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# Towards a theory of translation pedagogy

based on CAT tools for Catalan and English non literary texts

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# Abbreviations

ALPAC	Automatic Language Processing Advisory Committee
CAT	Computer-Assisted Translation
LSP	Language for Specific Purposes
MT	Machine Translation
NLP	Natural Language Processing
RTF	Rich Text Format (computer file)
SL	Source Language (Language being translated)
ST	Source Text (to be translated)
TL	Target Language (Language into which translation is made)
TM	Translation Memory
TMW	Translation Memory for Windows (file: TRADOS TM database)
TT	Target Text (Result of translation)
TM	Translation Memory
TU	Translation Unit (pair of SL/TL sentences in TRADOS TM database)

NOTE: The bibliographical references of this dissertation have adopted the standard  $\LaTeX$  formatting. There are two types of references:

- (1) [reference number of the book]. For example, (Nord 1995) would appear as [113], since this is the order number that the book has been assigned in the bibliography
- (2) [reference number of the book, pages]. For example, (Nord 1995, pp. 5-7) would appear as [113, pp. 5-7]



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# Chapter 1

## Introduction

The interest in translation all over the world has increased dramatically over the last few decades as the large amount of literature on this topic indicates. Due to the social and economic need for interlinguistic communication not only in Eastern and Western Europe, but also in Middle Eastern Countries, India, China, Hong Kong, Indonesia, Thailand, South America and Africa, there has been a growing awareness that translators should be given a sound educational basis and consequently their training needs to be institutionalised. In the last few years there has been a mushrooming of translation schools, posgraduate and doctorate courses that focus on translation training. This has brought about the gradual appearance of a few student-oriented practical coursebooks suggesting ways to design curricula for trainee translators.

Unfortunately, the tools, methodologies and training that students enrolling in some of these courses have traditionally received have not often met their expectations nor have these prepared them adequately for a translation career. In fact, many translation courses are/ have been designed as on a "hit or miss" basis and most are more or less sophisticated applications of error-analysis<sup>1</sup>, unaware of any academic approach. Realization of this widespread problem in translation pedagogy has derived into an awareness that this area is both lacking in good translator-training methodologies, approaches and guidelines as the following quotes indicate:

[translator training] has raised a number of questions that fairly cry for answers: question that have to do primarily with teaching methods, testing techniques, and curriculum planning. It is obvious that the search for well-founded, reliable answers to these questions constitute a major area (and for the time being, at least, *the* major area) of research in applied translation studies.[59, p.77]

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<sup>1</sup>Cf. section 3.1 on page 39.

One very important area for investigation is in developing translator-training methodologies or course profiles. [163, p.8]

and that translation-related activities could be included into the foreign language teaching (FLT) class as identified by Alan Duff, a scholar highly concerned about pedagogical translation, who describes pedagogical translation in the context of FLT as:

[a] fossilized discipline which instead of being a vital and challenging activity, has degenerated in most schools into a pointless routine exercise, a chore, a punishment. [30, p.5]

This general concern about the way translation is taught has triggered off during the 90's the appearance of several theoretical frameworks on translator training models (Kußmaul [82] and Gile [40]) and a boom in the number of published coursebooks for trainee translators (e.g. Bell 1991; Nord; 1991; Baker 1992; Delisle 1993)<sup>2</sup> which is a step in the right direction towards the design of better teaching methodologies.

A lot of work still remains to be done on the issue of evaluating traditional models of translation pedagogy and creating and implementing new ones, mainly because of the increasing demand for translation degrees on the market. This may be added to the fact that it is increasingly recognized by scholars<sup>3</sup> and translation companies and agencies<sup>4</sup> that formal training in translation schools is the most practical way to teach and test abilities to supply the market with reliable professionals, and the main priority for educators and pedagogically oriented research is to design theoretical models of translation which may fill this vacuum.

Since scientific investigation in this field is just beginning, the models developed recently are still tentative and require optimization. This explains the large number of papers, theses and presentations at international conferences which have translation pedagogy as their pivotal point. This dissertation is an attempt to design a theoretical model, that I labelled "eclectic", which may get closer to the student's needs and prepare them to confidently face the translation market. This preparation involves, on the one hand, developing the students' awareness towards existing and new approaches towards translation pedagogy, translation theories, models and patterns and, on the other, introducing them to the technological innovations available

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<sup>2</sup>Cf. [163, 125-127] for a summarised overview of the different authors who have worked on models of translation pedagogy.

<sup>3</sup>Cf. Gile [40] and Kußmaul [82].

<sup>4</sup>On a practical level, the translator registration forms of most competitive translation and interpreting agencies and companies devote a large section to finding out the applicant's university education.



for their career. The latter refers specifically to discovering the potential applications of computers in translation pedagogy.

Starting from the second half of the present century, computerized translation has attracted the attention of a large amount of people who work directly or indirectly on translational issues such as professional translators, teachers, linguists, researchers and future translators. All of them have different views on the many aspects related to computer translation, its feasibility, its quality, its cost-effectiveness, etc. One thing is clear: it leaves nobody indifferent.

All types of computerized tools are available nowadays to both researchers, professionals, educators and trainees whose main interest revolves around translation pedagogy. Traditional approaches to translation pedagogy still feel reluctant to take the plunge and incorporate computerized tools to their teaching and yet the professionals have already included computer tools into their daily work. This gap between translation pedagogy and professional translation has resulted in a clash between both disciplines. Although computerized tools are increasingly integrated in the formal training of future translators especially for their practicals, teachers and practitioners are still confronted over this issue.

## 1.1 Objectives of the work to be described

The objective of this dissertation is to propose an approach to translation pedagogy along two main guidelines:

1. Evaluation of the main traditional theoretical frameworks to translation pedagogy with a view to designing an eclectic approach
2. Implementation of computer-assisted translation tools to translation pedagogy based on classroom and experimental activities

The first guideline may be justified in that, to be in a position to create an approach to be used by novice translators, it is of interest to investigate to what extent it will be a better alternative than existing ones. In any case, far from underestimating approaches which have been effectively used in class my intention is rather to re-assess their value and adopt and adapt them to my own theoretical framework.

As for the second guideline, this work aims to incorporate computer-assisted approaches in translation pedagogy through practical research. The core of the experimental work to be described in this thesis is concentrated on trying to give an answer to the question of how computer-assisted translation tools can be implemented effectively in the translation class. This task will

start only after analysing what the needs of the students are. Questions such as what the student can translate using computers and what needs to be checked and translated manually will also be answered in the light of the results obtained in this work.

It is hoped that the proposed approach, its results and conclusions may be a step in the right direction as to how computers and humans may live in harmony in translational terms and how trainees may become better prepared to face an ever-increasing, ever-competitive and ever-demanding translation market.

## 1.2 Plan of this dissertation

Following this section, there are two sections which include a list of reasons which justify this work (section 1.3) and a list of argumentations behind this study (section 1.4).

Since this work can be classified at the intersection between translation pedagogy and computers, I have considered it necessary to explore its relationship with other approaches to translation pedagogy itself and also with related disciplines. The latter is analysed in chapter 2 with an extended three-fold explanation of the influences of translation pedagogy through its relationship with linguistics (section 2.3, translation studies (section 2.2) and computers (section 2.4).

The former relationship is explained in chapter 3. This chapter is devoted to the theoretical approaches to translation pedagogy. It starts off with a summary of the four main approaches to translation pedagogy, i.e. the error-, the text- the process-oriented and multidimensional approaches (sections 3.1, 3.3, 3.4 and 3.5 respectively). For each section, I have indicated the features of each approach that have been taken to develop the eclectic approach.

Chapter 4 is an in-depth explanation of the computerized content of this work preceded by background information on the subject. After a brief history of machine-aided translation systems, a list of the advantages of CAT over MT, the interaction between computers and human translators, there follow two lengthy sections on the two software tools used in this study, namely a terminology management tool and a translation memory (sections 4.3.1 and 4.3.2, respectively).

Chapter 5 brings together chapters 3 and 4 with the proposal of the main guidelines of an eclectic approach to translation pedagogy, which is the model I propose to train future translators.

Chapter 6 deals with the actual implementation of the eclectic approach. The results obtained from students doing human translation are analysed and discussed and, in the light of these results, I have designed an initial draft

model of translation exercise using the above-mentioned computer-assisted translation tools. The aim of this model, which shows the mechanization of some translating processes, is to prepare future translators more adequately for a highly-competitive and computerized job market.

In a final chapter, the conclusions drawn from the present work are given together with the future lines of research which may be initiated in the light of the results obtained in this work. Before the bibliography, there are also several appendices with the following contents:

Appendix B offers one possible version for a Catalan translation of the English sample text. After I did one draft version of the translation, a Catalan philologist proofread the text I gave her. The changes she suggested were almost exclusively referring to style since she mentioned that the text sounded "*extremely stilted and unnatural, as if it had been written by a non-native speaker*". The stylistic changes suggested by the Catalan philologist have been indicated in the text in bold type. The reason for including a Catalan translation is, rather than to point out the students into the "perfect translation" myth, to show the main type of errors that students are likely to make, in this case, stylistic errors which blur meaning and may undermine the reader's confidence in the company's products.

Although some translation theorists object strongly to a "model" TL translation, many scholars support the idea that a TL translation is an asset rather than a hindrance to the students' progress. According to Königs, textbooks should never contain only texts written in the source language, but also translations, even including unacceptable variants, so that students can make comparisons<sup>5</sup>. My practical day-to-day experience with students has directed me into this opinion, although I accept and encourage them to give me alternative translations and improved versions.

In appendix C, I have written the terminological results of human translation. Thus, thirty selected words and/or noun phrases have been analysed and statistical facts about their translation have been presented. These results may be contrasted to the ones obtained in appendix D, where detailed and field-specific information about the 30 terms under analysis may be looked up and edited by the student.

In appendix E an overall number of 14 TU's have been analysed in the light of their translation into Catalan by the students according to 7 parameters, which correspond to the 7 most frequent mistakes made by Catalan students when translating English texts into their native tongue, namely, passivisation, nominalisation, overuse of the third person, empty verbs, present tenses, pronominalisation and use of incorrect prepositions. In order to show the usefulness of the Translator's Workbench's "Concordancer" and "Trans-

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<sup>5</sup>As reported by Irma Sorvali [144, p.117].

lation memory”, I have included appendixes F and G. Appendix G displays as many as 89 entries, which correspond to the overall TU’s recorded in one of the databases.

Appendix H reproduces the output of the 14 TU’s using the Concordance facility of Translator’s Workbench. These results show the usefulness of the program in that it provides a consistent translation of TU’s of different lengths.

### 1.3 Reasons for this study

There are a series of questions which need to be answered to better understand the motivation behind this work. They are the following:

1. Why translation pedagogy?
2. Why Catalan and English?
3. Why a computerized corpus?
4. Why non-literary texts?

#### 1.3.1 Why translation pedagogy?

1. *Because there is a need to do more research on translation pedagogy*

A diachronic overview of translation studies shows that translation pedagogy has traditionally been regarded as a secondary activity in scientific research. This is a situation which most scholars seem to agree on [9]. And it is precisely these scholars who strive to account for the reason(s) for this situation. Among the many possible theories suggested, lack of systematic training seems to be gaining force among professional translators and translation theorists. Mona Baker [6] acknowledges that translation is a very young discipline in academic terms and precisely because of this needs further investigation. She says:

(...) if translation is ever to become a profession in the full sense of the word, translators will need something other than the current mixture of intuition and practice to enable them to reflect on what they do and how they do it. They will need, above all, to acquire a sound knowledge of the raw material with which they work: to understand what language is and how it comes to function for its users [6, p.4].

The pedagogical aspect of translation is certainly an area which takes translation away from associations with intuition, art and a sixth sense. In a word, pedagogical translation intends to separate translation from anything that could be regarded as unscientific.

The teaching of translation is an area of paramount importance in order to give a chance for future translators to receive the recognition and respect that other professions enjoy. In any case, the status of translation has come a long way from the times when translators came into the profession by chance, either as language graduates wishing to continue using their languages but looking for an alternative to teaching, or as technical specialists with a bilingual background or with language skills acquired through a posting abroad. The situation has changed in the last twenty years. Translation is slowly but surely becoming a discipline which enjoys recognition and respect from society at large. Most translators agree that the reason for such an improvement can be attributed to the formal education that members of the profession are receiving.

The amount of institutions preparing future translators for an increasingly demanding market has grown around the world since the 1950's in view of the growth in international relations and institutions. But the current trend has only just started and the need to communicate more effectively is at the top of the list of priorities. This is where universities, institutes and translator training schools come into play.

There is no universal consensus as to how the teaching of translation can be best carried out. Most translation teachers and professionals will be able to list a number of problems and suggest ways of dealing with them. Hopefully, all educators will be able to refer to a theoretical and methodological framework for their practical teaching. However, for students any teaching method is valid if it is useful. In fact, any conceptual explanation that accounts for this usefulness is valid as well, if the student and the teacher alike are personally satisfied. With this focus on the practical side of translation, a theoretical base for translation pedagogy remains relevant in order to apply the same teaching methodology and consequently, to manage confidently a successful translation. With this hope, I have set out to design the main guidelines towards a theory of translation pedagogy.

The next step would be to discuss the contents that such translation course should have. Paul Kußmaul approaches the issue of how to teach translation by asking these simple questions:

(...) do we really put enough emphasis on the right areas? Or

could it be that we stress problems which are not problems for our students after all, and that we actually disregard areas where they encounter difficulties? And has it ever crossed our mind that our students might perhaps have found ways of dealing with problems which we may never have thought of and which, if they are successful, may serve as models for our teaching [82, p.5]

The answer to the first question is a simple 'no'. However, just as translation studies is a discipline which needs empiricism, as pointed out by some scholars such as Holmes:

translation studies is, as no one I suppose would deny, an empirical discipline [59, p.71]

so does translation teaching, since translation studies should be conceived as an umbrella concept which covers applied translation studies (such as translator training)<sup>6</sup>. In general, translation teachers tend to focus on areas which they feel or think are worth looking into just because they have a specific prototypical student profile in mind, which is not necessarily the profile of the students they may happen to be teaching at a given moment. For example, it is very often the case that some students 'switch off' because the assumptions of the teacher as regards his/her students' competence are either too high or too low. In order to provide an answer to the students' real problem, it is necessary first to find out what these problems are. In other words, one crucial step for teachers would be to design courses according to data-based research [82, p.5] and empirical analysis. The practical part of this dissertation is an example of how this research and analysis may be done. Accordingly, the implementation of the CAT tools is done in the light of the two main problem areas for a specific group of students, namely lexical and syntactic difficulties.

But what kind of data can be used for the analysis? This leads to the third and last of Kußmaul's questions, the one which refers to actual students being the providers of all of the information teachers need, be it doubts or solutions. And the answer to this is 'no', many educators feel uncomfortable with bright students and reject their target text suggestions which might be more adequate than the ones they propose. Once educators feel their position as educators is being threatened, that shuts out any feedback they might otherwise obtain from their students. Obviously, this negative attitude from teachers encourages the view in

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<sup>6</sup>Cf. section 2.1 on page 26.

students that translation is based on intuition and intrinsic knowledge rather than that translation is a skill which can be taught and learnt.

But if a study of translation pedagogy involves dealing not only with the trainees linguistic competence but also their translational competence, why does the former so often take priority over the latter? My assumption is that, although theoreticians insist on establishing this distinction, the difference between these two types of competence is not clear-cut in translation practice and since translation is a language-related exercise, then both teachers and students tend to regard any mishap as a language problem. And this tendency applies to translation practitioners as well. In an unpublished research study I carried out from 1994-1996, I made an attempt to distinguish both types of problems, i.e. linguistic and translational, by analysing some of my students' translations and classified their errors according to language-related criteria whereas errors based on the students' lack of translational skills were ignored.

In the present work I have also analysed the students' language-related errors and selected those occurrences where errors were caused by the influence of the English ST wording over the students' Catalan translation. Unlike the previous study, students were translating into their mother tongue, Catalan, resulting in a more restricted and localised number of errors<sup>7</sup>

## 2. *Because translation pedagogy is a language-related activity*

We cannot forget that studying translation involves directly or indirectly studying language (2 languages, in fact), as stressed by Steiner, who said that "A study of translation is a study of language" [146, p.47]. Therefore, linguistic competence is a very important prerequisite to anyone involved in translation, i.e. translators, teachers or trainees. Keith highlights the importance of language in translation in the following quotation:

*Budding translators* also need to have a genuine interest in language, to be quick to absorb linguistic information, to learn new words and to note how language is used in different circumstances (my emphasis).[74, p.164]

Besides the focus on language for general translational purposes, there are further reasons for stressing language competence in translation training. One of them is the grading of the difficulty of translation

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<sup>7</sup>Cf. page 153 onwards for a view on the error categories obtained.

tasks. In translation teaching, the teacher has to be aware of the level of proficiency the student has in a foreign language in order to set appropriate tasks, and as Christiane Nord explains, the degree of difficulty presented by a translation task is often measured by linguistic criteria [113, p.150].

If a language-oriented bias is agreed to be a fundamental feature of courses specialising in training translators, developing model courses which caters for this need becomes an overriding priority for teachers, scholars and researchers alike. It follows, then, that if achieving a good command of the two languages involved in the translation process is an important prerequisite of future translators, translation exercises aimed at developing, improving and testing the student's linguistic competence would be motivating enough to students, which is not always the case. Most theoreticians and language educators seem to agree that the reason for this negative reaction from the students is due to the methodology that teachers use in the making of these language exercises, focused on constant repetition and the concept of error. In this study, a re-evaluation of error-centred and other traditional approaches to translation pedagogy are carried out<sup>8</sup> with a view to selecting those features that might be appropriate for an alternative approach to translation pedagogy<sup>9</sup>.

### 1.3.2 Why Catalan and English?

1. *Because Catalonia has witnessed a sudden increase in universities specialising in translation*

In the context of Europe, the 1950's were the years when the number of translation institutions started to increase, as reported by Patrick Zabalbeascoa:

Since the 1950s the number of institutions offering formal training in translation has grown quite remarkably with the growth of international relations and institutions, especially the U.N. and the European Common Market and, later on, the European Community. [163, p.126]

In the context of Spain and, in turn Catalonia, this increase has only come about from the 1990s:

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<sup>8</sup>Cf. chapter 3.

<sup>9</sup>Cf. chapter 5.



(1) there has been a spectacular increase in the number of universities that offer a degree in translating and interpreting (from 3 to 15 between 1990 and 1995); (2) there are four official languages in different stages of development and social acceptance; (3) there is a high level of language awareness and translation awareness among the people, so language and translation are part of many political party policies. [163, p. 127]

Catalonia is an interesting case study in terms its language. Catalan is a language which is recovering from the severe blow of the Franco regime and regaining a long-lost status of linguistic prestige. Catalan has progressively been re-established as a fully-functional and socially acceptable language. Catalonia being a bilingual society —where Catalan and Spanish co-exist— is highly aware of the importance of languages and translation. This shows on the increase of translation degrees and postgraduate programmes offered at the various existing universities and newly-created translation and interpreting schools which cater for a market that requires translation into Catalan, as opposed to Spanish, to address Catalan customers.

2. *Because there is a lack of translation teaching material in this language combination*

The limited market of Catalonia seems to have discouraged teachers and editors alike to produce teaching material for Catalan speakers. Only published compilations within university publishing houses have been able to do this. The reduced number of Catalan speakers is unlikely to boom suddenly and that creates a catch-22 situation, as a result of which no teaching material would be available to Catalan translation students.

The CAT programs I have worked with in this study are one effective way of surmounting this mishap. These programs are empty shells where customised data in the form of entries are entered in the programs' databases and allow the students to interact with them as they see fit. Namely, editing, consulting, searching or even deleting the entries. Medium and long term use of these existing databases involve evaluation and report-writing on their suitability, creation and maintenance of existing databases and creation of a database network whereby databases may be uploaded and downloaded, as the authorised user sees it appropriate.

The possibilities offered by the CAT programs selected for this dissertation, a data management package and a translation memory, repre-

sent one of the best alternatives to publication, since the information becomes available fast and cheap and may be easily updated by the users. Manually-created terminological reference material such as paper or electronic dictionaries soon become outdated but the programs described in this work enable the user to manage and update the information constantly. The approach and study described in this dissertation (Chapters 5 and 6) are one example of how CAT tools may be used in the translation class.

3. *Because Catalan is the mother tongue of the students I work with*

The practical experiment of this dissertation (Chapter 6) reports on the results obtained with a group of students, whose mother tongue is Catalan, translating a sample English text into Catalan. Although, in general terms, most of them are bilingual and have a good command of both Spanish and Catalan, many of them have decided to use Catalan because, according to them, they feel "more at ease and can express themselves better in Catalan than in Spanish".

Therefore, it was interesting for me to analyse the work done by my students both to identify the areas which I need to reinforce during the course and also to try and find a remedy to by using CAT software.

### 1.3.3 Why is it important to teach translation through computers?

The reasons for using computers in translation didactics are manifold. I have pointed out and summarised the main ones below.

1. *Because computer-literacy and familiarity with computer-assisted tools software is becoming an integral part of the training of translators*

The entry of computers into all fields of knowledge has changed the way we work, study and even think. But if there is one area which has experienced a strong impact with the incorporation of computers, it is undoubtedly translation. The eighties and nineties have witnessed the growing importance and usefulness of computers in the day-to-day work of professional translators. Hugh Keith is but one of the many translators who shares his wealth of experience in the field<sup>10</sup>. The article gives a strong emphasis on the kinds of computerized tools which the translators can use and identifies the need to train future translators in machine aids:

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<sup>10</sup>Cf. Keith [74, p.169]

Probably the most useful contribution to the translation profession made by computers in recent years has been the development of various aids which fall short of actual fully automated machine translation. Trainee translators should be made familiar with the use of data - and term-banks and, of course, word-processing equipment [74, p.169].

Although the new didactic approach he is suggesting would seem the next logical step in the area of translation pedagogy, nearly two decades afterwards it is still very much a theory rather than a tangible reality. Many translation schools, colleges and universities are still using traditional methods to teach their students but this practice for training translators is becoming more and more obsolete, as many contemporary scholars report:

Il est clair que le traducteur ou l'étudiant en traduction en peut rater le train électronique. La traduction devant hier (papier, crayon ou stylo) ou hier (machine à écrire), qui existe encore dans certains milieux, est définitivement dépassée sur le plan professionnel [76, p.318].

Although, admittedly, these traditional methods do have their validity and usefulness, most academically-minded programmes still do not require students to acquire any knowledge on computer skills, not even computer-literacy. This results in a mismatch between the translating skills that students have learned during their training and the expertise that the real market expects from them. Suzanne Falcone, an experienced freelance translator who uses computerized tools for her work, points out that one of the problems of novice translators is that they are untrained in computer-assisted translation software. She says:

One problem with these [computer-assisted translation] programs is that they usually come at the same time as the first job, and the deadline for delivery obviously doesn't take training into account. The translator rarely has the time to read the user's manual (if it is provided at all) and sometimes can't even install the program properly on the first (and even second) attempt (although the client did give instructions). This is one point to take into account before accepting to work with a program that the client is offering to provide.

The translating methodology I advocate for aims to prove the ideoneity of using computers to teach future translators during their training

years and contribute to the education of flexible translators who can adapt to different CAT tools. The reason for these aims is that students cannot miss the train of today's translation, that is, hardware, software and products which will enable them to work with up-to-date tools.

Translation training through computer-assisted tools is a relatively unexplored field. Indeed, although a tremendous amount of work has been done on machine translation programs and the use of computers to learn foreign languages, very little work has been done on finding ways of teaching students to become translators ready to face an ever-competitive field.

