

Terminology and Translation: A Method for Researching Specialist Vocabulary

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Abstract - *The paper starts by emphasizing the importance of terminology work for translators. Following this, one possible method for researching specialist vocabulary, based on the author's research, is presented. Points such as gaining background knowledge, selecting documentation, 'scanning' through selected texts, matching terms across languages and storing terms are addressed.*

1. The Importance of Terminology Work

The need for terminological work and research for translators has become increasingly important. As a recent UNESCO resolution records it is a well-recognized phenomenon that knowledge is growing fast as new technologies and subject fields emerge rapidly during scientific-technical and economic-industrial development - a fact which creates communication barriers (1991: 96). UNESCO is convinced that

“unambiguous and appropriate terminologies based on the principles and methods of terminology work are indispensable for the transfer of knowledge” (1991: 96)

and invites Member States to actively encourage and further all terminological activities.

The exponential growth of knowledge has led to an increased demand for the translation of texts from specific subject fields. As a result, most translators have to familiarize themselves with new or swiftly-developing subject fields and their terminologies at some point during their professional lives. It is well known that translators are regularly confronted with the problem that specialist dictionaries are often not detailed and comprehensive enough to meet their translation needs regarding both the subject matter and linguistic information. Translators also face the problem that even specialist terminologies may be inadequate or rarely available at a “sufficiently detailed level conceptually or linguistically” (Rogers 1994: 2/2). Furthermore, access to term banks is still very limited since they are mostly internal to particular organizations or prohibitively expensive to the independent translator if available on CD-ROM.

Since the 21st century will be known as the era of the 'Information Society' owing to the rapid growth of specialist knowledge, information can be regarded as the currency of the future. The way we communicate our knowledge is in words, or rather *terms* in the case of specific subject fields. As such terms can be thought to be the building bricks of our knowledge. Hence, terminology - which can be defined as encompassing the practices and procedures used for collecting, describing and presenting terms (Sager 1990: 3) - is indispensable for organizing and systematizing human knowledge (Budin *et al.* 1993: 480).

- | Most translated texts are texts from specific subject fields.
- | Sooner or later most translators have to work their way into a new subject field and get to know its terminology.
- | Specialist dictionaries and sufficiently detailed terminologies may be inadequate and access to term banks is often limited.
- | 21st century: 'Information Society'
(words/terms are said to be the *building bricks* of our knowledge)

FIG. 1 - *Reasons for Carrying out Terminology Work*

2. Terminology and Communication

Inadequate terminology work (or at its worst, lack of terminology work) can lead to communication problems at a number of levels, all of which must be taken into account by translators. Communication problems are "compounded once the environment is in some way cross-linguistic" (Rogers 1994: 2/2). This includes communication problems:

- between **languages**, e.g. between English and German;
- across **individual domains**, as, for instance, in the case of a joint project between two disciplines. For example, the term *ablative* is used in linguistics and in computing science but has different meanings. In linguistics the term *ablative* refers to languages which express grammatical relationships by means of inflections, e.g. the ablative case in Latin (Crystal 1991: 1). In computing science *ablative* is defined as

“an optical recording technique in which the heat generated by the recording beam melts or vaporizes a small area of the recording medium, leaving the underlying layer (with a different reflectivity) exposed.” (Dictionary of Computing 1992: 1)

- across various **levels of communication**, for instance, when experts talk to laypersons, and so on. This is often the case, for example, in situations where doctors speak to patients. Specialist terms such as *hyperemesis gravidarum* (The Doctors’ Book of Home Remedies 1991: 465) may not mean anything to patients but its plain English equivalent of *severe morning sickness* would.

