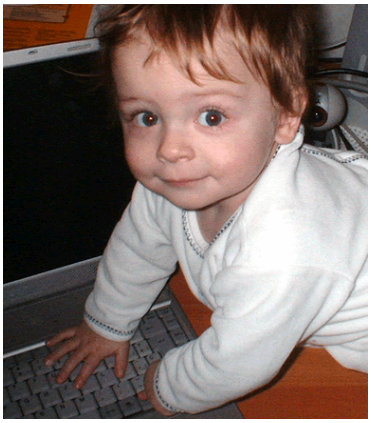
Translation Technology and its Teaching



Edited by
Anthony Pym, Alexander Perekrestenko
& Bram Starink

Intercultural Studies Group
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Foreword

More people than ever are being trained to translate. However, the most dynamic sector of the labor market requires more than mere translation. The demand is increasingly for professional competence in a range of new technologies. Translators now need professional competence in the use of programs for translation memories, terminology management, sometimes content management, and increasingly the integration of various forms of automatic or semi-automatic translation. At the same time, the use of these technologies is being associated, rightly or wrongly, with the development of what is known as the "localization industry". Faced with these new technologies, and with the new terms, many of the institutions that traditionally train translators are asking how, and to what extent, the existing curricula need be changed.

The papers brought together in this volume seek to address this question in various ways. All have been drawn from various activities organized by the Intercultural Studies Group in recent years.

The first papers seek to give a general background to the recent developments in translation technology. The paper on "Technology and Translation", by José Ramón Biau Gil and Anthony Pym, was first written as a chapter of a university-level coursebook in translation, to be published in Italy. Its aim is not only to introduce the range of new tools available, but to encourage critical thought about the use of electronic technologies. The second paper in this introductory section, Bert Esselink's "The Evolution of Localization", was first published in 2003 and has been updated for this volume. It tells a similar story of technology, but this time from within the industry. Esselink traces the expansion of the localization industry from a narrow concern with software to a major way of thinking about the marketing of products across borders.

Section two of this volume is drawn from the online conference on Localization and Translator Training, which took place on the ITIT list (Innovations in Translator Training) from 19 to 29 November 2003, with about 530 participants. The conference was based on number of position papers written by representatives of some of the main translator-training institutions. In most cases, those papers were responses to a brief questionnaire designed to explore the relations between the terms "translation" and "localization" with specific reference to training needs. The replies reproduced here are by Minako O'Hagan from Dublin City University in Ireland, Bob Clark, Jo Drugan, Tony Hartley and Daming Wu from the University of Leeds, UK, and Patrick Drouin from the University of Montreal. The online discussions that followed those papers can be seen on the ITIT list (http://groups.yahoo.com/group/itit/). What we present here are summaries of some of the main topics, written up by students in the Tarragona PhD program

in Translation and Intercultural Studies: “Localization and Translator training”, “Is localization just technology?”, “Finding qualified trainers”, and “What is XML and how do we teach it?”. In most cases those discussions produce answers, as well as interesting questions.

The third section of this volume mainly comprises papers from the symposium Technology and Translation, which took place in Tarragona on 28 and 29 November 2003. The symposium was designed to complement the online conference, extending the issue of new technologies in several directions. Frank Austermühl’s paper “Training Translators to Localize” explains in some detail the rationale behind the various types and levels of training that he used at the School of Applied Linguistics and Cultural Studies at Germersheim (University of Mainz) in Germany (Austermühl has since moved to the University of Auckland in New Zealand). Hannu Jaatinen and Riitta Jääskeläinen report on the project Computing for Language Careers, carried out at the Savonlinna School of Translation Studies in Finland. José Ramón Biau Gil reports on the teaching electronic tools for translators in a 100% online training environment, based on his experience in the online courses organized in Tarragona. Ignacio García, from the University of Western Sydney in Australia, looks at the way translators assess translation-memory programs on one of the profession’s main discussion lists. Andrés Salter Iglesias, of the Universidad de Vigo, Spain, considers the development of Internet telephony and the way it has helped change the translation profession. The final paper in the volume is a consideration of some of the more practical problems encountered in the teaching situation.

Acknowledgements

The work on this book has been done by many different hands. Our special thanks go to the PhD students who pre-edited most of the texts, produced abstracts, and summarized the discussions: Anna Loguinova, Carlo Marzocchi, Conceição Bravo, Esther Torres, Graciela Calderón, Isabel Chumbo, Kristina Mullamaa, Lung-Jan Chan, Marta Rosas, Natasa Pavlovic, Olga Núñez Piñeiro, Sandra Poupaud and Vanessa Enríquez.

Our thanks also go to the Diputació de Tarragona, which helped fund the symposium on Translation and Technology.

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The Background of Translation Technology

Technology and translation
(a pedagogical overview)

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Abstract. *Recent decades have seen the work of translators shift into several new dimensions, mainly due to technological advances and the process of globalization. The dramatic increase in the information to be translated, along with the availability of translation-memory tools, has led to changes both in the translator's work processes and in relations with clients. This text presents an overview of these developments, looking at the principles of translation memories, the non-linearity of the information objects translators work on, the corresponding concept of "content", the rise of content management, the use of localization tools, and the role of machine translation. While it is agreed that translation technologies may increase consistency and allow translators to focus their best efforts where they are most needed, the many possible disadvantages include high costs in terms of financial outlay and learning curves, the deepening of divisions within the labor market, and the conceptual restriction of translation to narrow text-replacement activities It is concluded that the solution to these problems lies in developing greater control over technology.*[*]

Technology extends human capacities. The monkey uses a stick to get a banana, and that stick is technology, in this case a simple tool. More general technologies are collections of tools. Some of them affect our communications, and thus translation.

The use of books rather than scrolls, for example, made it easier to retrieve and cross-reference texts. Concordances were written for complex texts like the Bible, and translations thus had to render the whole text, not just isolated phrases so that the references would work. Similarly, the move from parchment to paper, which was generally cheaper and more transportable, meant that more written copies were made, revised and distributed.

[*] This paper was written within the frame of the research project "Evaluación de medios de aprendizaje a distancia en la formación avanzada de traductores" (BFF-2002-03050), Ministerio de Ciencia y Tecnología, Madrid.

And since written culture was more easily re-written, translations were commonly re-translated. Not by chance, the use of paper coincided with the translation schools in Baghdad in the ninth century and Toledo in the thirteenth. Or again, the use of print technology from the fifteenth century supported the ideal of the definitive text, hence the definitive translation, and thus notions of equivalence as a relation between stable, fixed texts.

What might we say now that our key technologies are electronic? Texts on the web are constantly being updated, as is our software. We are sometimes called on to render no more than the updates or adaptations. Our translations might thus be expected to move away from the ideal of equivalence between fixed texts, becoming more like one set of revisions among many. In the fields of electronic technologies, translators are less commonly employed to translate whole texts, as one did for the books with concordances. Translation, like general text production, becomes more like work with databases, glossaries, and a set of electronic tools, rather than on complete definitive source texts.

Here we shall be looking at a series of electronic tools that extend human capacities in certain ways. These tools fundamentally affect 1) communication (the ways translators communicate with clients, authors, and other translators), 2) memory (how much information we can retrieve, and how fast), and 3) texts (how texts now become temporary arrangements of content). Of all the tools, the ones specifically designed to assist translators are undoubtedly those concerning memory. But we shall see that electronic technologies affect all aspects of the translator's work.

Translator-client communications

In our digital age, electronic formats concern not just our texts, but also our communications with clients and other translators. Thanks to the Internet, professionals from all over the world can be in regular contact by email or various forms of instant messaging. Work can be sent and received electronically, across national and cultural borders. This has several consequences.

First, in theory, you can work for clients anywhere in the world. The market for translations need not be your city or your country. A source text received at 5 pm in Tarragona can be sent to a translator in New Zealand, who will return the translation before 9 am the following morning, Tarragona time. Time zones can thus be used creatively, and work can thus come from companies that are very far away. All you have to do is list your name, language combinations and areas of specialization on one of the many web sites that aim to put translators and clients in touch with each other. One would expect this process to lead to a situation where the fees paid for translations will become virtually the same all over the world, in keeping with theories of a global market. This, however, is very far from happening.

Translation is still a service that depends on a high degree of trust between the translator and the client. Little constant high-paid work will come from unseen clients; the fees paid in different countries still vary widely; the best contacts are probably still the ones made face-to-face and by word of mouth.

A second consequence of electronic communications is the increased security risk. Translators quite often work on material that is not in the public domain, and this is indeed one of the reasons why relations of trust are so important. When sending and receiving files, you will have to learn various forms of zipping, secure FTP, or other company-specific forms of encoding, with all their corresponding passwords.

A third consequence is that electronic communications make it relatively easy to distribute very large translation jobs between various intermediaries. The client may want to market their product in 15 European languages. They hire a marketing company, which hires a language-service provider, which hires a series of brokers for each language, who give the work to a series of translation companies, who pass the texts on to translators, often freelancers. In this kind of system, the client may be paying as much as four times what the actual translators are receiving per translated page. But each link in the chain is revising, coordinating and producing the various translation products, adding value as they go. This means the text the translator produces is commonly not the same text as the one actually used, and there can thus be little question of copyright over the translator's work. It also means that translators are sometimes very far removed from the end client and the overall context of the texts they work on. Translators in projects like software localization quite often see no more than lists of phrases, along with glossaries that are to be respected. The resulting work can be quite isolating and dehumanizing.

Electronic communications have also been used to enhance communication between translators, especially through Internet forums for professional translators. These are usually classified by topics and/or language pairs. Some may be open, in others participation is restricted to registered members. The traffic (number of emails) in each group varies from a few emails a month to hundreds a day. In these forums translators are very willing to exchange advice, give tips, and generally discuss their work. Simply by reading the posted messages, students and novice translators can learn about translation and see the kind of support that professionals give each other. Discussion lists for professionals usually have their own communication guidelines, and so new participants see a specific way of interacting among professionals. For example, when asking about terminology, professional translators usually send a short message in which they give the term, some context, suggested translations and the consulted sources. This model gives valuable hints about terminology mining and teamwork skills. Or again, by reading messages about a specific computer tool, novice translators often discover that the program is in constant

evolution and has functions they would have otherwise overlooked. These forums thus build a valuable bridge between students and the professional world. They also put paid to the stereotype of the professional translator somehow isolated behind a wall of dusty dictionaries.

Translation memories

Translation memories (TMs) are programs that create databases of source-text and target-text segments in such a way that the paired segments can be re-used. These tools are invaluable aids for the translation of any text that has a high degree of repeated terms and phrases, as is the case with user manuals, computer products and versions of the same document (website updates). In some sectors, the use of translation memories tools has speeded up the translation process and cheapened costs, and this has led to greater demands for translation services. The memories do not put translators out of work; they ideally do the boring routine parts of translation for us.

Translation memory tools re-use previous translations by dividing the source text (made up of one or several files in electronic format) into segments, which translators translate one-by-one in the traditional way. These segments (usually sentences or even phrases) are then sent to a built-in database. When there is a new source segment equal or similar to one already translated, the memory retrieves the previous translation from the database.

An example of the Trados Workbench translation memory suite can be seen in Figure 1. Here we are translating the segment “Restart your notebook” (highlighted in gray); the memory has proposed “Apague su ordenador portátil” as a translation, based on the translation of a previous segment (in fact the one translated just three segments earlier). But “apague” means “turn off”, and here we need “restart”. This is where translators either type a new target sentence or modify the result from the memory database. In this case, we would accept the suggested phrase but change “apague” to “reinicie” (restart). We do not have to rewrite the rest of the phrase.

At the top of the screenshot we see that Trados Workbench has highlighted the differences between each segment and reminds us about the language combination with a flag system. With Trados, we can translate Word documents using the Word itself, but files with other formats need to be translated using specific built-in translation environments.

The platform used by most other translation memory suites (DéjàVu, SDLX, Star Transit) is quite different. Figure 2 shows the user interface of DéjàVu X. Here we have the source text in the left column and the translation in the right one. The suggestions made by the translation memory are in the bottom right corner of the screen. In this system we do not see the document layout, since all the formatting is represented by the bracketed

numbers. Formatting is thus protected. This means that translators cannot alter it by mistake. It also means they cannot edit it consciously.

Translation memories change the way translators work. If you are provided with a memory database, you are usually expected to follow the terminology and phraseology of the segment pairs included in that database, rather than write the text using your own terminological decisions and style. Further, translation memories enable several translators and revisers to participate in the production of the same translation. While this is needed to meet industry deadlines, it may lead to a translation with no cohesive style, made up of a set of sentences put together. The result can read like a "sentence salad" (cf. Bédard 2000).

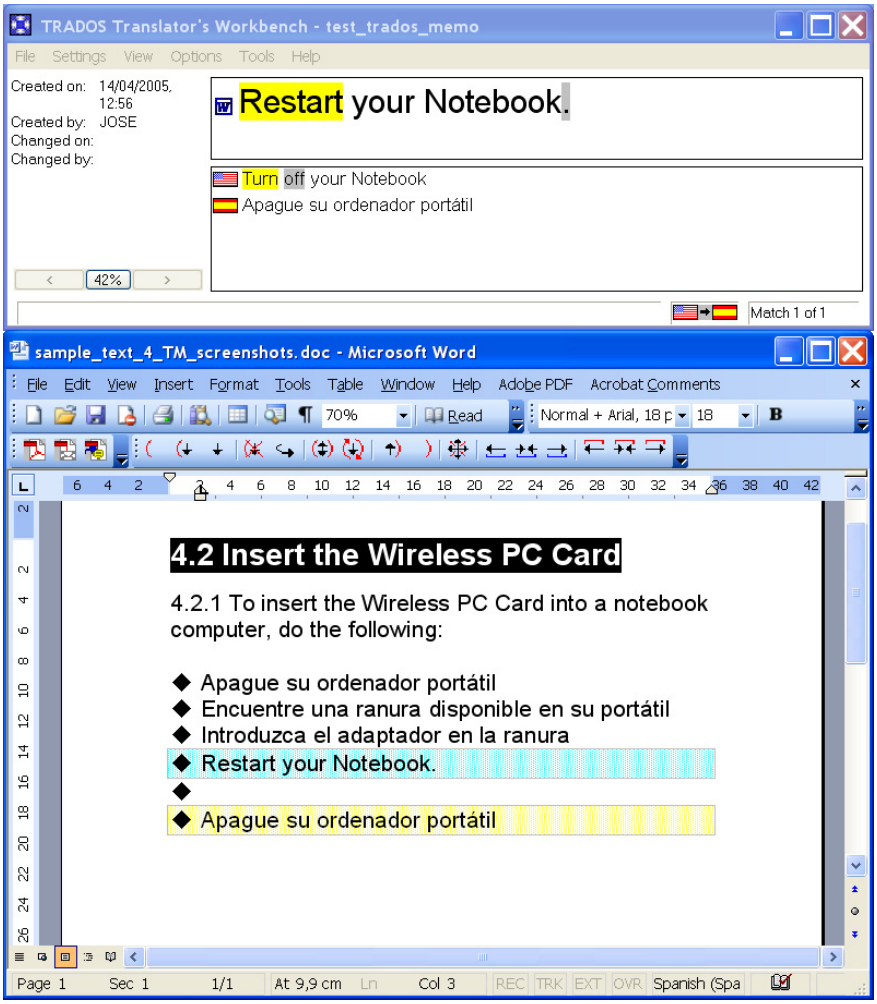

Figure 1. Screenshot of Trados and MS Word

The possibility of re-using previous translations means that clients ask translators to work with TM systems and then reduce the translator's fees. The more exact and fuzzy matches there are (equal and similar segments already translated and included in the database), the less they pay. This encourages translators to work fast and often uncritically with the previously translated segments, with a corresponding decline in quality. When higher-quality work is required, special emphasis must be put on revising the outputs of translation-memory tools.

An associated complication of translation memory software is the ownership of the databases. If you sell your translation, should you also sell the database of matching segments that you have created while doing the translation? Should you sell that for an added fee? Then again, if you have used the work of previous translators by importing a database (or receiving one from your client), can we say that the translation is really all yours to sell? These are ethical questions that escape the parameters of traditional copyright agreements. The possible legal frameworks vary from country to country (cf. Megale 2004). In practice, however, translators receive and deliver databases without paying or charging fees, thus according effective ownership to the clients or language-service providers they work with. At the same time, most translators are used to keeping copies of the databases, or integrating them into their own. To our knowledge, no law has yet been used against them.

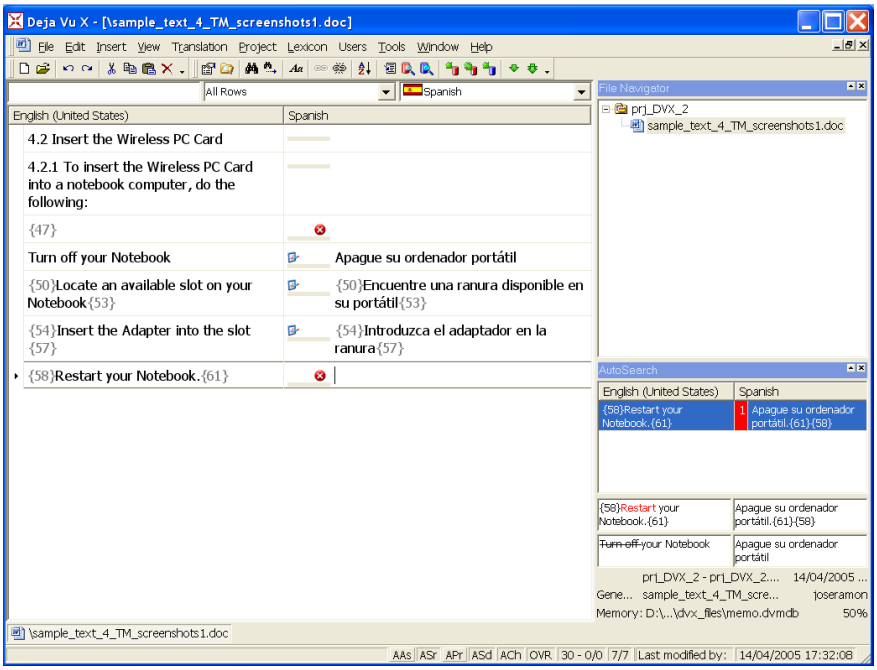

Figure 2. Screenshot of DéjàVu X

This practice, though, will almost certainly die out with the use of the online memories. This system is highly appreciated by clients, since their texts and memory databases remain on a secure server rather than being copied and scattered to translators' personal computers all over the world. Moreover, the owner of the database server (the client or language vendor, never the freelance translator) is the only owner of the memory, as there are no other copies. This means that when these technologies become widespread, translators will not have access to their own previous translations, and project managers will be the only masters of the reference materials translators have access to.

The industrial applications of translation memory tools are based on the idea that translation is a word-replacement activity. On the other hand, translation theories since the 1980s have tended to see translators as communicators whose duties go beyond the replacement of source-text words; translators are employed to provide meaningful communication. Translation memories make this difficult. Indeed, they move translators back to the linguistic equivalence paradigms of the 1960s. Worse, now that texts commonly comprise not only written words but also images, videos and layout (think of any website), translation requires a division of labor. Thanks to our tools, translators are commonly only expected to deal with written words; they are invited to forget about the other elements configuring the text. This division of labor may not always create satisfying long-term employment.

Texts without ends

The way translators work is also being affected by the nature of the texts we work on. We are all familiar with texts that have automated cross-references (links) to other documents, which enable the reader to jump from one text to another. The most common examples are the links in websites. The use of these links means that there is now no clear beginning or end to texts, and that readings are no longer expected to be linear. Indeed, we now talk about "users" rather than "readers". While this is nothing fundamentally new (concordancing is an ancient activity), digital support has radically extended the role of this kind of text.

A major extension can be seen in content management systems. These are computer programs designed to manage databases comprising "information chunks" (generically known as "content"), usually no longer than a couple of paragraphs, which are combined and updated to create several customized texts according to the user's needs. The information chunks are regularly updated and re-labeled. This means that there is no final text, but a constant flow of updated, rearranged, re-sized and user-adapted provisional texts based on a large database of content in constant change. Think, for example, of a company that produces a series of improved

versions of their products, be it software programs or cars, or adapts the products to a series of particular markets. They are not going to rewrite all their user manuals from scratch with each new version. They will logically re-use their existing texts, putting them together and modifying them on each occasion.

XML (eXtensible Markup Language) is a technology standard used to exchange content. It is a way of tagging information so that it can be retrieved later. Take the following example of an XML text:

```
<item>
<title>Pride and Prejudice</title> was written by <author>Jane
Austen</author> in <year>1813</year>.
</item>

<item>
<title>Alice in Wonderland</title> was written by
<author>Lewis Carroll</author> in <year>1866</year>.
</item>
```

By tagging texts as we see above, we can later retrieve information that talks only about authors, for instance, to create a coursebook on literature (in which case we would get both information items). We can also retrieve information based on dates, to create a chronology of publications between 1800 and 1850 (in which case the second item would not appear). With the use of XML in this way, the text production process is anything but linear.

Translating this kind of information cannot be linear either. The updated texts are not translated from scratch, but pre-translated with a translation-memory tool. The translator's duty is to translate only the segments that have been modified, since the non-modified sentences have been retrieved from the memory database. On other occasions, the translator may receive a series of small chunks to translate, usually in a non-problematic format like RTF. These will look like phrases and paragraphs that have no connection with anything. They all have their number or code; they must all respect the established glossaries; they give the translator no indication of how they should fit together. In such cases, translators are obliged to "fly blind", rendering phrases without having any idea of the communicative context.

The development of these work practices has changed the very words used to describe what translators do. Once upon a time, translators worked on source texts, perhaps with the aid of a dictionary. Then, when the importance of contexts and clients was recognized, we talked about "translation projects", involving a lot of background information about specific communicative situations, including specialized glossaries and detailed instructions. In the days of content management, however, it is more exact to refer to "translation programs", on the model of the "maintenance programs" that keep things working day after day, year after year. In the world of content management, translators may be employed on programs that have cycles, rather than on texts that have ends.

Localization, its terms and its tools

These changes have also brought about a series of new terms for the language industry itself. Most prominently, from the 1980s the need to translate and adapt software to new markets led to common use of the term "localization" rather than "translation". This term has been defined by LISA (the Localization Industry Standards Association) as follows:

> Localization involves taking a product and making it linguistically and culturally appropriate to the target locale (country/region and language) where it will be used and sold. (cit. Esselink 2000: 3)

The word "localization" is associated with "locale", a term to define a specific target market. Locales are often smaller than countries or languages. Localizing a word processor developed in the United States so that it can be sold in the Spanish market involves translating into Spanish the menus, the dialogue boxes and other user-visible messages, translating the online Help files, the publicity and the printed reference material, and adapting any cultural references along the way. But it also involves implementing the word processor with a spellchecker for the variety of Spanish used in the target locale, adapting the "insert date" option so that the text inserted appears as Day/Month/Year, and not Month/Day/Year, including pre-set page settings that match Spanish standards for paper and envelopes, and changing functions so that letter combinations make sense to a Spanish user (the hotkey combination 'Alt + E' opens the Edit menu in the English version of Microsoft Word, but the same menu opens with 'Alt + M' in the Spanish version, referring to the Spanish word *Modificar*). All that can be called "localization". It involves more than just translation.

