

Terms as dynamic entities: problems and solutions in translation



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1. Introduction

It is a common assumption that technical terms and their meanings can be more easily matched across special languages than in general language. While there may be some truth in this assumption for a subset of terms, the overall picture is a more complex one, in which phraseology, the linguistic neighbourhood of terms, and semantic variation, the perspectivisation of meaning, play a role in the decisions taken by the specialist translator. In this paper, I would like to discuss some examples of how technical terms behave in text as opposed to dictionaries, and to relate this to selected aspects of the literature on translation, terminology and linguistics. We will also look at the resources available to specialist translators in the form of dictionaries or ‘terminologies’, and texts, relating these to the problems which such translators may face in their work. Let us start with the system-use dichotomy represented by the relationship between dictionaries (system) and texts (language use).

2. Terms as ‘real’ words

Since Saussure, it has been generally accepted that words (or rather lexical units) have two ‘sides’: content – the meaning, and form – the physical expression. The popular view of word meanings is often based on dictionary definitions, which appear to offer some kind of authoritative decision on the ‘correct’ meaning. So when Albert Reynolds, the Irish Taoiseach, was asked on television in 1994 whether the IRA proposal for a ‘*complete* cessation of military operations’ meant a *permanent* cessation, he expediently consulted his English dictionary. But as the non-material side of the word, meaning is rather more elusive than lexicographical codification implies, exhibiting many dimensions including what have been commonly described as syntagmatic and paradigmatic aspects, such as collocability and sense relations, as well as

polysemy and other types of arguably more subjective relations such as prototypicality (cf. for instance, Lutzeier 1995: 45-58 for an overview). Lexical meaning certainly presents more obvious challenges for scholars than form. As Labov (1973: 314) remarks:

Words have often been called slippery customers, and many scholars have been distressed by their tendency to shift their meanings and slide out from under any simple definition.

The context of a word is usually understood as the words with which it co-occurs, not necessarily contiguously, i.e. syntagmatic relations, but context also subsumes polysemous aspects of meaning in that collocations can disambiguate senses e.g. *window* and *computer* versus *window* and *house*. Hence, the inclusion of contexts in dictionaries can be an important addition to definitions in conveying meaning:

It is often impossible to give the meaning of a word without 'putting it in a context'; and dictionaries are useful in proportion to the number and diversity of the 'contexts' they cite for words. (Lyons 1968: 410)

For linguists such as Labov and Lyons, as cited here, the primary concern is to discern lexical meaning and then to represent it. In producing a target text, translators are not only text decoders but also text *creators*, as well as in some cases, their own terminographers, so the creation of lexical meanings in a new text is as important as discerning lexical meanings in a source text. And it is the use of terms in the sense of their inclusion in new texts which has been the focus of Wüster's General Theory of Terminology, in which principles were developed for (1) the selection or formation of preferred terms for prospective use based on an analysis of *restricted* current usage, that of subject experts, and (2) the construction of terminologies (i.e. terminology collections) as the instruments of prescription. Wüster always stressed that it only made sense to regulate (lexical aspects of) *special* languages (e.g. Wüster 1974: 69) and in this way is in agreement with Labov (1973: 341), who points out the futility of attempting to regulate the slippery words of general language but considers this feasible for what he calls 'technical jargon':

A goal of some clear thinkers has been to use words in more precise ways. But though this is an excellent and necessary step for a technical jargon, it is a self-defeating program when applied to ordinary words.

The ideal of one meaning for one term and one term for one meaning in specialised vocabularies – a general ideal which can be traced back to the 'analogists' of Ancient Greece, who tended to "correct" any "anomalies" [...] rather than change [their] ideas about the nature of language', which they regarded as essentially regular (cf. Lyons 1968: 7) – was really only ever

considered as that, an ideal, although the claim that terms as opposed to words are context-independent was partly predicated on such a regularity. Subsequently, text-based research in a translation context has established that the meaning of terms can also be context-dependent (e.g. Gerzymisch-Arbogast 1996). Perhaps more importantly, there has been an increasing recognition of variation in the use of terms in text – in both form and content – which can furthermore be viewed positively (cf. also Sager 1990: 58). Variation need not be seen as a *failure* to apply lexical regularity which has been introduced into a system in order to aid the practice of specialist communication, but rather as the result of functionally-motivated choices in language use which may *refine* aspects of that communication in relation, for instance, to domain, genre, meaning perspective, readership and textual function.