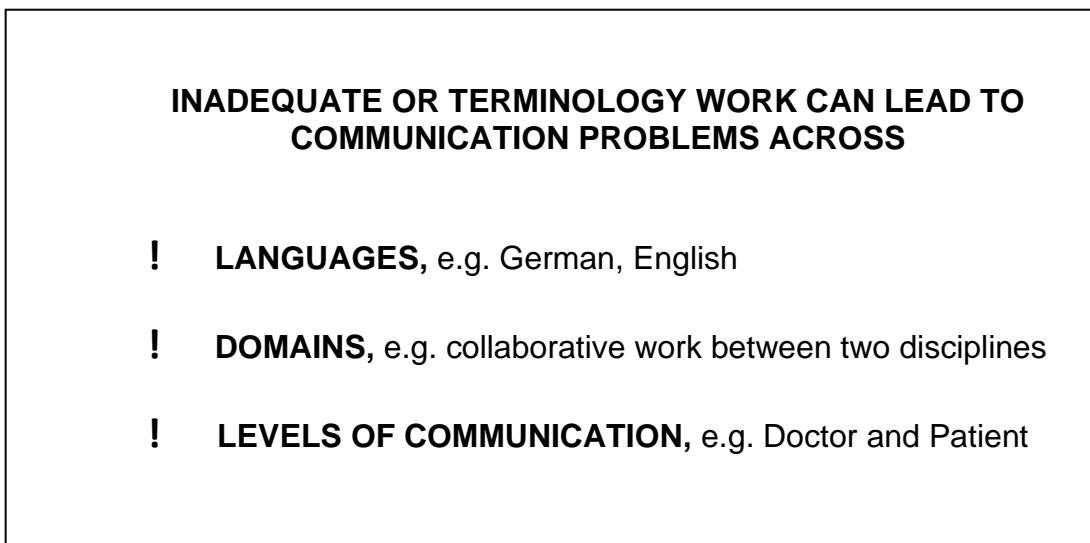


FIG. 2 - *Inadequate Terminology Work*

3. A Method for Researching Specialist Vocabulary

To support translators in carrying out terminological work a possible method for researching specialist vocabulary is presented here. This method was developed during the translation of a special-language text from German into English dealing with the subject matter of airline economics. The main difficulty with this translation was to arrive at the correct terms as there were hardly any specialist dictionaries - neither monolingual nor bilingual - available in this field.

The research method presented aims at identifying terms specific to a subject field in one language and their equivalents in another language by using texts as the basis for the vocabulary research.

There are several steps involved in researching specialist vocabulary. Depending, for instance, on the translator’s level of subject knowledge it is possible to shorten or even to omit some steps.

3.1 Gaining Background Knowledge

The first phase of the method involves gaining background knowledge. The level of knowledge gained needs to be adequate for terminological purposes but it would be unrealistic to expect the same level of knowledge as that of a subject-field expert. During their subject-field research, translators and terminologists usually accumulate sufficient knowledge for carrying out terminology work (Cole 1987: 79), but it is regarded as important to be able to contact subject-field experts for clarification or consultation purposes at particular stages of the work.

However, depending on the subject field, there may be requirements for translators or terminologists also to be subject-field experts. This may be necessary, for instance, in safety-critical matters. Examples of this are translations carried out in the subject field of chemistry where translation errors due to the lack of knowledge of the subject matter could turn out to be life-threatening.

In order to gain some general knowledge of any subject area introductory textbooks, encyclopedia articles, specialist papers, and so on, are particularly suitable.

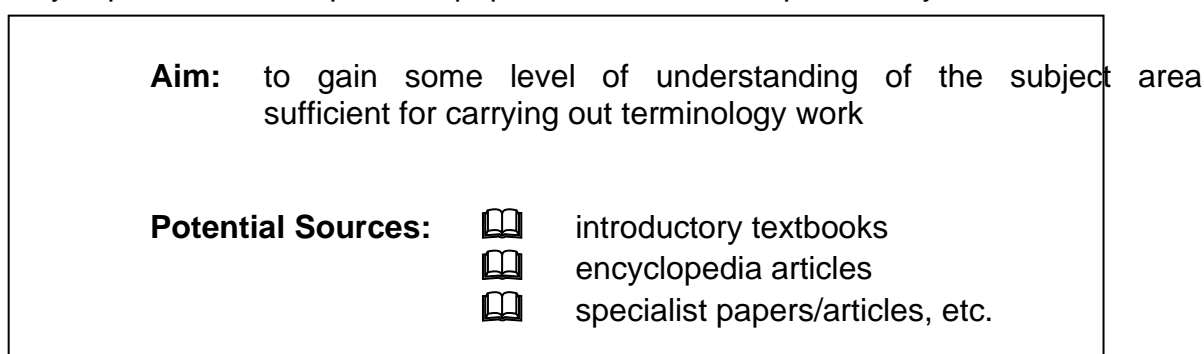


FIG. 3 - *Gaining Background Knowledge*

3.2 Selection of Documentation

The intention of the second phase is to select documentation for the purpose of identifying terms, unlike the previous phase which was concerned with gaining background knowledge.