The methodology used will be a computerised analysis of one English text on computers. The analysis intends to obtain a theoretical model which can be applied to translation teaching. One very interesting are which I also intend to analyse is the way computer-assisted tools and students are able to interact with each other, to create a better translation output, since I think that machines and humans can help and learn from each other.

it is becoming clearer that machine-related translation systems and purely human translation have a lot to learn from each other. [163, p.8]

This quote summarizes quite accurately the purpose of this doctoral thesis. It is therefore an attempt to design a methodological model which enables translation students to learn the skills they will need in their career, which involves being able to adapt CAT tools to their own work. Since translation courses should prepare trainees to become professional translators, these courses need to make them aware of the requirements that future clients expect from them and develop the necessary skills. Although most if not all professional translators make use of computerised systems for their work, other traditional tools such as dictionaries in book format will also be utilised, since translators still fall back on dictionaries in book format because they are sometimes comprehensive and less tiring to use than on-line information -i.e. they gave them the opportunity to look away from their computer screens.

2. *Because translation institutions need to prepare trainees for a computer-prone market*

The teaching profession is in constant mutation. Clients become more and more demanding as the translation market expands and becomes more competitive. Young and enthusiastic translation graduates are

thrown into the world of professional translation with excellent translation skills and potential but very little or no knowledge on the real requirements and skills that companies, agencies and clients require. There is, then, a mismatch between the teaching and training they receive and a more market-oriented training. Below, I will also account for the need to introduce computers in the teaching of translation.

Teaching translation through computers started being introduced systematically in the course syllabi of German universities, as reported by several scholars:

Seules les facultés allemandes sont en train de les introduire plus ou moins systématiquement. [76, p.318]

In the last decade, teaching translation through computers has slowly been introduced in private translation institutes or universities. Public translation universities are catching up with the private ones although the association of translation with humanities, the poor relative of science, still prevails, and therefore it is difficult to obtain the financial support needed to set up a computerised environment in the tuition. However, this effort must be relentless if translation pedagogy is to give an answer to the market needs. Just as we cannot conceive of conference interpreter training without proper laboratories, booths, headphones, cassette tapes, etc. it is equally unconceivable to train translators without computer rooms fitted with the necessary hardware and software. As far as software is concerned, among the many state-of-the-art computerised translation tools available today is computer-assisted translation, a useful, articulate and protean device for human translators, a valid aid for trainees in translation. It is actually being used in many private and public translation universities, but I agree with many scholars that this practice needs to be made extensive to all translator-training institutions because technical restrictions regarding hardware and software requirements are no longer so. For example, memory space used to be a serious concern but nowadays a standard 486 PC with a 8-16 MB RAM can support CAT programs and if the program is networked, then students can access it whenever they need it and, when quitting, releasing the amount of memory that the CAT program occupies.

Adequate infrastructure is one very important feature of translation pedagogy but not the only one. An equally adequate teaching course and theoretical framework needs to be established. I do not intend to go through a full-scale criticism of previous practices in translation didactics. Very convincing and thorough studies have been made in the last decades<sup>11</sup>. In fact,

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<sup>11</sup>Cf. Hewson & Martin [56] and Hervey et al. [55].

some of the global assumptions pointed out by both the former and the latter have been taken as information sources for the development of this thesis. However, I think that, since teaching translation through computers is a relatively young and unexplored area of knowledge where too little work has been done, there is a didactic gap which needs to be filled with appropriate and various methodologies and theoretical guidelines.

### 1.3.4 Why non-literary texts?

#### 1. *Very little or no connotative language*

The theoretical model explained in this thesis deals with pragmatic or non-literary translation, which is concerned mostly with messages centered on information rather than emotions. Although many literary translators claim that concepts and models dealt with in non-literary translation also apply to literary translation, I do not feel qualified to tackle the problem of literary translation, with its very intricate relationship between content and linguistic information, and its aesthetic factors and connotative language.

Apart from my inability to deal with the complex nuances of literary texts, computer assisted translation tools so far have not evolved enough to understand connotative language. In fact, most machine translation scholars and developers agree that literary texts are inadequate for testing the efficiency of some translation programs:

Automatic translation followed by post editing has been found to be most effective when the texts are technical rather than persuasive or literary [94, p.150].

#### 2. *Numerical reasons*

Since translation courses should aim at training future professionals, it seems logical that such courses may anticipate what the trainees' prospects may be. More specifically, the courses should expose trainees to the documents that they are more likely to encounter in their career.

If we establish a two-fold taxonomy of texts<sup>12</sup> between literary and non-literary texts, we will find that literary translation in the EC amounts to a mere 1% in numerical terms, which puts non-literary translation into the top position of the bulk of translation undertaken:

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<sup>12</sup>Cf. sections 5.4 and 5.3.2 devoted to Snell-Hornby.

Dentro del volumen de trabajo que mueve la traducción hay que decir, sin embargo, que más del 80% de la demanda la absorben los textos jurídicos, médicos, informáticos, documentos de firmas de automoción, bancos, seguros, etc., mientras que la traducción literaria absorbe sólo el 1% de los especialistas. [112, p.138]

A translation course which devoted much more time to non-literary texts than to literary texts should therefore be more useful to most students than the other way round.

### 3. *Linguistic convenience*

Although syntactic well-formedness together with other usual linguistic concepts of ungrammaticality, unacceptability and stylistic and situational inappropriateness need to be tackled by professional translators at some stage of their careers, I think that choosing texts and text-types with a limited degree of difficulty may facilitate both the teachers and the novices task. Christiane Nord [113, p.171] suggests that the degree of difficulty of the source text should bear some relation to the learners level of competence and literature is far from being a simple, straightforward and uncomplicated area of knowledge.

### 4. *Higher degree of predictability*

Non-literary language is characterized by a higher degree of repetition of structures, patterns, idioms, phrases, collocations, etc. as compared to literary language and hence, a higher degree of predictability of the relationship between form and content. At syntactic level, for example, complex and/or deviant syntax seems to be a common feature of literature. Nils Erik Enkvist highlights literature among other discourse types which require alternative syntactical analysis:

In impromptu speech, advertising, and modern poetry for instance, people often make excellent, and sometimes deliberate use of structures which syntacticians for instance are tempted to call defective or deviant [31, p.5].

This arbitrariness of language may be extended to other levels of analysis -semantic, pragmatic- of literary language in general.

Another advantage of non-literary language is that it adheres much more to the norms of a genre or type of text.

## 1.4 Argumentations of this study

There are a number of assumptions behind this study. They have been divided into:

- Pedagogical assumptions
- Computer-related assumptions

### 1.4.1 Pedagogical assumptions

1. *Students do not begin their translation courses as blank slates. They have some preconceived ideas about what translation is and what translating involves.*

However, their perspective of translation tends to be very limited because they are frequently more aware of the linguistic aspects of translation rather than the extra-linguistic ones. More specifically, they are generally limited to the school-translation approach. When they are given a text to translate, they just try to find the closest linguistic equivalent in the target language without being aware of the extra-linguistic limitations surrounding the text. In other words, they do not know what professional translation is about and because of this they are often reluctant to accept any evaluation which differs from their preconceived ideas of translation as a word-by-word task and any which might clash with their previous school experience.

2. *Although some professional translators argue strongly against formal academic training because, they suggest, translation is an art which merely requires aptitude, practice and general knowledge, it is commonly accepted that translation is a skill and it can be taught.*

In fact, this stress on teaching translation is a necessary requirement if the unjust low status of translation is to be improved. Mona Baker, among other translation scholars, complains about this unfair situation, which paradoxically translators themselves have put themselves into:

Throughout its long history, translation has never enjoyed the kind of recognition that other professions such as medicine and engineering enjoy. Translators have constantly complained that translation is underestimated as a profession (...) There is no doubt that the low status accorded to translation as a profession is 'unjust', but one has to admit that



this is not just the fault of the general public. The translation community itself is guilty of underestimating not so much the value as the complexity of the translation process and hence the need for formal professional training in the field [6, p.2]

But not only translation scholars find it necessary to provide formal training in the field of translation but also professional translators such as Carlos Marapodi and Derick Fajardo realise how important education is for future translators in an ever-increasing competitive market:

Experience plays a great role in this profession, but a solid education will build a stronger foundation and must not be set aside. Many of the errors made by some translators are the result of a lack of academic preparation [91, p.43]

Translation students are often required to translate at home, but they should also be given in class some guidelines on how to develop translating skills. Their examinations and textbooks toss at them questions beginning: Translate the following sentences into Spanish/ French/ English/ Dutch.... Even the approach to the teaching of translation is merely handing out texts to the students once a week with the instruction: Translate!. This random approach to translation serves little purpose. Teaching translation should not mean setting written assignments to be returned to the students with the errors marked in red. It should mean, rather, giving the students opportunities to learn how to translate by tackling their own difficulties.

3. *The objectives of a translation course are not always adequately explained or bear little relation to the classroom activities*

Many translation theoreticians acknowledge that the classroom activities used in the translation classroom are not always explained adequately. Claims like the one below are not infrequent:

There should be a connection between the goal of a program and the kind of classroom activities that are appropriate [138, p.80]

In 1988 Albrecht Neubert pointed this out at the TRANSIF seminar<sup>13</sup>. He regretted the fact that unlike language courses, in translation, with

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<sup>13</sup>Cf. Neubert [102].

the exception of specific courses such as comparative stylistics, the connection between the methodology and the goal is not very clear. It seems to me that just as professional translators produce their translations according to the clients requirements, as proven by successful thinking-aloud experiments<sup>14</sup>, translation trainees need to be better informed about the goal of the activity. In the literature available on the subject, skopos theory deserves a special mention, which hinges on the principle that equivalence between source and target texts may be achieved if the translator manages to match the purposes (skopos) of the source and target texts.

Even if it is, the aim of the exercise and the actual competence of the student are not always on an equal level. For example, it is current practice in translation teaching for the beginner students to be asked to produce a functionally equivalent text<sup>15</sup>. This is clearly asking too much of a beginner.

As a consequence, the final product that the student submits to the teacher is more often than not going to be marked as unsatisfactory. Although this situation has improved during the 90s with the mushrooming of translation degrees and courses in Western Europe, translation pedagogy is still an area of knowledge under development. On this subject, Christiane Nord suggests that:

grammatical and stylistic errors, for example, would be reduced considerably if the entry requirements for translator training were strictly laid down (and adhered to) and also if translation tasks were geared to the level of competence of the learners [113, p.172].

4. *Professional translators can provide a lot of feedback to translation pedagogy*

Translation teaching is a discipline which needs to be taught to students whose future job is, hopefully, going to be a translator. Therefore, the hands-on experience of professional translators is of great help when it comes to highlighting those issues which pose extra difficulty to translators and those aspects which employees tend to value such as terminological consistency. Their aid becomes essential, then, in maximising the instructors' teaching time and the students' learning time.

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<sup>14</sup>Cf. Jääskeläinen & Tirkkonen-Condit [69].

<sup>15</sup>Cf. House [64, p.37].

### 1.4.2 Computer-related assumptions

1. *Computers and translation teachers can work hand in hand towards a better teaching methodology. Some tasks can be best implemented with the help of computers while other skills require the hand and expertise of translation teachers*

Teaching through computers is becoming a popular and widespread practice in foreign language teaching. Language schools which used to have traditional teaching methodology—chalk-and-talk teaching, audio-lingual methods using cassettes and videos and communicative methods— have included computer programs in their syllabus. However, even with the inclusion of computers in the language class, the teachers assistance and advice is also needed. So, if this is true for foreign language teaching, it seems quite reasonable to think that same principle should apply to other areas of knowledge such as translation teaching. Albrecht Neubert states that:

The more one finds out about the chances of computerizing significant parts of the translation process the more the remaining more human aspects of translation are brought into new focus [102, p.24].

Indeed, it is generally acknowledged, among translation theoreticians at least, that computer translation may help during the translation process but human translation is still necessary. Fully-automated translation is still an unfulfilled aim. Albrecht Neubert, Jaime G. Carbonell and Masaru Tomita are some of the many theoreticians who acknowledge the essential role of the human translator in the translation process.

Jaime G. Carbonell and Masaru Tomita shed some light on the tasks required by human translators. They acknowledge that much of the time of a human translator is wasted on manual lexicographic searches, and in document editing and formatting, and these are the simplest tasks that a translator must perform and therefore the easiest to automate effectively. They strongly suggest that one way of improving the efficiency of a valuable, experienced human translator is to provide them with high-powered computational tools for the more mundane, time-consuming tasks. Such tools range from split-screen editing systems, to document formatters and graphic layout modules, to on-line technical dictionaries and grammar checking programs.

Figure 1.1 outlines the basic flow of information in a machine-aided human translation approach, as adapted from the original figure and terminology drafted by Carbonell and Tomita in [19, p.70]<sup>16</sup>. The direction of the

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<sup>16</sup>I have changed the authors' original phrase "final translation" into "target text" in order to maintain the terminological consistency of this dissertation

arrows show the human translator as an activator of the information flow. He has powerful computational tools at his disposal and the human translator stands at the centre filtering the data obtained in the computer. The arrows also show the human translator not only as a receiver of the information coming from the translation aids but also a creator of it.

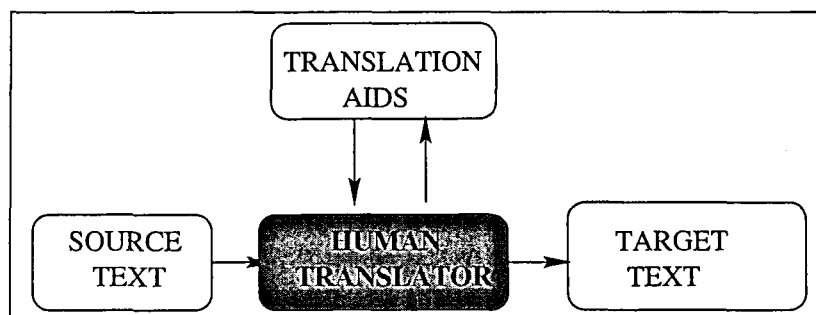


Figure 1.1: Translator aids

Although traditional methods and skills have some strong points, including computers in the translation class would be more beneficial than harmful for trainees. For example, the traditional tools to the teaching of translation have been dictionaries, grammar and style books, parallel texts, glossaries, etc. All of them occupy a lot of space on the students desk and become awkward to handle after a while. This is where translation students could derive more benefit from using material which is more associated to professional translators such as word processors, on-line dictionaries, grammar/style checks and even machine translation.

The advantages of this computer-oriented bias to the teaching of translation are manifold and range from a more hands-on and faster methodology of learning translation to a more interdisciplinary and updated learning process, as suggested by Gentzler [37]. It is always preferable to provide translation students with systematic training on the latest off-the-shelf technologies and techniques available on the market in order to upgrade their knowledge and their future careers to professional standards and position translation pedagogy at a competent and competitive level in nowadays society.

For Melby most texts are a mixture of general vocabulary and specialized terms. He claims that:

Only a small portion of the text that is authored conforms to a naturally occurring sublanguage that is entirely restricted to a narrow domain and is sufficiently predictable to allow us to get away with pretending that objectivist assumptions apply perfectly to it. Likewise, only a small portion of text is free from

specialized terms of any kind. Most text is a mixture, including some amount of LSP (Language for Specific Purposes) (...) it should be possible to develop methods that can be used by skilled humans to predict results accurately [96, p.154]



# Chapter 2

## Influences from other fields

### Introduction

Although the interest in translation pedagogy has started quite recently, namely from the second half of the twentieth century, the basis on which this relatively new discipline rests on is well-established because it has benefited from firmly grounded models and theories from related study areas such as translation theory, linguistics and computer studies.

This chapter attempts to show how important this three-fold influence has been for the development of translation pedagogy and to what an extent these related fields have been taken into account in this dissertation (sections 2.2, 2.3 and 2.4). Prior to this, it is adequate to find out where translation pedagogy/translator training stands within the discipline of translation studies (section 2.1).

### 2.1 The status of translation pedagogy

Holmes established in 1988 [59] a division of translation studies, which may help clarify the position of translation pedagogy in the area of translation studies and provide a basis for the eclectic approach, developed in chapter 5. Holmes divided translation studies into “Pure” studies and “Applied” studies. The former aimed at improving our understanding of the nature of translations, translational phenomena and the influence of related factors whereas the latter used insights, theoretical models and/or hypotheses, and/or experimental or descriptive studies to develop ways of assisting or training translators and translation critics, an indirect means of influencing translators. Pure translation studies were further broken down into Theoretical (General and Partial) vs. Descriptive sub-branches, with Descriptive

Translation Studies branching again, in terms of three different foci of research –Function-, Process-, and Product-oriented.

In this representation, partial theories are the ones that would provide a basis for the general theory (i.e. models, statements, etc. with a restricted number of variables or restricted in scope). Restrictions imposed by the medium can be identified as the ones that limit their scope to human or machine processes.

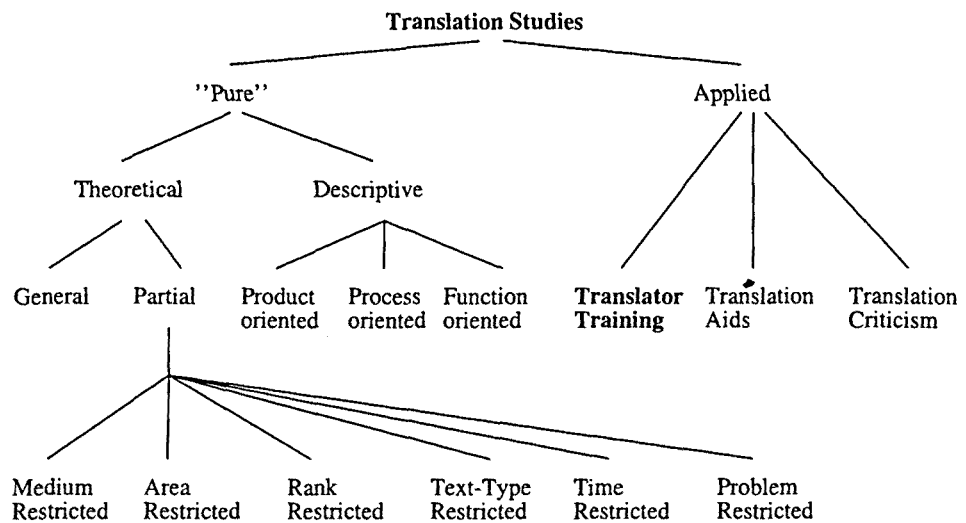


Figure 2.1: Holmes' basic 'map' of Translation Studies [152]

Traditionally the focus of attention of research in translation has been on "Pure" translation studies, and that has brought about the creation of a wide and so far unbridgeable gap between translation pedagogy and professional translation or rather translation scholars and professionals. According to the Dutch translation scholar Arthur Langeveld, who identifies this situation in the Low Countries, professionals tend to look down on theories of translation studies and pedagogy:

... the mere mention of the discipline among translators is enough to provoke jeers and laughter (as quoted in [151, p.35]).

Langeveld feels that translation studies (i.e. Pure translation studies), a discipline which is traditionally taught in translation institutions (referring to translation institutions that did not use to prepare students for their career), owes its notoriety largely to itself:

Translation Studies is reputed to be a rather impenetrable discipline, rich in elaborate diagrams of the bilingual communication



process, but very poor in simple answers to practical problems. This reputation is not entirely unjustified (op.cit).

The diagram set out by Holmes was further developed and clarified by Gideon Toury, who in 1995 made an attempt to bridge the gap between translation studies and its applied extensions (translator training being one of them<sup>1</sup>). Toury presented an array of relations and interdependencies between the branches and ramifications of Holmes' map. The relations between translation studies and its applied extensions is indicated in figure 2.2 by the use of a different type of arrows. He states, however, that no transition from translation studies proper to any of its extensions can be made directly. This transition necessitates the application of some *bridging rules*. In figure 2.2 we can see how a set of modifying rules for translator training would come from a theory of teaching and learning. This heterogeneity is the reason why Toury has used the term "applied extensions" instead of Holmes' term "applied translation studies" (as represented in 2.1 page 26).

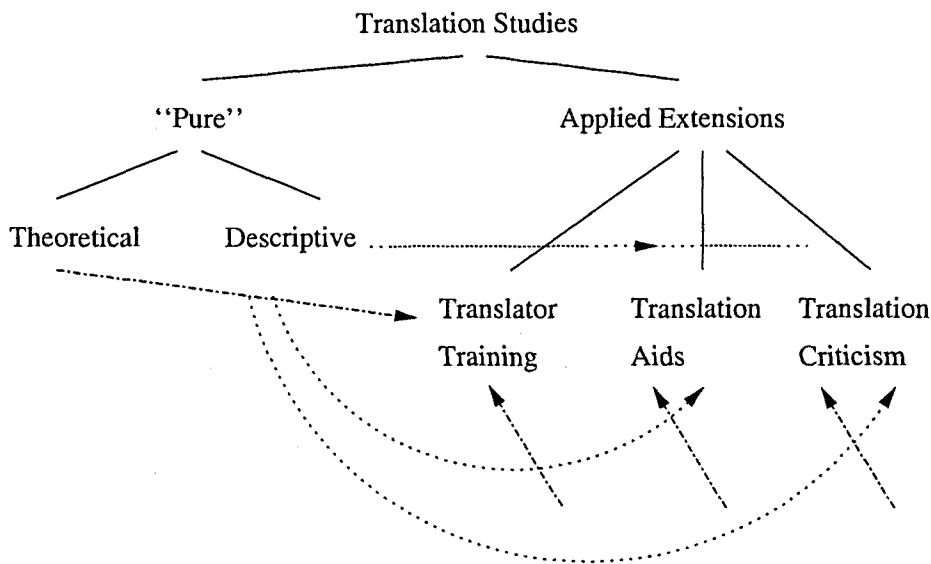


Figure 2.2: The relations between translation studies and its applied extensions, as suggested by Toury [152, p.18]

Figure 2.2 also visualises the nature of this dissertation, which has been conceived as an attempt to explore the relations between "Translator training" and "Translation Aids".

A practical example of the relations between translation studies and its applied extensions is the feedback between professionals and translation

<sup>1</sup>Cf. Figure 2.1 on page 26.

scholars, who seem now to have a tacit agreement whereby they receive continuous feedback from each other in order to establish a constructive and beneficial course of action. On the one hand, professionals report on their practical experience and, on the other, translation scholars analyse their problems and suggest solutions, in the light of which, competent translation courses and syllabi can be created which prepare future translators more adequately for their career. This feedback has been illustrated in figure 2.3.

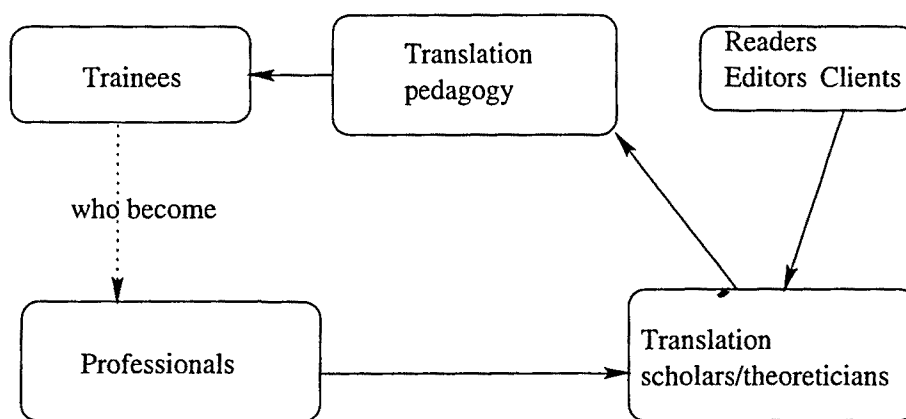


Figure 2.3: Feedback between the different translation-related parties, based on Toury's "bridging rules" [152, p.18]

Since trainees themselves tend to focus their interest on the practical content of the course syllabus more than on the theoretical side, instructors should make an effort to strengthen this area. This is, however, a difficult aim to accomplish because, although there have been many studies on translation phenomena, most of these are rather scholarly rather than pedagogically-oriented. Realisation of this problem was identified by Daniel Gile [40, p.17], who designed his own theoretical framework for translation pedagogy and developed his own training package as well for direct use in the classroom.

## 2.2 The influence of translation theory

Bearing in mind Holmes' and Toury's diagrams of translation studies, it is appropriate now to explore the influence of translation theory (i.e. Theoretical translation studies, using Holmes' terminology) on translation pedagogy and, in turn, to explore the influence of translation theory in this dissertation.

