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‘ Terminology – where to find it, and how to keep it’

1. Introduction

If one looks for connotations of ‘terminology’ in context, one may well find a negative example like this one, taken from the British National Corpus:

“Many readers, I suspect, will fall by the wayside as we descend into the realms of indigestible rhetorical terminology.”

This example reflects an attitude that sees a preoccupation with the more precise use of words as being unnecessarily pedantic. There are occasions when such a criticism is valid, because some people like to dress up simple ideas in difficult terminology in order to impress. However, one could also say that the attitude is rather typical of people who find their inability to understand certain subjects humiliating, and excuse themselves by blaming the language used.

2. Definitions

The Merriam Webster dictionary gives us the following definition of **terminology** and related terms:

ter.mi.nol.o.gy *n, pl -gies* [ML *terminus* term, expression (fr. L, boundary, limit) + E -o- + -logy] (1801) **1:** the technical or special terms used in a business, art, science, or special subject **2:** nomenclature as a field of study -- **ter.mi.no.log.i.cal** *adj* -- **ter.mi.no.log.i.cal.ly** *adv*

lex.i.col.o.gy n [F lexicologie, fr. lexico- (fr. LGk lexiko-, fr. lexikon) + -logie -logy] (ca. 1828): a branch of linguistics concerned with the signification and application of words

lex.i.cog.ra.phy n (1680) 1: the editing or making of a dictionary 2: the principles and practices of dictionary making

To complete these distinctions, we also have **terminography**, which is not yet found in dictionaries, but which is understood by experts to apply to the principles and practices of making terminology databases. In normal discussions, most people restrict themselves to discussing **lexicography** and **terminology**, and the distinctions between the two are best summed up in the table below, adapted from the POINTER report (1996).

TABLE 1.

	Lexicography	Terminology
Variety of language:		
General Language	YES	NO
Special Language	YES – as special purpose lexicography	YES
Subject matter:		
Broad areas of knowledge	YES	NO
Delimited domain	Ráre	YES
Use of classification system	NO	YES
Method of working:		
Word-based	YES	NO
Concept-based	Rare examples only	YES
Presentation to user:		
Alphabetical	YES	Yes (if reorganised)
Thesaurus-type structure	Rare	YES
Headword/entry term:		
Closed class	YES	NO
Open class	YES	YES
Presentation of entries:		
Polysemes/homonyms	Presented together	Presented separately
Synonyms in same entry	Present separately	Presented together
Orientation:		
Prescriptive	NO	Largely depending on domain - YES
Descriptive	YES	YES

For the purposes of the present paper we shall also restrict ourselves to these two terms.

3. The functions of terminology

Cabré (1998: 11) describes terminology in terms of the following functions it is expected to fulfill:

- For linguists, terminology is a part of the lexicon defined by subject matter and pragmatic usage
- For subject field specialists, terminology is the formal reflection of the conceptual organization of a special subject and a necessary medium of expression and professional communication
- For end-users (either direct or intermediary) terminology is a set of useful, practical communication units which are assessed according to criteria of economy, precision, and suitability
- For language planners, terminology is an area of a language requiring intervention in order to reaffirm its usefulness and survival and to ensure its continuity as a means of expression through modernization.

This means that the function of terminology for most people training as translators is likely to be considered from the point of view of the linguist, since most translator training establishments are run by academics from either the linguistic or literary spheres of the humanities. Standardized terminology work, on the other hand, is more often done by specialists, with or without the help of people from the humanities who have been trained in terminology and/or lexicography.

Official attitudes to producing terminology have a lot to do with the political importance given to language planning. This tends to vary considerably from country to country, and also from discipline to discipline. In Canada and Catalonia, where there are strong political reasons for maintaining the separate identity of 2 languages, English and French, and Catalan and Spanish, respectively, there are strong schools of terminology and the

process is financed by local political policy. Engineering is a discipline that has always required precise terminology, for the obvious reason that the wrong term can result in the wrong material or process being used, something which can lead to heavy financial loss. The best-known pioneer in terminology in this century was the Austrian engineer, Eugen Wüster (1898-1977).

Terminology management provides information at a variety of levels. At its most abstract, it can be seen as way of organizing knowledge about knowledge, or providing ontologies. Once organized into such systems, it can provide a structured overview of the subject for anyone approaching it for the first time and, as such, is useful to students and their teachers. Although people in the humanities are less insistent on this aspect of teaching, and are usually more open to alternative schemata and classifications, those from the more exact sciences usually make a point of introducing their students to a subject by explaining the meaning of the terms that will be used during the rest of the course. For example, an introduction to anatomy that obliges medical students to learn the names of the different parts of the body, usually by heart, is a sensible way to begin training as a doctor.