3. Terms and their variability: Contrasting views

There are differing views on the potential of terms to vary in their form and meaning. One factor may be the subject field to which the terms belong. The terminology scholar Juan Sager has, for instance, suggested that the terminologies of technological as opposed to scientific domains are particularly ‘volatile’, especially new technologies, and that this volatility can be accentuated in the transfer of knowledge to new cultures and languages through translation (Sager 1990: 82). Other scholars have taken a different stance. As we have seen, claims about the importance of context in relation to the determination of meaning are familiar. But such claims are often relativised where LSP (language for special purposes) and LSP translation are concerned: the translation of technical words – or ‘terms’ – is said to be context-free (cf. for example, Coseriu 1975: 28):

Sie [Terminologien] zeichnen sich häufig durch ihre inhaltliche und teilweise sogar formale Zwischensprachlichkeit aus, die durch die Internationalität der betreffenden Wissenschaften begründet ist. Sie können daher ohne Schwierigkeiten übersetzt werden, sofern die terminologischen Konventionen der betreffenden Sprachen übereinstimmen, denn die Übersetzung bedeutet in diesem Fall nur die Ersetzung eines “signifiant” durch einen anderen im Verhältnis 1:1; das “signifié” bleibt dabei unberührt.(Coseriu 1975: 28)¹

¹ ‘They [terminologies] are often distinguished by the crosslinguistic correspondence which is exhibited at the content level and partly also at the formal level. This correspondence has its origins in the international nature of the relevant subjects. They can therefore be translated without any difficulty, as long as the terminological conventions of the relevant languages are

As Newmark neatly puts it: ‘Such words bring their contexts with them’ (1988: 194, cf. also Newmark, 1996: 56).

The view that the meaning of terms is context-independent, i.e. that terms are *not* slippery customers, is also found in the earlier literature of German-based terminology studies, often referred to as the general theory of terminology: *die Allgemeine Terminologielehre* (cf. Wüster 1974), which is concerned with the study of terms and concepts and the relations between them. Felber (1984: 108) has stated, for instance, that a term ‘retains the particular meaning [...] within any context’ by which I understand him to mean that the meaning of a term does not vary within a particular subject field, at least once any polysemy has been identified and eliminated through standardisation. The motivation for this view lies in the concept-based – or onomasiological – approach adopted to the study of the specialist lexicon and the compilation of specialist lexica – or terminologies. You assign terms to meanings i.e. concepts, not meanings to terms, as do specialist lexicographers. More recently, as we have seen, this view has been modified, and there is general recognition that some terms are indeed influenced by their context with respect to aspects of their meaning.

In the next section, we look at a more differentiated model of term-concept relations than that which appears in many textbooks and manuals, and hence, at a refinement rather than a rejection of the view that the translation of technical terms can be treated as a kind of crosslinguistic slot-and-filler exercise.

4. From stable to slippery: a differentiated view of terms and concepts

Texts are a recognised and accepted source of terminological data. They may be used to build up a conceptual picture of the subject field and to identify linguistic behaviour. And even in a concept-based approach to building terminologies, i.e. starting from specialist meanings and establishing how these are linguistically expressed, texts are still a principal source of such data, unless the terminologist is him- or herself a subject expert, as was the case for the engineer Eugen Wüster. The recommended forms for representing the systems of concepts which underlie subject knowledge are, however, still a blunt instrument compared to the subtle ways in which specialist knowledge can be and is presented in texts. In concept systems – a way of trying to order the knowledge of a subject field as a basis for the compilation of terminologies so

in accord, since in this case translation means replacing one “signifiant” by another in a 1:1 relationship. The “signifié” remains the same.’ (*my translation*)

that definitions are clear and equivalence is soundly based – relations are most often presented as hierarchies. These most commonly take the form of genus-species relations: a car is a kind of motorised vehicle is a kind of vehicle, or part-whole relations: a hub is a part of a wheel is a part of the chassis is a part of a car. Sometimes, these relation types may be mixed so that a particular concept has more than one dimension: a book is a kind of document; a book contains the parts pages, spine, cover.

