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Information and Documentation Management in the Training of Technical Translators - As Opposed to Teaching Technical Science

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1. Background

This, obviously, is a non-negotiable point of departure:

> The translation of technical texts requires considerable specific knowledge, i.e., not only knowledge about linguistic rules and structures, but also knowledge about the topic of the text to be translated. Knowledge of just one of these two aspects does not suffice to produce a correct translation.
> (Galinski/Budin 1993:209)

That it is necessary for the technical translator to have a thorough knowledge of the subject matter of the text, which s/he is to translate, is beyond question. But here we must add one very important fact: Namely that this holds true for the translation of any text, be it technical or literary. As a conditio sine qua non stands the notion that you cannot translate what you do not understand. But apparently this seems insufficient when speaking of the knowledge and skills needed by the technical translator. In fact the ideal LSP translator is often defined as someone who possesses two complementary types of knowledge and skills:

> "Unbestritten sind die Notwendigkeit von Fachwissen und die als Ideal anerkannte Einheit von Sprach- und Fachwissen [...]".
> (Fluck 1992:221)

For such a unity of (high quality!) translation and subject matter knowledge and skills to come into existence in one person, it seems the LSP translator in question would have to be a compilation of the trained professional (e.g. the engineer) and the trained LSP translator. In terms of feasibility, this would require a minimum of 2 times 5 years of university training (in Denmark at any rate), making it an option for only the very dedicated of translators. But even if this would seem to combine

the best of two worlds, the question springs to mind whether we – with the same kind of straightforwardness – would expect from the translator who translates novels that s/he be a writer (?), or from the translator translating newspaper articles that s/he be a journalist? I do not think so; neither do I think it is necessary. What I am basically opposed to is the compilatory nature of the whole idea. To be a bit polemic one might ask: what kind of Chimera would it take to translate a novel or a newspaper article dealing with some 'technical' matter? For instance the specificity of maritime knowledge found in Kipling's novel "Captains Courageous" or the in-depth knowledge of bullfighting conveyed in the articles, which Hemingway wrote for *Life* in 1960.

What I would like to propose in this article is a shift in educational focus induced by a new way of integrating the two spheres of knowledge and skills (i.e. linguistics/translation and subject matter) into a technical translator curriculum. My point of departure for doing so will be the presentation of a number of commonly accepted areas of competences followed by a critical discussion of two prototypical ways of integrating subject matter knowledge into LSP translator curricula. Even if these approaches have been summarized primarily on the basis of German and Danish university traditions, I hypothesize that they are not limited by geography.

2. General Areas of Competences for the Technical Translator

What I have referred to as the two spheres of knowledge and skills, Roelcke (1999:146) sub-divides into three areas of competence for the LSP translator:

1. General language competence L1 + L2
2. LSP competence L1 + L2
3. A sufficient knowledge of the relevant domain

In his listing of areas of competence Roelcke, however, leaves out one very important aspect namely the fact that even if a person has a thorough command of two languages and of LSP in the two languages this does not eo ipso mean that s/he is capable of translating between the two languages. Consequently, one more area of competence must be added to his list of requirements[1]:

4. LSP translation competence L1/L2

The LSP trainee translator may obtain these four general competences in different ways. Roelcke (:146) suggests four – as he puts it – 'conceivable' ways:

1. An education within the subject matter with an added language education
2. An education within language with an added education within subject matter
3. A parallel education within language and subject matter
4. An education within language and translation, supplemented concurrently with studies of the subject matter

1 See also Fluck (1985:217).

If we take into account my above addition to his areas of competences, and thereby accept that by „language education" we should understand „language and translation education", Roelcke's list of possible ways seems quite exhaustive, albeit from a rather mathematical point of view. Taken from the top, the three first ways would imply that the LSP translator receive some kind of double education; I will not comment further on this issue (see chapter 1). My investigations show that the fourth way is the one most widely used and therefore the one that I will discuss in the following. I will not take into consideration how language and translation knowledge and skills are taught but focus solely on how subject matter is conveyed.

2.1 Two approaches to teaching subject matter competences

Based on relevant literature as well as a survey of translation schools in Germany and Denmark featuring information about their LSP translation curricula on the Internet, two approaches to teaching subject matter competences may be summarized: A deductive and an inductive oriented approach.