The complexities of localization can be reduced by foreseeing the difficulties and preparing for them in the first version of the product. When this is done, companies save time and money, and may offer better-quality products. This process is called "internationalization":

> Internationalization is the process of generalizing a product so that it can handle multiple languages and cultural conventions without the need for re-design. (LISA definition, cit. Esselink 2000: 2)

Internationalizing a computer product means designing to handle demands such as the accented characters that will be needed in the localized versions. For example, by designing "Cancel" buttons that are actually much longer than the English word "Cancel", they allow for longer translations in other languages (*Annular* in Spanish), so that there is no need to resize the button to display the Spanish translation.

The term "globalization" is sometimes used instead of "internationalization", notably by Microsoft. For LISA, however, "globalization" involves a specific reference to the way companies are organized:

> Globalization addresses the business issues associated with taking a product global. In the globalization of high-tech products this involves integrating localization throughout a company, after proper internationalization and product design, as well as marketing, sales, and support in the world market. (LISA definition, cit. Esselink 2000: 4)

We might thus say that globalization is a mode of organization that uses internationalization in order to prepare for localization.

So, is translation part of localization, or vice versa?

The answer really depends on whom you ask. Software developers argue that translation is only one of the many modifications a program has to go through in order to be localized. Translation scholars, on the other hand, might argue that localization is only a fancy name for the act of adapting a text for a specific target readership, which is something translators have been doing for millennia.

Another answer might be found in the electronic tools that have been developed especially for localization. Apart from text editors, spellcheckers, translation memories and terminology management systems, which are common in translation programs, professional localization tools include functions to resize dialogue boxes, assign and check hotkeys to menus, edit and check programming code, manage non-textual resources (such as icons or sound files), calculate the complexity of a project, and replace programming code to make the program work on another platform. The result might still be a translation, but the work process clearly goes beyond traditional translating.

Software localization requires those specific tools. Without them, we would have something like Figure 3, which shows the programming code for a dialogue box. Translating in this format is extremely dangerous and time-consuming, since you can easily delete or modify code (instructions for the computer) by mistake. Before working in this way, you would need to learn to discriminate natural-language strings from code. Moreover, there are no spellcheckers or advanced text-editing tools available.

Are translation-memory tools any better? Figure 4 shows a screenshot of the Transit translation memory suite. Here we have the same file being translated, with source and target text, dictionary and memory database. Translators working with this environment cannot see or edit the code, so their duty is to translate text. Even if they have the ampersand symbol, which stands in front of the hotkey letter, it is the localization engineer who should test the allocation of hotkeys and perform all the tasks related to layout and function.

Figure 3. Translation of a resource file with NotePad

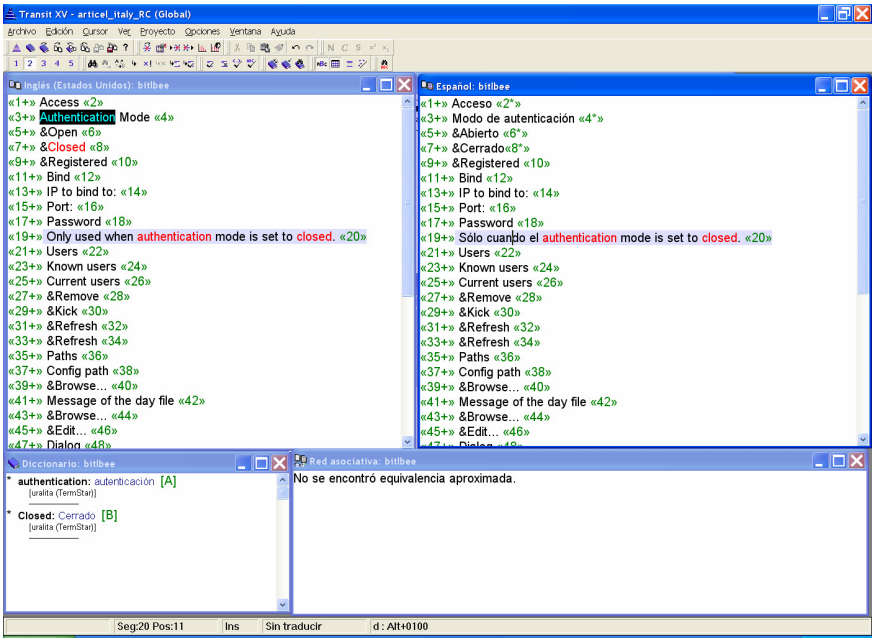

Figure 4. Translation of a resource file using Transit

So what are the tools developed for localizing software? In Figure 5 we can see the same file being translated with Catalyst, which is specifically designed for this kind of work. This is perhaps like the translation memory, except that here we can see what the dialogue box looks like; we have its visual context. And just below the dialogue box we have the active segment ("Authentication Mode") where we can type our translations and see immediately if the target text fits into the box. We can assign unique hotkey combinations to each function and resize the dialogues if we need to allocate more space for our translation.

Tasks become considerably easier when you get the right tool for the job.

Machine Translation

Machine translation (MT) is probably the translation technology with the most sway over the popular imagination. The first serious attempts to create MT systems date from the late 1940s, when United States and the USSR both funded projects to move rocket technology out of German, and then to spy on each other. It is often said that the initial expectations were very naïve, which would be why when the early projects were almost completely abandoned in the US following the negative ALPAC report in 1966.

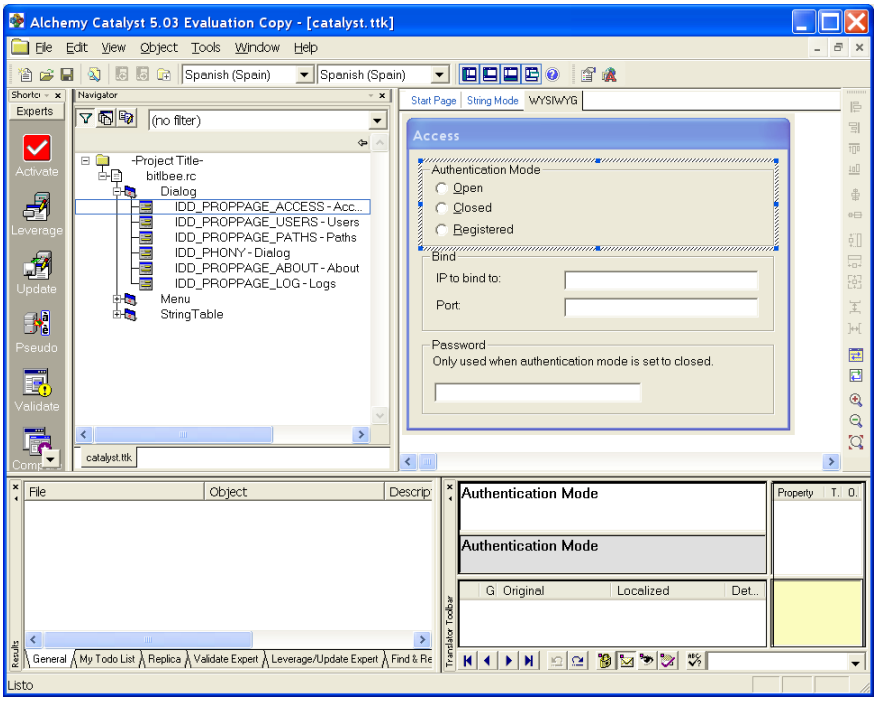

Figure 5. Localization of a resource file using Catalyst

However, the early approaches were based on quite sophisticated concepts of code-breaking, and there is little evidence that the aim was to produce high-quality output that would be of immediate use. Indeed, the main limitations of the day were on the capacity to store and retrieve huge amounts of lexical, morphological, syntactic and semantic information. The funding evaporated when the Cold War went through a relative thaw.

Several generations later, MT is readily available and relatively functional. The transfer-based Systran system can be used for free on several websites. Its many unhappy matches and almost complete inability to handle proper nouns can result in hours of fun for bored linguists or enthusiastic revision classes. However, the system is extremely useful for gist translations from languages you know nothing about. It allows users to identify the texts or fragments of interest, which they can then have translated by other means.

In other circumstances, MT systems produce high quality translations in very restricted contexts. This can be done by limiting the lexical and grammatical structures of the source text (controlled language) and fine-tuning the system to work only with a specific text type. A classic case is French-English weather reports in Canada, for which an MT system has been in continuous use since 1984. In other circumstances, a company may develop a highly standardized central language and fixed document templates, enabling MT to be used successfully in conjunction with controlled writing of content (in fact a form of internationalization) and careful revising of MT output (cf. Lockwood 2000, on the heavy machinery producer Caterpillar, where content is written in "Caterpillar English"). The Translation Service of the European Commission similarly uses its own version of Systran to give acceptable results on formulaic texts between cognate languages (especially from French to Italian or Spanish).

There are important technical differences between these examples. The Canadian weather reports and the use of EU Systran are based on correspondences between language pairs (a "transfer" architecture), whereas the use of controlled writing (as at Caterpillar) enables MT to go from one language to many languages at the same time (thanks to an "interlingua" architecture). From the translator's perspective, however, the consequences are the same.

Machine translation systems are not replacing human mediators. This is first because the prime use of MT is only to *locate* the texts and fragments requiring human translation. Second, if MT output is to be used professionally, it requires human revision. And third, the future development of quality MT output requires serious attention to controlling writing of the input, which is an area that some translators may want to move into. Indeed, the better MT systems work (and current statistical models seem able to offer a better future), the more texts will be processed, and the more work will be created for human translators.

Whatever happens, do not let a client tell you that you have been replaced by a machine. If they say that a text has already been translated automatically and you only have to correct the errors, look for another client. It will usually take you less time to translate from scratch rather than identity and correct the errors. And your quality will be higher.

Advantages and Disadvantages for Translators

Technology is not an option in today's professional world; it is a necessity. Years ago one talked about Computer-Aided Translation (CAT). That now seems a redundancy. Virtually all translating is aided by computers. Further, the most revolutionary tools are quite probably the everyday ones that are not specific to translation: Internet search engines, spell checkers, search and replace functions, and revision tools have had a huge impact on all forms of written communication. On countless levels, the advantages presented by technology are so great that they cannot be refused. Translation memories perform the most repetitive tasks so that translators can concentrate on the most creative aspects of translation. The intelligent use of machine translation should mean that our best human efforts are focused where they are most needed. However, technology is not perfect, and translators must be very aware of those imperfections. Here, in closing, we offer a list of those aspects where critical awareness seems most needed.

Each new technology requires new investment, not just in purchasing tools but also in learning how to use them. In all cases, the investment you put in should be less than the benefits you expect to gain. This means, for example, that the kind of text corpora that linguists use in order to study language are generally not cost-beneficial tools when applied to professional translation. They address problems that are more easily solved with a quick web search, and the kinds of quantitative data bases they use have little to do with those developed by translation memory tools. Or again, there is little need to take a course in a particular translation-memory suite if you already know how to use a rival brand. All the products are similar in their underlying technology, and you should be able to find your own way from one to the other. As a general rule, inform yourself before buying anything or signing up for courses. Demonstration versions of all tools are usually available on the web for free, many of them with online tutorials, and translators' forums can give you numerous pointers about the relative advantages and drawbacks of each tool.

Investment in a certain technology can be essential if you are to move from one segment of the translation market to another. The jump is usually made when a client or intermediary offers you work requiring knowledge of a certain tool. You then have to learn very fast, but you are at least sure that you have the right tool for the available job.

Even within large projects, the cost of technology tends to form a set of internal barriers. For example, in a localization project, the project managers (responsible for the overall organization) usually have very powerful, expensive tools with advanced project-management options. The language project managers (responsible for a specific version of the product) have tools that allow them to perform advanced processing, such as automatic terminology checking and the preparation of the packages they send to translators. At the end of the line, the translators have the cheapest and most restricted versions of the software, sometimes called "light" versions, with which they can only replace language strings and perform some basic editing and proofreading tasks. Since code is protected, only the people with the original source files and the powerful tools are able to edit the layout or the content of the source text. By limiting the functions of the tools assigned to each member of the workflow chain, technology has become one way to control the actions and responsibilities of translators.

All these barriers can, of course, be overcome. Translators can and do move into high-tech sectors; some do become project managers, marketing experts, or owners of companies. In general, the way to advance within the profession usually involves more conceptual control over technology, not less. Too often, the dominant industry workflows impose their own specific technologies and processes. Only when translators are critically aware of the available tools can they hope to be in control of their work.

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The Evolution of Localization

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Abstract. *The evolution of the localization industry since the 1980s has been marked by a move from in-house localization to internationalization, along with marked changes in the nature of the tools used. However, the turn of the century has introduced a new view. The distinction between content and software is no longer clear, and typical software localization projects are being supplanted by new types of localization projects, focusing on programming and publishing. At the same time, open standards allow translation vendors to focus on translation. Core translation skills and domain expertise thus now seem to be newly appreciated. This could bring together two worlds: software localization, with a strong focus on technical complexity for translators, and content localization, with a strong focus on technical simplicity for translators. The localization industry may now have to face new challenges in the future, and rapidly adapt its processes, quality standards and resourcing approach.*[*]

Introduction

It seems like ancient history to me sometimes, but I entered the world of localization just over ten years ago. In 1993 I joined International Software Products in Amsterdam, a small and specialized localization vendor that still exists under the same name. I had recently graduated as a technical translator, using an article on the launch of Windows 3.1 as my thesis subject. The seemingly incompatible marriage of language and technology has intrigued me ever since. Still, this is the core characteristic of what today we have come to know as "localization".

In a nutshell, localization revolves around combining language and technology to produce a product that can cross cultural and language barriers. No more, no less.

In this article, I will explore the fundamentals of localization: what it is, where it started, how it progressed, what it is today and what it may be

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[*] A first version of this paper was first published in the *Guide to Localization* edited by Multilingual Computing and Technology (2003). It is reproduced here with the kind permission of the author.

tomorrow. Against this historical background I will discuss developments in the localization services business, translation technology and general trends.

Where It All Started: The 1980s

Desktop computers were introduced in the 1980s, and computer technology slowly started to make its way to users who did not necessarily have a background in computer programming or engineering. The early 1980s also saw the first international ventures of US-based computer hardware and software firms. Sun Microsystems, for example, began operations in Europe in 1983, expanding to Asia and Australia in 1986. Microsoft had started international operations earlier, opening its first overseas sales office in Tokyo in November 1978 and beginning its expansion into Europe in 1979.

The shift of computer hardware and software use away from corporate or academic computing departments to "normal" users' desks called for a shift in product features and functionality. Not only did desktop computer users now need software that would enable them to do their work more efficiently, but the software also had to reflect business processes in tune with local standards and habits, including local language. Word processors, for example, needed to support the input, processing and output of character sets in other languages, language-specific features such as hyphenation and spelling, and a user interface in the user's local language. The same expectations applied to hardware. For example, in 1985 the Spanish government decreed that all computer keyboards sold in Spain should have the ñ key.

Internationalize to localize?

The international expansion of software and hardware developers automatically triggered the need to localize the products for international markets. Initially, software vendors dealt with this new challenge in many different ways. Some established in-house teams of translators and language engineers to build international support into their products. Others simply charged their international offices or distributors with the task of localizing the products. In both cases, the localization effort remained separated from the development of the original products. Development groups simply handed off the software code and source files for supporting documentation to those responsible for localization.

This separation of development and localization proved troublesome in many respects. Microsoft, for example, asked its then-distributor ASCII in Japan to localize Multiplan (predecessor of Excel) into Japanese. According to a Microsoft director responsible for localization at that time, "we'd finish the product, ship it in the United States, and then turn over the source code library to the folks in Japan, wish them luck and go on vacation".

Not only was locating the translatable text embedded in the software source code quite difficult, but the requirement for additional language versions of the code made update and version management increasingly complex. Moreover, the localizers often had to return the products to the development teams to first build in support for localization or international computing standards. With these requests, the concept of internationalization was born.

Internationalization refers to the adaptation of products to support or enable localization for international markets. Key features of internationalization have always been the support of international natural language character sets, separation of locale-specific features such as translatable strings from the software code base and the addition of functionality or features specific to foreign markets. Without internationalization, localizing a product can be very challenging.

Outsourcing localization

Initially, many software publishers, such as Microsoft and Oracle, established in-house localization teams who had to adapt the products for key international markets. A large portion of this effort was obviously the translation of the software product itself and supporting documentation. US companies often decided to place the localization teams in their European headquarters, many of which were based in Ireland.

Even though it seems that localization vendors are now moving activities to many locations across the globe, Ireland established itself as the leader in the localization industry during the 1990s. Over the past 10 to 20 years, the Industrial Development Authority (IDA), a semi-governmental body, had the mandate to move Ireland forward industrially by attracting foreign investment. In the 1980s, a high concentration of manufacturing companies started in Ireland, including some high-tech companies. The Irish government provided what it called turnkey factories, where a large multinational was offered a certain amount of government subsidy per employee, plus facilities, grants and a corporate tax rate of 10% as an incentive to invest in Ireland.

After some failed investments and the increased competition from manufacturing in cheap labor markets, the Irish government switched its focus to research and development and the high-tech, blue-chip companies, that is, a more long-term strategy. Most large software and Web companies now have a presence in Ireland, with the bulk of their localization being managed from there, including Microsoft, Oracle, Lotus Development, Visio International, Sun Microsystems, Siebel and FileNET.

The key benefits they offered these companies included a certain amount of money per employee, a 10% corporate tax rate and exemption from value-added tax (VAT). All products, including software, exported to

Europe are exempt from VAT in Ireland. In addition, competitive labor costs, with social costs at approximately 12% to 15% per employee, mean that it is cheaper to employ people in Ireland than in many of the European Union countries. Compared to the United States, development costs are still lower in Ireland. And Ireland offered a young, well-educated, motivated work force. Approximately 50% of the population was under 25 at the beginning of the 1990s.

The Irish government has invested a great deal of subsidy in education. There now is a strong push to offer additional computer courses to cope with the growing demand for IT and localization staff. This, combined with the fact that Ireland is an English-speaking nation on the edge of Europe that serves as a gateway to Europe and the Euro zone, made many US-based companies decide to base their European headquarters or distribution centers in Dublin.

Translators, localization engineers and project managers were recruited from all over Europe to be trained and employed as localizers in Ireland. For most translators, it was their first introduction not only to computers, but also to the concepts of software localization.

Although Dublin in the late 1980s and early 1990s was a very attractive place for localization experts, with many job opportunities and a strong social network, software publishers began to doubt the validity of the in-house localization model. Not only did new recruits face a steep training curve, but the rapid growth of products sold internationally and the content explosion also created large localization departments that were difficult to sustain. Business fluctuations—very busy just before new product releases, very quiet after—contributed to this problem, as did the difficulty of keeping translators in another country for a long time because localization really wasn't very exciting (imagine two months of translating on-line help files) and not always well paid.

Software publishers increasingly realized that localization was not part of their core business and should ideally be outsourced to external service providers.

One of the first companies to realize there was a service offering to be built around this need was INK, a European translation services network established in 1980. INK became one of the first companies in the world to offer outsourced localization services. In addition to translation into all languages required by software publishers, this service included localization engineering and desktop publishing and, most importantly, the project management of these multilingual localization projects.

Translation technology

INK was also one of the first companies to create desktop translation support tools, called the INK TextTools, the first technology commercially

developed to support translators. As a historical note, the present company Lionbridge was "spun off from Stream International, which itself had emerged from R.R. Donnelley's acquisition of INK," said Lionbridge CEO Rory Cowan in 1997.

In 1987, a German translation company called TRADOS was reselling the INK TextTools and a year later released TED, the Translation Editor plug-in for TextTools. Shortly thereafter, TRADOS released the first version of its Translator's Workbench translation memory (TM) product. TRADOS continued to establish itself as the industry leader in TM technology throughout the 1990s, boosted by Microsoft taking a 20% stake in 1997.

Initially, TM technology could only deal with text files. Hardly any technology was commercially available for the localization of software user interfaces. Most software publishers built proprietary tools, which were tailored to their own source code format and standards and used by their internal teams. Development of these tools was often quite ad hoc and unstructured. As a result, early generations of software localization tools were usually quite buggy and unreliable.

1990s: An Industry Established

Throughout the 1990s, a large number of localization service providers were born, many of which were little more than rebranded translation firms. For the IT industry, the sky was the limit, the globe was its marketplace, and the localization industry followed closely in its footsteps.

After the initial pioneering efforts of translation companies adapting to the new paradigm of localization, the 1990s clearly saw the establishment of a true localization services industry. Software and hardware publishers increasingly outsourced translation and localization tasks to focus on their core competencies. The need for outsourced full-service localization suppliers was growing rapidly.

Within a localization services company, localization teams would typically be coordinated by a project manager overseeing schedules and budgets, a linguist to monitor any linguistic issues, an engineer to compile and test localized software and on-line help and a desktop publisher to produce translated printed or on-line manuals. A typical localization project consisted—and often still consists—of a software component, an on-line help component and some printed materials such as a getting started guide.

To localize a software application, localization engineers receive a copy of the software build environment, extract the resource files with translatable text, prepare translation kits and support the translators during their work. Post-translation, the engineers merge the translated files with the build environments and compile localized copies of the software application. This always requires some level of bug-fixing, user interface resizing and testing. A similar approach is taken to produce localized versions of on-line help

systems. The source files, mostly RTF or HTML documents, are translated, and a compilation and testing phase follows. Most on-line help systems and printed documents contain screen captures of the software, so including pictures of the localized software application can only be done once the application has been fully translated, built and tested. These dependencies and many others have always made the management of localization projects quite a challenge.

Consolidation and outsourcing

One of the developments that characterized the localization industry throughout the 1990s was consolidation. Localization service providers merged with others in order to "eat the competition" or to add service offerings, to reach a wider geographical spread—or they could merge simply because they had some money to burn. The list of companies that were acquired seems endless. From at least a dozen large multilanguage vendors in localization, we are currently down to a handful, with the main players being Bowne Global Solutions, Lionbridge and SDL International.

Consolidation also manifested itself in the emergence of a relatively standard production outsourcing framework. The larger multilanguage vendors (MLVs) took on multilanguage, multiservice projects, outsourcing the core translation services to single-language vendors (SLVs), one in each target country. SLVs normally work into one target language only, from one or more source languages, and either work with on-site translators or contractors.