In some work which I carried out into the bilingual representation of the braking systems of articulated vehicles in German and English texts (Rogers 1999), it became clear that certain concepts are relatively stable within each text and hence, the linguistic labels used to convey those meanings can be related to each other as equivalents without further ado. This situation prevails, for instance, when the reference is to an individual and specific part of the articulated vehicle, i.e. the ‘towing vehicle’ (*Zugfahrzeug*) or the ‘towed vehicle’ (*Anhängfahrzeug*):

| | |
|--|--|
| ... des Anhängfahrzeugs | |
| zur Betätigung der Bremsanlage des Anhängfahrzeugs | for the control of the braking system of the towed vehicle |
| ... im Anhängfahrzeug | |
| eine Betätigungseinrichtung im Anhängfahrzeug indirekt [betätigen] | an indirectly operated control device on the towed vehicle |
| .. im Zugfahrzeug | |
| eine Betätigungseinrichtung im Zugfahrzeug direkt [betätigen] | a directly operated control device on the towing vehicle |

Figure 1: Textual correspondences for individual and specific reference to parts of an articulated vehicle

But the authors of such texts may wish to vary the way in which these parts are referred to. They may want to refer to the two parts collectively, as in Figure 2:

| | |
|--|---|
| ... der Fahrzeuge eines Zuges | |
| Kombination von Bremsanlagen der Fahrzeuge eines Zuges | Combination of braking systems for vehicles forming a vehicle combination |

Figure 2: Textual correspondences for collective reference to parts of an articulated vehicle

In fact, we can identify yet another perspective in the selected text extracts. In this additional view, the vehicles are represented individually (*viz. einzeln*, ‘individual’), but without being differentiated according to their specific function, in contrast to the terms *Anhängefahrzeug* and *Zugfahrzeug* (‘towed vehicle’, ‘towing vehicle’).

| | |
|--|---|
| ... der einzelnen Fahrzeuge | |
| die Bremsanlagen der einzelnen Fahrzeuge | the braking systems of the individual vehicles |
| ... der einzelnen Fahrzeuge eines Zuges | |
| die zur Bremsung der einzelnen Fahrzeuge eines Zuges benötigte Energie | the energy used for the braking of each of the vehicles forming the combination |

Figure 3: Textual correspondences for individual and generic reference to parts of an articulated vehicle

The final possible combination of characteristics – specific and collective – was not found in the text extracts studied.

What traditional terminology is good at handling are concepts which are individual and specific, clearly labelled by terms which are monosemous, such as ‘towing vehicle’ and ‘towed vehicle’ or *Zugfahrzeug* and *Anhängefahrzeug*. The relationships are clear and can be classified in a straightforward way. Equivalences can also be easily mapped, and definitions constructed accordingly, even if there is more than one possible perspective (Figure 4 and Figure 5):

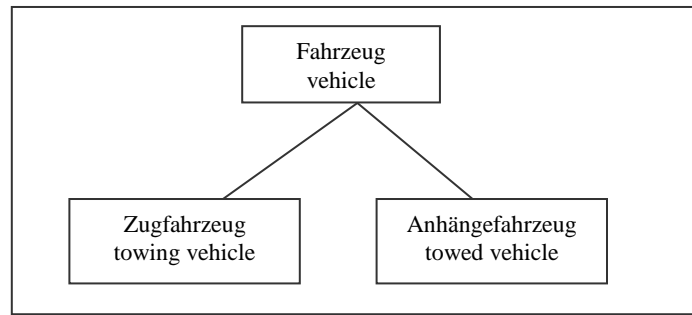


Figure 4: A genus-species (type-of) view of key concepts

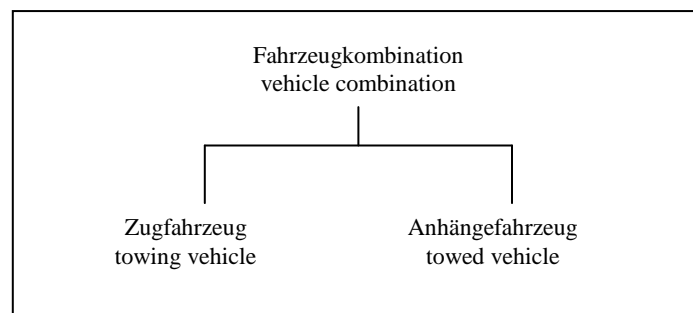


Figure 5: A part-whole (part-of) view of key concepts

But if we were to try to represent dimensions such as [collective, generic] or [individual, generic], there are no graphical or definitional conventions to capture them adequately. So what can be represented in texts can be more subtle than traditional concept systems and codified terminologies. Hence, the solutions to terminological problems may sometimes have to be found in the same medium, i.e. language use.