To those outside education, the most obvious use of terminology is that of providing standardized language for practical and economic reasons. Nowadays, when the global market has made it essential that there should be international agreement on the nature of goods to be exchanged, it is only natural that entities like the International Standards Organization (ISO) should insist on careful organization of terminology at a multi-lingual level.

There are those, of course, who will point out that, by systematizing our knowledge and providing too rigid an expression of it in language, we are controlling and regulating language and thought. This is true in some respects, as any philosopher will tell one. However, particularly since Popper (1934) pointed this out, scientific research has learnt

to cope with the limitations of its own language on thought. The fact that the number of terms in any area of research increases by the year is an indication that human thought can always go beyond language to seek new ideas. Language is not the fixed entity that so many people believe it to be. Words change their meaning, sometimes in a few years, and, although most of us can think of examples of words in social and cultural use that have changed, or been (re-) invented in the last few years, the truth is that this phenomenon is even more noticeable in scientific areas.

The limitations to the systematization of knowledge, and the language that describes it, is a point that should not be forgotten in our search for terminological solutions. Knowledge is less than linear in nature and, although the hierarchical structures to be found in classical thesauri have their uses, they are less than satisfactory as a description of a field of knowledge. Several people now argue for a more multi-dimensional structure of knowledge, and the various types of structure are well demonstrated in Wright (1997, Meyer et al (1997), Kageura (1997), Bowker (1996 & 1997) and Faber (2001). Temmermann (2000) also points out that the world and the human mind are interdependent, rather than separate entities, which further demonstrates the multi-dimensional nature of knowledge.

4. Specialization and Terminology

The 'specialist' is anyone who uses language to discuss subjects not considered of general interest with his/her peers, or with a view to applying scientific or technical knowledge to everyday life and making it accessible for use, in the education of other specialists, and at a lower level, in the education of the general public. When specialists make a new discovery, they create a new concept to deal with this, and later on find a new term with which to describe it. With time a newer discovery will be made, there will be a change in the concept, but the term may simply be extended to cover this, or qualified with an extra adjective or some other linguistic device. Not all specialists are

particularly worried about their choice of term, provided the other specialists agree to it and understand the related concept.

The essential thing for anyone writing specialized texts is that they understand what they are writing about. It also follows that translators should have a reasonable understanding of what is being discussed, particularly if there is no established bi-lingual terminology to assist them. Since the latter condition frequently does not hold, many people believe the ideal candidate for a translator is an experienced, bilingual graduate specialist in the scientific or technical field, with or without a post-graduate course in translation¹.

Of course, as is well known, this ideal is a rarity and that the average candidate to do a technical translation is a graduate in modern languages, applied languages and/or translation. These people are frequently advised during and after their training to specialize. The question that most trainers find hard to answer is ‘how?’

4.1 The Humanist Tradition and Terminology

Part of the problem with teaching translators to specialize is the complex reaction of the non-scientist to the world of science and technology. Most people in the humanities first opted to study in this area because of a mixture of dislike, fear and ignorance in relation to science and technology. How often have I heard my students say they chose the humanities because they did not like (could not do?) mathematics! There is also a general tendency to see a scientist interested in the humanities as a sensible and sensitive person. However, a humanist interested in science is considered either an all-rounder, or, more usually, a dilettante. Science fiction, until recently at least, was traditionally despised, yet Aldous Huxley’s *Brave New World* predicted a world now too possible from ideas taken from his scientist brother and friends.

¹ For example, the Gulbenkian Foundation sponsors the translation of scientific work into Portuguese but contracts university experts in the discipline to do it.

Then there are the prejudices against terminology that can be found within the more specific areas of the traditional modern languages academic. On the one hand, the attitudes of linguists have not changed much in relation to the treatment of lexicography – let alone terminology - since Bloomfield (1936) declared the lexicon too unruly an area for useful categorization to be possible, and suggested it was the realm of the anthropologist and sociologist rather than the linguist. Nowadays there is more recognition of the importance of the lexicon in recent lexico-grammatical and cognitive linguistic theory, which has led to projects like Framenet, based on Fillmore's frame semantics (see Fillmore 1998). However, this still works at the level of general language and not terminology.