Throughout the 1990s the localization industry further professionalized, including industry organizations, conferences, publications, academic interest and generally increased visibility. Obviously, the increasing number of companies jumping on the localization bandwagon resulted in fierce competition and increased pressure on pricing. As a direct result, benefits and cost savings from the use of TMs, for example, quickly shifted from the translator's desk to the localization vendor and eventually to the customer. Today, no localization quote is sent out without a detailed breakdown of full matches, fuzzy matches and repetition discounts through the use of TM database technology.

From TM to GMS

TM technology plays a dominant role in localization for various reasons. First of all, most software companies aim for "simship" (simultaneous release) of all language versions of their products. This means that translation of the software product and supporting on-line documentation has to start while the English product is still under development. Translating subsequent development updates of a product is then greatly simplified by

the use of TM technology. Moreover, after general release, most software products are updated at least once a year. These updates usually just add features onto a stable base platform, making it all the more important to be able to reuse—or leverage—previously produced content and translations.

Another type of translation technology commonly used in localization projects is software user interface localization tools. These tools are used to translate software resource files or even binary files and enable the localizer to not only translate but also resize and test the user interface. Examples of localization tools are Alchemy's CATALYST and PASS Engineering's PASSOLO.

By the end of the 1990s the Internet had changed many things in localization, such as the introduction of globalization management systems (GMS). Riding the dot-com wave, various companies offered revolutionary new ways of managing translation and localization projects, storing and publishing multilingual content and fully automating localization processes. Although this new technology had some impact on existing outsourcing models and processes in the localization industry, it became rapidly clear that although a GMS could be useful for content globalization programs (for example multilingual Web sites), the world of software localization still required a lot of "traditional" expertise and dedicated teamwork.

With Web sites containing more and more software functionality and software applications increasingly deploying a Web interface, we can no longer make a clear distinction between software and content when we discuss localization. The traditional definition in which localization only refers to software applications and supporting content is no longer valid. Today, even producing a multilingual version of an on-line support system, e-business portal or knowledge base could be defined as a localization project.

In other words, the turn of the century also introduced a new view towards localization and translation.

What Lies Ahead

So, what is so different now in localization compared to what we got used to during the 1990s?

Not as much as you might expect. After all, many localization projects fit the profile that we have grown accustomed to over the past years: Windows-based desktop software products with some translatable resource files, basic engineering and compilation requirements, HTML files to use for the online help and possibly some product collateral or manuals to be printed or published in PDF format.

Even though these typical software localization projects may still be the bulk of the work for many localization service providers, they are quickly being supplanted by new types of localization projects where the focus is on

programming and publishing environments such as XML, Java and .NET. Also, content translation projects are now often considered as localization projects simply because of the complex environments in which the content is authored, managed, stored and published. Most of today's Web sites contain so much scripting and software functionality that Web localization requires a wide range of engineering skills. For Web sites based on content management systems (CMSs), the story gets even more complex: when content is continuously updated and published in multiple languages, the translation process must be truly integrated with the overall content lifecycle.

Apart from a renewed focus on content localization, we have also seen various other important developments over the past few years, such as the growing importance of open standards. Examples of open standards in the localization industry are Translation Memory eXchange (TMX) and XML Localization Interchange File Format (XLIFF). Many TM tools support TMX for the exchange of TM databases between different tools, and XLIFF is being adopted by companies such as Sun Microsystems and Oracle. A Sun Microsystems manager recently said, "XLIFF allows our interaction with translation vendors to be much more efficient. There is less need for translators to become engineering experts in the many different source file formats that are currently being used—SGML, HTML, MIF, RTF and the numerous software message file formats. Instead, XLIFF allows translation vendors to concentrate on their core competency: translation of words."

Back to basics?

Does the popularity of XLIFF signal a trend? Throughout the 1990s, the localization industry tried to turn translators into semi-engineers. Is it now expecting them to just translate again? It certainly looks that way. For the past decades, content authors and translators may simply have been "distracted" by the possibilities and the features the new technologies had to offer—all those file formats, all those compilers, all these new tools, all the output formats, all those cool graphics and layout features! If content management fulfills all its promises, content creators may in a few years be writing text in a browser template with fields predefined by the CMS, and translators may all be working in a TM tool interface that only shows them long lists of translatable segments, possibly partly pretranslated. We have come full circle: authors author and translators translate.

Is this a bad thing? Not necessarily. Throughout the 1990s, one of the biggest "linguistic" challenges was to maintain consistency with "the Microsoft glossaries," but today we see a new appreciation of all the core translation skills and domain expertise that we often considered no longer critical in localization. A localization service provider translating an ERP software package or an SAP support document had better make sure to use translators who know these domains inside out and should not rely on

translators just looking at some glossaries. Localization companies now need to face these new challenges and higher customer demands.

New Kids on the Block

The year 2002 included one of the largest mergers in the history of localization, as Bowne Global Solutions acquired Berlitz GlobalNET to become the largest localization service provider. Various new localization organizations were launched. And on the technology side, the main developments can be seen in server-based TM systems. TRADOS, for example, recently released its TM Server product, a new technology that offers centralized TM for client server environments. Telelingua also introduced T-Remote Memory, a distributed computing architecture using Web services.

Software user interface localization tools now all offer support for Microsoft's .NET programming environment. According to a white paper released by Alchemy Software, "while fundamental approaches to application design remain somewhat consistent with the approach traditionally chosen by desktop application developers, the localization service provider community faces a daunting challenge of upskilling and retooling their localization teams while embracing this new Microsoft technology. Coming to grips with the new open standards and learning the nuances of translating NET technology will present both a financial and an educational challenge."

Based on this comment and other signals from experts in the field, it looks likely that while translators will be able and expected to increasingly focus on their linguistic tasks in localization, the bar of technical complexity will be raised considerably as well. This applies not just to software localization, but also to the wider context of content localization.

So the question remains, what have we learned over the past 20 years of localization and do the lessons that we have learned still apply to today's new realities of content localization? It almost seems like two worlds are now colliding: software localization with a strong focus on technical skills and technical complexity for translators on the one hand, and content localization with a strong focus on linguistic skills and technical simplicity for translators on the other. With the Internet increasingly merging platform and content, the localization industry will have to rapidly adapt its processes, quality standards and resourcing approach to these new requirements.

The localization job market in academe

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Abstract. *There are now many academic institutions, particularly in North America and Europe, offering programs and courses on localization. All of them are housed in centers for translation in which the faculty is shared with traditional departments. This situation can be beneficial, as it creates new research opportunities in localization and offers customized training and services to the industry. Conversely, demands from industry may also affect the make-up of the curricula, and more candidates are now being sought to teach for the profession or business. This, however, entails a number of problems: a lack of publication outlets for localization scholars, the need to establish formalized departments of localization, and inadequate academic openings in the field.*

Slowly but surely, academia is catching on to localization. From practically no programs in 1995, there are now many institutions offering courses on localization, primarily in North America and Europe. As with any new type of course or program, finding a home in the academy is difficult, especially for subjects that cross the rigid disciplinary lines that are the hallmark of colleges and universities. This article examines some of the ways in which localization is entering the academy as a field of study and career option.

The University of Leeds in the United Kingdom offers a Master of Arts in Applied Translation Studies, housed in a Centre for Translation. In Ohio, on the other side of the Atlantic, Kent State University has a similar structure. Its Institute of Applied Linguistics offers a Master of Arts program in Spanish, German or French, with a concentration in translation. Several courses in that program also deal with localization. At New York University, a graduate-level course called Terminology: Theory and Practice is housed in the Center for Foreign Languages and Translation and "explores […] computer-based systems for terminology management". Students at this university can earn a Master of Science in Translation.

These post-graduate level programs, found in "centers" or "institutes" of Translation or Applied Linguistics, are a relatively new species in higher education. New fields, especially interdisciplinary ones, are often housed in centers where academics from various departments share teaching duties. Fields such as Area and Ethnic Studies and Translation, representing a broad

range of topics and languages, are often organized this way. Such centers or institutes seldom have their own faculty. They usually have to "share" teachers associated with traditional departments like language or engineering. A faculty member's workload is thus divided between a "home" department and the center or institute. Such a structure is flexible, as it allows faculty to pursue research opportunities that may otherwise be unavailable or considered "unacceptable" in their home departments. Furthermore, as new fields develop and become more mature, certain research directions may no longer be favored and new lines of inquiry may be opened up. In this way, there is a diversity of interests that attracts faculty members who contribute to the center or institute at different times.

Such centers may also be beneficial to the industry, as they provide training, customized research and other services. For example, the University of Massachusetts at Amherst operates a commercial translation, interpretation, and localization service in 60 languages. On the educational side, the Comparative Literature Department of this university offers a course entitled Translation Techniques and Technologies which "experiments with latest technology", as stated on its official website.

The University of Montreal in Canada began a program in January 2003 leading to a Certificate in Localization. This program is housed in the Continuing Education Department and consists of 23 courses, of which ten (30 credits) are compulsory. The program offers an impressive range of courses and reflects a truly multidisciplinary approach. Currently it is only available in French, but an English option may be offered in the future. This program is the fruit of a huge multidisciplinary effort by Rita Damiani, who joined the university after years of work in the industry, bringing a broad curricular perspective to the program (Damiani 2002). Courses at the University of Montreal are given in the evenings and attract a broad range of students, from engineers and public relations specialists to professional translators. A feature that this program shares with the one at Austin Community College is that it did not arise from a foreign language or translation department.

Another program, also entirely in French, is available at the University of Quebec at Outaouais. It consists of a series of courses, each three credit hours in length, plus a training course of six credit hours. This program leads to a Diploma of Higher Studies (DESS) and is considered a natural extension of the translation program already in place. It is also the first program founded at a French-language university in North America.

Because the core of localization revolves around language, translation and international business, institutions specializing in such areas have integrated localization topics into their language curricula. Examples here would include the Monterey Institute in California and the Maastricht School of Translation and Interpreting in the Netherlands. At Maastricht, localization is not taught as a separate course, but is integrated into its four-

year training program. Although the focus is still on translation, from the second year onwards localization is explored in greater detail, alongside pure translation issues and in all translation courses and assignments. Students are trained in specific translation techniques for localization and become familiar with a number of software applications. During their studies, quite a large number of students find employment in localization/translation companies (some even join high-tech ones). By the time they complete the program, students have become competent in localization techniques. Maastricht cooperates closely with localization and translation companies when designing and structuring its program. The localization part of its curriculum is jointly operated by linguists, mathematicians and electrical engineers, all expert in Computer Science.

Translation departments, centers and institutes are clearly a popular venue for localization initiatives. The emergence of these organizations is also an interesting phenomenon, as it may indicate the future of localization itself, perhaps signifying increased reliance on translators to provide traditional engineering services such as program compilation, data structure and character encoding. This trend has already been echoed by the translation and localization industry. Companies such as Star, Logos, Lionbridge, Alchemy, Trados, and SDL International have already marketed products for translators working as terminology managers, software localizers, desktop publishers, technical writers, project managers, and software testers.

Academia is often responsive to industry needs. This may be seen from the re-alignment of foreign-language education curricula that has been slowly underway for many years. It is well known that the supply of PhDs in foreign languages in the United States has long exceeded the demand for them, and a steady decline in the number of students learning languages has gutted many Foreign Language departments, leading to a much-discussed "crisis" in the profession. The Proceedings of the 118th Annual Conference of the Modern Language Association of America include a lively discussion on this.

This phenomenon may affect the make-up of curricula. New curricula now pay more attention to the industry's needs for multilingual skills. Instead of the traditional Literature major, we now increasingly find Linguistics and Cultural Studies options in many foreign language departments. There is also a sharp rise in the number of Ethnic and Area Studies centers. In recognition of increased study options, some departments have changed their names, This is the case of the former Department of Germanic Languages in the University of Texas at Austin, now the Department of Germanic Studies.

As many of us still remember the localization boom in the 1990s, we recall there was once a strong demand for localization professionals. Part of that demand, of course, was exacerbated by a dearth of educational programs

to train or re-train those professionals. With an economy at near-full employment and a soaring demand for high-tech skills, could the employment crisis of Foreign Language graduates spur an interest in curricular modification? Quite possibly, especially if one considers the industry demand for languages such as German, Dutch and Italian, where courses have suffered from dwindling enrollments.

There is some possibly coincidental evidence to support this view. One of the founders of the Software Localization Certificate program at the University of Washington at Seattle is Ulrike Irmler, who holds a doctorate in German. At Austin Community College, the program founder, Tim Altanero has a doctorate in Germanic Studies. At Kent State University, Sue Ellen Wright, who offers a Terminology Management course, also holds a doctorate in German. Her colleague, Kieran Dunne, has a doctorate in French. The Director of the Localization Research Centre at the University of Limerick, Reinhard Schäler, is a "real" German. Stefan Sinclair, who teaches in the Humanities Computing program at the University of Alberta in Canada, holds a doctorate in French Literature. Many of these individuals worked in the industry before taking up academic jobs, and this has also probably affected curricular offerings.

Notably absent are doctors in Spanish, perhaps because the job market for them is considerably larger and more robust. At the Modern Language Association, which might be seen as the clearinghouse for foreign-language faculty positions in the United States, there are currently 216 openings advertised for Spanish, which is slightly less than the total number of positions available in all other modern languages combined. The implication is that academics holding doctorates in languages other than Spanish may have a more difficult time locating academic employment and thus first have to secure jobs in the industry. Indeed, many of the founders of the localization programs mentioned in this article first found employment in the industry before moving back to academia.

Interestingly, we are now finding more Foreign Language positions seeking candidates to teach "for the professions" or "business". For Spanish, this has often meant health or welfare professions such as nursing, social work and court interpreting, but for other languages the emphasis has clearly been on business and international trade. One can even find centers, such as that at the University of South Carolina, where appointments in Foreign Languages are often made jointly with the business school. Whether these positions will evolve into entryways for localization professionals to join the academy remains to be seen, but the door is clearly opening, if not already slightly ajar, at least for Foreign Language hiring. Engineering and Computer Science departments may not be far behind.

Once in the academy, tenure decisions rest on scholarly production, in addition to course development and teaching. Promising talents may find it difficult to place articles for lack of publications in the localization field.

There are, of course, trade journals of various kinds available, but academic journals are scarce. There are journals specific to various disciplines in which one might publish, but seldom is an academic journal reviewed by industry or academic peers in the field of localization.

At the 7th Annual Localization Research Centre conference, academics from both sides of the Atlantic discussed the perceived position of localization in the curriculum. To address the need for peer-reviewed publishing outlets, the Localization Teaching and Training Network was formed by representatives from Austin Community College (United States), the University of Limerick (Ireland), the Maastricht School of Translation and Interpreting (Netherlands), the University of Stirling (United Kingdom), and the Canadian Bureau of Translation (the Canadian government's translation arm). During its first meeting in Dublin, the group founded the International Journal of Localization, specifically aimed at filling the void in academic outlets for localization research. The journal has been published since January 2003.

The Localization Teaching and Training Network also expressed considerable support for localization to be housed in formalized Departments of Localization. Movement toward such a structure may be forthcoming, possibly as a result of the outgrowth of the centers and institutes discussed earlier. Such an outcome would not be unexpected, as Computer Science programs were often housed in other centers and institutes before becoming formalized departments. The group is also working on joint research enterprises, exchanges of students and faculty, and an annual reader, among other initiatives. It seems that, with time, all of the trappings that define a field of study as "academic" will come into place. We can readily see the shift in position announcements, the emergence of a journal, and the formation of several working groups and professional organizations.

Although we occasionally find a position in Localization advertised in the academy, that is still far from the norm. Localization academics still seem to start as non-localization professionals and gradually make their move as the field gains more acceptance by (and becomes more crucial to) educational programs in localization. As critical human mass is built within academia, new avenues will develop, offering more academic careers and opportunities in the field of localization.

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Localization and Translator Training
(an online conference)

Training for localization (replies to a questionnaire)

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What, for you, is meant by "localization" and "the localization industry"?

One way to define localization may be to see how it differs from conventional translation. That difference lies in the nature of the content it deals with. Localization can be seen as an industrial process applied to content that is predominantly in digital form and needs to be adapted to target market requirements. The localization industry can be regarded as a business sector that serves customers seeking globalization of their products across linguistic and cultural barriers. Localization is much more explicitly associated with globalization than conventional translation is.

Is translation a part of localization, or is localization a part of translation?

Continuing on from the above discussion, localization can be seen in the context of globalization. Translation, in turn, can be placed as the core of both localization and globalization (see Figure 1). From the point of view of traditional translation, localization was initially considered an extension of software engineering. Now it is treated as a new form of translation.

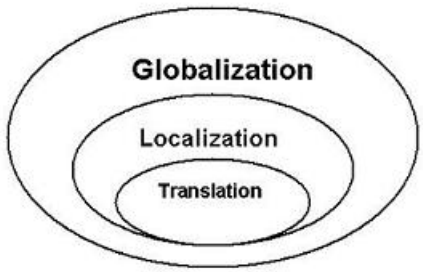

Figure 1. Interrelation between globalization, localization and translation

Is localization just a result of technology, or does it involve deep conceptual changes?

Localization is closely linked to the technology that is enabling new kinds of content such as computer software and web pages. The content imposes the use of new technology, i.e. localization tools, if it is to be localized adequately. This industrial process was developed more or less independently of traditional translation and directly in response to market needs. As such, its practice developed before its theory. This may be part of the reason why localization was not included in Translation Studies until recently. Localization is an ideal case for theorizing the future of language support, embodying conceptual changes to translation in its traditional sense.

In what ways, if any, should localization change traditional conceptions of translation?

Think of the difference between translating a technical document 20 years ago and localizing Microsoft Word. The latter involves changes far beyond the conversion of written text from the source to the target language. It affects the software design itself (e.g. character sets, locale-specific features, etc). The internationalization process is of particular interest to me. In the localization industry, it deals with localizability and translatability of the content at the onset of product design and development. This approach contrasts with the traditional approach to translation as an after-thought, independent of the source text creation.

Another level of change can be seen in the use of technology for translation in the context of localization. While Machine Translation (MT) has not yet made a significant contribution to localization, tools such as translation memories (TM) and content management systems have affected the entire workflow in which the translation process has to fit. The impact of these tools on the translation process is beginning to be observed. For example, TMs are accused of creating a peep-hole effect by "chunking" the text or inducing patchwork translation that is made up of a collection of segments picked up from various memories. Similarly new is the concept of pre-translation, whereby matching segments from TM or known terms are already inserted in the target language when the translator sees the source text.

These changes are quite significant, as they transform the concept of traditional translation.

Should all translator-training programs include localization?

For any students who are hoping to work in a commercial translation environment, at least an awareness of what localization entails is essential. This is not only because students are necessarily going to be involved in

localization projects but also because various dimensions of the localization model (e.g. translation tools, workflow, etc.) are spreading into the translation industry in general. So, a certain basic knowledge of localization is becoming more and more relevant.

Should all localization-training programs include translation?

Referring back to Figure 1, translation is seen as the core of localization. Localization cannot stand alone without translation. For this reason, a basic understanding of what is involved in the human translation process should be included in localization training programs.

What elements of localization should be obligatory in the curriculum for translators? Which electronic tools should be taught?

At least a general overview of the localization industry and what localization entails should be part of the curriculum for translators. Tools such as TMs and terminology management systems are becoming widespread in the translation industry as a whole and therefore should ideally be taught as part of translator programs. On top of being able to manage these tools, basic computing knowledge is important, such as different file formats, file management, tags and character sets that are essential for localization.

What should be the main components in a curriculum for training people for the localization industry?

Localization involves different types of skills. The training of personnel will therefore depend on the particular role to be filled in. For example, skills required for localization project managers would obviously be different from those needed for localization engineers. Assuming that task-specific training will be given subsequently, it is important for all players in localization to understand that it requires a smooth integration of software engineering and translation. Before, localizers came from a software engineering background and knew nothing of what was involved in translation. So the balance between these two areas should be a common denominator for the curriculum for all kinds of localization players.

At what level should students receive training in localization?

In the case of Dublin City University, Software Localization is offered in the second semester as an optional module for Graduate Diploma/MA in Translation Studies course. The backgrounds of the students in this course are varied in terms of professional experience, which is reflected in their computing skills as well as knowledge of translation. However, a Translation Technology module is compulsory and is taught in the first semester. This

formula seems to work well, as the students who take the Software Localization module are those who have particular interest in localization. They may consider they are able to cope with its technical aspects because they have previously done the Translation Technology module, which touches on some generic aspects of localization.

Does the localization industry need interaction with the traditional translator-training institutions?

Given the nature of the rapid changes involved, the localization industry could play an important role in pointing out knowledge gaps to the training institutions, which could ideally use the feedback to improve their curricula. At Dublin City University mutually beneficial industry links have been developed over the years. The industry tells us what training is needed, in some cases donating tools and sponsoring prizes. We respond to the industry needs to the best of our ability. Many of our translation graduates with applied languages and computational linguistics degrees have gone to work in the industry. They in turn provide us with very useful ongoing industry contacts.

Do traditional translator-training institutions need interaction with the localization industry?

Returning to the practice vs. theory discussion, the industry can feed vital information about practice into academia, where the theorization of practice can take place. In the long run, theorization could help practice to advance, as well as help train people in the most effective manner. The industry needs to obtain immediately useful graduates, which are adept at the constant changes that face the industry. My personal objective in education is to incorporate a long-term view to give students the ability to cope with changes effectively. Trying to understand the theory behind the practice and reflecting on it are important dimensions that academia can add in interaction with the localization industry.

Who should fund the training programs?

In addition to the conventional scenario of students funding themselves with a government contribution, partnership between educational institutions and the industry should be considered as another alternative. At Dublin City University, a doctoral student in Translation Studies has recently been signed up. This person is sponsored 2/3 of the way by a company whose specific problem area is the topic of the research. The university provides their library and supervisors, while the industry funding includes equipment, desk space and company-specific technical expertise/supervisor. This is a new and exciting development. The University is also encouraging translation

technology tool vendors to provide it with the problem areas that students could use as their research topics for MA dissertations. This pattern is perhaps common in science disciplines, but may be new in Translation Studies and seems to be a positive development for the future.

Training for localization (replies to a questionnaire)

BOB CLARK, JO DRUGAN, TONY HARTLEY, DAMING WU

Centre for Translation Studies, University of Leeds, United Kingdom

What, for you, is meant by "localization" and "the localization industry"?

This never fails to be an interesting question. Everyone would have to agree that localization in the broad sense can be defined as the process of adapting anything to a target locale. Any text or speech content must be translated or "rendered". Has anyone else noticed that very few people ever used the term localization before software publishers began to have their products translated? Virtually overnight, software translation began to be referred to as software localization and, in what used to be called the translation industry, there was a lemming-like stampede of translation companies hoping to enter this lucrative new market. It was a very risky business and in the process many companies went under.