2.1.1 The deductive approach

The deductive approach means that the translation student will be taught or at least exposed to the basics of technical science. Below are a few examples:

- „Einführung in die Technik" (An Introduction to Technical Science) at the Fachhochschule Köln, Germany

- „Grundlagen der Technik" (The Basics of Technical Science) at the Fachhochschule Magdeburg, Germany

- „Fachtheorie im Fachgebiet Technik" (Domain Specific Technical Theory) at the Fachhochschule München, Germany

From this knowledge base the trainee translators are obviously supposed to derive the knowledge needed to understand and subsequently translate any given technical text. Bachmann points to two general problems when implementing a deductive approach:

> „Jede Übersetzerin und jeder Übersetzer wird sicherlich leichten Herzens der Erkenntnis zustimmen, daß es nicht möglich ist, auf vielen technischen Gebieten, mit denen man in Form eines zu übersetzenden Textes konfrontiert werden kann, so sachkundig wie der jeweilige Autor zu sein. Um so mehr möchte ich aber hervorheben, daß es m.E. auch nicht möglich ist, mit dem zitierten und nie so ganz faßbaren „technischen Grundwissen" [i.e. basic technical knowledge], das in der Übersetzerausbildung oft ohne Integration studienbegleitend vermittelt wird, den Anforderungen an professionell angefertigte Fachübersetzungen gerecht zu werden".
> (Bachmann 1992:145)

The fundamental problem is centred on the following question: What constitutes the 'basics of technical science'? Should it be an introduction to the laws of physics or the periodic system? Even if one were to keep the content at a very rudimentary or abstract level, the list of possible basics would be infinite. A brief look into for instance "How things work" or any other technical encyclopaedia provides amble proof of that. If we look at the usefulness of technical science for the trainee translator, then we may easily derive yet another problem. How can one expect that a student of *translation* should manage to bridge the gap from such abstract or rudimentary basics to implementing them or – what would typically be the case – to implementing content derived from these basics in an actual translation? A prerequisite being, of course, that the topic of the translation is in fact covered by the basics taught in class.

2.1.2 The inductive approach

One way of trying to eliminate these problems is to apply a more inductive approach to integrating subject matter knowledge. Here the translation student is taught or exposed to a (usually) small number of technical disciplines. Based on this knowledge of individual disciplines, the student is then obviously supposed to understand and subsequently translate any given text. In favour of the inductive approach is Horn-Helf when she states:

> „[...] daß es in der Praxis kaum übersetzungsirrelevante Fachgebiete gibt. Diese Vielfalt kann in Übersetzungsübungen auch nicht annährend behandelt werden [...], „dafür ist das Spektrum der an übersetzungspraktisch einschlägigen Texten und Berufssituationen einfach zu groß" [...]. Die Beschränkung auf einige ist daher unausweichlich. Es wäre allerdings wünschenswert, auch hier vorrangig die zu berücksichtigen, die als Prototypen gelten können (insbesondere Maschinenbau, Elektrotechnik, Informatik)".
> (Horn-Helf 1999:300)

Although it seems that this approach has an answer to what the deductive approach lacks in depth, it is at the expense of the holistic perspective of the former. For by choosing to expose the students to a catalogue of technical disciplines, one is immediately confronted with two issues that need further consideration: The selection of disciplines and the future practical value of such disciplinary knowledge. In the catalogue proposed, Horn-Helf advocates the selection of prototypical disciplines; it does, however, become clear that what she understands by a prototypical discipline is one from which translation services are requested hic et nunc, giving the selection a short term perspective at best. But apart from that, I am concerned with the practical value of the inductive approach. The students' acquired technical knowledge could very well prove to be of a fragmentary – or even kaleidoscopic – nature. Nord gives an example of this kind of integration:

> „Sach- und Fachwissen wird im Rahmen der Sach- oder Ergänzungsfächer ermittelt; hier erhebt sich allerdings weithin die Frage der Koordinierung bzw. Verzahnung: Im Idealfall sollte das Fachwissen, das für die