The literary mind, on the other hand, regards itself as the 'master' of language as a means of expression about our loves and lives. Beyond this, they may recognize the power of language as a form of communication in the media, advertising, and areas in which there is an interest in showing how we use and manipulate general language for all kinds of purposes. However, too often the literary / linguistic tradition fails to consider even its own special language as terminology. The result of this is that many humanists favour the 'generalist' attitude towards training translators.

Traditional 'modern languages' courses tend to be based on certain assumptions. One of these assumptions is that in order to do good translation one needs a sound knowledge of the language and culture in which it is spoken. This, most of us would agree, is true. However, the accompanying assumption that literary language and translation produce the most difficult problems, and that, therefore, if a student can translate a literary text, he/she can translate anything, is false, as any person so trained will tell you when faced with the texts that have to be translated in the real world. The excuse often made, that no translation course can cover specialized subjects in sufficient detail to be useful, and that, therefore, specialization can only come with work experience, is also false.

Most universities nowadays will supply some sort of language teaching (particularly in English) of the kind known as Languages for Special Purposes (LSP). More often than not it is provided for students learning a language as a tool for studying a specific subject, like engineering, medicine, or computers. These courses usually consist of general language teaching using texts and vocabulary in the area of specialization. On a lesser scale and in more forward looking courses, mainstream students of languages may be expected to study the genre, style and vocabulary usage of more specialized texts.

Undergraduate Translation or Applied languages courses are usually more overtly practical than the traditional modern language courses in that they give priority to contemporary use of language, and contemporary culture and history. They also often provide introductions to subjects like economics and law, and provide plenty of practical teaching in technical and scientific translation. However, as a result, they are often lamentably short on theory and general culture, and the problem of what to specialize in still exists.

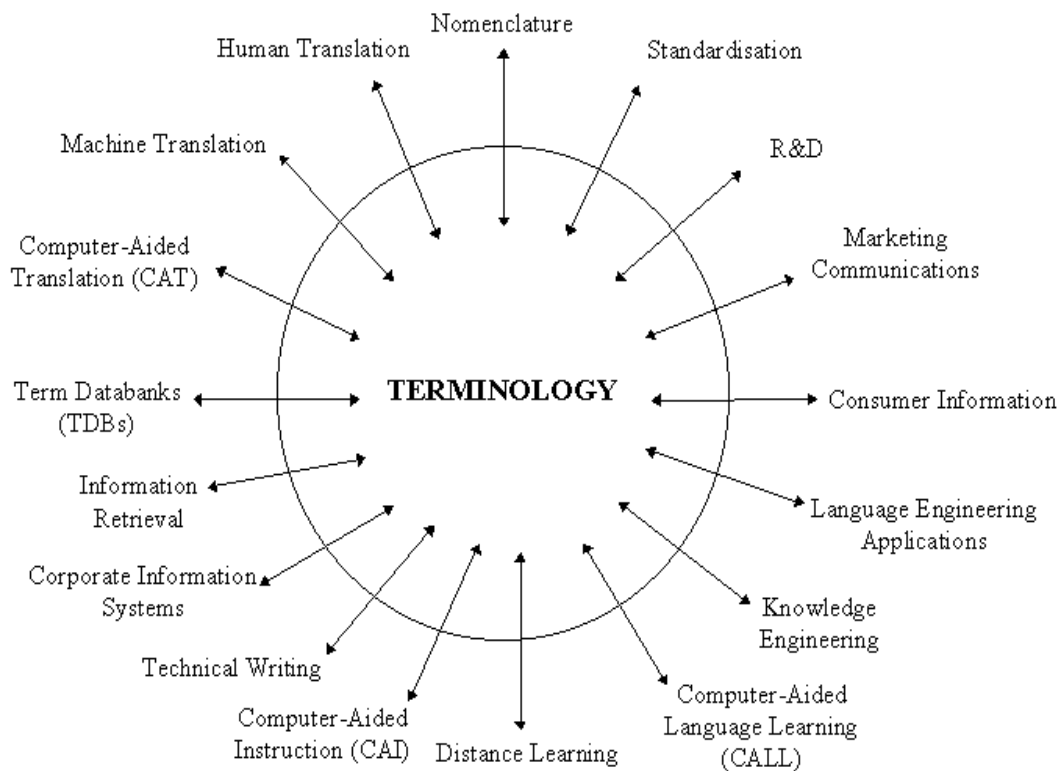
4.2 The Translation Market and Specialization

The need for terminology affects a wide variety of areas, as can be seen from Figure 1 below, taken from the POINTER report. The scope of the problems demonstrated by this diagram shows that terminology affects more than just translation, and that translators need to be aware of a world of translation related technology that goes well beyond being able to use a simple word processor.