5. What is a term?

Using texts as a source of data about terms and their use presupposes that we are able to distinguish terms from non-terms in our reading or processing of the text. A number of considerations become important here, such as language typology (e.g. Germanic versus Romance patterns of term formation), diachronic change (pre-terms versus terms), and what we can call text grammar. Variation within a text may have to do with with aspects of cohesion (formal links) or with aspects of coherence for a given readership (prior knowledge). In a scientific text written for the educated layperson, for example, compound terms, as fully lexicalised concepts, may only appear later in the text, after they

have been linguistically and conceptually constructed. Halliday (1992: 70-1) has analysed the progression of a text on the fracturing of glass in *Scientific American*² describing the textual ancestry of the compound *glass fracture growth rate*, by pointing out the gradual shift from the verbal to the nominal (e.g. *cracks* to *crack*; *grow* to *growth*; *slow* to *rate*):

how glass cracks

the stress needed to crack glass

as a crack grows

the crack has advanced

will make slow cracks grow

the rate at which cracks grow

the rate of crack growth

we can decrease the crack growth rate

glass fracture growth rate

The terminologist faced with textual evidence of this kind is keen to establish whether phrases such as *rate of crack growth* and *crack growth rate* (a synonym of *fracture growth rate*?) can be considered as terms. Whatever practical decision may eventually be made, the textual history of the expression is not due to the carelessness of an inexperienced writer, in fact rather the opposite: it is due to the skill of a writer with a particular audience in mind. For the translator, the problem is to deal with a nominal phrase which (i) may be an idiosyncratic term creation, e.g. in an emerging domain, (ii) may be a stable compound but have no established equivalent, or (iii) may be an unstable combination with no clear specialist meaning.

In the first two cases, lexical gap-filling strategies which have been in use since classical times are usually brought into play as text-based solutions:

- borrowing
- loan translation
- neologism
- circumlocution

² Halliday relates his comments to 'scientific and technical discourse' in general, but a comparison with an expert-to-expert text on the same topic may reveal different patterns.

- a combination of two or more of these strategies

But we at least have the advantage over Cicero: we can test whether the SL nominal phrase is idiosyncratic using a search engine on the WWW. In the case described, our full nominal phrase *glass fracture growth rate* does indeed seem to be idiosyncratic although *fracture growth rate* seems stable as a compound. On this basis then, we can try out various solutions, particularly loan translations, on the WWW to establish whether they – or a close variant – are already in use. If our combination is not a term, as for instance, *swimming shark*, then we are free to translate the phrase according to its individual components: *schwimmender Hai*. But this is not necessarily the case, if it is a term, cf. *basking shark: Riesenhai* (cf. Kocourek 1981: 219). Other terms may, however, correspond across languages, e.g. *heavy water: schweres Wasser*. So the situation is unpredictable, and, as Heid (2001: 794) has pointed out, a matter of convention rather than rules.

To sum up:

- terminologists need to distinguish between terms and non-terms in order to determine the contents of their termbase;
- translators need to distinguish between terms and non-terms in order to help refine their lexical translation strategy.

6. Collocations: an LSP-LGP continuum

Tools to facilitate the extraction of terms from text are beginning to move out of the research lab onto the commercial shelf. But such tools do not provide ready answers to the problems of distinguishing between general-language collocations and special-language terms, a well-recognised problem (cf. Heid 2001: 791). In fact I would like to support the suggestion that we are not dealing here with a dichotomy, but with a continuum of LGP (Language for General Purpose) expressions to LSP multiword terms, which makes the problem hard to solve, for both humans and machines. In order to illustrate this proposal, a German/English bilingual corpus of texts in the domain of Bluetooth technology was analysed for lexical combinations. Bluetooth is a new technology in which, following Sager's suggestion (1990: 82), concepts and terms are likely to still be evolving. The size of the corpus comprises 91,186 words in German and 163,891 words in English. We will focus on just two terms which act as 'carriers' or 'mother terms' as Sinclair calls them: *technology* and its plural *technologies*, and *Technologie* and, where applicable, its plural *Technologien*. What is at issue here is whether lexical combinations