Melby drew in 1995 a simple yet far-reaching implication for the discussion on translation theory, which I find most congenial and applicable to my own ideas about translation theory.

According to Melby[96], there are branches of translation theory, one for dynamic general language and the other for domain-specific controlled language. He calls this the “general/domain distinction” [96, p.157]. Translation theory for general language would be intended for human translators, whereas translation theory for controlled language would be intended for developers of machine translation systems using current techniques. A third branch of translation theory, with significant practical applications, would develop a methodology for analysing whether a given text is suitable for machine translation and why. This threefold division of translation theory can be visualised in figure 2.4.

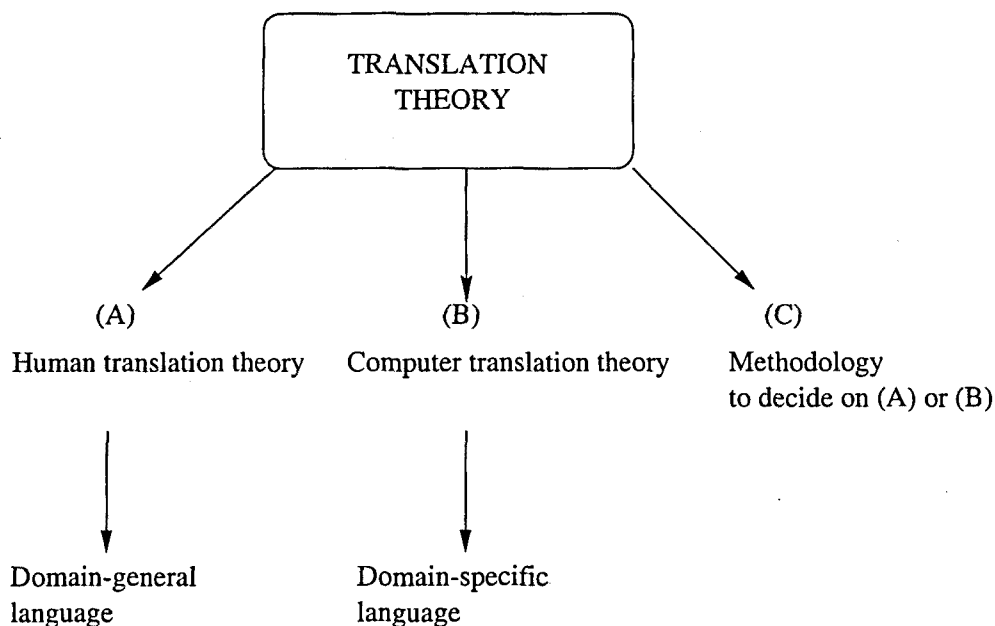


Figure 2.4: Division of translation theory, according to Melby [96]

Figure 2.4 shows that human translation theory intends to provide guidance to humans in the translation of general-language and LSP texts (Computers in the case of the text under study in chapter 6) whereas computer translation theory would be intended for developers of machine translation systems using current techniques for the translation of domain-specific language. Melby suggests that if this threefold division of translation theory were taken seriously, much of the tension that is recognized in current translation studies should evaporate. Translation theorists would be able to participate in machine translation projects without feeling that they are degrading themselves or betraying translators, and the role of mainstream linguistic theory human translation studies would naturally shrink, while linguistics' role in machine translation studies would increase.

It would appear that, of the three branches, human translation theory is the most congenial to this dissertation, although such theory would leave aside any possibility of using CAT tools in the classroom. However, one of the most interesting aspects of Melby's division of translation theory is that the three branches are overlapping. He is aware of the fact that texts are not 100% general nor domain-specific. Indeed, he acknowledges that there are texts that require high-quality translations but are not domain-specific, that is, are not written in a controlled language restricted to a particular domain, and that *computers* can do a lot to help *humans* with the translation of such texts.

Melby states that, although current machine translation techniques cannot handle dynamic general language the way humans do, CAT tools can help humans in the dimension of terminology management and also in order to ensure consistency. Melby's human translation theory is headed away from the linguistic approach and

toward what humans have been doing all along -communicating in particular situations for specific purposes [96, p.183].

and since human translators have formed a partnership with computers, one of the chief aims of human translation theory would be for translators:

[to] build on the basis of word processing and use computers in new ways as tools to extend memory, reduce drudgery, and improve communication. (op.cit.)

The approach suggested by Melby, opposed to traditional linguistic approaches to translation, rests on the following three assumptions:

1. There is no single correct interpretation of a source text.
2. Techniques used in MT cannot be extended to handle dynamic general language effectively. Humans can adapt to domain-specific language but current machines cannot extend to general language.
3. Objectivism needs to be avoided because
  - Words do not have one or more well-defined meanings
  - Each sense of a word does not exist independently of any particular word or sentence and does not have the properties of a mathematical set.
  - Sentences should not be treated in isolation.

These three assumptions need to be borne in mind if we intend to build up an appropriate approach to human translation theory.

## 2.3 The influence of linguistics

Another source of controversy is the fact that for a long time, translation studies has been and still is regarded by most people as a discipline related exclusively to other disciplines in the neighbourhood of linguistics. Quotations like the following are frequent among theoreticians:

As translation studies has derived some of its terms from linguistics, it is also regarded as being a specialized field of the latter. They do indeed have much in common, but they are by no means identical [144, p.54].

(...) in search of an integrated, interdisciplinary, multimethod, and multilevel approach to the explanation of the phenomenon of translation and we would locate the approach within a broadly defined applied linguistics which would embrace, in addition to the teaching and learning of foreign languages, lexicology and lexicography, speech pathology, stylistics, language planning [12, p.28].

This one-sided focus on linguistics prevented the development of further associations of translation studies with other study areas. Consequently, translation pedagogy has also been associated exclusively with linguistics rather than with other areas of study or as a completely independent discipline.

Little by little, as translation studies started acquiring its own status, study fields other than linguistics made valuable contributions to translation studies. In fact, as far back as 1972 James Holmes' statement about the *interdependency of translation* with linguistics but also other areas of study is an early precedent of the current state of affairs:

As the interest [in translation] has solidified and expanded, more and more scholars have moved into the field, particularly from the adjacent field of linguistics, linguistic philosophy, and literary studies, but also from such seemingly more remote disciplines as information theory, logic and mathematics, each of them carrying with them paradigms, quasi-paradigms, models and methodologies that he felt could be brought to bear on this new problem [59, pp.67-68].

Later in 1987 Allen Tucker made a prediction about the future of translation and again mentioned *interdisciplinarity* as an intrinsic feature of machine translation:

Machine translation is, truly, one of the most profound and intrinsically interdisciplinary research problems in the history of scientific inquiry. Its effective solution will not be realized until scholars from several fields (linguistics, software engineering, artificial intelligence, and psychology) can effectively merge their creativity to achieve a common goal [155, p.41]

In 1992 Neubert and Shreve confirmed the *break of the one-sided traditional link between linguistics and translation* and explored a whole new set of connections of translation and other disciplines:

Translation studies has abandoned its single-minded concern with strictly linguistic issues. It has been invigorated by new ideas from other disciplines. Translator scholars no longer hesitate to adopt new ideas from information science, cognitive science, and psychology (...) This interdisciplinary give-and-take has resulted in new research directions. Translation has become an important area of study in its own right [103, p.7]

and continue their enthusiastic comments about it:

The development of translation studies over the last two decades has been characterized by a decline in the influence of linguistics and a movement to give translation research an interdisciplinary focus. Linguistics is now just one of many disciplines which contribute to our understanding of translation. As a result of the emergence of translation as an interdiscipline, new research patterns have emerged which redefine the character of translation studies. Certainly, translation is still a subject of interest in linguistics. Similarly, linguistics is still a central issue in translation studies. Translation, however, is no longer wholly included in linguistics. Translation studies has emerged to pursue its own connections with other disciplines. The resulting hybrid vigor has led to the growth of a number of competing models of translation [103, p.7]

In the field of translation pedagogy, linguistics is now viewed as a helpful tool which may offer translators valuable information about language, as Mona Baker quotes in the following passage:

Linguistics is a discipline which studies language both in its own right and as a tool for generating meanings. It should therefore have a great deal to offer to the budding discipline of translation studies; it can certainly offer translators valuable insights into the nature and function of language. [6, p.4]

In fact, the eclectic approach I have developed in chapter 5 is enriched by the several approaches revolving around linguistics, namely error-oriented, context-sensitive and text-oriented approaches to translation pedagogy.

## 2.4 The influence of computers

Together with the mushrooming of universities offering degrees in translation and interpreting, the 90's witnessed a more dramatic step forward. Namely, the irruption and spread of computers in translation. Computers started becoming an indispensable tool in most professional jobs and everyday lives. Nowadays we are living in a new environment where the path of computers and translation are interlinked, in other words, translation has become an interdisciplinary activity which feeds on the breakthroughs of information technology. Neubert and Shreve acknowledged the role of computers in translation and, in the light of this realisation, they established and described the features of a "computational model" of translation [103, p.26–29]. These scholars helped move translation studies away from an overdependence on a linguistic approach. They also observed a decline in the influence of the linguistic approach in translation theory, as far as human translation theory is concerned, but not in machine translation theory. They say

Much early work in translation studies is rooted in the linguistic tradition.[103, p.9]

and they correctly point out that machine translation is highly dependent on the linguistic approach, but they add to this that there are two recognizable trends which lead to a lack of consensus in translation studies. One of them is:

The shrinking role of linguistics as the intellectual basis for translation studies [103, p.11]

Neubert and Shreve lament that the result has been translation conferences and translation studies literature that contain "an enormous amount of frustrating miscommunication", and they rightly point out that translation studies is a young discipline (it only started being widely recognised as a new discipline in the early eighties) and that young disciplines often have competing paradigms.

During the 90's the distinction between human translation and machine translation was already widely accepted. In the light of Neubert and Shreve's comments, Alan K. Melby [96, p.153] acknowledges that over the past thirty or forty years, translation theory has reached a turning point. He says:

In this extremely brief span, relative to the history of translation, we have gone from domination to failure to a breaking away: domination by a linguistic approach; failure of the linguistic approach to come through with results in machine translation when applied to tasks that require an understanding of general-language texts; and a breaking away from the linguistic tradition in human translation [96, p.182]

A recent recollection by Melby [96] of the origins and subsequent history of the different approaches or trends of translation theory gives the following milestones:

<i>Time period</i>	<i>Trends in translation studies</i>
1960s, 1970s and 1980s	Influence of Chomsky in translation scholarship. Focus on linguistics and the notion of equivalence
1970-1978	Introduction and development of the notion of "polysystem"
1992	Neubert and Shreve suggest that machine translation is dependent on the linguistic approach, whereas human translation is less dependent on linguistics
1993	Sager suggests a distinction between human and machine translation
1995	Melby suggests a multidimensional approach to translation theory

Table 2.1: Milestones of the origins and history of the different approaches or trends of translation theory

Until the first attempts into machine translation and computer-assisted translation were made, translation theory had always implied "human" translation theory. That is, translation done by human translators. However, with the arrival of a theory of computerised translation, the axiom that translation was always carried out by humans did not hold true anymore. This change of perspective as to who does the translation brought as a consequence a slow realization that traditional translation theories based on human translation would not necessarily work for translation carried out by machines. At first, scholars realized that machine translation did not fit the patterns described by existing translation theories and they started to look down on it and consider it as a minor discipline within translation studies. It may well be the case that many of the traditional translation theories did not apply to human



translation. The difference is that in the case of machine translation, it is easier (and more painful) to see that they do not work.

Computerization has, in turn, had a strong influence in translation pedagogy. But in order for translation pedagogy to be able to prepare students for an increasingly computerised market, this influence should be invigorated and further research on the relationship between computerization and translation pedagogy should be carried out. This dissertation is an attempt to do so.

Whereas human translators have overall been able to take the plunge and incorporate to a certain degree translating tools into their work, translation teachers have pulled back and continued using traditional approaches to teach translation. In general terms, the approach of translation courses has traditionally come up with three main disadvantages:

1. Imbalance between theory and practice, in other words stress of the theoretical component over the pragmatic one or viceversa
2. Translation courses focus mainly on literary translation
3. Practical tuition provided to future translators has rarely trained translators through the latest technology available, which creates a huge gap between trainees and professional translators

Figure 2.5 is a synthesis of the main concepts borrowed from linguistics, translation studies and computer studies for this dissertation.

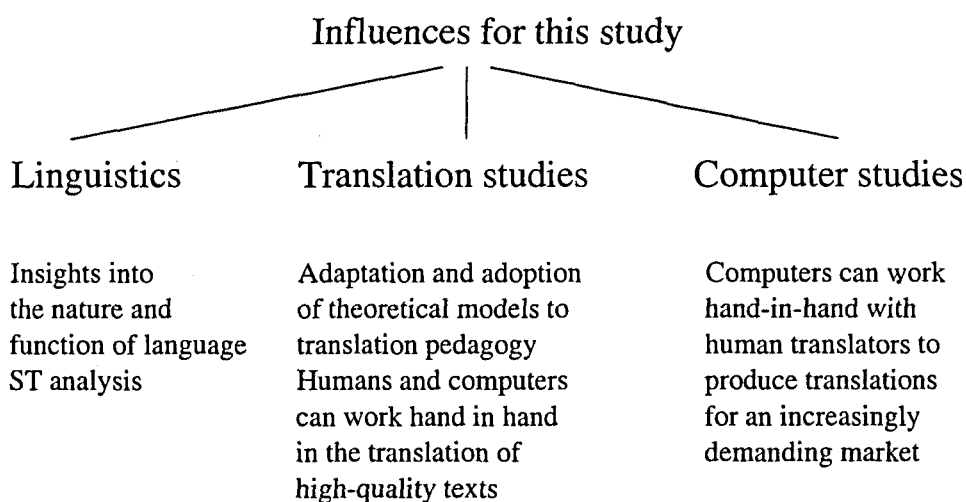


Figure 2.5: Influences of linguistics, translation studies and computer studies in this study.



# Chapter 3

## A survey of previous work

### Introduction

In this chapter I have tried to establish a background of the main practical approaches to translation pedagogy because the approach I will develop in chapter 5 is based on some of the guidelines comprised in past and existing theories of translation pedagogy. It needs to be said that, because of the traditional focus of scholars primarily on linguistics and translation studies, most of the approaches towards the teaching of translation have been strongly influenced by more and better developed models stemming from both study areas<sup>1</sup>. This influence does not discredit the validity of traditional and existing educational systems but rather becomes a reflection of the changing trends of a multilingual society increasingly aware of the importance of designing pedagogical models for the training of future translators.

I have divided this chapter into five sections: error-, context-sensitive literalist, text-, process-oriented and multidimensional approaches. Special attention will be devoted to section 3.1, since error-oriented approaches to translation pedagogy are among the most popular. The in-depth analysis of the multidimensional approach explained in section 3.5 is justified because the eclectic approach developed in chapter 5 feeds on many of the guidelines pointed out by the defenders of the multidimensional approach, re-assesses the validity of some ideas and adds computer-related components to its implementation.

At this point, it is worth pointing out that the labels assigned to the different approaches have been coined according to descriptive criteria. During the decision process I have tried to be as accurate and faithful as possible to the philosophies propounded by the different authors and no attempt has

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<sup>1</sup>Cf. chapter 2 for an extensive explanation of the influences of other study fields on translation pedagogy.

been made to categorize or pigeonhole them. In some cases, the theories put forward by one author cover ground from different approaches. This may be the case of Christiane Nord and Paul Kußmaul, whose theories comprise elements from both section 3.1 and section 3.3. In sum, my intention was to establish a summarized account of contemporary translation pedagogy.

I would also like to point out that some of the bibliographical references I have included in this chapter have originated from texts translated or adapted into English from the original German. This is the case of theories on translation didactics included in [78], originally written in German and adapted into English by Irma Sorvali [144, pp. 116–120].

1. Section 3.1 deals with the *traditional error-oriented approach to translation pedagogy*. By far the most common approach in the translation class. Closely linked to foreign-language teaching (FLT), this approach has been thoroughly discussed and its validity questioned in recent years by prestigious scholars such as Christiane Nord [113] and Kußmaul [82]. Nord proposes a re-evaluation of errors by establishing appropriate criteria and Kußmaul establishes a list of approximate diagnoses and symptoms to errors. The list has been included in this section as it provides a good overview of the error-oriented approach. Every item in Kußmaul's list has been instantiated with examples of a previous classroom experiment<sup>2</sup> and, where applicable, examples of the present study were given.
2. Section 3.2 covers the approach taken by Peter Newmark, which could be labelled as context-sensitive literalist.
3. In Section 3.3, I will explain the *text-oriented approach to translation pedagogy*, illustrated with Hatim and Mason's, Christiane Nord's and Kußmaul's and Hönig's models of translation pedagogy.
4. Section 3.4 is an extensive explanation of the *new process-oriented approach to translation pedagogy*. Gile [40] is one of the main scholars who supports this approach. He enumerates a list of advantages which this approach has over the more traditional error-oriented approach. In this group I have established a list of different techniques that have been used within the general framework of the process-oriented approach such as the think-aloud protocols, the text-analysis approach and the creative approach.
5. Section 3.5 provides an explanation of the *multidimensional approach to translation pedagogy* put forward by Daniel Gile.

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<sup>2</sup>Cf. page 161 for more details about the study.

## 3.1 The error-oriented approach

### 3.1.1 Error analysis

From the beginning of the teaching of translation at institutional level, there has been a strong connection between FLT and translation pedagogy. Among other things, FLT has traditionally concerned itself with looking for the reasons for and types of errors. Literature on the issue of errors abounds, even a few of the works directly addressed to foreign-language learners become compulsory reading in certain language schools and universities. For example, Brian Mott and María Pilar García Fernández's textbook<sup>3</sup> has been for years a popular book among English philology students in Catalunya. These authors focused their attention on interferences at all levels particularly interference at lexical level. In Chapter III they discuss a number of English words which tend to be affected by interference from the learner's mother tongue [101, pp.45–59]. Other authors, usually philologists, have produced works based on this approach such as José Merino and Douglas Potter [98], who devoted 184 pages to comparing English words which are spelled similarly in Spanish, and English words which have the same equivalent in Spanish but have different usage in English such as *older/elder*. Interestingly, translation pedagogy (independent from FLT) also has a long tradition of **error analysis**, its main focus being the **offence against linguistic conventions**, in other words, the offence against the grammatical and lexical usage of the TL conventions<sup>4</sup>. This emphasis on the linguistic component of translation represented, for many teachers, one of the main indicators which distinguished good trainees from the rest. In order to avoid linguistic errors in translations, these teachers used to and still advise their students:

to take courses in mother tongue usage in order to become more sensitive to the way they use their own language (...) [and] prescribe a remedial course in the foreign language in order to improve their foreign language competence (...) [and] prescribe a course in text analysis in order to improve their understanding of the source text and help them with their decisions when translating it [82, p.7]

However, translation exercises based on error analysis do not seem to bear enough scientific credibility and objectivity probably because there is little agreement among researchers and teachers on how to *define and classify errors*. Many scholars have undertaken this task and have come up with

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<sup>3</sup>Cf. [101].

<sup>4</sup>Cf. [132].

different answers. The concept of error has frequently been used in all areas of humanities especially those revolving around instrumental language. Christiane Nord reports on a series of linguists who have written extensively about defining and classifying errors:

In traditional philology, in foreign language teaching, and in other disciplines of applied linguistics, such as contrastive linguistics and psycholinguistics, the question of how to define a (linguistic) error, how to detect an error and, above all, how to develop efficient error therapy has been under discussion for quite some time (e.g. Nickel 1978, Bausch and Raabe 1978, Cherubim 1980, to mention just a few), whereas in translation studies error analysis has been dealt with only peripherally so far (e.g. Wilss 1982;196 ff.). [113, p.169]

In linguistics it is fairly common practice to define an error as a deviation from a certain norm, convention or a system of rules, as stated by Cherubim [22, p.229], who takes grammatical deviation as the basis for errors. In translation, because of the two languages involved in any translational process, errors may be linked either to the phase of text reception or to the phase of text production. Difficulties in translation do not only result from linguistic problems, they also depend on extra-linguistic factors such as knowledge of the source and target cultures, the stylistic, functional and pragmatic qualities required of the target text, the translation skopos<sup>5</sup>. However, linguistic fluency is a factor which most employers and translation agencies admittedly focus on when selecting their candidates.

Christiane Nord put forward her own definition of what an error is in translational terms<sup>6</sup>. She proposes a "functionalist view" of correction and incorrection, grounded in the idea that a particular expression or utterance does not in itself have the quality of being incorrect, but it is assigned that quality by the recipient [77, p.174] in the light of a particular norm or standard<sup>7</sup>. This particular view on errors has been the basis for analysing the

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<sup>5</sup>The "Skopos theory" first appeared in 1984. Its creators, Reiss and Vermeer state that "human interaction (and as its subcategory: translation) is determined by its purpose (skopos), and therefore it is a function of its purpose - IA (Trl) - f (Sc.). The purpose can be described as a function of the recipient: Sc = f(r)" (quoted from [156, p.54], as translated in [113, p.24].

<sup>6</sup>Nord's overall approach to translation pedagogy has been extensively developed in subsection 3.3.2. She has been mentioned in this section because her definition of errors is appropriate at this point.

<sup>7</sup>Christiane Nord mentions Kupsch-Losereit as the first to introduce a functional view into the discussion of error analysis. She defines a translation error as an offence against 1. TT function, 2. textual coherence, 3. text-type norms, 4. linguistic conventions, and 5. culture-specific and situational constraints [81, p.16].

students' errors in chapter 6. That is, some parts of the students' translations were considered as errors whenever they violated the requirements set out by the prospective client.

Linked to the definitions and classifications of errors is the question of what causes errors. One of the most convincing **classifications of reasons for errors** is the one propounded by Kußmaul [82, p.15], who distinguishes six types of problems that students may encounter during the translation process:

- *Interference*
- *Fear of interference*
- *Faulty one-to-one correspondence*
- *Misuse of bilingual dictionaries*
- *Misuse of world knowledge and one's own experiences*
- *Incomplete paraphrasing*

Before developing these problems, it is worth saying that they are not to be regarded as ultimate truths but rather as approximate diagnoses and symptoms to errors. It also needs to be said that this is not a closed list and therefore further items may be added to the above should research results suggest it. All categories have one thing in common: they are based on the meaning of words. In those cases when similarity between the different categories may be confusing for the reader, explanations will be provided to justify the apparent over-abundance of categories.

The examples that illustrate the problems have been obtained from a previous research study I did between 1994 and 1997 called "Equivalence and Interference in translation from Catalan into English" (henceforth, "Equivalence and Interference"; focusing on translation from the students' mother tongue). For the present study (which focuses on translation into the students' mother tongue) the same labels were selected but only *Misuse of bilingual dictionaries* and *Misuse of world knowledge and one's own experiences* were the most common problems that the test students encountered<sup>8</sup>.

### 1. Interference

Interferences are the cause of frequent errors both with prose translation (i.e. into a foreign language) and direct translation (i.e. from the foreign language into a mother tongue). A notorious instance of interference are the so-called "false friends". According to Kußmaul, there are two types of false friends:

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<sup>8</sup>Cf. chapter 6 from page 165 onwards provides further detail about this.

- (a) Those which **always** turn out to be false friends.
- (b) Those which can **sometimes** be good friends.

Examples of the first type are Catalan words such as *sensible*, *eventual* and *actual* which tend to be translated literally into the English words *sensible*, *eventual* and *actual*. These can probably be explained simply by insufficient L1-L2 contrastive knowledge leading to heavy reliance on analogy. The second type includes words such as English *psychological*, *control* and *drugs*, which can in certain contexts be translated into Catalan by *psicolgic*, *control* and *drogues*, but not in all. The problem is caused by polysemy because one of the meanings of these words, but not all, is lexically equivalent to a formally corresponding Catalan word. For example, *drug* in the meaning of “a substance that is illegal in many countries which some people smoke or inject into their bloodstream because it has a stimulating effect or because they are addicted to it” [140] can be translated by Catalan “*droga*”, but in the meaning of “a chemical which is given to a person in order to treat or prevent an illness or disease” [140] it cannot, but must be translated as “*medicament*” or “*medicina*” for most texts. These words cause problems for those translators who consider translating as a linguistic reflex, and for those who do not know when they must switch from automatic reflex to conscious reflection.