After some time there emerged a very clear distinction between software localization companies, often referred to as localization companies, and those companies that either could not, or would not localize software, which continued to be called translation companies. That the founding members of the Localization Industry Standards Association (LISA) were exclusively software publishers and localization vendors is no accident. In those days, it would not even have occurred to someone to ask the question in the heading. So why is it necessary to do so today?

There are a number of reasons. The kind of material being translated today bears little physical resemblance to what was being translated at the beginning of the nineties. The "extra stuff" that localizers had to do in addition to translation is no longer limited to software products. The complexity of current documentation workflows requires translation companies to employ tools, processes and project management very similar in a lot of respects to what would be found in a software localization project. Another important factor was the flattening out of the IT market and its knock-on effect on localization. If you were a large localization company totally reliant on the software sector, what would you do? Exactly, turn your attention to "vertical markets" and start "localizing" what translation companies had always "translated".

So where does this leave us? We still have a problem knowing what people mean when they use the term localization. The processes and tools required for software localization are still quite different from those used by the rest of the "Localization Industry". The safest thing is to ask them what they mean.

Should all translator-training programs include localization?

The answer to this is very simple. Whatever flavor of localization we are talking about, the translator will be expected to cope with the tools and processes required. It seems inappropriate to teach someone how to translate without giving them the tools to do so.

What elements of localization should be obligatory in the curriculum for translators? Which electronic tools should be taught?

Depending on the flavor of localization, all translation students should have a thorough understanding of the processes involved and as much exposure to appropriate tools as possible. Tools should include terminology management and translation memory systems, software localization tools and project management tools, even a simple one like Excel. Ideally, this should be a "why", not "how" approach and be as comparative as possible.

At what level should students receive training in localization?

It is never too early to start teaching fundamental skills, such as teamwork, project management, problem solving, and computer skills. Extensive training in localization tools should occur during translator training, normally at the graduate level, depending on the country.

Does the localization industry need interaction with the traditional translator-training institutions?

By "traditional" do you mean institutions that hitherto have *not* included localization/translation technology in their curricula? The answer is probably a reluctant "yes", if you accept that there is a lack of translators and that the industry needs a steady supply of recruits. The important thing for employers is that these recruits have the linguistic expertise to translate the kinds of texts they deal with. And of course, they prefer it if the training institutions have already taken care of equipping their trainees with experience of the necessary tools. As we pointed out earlier, the physical (well, electronic) format of certain kinds of texts—such as texts embedded in software applications—means it is not feasible to translate them without (recourse to) specialized technology. And the nature of other types of texts, such as those that are repetitive either internally or from one version to another, means it is

not economical to translate them without (recourse to) specialized technology.

Do traditional translator-training institutions need interaction with the localization industry?

Only those that want their students to become part of the localization industry in its broadest sense.

Training for localization (replies to a questionnaire)

PATRICK DROUIN

Department of Linguistics and Translation,
University of Montreal, Canada

What, for you, is meant by "localization" and the "localization industry"?

Various definitions have been suggested for the concept of "localization". For me, localization is the interdisciplinary process of adapting an electronic product (software, website, Help file, CD, etc.) to the needs or expectations of a specific target audience (group of users, country, etc.). This definition is wider than the usual one, as it opens the door to a localization process without translation. For example, one could want to adapt a website to the needs of visually-impaired users or to the specific needs of a country that shares the language of the original product.

The "localization industry" includes everyone involved in the localization process, the localization tools developers and the end customers of the localized product.

Is translation a part of localization, or is localization a part of translation?

Translation is one of the activities that may take place in localization alongside, among others, project management, marketing, graphic design and software development. Large localization projects tend to include more actors than small ones, and multilingual localization projects include translators. In my view, translation and localization are parallel domains that need to interact based on the nature of the project at hand.

Is localization just a result of technology, or does it involve deep conceptual changes?

Technology, through the Internet and access to a world-wide market, has played a major part in the birth of the localization industry. It has made large corporations aware of cultural details that mainly remained unseen until the end of the 1980s. But I tend to remain skeptical and believe that the conceptual changes we observe on the surface are mainly driven by financial

concerns. The driving force behind the localization efforts is still potential revenue increase, as local markets become saturated. However bad this may sound, it is still a very good thing for translators, as they gain more exposure and may secure new revenues.

In what ways, if any, should localization change traditional conceptions of translation?

I do not see how it has changed, or will change, the actual translation act except that translators no longer work behind closed doors, as they usually did in the past. They are now considered members of a larger interdisciplinary team. Translators have to pay special attention to the consistency of terminology, phraseology, style, etc. between very different products. This was part of their task in the past, but it usually applied to a few documents of a similar nature and not to products as different as the ones we see in current localization projects (Help files, websites, printed manuals, etc.). Localization has made translators more aware that their translations will be included in a larger context. For example, when translating a graphic file, the task of the translator is to make sure the string is consistent with the overall translated material and that it respects visual constraints. On the other hand, a design or a marketing specialist, and not the translator, should ensure that the picture, the icon or the diagram is appropriate to the target audience.

Should all translator-training programs include localization?

Yes! In the short term, we need to familiarize students with the specific challenges of the new media (software interface, websites, multimedia documents, etc.). This type of translation has challenges and constraints—mainly the tools used in the process—just like audiovisual translation or interpretation, which we usually include in a standard curriculum.

I expect things to be different in the long run. I tend to agree with Bert Esselink, who recently suggested that the need to turn translators into semi-engineers will fade out with time, as localization tools evolve. Localization will remain an issue and will still need to be discussed in a translation curriculum, but I believe that localization tools will be a lot more user-friendly and that we will spend less time familiarizing students with technology. That said, the introduction of drastically new publishing technology will lead to periods when the available localization tools will not be able to assist the translator. Hopefully, as we have seen with the introduction of Microsoft's .NET platform, these periods will be relatively short.

Should all localization-training programs include translation?

In my opinion, every actor involved in the localization process should have at least a slight idea of the challenges of translation. I also believe it is very important for translators to have a good idea of the challenges the other members of the localization team are facing.

What elements of localization should be obligatory in the curriculum for translators? Which electronic tools should be taught?

Localization tools should obviously play an important part in the curriculum. However, teaching students how to handle specific localization tools is not the most important aspect, as these tools and the technical aspects of the material to be translated continuously evolve. We should help students understand the capabilities and, more importantly, the limits of such tools. It is also crucial that they understand when, and in which context, they should or should not use electronic tools.

What should be the main components in a curriculum for training people for the localization industry?

This is a difficult question but I can explain how we approach the problem at the University of Montreal. We currently have two localization programs, one at the graduate level ("postgraduate", for some countries), the other at the undergraduate level. The graduate program is targeted at translators who want to acquire good knowledge of what localization is and what it involves. The students first go through an introduction to localization. They then move on to training in localization tools, computer-assisted translation and machine translation, multimedia and hypermedia and, finally, to XML. Upon completion of the program, students are fully trained to join a localization team.

The undergraduate program is geared towards people who have been trained in translation, computer sciences or project management. There is a core group of classes in which students with different backgrounds learn to work together. Once the basic skills are acquired via the required courses, students select an area of expertise based on their prior training. Language specialists acquire computer skills and learn to use translation and localization tools. Computer specialists are trained to understand and use internationalization techniques and tools. The students wishing to develop management expertise take a series of project management courses and learn to apply the acquired knowledge and skills to localization projects.

At what level should students receive training in localization?

In my opinion, students should be trained at all levels and have a good idea of what localization covers. The sooner we can do this, the better.

Does the localization industry need interaction with the traditional translator-training institutions?

Yes! As most localization projects include a translation component, the localization industry should keep in touch with the future workforce. Without proper interaction between the industry and the training institutions, we will end up with training programs that do not reflect the needs of the industry, and industry expectations that differ significantly from the training offered.

In the case of the University of Montreal, proper relationships with the localization-tool vendors have been very difficult to establish. Our biggest challenge so far has been obtaining localization tools to train the students. The tools are expensive and our budgets tend to be very small. A few vendors now seem to be revising their previous position which was to see universities as customers. They now consider us as marketing grounds and not as money-generating entities. We noted, very interestingly, that it was easier to establish relationships with small vendors than with the well-established ones. I see this as a double-edged sword for the vendors. They might save some money in the short term by not providing training institutions with their technology, but our students, once they hit the market, will want to keep using the tools on which they have been trained.

Do traditional translator-training institutions need interaction with the localization industry?

Yes, for exactly the same reasons I stated in my previous answer. This, in my opinion, is a two-way street.

Who should fund the training programs?

There is no easy answer to this question. I think governments should play a role, for obvious reasons of public education and social involvement (not limited to localization or translation programs). In multilingual countries such as Canada, I strongly believe that governments should take an active role in language-related training programs.

The localization industry (translation vendors, tool vendors, etc.) is also one of the key players. We often hear that students hitting the market have to face a steep learning curve. In many cases, training institutions are fighting with tight budgets that limit their capabilities to train the students fully. It would only seem logical and profitable for the localization industry to

support the training and ensure that students have the required expertise once they complete their studies. Of course, we need to keep in mind that experience cannot be bought or thought.

At the financial level, I would like to see the professional translators' associations become involved. They could ensure a flow of expertise.

Summary of discussion on

Localization and Translator Training

CONCEIÇÃO BRAVO & VANESSA ENRÍQUEZ

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At the start of the conference two questions were put forward:

1. "What, for you, is meant by 'localization' and 'the localization industry'?"
2. "Is translation a part of localization, or is localization a part of translation?"

Anthony Pym referred to the second question as being particularly delicate for translation theorists, who "tend to see all this talk about 'localization' as simply encroaching on their territory". He also suggested that localization might not differ much from a dynamic concept of translation.

Regarding question one, Daniel Gouadec described "localization" as "translation PLUS any number of changes to the necessarily composite material to be 'localized'".

Vanessa Enriquez, a Ph.D. student in Translation and Intercultural Studies and a freelance translator in Spain, described "localization" as "the concept [which] involves the convergence of language and technology, necessary to adapt any kind of digital content (software, websites, portals, online support systems, etc.) to a given target locale".

Gemma Alonso, from the Universidad de Alicante, did not find any new features in localization, which she understood as the restriction of meaning to a particular context. She considered it as a relatively new term to name contextualized translation. In this regard, Tytti Suojanen (University of Tampere) and Jean Vienne (University of Turku) also considered that localization appears to refer to the adaptation processes already inherent in translation.

In line with the above reasoning, Beverly Adab believed that the concept of localization could be usefully added to the family of concepts developed by functionalist approaches to translation. However, Adab considered that the concept of "localization" tends to refer essentially to an IT process that requires some degree of cultural awareness.

In answer to question two, many discussants agreed that translation is inevitably a part of the localization process.

Frederik Verbeke, from the Universidad del País Vasco, suggested there was not much difference between Anthony Pym's definition of "localization"[1], depicted as a one-to-many scenario, and the literary models that "were transferred in the 19th century from dominating cultural system(s) to many different cultures". Anthony Pym questioned this interpretation and explained his emphasis on the "one-to-many" aspect of localization models:

> The 19th-century transfer of cultural models had nothing corresponding to internationalization (as understood in localization theory). Mallarmé and Zola were writing for Paris. They had no idea that their models would be adapted to other cultures; they did not try to allow for such later adaptations. […] The real problem is that we call the industry "localization", when internationalization is the key element of it.

Chris Chrystello, a professional translator writing from Portugal, offered a contrasting example where localization involved the translation of *one* text into *one* multicultural locale. He referred to the production of local videos for Portuguese-speaking people in Australia who came from diverse parts of the world, had their own sub-cultures, but shared the same language. Ignacio Garcia, writing from the University of Western Sydney, found this a relevant example and "each time more common in the area of community translation/interpreting, given migration patterns in developed countries".

According to Daniel Gouadec, the issue is not what the relationship of translation to localization is but "rather how translators (and trainers) should conceive of localization". To him, the questions should be:

> What skills are required to localize what? Which of those are specific to full-blown translators? Which of those are not currently translators' skills? Which of those could or should be learned by translators or taught by trainers? At what cost? In what way? For what kind and amount of added value?

Candace Seguinot (York University, Toronto, Canada) agreed with Gouadec that "the relationship of translation to localization is not as important as understanding the relationship between the skills each requires and the relationship between training and the market". Louise Brunette (Université Concordia, Québec) mentioned a "paradigm shift" and saw localization as

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[1] "We find centralized production of the one 'internationalized' text or product, which is then more efficiently 'localized' (translated and adapted) to a wide range of consumer environments ('locales')". Anthony Pym, "Globalization and the Politics of Translation Studies" (2003).
http://www.fut.es/~apym/on-line/globalization_canada.pdf.

having more at stake than just cultural and linguistic matters. Seguinot, however, considered the real shift to have been brought about by globalization.

Vladimir Pedchenko, from the Translation Office 3000 Development Team, distinguished translation from localization in terms of constraints: "translation has constraints of quality and deadline. Localization has constraints of quality, deadline, plus, at least, important constraints of software […]".

In his concluding statement on the opinions expressed about these two questions, Anthony Pym considered that, in general, the term "localization" was seen as representing some kind of change, more superficial for some than for others. Peter Sandrini, from the University of Innsbruck, failed to see the need for discussion of

> […] some broad concept of localization in the sense of adapting a text (or a product) to a local audience because this is what translation theory has been all about in the past 20 years […]. Localization, however, has brought some new aspects into translation insofar as it deals with new kinds of texts (software user interfaces, online help or multimedia texts published on the WWW) deeply linked with technology.

Summary of discussion on

Is localization just technology?

KRISTINA MULLAMAA & OLGA NÚÑEZ PIÑEIRO

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Two of the initial questions were: "Is localization just a result of technology, or does it involve deep conceptual changes?", and "In what ways, if any, should localization change traditional conceptions of translation?"

James St. André (National University of Singapore) opened the discussion by asking participants to consider the broader question of the relationship between changes in technology and culture. Referring to George Landow, he emphasized the way computers have changed the way we write, read and think, and that have led to conceptual changes that challenge our definition of translation.

Olga Torres, of the Tarragona Ph.D. program, suggested the answer to the question lies in the definition of technology itself, as this is involves deep conceptual changes and therefore by definition affects tasks such as localization that make use of technology.

Daniel Gouadec believed localization was the result of having to cope with new media, using new tools and learning new skills. He introduced the idea of the translator going beyond just transferring the language element to paper. He saw the translator as actually reaching out and adopting the technology required to take a step further into previously uncharted territory, into the realms of multimedia, software, video and websites. He did however draw the line at programming. He claimed his view was increasingly consistent with that of documentation engineers or managers. Gouadec concluded that localization is the result of technological changes but it is also firmly in the domain of technology.

Peter Sandrini, adopting a narrower concept of localization as "adapting a text (or a product) to a local audience", did not consider there to be any deep conceptual changes but did strongly advocate the idea that the translator must acquire a new skill set. Translators should be able to bridge the gap between technical people who lack the necessary cultural awareness and translators who do not possess sufficient technical know-how.

Tytti Suojanen, from the University of Tampere, suggested that instead of pondering the question of whether localization should change traditional conceptions of translation, we should consider how technological change has

and will continue to impact upon both the concepts of localization and how translators and training institutions should respond.

Ignacio García accepted that software and webpages are "localized" but considered that Help files, manuals, spare-part catalogs and pharmaceutical leaflets etc. are not treated in the same way. Instead he believed those documents are "translated very expeditiously using translation memories". He went on to request that the role of translation memories should be incorporated into the discussion, and he asked what the interrelationship is between translation memories, localization and traditional translation.

Beverley Adab, of Aston University in the United Kingdom, saw localization as a branch of translation that requires a fundamental awareness of translation theory but, equally, represents an activity that is far more complex in its use of IT. She felt that the underlying concept of adaptation to the local target audience remains constant, but what changes is the extent of technical know-how involved. She thus concurred with Daniel Gouadec's emphasis on 'what the translator does'.

Jim Oliver added his definition of localization, which centers on new technology and internationalization. He said that in his view "localization is the translation of the new age". Consequently the translator needs to be *au fait* with the latest technology. This is the "new" harsh reality.

José Ramón Biau Gil made referred to Anthony Pym's comments and stated that the concept of internationalization should be central. This would involve the idea of the source text as a draft which is then converted as efficiently as possible into the localized and final versions. Gil believed this shift to be the change in the conventional conception of translation.

Anthony Pym added that while the localization industry is dedicated to "an extreme degree of adaptation to target-user purposes", the electronic tools that are deployed actually reduce translation to "good-old backwards-looking phrase-level equivalence-seeking".

Brian Mossop, a government translator in Canada, pointed out that localization can be defined in two ways: 1) as an industrial practice, and 2) as a term in theoretical discussion (whose extension is potentially very large depending on how it is defined). He gave examples of news stories taken from English-language press agencies and the way they are translated for use by local newspapers. This illustrates how localization has been existent since before the computer era, as have its frequent failures. As far as deep conceptual change is concerned, Mossop thought that any definitions need to be formulated on the basis of a large time-scale, not just what has been going on in the past 20 years.

John Graham (BDU, Stuttgart) defined localization as the "preparation of a text or part text for insertion in documentation for the locale in question". He also presented two further descriptions from different sources:

> "Localization involves taking a product and making it linguistically and culturally appropriate to the target locale (country/region and language) where it will be used and sold." (LISA)

> "Localization: Linguistic and cultural adaptation and translation of software applications, technical descriptions, user manuals, etc., for local markets." (ÖNORM D 1200—Austrian standard)

Sue Ellen Wright, of Kent State University in the United States, thought that Graham's definition was not comprehensive enough and elaborated further on it by describing the localization process as requiring "huge interaction between the translation of text and the manipulation of a wide variety of tools and methodologies". She insisted on the increasing need for translators working in the localization field to have a decent grounding in XML and other formatting and exchange mechanisms. Graduates needed the opportunity to obtain these skills during their training.

Vanessa Enríquez understood localization as the convergence of language and technology but nevertheless considered the "classical" translation model and theories still pertinent. Localization has not brought conceptual changes to translation but has instead broadened the concept. The way technology has developed has forced a change in the industry whereby traditional translation skills must now be combined with technical ability.

Summary of discussion on

Finding Qualified Trainers

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Towards the end of the symposium, Ola Furmanek (Wake Forest University, United States) raised the question of the recruitment of qualified trainers. She wondered whether the solution was to attract industry specialists or to train applied linguistics/translation/communication scholars to teach localization.

She underlined how difficult it was in the United States to find localization practitioners combining a willingness to teach and a serious scholarly interest. She also stressed that academia seemed reluctant to hire technical specialists, as professional training is generally seen as pertaining to vocational schools. Ola Furmanek added that this situation was changing in the United Stated, but she saw another problem emerge, as she wondered whether there were enough qualified instructors to teach localization. She explained that her own institution had failed to hire a full-time translation/localization specialist to fill a tenure-track position, adding that few localization specialists seem willing to transmit their experience. She saw this as another reflection of the university/trade relationship, wondering whether this could be related to Frank Austermühl's earlier comment about industry-university cooperation (in which he asked whether the exclusion of translation scholars from localization conferences could not be compared to that of translators in localization projects), or if other factors were worth exploring.

Quoting a comment by Daniel Gouadec about the declining rate of students willing to engage in teaching, she asked whether other institutions also faced a similar situation.

Tim Altanero (Austin Community College, United States) took up this discussion and said that he had hired trainers in adjunct positions for several reasons. He stressed that he valued industry experience more highly than academic preparation, but that industry specialists generally held highly paid positions that restricted their availability. Short-term courses and team-teaching were relatively successful in order to attract such specialists, allowing them to teach while retaining their current positions.

Altanero added that, although his college needed another full-time faculty member, it was unable to compete with industry salaries. Further, hiring a localization specialist for a full-time position would require the candidate to retool to be advanced, and to hold a Ph.D. The exact nature of that Ph.D. was seen by Altanero as a can of worms he was unwilling to open.

Altanero further considered that localization as an academic career was at its very beginning. For him, this meant there was a poor understanding of what a localization specialist would do about the ancillary activities of a professor, such as publishing. He saw academe as being stuck in the "traditional" publishing outlets, and lacking scholarly publications in the field of localization.

He added that one of the most insidious problems facing localization professionals was the academy itself, which is broken down into small units unable to accommodate a field such as localization, which is largely meta-linguistic and straddles over the borders of traditional individual language departments, computer sciences, business and other fields.

Altanero concluded by saying that small steps were being taken to address the situation and that, while there was still some way to go in order to establish the field, the future looked exciting.

Summary of discussion on

What is XML and how do we teach it?

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The topic of XML was introduced as a specific example of many of the more general problems being discussed. It was hoped that some participants would have concrete ideas about how this particular subject area should be taught within the context of translation studies.

In response, Daniel Gouadec pointed to the wealth of information on XML available on the Internet. He also offered a basic differentiation between XML and the more well-known HTML by explaining that XML was designed to describe structured data whereas HTML is simply concerned with the displaying of data.

Mark Shuttleworth (Imperial College, London) added that XML allows you to define your own set of tags to mark up data in an intelligent and meaningful way, whereas HTML is only concerned with the representation format of data and not with its structure and meaning. Examples provided during the discussion illustrated the use of XML tags to label different types of information contained in a document such as author, price, first line of address, French term, or German translation memory segment.

Supplied was also a link to an article written by Michael Beddow entitled "What is XML and what use is it? Some answers from a Humanities perspective": http://and5.anglo-orman.net:8082/sitedocs/whatis.html. This article is used as a starting point for students at Imperial College, London, where teaching XML forms part of the Language Engineering module of the M.Sc. program in Scientific, Technical and Medical Translation with Translation Technology. The main objective of this course is to keep students up-to-date with how markup languages are evolving and to emphasize the particular relevance of this technology as far as translation and localization are concerned.

In terms of the actual course content, Shuttleworth explained that the module combined a significant theoretical component with a degree of practical work involving creation of simple XML documents. The popularity of this component would suggest the merits of such a course, further reinforced by the decision of some students to produce their dissertations on XML-related topics.

Anthony Pym intervened by making the point that currently his students are not really taught HTML let alone XML. While some time is spent on looking at the workings of HTML, the documents are usually created using software without students learning the mark-up language itself.

Pym's concern was that some students are highly skilled linguists but are uncomfortable with excessively complicated coding. Up to now teaching has concentrated on the creation tools available, making it unnecessary to teach the underlying coding languages. In the same way, the theory of XML could be taught without developing practical elements, although the worry is that this could be counter-productive.

Daniel Gouadec addressed Anthony Pym's reservations and suggested that once students have acquired a reasonable level of computer literacy, curiosity and interest, they are often capable of teaching themselves "whateverML".

At Gouadec's institution there are two IT teachers who deal with Visual Basic, Perl, and JavaScript, and another teacher who covers DTDs, HTML, XML, etc. Gouadec reported that the student take-up is high and that the syllabus is under constant review after hearing the reports from graduate work placements and taking on board feedback from former students. Advantage is also taken of the students' ability to teach their fellow students (Gouadec remarked it was the way they introduced subtitling, SDLX, dubbing, website cloning and localization of videogames).