It should be noted that documentation needs to be chosen for each language concerned. The reason for this is that it is necessary to establish separately which terms exist in which language.

During this phase, documentation which is 'representative' of the subject field needs to be selected as it is impossible to examine all the documentation existing in one field. 'Representative' in this context is a relative term. The selection made depends on the purpose of the vocabulary research, i.e. what is the purpose of the terminology to be compiled or who are the intended users? The selection is also dependent on the subject-field experts consulted, as different experts might suggest different selections.

The reason for using texts as the basis of the research, particularly those of an informative or instructive type, is that texts aim to communicate knowledge about the subject field. Hence, they contain terms which are key items in this communication process.

During the research for the airline economics translation the subject-field experts consulted advised the author to select documentation with texts ranging from government publications, regulations of the then EEC, high-quality newspaper articles to specialist articles, and so on.

- 'Representative' selection of bilingual documentation
 - Terms specific to a subject field are identified by examining texts in the languages concerned
- Potential Sources:**
- government publications
 - EU regulations
 - specialist journals
 - high-quality newspapers, etc.

FIG. 4 - *Choosing the Documentation*

3.3 Scanning the Documentation

Once the documentation has been selected, the terms contained in it need to be identified and highlighted by a procedure called 'scanning'. In this context the term 'scanning' can be interpreted as 'reading fast through a text while consciously looking for potential terms'. A similar definition of 'scanning' is given by the Canadian Terminology Directorate:

"The careful reading of individual or parallel documents pertaining to a given subject field and selection of terms or equivalents (normally with contexts) [...]." (1983: 53)

Cole, however, criticizes this definition as being slightly dogmatic as far as the expression 'selection of terms' goes and he prefers to speak of a "*preliminary selection or apparent terms or equivalents*" (1987: 80, italics are author's emphasis). Cole explains that words or phrases only qualify as terms once it has been established how they relate to the concepts they have been assigned to. According to him, the scanning procedure only provides potential terms.

It should be emphasized that the work carried out during this phase is still done on a monolingual basis, that means the texts are being scanned individually for each language.

Furthermore, it needs to be noted that the texts to be scanned also provide additional information beyond terms. Firstly, they provide terms in their linguistic context which, for instance, demonstrates how terms are used. Secondly, texts often contain definitions of terms which are, for example, necessary for differentiating and delimiting the underlying concepts.

The subsequent recording of the data, in other words the noting of the potential terms found also needs to be carried out separately for each language.

- ◆ Terms can be identified by 'scanning' through the selected texts.
- ◆ **Scanning** in this context means **reading fast through a text**.
- ◆ Potential terms are highlighted.
- ◆ Potential terms should be noted in their context which may be linguistic and/or defining.

FIG. 5 - *Scanning the Documentation*

The following examples (Bajaj 1993: 94, 97) illustrate how terms may be noted in their context (example 1) or together with a potential definition (example 2).

Example ①
"Some airlines do this simply by dividing their passengers into business and non-business or leisure passengers." (Doganis 1991: 208)

Example (1) shows the context in which the term *leisure passenger* was found. This sentence gives indications about:

- the actual existence of the term;

- the use of the term in its linguistic context, i.e. how the term is used;
- the phrasing of the example sentence suggests a co-ordinate relationship between the terms *non-business* and *business passenger* indicating two types of *passenger*;
- a potential synonym for the term *leisure passenger*, namely *non-business passenger*

When noting terms it is important not just to get a mere list of terms but to arrive at some sort of classification of the terms found, in other words to find out how the individual terms are related to each other. This is of particular importance for translation purposes, including matching terms across languages.