Interferences of the first type are very frequent both at beginner (L2) and translator–trainee level but the second type occurs in translations done by intermediate–advanced L2 and translator trainee level students. I could confirm this after analysing the results of some Catalan students translating into English. Some of the results are the following:

- *els sinònims es troben escampats per entrades diferents*  
synonyms are widespread in different **entrances** (instead of “*entries*”)
- *una qüestió de gust*  
a **question** of taste (instead of “*matter*”)
- *índexs de desocupació*  
**indexes** of unemployment (instead of “*unemployment rate*”)
- *hi ha una preocupació per*  
there is some **preoccupation** for (instead of “*concern*”)
- *l'ús racional i prudent*  
the rational and **prudent** use (instead of “*wise*”)



## 2. Fear of interferences

Interferences can be observed both in novices and in advanced translators. However, advanced translators seem to have internalized the rule “When translating, never use the formally corresponding lexical equivalent! This seems to be the conclusion drawn by Paul Kußmaul [82], who carried out an experiment using think-aloud protocols (TAPs)<sup>9</sup> whereby both novice and advanced translators were given the same paragraph to translate. He observed that advanced translators seemed to show a kind of overreaction to false friends so he ventured the hypothesis that, at the root of the subject’s dissatisfaction with formally similar words given by the dictionary was their fear of false friends. He explains it further:

They [advanced translators] have learnt that in many cases the formally similar word in the TL leads to “big blunders”, and they will most likely have been warned of these by their teachers [82, p.19]

Kußmaul’s results coincide with the ones obtained a few years before by Hönig [61, p.12]. He came to similar conclusions after his empirical studies, i.e. fear of interference seems indeed to be part of the mental make-up of semi-professionals.

From the purely pedagogical point of view, there is a long tradition in FLT as well as translator training to warn students of false friends and therefore interferences. I could verify the occurrence of fear of interference in some results of “Equivalence and Interference”. For example, the translation of:

- *el rector contesta amb entusiasme*  
the rector answers with **excitement** (instead of “enthusiastically”)
- *estan centrats en l’elaboració de material escolar*  
they revolve around the **manufacture** of school material.(instead of “elaboration”)
- *pretenen harmonitzar la relació entre economia i medi ambient*  
they try to **enable** the relationship between economy and the environment (instead of “harmonize”)

The warning against false friends and interferences often turns into **mechanical linguistic hypercorrection** of misleading formal similarities and **reduces the self-confidence** that they may have acquired

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<sup>9</sup>Cf. section 3.4.1 on page 64.

throughout their training. These warnings should therefore always be put into perspective and specific cases analysed according to contextual considerations. Translation teaching should provide a series of strategies which would restore self-confidence to trainees by helping them to make decisions about the appropriate use of a word.

### 3. Faulty one-to-one correspondences

Both learners of a foreign language and translators are often not aware of the fact that words might have more meanings than the meaning they know, probably because of cultural differences between languages. It was noticed by Königs and also by Krings and Lörcher that this type of error was common among subjects who were foreign language students<sup>10</sup>. One may feel tempted to recommend that the students improve their foreign language competence but I think that it is difficult if not impossible for anybody to learn the whole range of meanings words may potentially have. There will always be situations where in a given text we will come across meanings of words which we have never encountered before.

In the light of this, I very much doubt that the only solution to this would be to improve the student's foreign language competence because I do not think the only reason for this error is insufficient lexical knowledge in the foreign language. Rather than this, I think that one way of avoiding this problem would be for teachers to make their students aware of the **important role of context** in understanding the meanings of words<sup>11</sup> and also making them aware of the **importance of culturally-bound words**. Finding the meanings of words in context is a skill that professionals master although the reason for using this technique has more to do with time-saving, i.e. looking up words in dictionaries is time-consuming, than with linguistic competence.

I am aware that this category may be regarded as similar to category 2. In spite of this apparent similarity, which stems from the fact that both of them refer to lexically inadequate words, the source of the error in 3 is caused by misunderstanding of the word's context, irony, sarcasm or cultural differences, whereas the source of the error in 2 is caused purely by sheer ignorance of its dictionary meaning and possibly insufficient foreign language competence. Some examples extracted from "Equivalence and interference" are:

<sup>10</sup>Cf. Hönig [79, p.168], Krings cite[p.271]Kri87 and Lörcher [90, p.153].

<sup>11</sup>This process, together with all the steps involved in translator training, has been developed in chapter 5.

- Hauré d'escruiure-ho amb totes les lletres perquè els exaltats ja han començat en aquest moment a saltar-me al damunt.  
I'll have to **write it with all the letters** because the exalted ones have started to **jump on me**. (instead of "explain it with details" and "attack me")

The occurrence of this type of errors is understandable and even justifiable in this case because the students were not translating into their mother tongue. On the other hand, when students are translating from their mother tongue, this type of problem does not tend to occur. This can be seen in the results obtained in chapter 6, probably because the test students had a good command of both source and target languages (English and Catalan, respectively).

#### 4. Misuse of bilingual dictionaries

Relying too much on a non-critical use of bilingual dictionaries is another common source of errors for trainees, who tend to regard them as the final authority. Actually, "but I found it in the dictionary!" is a common complaint from students after checking their errors in an exam. Again, the argument explained in the above section may apply to this section. Namely, that the meanings of words vary according to their context. Still, trainees find it difficult to believe that a word may have meanings which are not included in a dictionary, as Hönig [62] corroborated in his research. He found that his students often correctly inferred the meaning of a word from its context, but when they could not find the meaning in their dictionaries they did not have the courage to adhere to it. This lack of self-confidence is an aspect of translation learning that needs to be overcome and building up self-confidence is necessary. Professionals have enough self-confidence and expertise to avoid misusing dictionaries and trusting them blindly and literally; this is a quality that trainees need to acquire.

Excessive dependence on bilingual dictionaries is one of the problems that students tested in this study were not aware of. Dictionary translations prevailed over context-bound information. For example, the wrong translations of the word "stressful" show that the students did not quite understand the word in the context of the text at hand and, in turn, produced inappropriate translations for it<sup>12</sup>

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<sup>12</sup>More details about the evaluation of the students' translations in section 6.2.1.

### 5. Misuse of world knowledge and one's own experiences

This type of error stems from the fact that translators have preconceived ideas about texts, text-types and pragmatic analysis. Sentences as well as words do not occur in isolation, they are included within larger entities and these entities have specific pragmatic functions. For example, a contemporary translation of "the late John F. Kennedy" would probably have to leave out "the late" on the grounds of our knowledge of American history. As future translators, trainees need to be made aware of this and what may be true in the source language may not apply to the target language, as is the case in the above example. This critical attitude is essential if the work of trainees is to meet professional standards. These observations are similar to Tirkkonen-Condit's in her study of a professional and a non-professional translator. She found that:

the non-professional translator... resorts to extra-textual world knowledge rather than knowledge extracted from the text. Her main concern is with "truth", rather than with what is said in the text [151, p.439].

She concluded that the non-professional translator's attitude towards the text seemed to be "more arrogant" and not as modest as that of the professional [151, p.439]. These results show an imbalance between professionals and non-professionals which needs to be put right by the translation teacher at the early stages of the student's learning process.

In the study explained in chapter 6, misuse of their knowledge on the subject, together with misuse of dictionaries, were the two main problems encountered. The translation of words from the sample test<sup>13</sup> such as "indented" ("sagnat", "marcat", "interior", "dentat", "gràcies al contorn dels polsadors") indicate that the students ignored the relevance of the word within this text. The main purpose of the sample text is to highlight specific ergonomic features that the client will find attractive and will make him buy a mouse with indented keys over a conventional one. Unlike professional translators, the students under study tended to translate key words not very rigorously, perhaps because during the translating process, they did not have the target reader in mind nor did they have the pressure of their own translating abilities at stake.

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<sup>13</sup>Cf. chapter 6 and appendix A.

## 6. Incomplete paraphrasing

Paraphrasing is one of the strategies that professional translators use [6, p. 40] in order to preserve linguistic naturalness and to achieve a high level of precision in specifying propositional meaning. At classroom level though, students have been reported to use paraphrase when translating aloud in class but they stick to a literal and unidiomatic rendering of the source text in their written assignments, as observed by Séguinot in her case-study of a professional translator. She says:

It appears that the translator first reaches an understanding of the meaning of the source text, puts the meaning which is retained into words as she is translating, and then returns to the expression level of the source text as memory fades [137, p.36].

I disagree that the reason for this paradox is lack of memory, I would rather pin it down to three factors:

- (a) Lack of self-confidence to stick to their “free” version, as observed through TAP’s by Tirkkonen-Condit [151] and later on by Paul Kußmaul [82, p. 31] on several groups of students. I could verify this claim with the results obtained in “Equivalence and Interference”:
  - **passa sempre que una doctrina es vol difondre adaptant-se a les exigències propagandístiques**  
it is always the same that people want to spread a doctrine in the mass media in keeping with the advertising requirements (where “it is always the case” would be more appropriate)
- (b) Trainee students very often take the word as the unit of translation. This means that paraphrase does not have the status of a proper lexical item and therefore cannot convey expressive, evoked, or any kind of meaning, as reported by Mona Baker [6, p. 40] and observed in the results of “Equivalence and Interference” with a group of Catalan students, where word-by-word translation is more frequent than translation by paraphrase.
  - **amb l’objectiu d’estimular l’amor per la literatura donant als professors eines per treballar algunes obres a classe**  
with the objective of stimulating love for literature giving teachers the tools to work some books in class (instead of “with a view to promoting“)

- (c) They underrate paraphrases, i.e. they do not regard paraphrase as proper translations but rather as preliminary stages of translation. They consider paraphrase as a cumbersome and awkward strategy because it involves filling a one-item slot with an explanation consisting of several items, as observed empirically by Mona Baker [6, p. 40]. These factors make paraphrasing a non-desirable option, which opens the way to literalism and dictionary dependence. The Catalan students involved in "Equivalence and Interference" produced this type of sentences, where a slight word-order change would have sufficed to make the sentence correct:

- **Mots que tenen significats similars però no idèntics**  
Words which have a similar meaning but not the same (instead of "similar but not the same meaning")

Following Kußmaul, it is then the teacher's duty to make it clear to students that paraphrase is very often a valid option as a translation, and therefore reassure them of the fact that

in capturing, in their own words, the meaning of a text or passage they may have arrived at the most appropriate translation [82, p.31].

### 3.1.2 Criticism of error analysis

The concept of "error" generates in the student's mind negative connotations which the teacher should try to minimise. In fact, the definition of translation error as an offence against **purely linguistic conventions** leaves aside two important factors:

1. When translating into the mother tongue, linguistic target language errors are rare compared to other types of errors. This factor has been verified in the present study<sup>14</sup>, where linguistic errors (understood as errors against grammatical conventions) were very few compared to other types of errors, for example, those caused because of the students' unawareness or ignorance of the target text-type and terminology.
2. Diagnoses of the student's translational competence based solely on linguistic errors is misleading. Apart from linguistic criteria, non-linguistic criteria should also be included in the evaluation of the student's work. The sample text selected for this study included a list of translational requirements to be taken into account during translation.

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<sup>14</sup>Cf. chapter 6.

The advantages of including extra-linguistic criteria are that they add an additional criterion for the teacher to account for what he considers an error and that it helps students to better understand what the teacher would classify as an error.

In conclusion, I propose re-assessing the definition of what a “translation error” is by supplying students with unambiguous information of what “error” means to the evaluator. The eclectic approach proposed in chapter 5 tries to cover this area by establishing a detailed definition of what the word error means on page 142.

## 3.2 The context-sensitive literalist approach

### 3.2.1 Peter Newmark’s and Nida and Taber’s model

Peter Newmark made an attempt in 1988 to propound a theory of translation pedagogy revolving around the notion of text (Cf. [105]). His theory is aimed at trainee students and so his book, entitled a “textbook”, has actually been chosen in many translation-teaching contexts. His model of translation is based on Nida and Taber’s model [110]. Newmark starts explaining his theory from the question: what is translation. He suggests that it is often, but not always, rendering the meaning of a text into another language in the way that the author intended the text. This means that the text is pulled in ten different directions:

1. The individual style or idiolect of the SL author
2. The conventional grammatical and lexical usage for the type of SL text, depending on the topic and the situation
3. Content items referring specifically to the SL culture
4. The typical format of a SL text in a book, periodical, newspaper, etc., as influenced by tradition at the time
5. The expectations of the putative readership, bearing in mind their estimated knowledge of the topic and the style of language they use, expressed in terms of the largest common factor
6. The conventional grammatical and lexical usage for the type of TL text, depending on the topic and the situation
7. Content items referring specifically to the TL culture

8. The typical format of a TL text in a book, periodical, newspaper, etc., as influenced by tradition at the time
9. What is being described or reported, ascertained or verified
10. The views and prejudices of the translator, which may be personal and subjective, or may be social and cultural

This can be visualised as follows:

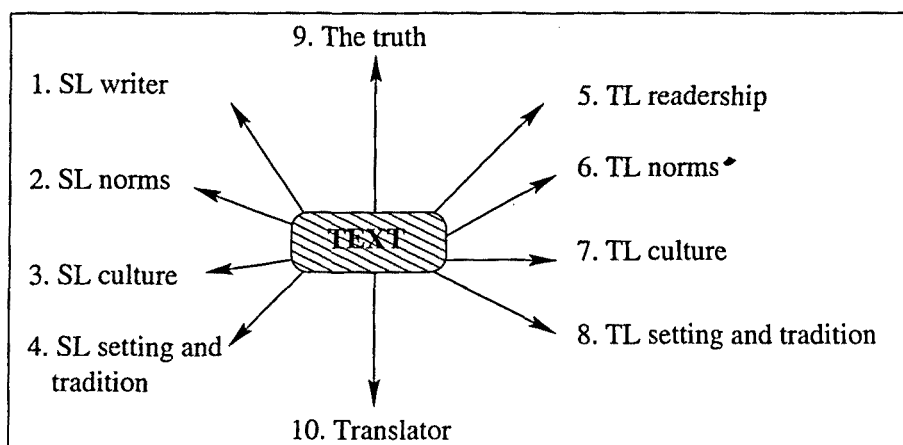


Figure 3.1: The dynamics of translation, according to Peter Newmark [105]

Since Newmark's model of translation theory has been used for educational purposes, I have reproduced in figure 3.2 the scheme suggested by Nida and Taber (1969), which represents the implications of Newmark's model on translation pedagogy.

Figure 3.2 shows an alternative to previous approaches to translation (revolving around the free versus literal dichotomy). Nida and Taber (and Newmark) suggest the **analysis-transfer-synthesis** approach, whereby the first step is an analysis of the source text to show its structure. The second step (transfer) involves replacing source language words with target language words and making other adjustments for incompatibilities between languages. The third step (synthesis) involves making the target text more natural according to the target language. This approach is very pedagogical in that it sets out an explicit process that is easier for students to comprehend and implement. In fact, these three steps can be found at different stages of the eclectic approach. For example, when analysing the source and target texts and during the translation process with the help of CAT tools.



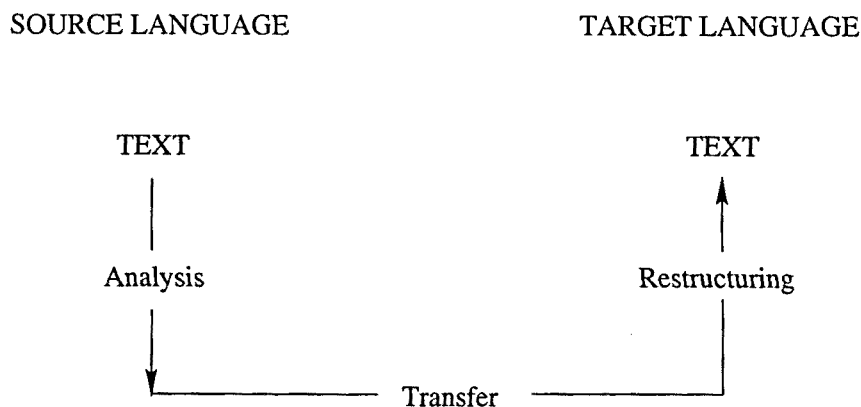


Figure 3.2: Newmark's model of translation pedagogy, as borrowed from Nida and Taber (1969)

### 3.2.2 Criticism of Peter Newmark's model

Newmark defines translation as the reproduction in the receptor language of the closest natural equivalent of the source-language message, first in terms of meaning and secondly in terms of style. This idealized definition of translation brings as a consequence a series of polar distinctions which force the translator to choose content as opposed to form, meaning as opposed to style, equivalence as opposed to identity, the closest equivalence as opposed to non-equivalence, and naturalness as opposed to formal correspondence. These decision-making processes carry the misleading underlying message of ideal, one-to-one and perfect matches between languages.

His theory is also based on an unrealistic three-level activity process, by which translators **receive, analyze the SL text and then transfer it into the TL**. However, professional translators and scholars alike have demonstrated that translators do not first receive and analyse an SL text and then transfer it into the TL, but that the processes of reception and analysis operate according to the **purpose of translation**. Thus, the translator does not receive and analyze the SL in a neutral way, but with a view to translating it for a certain purpose. This view is shared by Hönig, Kußmaul and Nord<sup>15</sup>. The eclectic approach developed in chapter 5 proposes a five-step learning process of translation to help students tackle the source text and its translation more confidently and with more and better arguments to account for their decisions. Therefore, rather than getting students to proceed following a linear structure (receive-analyze-transfer), they learn to approach the text from different angles and perceive the different factors

<sup>15</sup>Cf. section 3.1 and 3.3.2 for more details on the "functionalist view" of translation errors and Nord's approach to translation pedagogy.



existing in the translation such as linguistic, extralinguistic, pragmatic or professional.

In his book, Nermark suggests some general guidelines for translating. By suggesting examples, he hopes to provide enough practice for translators to improve their performance. However, the whole theory revolves around the idea of **equivalence and truth**, which the translator should aim for. One of the implications of this principle is that the translator's task is somewhat an imperfect one, a highly discouraging thought for both translators and trainees. The eclectic approach propounded in chapter 5 makes special emphasis on how important it is for teachers to develop the students' self-confidence by praising their successes over their failures<sup>16</sup>.

### 3.3 The text-oriented approach

#### 3.3.1 Hatim and Mason's model

The arrival of discourse analysis and text-linguistics models of translation (e.g. Delisle 1982; Hatim & Mason 1990; de Beaugrande 1981) [...] have been very influential in the way trainees- and researchers-are now made aware of the number and range of factors that need to be taken into account in text analysis for the purpose of translation. [163, p.126]

This quotation highlights the large impact of text-oriented approaches to translation and, consequently, translation pedagogy. Those who support text-oriented approaches claim that one reason there has been so much debate about how to translate is that each theory treats only **one type of text**. This approach can be applied to translation pedagogy because it provides students with a framework with which they can work. Therefore, they can understand that the translation of a poem needs to be done differently to a translation of technical documentation.

Hatim and Mason's approach to text-analysis has been particularly interesting for the elaboration of the eclectic approach in that it supplies a well-grounded theory on text-analysis, which is one of the stages involved in the approach<sup>17</sup>.

Although, before Hatim and Mason's, many attempts had been made to set up a typology of texts<sup>18</sup>, all attempts had come across the same problems: the classifications had been too broad and did not admit the possibility of,

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<sup>16</sup>Cf. subsection 5.3.6.

<sup>17</sup>Cf. section 5.3.

<sup>18</sup>Cf. section 5.3.2 for an extensive explanation on the text-typologies developed by several scholars.

for example, a literary text being didactic. The problem has always been that, however the typology is set up, any real text displays features of more than one type. This **multifunctionality** of texts is the rule rather than the exception, and therefore, any classification of texts needs to accommodate such diversity and flexibility. This can be appreciated in the sample text, which shares features of several text-types. For example, according to Snell-Hornby's text-typology, shown in diagram 5.4 the sample text<sup>19</sup> would lie in between "informative" and "operative" texts.

The main feature of Hatim and Mason's model is that it brings together **communicative, pragmatic and semiotic** values, and demonstrates their importance for the development of text and the way in which communication takes place. Thus, in looking at text-types from the translator's point of view, they examine the ways in which **context** determines the focus of any given text.

Figure 3.3 serves as a basic outline of the major principles involved in Hatim and Mason's theory. These scholars explain that the major principles involved in the translator's work are **communicative, pragmatic and semiotic**. These principles can be identified as a set of procedures which place the translator at the centre of the communicative activity. Within this perspective, the translator takes on the role of mediator between different cultures, each of which has its own visions of reality, ideologies, myths, and so on.

### Communicative transaction

Since the concept of language is so vast and heterogeneous, Hatim and Mason recommend a framework for the description of language variation where two dimensions are recognised. One has to do with the user in a particular language event: who (or what) the speaker/writer is. User-related varieties are called **dialects** which differ from person to person primarily in the phonic medium. The second dimension relates to the use to which a user puts language. Use-related varieties are known as **registers** and, unlike dialects, differ from each other primarily in language form (e.g. grammar and lexis).

### Pragmatic action

Hatim and Mason add a socio-cultural element to certain notions in pragmatic analysis, namely, speech acts, felicity conditions, and Grice's principles and maxims, and relate them to the analysis of actual problems of translation. The value of the notion of the speech act is such that it gives the

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<sup>19</sup>Cf. appendix A.

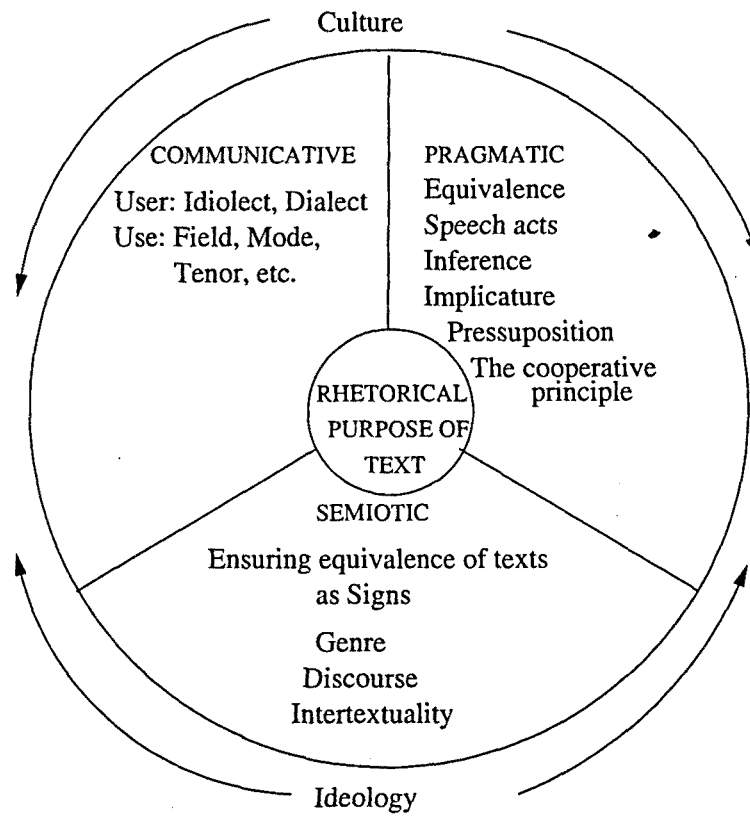


Figure 3.3: Hatim and Mason's main insights.

translator the opportunity to adjust his criteria for the judgement of equivalence in translation. Equivalence is to be achieved not only of propositional content but also of illocutionary force. For example, communicative failure of a translation may be attributed to failure to represent speech acts adequately. For example, translation of a business letter from a language in which directness is customary may result in offence being given where none was intended.