are terms e.g. *netcracker technology* or looser collocations without a specialist meaning, e.g. *fabulous technology*. Single-word compounds are of less interest here, since their form is already suggestive of a more stable combination e.g. *Funktechnologie*, *Funktechnologien*, *Übertragungstechnologie*, *Übertragungstechnologien*, *Mobiltechnologie* and so on. Hence English will be more problematic for us than German, since the majority of English compounds are multiword, leading to boundary identification problems.

In our chosen domain, it seems clear that the following combinations are terms, since the generic *technology* (or *technologies*) and *Technologie* are specified by known technical abbreviations:

Table 1: Combinations with *technology* and *technologies*, and *Technologie* (abbreviation + carrier)

| |
|-----------------------------|
| IrDA technology |
| <i>2.4 GHz technologies</i> |
| <i>LAN technology</i> |
| <i>PDA technologies</i> |
| <i>PGA technology</i> |
| <i>RF CMOS technology</i> |
| <i>RF technologies</i> |
| <i>RF technology</i> |
| <i>RFID technology</i> |
| <i>SWAP technology</i> |
| <i>WAP technology</i> |
| <i>WLAN technology</i> |
| <hr/> |
| <i>IrDA Technologie</i> |
| <i>LAN-Technologie</i> |
| <i>LTCC- Technologie</i> |
| <i>XJACK-Technologie</i> |

We are also able, through broad subject knowledge, to identify some key terms, as in Table 2:

Table 2: Combinations with *technology* and *technologies*, and *Technologie* (modifier + carrier)

| |
|-------------------------------|
| information technology |
| <i>e-tagging technology</i> |
| <i>mobile technologies</i> |
| <i>mobile technology</i> |
| <i>radio technology</i> |
| <i>scatternet technology</i> |
| <i>silicon technologies</i> |
| <i>silicon technology</i> |
| <i>wireless technologies</i> |
| <i>wirelesss technology</i> |
| Chip-Technologie |
| <i>drahtlose Technologie</i> |
| <i>kabelfreie Technologie</i> |
| <i>schnurlose Technologie</i> |
| <i>Sizilium-Technologien</i> |

In many cases, the terms shown in Table 2 can also be part of more extensive combinations, in which one element of a collocation is itself a collocation (cf. Heid 2001: 788-9). Such patterns are typical of special-language lexica.

Table 3: Combinations with *technology* and *technologies*, and *Technologie* (modifier + multiword term)

| |
|---|
| short-range radio technology |
| <i>low-power radio technology</i> |
| <i>frequency-hopping spread-spectrum radio technology</i> |
| <i>drahtlose Kurzstrecken-Netzwerk-Technologie</i> |

In defining term boundaries, a distinction is sometimes drawn between a so-called descriptor, and a modifier as an integral part of a term. So, for instance, in the nominal phrase *harmful emission pollutants*, it could be argued from a terminological point of view that the modifier *harmful* is semantically redundant since the generic concept, namely *pollutant*, is intrinsically harmful. But the text in which this phrase appears is a marketing brochure for a brand of

catalytic converter, in which the anticipated audience does not consist of experts. The descriptor may therefore be said to have a pragmatic if not a semantic purpose. When building a terminology, however, such phrases would not normally be included: the user of the terminology, a translator or a technical writer, would be expected to use their discretion as skilled writers whether to append a relevant descriptor. But when working from text to terminology, decisions have to be made about what is a descriptor and what is an integral part of a term. The following examples from our Bluetooth corpus raise just such questions:

Table 4: Combinations with *technology* and *technologies*, and *Technologie* (modifier or descriptor + multiword term)

| |
|--|
| wireless LAN technology |
| <i>Bluetooth wirelesss technology</i> |
| <i>wireless intelligent e-tagging technology</i> |
| <i>drahtlose Bluetooth Technologie</i> |

The issue here is whether *wireless* and *drahtlos* are semantically redundant: in the case of *drahtlose Bluetooth Technologie*, it seems that *drahtlos* is indeed semantically redundant, because Bluetooth is a wireless technology. There is no other kind. In the case of *Bluetooth wirelesss technology*, the situation is less clear because Bluetooth is *one* existing computing and telecommunications industry specification for short-range wireless connections. However, no evidence was found in the corpus of an alternative order in either language, which suggests that other factors, e.g. language-specific ordering factors for modifiers, may also be important.