> Ausfertigung einer Fachübersetzung erforderlich ist, auch tatsächlich im Rahmen der Sachfachausbildung kurz vor der Anwendung erworben worden sein.“
> (Nord 1996:316)

From the above quotation it is quite obvious that the students in question will be given assignments, which correspond nicely to the kind of technical knowledge they have recently acquired. The main problem being how capable students are for dealing with real-life translations later on; e.g. cross-disciplinary issues or technical topics from disciplines that were not part of the selection. I find it very hard to concur with what I take is the underlying idea; namely that some structural common ground should ‘rub off’ somehow or that trainee translators should – as an instance of ‘incidental learning’ – (through exposure to a pre-defined catalogue of technical disciplines) gain knowledge enabling them to translate texts from disciplines not dealt with in class. Although laconic, Teague’s comments to this issue from the practitioner’s point of view are quite illustrative:

> “Sci/tech translators may dream of serving one market sector, doing translations on a narrowing range of subjects (and hence progressively easier ones), becoming more and more valuable to fewer and fewer clients (and choosing, among those, the least vexing), and cocooning themselves in a blanket of job security. Those lemonade springs and peppermint trees remain just a dream for most.”
> (Teague 1993:161)

As an adapted version of the inductive approach, our department used to integrate technical knowledge by way of a prototypical ‘technical’ life cycle or ontogenesis. The phases of the ontogenesis ranged from materials over production methods to computerization. Corresponding translation assignments then followed each phase. Despite the fact that this seemed to be a reasonable compromise, the result was de facto a radical shift in focus from language, LSP and translation to technical matter. The students were briefly introduced to what in fact amounted to a massive body of technical knowledge and were subsequently expected to be able to translate texts from virtually all areas of technical science and disciplines. Consequently, the students tended to pursue the strategy of learning technical topics by heart, and – in the process – neglecting the other knowledge sphere, that of language, LSP and translation matters. Without going into details as to the learning aspects of such didactics (see Boud 1987 as well as Kastberg 2000 and 2001), I would like to point to the commonly accepted notion that:

> “[p]roblem-oriented training promotes spontaneous analogical transfer: Memory oriented training promotes memory for training.”
> (Needham/Beg 1991)

Generally encouraging a memory trained for training, as it were, and not for spontaneous analogical transfer of problem solving strategies, both approaches are fundamentally problematic. Neither approach prepares the student optimally for the

world of exponentially growing technical knowledge, of ever expanding and overlapping domains as well as constantly developing topics, which s/he will encounter as a technical translator upon graduation. It goes for many university degrees that there is not necessarily a link between curriculum and what the student will be doing after graduating. This link, however, is and should indeed be present when it comes to training future LSP translators.

3. Personal Information and Documentation Management

Not wanting to avoid the Scylla of the deductive approach at the expense of running into the Charybdis of the inductive one, I propose a common denominator other than that of disciplines; namely the basic building blocks of disciplines and their representation in texts: information. What I advocate is not merely a shift in perspective but in the attitude towards teaching technical translation with a point of departure along the lines of Barrows when he states:

> "The acquisition of the skills of effective problem-solving, self-directed learning and team skill is probably more important than the content learned." (Barrows 1998:631)

Even if it were my ambition to teach in class all the technical matter, which the trainee translator will need to know in order to be able to work as a technical translator, I would fail. The students, therefore, are neither taught nor exposed to 'the basics of technical science' nor to a pre-selected number of (more or less relevant) disciplines. In stead I focus on teaching methods enabling the trainee translator to cope with the content of – in principle – any technical text. In order to make such a change, it will not suffice to make adjustments with regard to the curriculum; the adjustments will first have to be made with regard to one's perception of a curriculum. Driver/Oldham states the fundamental issue when it comes to changing the perception of what a curriculum is:

> "[…] the curriculum is seen not as *a body of knowledge or skills* but the *programme of activities* from which such knowledge or skills can possibly be acquired or constructed, though we acknowledge that the selection of possible learning experiences is guided by the knowledge of experts." (Driver/Oldham 1986:112)