The hierarchical classification (Fig. 6) could already be established on the basis of example (1). The findings from this example also give indications as to what else to look for during further scanning. As a result the translator or the terminologist will be consciously looking for further potential types of *passenger* when reading through the rest of the documentation. In this manner, two types of *leisure passenger* were encountered in the following sentence:

“It can be seen by comparing weekend and two-week holidaymakers that even in the leisure market there may be distinct segments with their own needs and expectations.”
(Doganis 1991: 209)

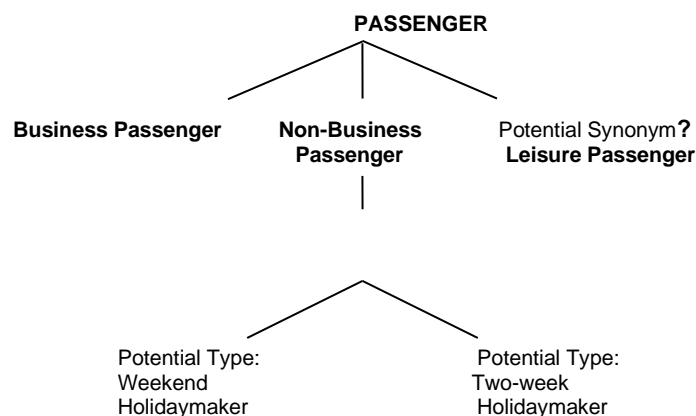


FIG. 6 - *Classification of Passenger*

Example ②
 “In-flight services including the quality and variety of meals, the availability of drinks, in-flight entertainment, cabin decor and flight attendant service, will also need to be planned.” (Shaw 1987: 130)

Example (2) provides

- the potential term *in-flight services*, i.e. the term actually exists;
- the use of the term *in-flight services* in its linguistic context;
- some sort of definition of this term;
- three other terms: *in-flight entertainment*, *cabin decor* and *flight attendant service*;

As we have seen, terms are noted in their linguistic and/or defining context. The reason for recording this additional information is that it assists the translator/terminologist in identifying how individual terms are related to each other, i.e. to identify synonyms, homonyms, polysemes, and so on. The aim is to eventually build up a systematic picture of a particular subject area or of part of it.

However, a system in which terms are positioned in relation to each other can only be built after an investigation of the underlying concepts - the ideas or notions which these terms designate. Concepts can be defined as

“units of thought constituted by those characteristics which are attributed to an object or to a class of objects.” (ISO/DIS 1087 1988: 2)

It is commonly agreed that concepts play a central role in terminology (Arntz & Picht 1989: 42). Hence, any terminological work is based on them. This means that concepts inherent in a special subject field need to be determined and delimited from each other before any attempt can be made to relate the terms designating these concepts.

By delimiting individual concepts from one another, relations between them become recognizable or are revealed (Arntz & Picht 1989: 62). Conceptual relations are necessary for elaborating and building up concept systems of special subject fields. The classification of *passenger* (fig. 6), for instance, reveals superordinate and subordinate relations (*passenger* is superordinate to *business passenger*; *non-business passenger* is subordinate to *passenger*) and also co-ordinate relations (between *weekend holidaymaker* and *two-week holidaymaker*).

3.4 Matching Terms Across Languages

Here, the data obtained through scanning needs to be compared in order to establish any corresponding concepts and possible term equivalences (Cole 1987: 81). As already mentioned, a prior comparison of concepts has to take place before

terms can be assigned to them. For this task, it is considered ideal to be able to consult subject-field experts.