### Semiotic interaction

Semiotics focuses on what constitutes signs, what regulates their interaction and what governs the ways they come into being or decay. The interactive dimension of language use does not just operate on the level of individual lexical items. It may also involve larger units. Translators may achieve semiotic equivalence by retaining, modifying or even omitting whole sequences within a text.

Translation, then, deals with signs and attempts to preserve semiotic, as well as other pragmatic and communicative, properties which signs display. The decisions taken by translators are determined by semiotic categories such as genre, discourse and text.

### 3.3.2 Christiane Nord's model

Another advocate of the text-oriented approach to translation pedagogy is Christiane Nord, who in 1991 designed a complete methodology based on text-analysis. Her book [113] is an introduction to the theory, methodology and didactics of translation-oriented source-text analysis, completed by an application of the model to several sample texts. Some fundamental aspects of the study are the following:

#### 1. Theoretical aspects

The theoretical principles of the model of text analysis are based on an action-oriented concept of textuality, on the one hand, and a functional concept of translation, on the other. Both concepts are closely linked with each other. The translation of a text is an "action" which makes it possible that a new text fulfils certain functions for other participants in a new situation. Therefore, a translation is more than "replacing" certain linguistic elements of the source language by certain linguistic elements of the target language: translation is the production of a functional target text maintaining a relationship with a given source text that is specified according to the translation skopos<sup>20</sup>.

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<sup>20</sup>More information on "translation skopos" theory, in [113, p.24].

The communicative situation becomes the centre of attention, while the linguistic structure of the text body is of secondary importance. She mentions the empirical psycholinguistic approach (TAP) proposed by Krings [80] and how it promises to throw some light on the famous “black box” of the translator and reveal “what is going on the translator’s head”.

Nord is against the equivalence-based concept of translation and criticises it as a method which is influenced by foreign language classes. Still, she acknowledges that, although this method does not correspond to the requirements of professional translation<sup>21</sup>, it determines their translation activities in class.

## 2. Methodological aspects

Since the text is the *raison d’être* of translation, the method includes the analysis of both extratextual and intratextual factors, giving priority to the extratextual factors, which are analysed first. This model involves the (retrospective) analysis of the source-text-in-situation, but also the (prospective) analysis of the target-text-in-situation, defined by the translation *skopos*.

## 3. Didactic aspects

The model for text analysis is intended to guide the fundamental steps of the translation process, it points to the essential competences required of a translator, namely:

- Competence of text reception and analysis
- Research competence
- Transfer competence
- Competence of text-production
- Competence of translation quality assessment
- Linguistic and cultural competence on the source and target languages

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<sup>21</sup>Nord devotes a short but clearly defined section to error-oriented approaches. She adopts the functional view and terminology on error-analysis proposed by Kupsch-Losereit, who in 1986 was the first to introduce a functional view into the discussion of error analysis. She defines a translation error as an offence against 1. TT function, 2. textual coherence, 3. text-type norms, 4. linguistic conventions, and 5. culture-specific and situational constraints (quoted in [113, p.169]).

These competences have to be developed in the course of a training programme for future professional translators and interpreters. In order to achieve all these competences, Nord suggests the development of each individual competence and so the traditional translation exercises, in which the theoretical knowledge of methods and procedures is by no means obsolete. However, Nord proposes the systematization of the teaching aims and brings them into a didactic progression which allows a reasonable and fair control of learning progress.

The model developed by Nord comprises the essential factors and dimensions of the translation process and so she suggests finding out the priorities of a particular translation task, thus allowing a statistical approach for both teachers and students. She proposes an integrated and combined programme outside the language departments, which may concentrate on translation problems which are bound to a particular pair of languages or cultures and on the development of linguistic and cultural competence.

Nord establishes two guidelines for a model of text analysis: an **action-oriented concept of textuality**, on the one hand, and a **functional concept of translation**, on the other. Both concepts are closely linked to each other. On the one hand, the text is regarded as an element of a communicative interaction which takes place in a situation. The communicative situation becomes the centre of attention, while the linguistic structure of the text-body is of secondary importance. In fact, translation is defined as the production of a functional target text maintaining a relationship with a given source text that is specified according to the translation skopos. On the other, it is the function of the source texts that permits the translator to decide whether or not the extratextual and intratextual factors are an appropriate means of achieving the intended function of the target text. Nord states that the function of a target text can only be realized through analysis of the source text and its elements.

An attempt to adapt Nord's model of text analysis to translation pedagogy has been drafted on page 58. It represents a simplified two-step source-text analysis for trainees, which matches the two guidelines for a model of text analysis mentioned above. The first step shows the person of the translator as the central figure in the process of communication. It starts, after the definition of the TT skopos, in the top right hand corner with the analysis of TT skopos and proceeds in an anti-clockwise direction until the production of a TT which fits into the given target situation. The second step, the function of the source text is specified through the analysis of the extratextual and intratextual factors of the source text.

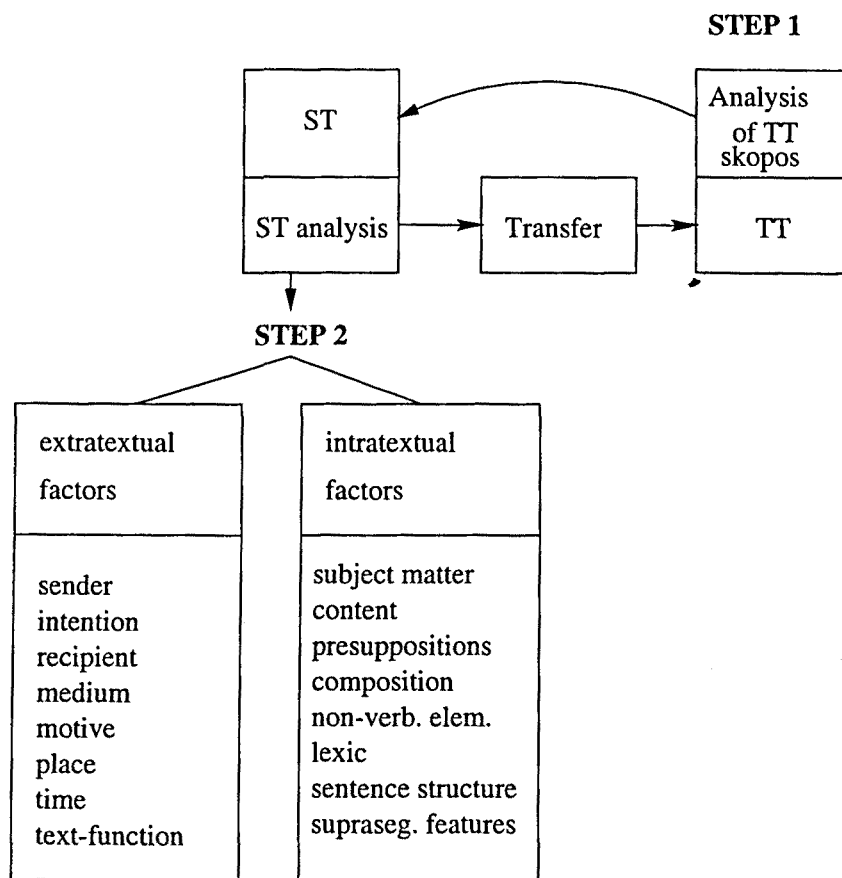


Figure 3.4: Christiane Nord's scheme of the translation process, as adapted from [113].



### 3.3.3 Criticism of Christiane Nord's model

This approach to translation pedagogy is a very didactic one because it is based on a systematic implementation in the translation class. From the student's point of view, the analysis of extratextual and intratextual factors is very clear and educational. I have actually used the analysis of both factors to design my approach of translation pedagogy.

Nord's theory, however, is built on the basis that the communicative situation is the teacher's and student's main focus, whereas the linguistic structure of the text body is of secondary importance. This means that linguistic issues are not given the main priority and yet language-related problems arise all the time in students' translations. She suggests that one way out of this problem is to design a combined programme outside the translation departments to reinforce the student's linguistic and cultural competence. However, syllabus coordination and links between departments are not always as easy to implement as would be desirable and I find Nord's suggestion too idealistic. Besides, since Nord's combined programme is aimed at improving source and target language competence, it needs to be said that linguistic incompetence in one's target language tends to be rare, as pointed out by Kußmaul on page 48 and also verified in the results obtained in this study.

Nord claims that her model may apply to both translator and interpreter training. I think that some principles may apply to both disciplines, although interpreting requires a separate and individual type of model and training different from the model and training that translators receive.

Nord's Model is intended to prepare students to deal with any text-type, since it is based on the assumption that, as future translators, trainees need to be faced with both non-literary and literary texts. This variety of text-types is subjectively telling the student that translators are something near to a 'jack-of-all-trades', whereas in reality specialisation is a very important aspect of professional translators.

### 3.3.4 Kußmaul's and Hönig's model

The two models explained above are based on the assumption that translators receive, analyse and transfer the SL text into the TL. However, professional translators and scholars alike have demonstrated that translators do not follow this "logical" progression but rather the processes of reception and analysis operate according to the purpose of translation. The translator does not receive and analyze the SL in a neutral way, but with a view to translating it for a certain purpose. This model was developed by Kußmaul and Hönig<sup>22</sup>. The authors consider the process of translation a process

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<sup>22</sup>In [63], as cited, translated and adapted from German into English in [88, pp.21-26].

of decision-making and problem-solving. The decisions to be made on the different levels of language (text, sentence, word) are determined by the **purpose of communication**. This is the pivotal point of their theory. Accordingly, they consider it impossible to describe the process of translation because it changes according to many factors. All communicative functions—from the function of the text to the function of the single word—become variables which have to be determined according to the **specific purpose and aim of the translational communication**.

The model proposed by Kußmaul and Hönig has been schematically represented in figure 3.5<sup>23</sup>. The figure visualizes the ideal course of communication between the SL text producer, the SL text receiver, the TL text producer, and the TL text receiver. Steps 1 and 2 are made by the SL text producer, who has a certain communicative intention (I1) and wants to evoke a certain communicative function (F1) in the SL text receiver. To make sure that the desired communicative effect is produced on the receiver, the text producer takes into account the situation (Sit) of the addressee. In addition, he informs him about the textual knowledge (Text) which has been built up by the preceding communication. Then, the text producer selects those SL signs (SL S) from his repertoire which most probably make the receiver act according to the text producer's intention (Steps 3 and 4). The translator's task (Steps 5, 6, 7 and 8) is now to deduce the SL text producer's communicative intention (I1) by applying **retrospective calculation**. That is, the translator has to view the SL signs which the text sender has selected and used to produce the SL text in the light of the SL addressee's situation and textual knowledge. These authors claim that this task is optimally accomplished when I2 is identical to I1. After having deduced the intention of the SL sender (I1), the translator acts as text producer in the TL. Taking into account the TL addressee's situation and textual knowledge, the translator selects those TL signs which probably produce a communicative effect (F2) on the TL addressee (Steps 9 and 10) that is largely similar to the **function** evoked by the SL text (F1). Thus, the processes of TL and SL text production are analogous, but the communicative intention of the translator is a **mediated** one. The process of translation can therefore be considered a process of **selection and optimization** with fixed components (I1, I2, Sit, Text) and a given repertoire of signs (TL S). The signs are selected with recourse to the fixed components and with a view to optimally achieving the aim (F2).

In sum, the process of translation is a decision-making and problem-solving one. The decisions to be made on the different units of language (text, sentence, word) are **determined by the purpose of the commu-**

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<sup>23</sup>For their model, these authors borrow the theoretical framework developed by Stein in 1980 (as quoted in [89, p.21] and give it a practical application.

nication, which becomes the “Archimedean Point” (as cited in [89, p.24]) in translation. Neither the information to be conveyed by the translation nor the function of the text results from the individual communicative intention of the translator as sender and text producer. Therefore, **all communicative functions** -from the function of the text to the function of the single word- become variables which have to be determined according to the specific purpose and aim of the translational communication.

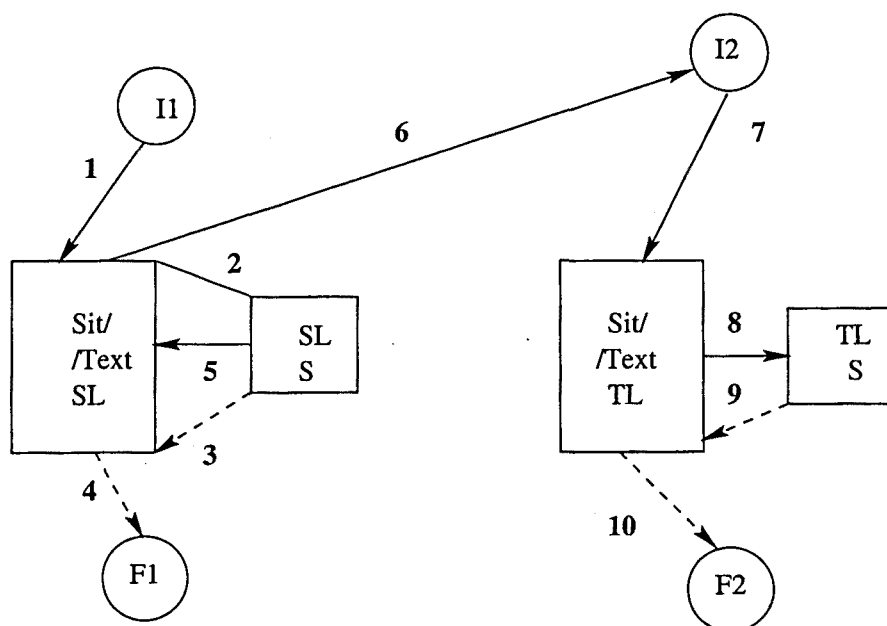


Figure 3.5: Kußmaul's and Hönig's scheme of the translation process, as adapted from [63].

### 3.3.5 Criticism of Kußmaul's and Hönig's model.

This model has basic weaknesses in that translation teaching is conceived as an idealized and prescriptive activity. The model shows how an **ideal** translator should proceed under **ideal** circumstances. Since ideal translators do not exist, and most translators work under non-ideal circumstances of performance (for example, limited memory capacity, an incomplete Sit and/or Text-knowledge, a limited availability of SL-and/or TL signs, deficient mental mechanism, translational experience, deadlines, etc.), the model gives future translators a misleading image of the translating profession. The eclectic approach developed in chapter 5 tries to eradicate this idea by proposing a five-stage process of translation, which may help students to deal with the

translation work from different perspectives (the client's specifications, the inner features of the source text, the linguistic features of similar text-types, etc)<sup>24</sup>.

### 3.4 The new process-oriented approaches

Below are other approaches to translation pedagogy whose implementation in the translation class runs parallel with the more traditional approaches mentioned above. It needs to be said, though, that the purposes of this approach did not originally revolve around translation pedagogy or training future translators but rather around research on psycholinguistics and finding out what happens in the student's mind during the translation process. In recent years, there has been an increasing interest in process-oriented approaches as applied to translation pedagogy and research<sup>25</sup>. Some of the ideas propounded by this approach have been important in shaping the eclectic approach, developed in chapter 5.

The aim of process-oriented approaches is to **focus not on results**, that is, on the end product of the translation process, but **on the process itself**. On page 146 the eclectic approach indicates the importance of having some feedback from students as a positive fact both for students and teachers alike. Many translation scholars have adhered to this approach, which, for example, conceives of errors not as unforgivable sins but as necessary phenomena that enable the reader (trainees, scholars or practitioners) to develop his own critical sense. Santoyo summarizes this idea in the following lines:

Que los yerros existen en traducción, y que existen sobre todo en las traducciones, es algo de lo que no cabe dudar (...). Lo que importa saber no es tanto que tales yerros existen, sino las causas por las que se producen, para aprender en cabeza ajena [133, p.9].

Whereas Santoyo's concern in this paragraph applies to professional translation, other scholars use this method for translation didactics. Irma Sorvali, an author renowned for her interest in the teaching of translation at university level, points out that:

It is essential that the translator should be completely familiar with the translation process [144, p.117].

Another well-known scholar, Daniel Gile (1995), presents the same argument in relation to translation pedagogy and proposes to stop the witch-hunt against "error-makers":

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<sup>24</sup>Cf. section 5.3.

<sup>25</sup>Cf. Holmes' basic 'map' of Translation Studies on page 26.

rather than simply giving students texts to translate, commenting on them by saying what is “right” and what is “wrong” in the target-language versions produced, and counting on the accumulation of such experience and indications to lead trainees up the learning curve, the process-oriented approach indicates to the student good translation principles, methods, and procedures [40, p.10].

One of the practical implications that could be inferred from this statement would be that, before doing their translation exercises, students should be given some methodological guidance in the form of basic concepts and models, and that when correcting students’ exercises, **instructors should comment** not on their selection of particular target-language words or linguistic structures, but **on the processes involved**.

Gile believes that this approach has a number of advantages over the classic result-oriented method, at least in the early stages of translation training (the first few weeks or months of training, depending on the total length of the program and its specific targets). Among the advantages he mentions, there are the following:

- Students are likely to learn to implement translation strategies faster if such strategies are explained than if they advance by trial and error.
- In their exercises, students face difficulties in the order in which they occur. In the traditional philosophy, teachers react to the result of all these problems, which may lead to a scattering of efforts. In the process-oriented philosophy, problems requiring the same methodological approach call for an explanation of this approach only, thus lessening the dispersion of teaching and learning efforts.
- By concentrating on the reasons for errors or good choices in translation, rather than on the words or structures produced by their students, teachers devote most of their effective teaching time to translation strategies, and waste little time over their by-products.
- By focusing on the process, teachers can be more flexible as regards linguistic acceptability and standards of fidelity than when they have to comment on the results. This means that the teacher does not lose valuable time in trying to convince students that the teacher’s standards are better than theirs, and there is also a lesser risk of antagonizing students by imposing one’s own standards, and thus reducing their receptiveness.

Taking the process-oriented approach as the basis on which to create different pedagogical techniques to teach translation, I have selected some of the main techniques which, I think, may be used effectively in the translation class. They are the think-aloud protocol, text-analysis technique, the creative approach and the multidimensional approach, which will be explained below.

### 3.4.1 The think-aloud protocol

#### The think-aloud protocol in psychology

Thinking-aloud is a case of introspective methodology. Historically speaking, the method of introspection as a research tool was developed and introduced into psychology by the Würzburg school in the first decade of this century. Wolfgang Lörcher reports on the historical developments of thinking-aloud:

Starting from a criticism of the then predominant associationist view of thinking, the Würzburg school founded the experimental psychology of thought (*Denkpsychologie*). The main method used to collect data was introspection [150, p.68].

Karl Bühler and Edouard Claparède developed this method of data collection. Bühler's aim was to find out what an individual experiences when thinking and he assumed that many processes of thinking are highly automatized and thus not conscious. Claparède used the method of thinking-aloud in order to find out how hypotheses are formed during the process of problem solving. When **behaviourism**<sup>26</sup> became the dominating paradigm in psychology, i.e. between the two World Wars, the method of thinking-aloud was violently criticised. The behaviourists rejected any kind of introspection as being speculative because the interpretation of the data yielded by introspective methods was not considered to be objective. Only since the beginning of the 1970's has there been a revival and **nowadays introspection is widely appreciated as a useful tool for the investigation of mental processes.**

#### The think-aloud protocol in translation

In the field of linguistics, the application of thinking-aloud protocols (TAPs) was initiated in second-language-acquisition research<sup>27</sup>. Soon after, the

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<sup>26</sup>The behaviourists focused on measurable and observable data and excluded ideas, emotions and the consideration of inner mental experience and activity in general.

<sup>27</sup>Cf. Cohen and Hosenfeld [25], Cohen [24], Ericsson and Simon [32], Gerloff 1986 [38], Faerch and Kasper [33].

methodology was adopted in research on translation processes. Pioneering studies of TAP's applied to translation were carried out by Krings [80], House-BlumKulka [65], Lörscher [87], [88] and Jääskeläinen and Tirkkonen-Condit [69].

The think-aloud protocol is a process-oriented approach to research rather than teaching which has been developed recently in order to gain more immediate access to the translator's mind. Think-aloud protocol as a method of empirical research into the translation process proper has been reported as:

a bold step in the right direction and the results gained were often unexpected and sometimes surprising [82, p.7].

Although the first studies did not really inform us about professional translating or translating as it goes on in translator training institutions since the subjects of the experiments were foreign language students who used translation basically to test foreign language skills, recent studies have applied these introspective methods to students training to become professional translators who have been given some training and made aware of the importance of the translation assignment (Jääskeläinen 1989, 1993, Tirkkonen 1989, 1992, König 1988, Kiraly 1990). This approach has been developed to **gain more immediate access to the translator's mind or "black box"**. In these experiments, translators were asked to utter everything that went on in their minds while they were translating, and these monologues were tape-recorded. These monologues are referred to as thinking-aloud protocols (TAP's). Such protocols are analysed in order to classify translation strategies with the pedagogical aim of observing difficulties, problems and doubts encountered by the students. In the activity I have reported in chapter 6, one of the main indications that students received before starting to translate was to write down any comments, difficulties or mishaps that cropped up before, during and after translating. The results of this request have been a good source of information because most of the comments were common to all the test students. In the light of these comments, I knew quite well what the needs of the students were and therefore I was able to implement CAT tools to try and tackle their translational problems.

### 3.4.2 Creative approach

This approach is an expansion of the section on text analysis<sup>28</sup>. It is also directly linked to the four-phase model used in psychology that aims for a clearer picture of the complex activities going on in the human mind. These

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<sup>28</sup>Cf. section 3.3.

phases were first expounded by Poincaré in 1913 and they can be labelled as *preparation, incubation, illumination* and *evaluation*. These are the four mental processes which take place in creative translation. In the preparatory phase problems are noticed and analysed, relevant information and knowledge are accumulated. This phase corresponds to the comprehension stage of the source text in the translation process.

From the point of view of translation, text analysis and interpretation are established. In this first phase trainees must have mastered the ability to recognize a problem, gather relevant information and form initial hypotheses about possible solutions, just as a creative writer would.

If creativity with production is regarded as an important element on the way towards a good translation, it is not the only one. Kußmaul believes that developing comprehension strategies plays also a major role in learning how to produce a good translation. How can that be? Comprehension is not only guided by what we hear or read but also by our **personal knowledge and experience**. For example, when we first read a text and then reread it ten years later, we interpret it differently and we come to different conclusions because our life experience at the moment of the readings is also different. It follows then that understanding is not merely a receptive but also a productive process; our view and interpretation of the text has been reconsidered and in this sense comprehension is a creative process.

This theory of creativity tells us a few things about the way we could teach translation to our students. For example, it tells us that:

[teachers should encourage students to keep a] critical and evaluative attitude towards the ideas that come to their minds [82, p.50].

Furthermore, it tells us that students need to be made aware that stepping back and observing what they have been doing is a necessary step in their training. This approach coincides with the one taken by professionals, although the latter's comprehension processes have become internalised and therefore automatised -after some time of training and practice trainees may also internalise the comprehension processes. Both groups aim at taking into consideration their text analysis and their suggested results and adapt them to a given situation in a given culture. This idea was summarized by Hönig in 1991 with the following statement "microstrategies should always be governed by macrostrategies" [62, p.91].

The creative approach involves both the teacher and the student but the teacher should act as a catalyst following this procedure:

- When a text is translated in class, the teacher should try to create the atmosphere of "sympathetic encouragement" [82, p.51] whereby criti-



cism is seen as a desirable on-going event throughout the translation process.

- If the student gets stuck, the teacher should use techniques for removing the mental block. One of the techniques suggested by Kußmaul is “parallel-activity” [82, p.51], which consists in diverting the student’s attention from the task in front of him/her and creating the relaxation necessary for removing the blockage. For some people, a diversion consists in having a chat with a colleague; for another person it could be going for a walk for half an hour.

The question remains: can creativity be trained? Yes, it can by means of linguistic tasks. And the teacher needs to find methods of training and improving this ability in order to develop the student’s translational flexibility. Lakoff’s “chaining theory”, Guilford’s “divergent thinking” and Snell-Hornby’s “gestalt semantics” are three of the methodological bases on which to achieve this end.