Consider now the following combinations in Table 5, consisting of adjective plus noun:

Table 5: Combinations with *technology* and *technologies*, and *Technologie* and *Technologien* (adjective + carrier)

| |
|--|
| adapted technology |
| <i>advanced technology</i> |
| <i>advanced technologies</i> |
| <i>competing technologies</i> |
| <i>competing technology</i> |
| <i>complementary technologies</i> |
| <i>current technology</i> |
| <i>disruptive technology</i> |
| <i>disruptive technologies</i> |
| <i>emergent technology</i> |
| <i>emerging technologies</i> |
| <i>enabling technologies</i> |
| <i>highly-flexible technology</i> |
| <i>mature technologies</i> |
| <i>new technologies</i> |
| <i>new technology</i> |
| <i>second technology</i> |
| <i>steppingstone technology</i> |
| <i>sustaining technologies</i> |
| <i>ubiquitous technologies</i> |
| <i>ubiquitous technology</i> |
| <i>dynamische Technologien</i> |
| <i>fortschrittliche Technologien</i> |
| <i>innovative Technologie</i> |
| <i>komplementäre Technologie</i> |
| <i>komplementäre Technologien</i> |
| <i>neue Technologie</i> |
| <i>neue Technologien</i> |
| <i>revolutionäre Bluetooth-Technologie</i> |
| <i>richtungsweisende Technologien</i> |

What clues can we draw on to establish whether these combinations are stable combinations with a specific technical meaning? With respect to stability,

frequency is indicative, assuming the corpus is of sufficient size; plural as well as singular occurrences can also indicate ‘terminess’³.

Table 6: Combinations with *technology* and *technologies*, and *Technologie* and *Technologien* (adjective + carrier).

| <i>Candidate term</i> | <i>Frequency</i> |
|--|------------------|
| adapted technology | 1 |
| <i>advanced technology</i> | 1 |
| <i>advanced technologies</i> | 2 |
| <i>competing technologies</i> | 7 |
| <i>competing technology</i> | 4 |
| <i>complementary technologies</i> | 1 |
| <i>current technology</i> | 3 |
| <i>difficult technology</i> | 1 |
| <i>disruptive technology</i> | 13 |
| <i>disruptive technologies</i> | 2 |
| <i>emergent technology</i> | 1 |
| <i>emerging technologies</i> | 2 |
| <i>enabling technologies</i> | 2 |
| <i>highly-flexible technology</i> | 1 |
| <i>mature technologies</i> | 1 |
| <i>new technologies</i> | 7 |
| <i>new technology</i> | 13 |
| <i>second technology</i> | 1 |
| <i>steppingstone technology</i> | 1 |
| <i>sustaining technologies</i> | 2 |
| <i>ubiquitous technologies</i> | 1 |
| <i>ubiquitous technology</i> | 1 |
| <i>dynamische Technologien</i> | 1 |
| <i>fortschrittliche Technologien</i> | 1 |
| <i>innovative Technologie</i> | 5 |
| <i>komplementäre Technologien</i> | 2 |
| <i>neue Technologie</i> | 22 |
| <i>neue Technologien</i> | 5 |
| <i>revolutionäre Bluetooth-Technologie</i> | 1 |
| <i>richtungsweisende Technologien</i> | 1 |

³ Nouns which are familiar to us in general language, such as *cancer*, *fuel*, *music*, do not usually occur in their plural forms *cancers*, *fuels*, *musics* except in specialist use.

If we combine these two indicators of frequency and number (i.e. plurality), we are pointed to three possible terms which normal judgements may have ruled out: *competing technology/competing technologies*, *disruptive technology/disruptive technologies* and *new technology/new technologies*. On the other hand, there are combinations which do not match these two criteria but which could be considered terms. For instance, *sustaining technologies* (2 occurrences, no plural form) suggests a concept which relates as an antonym to *disruptive technologies*. In this case, then, the trail leads from distributional and formal characteristics of word forms to semantic or conceptual systems. In the German, only *neue Technologie/neue Technologien* is indicated by distributional and formal characteristics, as is also *new technology/new technologies* in the English corpus.