Concepts across languages are matched by comparing their definitions. The basis of comparing concepts is a matching of the characteristics (Arntz & Picht 1989: 55) which are contained in the definitions (obtained through scanning). Being component parts of concepts, characteristics state or establish certain qualities of individual or classes of objects. Characteristics are

“necessary for the differentiation of a concept from other concepts of a specific field and for other functions as well” (ISO 704 1987: 2)

For example, the Oxford Encyclopedic English Dictionary defines *passenger* as follows:

“A traveller in or on a public or private conveyance (other than the driver, pilot, crew, etc.)”. (1991: 1061)

According to this definition, the concept *passenger* has the following characteristics:

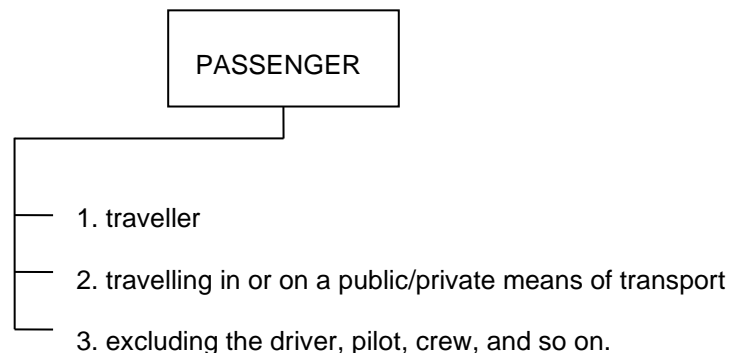


FIG. 7

In the following example, it will be shown how concepts from two different languages (English and German) are differentiated by comparing their characteristics. This is done by consulting subject-field experts due to the lack of definitions found during scanning and the lack of monolingual and bilingual dictionaries available for checking. The question of whether it is possible to find agreement between the experts consulted about which terms denote these concepts will also be examined.

The example, taken from the airline economics translation (Bajaj 1993: 96-97), illustrates a comparison between the German *elektronisches Reservierungssystem* and the English *computer reservation system* and *yield management system*.

The comparison became necessary since the terms *computer reservation system* and *yield management system* were encountered in the documentation without any defining context which would have allowed them to be differentiated. Also, one might have expected to find a term such as *electronic reservation system* which would have presented a straight-forward translation of the German term but this term was not encountered. As we will see, a one-to-one rendering would have actually resulted in an inappropriate translation.

The first expert consulted was the German author of the source text (expert A). According to him, the underlying concept of the term *elektronisches Reservierungssystem* has the following characteristics:

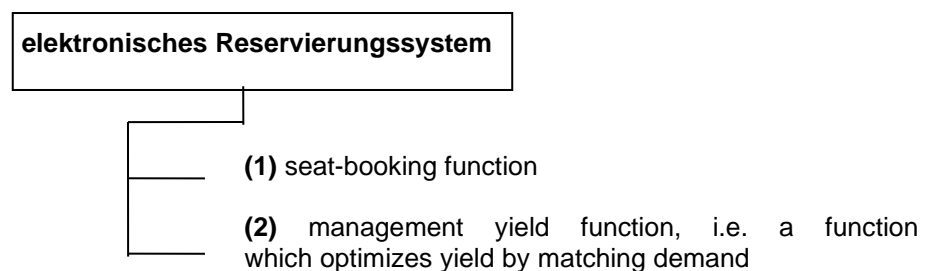


FIG. 8

Since airline economics is an international field, the German expert also writes and publishes extensively in English. Therefore, he was also consulted about the concepts underlying the English terms *computer reservation system* and *yield management system*. He said that both had the same characteristics, namely characteristic (1), the seat-booking function and characteristic (2), the management yield function. According to expert A, these terms both designate the same concept. Thus, they may be called synonymous.

Furthermore, the German expert was asked about the one-to-one translation *electronic computer reservation system*. He replied that this term was not used in his field at all.

The second expert who was consulted was an English air transport research officer (expert B). According to him, the concepts underlying the terms *yield management system* and *computer reservation system* have the following characteristics:

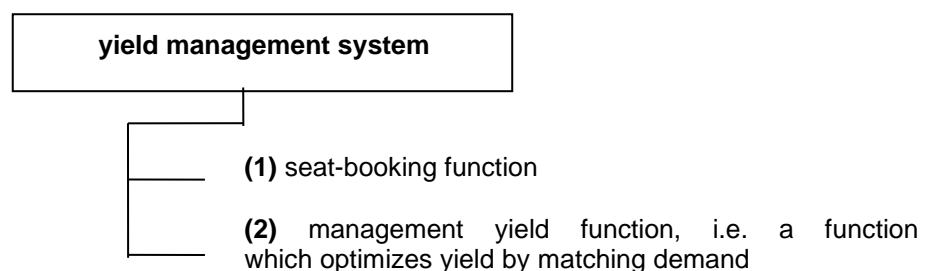


FIG. 9

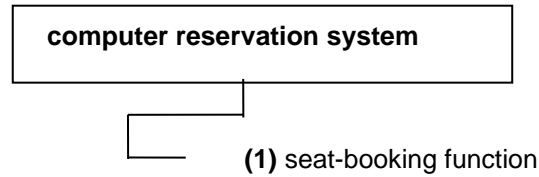


FIG. 10

He was also consulted on the term *electronic computer reservation* but he, like expert A, dismissed this term as not being used in his field.

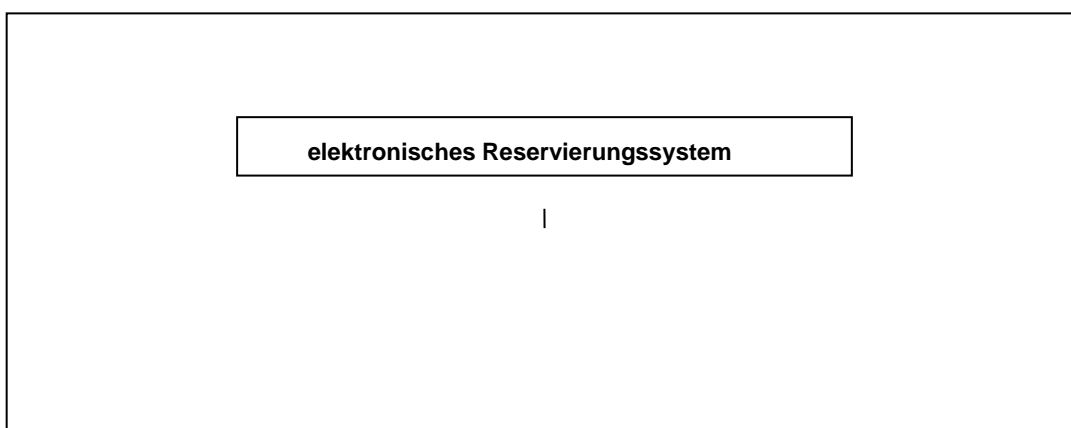
To briefly sum up the results, it can be said that expert B's understanding was different from expert A's regarding the concepts' characteristics.

After having differentiated the concepts by describing their characteristics, it then became necessary to find some agreement between the experts about which term should be used for the translation. Expert A, the German source-text author stated that he would be happy for either term (*computer reservation system; yield management system*) to be used in the translation of his source text since, in his opinion, they were synonymous.

Expert B, however, said that the only correct term denoting the English concept would be *yield management system* as it had the same set of characteristics as the German concept.

As agreement was only reached about *yield management system*, this term should - from a terminological point of view - have been used for the translation. However, after further deliberations with the experts it was eventually decided to use the term *computer reservation system* - disregarding the terminologically correct term - since the target readership (mainly first-year airline economics students) might understand this term more readily.

The following figures (11a) and (11b) aim to summarize the various stages of matching the concepts and the terms denoting these concepts.