Although teaching creative translation is an ambitious task, I think that something will be achieved if our students are made aware of what is going on in their minds during the creative process [46, p.52]. This awareness makes them not only self-confident but also realise their translating capabilities, and these are two typical features of successful translators.

### 3.5 Multidimensional approach

Melby coined the expression “multidimensional approach” [96] as an alternative to the linguistic approach that was traditionally taught in human translation theory<sup>29</sup>. Daniel Gile [40], a well-known scholar and instructor in translation pedagogy, makes a very valuable theoretical contribution to the multidimensional approach to translation. He acknowledges the fact that traditional approaches to translation pedagogy are useful for different stages of the trainee’s learning process and so he confesses to have used both approaches in the translation class because the requirements at each learning stage evolve as the trainee advances in his course.

Gile’s approach is very practically-oriented and of easy implementation in the translation class. He puts forward the “sequential model of translation”, a model of translation aimed at students of translation. The model is implemented into two phases, schematized in figure 3.6: (1) The Comprehension phase; (2) The Reformulation phase. In the Comprehension phase, the translator reads a **SL translation unit (TU)** (Step 1), which can vary

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<sup>29</sup>Cf. section 2.2.

in length from a single word to a whole sentence or more than one sentence, depending on the SL text and on the translator. The translator formulates mentally a **Meaning Hypothesis** (Step 2) for that TU, i.e. temporarily assigns a meaning to it. To do this, he or she relies on knowledge of the SL, but also on the relevant part of his or her World Knowledge. Both are contained in the **Knowledge Base**, on the left side of figure 3.6. Sometimes, the Knowledge Base does not provide the translator with all the knowledge required to formulate a Meaning Hypothesis, and he or she has to look for additional information elsewhere: documentary sources, human informants, etc. This part of the process is referred to in figure 3.6 as **Knowledge Acquisition**.

The translator then checks the Meaning Hypothesis for **plausibility**, also with the help of the Knowledge Base and through Knowledge Acquisition if necessary. Only when the translator reaches a Meaning Hypothesis which passes the plausibility test satisfactorily does he or she move on to the next phase, which is the Reformulation of this Meaning Hypothesis in the TL.

In the Reformulation Phase, once the translator is reasonably sure of the meaning of a TU, he or she verbalizes it in the TL, using knowledge of the TL in the process as well as extralinguistic knowledge again. The translator then makes sure that the TL version of the TU complies with fidelity requirements, i.e. he or she checks that none of the information has been omitted in the translation, and that no unwarranted information not contained in the SL TU has been added. If **Fidelity tests results** are satisfactory, then the translator tests the TL version of the TU for editorial acceptability, i.e. he or she checks that in terms of clarity, language correctness, stylistic appropriateness, and terminological usage, is acceptable. When the fidelity and acceptability tests for the first TU produce satisfactory results, the process starts all over again for the next TU, and follows until the end of the text.

Periodically, the translator also conducts fidelity and acceptability tests on groups (**aggregates**) of TU's of various sizes (sentences, paragraphs, pages, etc.) This final step gives translators a wider context for reference and puts them in a better position to detect inconsistencies when dealing with a single TU.

The characteristics of **progression, language correctness, stylistic appropriateness and terminological usage** in Gile's approach to translation pedagogy match some of the features supplied by the CAT tools I have worked with in this dissertation. The Translator's Workbench, explained thoroughly in chapter 4 allows the student, for example, to start translating one TU, established by the student, and once a satisfactory translation has been found, copied and pasted into the target document, the system automatically takes the student to the next TU. This **progressive translating process** then coincides with one of the characteristics of the mul-

tidimensional approach. As far as language correctness is concerned, it is the students who establish the linguistic correctness of a TU in a translation exercise. However, since the TU's and the entries are stored in networked databases, students are encouraged to solve language-related doubts and be thorough in their work. Also, the information is constantly updated by new students, who retrieve and edit existing data inserted by previous students. Therefore, linguistic correctness is better guaranteed thanks to the feedback obtained from the CAT tools and the interaction between these tools and the students.

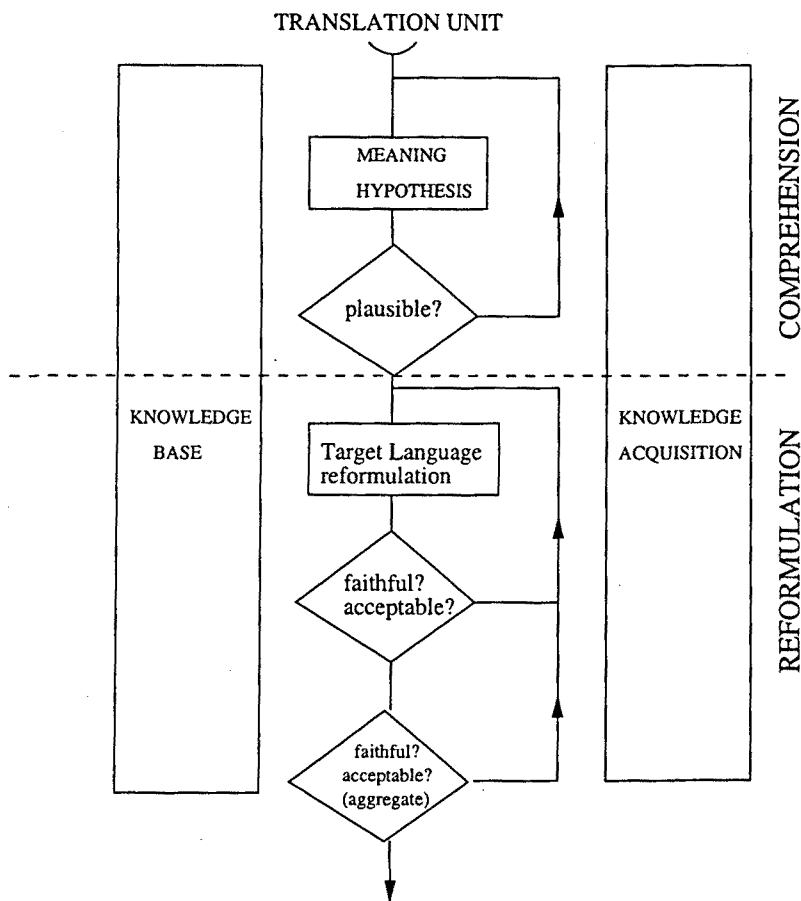


Figure 3.6: Gile's sequential model of translation [40].



# Chapter 4

## Computerized tools

### Introduction

Since the earliest days of the digital computer, attempts have been made to translate by or with the assistance of computing machines. There are really two computational tools for translation purposes, machine translation and computer-assisted translation. Although they are two different disciplines, their paths have crossed each other in several aspects: their terminology, their classification, their origin and their history. In other words, it is difficult to delve into computer-assisted translation without making reference to machine translation.

In this chapter I intend to explain and analyse each of the above aspects in order to understand the software used in this study, namely Trados' MultiTerm and Translator's Workbench.

In all sections I have tried to be as concise and to-the-point as possible but some lengthy explanations have been inevitable in some instances such as the comparison between machine and computer-assisted translation and the description and analysis of computer-assisted translation.

### 4.1 Definition of computer-assisted translation tools

It is difficult to obtain a uniform picture of the terms used in the literature of computerized translation. Researchers have used different terminology for the same phenomena or the same terminology for different phenomena. It is not uncommon to find one term with a highly restricted meaning for one researcher used by another as a cover term for a range of concepts. Generally speaking, researchers do not define their terms, but leave the readers to try

to draw their own conclusions. It is quite rare to encounter a set of explicit definitions<sup>1</sup> in scientific works, although such a task would be justifiable to ensure a proper delivery of the message and to avoid confusion to efficient communication.

“Older sciences” have an accepted terminology but a long period of work is required in a new science before agreement can be reached on the special terms to be used. Accordingly, the terminology used to define computerized translation needs to be defined clearly and unambiguously so that the readers will know exactly what concepts are being handled here. This is the purpose of this section.

Traditionally, there has been a lot of confusion among the general public on the issue of computerized translation. Adding to the confusion, the interested spectator and particularly translation teachers have to cope with a number of terms that are not always clearly defined: machine translation, computer-aided (or -assisted) translation, computerized translation, automatic translation, fully automatic translation, interactive translation systems, and so on<sup>2</sup>. All these are fuzzy concepts which need explication. Therefore, in order to make a clear start on this project and clarify concepts from the beginning, I have included this section which might shed some light on this terminology<sup>3</sup>.

From the irruption of computers into translation, it is obvious that different authors, theoreticians and translators have used the same or similar words to express different concepts related to computerized translation. Adding to the confusion, different classifications of computerized translation have been established. The following are 3 of the main definitions and classifications of computerized translation:

Blatt [16, p.76] distinguishes three types of computerized approaches to the translation process: machine aids for translators, machine-aided translation, and machine translation. In this classification, machine aids cover systems such as word processors, dictionary management tools, term banks and various lookup facilities, which support the translators but do not actually perform the translation task. Machine-aided translation systems, on the other hand, are systems which actually perform the task of translation but rely on the intervention of the human translator at various stages in the translation process. The difference between machine-aided translation systems and machine translation systems, in Blatt’s view, is that the latter are intended as fully automatic translation systems, though their output can of

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<sup>1</sup>Irma Sorvali devotes quite a few paragraphs of her book [144, p.53–57] to explain this phenomenon with reference to translation studies-related terminology.

<sup>2</sup>Cf. [48] for more information on the different names and terminological aspects related to computerized translation software.

<sup>3</sup>Cf. Sabaté [124].

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course be passed on to a translator for post-editing.

Their threefold division has been illustrated in figure 4.1<sup>4</sup>:

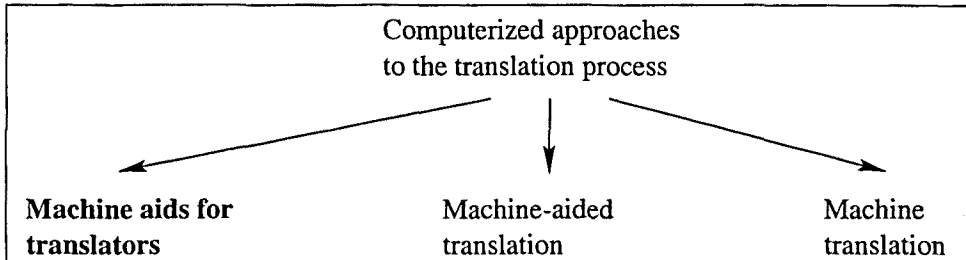


Figure 4.1: Computer systems, as adapted from Blatt [16]

More recent approaches to defining different types of computerized translation take as their principal criterion the degree of automation, that is the relative contribution of the machine and the human translator to the translation process [86, p.5], resulting in a classification which distinguishes between machine-aided human translation (MAHT), human-aided machine translation (HAMT) and fully automatic machine translation (FAMT). MAHT is basically human translation with only limited assistance from the machine whereas in FAMT there is no human intervention between the input of the original text and the final raw machine output of the translated text.

Their classification has been illustrated in figure 4.2:

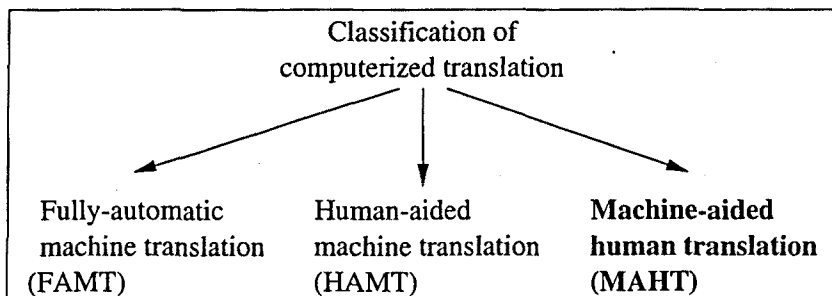


Figure 4.2: Classification of computerized translation, as adapted from Lehrberger and Bourbeau [86]

This short selection of varying definitions of computer-related terminology shows that translation programs have undergone dramatic changes in the last few years, from a general term which included any type of translating activity which involved the use of a machine to a more restricted definition, which nowadays is widely acknowledged as a standard. Thus machine

<sup>4</sup>For this figure and the 2 following, I have marked in **bold** the branch that this dissertation applies to.

translation refers to any type of translation that a computer does with very little pre-editing and post-editing [141] or no human intervention whereas machine/computer-aided translation would include any type of translation that uses a computer as a tool during the translation process.

Their definition of machine-aided translation further assumes that the source text is available in machine-readable form. Thus, machine-aided translation, as defined here, occurs in any situation where a machine-readable source text is processed by computerized tools in order to produce a translation, with the translator in control of all stages of this process and performing the intellectual process of translation.

There is a third classification made by some authors (see [107], [7], [97], [102]) which, because it is the one most scholars and specialists in this discipline agree on, is the one I have chosen as the standard terminology for the present study. They make a binary distinction between machine translation and machine-assisted or computer-assisted translation (MAT or CAT), using machine translation to refer to any system that actually performs a translation and classifying any other computerised translator tool which falls short of translating as a CAT device ([7, p.408]). Also the term machine-aided translation is used in a broad sense to cover all kinds of software systems especially designed and developed for use as part of a translators workstation, but not themselves performing the task of translation as such. In other words, the systems discussed here are not designed to undertake any syntactic or semantic analysis of a source text or to generate a target language equivalent of the source text or any part of it. Also excluded from the definition of machine-aided translation here are standard software systems used in a modern office environment in general rather than specifically by translators; these include standard word-processing software, universal database systems and other tools used in performing administrative tasks.

This two-fold classification has been illustrated in figure 4.3<sup>5</sup>:

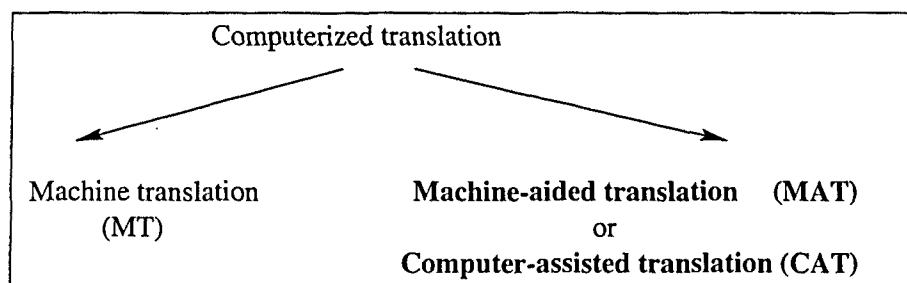


Figure 4.3: Classification of computerized translation, as adapted from Newton [107], among many other scholars

<sup>5</sup>I have marked in **bold** the branch that this dissertation applies to.



#### 4.1. DEFINITION OF COMPUTER-ASSISTED TRANSLATION TOOLS 75

In sum, the difference between machine translation (MT henceforth) and computer assisted translation (CAT henceforth) is established in terms of the **actual realization of the decision-taking component**. Therefore, in the former, the decision-taking task corresponds to the computer whereas in the latter, the decision-taking is the human translators duty. The different types of computerized translation disciplines can be best visualised and exemplified along a scale with varying degrees of mechanization on the one hand and human intervention on the other standing on opposing sides of the scale.

Figure 4.4 shows the different types of computerized translation disciplines suggested by W.J. Hutchins and Harold L. Somers [67, p. 148]. The figure highlights the evolution in time of translation from the moment computerized translation made its appearance.

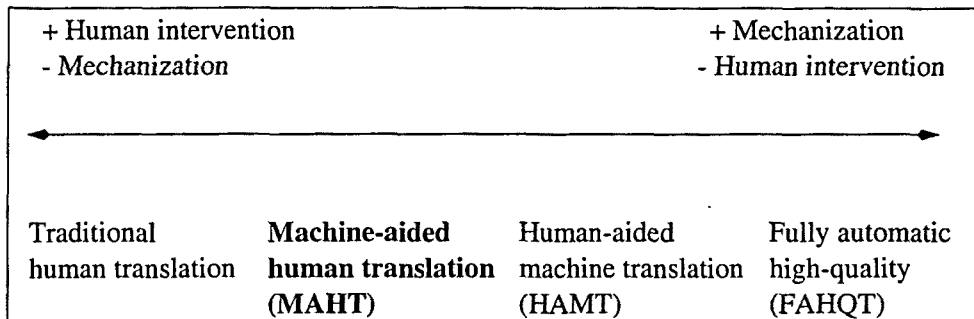


Figure 4.4: Types of computerized translation

Independently of the terminological confusion and different taxonomies developed in this section, one classification that may summarize them all, is the one established by Alan Melby in 1995. He takes technology as the common denominator of a three-fold division that has been set up according to the different functions and purposes of the translation:

Technology applies to translation appropriately in at least the following three circumstances: (1) to produce fully-automatic indicative translations for individual non-translators, (2) to produce publication-quality using machine translation when there is a high-volume of machine readable text consisting of rigidly controlled language restricted to a narrow domain; and (3) **to provide computer-based tools for human translators.** (my emphasis) [96, p.184]

### 4.1.1 A historical review

#### MT systems

No study on computerized translation could be complete without consideration of the discipline in a historical perspective, but the scope of such an enterprise is far too vast to be covered adequately in a single chapter. What can be done is to look at the way in which machine translation has evolved and given way to other computer-assisted disciplines revolving around translation such as computer-assisted translation.

The history of machine translation goes hand in hand with the history of machine-aided translation. Although tentative machine-aided tools started in the 50s<sup>6</sup>, we could establish 1966 as the official date which gave the real push for the creation of further computer-assisted translation tools. Why this year? Because that was when the ALPAC (Automatic Language Processing Advisory Committee) report was released. The ALPAC was formed in 1965 by the U.S. National Science Foundation and its purpose was to investigate the status of machine translation, i.e. the quality of the output of various MT systems. The first suggestion that automatic translation was an appropriate task for computers had been made by Warren Weaver of the Rockefeller Foundation some twenty years earlier, but research began in earnest on a large scale only after a demonstration of a small Russian-English translation program in 1954 had impressed the general public with the possibilities and encouraged substantial funding from U.S. governmental agencies.

This "pro-machine translation atmosphere" is linked to the political events after World War II, i.e. the Cold War between the Americans and the Russians. The American government funded a wide variety of Russian into English MT projects in search for a fully automated machine translation system<sup>7</sup>. Project leaders would put themselves under a lot of pressure by setting themselves under tight deadlines which were never met and after a series of unfulfilled promises over the years, the government decided to lead an investigation on the actual results achieved until then. Ten years later there were no MT systems in operation producing translations of a quality comparable with those of human translators. The ALPAC Report concluded that progress on MT had been unsatisfactory, and it recommended the cessation of funding for MT in the United States. At first sight, the results shed

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<sup>6</sup>In 1954, the Georgetown project, in cooperation with IBM, gave the first public demonstration of machine translation. In the late 1950s and early 1960s, Peter Toma developed Systran at Georgetown University. He developed a Russian to English version for the US Air Force, and it has been in use there since 1970. More information on Systran in [96, pp. 22-27].

<sup>7</sup>Cf. figure 4.4.

#### 4.1. DEFINITION OF COMPUTER-ASSISTED TRANSLATION TOOLS<sup>77</sup>

by the report were highly discouraging for machine translation supporters; they can be summarised as follows:

1. The quality of the output of MT systems was very poor.
2. MT systems are expensive because they need post-editing and therefore are indistinguishable from human translation.
3. At the moment, there was no shortage of human translators on the market, particularly from Russian into English, which was the main issue for the government at the time.
4. Since MT systems do not have any cost advantage over human translators after fifteen years' hard work, there is no justification for further government funding of MT for the purpose of developing commercial systems to compete directly with human translators.
5. The ALPAC report contained some positive recommendations at the end, including suggestions for (1) funding pure research into the nature of language, i.e. the support of fundamental research in computational linguistics, and (2) the development of computer-based tools for human translators.

#### 4.1.2 Origins and types of CAT

With point 5 of the above recommendations, the seed was planted for the creation of CAT systems. After the Report, the seed sprouted: the suggestion given by the committee has produced an incessant development of computer-based tools for translators, e.g., multilingual word-processing, concordances, glossaries, terminology management facilities, and now the successfully marketed translation workstations. In this sphere Alan Melby has himself been an influential advocate and active developer for many years. After the ALPAC Report different approaches to translation were laid out particularly along the lines of CAT and in what ways it could work with human translators to create better translations. Some of the main CAT approaches which bind computers and human translators together are:

- Interactive translation

The term interactive translation is normally used for human-machine interaction during the translation process that draws on human intelligence to avert errors in the machine translation input. In interactive translation, the human translator –instead of submitting to the machine– guides and controls it in a process of decision-making similar to that in human translation. Even here, however, only certain

stereotypical texts are possible, such as technical reports, instructions for use, etc.) and the sentence is reduced to a linear string of items, whereby textual cohesion is dependent on the human translator.

Some theoreticians on machine-translation systems, Alan K. Melby among others, have come to the conclusion that, since the original goal of fully-automated machine translation (FAMT) has not been attained so far, the goal needs to be re-defined. One of the approaches aimed at re-defining FAMT is to give up fully-automatic translation. If we drop the requirement that the system be fully automatic, then we have some kind of human-machine interaction.

Several projects have tried an interactive approach. For example, in 1972<sup>8</sup> Alan K. Melby together with Eldon Lytle and Daryl Gibb devised an approach called interactive translation, going from English into several target languages. The interaction was between the computer and the human during the analysis phase: the goal was to resolve syntactic and word-sense ambiguities that the computer programs were not able to resolve automatically. Other projects have tried an interactive approach, with the computer asking questions and the human answering them.

Among these projects we can establish a difference between those which require from the person interacting with the computer to be a translator (in other words, a bilingual), and those which poses questions that can be answered by a monolingual. Another project that uses interaction is being done at the Center for Machine Translation (CMT) at Carnegie Mellon University (CMU). Here a pre-processing tool called ClearCheck interacts with the author of the source text to resolve ambiguities and eliminate disallowed structures. Another project involving interaction is being conducted at the University of Grenoble, which is based on a dialogue-based machine translation (DBMT) approach. This project is intended to allow a monolingual or a native speaker of a language with limited ability in the target language to produce a useful translation by interacting with the computer only in the source language.

- Post edited translation

Unlike interactive translation, the term post-editing applies to processes that use humans to fix errors after they have already appeared. Post-editing is an alternative to interaction during the translation process to let the machine go ahead and finish the translation, making errors along the way. Then a human translator revises the output to bring it up to required standards.

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<sup>8</sup>As reported in Melby [96, p.32].

#### 4.1. DEFINITION OF COMPUTER-ASSISTED TRANSLATION TOOLS 79

Both alternatives to machine translation point in one direction, i.e. to improve the quality of the final translation through some kind of human involvement, either interaction during the translation process or post-editing of raw machine-translation output.

There are still many questions that remain unanswered in the field of pure MT systems such as will we see the day when current work on machine-translation systems will be applicable to both restricted and general-purpose texts. An increasing number of people involved in MT projects have gradually taken a more moderate and pragmatic view of their projects. They acknowledge that machine translation certainly has limits but that within those limits it can be very useful. High-quality machine translation requiring little or no revision is feasible only for highly predictable language.

In view of these results, the only convincing and operational answer towards machine translation systems for the time being seems to be to involve the human translator in the translation process, in other words, to direct more efforts towards developing computer-based tools for human translators, that is, solutions that involve computers but not machine translation proper. It is within this line of thought that I believe this dissertation can fit in.

In a commercial setting, the combination of machine translation and human collaboration needs to have some advantage over machine translation and human translation taken independently. Otherwise, this combination will be abandoned. Some of the advantages that Alan K. Melby [96, p.36] saw are:

- Lower cost
- Higher speed
- Increased quality through consistent use of terminology

These advantages are subject to controversy because they do not always apply to all CAT systems. In fact, many people believe that a reasonable approach in the foreseeable future will be a combination of computerized translation (both MT and CAT) and human involvement in order to achieve an acceptable level of quality:

It is becoming clearer that machine-related translation systems and purely human translation have a lot to learn from each other.  
[163, p.126]

This statement has a lot to do with terminological management systems and translation memory systems, the two systems implemented in this study<sup>9</sup>.