Melany Laterman commented that, in her 12 years experience as a translator in software localization, it is not necessary for a translator to become an engineer or to learn how to write code (XML or any other) in order to work in the software or website localization industry. She agreed that a translator planning to work in this field must have some degree of technical know-how (for example, how to work with different file formats, text editing programs, CAT tools) as the market dictates that professional translators (with the possible exception of literary translators) must be prepared to tackle the non-translation aspects of the task in question.

Laterman strongly believed that students must be very familiar with different file formats. While she thought that programming and compiling code was really the territory of qualified engineers, any translator in a position to provide these services is adding enormous value to their product.

The final contribution in this discussion came from Patrick Drouin, who teaches localization at the University of Montreal. He stated that all students taking his localization courses must be familiar with XML to the extent that they should be able to understand what TMX, TBX and XLIFF are. Those students who opt to take part in the localization program receive tuition from lecturers from the Library Sciences Department, where they learn about DTDs, XML, SGML, ODA and XSLT.

Technology and Translation

Training translators to localize

FRANK AUSTERMÜHL

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Abstract. *The role that localization training plays in translator training programs is scrutinized with particular reference to the School of Applied Linguistics and Cultural Studies at the University of Mainz in Germany. Specific examples are given of the three types of courses that are run under the umbrella of localization, namely translation for localization (emphasis on software and websites), electronic tools for translators, and theoretical issues of localization. A four-level model of translating for localization is introduced encompassing an introduction to localization and computer systems followed by website and software localization and finally the research component. The importance of real-world examples and project work is emphasized throughout, with particular reference to organization and management and familiarity with industry tools and, at the higher level, the value of thorough research.*

Introduction

This position paper will mainly focus on how localization training should be integrated into translator training programs. Most of the paper will be based on my own approach to website and software localization, as implemented within the constraints of a traditional four-year program at the School of Applied Linguistics and Cultural Studies at Germersheim (University of Mainz), Germany.

Before discussing approaches to localization training within and beyond traditional programs of translation and interpretation, I should say that I consider translation to be an integral and central part of localization, but I also consider localization to be more than translation. Localization comprises several tasks that are traditional translation tasks like, yes, translating text itself, terminology mining and management, or revision. However, there are also tasks like software development and engineering, desk-top publishing or the editing of graphics files, that, at most, lie on the peripheries of technical translation. The boundaries between translator tasks and localizer tasks are rather fuzzy, but they nevertheless exist, as the rather clear division of labor between freelance translators and translation or localization project managers shows. The differentiation between translator tasks and localizer tasks also gives rise to upward mobility schemes for freelance translators.

Given the different textual and technical natures of software products and websites and taking into account their different development and publication cycles, software and website localization should not be lumped together as "just the same kind of localization" but should be considered as different phenomena. The development of comparative text typologies, both for hypertexts as well as for software texts, will help to define the differences between these two localization types. They will also shed light on such hybrid products as computer games or DVDs.

Integrating localization into traditional training programs

With regard to ways of integrating localization into translator training programs I will focus on three areas (see Figure 1). The first, which could be called translation for localization, takes place within traditional translation practice classes and focuses on software and website localization. The second type deals with electronic tools for translators. These courses are usually optional.

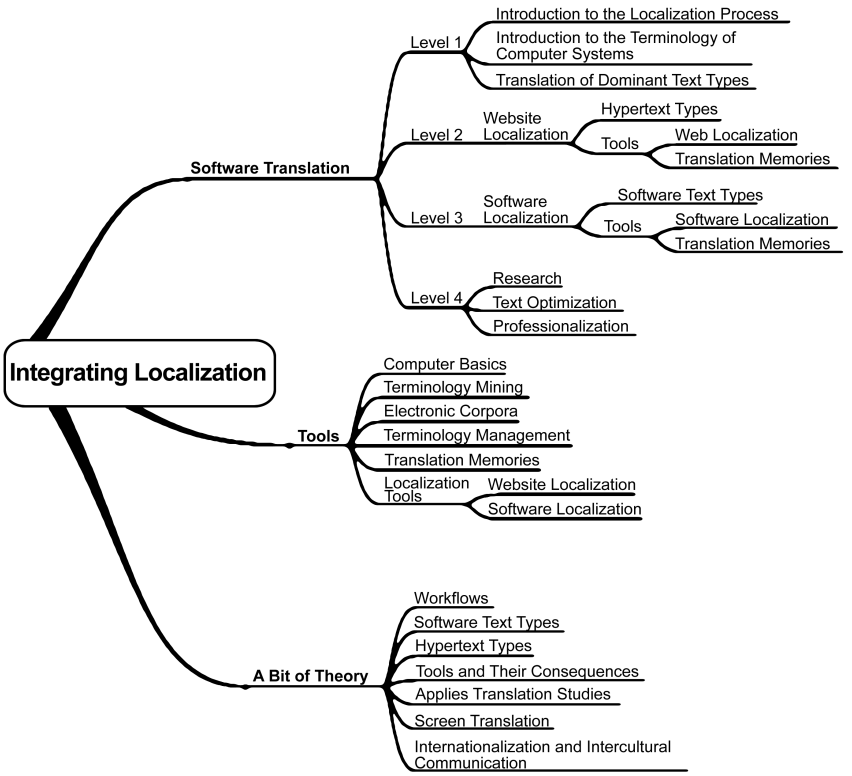

Figure 1: Integrating Localization—General Approach

The third part of the general approach on introducing localization regards seminars dealing with theoretical issues of localization, e.g. workflow analyses, text typologies or translational constraints derived from, for example, the use of content management systems, translation memories, or localization tools. One of the goals of these more theory-oriented courses is to find ways of applying existing translation studies paradigms (for example *Skopos* theory or Holz-Mänttäri's Theory of Translational Action) to localization. Courses in the theory part of the model also deal with issues of internationalization. Given the fact that a good part of the intercultural component of software and website translation is actually located on the level of internationalization, students—as future experts for intercultural communication—learn to apply their bi- or multicultural skills to software programs or multilingual websites.

My thoughts on the question of what elements of localization should be included in a curriculum for translator training and how they should be taught will be guided by the question of feasibility, i.e. what kind of solutions are possible given existing curricular, administrative, and institutional constraints. Accordingly, I will be talking mainly about solutions within traditional translation programs (i.e. the German *Diplom* or the Spanish *Licenciatura*), while solutions outside the traditional scheme of translator training (like specialized postgraduate or MA programs) will only be briefly mentioned. However, since the following proposals are based on a modular approach to localization training, they could easily be used in both of these settings.

Translating for Localization

As stated above, I propose a conceptual differentiation between "translation tasks," i.e. software translation and website translation and "localization tasks" (knowing, of course, that a clear distinction is not possible). The first set of these tasks will most likely be carried out by freelance translators, while the localizer tasks will be carried out by in-house staff, e.g. project managers (a lot of them former freelance translators), software engineers, or quality-control specialists. If we look at localization from the point of view of freelance translators (most of our graduates will use the sector as a first stepping stone into the market) localization could be easily integrated into existing translator-training programs. This could be even more straightforward if we did not start from the notion of localization, which in my mind often places too much emphasis on the *production* process of a multilingual website or software product, but if we instead simply talked about translating software texts and translating hypertexts, something that can be dealt with in rather traditional translation practice classes on technical or scientific texts (only computer-based and -supported, as well as team- and project-oriented).

With regard to my own classes on technical translation, over the course of the past eight years I have developed a four-level model for software and website translation (see Figure 2).

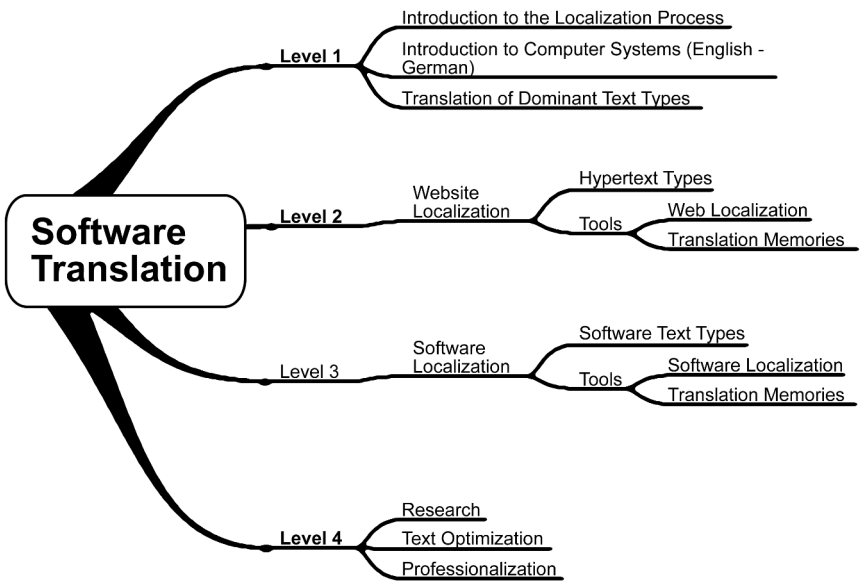

Figure 2: Translating for Localization—Four-Level Model

Each level now comprises about 30 hours. On the first level, students (usually early in their third year) are introduced to localization in general and to the basic text types involved in software localization (on-screen texts, installation guides, Help files). In addition, this course also serves as an introduction to basic hardware and software terminology. This introduction is based on a number of interrelated concept systems (see figure 3 for an example) and fortified through the contents and foci of the texts used throughout the translation practice class (e.g. excerpts from a printer manual or an installation guide for a network adapter).

The courses on the second and third levels (third and fourth years) of the two-year model aim to introduce the participants to "real-life" translation projects. Students not only use typical translator tools such as terminology management systems, translation memories, and localization tools, but also learn how to manage and coordinate small localization projects. On each of the two levels, students carry out a specific localization project, one focusing on software localization, the other on website localization. If possible, these courses are based on real translation tasks, i.e. involving real clients and the subsequent publication of the project results. Where this it not possible, a

real-life project is simulated. The courses include all stages of a localization project from analyzing the source text, calculating the (unfortunately fictitious) budget, organizing and managing the distributed translation of the files, creating and maintaining a project terminology base, building customized corpora, and using CAT tools such as Catalyst or Passolo for software localization or Cats Cradle or Trados Tag Editor for HTML/XML files. Students take on individual roles and become project managers, terminologists, translators or revisers. Software localization projects also comprise the translation of Help files and printed documentation, which can also include the handling of translation-memory systems. For time reasons, however, the use of translation-memory systems usually has to be reduced to a short presentation or has to be left out altogether. Nevertheless, translation memory systems are taught in a different class, and this class is especially geared to third- and fourth-year students.

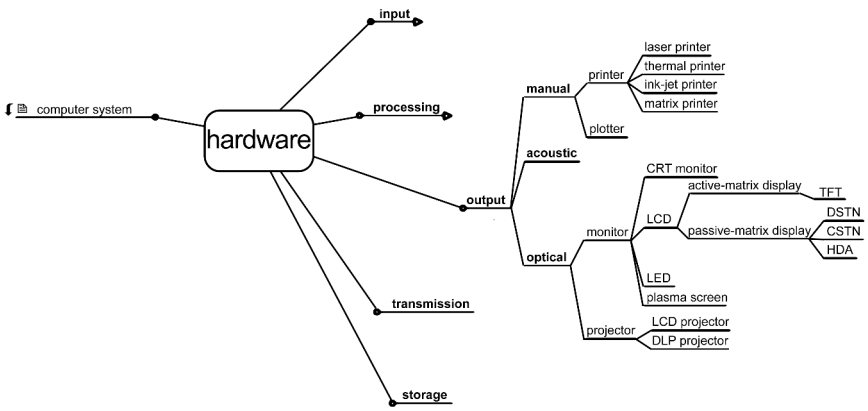

Figure 3: Concept system "Hardware—Output Devices

The fourth level of this translating-for-localization model is directed at exam candidates, usually in their fourth year of study. The final exam in technical translation is a three-hour written translation of a five-hundred-word text. The translation is written by hand and no electronic resources are allowed, but students are allowed to use a print copy of a glossary that they themselves have put together during the semester leading to the exam. An exam course is necessarily influenced by the nature of the exam and student's hopes of and expectations, e.g. solid knowledge of the subject area dealt with and the terminology involved as well as confidence in analyzing and producing culturally-adequate texts. From the student's point of view, this course is very much about "panic control". In addition to this primary goal, the course aims at developing some crucial professional skills. One of these skills is the ability to research a topic thoroughly (I usually pick a

rather new and/or unknown topic) and to build a strong knowledge base that includes the main terminology and phraseology in the field. Starting from this knowledge base, which is supported by a terminology database and a customized bilingual corpus, students are encouraged to self-confidently create independent texts. The source texts usually represent technical marketing material or detailed product descriptions and force the students to dig deep into their encyclopedic and terminological repertoire while at the same time leaving them more room for creativity than, for example, a set of software strings or a Getting Started Guide does. In addition, these types of texts also encourage the students to work on their revision skills. Class discussion is usually based on one sample translation. This presentation is prepared by a group of three students, of which one serves as terminologist, one as translator, and one as reviser.

All four courses mentioned above are obligatory, and are supported by a course website and either a mailing list or a newsgroup.

On Translator Tools and Localizer Tools

The four levels making up the "translating-for-localization model" is supported by a number of additional, non-obligatory courses on electronic tools for translators. The teaching of these courses is divided into several categories, as shown in figure 4.

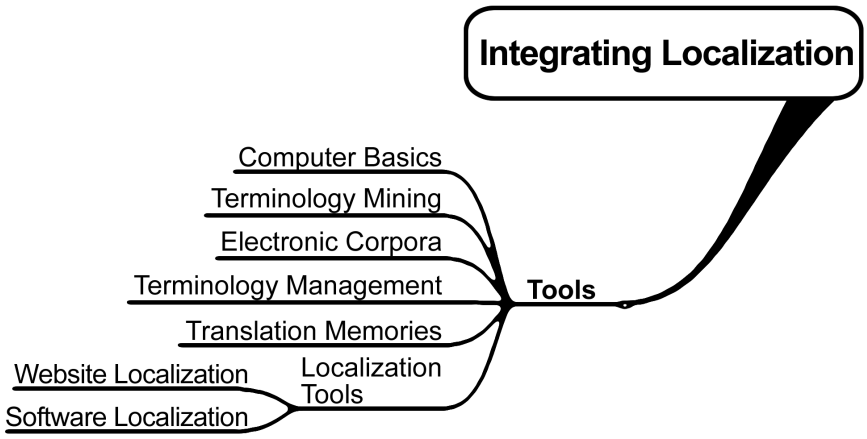

Figure 4: Integrating Localization—Tools

In general, we distinguish between two separate, yet closely interconnected sub-processes, each requiring its own set of task-specific tools. The first of these domains comprises the "classical" three-step translation model of source text reception, information transfer, and target text formulation. The computer-based resources used during this core translation process aim

at providing the translator with the linguistic, encyclopedic, and cultural information necessary to successfully perform the task. Since we consider translation to be an utterly knowledge-based activity (see Stolze 1992), these "translator tools" will ideally serve to enhance the translators' hermeneutic abilities, thus allowing them to unfold their full creative potential.

This ideal situation of a translator's freedom, however, is in many cases torpedoed by a second group of electronic tools. These applications, which we will call "localizer tools", aim primarily at streamlining the business process of translation, especially with regard to larger, repetitive translation tasks and projects. Although from the point of view of a human translator it is tempting to characterize these tools (primarily translation memories or localization tools) as merely productivity-enhancing, their impact on the improvement of translation quality, especially with regard to terminological and phraseological consistency, should not be ignored.

Here we focus on the various translator tools, on translation memory and localization solutions, which are used by translators and localizers alike, and on machine translation systems. The other tools listed are primarily used by larger translation agencies to help optimize the localization workflow and, as in the case of multilingual content management systems, to speed up the actualization of multilingual documentation or websites. As the typology in Figure 5 shows, the automation of the process increases from right to left. The model also shows the overlap in terminology database, translation memory and, to a lesser extent, localization tools used by translators and localizers. The translation-memory and localization programs available do vary however with regard to the number of available features. Software used by freelance translators oftentimes offers only part of the functionality available to localizers. These customized applications have become known as "light" or "front-end" solutions.

Translation and Localization Technology

Localizer / Productivity Tools		Translator / Knowledge Tools	
DTP Tools	Term Extractors, Term Bases	Term Bases (Glossaries)	Encyclopedias
Quality Assurance Tools	Translation Memories Back Ends	Translation Memories Front Ends	Dictionaries
Project Management Tools	Localization Tools Back Ends	Localization Tools Front Ends	Digital Archives
Workflow Systems			DIY Corpora
Content / Globalization Management Systems			Concordances
Machine Translation			Specialized Websites and Newsgroups
Internationalization			Multilingual Knowledge Management

Figure 5: A Typology of Translation and Localization Technology

While our distinction between translator tools and localizer tools serves a theoretical and didactic purpose, the processes involving these tools and their individual advantages and disadvantages cannot and should not be seen as separate. The close interconnection of translation as the transfer of knowledge across cultural and linguistic borders and translation as part of a larger business process must not be neglected.

A bit of localization theory

Both the translation courses and the tool courses are flanked by additional courses that offer a more seminar-style discussion of localization issues. This third element of my overall approach aims at applying existing translation studies approaches to the field of localization and developing new ones.

Theoretical considerations of the localization paradigm should also address the changes that the industrialization of the translation process bring about for the professional lives of translators and localizers. This should include a description and critical analysis of typical localization workflow patterns and a warning against the translational constraints resulting from the use of translation tools.

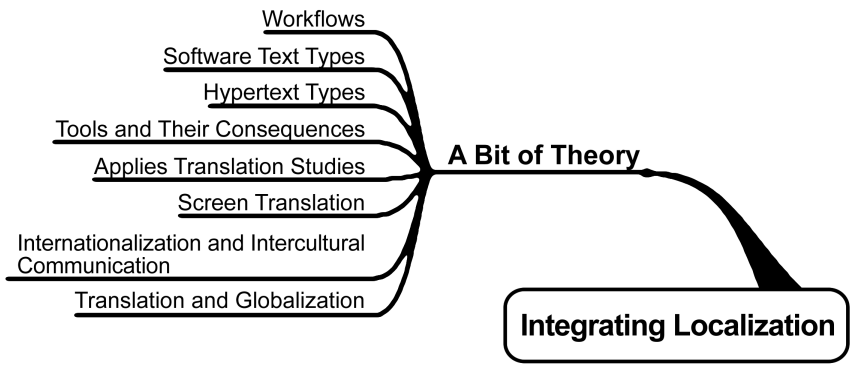

Figure 6: Integrating Localization—Possible Theoretical Issues

The main characteristics and advantages of translation-memory (TM) systems are widely known, and could be summed up as follows: Given the fact that technical documentation in general tends to be redundant, the use of translation-memory systems eliminates the need for repetitive translations of regularly recurrent textual segments. This refers to repetitions of the same or similar source text units within the same text (internal repetitions) or repetitions within a corpus of previously translated texts (external repetitions). The automatic recognition of previously translated segments

increases the stylistic, phraseological, and terminological consistency of the target texts, which constitutes a major quality improvement. The elimination of repetitive tasks leads to faster turn-around times, productivity increases, and lower costs, and at the same time frees the translator from time-consuming, boring, and error-prone tasks. Project management functions available within translation-memory tools provide, for example, statistical information about translated segments and thus allow for the better planning and monitoring of localization processes. Translation memories can be used over local or global networks, which speeds up team-based translation projects, and helps to secure consistency among translations produced at remote, yet interconnected sites.

Despite these undisputed advantages, translation-memory usage also includes a number of inconveniences, especially from the point of view of individual translators. Among the complaints from the translator community are the rigidity of source text structures, the dominance of the sentence or sub-sentence phrases as primary translation units, incompatibilities within one TM or between TM and term bases contents, faulty yet untouchable segments, the lack of creativity for the translator as autonomous text producer, the lack of co-text and context for the segments to be translated, and the lack of motivation or freedom to go beyond the simplistic source text structures and the preexisting translations imposed upon the translator by the TM system. Another problem with regard to the use of translation memories is the question of copyright and intellectual ownership of the translations that form part of the TM.

Given the dangers of a snowball effect of translation errors embedded in TMs, one must control the quality of segments stored (for source texts as well as for target texts) and the consistency of the content of TMs and term bases become essential for the overall quality of any translation project. Therefore, TM systems must provide for the easy manipulation and updating of existing TMs, including the automatic update and replacement of new or modified terminology. This quality maintenance is directly related with the reliability of a TM and thus with the quality of the work produced using a TM system. That sounds pretty simple, and all TM suites offer the necessary features for this kind of quality control.

The problem, though, is that the realities of modern, conveyor-belt-like localization projects, tight delivery deadlines and even tighter budgets mean that quality control of TM content is often not carried out thoroughly enough. As a result if this neglect, units stored in translation memories are often neither reliable nor consistent, which basically renders the main arguments for their usage obsolete.

In many case the use of TMs and other localizer tools thus leads to frustrated users. Many of the problems are caused by not seeing translation as an integral part of localization projects, and by not considering technology as and integral component of translating. Interesting, and I would add, rather

telling about some approaches to translation of the language industry, is a statement on the role of translators taken from a rather expensive-looking Trados brochure: "The translator or linguist is a language expert responsible for the creation of the translation as such. He (or she) focuses mainly on the content (of the translation) and not so much on the technologies involved or on the translation process (as a whole)" (Trados 5). I struggle to see why a company that is dependent on its TM sales needs to promote such an isolated, outdated, and utterly technocratic view of the translator and his or her doing.

This quote, however, seems to be symptomatic for an industrial system that creates a seemingly permanent frustration among freelance translators who feel either exploited and/or deprived of their linguistic and translational freedom or who "just don't give a damn."

Bob Clark (2003) has warned of the dangers connected with the strict hierarchy of the localization industry. He calls for the rehumanizing of translation, and describes rather well what is happening to individual translators within the localization industry.

So, in today's professional reality, home offices regularly convert into sweat shops with translators desperately trying to meet yet another unexpectedly advanced delivery date. Due to the size of the files to be dealt with and inhumane dead lines, many modern translators feel exploited and over-pressured. Yet, at the same time they are often times bored because of the monotony of their work, e.g. the translation of seemingly endless software strings. In addition, many typical localization text types such as resource files significantly cut into a translator's freedom, forcing him or her to-quite literally-count characters. In text types that due to their functions and structures would give translators a little more creative leeway beyond bilingual bean counting, the dictatorship of terminology presets (many of them established by linguistically-challenged software developers) and the sacrosanctity of translation memories restrict the hermeneutical activities of translators right form the start. Just like that, the advent of translation memories and the "one-size-fits-all approach" they represent, have effectively reintroduced "the phrase" to the throne of translation units.