The market situation for translators reflects this, and one will usually find that international organizations and multi-nationals advertise for experienced translators who have gained the necessary specialization through work, and who have been trained to either create or use terminological databases and translation memories. Medium and small enterprises tend to require translators who have other, more secretarial-type,

qualifications, and expect the translator to pick up the necessary specialist knowledge ‘on the job’.

FIGURE 1.



Translation agencies of the more successful variety will find that their future will depend on the quality of their translators and the ability to get work that allows them to specialize and benefit from translation software, as well as the other possibilities of information retrieval now available. Those agencies, or translators, that have to accept anything that comes along will not be able to work competitively in a world where specialization is increasingly encouraged and where standards are rising.

The general public – which includes a large number of people in industry and commerce - either expects all kinds of translation to be done fast, usually with the help, at most, of a general dictionary², or, particularly when they find that this produces a less than satisfactory solution, contracts a specialist who speaks languages to do it.

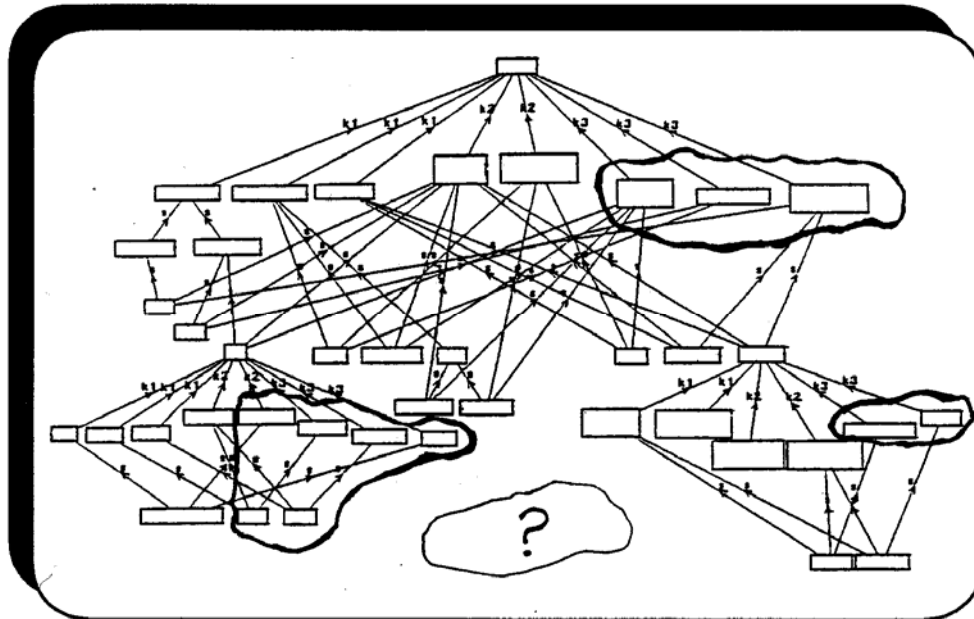
How does the translator react to such attitudes? Not many can cope with the eclectic position of Catriona Picken (in Somers: 1996) who, as a professional translator, relishes the variety of texts that come her way. Most translators like to specialize, if nothing else because once the initial work is done, the translation work becomes easier and more profitable. Many translators just have to take what they can get – especially young professionals. It is ironic that the least qualified professional is more often than not faced with situations where they are often ‘flying blind’, with little knowledge of the subject they are dealing with, and minimal support from their clients.

The position of translators and terminology is difficult, as Wright & Wright (1997: 148-9) point out. What they choose to call ‘Translator-terminologists’ are not subject-field experts, and they may even have difficulty determining the field the text actually belongs to. In Figure 2 (ibid: 149), they show how a multi-dimensional concept field can be designed, and how the translator-terminologist tends to focus on only one small, vaguely defined area without comprehending the whole, or simply misses the area completely. As they say, more often than not ‘available research materials in both the target and the source language are inadequate, they lack access to subject-field specialists and, due to short delivery deadlines, they lack the time to pursue extensive (or even cursory) research activity’. Besides this, ‘even when information is available, they lack time to create extensive, thoroughly documented terminological entries’. This is very true, and reinforces the argument that terminology work is something that needs to be done in a professional way. For this, it is not enough for the universities to train people – the world

² Several of my students doing ‘estágio’ work have found this attitude to be prevalent, even in the offices of multi-nationals, and they often have to bring their own reference material to work.

in general must be prepared to pay them for the necessary, but time-consuming, expert work that has to be done.