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<sup>9</sup>Cf. 4.3 for a thorough development of these systems.

To commence this section, it is perhaps useful to delineate the area of interest, which Whyman reports on:

Although the title (of the paper) talks explicitly of machine translation, I hope that much of what is said will apply to the evaluation of language industry products in general: although less ambitious in their aims [...], a growing list of products which can greatly facilitate the translator's task and relieve him of some of the more tedious aspects exists. Amongst the more modest are spelling checkers and automated dictionaries; the range continues through grammar and style checkers and terminology servers to the specialised workstations now being developed, which aim at providing access to previous translations as well as document preparation services specially conceive (sic) with the translator in mind [158, p.17]

### History of TM systems

The origins of translation memory systems is more recent than the origins of terminological databases explained in 4.2.2. It develops from the idea of a translator's workbench (or workstation), which originated with Erhard Lippman (1971) and Martin Kay (1980); it has been championed especially by Alan Melby (1982, 1983, 1987) with his multi-level translator workstation and was incorporated in the commercial HAMT system developed by Alp-Systems (Tenney 1985). The idea has also been taken up by researchers in Malaysia (Tong, 1987).

One word of warning. The amount of bibliography available relating to CAT and specifically TM systems is much lower than MT-related bibliography. A recent academic report by an experienced professional translator [29] provides a concise up-to-date examination of the place of computer tools, and TM in particular in the translation process. One relevant comment in his work refers specifically to the imbalance in terms of bibliography available for MT and CAT tools. It reads as follows:

There is a significant amount of available literature relating to machine translation, but there is surprisingly little to be found on the subject of other computer aids to translators, and in particular relating to the application known as Translation Memory. [29, p.14]

In spite of this preliminary setback, some valuable information can be extracted from different reports about MT systems, and this may be seen in the following section.

#### 4.1. DEFINITION OF COMPUTER-ASSISTED TRANSLATION TOOLS<sup>81</sup>

Although the actual task of translation, which involves making decisions on which target language equivalents to use, is performed by the human translator, there are various tools which can be used to support the translator in performing this task. One such tool is the terminology management system as described in section 4.2.2. In addition to providing access to source and target terms, this type of system can and should offer definitions of the terms in question, information on subject fields, linguistic contexts, synonyms and so on.

Apart from providing information on the lexical or phraseological level, some tools offer suggestions for the translation of a complete sentence or even larger segments of the text. Such systems consist of databases which contain source language text segments together with their target language equivalents. The text segments are drawn from translations produced by human translators and then segmented according to simple linguistic algorithms<sup>10</sup>.

Melby [96, p.255] reckons that the first implementations of translation memory resulted from ideas that originated at the translation institute at Brigham Young University in the 1970's. By 1981, there were two implementations, one developed by Melby himself at the university, called a Suggestion Box system, and the other called Repetitions Processing, developed at ALPS Inc. (later AlpNet Corporation), which was formed by some people at the translation institute when the machine project ended in 1980. The AlpNet translation memory system, embedded in a product called Autoterm, was sold to IBM with source code. IBM developed it further, using consultants who later formed Trados corporation, and the IBM system eventually became Translation Manager. Trados has since developed its own version of translation memory, called Translators Workbench, and others started picking up on the idea and developing similar products a decade later. Figure 4.1 shows a recollection of the origins and subsequent history of what has become known as Translation Memory (TM).

Whereas the above corporations created the first implementations of TM systems, the first documented discussion of the TM technique has been assumed to be that of Martin Kay [73], although a similarly titled paper was apparently written by the same author as early as 1976.

Kay proposed what he called a 'Translators Amanuensis' as an incremental approach to the problem of how machines should be used in language translation. The Longman Dictionary of English Usage (1984) defines amanuensis as a scribe:

One employed to write from dictation or to copy a manuscript

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<sup>10</sup>An example of such a system was used in the early 1960s as part of a machine-aided translation tool developed for the European Coal and Steel Community in Luxembourg. It is described in the ALPAC Report [2, pp.27-28].

<i>Time period</i>	<i>Milestones in TM systems</i>
1970s	Idea originated at Brigham Young University (BYU) translation institute
1981	'Suggestion Box' system developed by Melby at BYU
1981	'Repetitions Processing' at ALPS Inc (later AlpNet Corp); personnel from BYU
1980s	IBM developed TM element of AlpNet system into 'Translation Manager' product
1980s	Consultants from IBM form TRADOS, developing TM in Translators Workbench
1990s	TM ideas further developed by other and similar products created

Table 4.1: Milestones in Translation Memory systems

[From the Latin (*servus*) a manu, slave with secretarial duties]

Kay not only recognised that the kind of software he was describing did not then exist, but that he thought that it "probably never will". However, the features that he described as desirable are now in fact common features of sophisticated text editors and word-processing packages. This reflects the fast advance in computerised text handling during recent years.

The observations that Kay made were for a very limited version of TM. They are:

- The unit of text expected to be stored should not exceed the phrase level.
- The mechanism for augmentation of the phrase dictionary should only be through repetitions within the text being translated.
- There was no indication of the possibility of translation pairs (phrases), obtained in the course of translating texts with the aid of a computerised text handling device, being stored (in the dictionary) for use on subsequent texts.
- There was no mention of the possibility of sourcing dictionary entries from existing machine readable parallel bilingual corpora.

Nevertheless, Kay's contribution is important because he realised that, in an ideal world, the possibilities of computer science could meet the translator's needs somehow. In this sense, he may be considered as the forerunner



of TM systems. Later on Melby developed a more thorough theory of CAT systems which included TM systems. As early as the 1980s, Alan Melby had designed a system of multi-level translation aids (Melby 1982, 1983). This included a translation editor and a terminology lookup facility as part of an Interactive Translation System (ITS).

Other, more recent systems also include a translation memory component. Entries from the terminology database and the translations found in the memory component are integrated and the system then provides automatic substitution of all source language segments which are either totally identical to segments in the memory or which differ only with respect to the terms contained in the terminology database. A slightly different approach involves integrating, in addition to the above, a machine translation system which provides a raw translation for any segment not found in the memory component. This approach suggests that there is no hard and fast distinction between machine-aided translation and machine translation and that the translators workstation of the future is bound to make extensive use of both kinds of technology.

An extensive explanation of the machine-aided translation tools will be dealt with in the following section.

## 4.2 Software programs and tasks in CAT processes

### 4.2.1 Standardised computer-based language resources

The computer as a translating tool in the professional world has been available for a long time. Very few translators are keyboard shy<sup>11</sup> and some theorists base their ideas on this assumption:

Whenever the human translator is translating we will assume he or she will use the word processor [96, p.149]

Standard computer applications are used in the translation environment:

A aplicación ofimática máis utilizada polas persoas que traducen é sen dúbida o procesador de textos, aínda que neste labor se poden empregar tamén con moito proveito outras aplicacións ofimáticas como o recoñecemento óptico de caracteres ou os sistemas de dictada para a conversión da voz en texto (como *Personal Dictation System* (his italics). [48, 101-102]

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<sup>11</sup>Cf. Alan Melby [94, p.149].

Translation agencies require from their freelance and of course in-house staff to be computer-literate since nearly all texts, both source and text translations, are now prepared in electronic form using some kind of word processing software.

Die-hard professional translators in the past thought that it was precisely these computer facilities which threatened to change the image of translation from an art to a technique. However, as computers became a standard and necessary tool in every profession, it also became clear that there was no reason to fear that computer tools lowered the intellectual and artistic capacity of translation, just as using dictionaries and typewriters did. This fear stemmed from the belief that computer science is a step forward dehumanization. Nowadays though it is a widely accepted fact that computers can help translators in several ways. Harry H. Josselson and Lanna Castellano highlight the importance of computers in professional translation. Josselson's quote summarises this idea, encourages translators to take the plunge into using such a powerful tool on the grounds that computers are a help rather than a hindrance to them:

Since computers will not go away and are, quite obviously, here to stay, it makes no sense to renounce their application in such an important area of human behaviour as language output. You don't throw away an important tool; you use it [72, p.51]

Lanna Castellano stresses the advantages of word-processors over more traditional ways of translation output by saying that the former increase both the creative process of translators and the quality of their work.

Word processing –whether on a dedicated machine or on a computer– is a technology that has been found to increase translators' productivity in the sense of the speed at which they are able to convert the product of their minds into a commercially acceptable format. The creative process is enhanced: the translator can draft and redraft thoughts without the physical constraint of having to type or dictate a new version each time. Word processing adds to the pleasure of working as it reduces the amount of repetition. Combined with the use of other new technologies, it gives greater satisfaction and pride in the production of a professional piece of work. The linking of their computer to the originator of the texts being translated and the users of the translation makes translators part of the information chain and brings them closer to clients who are open-minded to new developments –the clients most likely to survive and provide them with a continuous flow of work. [20, p.193]

Although all word processing programs are computer tools and may be regarded as a machine aid, they cannot be considered as CAT. In the case of CAT, linguistic items (such as terminological data) are stored in data-banks and made accessible to the human translator, who is then **fully responsible** for the syntax and textual cohesion of the target text. However, computer-based language resources are also part of the translation tools available to translators and the incorporation of sometimes highly sophisticated features, such as grammar and style checkers, has turned word processors into powerful and essential tools for translators.

Standard word-processing software is often used for creating and editing the target language text. Spellcheckers, synonyms, word-splitting, word-count, keyboards adapted to different languages are but some of the functions available in most word processors.

However, there are various features which can aid the translator in the task of editing but which are not included in such standard products. These are offered by translation editors, software programmes especially designed with the needs of translators in mind. For example, if the translation is created by overwriting the source text, it is essential that the software used provides the possibility of protecting certain elements of the texts against being overwritten accidentally. Such elements may include tags which contain layout information, as figure 4.5 shows. The right-hand column shows two shaded boxes which contain layout information for the translator.

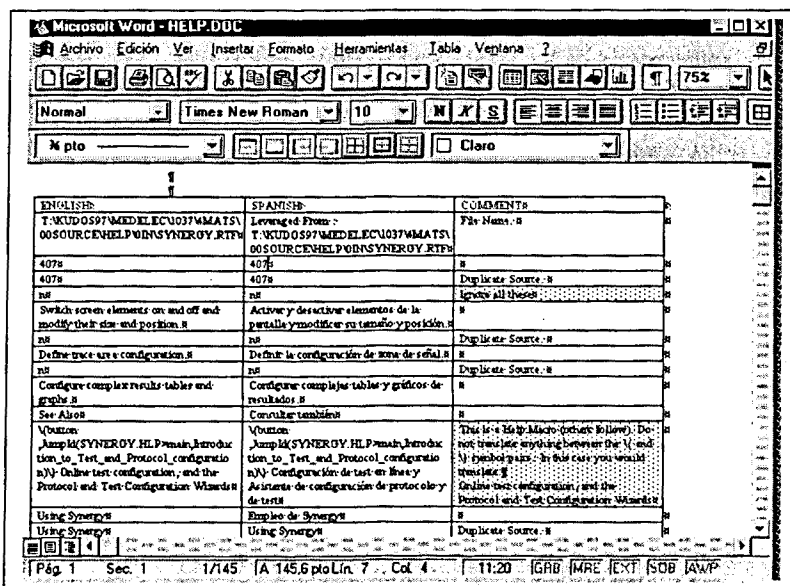


Figure 4.5: Layout information

or, in software localization, elements which form part of a programme code. Similarly, if translation is done by using different windows for displaying source and target texts, a translation editor will usually include a feature for simultaneously scrolling the texts in both windows.

For the purposes of this study I do not consider that it is necessary to use these sophisticated editors in order to avoid unnecessary and time-consuming training. The software we will use is the standard word processing software that most computer-literate are able to use such as Word or WordPerfect. Still, the teacher may point out the existence and availability of these more sophisticated word processors to advanced students.

I have developed below some of the main standard resources available in most computers nowadays. They are the following:

1. *Spellcheckers* are language tools that are incorporated in the word processor. The quality and quantity of the entries of spellcheckers depend on the target language, although they can be customised by adding new entries to the standard dictionary for personal use; for English and Catalan there are very good and efficient spelling checkers available, for other languages the picture varies according to the commercial attractiveness of the particular language or the institutional support that the language enjoys. Most spellcheckers are based on very large dictionaries with very fast look-up, but have no linguistic intelligence, though some have quite ingenious algorithms to try to guess the correct form of a misspelling.

2. *Grammar checkers*

Modern developments in computer software packages now include grammar checks together with spell checkers<sup>12</sup>. These checkers have been developed for the evaluation of syntax and parsing, pointing up such faults as the use of a plural verb with a singular subject. This is becoming a commonly available tool in most word processing packages and it is certainly a useful proof-reading aid. This sophisticated "toy" can be of great assistance. However, like with all check programs and CAT tools, reliance upon computer software programs does not absolve the user from his responsibilities. They must still continue to think.

3. *Style checkers* are slightly more sophisticated tools, working typically by pattern matching, although some use parsers of the computational linguistic kind. Grammar checkers look for errors such as the non-agreement of subjects and verbs, word repetition, sentences lacking

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<sup>12</sup>For example, Inèdit software provides *Escriu*, a spell and grammar checker for Catalan for Apple Macintosh platforms, and DGC has released a grammar checker called *Word-Correct*.

finite verbs, and so on. Style checkers look for features considered to be stylistically awkward, such as clichés, sentences beginning with conjunctions or ending with prepositions, sentences which are too long or too short, and so forth. It is even possible to check for repetitious use of words and phrases.

4. *Laser discs and CD-ROMs* are electronic data resources that can contain a large amount of information and can be integrated to word processing environments and can be accessed directly whenever a translation problem arises. The electronic dictionaries (monolingual and bilingual) in CD-ROM include search options and the possibility of adding comments to existing entries, among many other facilities. Generally speaking, electronic bilingual dictionaries tend to have more extensive information in one of the languages. For example, the Catalan Hyperdictionary Catalan–English, that has been used in this study, supplies very little information in English, as figure 4.6 shows.

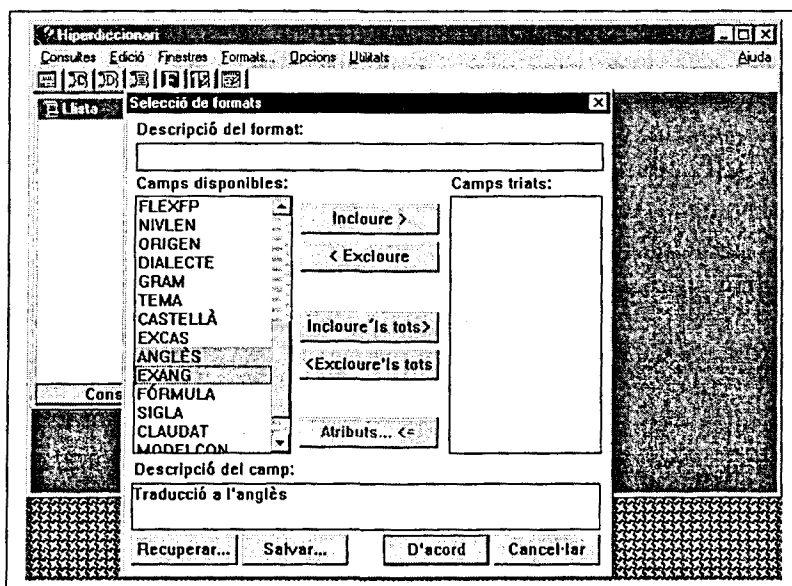


Figure 4.6: Catalan Hyperdictionary

5. *Internet resources.* It is becoming increasingly popular for translators to use on-line databases and references such as dictionaries, thesauri, termbanks, bibliographic sources, encyclopaedias and other general information sources available to translators such as document retrieval, search of parallel texts and links from translation-related addresses<sup>13</sup>. There is also translation software on the internet

<sup>13</sup>Cf. [115] for some useful addresses and links for translators.

such as TM tools, e.g. Déjà Vu, terminology management systems, e.g. TermWatch, MT<sup>14</sup>. We are also witnessing the commercialization and free availability of on-line bilingual dictionaries and all types of checkers<sup>15</sup>. Even Internet Explorer has a Catalan version available on <http://www.catalunya.com/fitxers/fitxers.html>. Consuelo Gonzalo García summarises the undeniable value of *the web* for translators in the following quote:

Para el traductor, internet se presenta como una herramienta de trabajo imprescindible (sic), al ofrecerle hermanadas nuevas formas de comunicación y transmisión del conocimiento científico (mensajería electrónica, participación en foros de discusión, transferencia de ficheros), además de facilitarle y mejorar sensiblemente sus labores de búsqueda documental (consulta en línea de catálogos automatizados, bancos de datos terminológicos, diccionarios, enciclopedias o textos paralelos, entre otras fuentes de información). Como usuario, procesador y productor de información, el traductor encuentra en la red una valiosa fuente de documentación y un útil sistema de intercomunicación profesional. [42, p. 175]

6. The integration of several resources has brought about the development of a concept known as *translator's workbench*. In Section 4.3.2 of this chapter I shall explain in detail the translators workbench software I have used in this study.

#### 4.2.2 Specific software programs

- *Terminology management*, that is looking up and/or entering terms in a machine-readable dictionary or terminology database, before, during, or after the translation process.

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<sup>14</sup>Systran is a free translating service consisting of a personal translation program available on the web that allows access and retrieval of data of terminological search. It translates not only text that we can paste or write on an input window but also whole web pages when you type the URL address in the window. <http://babelfish.altavista.digital.com>.

<sup>15</sup>In Catalan, for example, Liberation Philology Software provides a shareware low-cost software for authorised members for a variety of languages, Catalan being one of them. The full program provides vocabulary and basic grammar instruction and includes full paradigms, verb drills, declensions and vocabulary quizzes. Another software, Excalibur, that can be downloaded from the Excalibur home page, is a plain text spelling checker created by a faculty member at Bucknell University as a service to the Macintosh community. The Catalan dictionary includes 204,817 words.

- *Translation memory systems*, that is choosing target language equivalents on the lexical, syntactic, textual, and functional (pragmatic) levels, where the translator might be supported by various tools offering translation suggestions.

Below, I will develop these tasks and explain the specific software programs that may be used in the translation. There is a third process that should be included in the list, localization. This is the process of translating and adapting a product to a local market. More than merely translating software messages and documentation, localization entails the transformation of an entire product into the language, customs and culture of a particular market. There are privately-owned companies who provide services in the localization of software and hardware products for all types of markets. For professional translators and trainees, Trados has incorporated this function into the Translator's Workbench. This function would, however, require separate in-depth analysis which would lie outside the purpose of this dissertation.

### Terminological management systems

The rationale and origins of computerized terminological databases for translators need to be found in the traditional time-consuming hand-made cards, glossaries and terminology lists that translators in the past used to create to keep a record of the terminology used for future reference and as an aid to ensure consistency in their current work. Terminological management systems are a step further towards the automatisisation of the translator's job, whose potential use trainees need to be fully aware of.

As in the past, an important part of the translation process nowadays involves creating glossaries to ensure consistency but this task is made more agile by the use of terminological management systems. Today's translators spend part of their time collecting subject-specific terminology, entering this terminology in a machine-readable glossary or terminological database, and making sure that all this can be accessed from the translation editor during the actual translation process. Terminology management systems are not usually based on standard database systems, but rather consist of tools designed specifically for translators. Such systems provide a means for maintaining complex, concept-oriented terminological entry structures which can be individually adapted by the translator and include features for direct communication between the translation editor and the terminology database (for example looking up terms manually or automatically from the editor, pasting terms from the database into the text and viceversa).

Automatic lookup requires a degree of morphological analysis of the source language in order to identify inflectional endings and strip inflected

word form to their word stems. There are also systems, available or being developed, which explicitly integrate a translation editor and a terminological database with an automatic lookup feature in one software package. Such systems automatically display an additional window containing the terminological material related to the part of the text currently processed in the editor window<sup>16</sup>.

### Translation memory (TM) systems

Workbench software packages were created from the integration of several software facilities. This built-in system includes facilities such as a split screen and multiple windows: one part of the screen is the work space for the target text and has function keys to open windows or split the screen to look up on-line dictionaries and other sources of information such as previous translations on similar topics addressed to the same client. When the information can be easily transferred from one window to another, it is called total integration.

The original texts can be input directly into the computer through the keyboard, copied from a diskette, transmitted via e-mail or input into the machine by means of an optical character reader device. Facilities are also provided for the creation of text-oriented glossaries, lists of words occurring in a particular text with suggested equivalents in a target language. These lists may be in alphabetical order or in the order of occurrence in the original, and the equivalents may come from translators' own glossaries or from other sources. There is often an alternative option in the form of automatic term look-up, the consultation of in-house and external terminological databases for technical and specialised words in a particular text. These workbench facilities can save translators a lot of valuable time. It has been estimated that technical translators spend as much as 60% of their time consulting dictionaries and reference books in terminology research.

Translation memory systems can be particularly useful if the source language text is an updated version of a document which has been translated previously and then stored together with its translation (for example a computer manual). When starting to translate the new text using the translation editor, the system automatically performs a segmentation of the source text and looks up the segments in the translation memory database. If a segment is found, the translation stored with this segment is offered as a possible equivalent. It can be adopted by the translator as it is, or be amended or rejected. As soon as the translator has finished the translation of this segment, the new source and target segments are again stored together in the translation memory.

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<sup>16</sup>For a detailed discussion of such systems, see [93] and [95].



One advanced feature of a translation memory system is the so-called 'fuzzy match facility'. This is of interest to both professional translators and linguists. In addition to exact matches, systems which incorporate this feature can find in their translation memory segments which differ from each other in certain respects but based on the principle of 'fuzzy logic' and make use of syntactic parsing mechanisms to some extent. Figure 4.7 is a screenshot print-out which displays the translation of a source document after running the fuzzy match facility of the TM program.

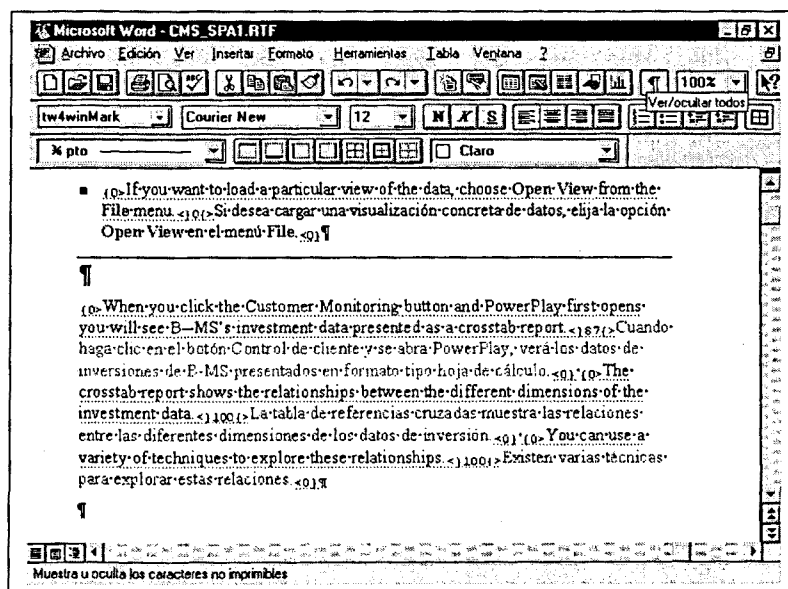


Figure 4.7: Results of translation running the fuzzy match facility.

However, the most important feature of using a translation memory-based program in comparison with normal translation is the possibility of automatic cross-referencing with previous translations: subject-related previous translations are copied into a reference directory, and while a text is imported into the program, it is compared to these previously translated originals.

