



ANALYZING LSP TEXT TYPES: FROM DESCRIPTIVE TO PRESCRIPTIVE TEXT(-TYPE) LINGUISTICS

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Abstract

In the last 15 years, numerous LSP genres have been analyzed and compared intralingually as well as interlingually and interculturally. The results of these analyses, however, have hardly been related to each other and consequently not been joined together to form a mosaic that gives us an overview over larger text-type systems. The methods of such an integration process will be the subject of the first part of this article. In the second part, I will raise the question whether the characteristics of specific genres which we find out on a purely descriptive basis actually contribute to the fulfilment of these genres' communicative functions in an ideal way. Furthermore, I will discuss methods which may help us to answer this question and, thus, to develop guidelines for technical writers.

1 The present situation in LSP text linguistics

For the last 15 years LSP research has focused on LSP texts, especially LSP genres or text types. Previously, LSP researchers had mainly been concerned with terminology and syntax. Kalverkämper's paper "Textuelle Fachsprachen-Linguistik als Aufgabe" ("Textual LSP Linguistics as a Task") (1983) marks the transition from lexicology-oriented to text-oriented LSP research: "Texts as they actually occur, i.e., as real parole phenomena (individual texts), as well as texts as abstract entities, i.e., as entities in the langue system, must be the sole and decisive points of departure for language descriptions and consequently also LSP descriptions." (Kalverkämper 1983: 126; my translation)

Since the publication of Kalverkämper's paper, the necessity of integrating text (and pragma-) linguistics into LSP research has been voiced again and again. In 1985 Baumann (1985: 142), for example, considered the close examination and exact differentiation of LSP genres one of the most urgent tasks facing LSP research at that time. Hoffmann, too, has emphasized the importance of LSP genre analyses:

"An exact classification of scientific and technical texts on the basis of dominant distinguishing features forms one of the decisive prerequisites for the successful solution of specific communicative tasks [...]. A catalogue and later a systematic description of the different types of texts which are mainly determined by their specific functions, together with their typical features may contribute to improved comprehension of specialized information and – above all – to the production of texts which convey such information adequately. This, again, would be a major contribution to more efficient mono- and multi-lingual communication." (Hoffmann 1983: 62; my translation)

Here Hoffmann appears to assume that the features which prove to be characteristic of a particular genre also contribute to the fulfilment of its communicative function in an ideal way and should thus be imitated. I will come back to this assumption in section 3.

Hoffmann is not the only one to emphasize the usefulness of genre analyses – especially contrastive ones. Fluck (1991: 218 ff.), Kußmaul (1978: 57) and Reiß and Vermeer (1984: 194), to name only a few, have also stressed their importance. In 1991 "Comparison as a Method in LSP Research" ("Der Vergleich als Methode in der Fachsprachenforschung") was chosen as the motto of the first LSP Conference which brought researchers from East and West Germany together in Leipzig (October 17 and 18, 1991). The conference results were published in a volume

entitled *Kontrastive Fachsprachenforschung (Contrastive LSP Research)* (Baumann and Kalverkämper 1992), which again focuses on comparisons of LSP genres. This is no wonder since LSP research and LSP genre analyses had almost become synonymous by this time (cf. Baumann and Kalverkämper 1992: 24).

In the last 15 years, the central role of LSP texts and LSP genres in LSP research has resulted in numerous genre descriptions as well as intralingual and interlingual comparisons of genres. This work culminated in the volume *Fachliche Textsorten: Komponenten – Relationen – Strategien (LSP Genres: Components – Relations – Strategies)* edited by Kalverkämper and Baumann (1996), which was dedicated to Lothar Hoffmann, the “nestor of LSP research” (Baumann and Kalverkämper 1996: 16). Apart from a few exceptions, however, the genre analyses carried out so far have been limited to specific genres such as patent specifications (Raible 1972; Schamlu 1985), papers in the humanities (Kußmaul 1978), English chemistry articles (Weise 1980), weather reports (Spillner 1983), articles in medical journals and their popularized versions (Adams Smith 1987), operating instructions (Kußmaul 1990), abstracts (Kretzenbacher 1990; Adolphi 1996), introductions to scholarly papers (Gnutzmann and Lange 1990), conclusions (Oldenburg 1992), lexicon articles (Schaefer 1996), annual business reports (Bolten et al. 1996), prefaces (Timm 1996; Sternkopf 1996), reviews (Sternkopf 1996), recipes and knitting patterns (Nordmann 1996), to name just a few. Many of these analyses are even restricted to particular aspects. Only few cover a wider range of genres in a particular subject area. Among them are a few dissertations written at the University of Leipzig (Zerm 1987; Fiedler 1991), Gläser’s *Fachtextsorten im Englischen (English LSP Genres)* (1990) as well as my own *Textsorten in Naturwissenschaften und Technik (Genres in Science and Technology)* (Göpferich 1995a) and Munsberg’s *Mündliche Fachkommunikation (Spoken LPS Communication)* (1994) in the field of chemistry.