FIGURE 2



From: Wright & Wright (1997: 149).

4.3 Training for a Specialization

In the meantime, what can be done to train translators for specialization? Introductory courses to economics, law, and other subjects certainly help, but they do not provide more than a skeletal system of categorization. When translators are then faced with normal texts in the area of economics and law, they will still need to consult specialists, or will find that specialists are still preferred for the work in hand anyhow. Most of the translators in the EC legal units are trained lawyers.

Most serious translation curricula offer classes in scientific and technical translation. Such classes usually deal with a variety of different areas, and a teacher may spend some time on, say, medicine, biotechnology, and mechanical engineering. But when the

translator is later confronted with texts from on textile machinery, dairy products, or regulations on cats, the only lesson they will have learnt - one hopes - is that each text needs special treatment. The specific smattering of terms they have learnt for any one area is of little use on its own.

So how does one train someone to specialize? There seem to be only two perfect solutions: either the expert becomes a translator - and we have already said that this rarely happens - or the translator becomes an expert on the subject, something that some translators do, given the right circumstances.

The alternatives to these more extreme solutions for the translator are, either to get by with use of general and specialized dictionaries, glossaries and Luck – the solution of the past; or to acquire an intelligent non-expert knowledge of the subject and rely on expert help with more difficult items – the option of the conscientious translator; or to work with the help of reliable specialized databases and corpora – already possible in some areas, and the aim of the future.

One can train people for all of these options, but the latter two require more formal preparation than the first. One needs to teach students how to acquire knowledge, choose and approach their experts, recognize databases and other information as being reliable, and how to use and extract information from corpora. This can be done at a more elementary level in undergraduate work, and involve more complex research for the post-graduate.

5. Where to Find Knowledge, Information and Terminology

Cabré (1998: 119) suggests the following sources for terminology: general language dictionaries, encyclopedias, general science and technology dictionaries, specialized dictionaries, specialized visual dictionaries, lexicons and vocabularies arranged by subject matter, but without definitions, and terminological databases. The emphasis of

this list is on finding terms, schemata, diagrams and other forms of information that will help the terminologist in the task of constructing a conceptual system and finding the terms that represent the concepts. However, one must remember that this book was originally written in Spanish in 1992 and that the author was not obliged, at the time, to realize that the Internet would bring a certain revolution to the process of retrieving knowledge.

It is obvious that all the reference material that Cabré refers to is extremely useful, but I would suggest that the most important point that should be made to anyone embarking on translating specialized text is that the best way to do so is to acquire concepts – or knowledge, rather than just words or terms – or only partly understood information.

It may seem a little idealistic in a world where so much translation is expected for the day before yesterday, but I believe that, as a teacher, one should always encourage one's students to find knowledge, rather than information, largely because knowledge is what makes life interesting. I therefore encourage my students to always try and find out as much as possible about the subject of the text they are translating. The Internet now provides us with so much free information that such an objective is no longer so difficult or as expensive as in the past, when buying books on a particular subject each time one did a translation would have been prohibitive.

Let us look at a couple of examples, taken at random as I was preparing this paper. First I chose to look for 'hydraulic engineering' and started by going to the Encyclopedia Britannica at <http://www.britannica.com>. A general article gave me an outline of the subject, and then led me to the Edinburgh Virtual library of engineering and to several articles and special journals on the subject. Then I asked Google to find me 'diabetes' and soon found my way to <http://www.diabetes.org> where I found all kinds of information, from general support for families to clinical advice for doctors, all very useful if I were to have translate texts in this area.