Some of the central components of modern translation project management contribute to a translation reality that is in many ways diametrically opposed to key paradigms of modern translation theory. What room is there, for example, for Hönig and Kußmaul's "degree of differentiation" (1982:58-63), which allows, or better, implores the translator to add information, to leave out information, to alter the text where necessary? How many times are users of translation memories faced with a couple of source-text sentences that would sound just lovely if made into one in the target language? Of course, technically, that could be done by changing the segment alignment. But how many translators would do this, and how many project managers or clients would accept it? Under these circumstances, can

translation still be "the creative give-and-take of intuition and cognition" that Paul Kußmaul writes about (1998:49 and 2000)? To be fair, however, with regard to many typical software types, e.g. on-screen texts and strings, this kind of approach would represent a theoretical overkill. But does the same hold true for manuals, for e-learning material, for marketing texts? And what about instruments of coherence? Anaphora, cataphora, isotopy, paraphrasing, substituting? Forget them. In a text that is a "just-in-time document", that is less a text than a momentary assemblage of content fragments within which every fragment, every phrase can become the readers entry point, "repeating" becomes the one and only resumption strategy. Think that's bad? Wait for content-management systems.

My reason for stressing the negative impact on individual translator is also to sound a warning. Translating within larger localization projects or for the pitiful word fees of many agencies can no longer be advertised as an attractive and challenging profession (not to mention it being a lucrative one). Many excellent graduates of translation schools are already migrating to new, more rewarding professional fields. And those working in the localization setting are constantly looking for ways up or out, making technical and software translation more and more and entry level job or a way to survive financially until something better comes up. The results of this are a lack of qualified and motivated beginners, and a translation brain drain, i.e. the professional escaping of qualified and experience translators.

Localization and, above all, internationalization can benefit from Translation Studies. Anthony Pym (2003) has mentioned some of the possible links. Finding ways of applying Translation Studies to localization (and developing new approaches) will be an important challenge for academics in the field. A comparison of subtitling approaches and software and website localization, for example, will show interesting similarities between these two types of screen translation.

We should also become more involved in thinking about the ways in which translation is related to computer-mediated intercultural communication, and how it fits into the workflow of localization processes. In that regard, it would be interesting to see if, for example, consistent and resolute post-alignment of thoroughly researched and revised translations could not lead to higher productivity, better quality, and more consistency in TM usage.

Furthermore, scholars might want to look at and compare text types involved in website and software localization. Using a typology of software text types (see figure 7 for a simple representation), analyses could focus on the textual characteristics, inter- and intracultural differences or technical constraints of these specific texts, which would be one way of preparing future translators (and technical writers) for the advent of XML-based globalization management systems.

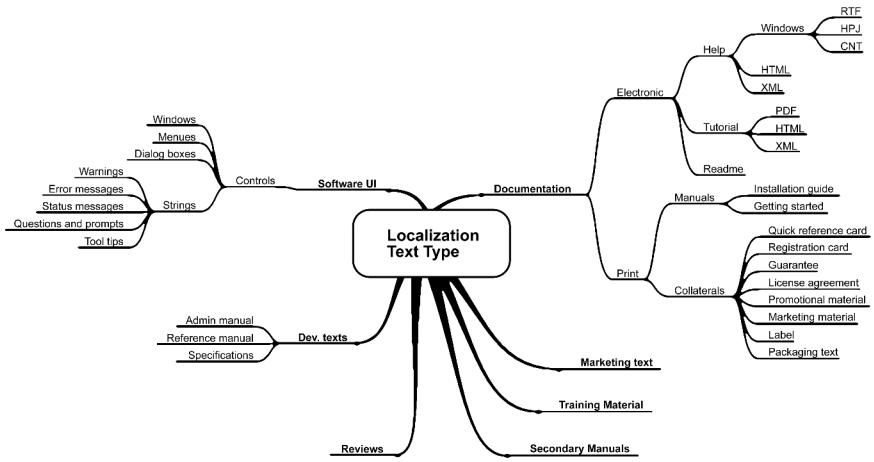

Figure 7: A Typology of Software Texts

Conclusion

The model described above calls for a scalable approach to integrating localization into translator training program. The approach reflects the institutional constraints of a traditional four-year program. The model has proven to be flexible enough to allow students interested in technical translation, translation technology and localization to combine numerous obligatory and optional courses for a specialization in this field within the traditional *Diplom* program. The obligatory four-level module on software translations (English to German) guarantees the student's exposure to the dominant text types and tools involved in software and website localization. The optional second part of the overall approach, the courses on electronic tools for translators, allows for an individualization of the learning pace by letting students select the courses on the basis of their prior experience. The courses on tools are also very well suited for conversion into e-learning units. The third component of the approach allows for a more thorough and critical analysis of the localization paradigm. Students can write term papers and their final theses on the issues mentioned above and might even go on writing their dissertation about Translation Studies and localization.

The courses offered within the above model can be easily combined with other translation courses, for instance in order to cover other relevant language combinations like Spanish and German, or English and Spanish. They could also serve as the basis for more technology-oriented program on translation tools and localization project management.

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Introducing IT in translator training: Experiences from the COLC project

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Abstract. *One of the major recent developments in the translation industry is the introduction of computer technology. From 2000 to 2004 the Savonlinna School of Translation Studies responded to this general development through the specialized three-year COLC project (Computing for Language Careers), designed to update the curriculum of its degree program in translation and interpreting. A total of 15 new computer-related courses were offered within the project. It was shown that both students and teachers were aware of the need to familiarize themselves with the new translation technologies. But at the same time the project revealed several problem areas. The major challenges of the project were organization and timetables, outsourcing teaching, transfer of knowledge, and student attitudes.*

The way translators work has changed: commissions arrive by email, and translators are expected to use the internet, electronic dictionaries, translation memory tools, electronic corpora and concordance software, etc. to increase the efficiency and quality of their work. As the Finnish POSI committee stated in their final report in 2000: "Employers on the public as well as the private sector, translation agencies and translators themselves all agreed that one of the things urgently needed on the market are better computing or IT skills" (translation RJ).

In this paper we will describe one of the ways in which the Savonlinna School of Translation Studies has responded to these recent changes in the translation industry. In November 2000, a project known as Computing for Language Careers (later COLC) was launched, and its main aim was to update the curriculum of the degree program in translation and interpreting at Savonlinna.

The three-year project, which ended in June 2004, was funded by the European Social Fund of the European Union and the State Provincial Office of Eastern Finland, and it employed four persons full time and several part-time teachers. The facilities and hardware were provided by the Savonlinna School of Translation Studies. These included a state-of-the-art computer class known as the Translation Lab, which had 13 workstations for students equipped with a wide variety of language and translation technological software.

The aims of the project

As was mentioned above, the main aim of the COLC project was to improve the undergraduate training at Savonlinna by (1) updating the contents of the curriculum and (2) by adding a new minor subject: Information technology for translators. The emphasis was on teaching information and translation technological skills. One of the most important issues was to address both aspects of the changes in the market, i.e. not only to provide teaching of translation tools, but also to give relevant theoretical background on working in different areas of the translation industry, such as localization projects.

In addition to improving the undergraduate studies, the COLC project aimed at providing training for the trainers. The COLC staff arranged short courses on translation tools as well as other tools such as presentation software. These courses provided the staff at Savonlinna with an opportunity to update their knowledge and to learn about the possibilities of integrating for instance translation tools into "normal" translation classes. One example of such integration would be to build and use translation memories, term bases and/or corpora in special field translation courses.

Finally, the project aimed at promoting equality between men and women, since information technology courses are often offered in male-dominated technical fields of study. In contrast, 85% of all students of translation at Savonlinna are women. As roughly two thirds of the participants in the COLC courses were women, it can be said that this goal had already been achieved.

Studies

The COLC studies consisted of 15 different courses, divided into basic and subject studies, each package comprising 30 ECTS. In addition to completing one or both of these packages, students could also choose individual courses to complement their studies. A list of courses offered in each package is shown in Table 1.

Most of the COLC courses were taught by COLC staff members, who had different areas of expertise ranging from translation tools to software engineering and globalization. On some courses teaching was outsourced to experts of that particular field. Outsourced courses included Databases, Software testing, and Project management. During the first three years, over 100 students took at least some of the COLC courses, and the project produced nearly 1500 ECTS.

Feedback

An intermediate survey was carried out at the end of 2003 to collect feedback, which could be used to improve the project in its final year and in

Basic studies
Introduction to localization
Basic computer skills (for translators)
Graphical user interfaces
Introduction to software engineering
Software documentation
Translation memory tools and term databases
Corpus linguistics and corpus-aided translation

Subject studies
Introduction to programming
Databases
Localization in practice
Software testing
Working with text and hypertext
Project management
(Additional) Tools for translators

Table 1. Courses offered in the COLC project

planning for the future. The survey was carried out as a web-based questionnaire.

Feedback from teaching staff (n=14)

The teaching staff seemed to agree that the COLC project had improved the profile of the Savonlinna School of Translation Studies and that all our graduates should know the basics of translation technology. The integration of key courses (e.g. translation memory tools and corpus linguistics) into normal curriculum was also seen as an important step.

Twelve out of 14 respondents had participated in the training offered by the project. The most popular course with a total of 22 participants was the introduction to presentation software (PowerPoint), which is not, however, a course in translation technology. Paradoxically, nine out of 14 respondents had not familiarized themselves with the new IT tools, such as educational networks or new translation technology software (e.g. translation memory tools). These findings suggest problems with regard to integrating translation technology into the "normal" curriculum.

Feedback from students (n=40)

The students seemed to almost unanimously agree that key courses should be integrated into the normal curriculum. Similarly, Basic Computer Skills,

Translation Memory Tools and Corpus-aided Translation should be made compulsory for all students of translation. Some students would also have liked to receive more information about courses to make them sound less frightening and forbidding. This seemed to imply that fear of computers still existed among Arts students.

Students also expressed their concern that if the courses were no longer available after the project ends, this would be a considerable loss for the Savonlinna School of Translation Studies.

Challenges

The main challenges in the COLC project could be divided into four categories: Organization and timetables, outsourcing teaching, transfer of knowledge, and attitudes of students. These will be discussed in more detail below.

Organization and timetables

The organization and timetabling of courses created some difficulties. Trying to avoid overlapping with mandatory courses and finding slots both in terms of suitable times and appropriately equipped classrooms was not always easy. Students and teachers had to compromise and make special arrangements to avoid canceling courses. As a partial solution to this problem, the COLC project also successfully experimented with introducing the third semester into the Finnish university system, i.e. providing courses during the summer.

Outsourcing teaching

Finding teachers with the necessary qualifications and expertise for IT courses was not always easy. Based on the student feedback and our own observations, it is very important that instructors have sufficient knowledge of Translation Studies, in addition to their special field of expertise. Lacking knowledge of translation can make it virtually impossible to make the necessary link between the course and Translation Studies. A failure to establish this link can easily result in students losing motivation, as they cannot see why they should be aware of the issues they are being taught.

Transfer of knowledge

Projects do not last forever. Therefore it is vital that the experiences and knowledge accumulated in the project be passed on to the permanent teaching staff who will stay in the School after the project. The transfer of

knowledge proved to be an unexpectedly difficult task. One reason seemed to be that many teachers and staff members did not realize that the project will come to an end and that it is not guaranteed that the project staff will remain in the School. Particularly the beginning was hard, as there were few people willing to participate in the training. During the project's final six months many staff members woke up and started to ask for extra training sessions. As the saying goes, better late than never; however, this is a problem in terms of for instance integration of translation technology into the curriculum.

Attitudes of teachers and students

Traditionally computers and information technology have not played any important role in translation studies at Savonlinna or elsewhere. Some students and teaching staff still harbored certain prejudices against using computers in translation. Some even said that they suffered from a fear of computers. Fortunately, the important role of computers and information technology in today's translation industry was recognized in several publications (e.g. Mortensen 2000:28, Pym 2002), which has made both staff and students aware that computers are not there to replace translators but to help them where possible.

Implications

The COLC project was developed in close co-operation with software companies offering translation technology solutions, and this model proved very successful. Most of the applications were received free of charge or with minimal costs for educational purposes. As a result, at that moment the School had an extensive set of translation technology tools installed in most of the computer classrooms. The students could familiarize themselves with tools used throughout the industry, and free updates enabled the teachers to be always among the first to know about new solutions.

The project also increased the visibility and profile of the Savonlinna School of Translation Studies both locally and in the field at large; it also made the school more attractive to potential new students. In addition, the 15 available courses considerably increased choices in the curriculum.

Computing for Language Careers was the first of many interconnected projects on the Savonlinna Campus. Together with projects such as Continuing education for language professionals, Customs terminology project and Audiovisual communication for translators and interpreters it has made the Savonlinna campus of the University of Joensuu one of the centers of translation technology in Finland.

Future at Savonlinna

Two of the projects—COLC and Audiovisual communication for translators and interpreters, which offers courses on topics such as journalism, new media, subtitling, dubbing, distance interpreting (videoconferencing)—ended. In 2005 with the introduction of the European Degree reform in Finland the Savonlinna School of Translation Studies aims to introduce a separate, specialized Master's program on "Translation and communication technology".

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Teaching electronic tools for translators online

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Abstract. *The growing demand for training in translation technology can partly be met by courses in a 100% online mode. These courses, however, cannot simply transfer the experience gained in face-to-face environments. This paper reflects on the teaching of electronic tools for translators in a 100% online training environment, comparing the difficulties encountered with similar problems that surfaced when the same contents were taught face-to-face. It is concluded that a key factor when selecting students for online courses is their initial computer literacy, and that this is especially true in courses on translation technology.* [*]

On online training

There is a huge demand for online courses. Nowadays, studying is not something that people do before entering the labor market; it is a lifetime activity. Today's professionals are ready to invest in training, but they must combine it with other adult responsibilities such as working full-time and raising children. The traditional university face-to-face teaching system thus fails to provide an adequate means of training for this sector of potential students. On top of that, online training is suitable not only for practicing professionals, but also for other profiles (traditional young students included), so the scope of student intake is very wide.

There is also a strong supply of online courses. In an effort to catch up with the times and attract more students, most universities offer now virtual or semi-virtual courses. This is as true in the field of translation as it is in any other field of professional training.

On translation technologies

Personal computers and the Internet have brought about a shift in the way translators work. Twenty years ago most freelance translators used a typewriter or dictated translations to a secretary; ten years ago they had a

[*] This paper was written within the frame of the research project "Evaluación de medios de aprendizaje a distancia en la formación avanzada de traductores" (BFF-2002-03050), Ministerio de Ciencia y Tecnología, Madrid.

computer with a word processor; nowadays most translators need to know how to use translation-memory software and terminology managers, and must be expert Internet users. They might also have replaced the secretary with a voice-recognition software system. Telecommuting is now a reality within the profession, since electronic means of communication mean that customers and translators no longer need to be in the same geographical area, and members of the same translation team may live and work in different places. The Internet (and, by extension, computer proficiency) is not only a source of information or a tool for translations, but also the platform for communication with clients, agencies and fellow translators.

Online courses at Tarragona

The Intercultural Studies Group at the Universitat Rovira i Virgili in Tarragona currently offers two certificate courses in 100% online mode. One of those courses is the "Online Postgraduate Certificate in Technical Translation and Electronic Tools". Here we use data from the way that course was taught between October and December 2002. There were 12 students, from Bolivia, France, Spain, the United Kingdom, the United States and Venezuela. The course tasks were based on the English-Spanish language pair, so all students were fluent on both languages and were expected to work in both directions. English was the language of instruction, but Spanish was also used when interacting with the students.

The course comprised 50 hours of learning time, distributed over ten weeks. Of those 50 hours, 5 (10%) were devoted to the translation market, 15 (30%) to translation strategies, 15 (30%) to CAT tools and 15 (30%) to translation projects. The module topics were as follows:

- Advanced Internet searches
- Revision tools with MS Word
- Terminology management with MS Excel
- HTML basics: Creating a simple website with Netscape Composer
- HTML for translators: Identifying translatable text inside code
- Using Translation Memories:
    - Trados
    - WordFast
    - DéjàVu

Learning tools and resources available for students

Although there are many online learning platforms available (WebCT, Blackboard, Moodle), this course was based on very simple technology allowing maximum accessibility.

There was a course website with all the lessons and exercises available in web format. If the exercises to be done in a specific file format (Excel, PowerPoint), they were posted in that format.

There was also a non-moderated email discussion list, which was the main means of communication between teachers and students. All the participants could send messages to the list, and the messages would be forwarded automatically to all course participants (teachers and students). Messages were also automatically posted to a website, so it was possible to read messages even if students had no access to their own email account temporarily.

From the course website there was a link to the Shared Files, a web-based application (BSCW) to put and share files on the Internet without the need for any extra tool or knowledge. An Internet connection and a web browser was all the students needed. Students posted their work, and teachers posted their feedback. The Shared Files were also used to share some off-topic materials, such as articles on translation not used for the lessons, personal pictures and jokes.

A chat channel was made available from the course website. Students were free to use it at any time as a means to communicate with each other, apart from the scheduled sessions with the trainers.

According to replies to a questionnaire given to students after the course, the website was easy to use: none of the students said it was difficult to use or that they would have liked more time to get used to the learning environment.

Time for the sessions was calculated based on the experience of face-to-face classes.

Pedagogical approach

The course was very practical, making students translate texts and otherwise practice the lesson contents. Tasks were set at the end of each lesson. The basic interaction pattern was as follows:

For each lesson, the teacher sent a message to the list specifying what had to be read and which exercises the students should do, and gave a deadline for the exercises. If students had doubts or comments on the activities, they would send another message to the list, and the teacher or another student would reply. This developed discussion threads. When students finished the exercises, they posted them to the Shared Files, teachers revised the tasks and posted the feedback in the Shared Files. This led to discussion on the exercises and the feedback (difficult points, applications in the market, investment in technology, questions on the feedback, ethical issues, etc.). Finally, the teacher would send another email indicating further readings and activities, thus starting the cycle again.

As the course advanced, the session threads overlapped. Students also sent emails and opened new lines of discussion based on their own needs and interests. All this enriched the communication between all the course participants and gave an added value to the list.

The email list

We analyzed the topics of all the emails sent to the list. It was found that the emails could be grouped into the following four general areas, following the classification used by Fallada (2003) and adapted from Schlager (2003: 7).[2] The description of each of the categories is as follows:

- *Pedagogy*: messages directly related to course contents.
- *Technology*: messages on technology issues not directly related to the course contents.
- *Management*: messages on the overall functioning of the course (pedagogy and technology excluded)
- *Social events*: messages with personal information, organization of local meetings or information relevant to translators.

Many emails did not fall neatly into one category or another. When an email had two topics, for instance, we used the following criteria to allocate them to a category:

- *Position*: if there was more than one topic in one single email, the first topic was picked.
- *Length*: if there was more than one topic in one single email, the lengthiest topic was picked.

If the two previous criteria contradicted, length had priority. The results of this analysis are shown below.

Category	Percentage of total
Pedagogy	38
Technology	26
Social events	21
Management	15

[2] The same categories have been used to analyze other learning groups at Tarragona. Those analyses were made by Jill Orenstein, Magdalena Talaban and José Ramón Biau Gil. The results were presented in conferences in 2005 by Jill Orensten and Magdalena Talaban.

Here we see that, of all the messages sent to the email list, only 38% were on class issues. That could be seen as negative, since it means that more than half the emails were on issues other than the specified business of the course. However, the course organizers had actually fostered the sending of non-pedagogical messages. Although the course syllabus included some technology, the educational goal was not to focus on that alone but to expand the technological horizon of both students and teachers. Thus, comments on software not used for our course were very much welcome. Also, we expected some extra-curricular questions regarding computer skills, as this was a course dealing with computer programs and we did not want people to be silent when facing a problem.

Management emails dealt with the overall functioning of the course. In a face-to-face course with local students, teachers and students may share the same experience and assumptions on how the course should work. In an online environment (new to some of the participants) with people from several countries, rules and guidelines had to be made explicit, in our case by emailing to the list.

The justification for having off-topic social messages in our discussion list is very simple: to fight student distress. When studying online, many students feel isolated, which may lead to them dropping out of the course (Palloff and Pratt 1999: 29). By fostering social messages, we expected to build a greater sense of community, and that this would help students stay motivated. The social emails were thus thought to have a positive effect on the overall pedagogical results of the course participants, apart from making the experience more enjoyable for everyone.

When looking at the number of emails on technology sent to the list, we found that both low-tech and hi-tech students sent the same number of messages. However, this did not mean that both groups needed the same amount of teacher support. There was a notable difference in the way students interacted. Students with good computer skills did the exercises and then sent comments to the list, adding extra value to the task by talking about their experience and raising awareness on interesting issues. Students with low computer skills sent questions on how to do the tasks, since the written lessons and tasks on the web were not clear enough for them. Also, some of the questions were sent more than once and some questions needed more than one message to be answered. Further, despite the teachers' efforts to have all the messages sent to the list, some students sent private emails to the teachers asking for help on technology issues. Those messages are not represented in our statistics.

The sample exercise

Two chat sessions were organized. The first session was set up as an open discussion on practical issues such as prices and the advantages and

drawbacks of specific tools. All the students were invited to participate. The second session was designed to provide individualized, synchronic support to two students who needed extra help with the following exercise.

Students were expected to do advanced searches on the Internet. By restricting the search of two terms to a specific country domain (.es, .uk, .ar, etc.), they had to find out which term was used more widely in a given country. All the necessary steps were available in a web-based lesson. Some students did the task and sent comments, others asked the list for help and received replies to most of their questions. There were, though, two students who did not manage to complete the activity. For them, we set up a chat session in order to work synchronically, to identify the problems and to find a solution.

The chat session lasted just over one hour. At the end of it, the students managed to do the assigned task, but failed to apply the mechanics to other similar searches. Both students were then invited to come to the teacher's office to have a face-to-face session: only one was able to accept, as the other lived on a different continent. The teacher saw the student working on the computer and identified the student's problems quickly (missing quotation marks, commas, spaces, Boolean operators in the wrong place, etc.). The teacher made the student aware of the importance of commas and spaces when doing advanced searches, and performed the search before the student's eyes. After that, the student was able to apply the concepts to other searches. The whole session took less than 20 minutes. The Tarragona program runs the same activity in a face-to-face environment for Masters students, who usually spend one hour to learn the concepts (equivalent to reading the lesson in the online environment) and do the tasks.

Conclusions

In the online course, students with low computer skills needed to spend much more time than expected in order to attain the course objectives. Moreover, they needed more time from the teacher, who was obliged to provide a lot of individualized attention to each of the students with low computer skills.

From this general experience, we can conclude:

- For students with low computer skills, a face-to-face environment is more fruitful than an online environment.
- Students with good computer skills tend to be very independent learners: they can manage technological problems on their own.
- Students with low computer skills are dependent learners: they need a lot of external help, usually requested from the teacher. These students tend to seek "the human factor", that is, a person to help them, rather than find solutions by themselves.