Finally, at the end of the continuum which most closely approaches general language, we find combinations which are distinguished in the current data by their emotive content:

Table 7: Combinations with *technology* and *Technologie* (adjective + carrier).

| Lexical combination |
|------------------------------|
| <i>expensive technology</i> |
| <i>fantastic technology</i> |
| <i>good technology</i> |
| <i>great technology</i> |
| <i>humble technology</i> |
| <i>modernste Technologie</i> |

7. Terms in text and text in terms⁴

Despite the problems of dealing with the terminological uncertainties of real texts – at least for codification purposes – translators are increasingly turning to texts for lexical solutions. With the emergence of new disciplines, products, services, and a fast-changing market, published terminology collections alone are often inadequate as a source of information. Recourse to texts as a source of terminological solutions or in a corroborative or elaborative role is therefore

⁴ This section is closely based on a paper given at the Saarbrücker Symposium als Euroconference: Translation and Interpretation in Science and Technology: Models, Methodology and Machine Support, 15-17 March 2000: Terminologies are dead – long live terminologies! The paper has been submitted for publication in a volume to be edited by Klaus Schubert in the series *Jahrbuch Übersetzen und Dolmetschen* (Gunter Narr).

likely to increase. The increasing accessibility (e.g. WWW) and processability (e.g. term extraction tools) of digital text can be seen as supporting this trend, in which what we can call ‘text-text’ solutions may be sought in preference to ‘terminology-text’ solutions.

The relationship between terminologies and texts is therefore of some interest. On the one hand, when producing a translation, lexeme-based information presented in codified form must be transformed into contextualised word forms. We can call this the *terminology-text direction*, the direction traditionally more familiar to translators, the processes of which, however, remain largely unreflected. On the other hand, when compiling a terminology from textual sources, contextualised word forms must be transformed into lexemes. We can call this the *text-terminology direction*, a direction which is becoming increasingly familiar to translators.

What kind of problems might there be in the terminology-text direction? In the move from abstract lexeme to word form, a kind of decoding process, decisions have to be made *inter alia* about the following:

- the allowable combinations which the chosen term may enter into (i.e. collocational meaning)
- the morphosyntactic form of the chosen term, which may only appear in certain restricted forms (considerations here include, for instance, voice, person and tense for rare LSP verbs; number, definiteness, countability and possibly case and gender for nouns)
- the aspect of the denotation given in the codified collection which is to be activated in the TT

Let us start with the issue of collocational meaning. This is shown in example (1) from the domain of statistics, in which the highly-constrained nature of LSP phraseology leads to a particular choice of phrasal verb – ‘to set at’ – for the subject, the term ‘significance level’; in turn, ‘set at’ is predictably followed by a value for ‘p’, expressed as ‘p< ... ’:

- (1) The significance level is normally set at $p < .01$

The same example can be used to illustrate our second point concerning morphosyntactic choices: the typical use of the verb ‘to set at’ in this domain, as illustrated here, is a passive structure in the third person.

Our third point, namely that of denotational meaning, can be illustrated from a pamphlet distributed by Lufthansa at German airports during a strike to inform

passengers about alternative travel arrangements. The problem is how to translate *Mitarbeiter*:

(2) Unsere Telefone sind mit Mitarbeitern besetzt, die ständig über aktuelle Veränderungen im Bild sind

The German term *Mitarbeiter* has a number of possible translations, each associated with a different network of concepts, namely ‘personnel’ (human resource management), ‘employee’ (industrial relations), ‘colleague’ (personal relations in a professional context), ‘co-worker’ (politically marked variant of ‘colleague’). Yet none of these aspects of the potential meaning of *Mitarbeiter* is appropriate in the given context, since the relevant frame is ‘customer care’. A search in Eurodicautom produced a great deal of information on *Mitarbeiter*, but nothing related to our particular context.