Now the time has come to accompany further analyses of individual genres with an integration process – an integration process in which the results of the individual analyses are joined together to form a mosaic that gives us an overview over larger text-type systems. The methods of such an integration will be the subject of section 2.

Furthermore, we should juxtapose current usage as it manifests itself in the genres analyzed with an empirically-based description of the way ideal texts should be structured and formulated. This description, which must be independent of current usage to a certain degree, must define what a text of a particular genre and thus a particular communicative function should look like to be of utmost use for the specified purposes. In the age of globalization, one such purpose may be optimal suitability for machine translation. Other purposes may be rapid accessibility and cognitive processability in a particular communicative situation. Here we have to keep in mind that every-day life and our jobs confront us with new questions every day which we can only answer within a reasonable span of time if we have rapid access to the knowledge required. We can only extract the knowledge we need from the flood of information which inundates us and process it quickly enough if it is structured and presented adequately. The methodology to determine what such ideal genres should look like will be the subject of sections 3 to 5.

2 Descriptive LSP text(-type) linguistics: the methodology of investigating current usage

Let us first turn to the methods by which the results of the numerous analyses of specific genres carried out so far can be integrated into a text-type system which gives us insight into the relationships between LSP texts.

When we select the investigations whose results are to be integrated in our text-type system and when we actually integrate them into this system, we have to take into consideration the following aspects:

a) Locating the analyses in a common framework

In order to ensure that the results from individual genre analyses are comparable and that they can be joined together to form a consistent picture of LSP communication, Kalverkämper (1992: 68 ff.) calls for the inclusion of definition sections in all genre analyses. These definitions must specify how each analysis fits into the range of investigations in LSP research. For this purpose, he develops a hierarchically structured framework, which – in an ascending order – comprises the following criteria: language system (“Sprachsystem”), meaning the level of linguistic description (from the level of phonemes, morphemes, and lexical items via the level of phrases, sentences, and sequences of sentences up to the level of text parts, texts, and texts-in-situations/functions); variety (language for general purposes, language for specific purposes in subject area 1, in subject area 2, etc.); vertical level (“vertikale Schichtung”), ranging from the language of consumers up to the level of the theoretical sciences; medium (spoken vs. written); intralingual vs. interlingual/intercultural comparison; and time (synchronic vs. diachronic). This framework was used in both my own (Göpferich 1995a: 10) and Munsberg’s (1994: 10) analyses.

If individual analyses whose results are to be integrated into a text-type system have not yet been located in such a framework which serves as a *tertium comparationis*, this should be done first. Such metaanalyses are essential so that, subsequently, the results of investigations which resemble each other in a maximum number of criteria (at best in all criteria except one) can be compared with each other. Only in this way is it possible to pinpoint the reasons for differences discovered in contrastive genre analyses.

If a larger number of genre analyses exist which resemble each other in all aspects of Kalverkämper’s framework except one (as is the case in my analyses [Göpferich 1995a], where the genres of written communication differ only in the vertical level they belong to), the results of the analyses and metaanalyses can be used to develop hierarchical typologies for the particular subject area (cf. my pragmatic typology of LSP texts in science and technology [Göpferich 1995a; 1995b]). Hierarchical typologies of this kind have the advantage of allowing us to find out in a systematic way which features are genre-specific and which features a genre shares with one or more other genres (cf. Isenberg 1983: 305; and also Kalverkämper 1992). Isenberg (1983: 305) considers this a prerequisite for a comprehensive and theoretically satisfactory description of a genre.

When developing such a typology, a differentiation criterion has to be selected for each typology level. Here we can make use of the results of communication-oriented genre linguists who, in accordance with Gülich’s und Raible’s (1977: 25) extended model of linguistic communication, agree “that in genre descriptions ‘internal’ (linguistic) as well as ‘external’ (communicative, situational) features have to be considered, but that the former are determined by or even a

consequence of the latter”¹ (Lux 1981: 35 f.; my translation). This means that we can proceed on the assumption that the linguistic features of a genre depend on its communicative purpose. Consequently, a communicative-pragmatic typology basis should offer the best chance of reducing the variety of genres to a limited number of text categories and subcategories. This is supported by the results of my analyses (Göpferich 1995a).

b) Intralingual comparisons to discover genre-specific features in contrast to general textuality features