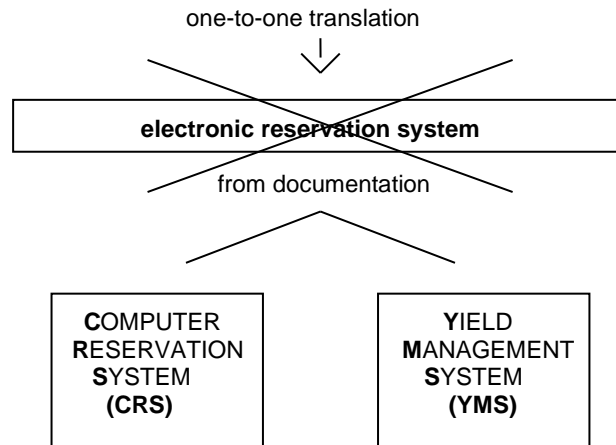


FIG. 11a - Stage 1 of the Conceptual Comparison

<p>Characteristics of the German concept <i>elektronisches Reservierungssystem</i> (according to expert A):</p> <ul style="list-style-type: none"> ① seat-booking function ② management yield function
<p>Characteristics of the English concept <i>yield management system</i> (according to expert A):</p> <ul style="list-style-type: none"> ① seat-booking function ② management yield function
<p>Characteristics of the English concept <i>computer reservation system</i> (according to expert A):</p> <ul style="list-style-type: none"> ① seat-booking function ② management yield function
<p>Characteristics of the English concept <i>yield management system</i> (according to expert B):</p> <ul style="list-style-type: none"> ① seat-booking function ② management yield function
<p>Characteristics of the English concept <i>computer reservation system</i> (according to expert B):</p> <ul style="list-style-type: none"> ① seat-booking function

FIG. 11b - Stage 2 of the Conceptual Comparison

On the whole, the airline economic translation on which the research was based was characterized by partial matches as in the aforementioned example. Situations lacking a conceptual match were not encountered during this particular translation. This may be explained by the fact that the airline business has an international layout, and international convergence leads in the majority of cases to concepts being universal in the subject field concerned.

However, it is quite possible to come across concepts which cannot be matched, and this may be due to

- insufficient research
- the fact that a concept does not exist in the target culture at all. Concepts are not restricted to individual languages but they are culturally bound and influenced by social conventions. A good example illustrating such a situation is the German concept *Habilitationsschrift* meaning *the thesis a German Doctor of Philosophy has to submit as partial fulfilment of the requirements to become a professor*. This concept is not known in Britain as someone is appointed professor without having to write an additional thesis.
- the emergence of a concept but there is no term in the target language yet to designate it. In this context Gallagher (1987: 13) mentions the example of the German concept of *Teigwaren* meaning *products made from dough or flour, egg and water*. Until not long ago, the English language had no word for *Teigwaren*. Gallagher reports that in a dictionary edition of 1958 the rendering of *Teigwaren* was *farinaceous products*. This expression, however, was hardly used. Slowly, the Italian word *pasta* came into the language and was found recorded in a dictionary at around 1979.

3.5 Storing Terms

The last phase deals with storing terms. In addition to data such as definitions and contexts, future users of the terminology will find information concerning the status of terms valuable. An important aspect of terminology work is the evaluation of terms themselves, thereby contributing to quality assurance. This is achieved by corroborating the terms in the documentation through consultation with subject-field experts. A set of labels can be used to record the outcome of the evaluation procedure.

For example, to label the terms obtained from the airline economics documentation the following code words were used when entering the terms into a database:

- ‡ terms which were confirmed by experts were labelled with the word *green*,
- ‡ terms which still needed consultation with experts were labelled with the word *amber*,
- ‡ terms which had not yet been checked were labelled with the word *red*,
- ‡ and terms said to be incorrect by experts were labelled with the phrase *do not use*.

The last point in particular shows that all data is valuable including negative data. In other words, terms which should not be used also provide very valuable information. Unfortunately, most dictionaries on the market fail to provide this kind of information.



- | | |
|---|--|
|  | A vital aspect of this phase is the evaluation of the status of terms, thereby ensuring quality. |
|  | Terms deemed to be incorrect by experts should also be stored, as negative data is valuable. |

FIG. 12 - *Storing Terms*

4. Conclusion

Carrying out reliable terminology work has become increasingly important for translators. Even very experienced and highly specialized translators are often confronted not only with new terms but also with specialist texts which can contain terms from a variety of unrelated or distantly related fields. Owing to the exponential increase in specialist terms in our 'Information Society', translators are becoming more and more dependant on reliable terminology research methods.

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Notes

The figures in this paper were adapted from the slides which were displayed during the conference talk. They have been included as they present a summary of the various sections of the paper and allow readers to pick up the essence of the paper without having to read it in its entirety.

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