- Economically speaking, the teachers' income needs to be calculated to compensate for the time commitment involved in online education.
- Blended learning environments (combined face-to-face and online sessions) cover a wider range of students' needs and abilities.

Adjustments

On the basis of this experience, some modifications have been made to the course design:

- The number of exercises on electronic tools has been reduced so that students have extra time to download, install and interact with these new programs, since the learning curve is longer in online environments. The original program, based on experience in the face-to-face environment, proved to be too ambitious for the average profile of students in the given amount of time.
- Prospective students are given more detailed information on the skills they are expected to have in order to finish the course successfully.
- Teachers are now paid according to a formula that accounts for the number of students they teach as well as the hours of course content.

Final thoughts

Online education involves efforts that are different from those demanded by face-to-face classes. The same activity may have very different timing depending on whether it is offered in a face-to-face, blended or online environment.

To be an effective online learner or teacher, one must be familiar with computers, be ready to interact with them, and be very independent at solving potential problems, as participants do not share the same physical space. Moreover, communication skills are crucial for the course to move forward smoothly. Students with low computer skills may have problems with the means of delivery, and this is likely to affect their performance. In courses on technology, the ability to interact with a computer is even more important. It is thus crucial to check the student's initial computer literacy so as to make sure they can get the most out of the course.

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Translators on translation memories: a blessing or a curse?

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Abstract. *Now a standard feature in the translator's toolbox, translation memory (TM) technologies come with various prices and brands, and hence different learning curves and levels of customer service. A study of messages posted to Lantra-L, an online forum for translators, reveals the advantages and disadvantages involved. Lantra-L contributors often mention gains in productivity due to repetitive texts as a key advantage, even if this has also led clients and translation agencies to seek discounts for perfect and near matches. Despite this drawback, non-repetitive texts and terminology management can also benefit from translation memories. Translators could explore opportunities for using TMs with non-repetitive texts, as this is something that neither agencies nor clients have systematically taxed yet.*

"Question to those who actually use translation tools: could you explain in a few words what you actually gain by using them?" (6 March 2003 16:10)

The question above was pasted to the Lantra-L discussion list from EST-training, a list the contributor defined as for "academic teachers, at best moonlighting as translators".[1] It generated the short thread on Lantra-L titled "Translation Memory software +&-". Increased productivity was the highlight among the pros, with fee discounts for repetitions the main feature among the cons. This is one of the issues the Lantra-L list deals with many times and which academic and professional literature tends to ignore (an interesting exception being Rode 2000), so it is informative to take a step back to show how it is being answered—which we will do here for the period 1 July 2002 to 30 June 2003.

The question could not have been posted to a better forum. Lantra-L is the oldest and one of the most active and prestigious lists for translators. It

[1] Research on the same list and for the same period but focusing on how users thought of *specific* TM systems, not of TM in general, has been published in García (2003).

avoids the narrow specialization of specific brand users' lists while still maintaining a focus on computer-aided translation that tends to be lacking in other lists based on country, language or area of specialization. This is a fact that Lantra-L's own membership is not shy in acknowledging: "I mean, who knows more [about TM] than the translators on our list? And I don't mean that tongue in cheek" (29 Jul 2002 11:25).

Using the search facility at the Lantra-L archives, we sought content-rich messages hit by major brand names (Trados, DéjàVu, Wordfast, Transit, SDLX, Trans Suite 2000, Wordfisher, Metatexis, Multitrans and Logiterm, i.e. those having users' lists at Yahoo! Groups). This gave us instant access to the contributions of some 134 translators, some of them experienced users of one or more brands, others complete beginners. Translation memory (TM) is often presented there as a blessing for the profession, other times as a curse, with four different patterns on this see-saw emerging:

1. As a curse: based on a deep feeling of frustration in many translators—mainly, but not only, beginners—due to the perceived steep learning curve needed to master TM;
2. As a blessing: based on a feeling of euphoria in others—mainly experienced translators, dealing with repetitive texts—due to gains in productivity;
3. As a curse: when after a significant investment in money, time and effort, and once having mastered the software, gains in productivity are offset by agency policies on "discounts" for perfect and fuzzy matching; and, then again
4. As a blessing: on the realization that the investment may pay off for non-repetitive text as well.

Learning curve

In the 1980s, TM technologies were confined to the in-house translation departments of corporations and big agencies. Since the late 1990s they have reached the freelance community. Clients and agencies request translators to use TM software. Many translators have had no choice but to embrace a technology they were not prepared for. There is a view at Lantra-L that sees TM software as difficult to master mainly, but not only, in the initial stages.

The first hurdle is to realize what the technology is for. While everyone seems familiar with machine translation (MT), there would always be some newbie at Lantra with no idea of what doing a job "with Trados" involves. "Could you please explain to me briefly how Trados works for example, does it translate word to word?", someone asks on 4 Jan 2003 13:31. By the time they find out, the opportunity has probably been lost.

Then comes price, which covers the full range, from very expensive down to budget brands and freeware. Differences in price usually relate to

differences in functions, filters, stability, amount of flow that can be simultaneously handled, and other variables. Lack of information will make translators eager to buy expensive tools without a proper assessment of their needs. Alternatively, they may expect too much from free applications.

Which brand to choose will depend on which kind of software a particular translator feels comfortable working with. There are basically two approaches to TM, best exemplified by major brands, Trados and DéjàVu. Trados is Word-based; DéjàVu relies on a proprietary interface. Many consider getting used to DéjàVu a disadvantage because it takes a while (the same would apply to the other brands in this category, such as Transit, and SDLX). At the same time, others consider the interface to be DéjàVu's best asset since, once you are familiar with it, you can deal with all formats in the same environment. Word-based software (Trados, Wordfast, Wordfisher, etc.), although easier to use at first, becomes complicated when translators need to deal with non-Word files.

The more functions, filters, and tools in the box, the more difficult certain TMs may be to master, but getting to know the ins and outs of a program is the most daunting aspect. What really bothers translators, even experienced ones, is the fact that the software reacts differently in different environments, depending on which hardware is used, which programs run in the background, which languages are in play, and how the source file has been handled. These are the problems that the users' lists are all about. They come when least expected and, if compounded with a tight deadline, they could indeed "drive sane translators to drink" (12 Feb 2003 13:16):

> "Tearing my hair out" (11 Jul 2002 14:29)
>
> "Frustrated and considering going for a walk despite a deadline" (3 Oct 2002 14:33)
>
> "I came VERY CLOSE to throwing it all out the window (laptop incl.) out of sheer frustration." (13 Mar 2003 00:31)
>
> "... nothing seems to make sense in this software. Weird, and frustrating." (3 May 2003 00:26)

Here is where, if help from the users' lists is not forthcoming rapidly enough, client support comes into the picture. Comments regarding service by the two main brands abound at Lantra-L while, surprisingly, little information is offered on the other ones. For this period 2002-2003 DéjàVu had a much better reputation for service than did Trados.

The late Emilio Benito, the developer of DéjàVu, earned that reputation. On 10 Mar 2003 07:08 someone explained how a problem—inability to export the files—was fixed personally by Benito, who sent back the exported files "in a message at 3:05". Even DéjàVu opponents are in awe:

> Emilio seems to either be a superman or have a time machine that gives him 48 hours in a day—I am really in awe (and I am not being facetious). But he really is an exception. What happens when he decides enough is enough and he needs more time for himself? Is there anyone else at Atril willing to put in the hours and obvious commitment he has to his product's users? (30 Aug 2002 09:12)

Trados's service has traditionally been seen as poor:

> I'm sure someone will say [Trados] support would help, but they don't. First of all, you have to pay for support, but even worse, they don't even respond. They have only ever answered one of my questions and it took two weeks before they told me I should check the knowledge base. Duuuuhhhhh! Do they really think I did nothing in all that time? (29 Aug 2002 08:57)

However, this long-held perception at Lantra-L seems to have started to change:

> I have had very good levels of support from Trados Ireland... despite not having a Trados maintenance contract (30 Aug 2002 09:22)

> When I have phoned [Stuggart's office], they have commented that I really should think about getting a contract if I use TWB a lot. The have _never_ refused to help because I don't have one (30 Aug 2002 11:45).

Summarizing the advice given at Lantra-L on how to minimize risks when adopting TM: read what expert users think, assess your needs, narrow your choices and download the demos before making your decision. Then, "be cautious about juggling learning all about it and a tight deadline" (17 Apr 2003 14:56). It may not be an easy ride, but the consensus is that the investment will pay off.

Gains in productivity

Once the TM program has been set up and is responding, the legacy material aligned and imported to the memory database, the memory itself built up with new translations, strategies for troubleshooting acquired, and clients attracted by virtue of using TM, then TM becomes a companion the translator will never go to work without:

> Don't wait; every day without it is a waiste [sic] (12 Jul 2002 21:11)

> My Deja vu paid itself [sic] in one week (29 Jul 2002 22:37)

> An Excel file arrived ... The job would have been virtually impossible without DéjàVu ... The turnaround was a couple of hours, and the agency was very impressed. (12 Aug 2002 14:35)
>
> I create a project, import a document and for the **vast** majority of cases pretranslating give [sic] me 100% matches for anywhere from 30-50% of the text. Time and time again. Day in and day out. (5 Jan 2003 07:47)
>
> I'm working on two school handbooks ... From 9:00 to 2:00, 13,000 Words translated. Feels good. Thanks to WordFast. (20 Jun 2003 14:08).

These are the advantages often mentioned in the list: TM is best for repetitive texts—manuals with a lot of internal repetition, for example—and updates; the longer a translator works with TM, the more helpful it becomes; translation is more consistent within the document, and through work on the same subject; terms that have taken ages to research will always be ready for reuse; agency-specific vocabulary ("if agency A likes to call a word X and agency B wants the same word translated as Y") can be easily applied; dealing with unfamiliar files (Excel, PowerPoint, PageMaker and other DTP applications, html and xml) can become a breeze if filters are available; it is a great help to the translator's memory when expressions, easily remembered at the beginning of a session, become blurry after a few hours or days.

Here are some contributors' views on what translators gain from TM software:

> [it] gives you an extra hour or two of premium translation time a day. Like a strong tail wind helping you cycle uphill (5 Jan 2003 14:05);
>
> [With TM] I think I win because I work less, and my clients win because they get better work for the same price (6 Mar 2003 16:20).

Is such enthusiasm warranted?

"Trados discounts"

"This morning I received a 3,000-word order accompanied by a Trados analysis that purported to show that, because of repetitions, there were in reality only 1,200 words to be translated" (25 Oct 2002 11:13). For big, repetitive jobs, the use of TM software is required, but the gains then have to be shared with the client: "It is already happening ... For large, repetitive jobs, clients now want and get 'Trados discounts'" (7 Mar 2003 07:19). If clients provide the translator with translation memory and terminology, they will seek to pay less for repetitions, even though the translator will still need

to handle them, and some perfect matches will have to be adjusted given changes in context:

> A translator colleague of mine, who works a lot with TRADOS, gave me the following rule of thumb for repetitions: 100%: 10%, 95-99%: 25%, |85-94%: 50%, from "no match" to 84: 100% (6 Mar 2003 17:54).

Some translators would not like to hear about discounts at all:

> when a client suggests that there should be a discount for similar-to-identical terminology, i tell them i really would prefer an extra 10% instead for the extra work of making sure that 'near matches' are not mistranslated (6 Mar 2003 16:05).

Some translators who conceded discounts later regretted it:

> first and LAST time I'll ever give discounts for repetitions... (17 Apr 2003 14:56).

For most, "near matches" are a fact. The issue of the quality of the memories received seems irrelevant. If not accepted, if translators insist on considering as repetitions only the exact matches of their own memory for that specific client, then they will price themselves out of the market:

> I told the client that I wouldn't do any more work on the project unless they 1) considered as repetitions only items from MY memory (not any other translator) and 2) paid a minimum fee for each file to compensate for handling time. That made me too expensive, apparently. (17 Apr 2003 14:56)

The perception is that "self-employed translators, in general, have very little leeway for negotiation... unless they are highly specialized" (6 Mar 2003 17:54).

There may be an area, however, in which clients and agencies have not yet been able to systematically tax translators, and in which translators may be able to put their mastery of TM to good use: that of the translation of non-repetitive text.

Non-repetitive text

General wisdom assumes that TM is only useful for repetitive texts and updates, and when dealing with fancy formatting and exotic files. However, a body of thought seems to be emerging at Lantra-L to show that plain, non-repetitive text may benefit from it as well:

> i rarely translate repetitive texts, but i focus heavily on the same subjects, with the same clients ... having that terminology for the balance sheet and income statement and cash flow available makes it all go more accurately and efficiently. (6 Mar 2003 16:05)
>
> i only work with non-repetitive segments. i wouldn't leave home without it [TM]. (20 Mar 2003 05:50).

Two distinctive approaches to the handling of non-repetitive texts through TM seem to be developing: one is based on the DéjàVu "assemble" feature; the other is not.

The "assemble" feature allows the translator to retrieve from the database not only sentences (exact and fuzzy) and terms—which most TM applications do—but also phrases, sub-sentence items, "portions" in DéjàVu-speak. Trados or Wordfast can also do that through their concordance function but the translators have to ask for it, should they have this déjà vu feeling that they have translated it before. The specificity of DéjàVu is its ability to leverage these "fuzzy" portions automatically. Portions can then be put together with a few keystrokes or mouse clicks. This has sometimes been referred to in the DéjàVu literature as the incorporation of example-based machine translation (EBMT) into TM. Here is a typical testimonial:

> I am currently working on 10,000 words of appeal court hearings. There are 0 repeated sentences in these three files, but because I have the entire Civil Code of Québec in my database, DejaVu keeps inserting the terminology I have saved to my term base and portions of sentences from the memory. (20 Mar 2003 05:50)

Another user explains: "Sometimes it makes you feel like you're editing all the time instead of translating, but that can be a good thing!" Even if the portions are finally discarded, they could trigger the brain further. Some thought this feature helped quality even more than productivity: "Someone wrote on the DV list that he actually works more slowly using DV (!) but that the difference in quality is amazing and more than makes up for any time invested" (5 Jan 2003 13:11).

This is seen by some as "one of deja vu's major strengths—for the rest of us who don't do manuals" (29 Aug 2002 03:52). It is a strength recognized even outside the traditional DéjàVu camp at Lantra-L: "I generally prefer working in Trados, but like DV's sub-segment matching capabilities and use that for texts that will profit from it" (5 Jan 2003 13:48).

However, not all users of TM are happy with it for non-repetitive texts. What some would consider useful triggers, for others will be distracting options (and too much mouse work). For some, low-budget TM is useful enough. One user even considers it an advantage not to have fuzzy matching in her application. Without time for "DV humor", she praises Wordfisher as

"a good work tool for business letters, legal documents, news items, and the like—the kinds of non-repetitive texts most translators deal with" (20 March 2003 09:31). For her, Wordfisher offers as good a service as the expensive brands without the price tag. Wordfast has also satisfied users who do not do much repetitive text:

> I even ocr [sic] or retype my hardcopy docs (most of my work) not only to use Wordfast but also to be able to easily search for all contexts of a term and to more easily keep track of my notes. (I make up a separate notes file with the source text in one column of a table and notes in another column, sentence by sentence). (17 Apr 2003 14:56)

Yet for others, a strong vocabulary management is a must:

> I find it definitely pays to use Trados in this way even where there are no repetitions precisely because I can achieve consistency of terminology (17 Jan 2003 06:48).

Two Canadian brands, Multiterm and Logiterm, entered the market claiming the ability to put massive quantities of bilingual text together plus automatically extract the relevant terminology and phraseology. They were noticed at Lantra-L and gained mixed reviews (9 Jan 2003 09:26 and 24 Apr 2003 11:50).

A blessing and a curse

TM is the technology that has brought translation into the industrial age. Multilingual content, for decades a bottleneck in corporation workflows, can now be exploited through the reuse of past translations and the ability to share the task between many translators, speeding up work while reining in the costs. For repetitive texts, this advance is unstoppable. Freelance translators will not get the job without it.

Translators are thus investing heavily in TM, in terms of money, time and effort. The learning curve is steep. The investment would pay off handsomely if the benefits did not have to be shared with clients and agencies. Unfortunately, the feeling of exhilaration so many translators get once TM is mastered is short-lived. As it is put at Lantra-L, "the benefit of the new tool has shifted from downstream to upstream, just as it happened with other technologies before (fax, copier, PC)". The freelance translator "ends up with the disadvantages of being self-employed plus the disadvantages of being employed". Yet, there is still that use of TM for non-repetitive texts that agencies and clients are not systematically taxing.

All in all, TM is, as the previously quoted contributor would say, "Another case where the latest & greatest technology turned out to be different than imagined" (7 Mar 2003 07:19).

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Voice-over-Internet Protocols: a new dimension for translation interaction

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Abstract. *Voice-over-Internet Protocols (VoIPs) have become of great help to freelance translators in a short period of time, giving them the possibility to communicate with professional colleagues all over the world. They help solve problems by reducing the time needed for research and the cost of phone calls. This paper considers the technological nature and requirements of VoIPs, discussing the developments and technical limitations encountered over the last decade, as well as recent strategies to overcome difficulties. The reliable services of Internet telephony are possible only if two changes are produced: 1) the improvement and deployment of the IP/ATM/synchronous optical network and ISDN, cable modems and x digital subscriber line (xDSL) technologies, and 2) the sampling payment for public Internet. Unfortunately there are few objective criteria for assessing the efficiency and the applicability of these tools to the work of translators. Further study on the influence of Internet communication on translators and interpreters' work is needed.*

Introduction

The feeling of isolation and the inability to participate in real-time communicative exchanges while at work have always been downsides of working as a translator, especially in the case of freelancers. Although working in a company is not necessarily synonymous with a friendly and cooperative environment, we all feel the need to check translation solutions or seek some help with terminological doubts. The introduction of excessively hyped CAT technologies does not seem to have overcome these obstacles. Yes, they may have helped us improve efficiency, but the partial automation of the translation process probably makes human-to-human interaction even harder.

The appearance of Voice-over-Internet Protocols (VoIPs) has brought the reality of real-time interaction closer than ever before. Freelance translators are now able to communicate with professional colleagues and informants from all over the world. This is particularly important when we consider the time required to find a valid solution for the unpredictable number of doubts we may be faced with, while the economic advantages of drastically reducing our phone bills are obvious.

Apart from one-on-one interaction, which is usually the quickest way to tackle a particular problem, we should also envisage a constantly updated worldwide real-time translation forum via the Internet, where everybody could voice their opinion. In this way, the various netmeeting applications could provide dynamic new possibilities beyond writing.

The main aim of this article is to discuss the technological nature and requirements of VoIPs, whose sudden emergence in the late 1990s and rapid dissemination in the present decade have given rise to a legion of ardent supporters, and to more detractors than expected.

The possible applications to translation and distance teaching are multiple. However, many doubts have arisen about their quality and feasibility in language projects, as the increasingly heavy use of the Internet's limited bandwidth often results in congestion and delays in transmission.

Let us now briefly survey the history of Voice-over-Internet Protocols and their quick evolution as far as quality is concerned over the past decade.

The Evolution of VoIPs

The possibility of voice communications traveling over the Internet, rather than the typical and still predominant public switched telephone network (PSTN), first became a reality in February 1995, with the introduction of the first Internet Phone software by the company Vocaltec Inc. The software was designed to run on a 486/33-MHz PC (which now seems almost prehistory), equipped with a soundcard, speakers, microphone and modem. The software compressed the voice signal and translated it into IP packets for transmission over the Internet. The downside to this system was that both parties had to be using Internet Phone software, otherwise communication was impossible.

Internet telephony has advanced rapidly since then. Many software developers now offer PC telephony software but, more importantly, gateway servers are emerging an interface between the Internet and the PSTN (Phone switched telephone network). Equipped with voice-processing cards, these gateway servers enable users to communicate via standard telephones. The gateway server digitizes the analogue voice signal and compresses it into IP packets.

With its support for computer-to-telephone calls, telephone-to-computer calls and telephone-to-telephone calls, Internet telephony represents a significant step toward the integration of voice and data networks. It also offers tremendous cost savings, which is more than tempting for the standard freelance translator.

Internet telephony nevertheless still has some problems with reliability and sound quality, due primarily to limitations both in Internet bandwidth and current compression technology. This leads many companies to confine their Internet-telephony applications to their intranets. Whereas most

translators working for big companies may have already been able to experience the advantages of this communication system, few freelancers have the same professional opportunity. Internet telephony within an intranet enables users to save on long-distance bills between sites; they can make point-to-point calls via gateway servers attached to the local-area network (LAN) and no PC-based telephony software or Internet account is required.

Let us image a case where Internet telephony is used in company intranets. User A in New York wants to make a point-to-point phone call to user B in the company's Geneva office. He picks up the phone and dials an extension to connect with the gateway server, which configures the private branch exchange (PBX) to digitize the upcoming call. User A then dials the number of the London office and the gateway server transmits the (digitized and IP-packetized) call over the wide-area network (WAN) to the gateway at the Geneva end. The Geneva gateway converts the digital signal back to analogue format and delivers it to the called party.

Technical barriers and limitations

Of course, there are important technical barriers to Voice-over-Internet Protocols. One of the main aims of Internet telephony as such is to achieve a reliable, high-quality voice service, which is the kind that users expect from phone switched telephone network. This is obviously a very important issue when talking about specific communication or about the transmission of important data, as in the case of a conversation where translation problems or terminology issues are dealt with. If the lack of reliability requires constant repetition or rephrasing in order to complete the process, this will lead translator to choose traditional slower or more expensive methods to solve doubts.

At the moment, the level of reliability of sound quality on the Internet has not reached its peak. This is mainly due to bandwidth limitations, which lead to packet loss. Packet loss usually triggers the undesirable appearance of gaps or periods of silence in the conversation, which produce a clipped-speech effect, clearly unsatisfactory not only for most standard users but for any kind of business interaction. For interaction among freelance translators and their informants. this kind of interference would be totally unacceptable.

The problem is probably due not so much to a lack of technological developments, but to the increasing popularity of Internet, with millions of new users signing on every month. This heavy, almost uncontrolled use of the limited bandwidth available usually results in congestion, which can also cause delays in packet transmission.

However, reliability and sound quality do not depend on bandwidth alone, since they are also determined by the voice-encoding techniques and associated voice-processing functions of the gateway servers. There are a great variety of speech-compression protocols. They all have their own

speech-coding algorithms, as well as different bit rates and mechanisms for reconstructing voice packets. Depending on the quality of the algorithms used, there will be varying levels of intelligibility and fidelity in sound.