The development of the translators workbench (or translators workstation) represents the integration of various CAT resources. Generally, these systems are based on microcomputers with

- Split-screen or multi-window facilities, whereby one part of the screen is the work area for the target text. Function keys open windows or subdivide the screen to look up . Figure 4.8 is a screenshot of an overview of how the split-screen facility works in the TW's package.
- On-line dictionaries or other on-line information sources

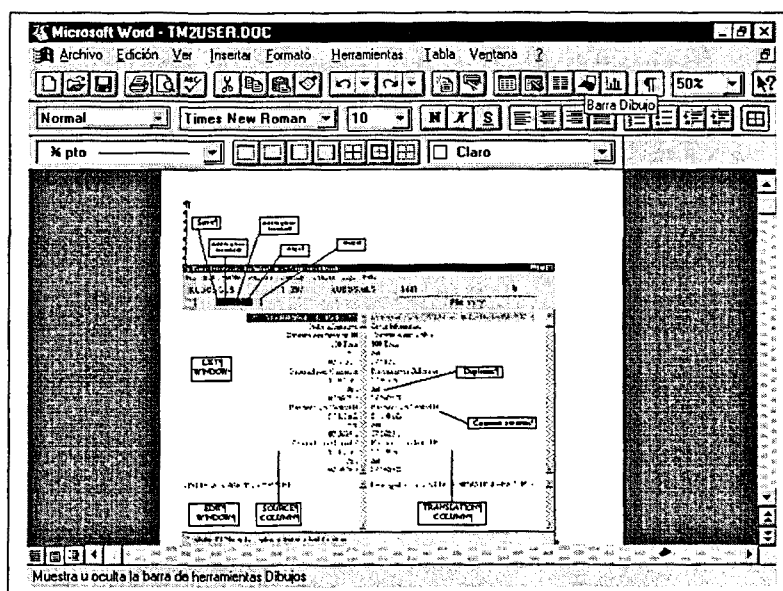


Figure 4.8: Overview of the split-screen facility in the TW.

- Search a previously stored translation on a similar topic or for the same customer
- Full integration means that information can easily be transferred from one window to another. Source texts can be input directly through the keyboard or in machine-readable form, copied from a diskette, or transmitted via a modem link, or converted from a hard copy by an optical character reader (OCR).
- Facilities are frequently provided for the creation of text-oriented glossaries, lists of words occurring in a particular text with suggested equivalents in a target language. There is often an alternative option in the form of (6) automatic term look-up. These workbench facilities may save a lot of effort to professional translators.
- Nowadays there are some programs being developed which allow lexical substitution semi-automatically and provide a kind of draft translation
- Programs for machine pre-translation replace source words and phrases which have univocal target language equivalents, to ensure consistency, and leave untouched those words which have many possibilities in the target language or which cause particular problems (for example, the translation of the English verb “use” into Catalan “servir, usar, utilitzar, emprar, servir-se de, manejar, manipular, gastar”, the translation of function words such as prepositions, conjunctions and pronouns

and the translation of common adjectives and verbs such as several, any, make, get, take). This kind of pre-translation can be considered as a mechanization for checking a text for unfamiliar or technical vocabulary, which usually requires a considerable amount of research by professional translators.

Memory-based translation programs differ from work with word-processors in the following aspects:

- Dictionaries are constantly activated. They can be built up before and during the translation, whereby the translator is always reminded automatically which translation s/he used for words which may have more than one correct translation.
- The dictionary database can be updated constantly because it is interactive, either by creating a new personal dictionary or by adding to existing ones.
- Consistency in the sentence is easier to maintain because recurring text-segments are replaced automatically by the translation used previously. This also means that if the translator embarks on a task started by someone else, s/he will be able to use the same phrases and terminology which were employed previously.
- The time-consuming process of identifying amendments made in previous versions is eliminated since previous versions may be stored in the reference directory for comparison.

After intensive efforts in the area of machine translation proper, many researchers have concluded that translation memory systems currently represent the most practical computer aid for translators. The advantages of translation memory systems are threefold:

1. They leave the creative work to the translator
2. They can learn from the translator
3. They actively support the translation process by automatically suggesting existing translations and terminology

These three features make them ideal for professional translators and translation companies alike. Indeed, large translation departments use them to increase the consistency and thus the quality of their work, and also to ensure completion of large projects. It has been extensively proven that translators spend a lot of time on:

1. Correcting spelling mistakes
2. Checking consistency
3. Looking up words in dictionaries

Freelance translators such as Andrew Fenner [35] and Veronica Lawson [85] and scholars such as Hugh Keith [74] and Lanna Castellano [20] have reported on the amount of time spent on proofreading, revising and editing one's own translations in the world of professional translation. Gile [40, pp. 131–158] devotes one chapter to address the issue of how to use information sources such as dictionaries and other reference material and stresses the complexity of terminological searches and compilations.

This is where translation memory systems become a highly effective time-saving tool for translators and companies alike. In fact, more and more competent translation companies choose their freelance translators on the basis of their familiarity with these systems which are becoming a need rather than a luxury. Some prestigious translation agencies sport their own MT system. One of these companies is SDL (Software Documentation Ltd.), who have their own in-house system. SDL's translation memory system is called SDLX and is used by professional translators at one of their branches in Maidenhead.

Other commercially-available memory-based translation tools are TRANSIT, from the German company STAR, Déjà Vu<sup>17</sup>, IBM TM2 and AlpNet's TSS (Translation Support System). For this study I have worked with the Trados package for several reasons. Apart from the fact that this software has become more popular among translators, perhaps because it has been better marketed than the others, the Translator's Workbench was the one that had a better press. Unlike the other translation memory tools, Trados' was the product that ranked the highest for most evaluators and reviewers. In fact, except for Trados' Translator's Workbench, not all the evaluators had the same opinion on the same products. For example, TRANSIT, a product which was released in May 1992 by the Swiss-based software firm STAR AG (Software-Translation-Artwork-Recording) received a good evaluation from Sabine Bell [13]. She concluded:

Once I had familiarised myself with the program, I enjoyed using it. The structure of the system is transparent, which facilitates the management of files and projects. The fact that a variety of source text formats can be used is a great advantage. Although some aspects of the program could be improved, it obviously has

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<sup>17</sup>Cf. <http://www.atril.com> for more information on the program specifications.

a lot of potential, especially since the hardware requirements are relatively easy to fulfil. The developers are working closely with the company's translators: they understand the requirements and aim to accommodate these in the program. [13, p. 6]

A few years later, another evaluator of the same program discovered more disadvantages than advantages in the program, as the following quotation indicates:

Commenting Star Transit would be a difficult job for me, because the occasional job I did with it required installing the program twice or three times and working with it was very frustrating. Maybe I'm denser than average, or maybe I *really* lacked time to explore the program and get familiar with it. [34, p. 1]

### 4.3 TRADOS' MultiTerm and Translator's Workbench

The "Translator's Workbench" software package also runs (optionally) the "Multiterm" terminological database. MultiTerm terminology databases are integrated into the Translator's Workbench environment but MultiTerm can be used as a standalone tool<sup>18</sup>. First of all, I enabled the "MultiTerm" software and worked with it independently. That is, I created the two terminology management databases. Afterwards, I exited "MultiTerm" and loaded the translation memory facility of the "Translator's Workbench". I created the database by translating source text sentences into Catalan. During my experimental work with the "Translator's Workbench" I also enabled the "MultiTerm" option. The net result was that both software packages worked together very successfully and interactively. For example, when one technical word appeared in the source text, I activated the MultiTerm option, which searched the word in the databases previously created.

#### 4.3.1 MultiTerm '95 Plus

##### Introduction to the system

TRADOS MultiTerm '95 Plus<sup>19</sup> is a terminology management system. The reasons for choosing this software for my experimental work rather than

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<sup>18</sup>TermWatch, the terminology management module included in Déjà Vu operates in an identical way.

<sup>19</sup>The full name of this terminology management system is TRADOS MultiTerm '95 Plus! but in this work the name will be shortened to MultiTerm.

any other program available on the market<sup>20</sup> are based on their potential usefulness in training future translators<sup>21</sup>.

### Features of MultiTerm

The main features of this terminological management system are the following:

1. MultiTerm is particularly helpful in **creating, managing, and presenting terminology**. Terminological creation, management and presentations are major problems for future translators, which trainees should become aware of and familiarise themselves with.
2. MultiTerm is based on **free-format text entries** for entering additional descriptive information, for instance definitions, contexts, examples, and usage notes, and can also store an unlimited number of entries. This facility is much appreciated by translators, who need to update their information permanently. This is yet another skill that students should be trained in.
3. MultiTerm is a **concept-oriented terminological database**. In other words, one entry always corresponds to one concept, that is, one language-independent abstraction of an idea. This means that an entry contains all the terms that describe the concept, together with any additional information associated with the concept (a definition, for instance)<sup>22</sup>.
4. For each concept, the user can specify terms in **up to 20 languages**. Since the concept-oriented approach means that all terms in an entry represent a single concept, the database can be searched in any language direction. Terms are therefore stored in what is called *index fields*, which can be optionally stored according to a user-defined sequence. This feature is particularly useful in this study because the

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<sup>20</sup>Another powerful CAT tool is NisusWriter from Nisus Software. Although it is not specifically written with the translator in mind, it does support spell checking in Spanish, German, French, Italian, and English. It also allows text of the various languages to be flagged as a particular language and the spell checker switches the dictionary in use automatically when encountering the various languages—language is essentially seen as just a custom “style”. More information <http://www.nisus-soft.com/>.

<sup>21</sup>MultiTerm is being used at some universities as the shell for compilation of databases. For example, as kindly reported by Dr. Federica Scarpa, the Scuola Superiore di Lingue Moderne per Interpreti e Traduttori at the Università degli studi di Trieste uses MultiTerm to set up a multilingual terminological database called TermIT.

<sup>22</sup>See appendix D for a list of the categories created for the different entries in the terminological database.

terminological database uses multilingual information. For example, together with Catalan and English, information in Spanish and, in a few cases, French have also been used because of the lexical similarities between Catalan, Spanish and French and the more extensive availability of Spanish dictionaries.

5. The search functions of the program allow the user to find the information he looks for very quickly. There are two important features: the *wildcard* and *fuzzy searches*. The former enables the user to include the symbol \* anywhere in the search term to find all terms ending in *ing*, for example. The latter allows the user to find terms even if the search criterion is transposed or misspelled. For example, fuzzy searching will find the entry "hand-tailored" even if you search for "tailred". Needless to say, this facility makes it easier for both students and translators to look up words in spite of spelling mistakes.
6. MultiTerm includes the **log function**, which allows the user to make a record of terms that were not found in the database. The terms are added to a list that can be used later during terminology research.
7. MultiTerm is fitted with **cross-references** to link entries with other entries. It keeps track of up to 10 entries to which the user can return after calling a series of cross-references.
8. The appearance of an entry can be fully adapted to the user's preferences via the **layout function**. Each item in the entry can have its own format.
9. The **DDE Interface** makes the data stored in the program available to other Windows applications. Special macros are provided for accessing MultiTerm from Windows. Users can even modify the predefined macros to better fit their needs, or use DDE to develop links to other Windows applications.
10. Its **import/export** is a powerful tool to exchange terminological information with other applications. MultiTerm has a *filter* function which allows the user to import only the information s/he wants to add to his database, or to export only the information that s/he wants. The import function supports sophisticated merging of terminological data, whereas the export function lets the user define the format to match the requirements of publishing programs or other databases.

This program has many more features<sup>23</sup> but the above are the ones which have been decisive in establishing MultiTerm as the software used for the experimental work of this dissertation.

### 4.3.2 The Translator's Workbench

#### Introduction to the system

The software package that was used for the present work was Translators Workbench, commercialised by Trados<sup>24</sup>. This program is a translation tool for PC use, comprising a text editor, a translation memory facility and a flexible terminology management database, MultiTerm 95 Plus!, which is also available as a separate package. There are also additional complements to Translators Workbench: Trados WinAlign, a program which allows us to recycle old documents by making them workbench-readable<sup>25</sup>, MultiTerm Dictionary, a dictionary network and finally, the S.-Tagger for FrameMaker/Interleaf, a conversion program which allows us to convert FrameMaker and Interleaf files comfortably into RTF format, translate and edit them, and then reconvert them into FrameMaker or Interleaf format. There is also the FTI filter program and TagEditor, two useful applications which extend the scope of the original program to the translation of websites. These features do not change the actual program described here, but they increase the scope of its application.

The minimum hardware requirements are a 486DX33 processor, at least 8 Mb RAM, a HiColor graphics card (at least 32,000 colours), a CD-ROM drive, Windows 95 or Windows NT. The installation of the software is very straightforward: copying the files into the desired directory makes the program instantly available.

#### Features of TRADOS' Translator's Workbench

This program is a powerful and flexible management tool of linguistic reference material. It offers quick access to previous translations not only at sentence and word level, but also at sentence part level, thus helping those

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<sup>23</sup>See MultiTerm '95 Plus User's Manual for more information on other features available.

<sup>24</sup>The full name of this program is TRADOS Translator's Workbench 2 but in this study the name will be shortened as Translator's Workbench.

<sup>25</sup>There are many other alignment algorithms for parallel corpora (text plus their translations), one of which is MultiConcord (further information on [121, pp. 206-220], [134] and [135]).



who want to be relieved from time-consuming and repetitive tasks<sup>26</sup>.

Once the program has been loaded, a whole list of translating features become available such as:

- Translation memory
- Fuzzy matching
- Active terminology recognition
- It also includes neural network technology for fast access to translation memory, support for most European languages, integration with WinWord 6.0 and WordPerfect for Windows 6.1
- Creation of bilingual concordances
- The MultiTerm for Windows is also integrated into the program, so existing terminology data can be easily accommodated

I will enumerate below those features which are particularly relevant to this study. Since the Fuzzy Match Searching facility is quite important to both the TRADOS Workbench TM software and to the experimentation part of this dissertation, further explanations have been developed below.

### Translation Memory

This is a program that provides a database in which SL sentences are stored together with their TL equivalents. This memory operates while the translator works and makes sure that no repeated term or phrase has to be keyed in twice. This feature also allows the user to perform fuzzy searches in the database to have instant reference to text segments that have already been translated. It can also manage additional data such as the client of the translation project, or the domain in which translation units were created.

The source sentences form the basis for a search for matching sentences within the Workbench database, i.e. its Translation Memory (the key element of this software). This database is created previously from previously translated texts with the corresponding ST/TT pairs bilingually aligned segment-by-segment. Where the program finds an identical match between a ST element of a paired TM segment (or translation unit (TU)), the corresponding TL segment is normally adopted as the "translation" of the text segment

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<sup>26</sup>TW normally looks up sentence/segments separated by paragraph markers but not "segments below sentence level". However, I am including the Concordance option, which can also look up sentence parts (see 185 for more information on the uses of the Conco-dancer).

in question, and is placed accordingly in the document opened in the word-processor<sup>27</sup>.

It should be pointed out that a powerful optional feature of the TM is its ability to create new segments that can be immediately stored in the TM together with its ST equivalent, to create a new TU. This enables a more efficient aided translation of subsequent similar (or identical) segments that often appear within the same text.

However, the search/matching algorithm in the translation memory has the added power of being able to locate, for any selected ST segment, a **similar** (but not identical) SL segment within the TU's. This is the so-called **fuzzy matching** (search) capability. This means that the translator (or the student, in this case) will be presented with one or more similar segments together with their translations. The student has then the choice of incorporating one of the latter into the document, for subsequent modification using the normal word-processing features, in order to create the "correct" translation, i.e. final TT segment or, at the very least, obtain a suggested translation from an approved previous translation of a specific TU.

The program also contains a glossary (not the MultiTerm terminology management system). It is empty when the translation memory is created and the student has to fill up. The purpose of this glossary is to develop in the students the habit of including it in their work since it is becoming common practice in translation agencies and companies to request one for each translation job. Students can either navigate the glossary, add, modify or delete a glossary entry. These facilities can be found in most terminology management tools. For example, figure 4.9 shows how the glossary entry "recording area", translated originally as "area de grabación", is going to be edited as "zona de grabación" in a TM system set up by a private translation company. The figure displays the number of entries (987) of the glossary. The differences at the level of display and presentation between MultiTerm and this program can be seen in this figure and previous figures.

Also, figure 4.10 shows how the multi-screen document interacts with the glossary and the latter may be called up.

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<sup>27</sup>Cf. appendix F and G for a complete view of the databases created using the program.

4.3. TRADOS' MULTITERM AND TRANSLATOR'S WORKBENCH101

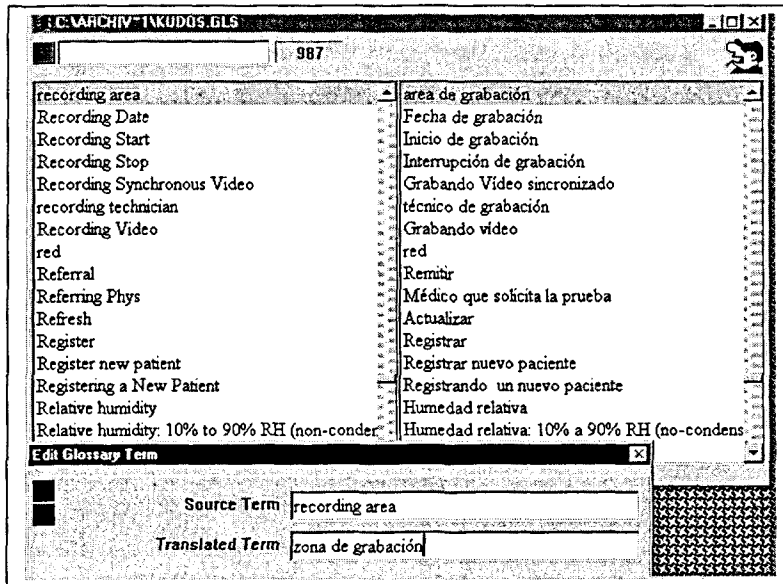


Figure 4.9: Edition of a glossary entry of most TM.

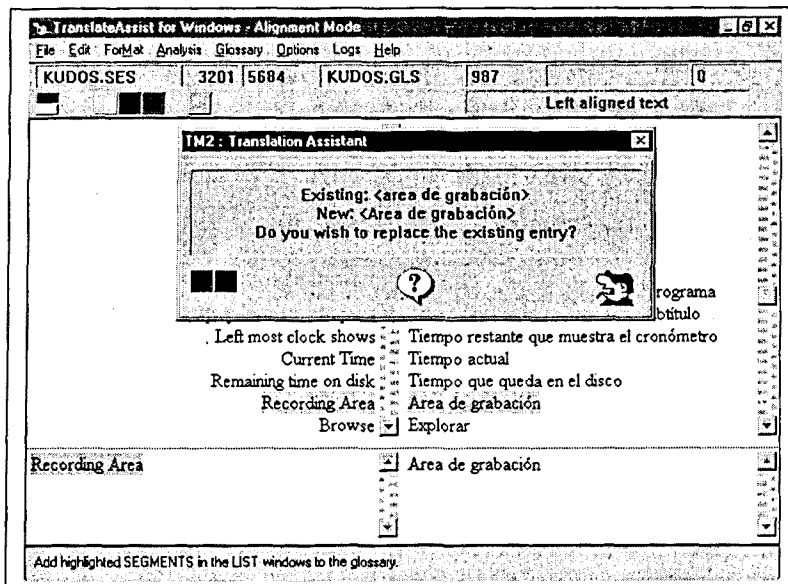


Figure 4.10: Interaction between the multi-screen document and the glossary.



### Fuzzy matching

This algorithm has the additional capability of **ranking** the proposed matches for each segment according to their degree of similarity, or “fuzziness” relative to the original, and also of visually indicating to the translator the differences between the “matched” SL segments “word-by-word”. In automatic mode the ranking information is used to select for insertion into the word-processor document the most favoured “translation” for each ST segment, to be the subject of subsequent post-editing.

For the purposes of this work it is not necessary to know anything about TRADOS fuzzy matching, except that it produces matches to natural language sentences (in English, in this case) that are **similar** to the originals, and that it ranks any multiple matches according to their percentage **fuzziness**<sup>28</sup>.

### Active terminology recognition

This is a feature that allows known terms to be stored in the database and be automatically highlighted by the program. Their translations can be pasted into the word processor very easily. This feature works with a fuzzy-matching algorithm, too. The fuzzy matching technology 4.3.2 gives the translator a chance to choose among alternative translations in addition to the one automatically suggested by the program. Terminology databases offer very quick and easy access, but like paper dictionaries, they are only a passive help: the translator has to perform a search to have a chance of finding a translation.

This means that compound words or morphologically modified forms are found even if they do not occur in the same form in the text to be translated. For example, if the student needs to translate the sentence “The ultimate MouseMan mouse that uses radio technology to communicate its position”, if there is an entry in the MultiTerm database containing the term “radio technology“, it will be found although the original sentence did not contain the term in this form, but only the word “radio” and “technology”.

The program provides then direct access to MultiTerm<sup>29</sup>. Once the terminology window displays the source term, its translation and any classifying attributes for each automatically recognised term appear. Translation from the terminology window can be copied to the word processor with a keystroke and by clicking on a term in the terminology window, the complete entry appears, showing related information like definitions, sources, and so on. In

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<sup>28</sup>The fuzzy match facility has been the subject of very little precise information. TRADOS have provided very few indications on how the neural network works. Some information may be obtained by looking up in TRADOS' User's Manual and [158, p. 53-56].

<sup>29</sup>Cf. section 4.3.1.

addition, in any text displayed by the program, the user can mark a term and look for it using either the fuzzy or the exact search method.

This feature enables the translator to search automatically for known terms and display their translations in the terminology window. The translator is spared the disappointment of fruitless searches, and at the same time translation consistency increases because the program points out known terms the translator might otherwise have overlooked.

### **Bilingual Concordance**

The concept of monolingual concordances is not new. Among other areas, it is used by FLT teachers and students to explain the meaning of a word by analysing its occurrence in real texts. The bilingual concordance utility is based on the same principle as its monolingual counterpart but, instead of analysing the occurrence of a word in a text or texts, the bilingual concordance analyses the occurrence of a translation in a text or texts.

The concordance output is determined in two stages: first the text or set of texts is prepared; and second the search and selection procedures are chosen so that the most useful information is displayed on the screen. In monolingual concordances, the texts are usually loaded from an existing database. Translator's Workbench's bilingual concordancer makes the user to produce his own database. And this is where this utility becomes useful for translator training, since it forces the student to translate the text in the first place rather than relying on existing databases.

As for the search and selection procedures in monolingual concordances, the user can perform a search at entire sentence level and also at sentence part level. The concordancer enables the user to do this by entering the word or words that need to be searched. Translator's Workbench's bilingual concordancer works with the same principle but it has additional useful features. The selection process is simplified by highlighting the part of the sentence that needs to be searched. It can create bilingual concordances from sentence segments, which means that it is possible to open all source and target-language sentences that contain the selected sentence segment. The bilingual concordance system allows fuzzy searches<sup>30</sup> for any part of a sentence. This means that a translation memory is not only a sentence database, but also a fast-growing collection of usage examples and a valuable complement to terminology databases. Instead of hours of research, the translator finds every previous occurrence of a phrase in a few seconds.

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<sup>30</sup>Cf. fuzzy algorithm on page 102.

In short, this software gives instant and flexible access to previous translation material at three levels:

- Sentence level and part-sentence level
- Similar sentences
- Terminological level, thanks to active terminology recognition in cooperation with MultiTerm

This software stores all linguistic data in what is called neural network. The translation memory operates in the background, while the translator works, to learn original sentences and their corresponding translations. In the process, these data are linked into the neural network. Later, the Workbench rapidly finds identical or similar sentences and automatically displays them as a working basis for creating a new translation. Thus, the program ensures that no sentence need to be translated twice. This feature is especially valuable for technical texts, where the repetition rate can be as high as 70%. For the human translator, it means being relieved of tedious or repetitive tasks so that he can focus on the creative part of the work<sup>31</sup>.

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<sup>31</sup>For more information on the software itself, read Chapter 3 in Whyman's unpublished dissertation [158, pp. 44-53].