Apart from the possibility of acquiring both knowledge and information about the subject, and also about how texts on this type of information are written and formalized, there are plenty of sources of terminological information on the Web and, unlike the books Cabré referred to, much of it is accessible and free. Some of it comes from approved sources, like EURODICAUTOM at <http://eurodic.ip.lu/cgi-bin/edicbin/EuroDicWWW.pl> or from reputable web sites like <http://www.uwasa.fi/comm/termino/>, <http://www.yourdictionary.com/>, <http://www.les.aston.ac.uk/extdic.html> and others, maintained by universities, translators and others, which supply links to a wide variety of dictionaries in several languages, as well as to glossaries of all kinds, from official glossaries like that on Astrophysics at <http://www.cea.berkeley.edu/html/GLOSSARY.html>, commercial glossaries such as the Art dictionary at <http://www.artlex.com/>, and ‘fun’ ones such as Theresa’s food page at <http://www.geocities.com/NapaValley/6562/frustration.html>.

5.1 Using Corpora

Other sources of useful information are the various corpora that can be consulted. Corpora are collections of texts in electronic form that can be concordanced, a process that extracts all examples of a chosen word in context from these texts in a way that will allow one to study and understand how that word or phrase combines with other words in text. There are large general reference corpora and smaller sub-corpora of special genres, and then there are special purpose corpora composed of texts on a particular subject.

Examples of the large corpora are the British National Corpus (BNC) (about 400 million words) which allows one to concordance up to 50 examples free, from <http://info.ox.ac.uk/bnc/corpora.html> and the Portuguese corpus, CETEMPÚBLICO (about 180 million words), at <http://www.portugues.mct.pt>, that allows one to concordance freely. The Real Academia Española is preparing corpora to consult at <http://www.rae.es/interno/cordenet.html> but it does not yet appear to be ready. There are

plenty of other more specialized corpora available for research at the ELRA site at <http://www.icp.grenet.fr/ELRA/home.html>. Besides this, there are projects, like WebCorp at the University of Liverpool - <http://www.webcorp.org.uk/webcorp.html>, the objective of which is to use the entire Internet as a consultable corpus.

The translator will also find a lot of use for parallel corpora, or corpora in which originals and their translations are aligned side by side for easy consultation. An example of this is the English/Portuguese COMPARA corpus, to be found at <http://www.portugues.mct.pt>, which consists of literary texts. The European Commission publishes a large number of its texts in most Community languages and there are plenty of bi- or multi-lingual sites on the Web that can be used to make parallel corpora. One can also use one's own texts and translations for this effect.

Comparable corpora³ – or bi or multi-lingual corpora of texts in similar genres and in the same subject area – are also most useful for finding terminology, and for studying the correct stylistic conventions needed. Much of this type of work can be done by the translators themselves. In Maia (1997) I described how I encouraged students to not only look for texts from which to study special subjects and in which to search for terminology, but also how they collected these texts in electronic form into 'do-it-yourself', specialized mini-corpora. Vartantola (2000) chose the term 'disposable' corpora for a similar process, because it drew attention to the fact that one should not infringe copyright by doing this, and dispose of the texts after one has used them.

In order to create a specialized corpus, one should start by collecting those texts one finds more accessible – like articles in encyclopedias, at <http://www.britannica.com>, for example, or web pages on the subject, and then move on to 'Introduction to' type books and texts that develop the subject in more detail. As one goes deeper into the subject one

³ Please note that not everyone makes the same distinctions made here between 'comparable' and 'parallel' corpora. Such people will refer to the 'parallel' corpora described here as 'aligned', and the 'comparable' corpora as 'parallel'.

will find standardized texts, and finally come to the texts written by experts for experts. A well-selected corpus of this kind will be most useful as a source of information for the translator.

6. Where to keep information, knowledge and terminology resources

I find that students enjoy the process of finding the dictionaries, glossaries, texts and other information that I now expect them to search for as part of the translation process. However, one still has to make sure that they organize the material and record their sources, and, if one persists, they soon become experts at saving it for present, and future, occasions. My advice to anyone who follows up suggestions made in this paper is to do the same.

In the future, translators will increasingly need to work with machine translation, translation software, terminology banks and on-line resources of many different kinds. Anyone who knows how translation software works will understand that a lot of the information retrieved in the way I suggest can be stored in the translation memories and terminological databases of software like DÉJÀ VU, SDLX, TRADOS and TRANSIT. Storing texts to make corpora is easy enough on any PC, and concordancers like Wordsmith, Microconcord, Paraconc, and Multiconcord are not prohibitively expensive.

Several translator curricula teach students how to use information technology (IT), but do not often integrate it into the translation and terminology teaching process. My argument is that, by integrating IT into this process, the relevance of the one to the other becomes clearer, and our future translators can only benefit from this more coordinated approach.

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