Present strategies to overcome difficulties

The industry is addressing all these problems with two main strategies: one of them consists of working on bandwidth limitations, which will be done by upgrading the Internet backbone to asynchronous transfer mode (ATM), a special system designed to handle voice, data and video packet loss. On the other hand, there have been several standard-setting efforts whose main aim is to focus on the three central elements of Internet telephony: the audio codec format, transport protocols and directory services.

The adoption of an audio codec standard has been a complicated process. The industry has agreed to sacrifice some sound quality for the sake of greater bandwidth efficiency. However, the main problem is that this will probably improve reliability and sound quality mostly for intranet traffic or point-to-point IP connections.

The current transport protocol still does not have mechanisms for ensuring the on-time delivery of traffic signals or for recovering lost packets. Neither does it address the quality of service issue, which aims at guaranteeing bandwidth availability for specific applications. In the near future, a new protocol may be adopted to improve quality-of-service levels.

Industry standards for directory services are also extremely important as they ensure the interoperability between the Internet and the PSTN.

The future of VoIPs

The future of Voice-over-Internet protocols is still to be seen but we can expect developments beyond the areas where they have been working up to now: corporate intranets and commercial extranets.

This development depends on the VoIP gateways, which evolve from PC-based platforms to robust embedded systems, each of which will virtually be able to handle hundreds of simultaneous calls, consequently reducing the expenses associated to high-volume voice, fax and videoconferencing traffic. IP will act as a unifying agent, concentrating all traffic, data, voice and video.

However, if we want the public Internet to handle voice and video services in a reliable manner, we definitely need two critical changes to take place: The improvement and deployment of the IP/ATM/synchronous optical network and ISDN, cable modems and x digital subscriber line (xDSL) technologies. We might also expect a certain segmentation of the public Internet, in which users will have to pay for the specific service levels they require.

Whereas the first critical change seems quite feasible, the second aspect is more problematic, since Internet users will normally not be willing to pay for a service that was previously free. Nevertheless, a cost-benefit analysis shows that a little investment will yield a high-quality service, and this will help us improve the quality of our work.

Videoconferencing and data collaboration are bound to become the normal method of corporate communications. Companies are aware of the economics of telecommuting, especially since network performance and interoperability are gradually increasing. Sooner than we expect, the video camera will become a standard piece of computer hardware for full-feature multimedia systems.

Applications to translation and interpreting

How can all these improvements improve our working conditions as translators? One of our main problems is the constant feeling of isolation. This may have its positive effects, but it certainly prevents us from sharing our successes and failures in an active and efficient manner. Breaking down communication barriers by means of VoIPs may help us to defeat our much maligned invisibility. Real-time interaction may also change the current state of the interpreter's work and crucial role.

That said, we still lack objective criteria to assess not only the efficiency but also the applicability of these tools to our work. This means that the success of a given communication system does not depend that much on the quality of the technology, but on the translator's ability to learn how to use and how to integrate real-time interaction with other colleagues or informants. Most of us are still used to paper documentation, and only a limited number of professionals either use or help build Internet glossaries or information sources. This must cast some doubt on our willingness to accept new technologies.

Another important problem, especially in the case of real-time video interaction, is that it is still absolutely compulsory that all the parties involved have the necessary software and functional Internet connection. In other words, there is no use in us translators trying to follow the breath-taking pace of technological development by buying and testing any new tool if our customers or information providers do not do the same. This again dangerously strengthens traditional or standard communication methods.

Nevertheless, the development of new gateway servers should allow us to phone our costumer or informant, who may only have a standard telephone line, from our computer with considerable savings and without moving from our computer desk. In the case of written translation, audiovisual communication is not an essential requirement: sound will be enough in most cases. Unfortunately this does not apply to interpreting, where the visualization of the presentation or the body language of the

speaker is thought to be absolutely essential to guarantee high-quality service.

Final remarks

Beyond technical requirements, which are not really that problematic, there is certainly a need to test in a objective manner how these tools will improve the translator's efficiency and if this can be bring about time and money savings. Then again, objectiveness is hard to obtain when not all translators are keen on using new technologies or may not be able to find their right application if not previously guided or advised. Efficiency is also hampered by the fact that VoIPs are far from being well known by many Internet users.

One possibility could be to start working on big companies or institutions where financial and technical issues may be more limited. Alternatively, one could focus on the field of remote interpreting, trying to establish a series of parameters whereby we could both objectively and subjectively assess the effect of real-time Internet communication on the interpreter's performance. We could try to guarantee objectiveness by comparing the quality of the interpreter's speech in a standard working situation (booth located at the conference site) to that in a situation where the interpreter sees and receives the sound via Internet from a distant location. The interpreter could also fill in a questionnaire with their own subjective considerations with regard to issues such as sound and image quality, differences in the degree of comfort and security, and feelings stemming from the lack of real interaction or closeness to the lecturer or audience.

This is just an example of the research potential that Internet communications have in the field of translation and interpreting.

Asymmetries in the teaching of translation technology

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Abstract. *The teaching of translation technology in a face-to-face environment involves the problematic presence of computers in the classroom. In many cases, the computer screens can hinder or replace teacher-student communication. However, computers offer various commonsense alternatives to the classical teacher-centered translation class. Students can do group work, interacting directly with the screen. However, in same cases, interactive teaching means doing away with computers altogether. Discussion of these problematics in terms of the normal asymmetries of the classroom (teachers and students are equal in neither number nor power) may lead us to see computer-based technologies as a liberating redistribution of power, since students become relatively free to work in their own groups and at their own pace. Questions should be raised, however, about the relative loss of a learning community, and more importantly about the apparent transfer of authority from teacher to technology. When analyzed in terms of asymmetry rather than symmetry, translation technologies do indeed replace the teacher with respect to the generation of translational alternatives. Yet they offer virtually no guidance, and little pedagogy, at the moment when trainee translators have to select between alternative renditions.*[*]

Teaching is a profoundly asymmetric activity. Teachers are supposed to know things; learners are supposed to be learning things. Any equality, as teachers and students engage in shared discovery procedures, is surely illusory, no matter how much theory is thrown in that direction ("social constructivism" and the like). What happens, however, when computer-based technologies enter the classroom? Now we have three-way interactions: teacher, student, and technology, at least to the extent that translation technologies have various kinds of voices. That changes things. In principle, technology makes information and processes available to all. It

[*] This paper was written within the frame of the research project "Evaluación de medios de aprendizaje a distancia en la formación avanzada de traductores" (BFF-2002-03050), Ministerio de Ciencia y Tecnología, Madrid.

could have a great equalizing effect on traditional classroom asymmetries. It would decide what works, and what fails. Or is this leveling also illusory?

Here we shall pursue this issue by considering two practical considerations. First, how do teachers and students interact spatially when computers are present? Second, more conceptually, what general relation might there be between translating and the tools available for the task? Both questions concern asymmetries, and both might receive a common kind of solution.

But first, let us explain why the questions are of some importance.

What can go wrong

The teaching of translation technology is worth discussing because it can be done badly. The following notes are based on passing observations in recent years:

- Everyone teaches technology in the hope and belief that it will make translating more efficient, in one way or another. However, few curricula bother to include touch-typing, which is the basic way translators can make their work faster.
- Translation technologies are thought to be difficult, so they are placed toward the end of a program of study. This ensures that students first get used to translating without the technologies, and then have no time to get used to the technologies in their normal practice sessions.
- Translation technologies are often taught in one class, and translation in another. Since the teaching staff do not communicate with each other about such things, the technologies are not used in the translation class.
- At one university, translation courses are given in a traditional classroom, where the students write with pen and paper. But the university is not deprived. Some 50 meters away it has a superb computer laboratory, mostly empty. The translation students never go there, since it belongs to the Computer Science department.
- One large translation school has more than 3,500 students, who are supposed to learn technology in a computer room with some 15 computers. This is one of the world's most prestigious schools.
- Yet another school, similarly prestigious, has invested respectable sums in hardware and software for training conference interpreters. All that technology lies idle, since the teaching staff has not learned how to use it.
- The same school has computers installed in the interpreting booths, since students should be able to use them while interpreting. None of the computers work. They have not been repaired because none of the teachers or students feel the need to use them.

- Another school has two large language laboratories, equipped with booths and tape-recorders. The technology was installed in the 1970s. The rooms are no longer used.
- Many centers buy computers and fail to contract technicians for their maintenance.
- Many centers then ask themselves why the computers are full of viruses after the students have used them.
- And so on.

We could all add a case or two. The solutions are fairly obvious, and there is no need to insist on them here. Let us just insist that, in most instances, the problem is not in the technologies, nor in the students, nor in the money required. The real problems are on the level of policy, coordination, and communication between teaching staff.

Those problems also affect the very spaces we work in.

Where is the teacher?

Policy and coordination (or the lack of it) determines how technology interacts with our teaching spaces. Since most traditional teaching is done with the teacher at the front of the class, rooms full of computers tend to have the teacher at the front of the computers (typically as in Figure 1). What happens? Look at the photo in Figure 1. Only one student is actually looking

Figure 1. A full-frontal teacher at work

at the teacher; the others are gazing at screens, and the teacher has no idea what they are looking at or doing. Soon the students are interacting with the screen, not the teacher. They circulate notes, laugh at secret jokes, do their email, indulge in off-topic images, and other assorted expressions of individual liberty. Not much actual teaching can be done like this. Either the computers are in the way, or the teacher is in the way. After a few minutes of this, any intelligent teacher will give up competing with the screens. A task is set, the students start a practical exercise, and the teacher can move around to offer individual help where needed (Figure 2).

Figure 2. Over-the-shoulder teaching

There is much to be said for this. Now the teacher can see what the student is doing, and individual problems can be solved. On the downside, one loses the "eavesdropping" effect of communication with the whole group, whereby one student asks a question and the whole group benefits from the answer. Further, the student here is not seeking help from her peers; she has no need for a learning community of any extensive kind. In many cases, the solutions found in the teacher-student-screen interaction here could equally be found in student-student-screen interaction, as in Figure 3.

In our postgraduate courses in Tarragona (which is where these photos are from), we now mostly make students work in twos at the one computer, simply so that they talk with each other. This socializes the learning process, preventing lost sheep from suffering in embarrassed silence. Two quick notes on this:

1) If one student has hands on the keyboard for one class, then the other student is doing the typing in the next class.

2) Only in rare cases will students with advanced computer skills repeatedly work in tandem with students needing technical help. This is a great idea (effectively have the advanced students be the teachers), but the advanced students tend to get frustrated then bored, and the not-so-advanced students become even more embarrassed. In classes with technology, tandem pairing is better done by putting together students with similar technological competence. More generally, in all translation classes the pairing should be done on the basis of different L1 competence, rather than technological competence. For example, an L1 speaker of English is made to work with an L1 speaker of Spanish. This encourages a kind of symmetry of peer support that is not found with respect to the more critical variables of technological competence. (For project work, the groups are of four or five, and the dynamics are quite different.)

Figure 3. Peer support

For some activities, particularly post-mortem analysis of group work, the best teaching space is created by getting rid of the computers altogether (Figure 4). Here we find a return to the primitive technologies of printed paper and people actually looking at each other. Not everything is best done electronically.

Where is the teacher in these photos? When we analyze the photos in our teacher-training seminars, some participants eventually answer: The

teacher is in the computer (except for the last situation). All our courses do have web-based lessons, so this is literally true, at least to the extent that the website contains previous input by the teacher. However, all translation tools these days come with their own Help files, tutorials, and online back-up, either official or unofficial (students can solve many problems by searching the archives of discussion lists). In fact, there is so much information on the technology that paid classes should not be necessary. Anyone with average computer literacy and search techniques can find it all on the web. In a very real sense, then, much of the teaching is indeed done from within the computer screen. Human teachers are just there to point the way and then provide moral support when things go wrong.

Except for the last photo, of course. Something different seems to be happening there.

Figure 4. Back to people-with-papers

Designing the teaching space

The teaching space depicted in these photos can be represented schematically as in Figure 5. Some of the shortcomings are clear from the photos and comments above. Most seriously, the room is arranged so that the teacher is supposed to be at the front (this is a teacher-centered learning space), which means that teacher-student communication is hampered by the surrogate teacher (and everything else) that is in the computer screens. Yes, teachers

can get around the problem by moving about the class. But in this particular case the teacher can only get to the students at the left of the class by jumping over four other students (and their chairs, which threaten some delicate parts of the male anatomy).

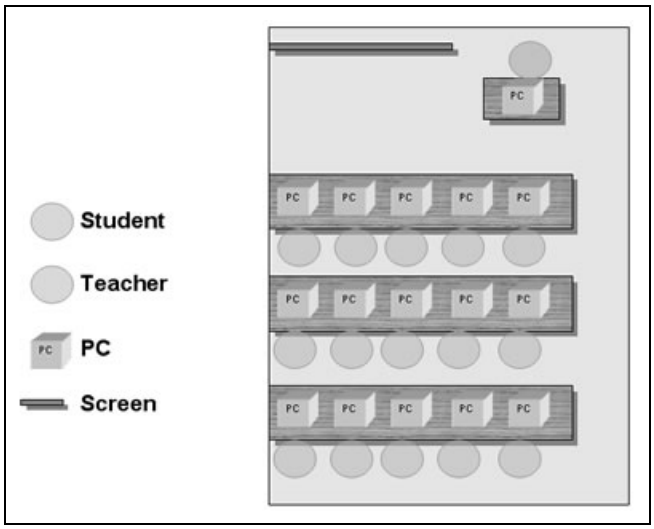

Figure 5. The world's worst teaching space?

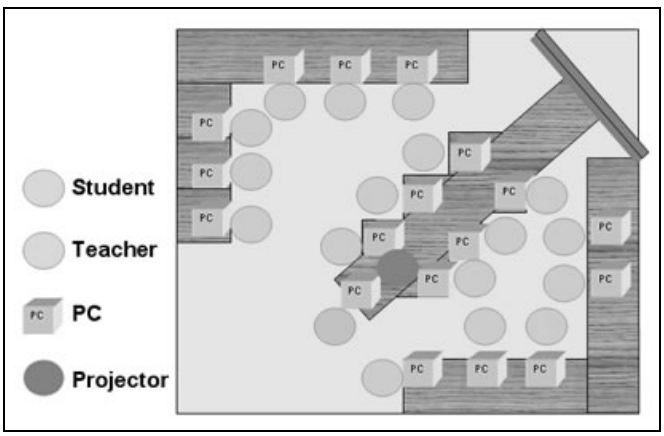

Figure 6. The world's best teaching space?

In various teacher-training seminars, we have given the elements of Figure 5 to teachers and we have asked them to rearrange the same elements, in the same space, in such a way as to solve all the practical problems. So far, the winning answer is the one given in Figure 6, which is actually inspired by a computer room at Monash University in Australia. The advantages here are

that, thanks to swivel chairs, the students can see both the screen and the teacher, and the teacher can see what the students are doing on their computers.

Of course, the solution in Figure 6 is now outdated. In Tarragona we no longer use the desktop computers depicted in the photos. Students bring their laptop computers (we supply a few to those that do not) and they put them on the one large table (Figure 7). Wireless Internet connection makes this easy. Everyone can see everyone (the laptop screens are smaller and do not block vision); there is a beamer projecting onto a screen at the teacher's end of the table; the teacher can move around the table easily; students form groups as the tasks require.

The general point is that serious thought must be given to the spaces we work in. Empowerment begins in architecture.

Figure 7. The classroom as a moveable feast

Time

Workspaces also involve time. If you are going to teach a class with computers, you need time to set all the equipment up, for the students to find the right place, and for tasks to be completed at various different rhythms. For all those reasons, the class must last at least two hours (ours are actually

two-and-a-half hours, with an optional coffee break in the middle). If not, you are wasting your time.

An even better solution is not to have time frames for the teaching process. When our student groups are given projects to complete, they usually have about 10 days in which to work. What they do in those 10 days, and where they do it, is their business. The classroom space is there, but the students take quite naturally to working from several different locations (there homes and, sometimes, places of work), communicating electronically. Daniel Gouadec recommends that all teaching should be like that. Unfortunately, many of us have institutions that like to divide the world into hours.

Gender

The most obvious asymmetry in the teaching of translation is gender. As can be seen in our photos, the vast majority of our students are women. Unfortunately, almost all our teachers are men. We might pretend that we are fighting the gender divide by teaching traditionally male-dominated technologies to women. But that is the kind of lame excuse one puts in EU funding applications. A serious imbalance still remains, and pious platitudes will not be enough to change the situation.

Categorizing translation tools

Here we shift gears, although we would hope to be moving in the one direction (as might become clear at the end).

How should we categorize the array of electronic technologies available to us? If the technology teaches, as we have suggested, can we say in what way the different technologies teach translation?

Frank Austermühl, more than anyone else, has given several good answers to the problem of categorization. They are good answers because they involve thinking about translation as well as technology. The first answer (in Austermühl 2001) is given in Figure 8, where we find translating divided into a three-part process (reception of source text, transfer, formulation of target text). Some of the electronic tools are mapped onto the reception process (all the data bases of various kinds), others help the formulation process (more data bases, presumably in the target language this time), and still others correspond to the transfer process (are these "culturally sensitive information systems" then bilingual?). Most interestingly, there are then "direct transfer" tools, which seem not to involve translation (translation memories do not actually translate?), or better, they do not involve the psychological processes of the translator.

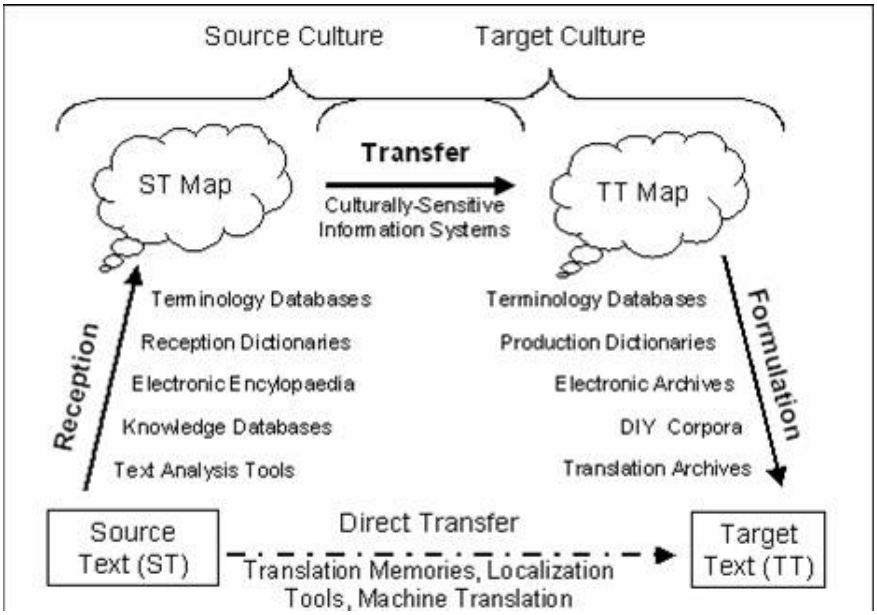

Figure 8. Translation tools categorized (Austermühl 2001)

There are many interesting questions that could be raised on the basis of this diagram. However, let us just insist on the incredible symmetry of the picture. Left and right balance perfectly, and top and bottom are by no means out of kilter. Translating is a symmetrical process, and so are its technologies, suggests Austermühl.

Austermühl has more recently offered a second categorization (Figure 9, in fact reproduced in Austermühl's paper in this volume). Here the picture is rather more sophisticated. The three-stage translation process now only occupies the right-hand half of the space. The "direct transfer" tools have developed into a whole second half of the universe, on the left, where they belong to localizers. In the middle there are tools shared by both localizers and translators. Note, also, the intriguing division of objectives. It seems that localization is only interested in productivity (efficiency, money). Translators, on the other hand, have tools to help them with knowledge, as if efficiency were not part of their real nature. As a map of the way two professions might meet, the diagram has considerable conceptual elegance. Once again, note the beautiful symmetry.

Is there any reason to think that our technologies, or indeed our work processes and professions, are really so perfectly balanced?

Let us try a slightly different model. Translators, let us suppose, basically offer competence in a two-stage problem-solving process (from Pym 2003):

- The ability to generate a series of more than one viable target text (TT_I, TT_2 ... TT_n) for a pertinent source text (ST);
- The ability to select only one viable TT from this series, quickly and with justified confidence.

This is not quite the same as the traditional reception-plus-formulation model used by Austermühl. We would hope it is rather closer to what happens in the learning process, where students spend their time solving problems in a profoundly intercultural space, without any clear separation between the source and target sides.

Now, which tools help us to generate alternative renditions? Almost all of them, surely. The more data bases you have, the more alternatives you can produce. This has been the most profound revolution in the way translators work. Years ago we used to wade through dictionaries and libraries; now we have instant access to more information than we need. Even the most faulty translation memories suggest alternatives, which the human translator does not always discard. Technology has brought about several explosions in the generational side of translation competence.

More problematically, which tools help the translator to select final renditions? Very few, we suggest. Only in the case of solid, up-to-date field-specific glossaries, and in deceptively trivial examples like spell-checkers, could we say that the tools allow us to select with full confidence. And in those cases, of course, we are no longer using the psychological processes of translating. We do not have more than one viable alternative; we are in the realm of Austermühl's "direct transfer"; we are pushing buttons that a non-translator could push equally as well.

Translation and Localization Technology

Localizer / Productivity Tools		Translator / Knowledge Tools	
DTP Tools	Term Extractors, Term Bases	Term Bases (Glossaries)	Encyclopedias
Quality Assurance Tools	Translation Memories Back Ends	Translation Memories Front Ends	Dictionaries
Project Management Tools	Localization Tools Back Ends	Localization Tools Front Ends	Digital Archives
Workflow Systems			DIY Corpora
Content / Globalization Management Systems			Concordances
Machine Translation			Specialized Websites and Newsgroups
Internationalization			Multilingual Knowledge Management

Figure 9. Translation and localization technology categorized (Austermühl 2006)

When it comes to the second part of translational competence, when the translator has to choose between alternatives and there is no absolute determination of which choice is correct, the technologies must fade into the background. Translators make those choices themselves, as humans solving human problems.

From this perspective, the impact of electronic technologies on translation must be seen as producing a marked asymmetry. We can generate a thousand possible translations, but we are in our own professional space when we select the one that is our translation.

Boucle

Why should a teacher push the computers aside, sit down and talk with students face-to-face? Why go back to paper in some situations? Why have everyone sit around a large table?

Because, quite simply, the most translational part of translating requires us to make decisions for which there is no certitude, no absolute authority. To teach that particular competence, once must discuss, suggest, converse. The teacher cannot convey any ready-made answers. Nor can (or should) electronic technologies.

It has taken us some decades to develop modes of teaching that reduce the asymmetric relation between teacher and student. We have found ways to teach translation without pretending to be absolute authorities. We have learned to live with the imbalances of our situation.

The risk is that we now make the technology an authority. We should not assume that its deceptive symmetries provide answers to all our problems.

References

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