If the objective of contrastive genre analyses is to discover only *genre-specific* features, the analyses have to extend to a maximum number of genres which resemble each other in their communicative function and cover similar topics. Only in this way is it possible to find out which features are shared by similar genres or are even general textuality features, i. e., features shared by all texts, and which ones turn out to be genre-specific (cf. Spillner 1981: 242).

c) Analyses of texts by different authors to identify idiosyncrasies

In order to avoid misinterpreting idiosyncrasies of an author as genre-specific features, genre analyses should always extend to a number of texts by different authors.

d) Restriction to particular subject areas

Conventions do not only vary from genre to genre, but can also differ depending on the subject area. In order to ensure that differences in what are considered genre conventions are only genre-related and not (also) subject-area-related, the texts to be analyzed must belong to the same subject area and deal with similar topics. In the fields of technology and engineering this can easily be achieved since, here, a product becomes the subject of various genres during its development, production and use. Thus, it is possible to collect and compare all texts which accompany a particular product – from its invention (patent specification) through the construction of its first prototype (e.g., article in a learned journal) and the beginning of its mass production (e.g., parts lists and order specifications) until it reaches the customer (product information, operating instructions, etc.) and service personnel (e.g., workshop repair manual).

e) Considering functional diversity within texts

Especially when using statistical methods, we have to take into account that texts are not homogeneous, but consist of sections with different communicative functions. Due to these different functions, the individual sections of a text may vary in the linguistic means used in them and their frequency. As a consequence, in contrastive genre analyses each section has to be analyzed separately, and, subsequently, only the results of those sections may be contrasted which share the same communicative function within the texts’ macrostructures (cf. Göpferich 1995a: 9 f., 478; as well as Minogue’s and Weber’s text-comparison method C [1992: 56 f.]).

¹ Cf. Gülich and Raible (1975: 151) and S.J. Schmidt (1978: 55): “[B]earing in mind that the orientation of communicative text theories is towards verbal texts in contexts of communication, any specification of genres has to respect text internal as well as text external aspects and markers (this hypothesis is emphasized by nearly all scholars working in this field).”

f) Intralingual comparisons as a prerequisite for interlingual/intercultural comparisons

Reiß and Vermeer (1984: 192) have emphasized that cultures may differ in the ranges of genres which are conventionalized in them. They differentiate general (classes of) genres, which can probably be found in all cultures, (classes of) genres which may be found in more than one, but not in all cultures, and (classes of) genres which are typical of hardly more than one culture (Reiß and Vermeer 1984: 192). The genres in science and engineering can probably be found in at least all industrialized cultures (cf. Göpferich 1995a: 172); nevertheless even in this range of texts, features can be found in which the genres of two cultures differ.

Kußmaul (1995) provides an example of this: in Germany washing machines come with instruction leaflets which not only instruct the reader on how to use the washing machine but also on how to install it, since the wages for manual labor are very high in Germany and therefore small jobs like installing the machine are usually done by the housewife's husband or even the housewife herself. As a consequence, the installation instructions must be very detailed and comprehensible for a lay reader. For the Indonesian market, however, the information which, in Germany, is combined in one instruction leaflet for laypersons must become the subject of two separate instruction leaflets. Those who can afford a washing machine in Indonesia can also afford to have it installed by the dealer since wages are low in Indonesia. Consequently, the installation instructions must be addressed to a different, more experienced audience. Furthermore the buyer of the washing machine will never use it himself but leave this to domestic servants. Many of these people, however, cannot read, so that it is no use translating the text into their language. What they need are picture sequences which explain how to use the machine. The Indonesian functional equivalent of a German instruction leaflet for a washing machine thus consists of two instruction leaflets, neither of which may assume the same knowledge base as the German version (cf. Kußmaul 1995: 75).

Such differences can only be detected if interlingual or intercultural genre comparisons are preceded by intralingual ones which result in intralingual text-type systems. The intralingual text-type systems of two languages can then be contrasted interlingually – a method well known from terminology research (cf. e.g. Arntz 1992).

g) Parallel texts as material for interlingual/intercultural comparisons of genres

The material to be compared interlingually or interculturally to detect differences in genre conventions must be *parallel texts*. Parallel texts are texts in different languages and/or from different cultures which are not translations of each other, but cover comparable topics and are written for the same purpose. Spillner (1981: 241 f.) differentiates three types of parallel-text analyses: the comparison of text adaptations (“Vergleich von Textadaptationen”), the comparison of texts for equivalent situations (“situationsäquivalenter Textvergleich”) and the comparison of genres (“Textsortenkontrastierung”).²