Compared to the approaches discussed in the previous chapter, with their focus on the "body of knowledge", the focus of attention in this approach has shifted to "the programme of activities from which such knowledge or skills can possibly be acquired". The programme of activities from which to obtain the subject matter knowledge needed is basically a process model for information and documentation management (Choo 1998:23pp). The model applied is centred on two partially overlapping dimensions. The first dimension sees information management as a dynamic tool for informational problem solving. Here, the students are not taught or exposed to, say, the discipline of 'machinery'; instead they are trained intensively and systematically in how to recognize what specific information needs

they have with regard to a given translation assignment and how to fulfil that need. In my approach, this dimension consists of the following rudimentary phases:

- Recognize information need

  On the basis of the translation assignment the student is trained to sort out his or her personal knowledge gaps.

- Locate information

  On the basis of the specific information gaps, the student seeks out relevant knowledge carriers, activates relevant personal and professional networks etc., enabling him or her to fill knowledge gaps.

- Evaluate information

  On the basis of such information compilation, information processing may begin; the student performs an analysis with regard to authenticity and authority of the knowledge carriers etc. chosen.

- Use information

  E.g. in relation to skopos, target culture and genre, addressee, etc.

Whenever needed, these phases may be recursive, adding to the mere compilatory nature of the chronology a cyclic and, in turn, dynamic quality (Winkel 1988:91pp). This – and this is intentionally so – corresponds to a four-stage learning process. The second dimension handles the results of the first dimension; in effect the relationship with the above dimension will often be a dialectical one. The second dimension contains the following three phases:

- Document information

  Every student at the Faculty of Modern Languages at our university has a personal home page (as well as an e-mail account) free of charge within the university web. The second dimension of the personal information and documentation management applied therefore takes on the shape of a personal web portal with links to relevant external knowledge carriers, to the student's personal full text corpora, his or her own lexicographic databases, etc.

- Edit / revise / optimise information

  Whenever additional information is required and/or new translation assignments demand it, the electronically stored information is easily revised, expanded or altered.

- Retrieve information

  In order to do so, the student designs an interface or system of interfaces tailor-made to suit his or her need for easy access to any piece of information.

This, in turn, corresponds to a three-stage documentation process. Combined, the two dimensions give the student a systematic method with which to deal not only with the technical content of a translation pre-selected for educational purposes, but due to its very nature, it is a method suitable for coping with any subject matter.

4. Summing up and putting into perspective

Needless to say, methods with which to cope with subject matter are but one element of technical translator training at university level. As mentioned before, they constitute one sphere of the knowledge and skills required, the other sphere being that of language, linguistics and translation (see also Kastberg 2001). In order to sum up, I would like to point to three of the issues raised in the course of this article. First of all the deliberate shift in focus from 'teaching' (content) to 'learning' (methods); in the sense that – as we have seen – it is not primarily important what and how much technical subject matter is taught: of primary importance is the student's ability to cope with any subject matter. Secondly, another important issue has been raised, namely that personal information and documentation management form a link between translator training and working as a technical translator; in the sense that the professional technical translator will be forced to manage new and changing subject matter each and every day of his / her professional life. Thirdly, I would like to point to the appealing long-term effect of this approach; in the sense that it mirrors – albeit in a practicable and down-to-Earth manor – the very essence of 'life-long learning'.

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ABSTRACT

Information and Documentation Management in the Training of Technical Translators - As Opposed to Teaching Technical Science

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This article deals with the integration of the two spheres of knowledge and skills commonly accepted to be essential to the technical translator, i.e. linguistics/translation and subject matter. The main focus is on one of the spheres, namely that of subject matter, and how subject matter is integrated into translator curricula. Whereas I do not question the need for subject matter knowledge, I do question the way in which such knowledge is typically conveyed in translator training. In this article, I define and discuss two prototypical approaches to integrating technical subject matter into translator training. The first approach I have labelled the deductive approach; here the student is taught or at least exposed to 'the basics of technical science'. The second approach I have labelled the inductive approach. Here the student is taught or at least exposed to a pre-selected number of technical disciplines. On the basis of a critical discussion of these approaches, I argue that neither way is optimal when it comes to preparing students for coping with real-life translations. I conclude by advocating a shift in educational focus away from the teaching of technical content towards the application of methods within the field of personal information and documentation management.

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