In moving from text to terminology, the terminologist/translator must interpret the relations between words in texts which are bound together in cohesive relationships including:

- repetition and partial repetition
- synonymy (including textual synonymy)
- hyponymy/hyperonymy
- ellipsis

In the following example – a text taken from a Mercedes-Benz website concerning the use of catalytic converters – we can see examples of lexical repetition: *Katalysator* (‘catalytic converter’) as well as three cases of hyponymy: *geregelter Dreiweg-Katalysator* < *Katalysator* (‘closed-loop three-way catalytic converter’ < ‘catalytic converter’), *Altkatalysator* < *Katalysator* (‘used catalytic converter’ < ‘catalytic converter’), and *Katalysator* < *Bauteil* (‘catalytic converter’ < ‘component’). Further hyponymic relations can also be inferred such as *geregelter Dreiweg-Katalysator* < *Dreiweg-Katalysator* < *Bauteil*; *Altkatalysator* < *Katalysator* < *Bauteil*, etc. These relations help to bind the text together, establishing not only cohesive links between sentences but also building up a semantic network of terms, which is sometimes formally explicit (e.g. *Katalysator/Altkatalysator*) and sometimes not (e.g. *Katalysator/Bauteil*):

(3)

KATALYSATOR

Als erster Automobilhersteller in Deutschland hat Mercedes-Benz schon 1986 den geregelten Dreiweg-Katalysator serienmäßig für alle Personenkraftwagen mit Ottomotoren eingeführt.

Er reduziert die Schadstoffe im Abgas im Vergleich zu einem Fahrzeug ohne Katalysator um über 90%. Heute gehen nicht einmal mehr unsere Tourenwagen ohne Katalysator auf die Rennstrecke. Ein Bauteil, das so viel für die Umwelt tut, soll ihr natürlich auch nicht zur Last fallen, wenn es einmal ausrangiert wird. Darum nehmen wir Altkatalysatoren zurück und vergüten den Restwert. Das bedeutet eine Einsparung kostbarer Bodenschätze und eine Verminderung der Abfallast.

Source:http://www.mercedes-benz.com/d/innovation/glossary/lex_begriff27.htm

(emphasis added)

Ellipsis, or the omission of elements which can be retrieved from context, is also a cohesive device which often characterises strings of conjoined compound terms, as in the following example from a promotional information brochure from the company AC:

(4)

AC produces several types of Catalytic Converter: oxidising – three way – and three-way/oxidising, in pellet and monolith substrate configurations

Retrieving the original terms accurately from the text is problematic without domain knowledge. We could hypothesise on linguistic grounds the following term candidates: ‘oxidising catalytic converter’, ‘three way catalytic converter’ or ‘three-way/oxidising catalytic converter’ (or all of these with upper case ‘C’ permuted with a hyphenated ‘three-way’ or a non-hyphenated ‘three way’), but would need corroborative evidence. Furthermore, the relationship of a ‘pellet substrate configuration’ or a ‘monolith substrate configuration’ with each of these hypothesised types remains unclear from the given textual evidence.

Correctly inferring the term in its citation form from running text is, however, only the first step in building a terminological entry. If the entry is to be of relevance to a user in creating a new text, then some of the ways in which the term as abstract form can be woven into a text as word forms entering into cohesive relations need to be represented. But the representation of such complex and varied textual relations in a terminology, which is operating at the level of system, is in principle problematic, bearing in mind the range of

possibilities and permutations involved in language use. In practice, the contextualisation of terms in codified collections is labour-intensive and therefore rarely attempted. Contextual examples, i.e. short extracts from authentic texts, are a feasible but only partial solution. So translators, as text-based term users, are increasingly likely to opt for text-text solutions as well as terminology-text solutions – but both need to be interpreted.

7. Conclusion

In this paper I have looked at some ways in which texts relate to terminologies and vice versa. Some of the problems of moving between codified collections of terms and specialist texts – in both directions – have been illustrated. Moreover, the increasingly popular and feasible solution of text-text solutions has been explored. Above all, the rich nature of text and the innovative capacity of language to re-use its resources for different purposes has been emphasised. It will therefore always be the task of the specialist translator to interpret and think creatively when dealing with the representation of specialist knowledge in texts. Part of this will involve moving between texts and terminologies – a dependent and complex relation, not one designed to fit a model of specialist translation which presupposes that all terminological problems can be solved by a straightforward slot-and-filler approach.

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