Like Reiß and Vermeer (1984: 196) I consider only the last two methods parallel-text comparisons in a stricter sense. As Scheithauer (1987: 34) points out, text adaptations are really pragmatic translations (“Übersetzungen unter pragmatischen Gesichtspunkten”). When using translations in interlingual or intercultural comparisons, one always runs the risk of considering

² R.R.K. Hartmann (1980: 37 ff.) also differentiates three types of parallel texts which more or less correspond to Spillner's categories.

features which are the result of interferences to be target-culture conventions (Reiß and Vermeer 1984: 195). Therefore, translations which are to be used for interlingual or intercultural comparisons must first be subjected to a translation-quality assessment which has to check whether the target culture conventions have been complied with. For such a quality assessment, the genre conventions must be known in advance – which quite often is still not the case.

Comparisons of texts for equivalent situations (cf. Spillner 1981: 242) are nothing else than comparisons of genres, since texts of the same genre are characterized by the fact that they are produced for the same communicative situation and for the same communicative purpose.

h) Comparison at all levels of linguistic description

Since genre conventions and thus intercultural differences in them may occur on all levels of linguistic description (cf. Reiß and Vermeer 1984: 184 f.) and since conventions on different levels may be interdependent, profound genre comparisons must also extend to all levels of linguistic description. This can be achieved by following Hoffmann's principle of "cumulative text analysis" (Hoffmann 1983: 63).

3 From descriptive to prescriptive LSP text(-type) linguistics

In our mother-tongue classes as well as in foreign language and translation classes, we tacitly assume that imitating the genre features of the respective (target) language which we collect on a purely descriptive basis by analyzing authentic texts in the respective language leads to the production of texts which optimally or at least adequately fulfil their communicative functions (cf. the quotation from Hoffmann in section 1). This seems to be based on the belief that the characteristics we find have developed into genre conventions because they contribute to the communicative function of the respective texts in an ideal way (cf. Göpferich 1995a: 153).

To proceed on this assumption seems plausible; whether the characteristics we find, however, actually serve the communicative purposes of the genres in which they occur in an ideal way has – apart from a few exceptions – not yet been investigated. Among the exceptions are studies by instructional psychologists who, for example, have examined the effect of *advance organizers* (Ausubel 1968), word and sentence lengths, summaries, underlining and the like on text retention (cf. the overview by Groeben 1982 and Christmann 1989), and research into the comprehensibility of legal texts (cf. e.g. Gunnarson 1984; Pfeiffer, Strouhal and Wodak 1987). Another example is *usability testing* of instructive texts (cf. Göpferich 1998a).

The fact that incomprehensible instruction leaflets have become a matter of constant complaint and that courses of study in technical communication have been established to overcome obstructions in the flow of information between specialists and non-specialists shows that there must be discrepancies between what we actually find and what we would like to find. Do the deficiencies we find in texts lie outside the range of what is governed by convention? Are they due to violations of conventions? Or are they due to the fact that their authors cling to conventions which are out of date? As Berkenkotter and Huckin (1995: 6) point out: "Genres [...] are always sites of contention between stability and change. They are inherently dynamic,

constantly (if gradually) changing over time in response to sociocognitive needs of individual users.”

Even if it should still be acceptable to perpetuate current conventions, we have to take a critical look at them to find out whether they really still serve their purpose. This is especially true in the face of rapidly changing communicative conditions due to recent developments in the field of telecommunication and the media. We cannot rely on the fact that the conventions which have served their purpose in the past and present will still do so in future in a new communicative environment. Do the traditional genres perpetuated by descriptive LSP text linguistics still fulfil our wishes? Or, to put it more precisely: is the adaptation of genre conventions keeping pace with developments in our communicative environment? Are the conventions which helped us to solve a communicative problem yesterday still suitable to do so tomorrow, especially in the face of new encoding and transfer methods? Or do we have to establish new norms, new norms which prescriptive LSP text(-type) linguistics has to establish on a scientific basis, such as the insights gained by comprehensibility research? – But before I raise any false hopes, I must make clear that I am not going to and I am not able to answer these questions here. What I am going to do is to discuss the methods which may lead to an answer. One thing is certain: simply describing what we actually find in texts of various genres will not answer our questions, especially since many genres are so new that there has not yet been enough time for new conventions to establish themselves. In fact, many texts in new media are nothing more than efforts on the part of their producers to cope with the new medium technically. Numerous technical as well as software problems often deprive the producers of such texts of the time to think about the best way to encode their message.

In our future research we must define requirements to be met by texts of the various genres and, subsequently, analyze whether the texts we are confronted with every day actually meet these requirements. If they cannot fulfil all requirements at the same time, we must establish a hierarchy of requirements.

4 Examples of requirements to be met by LSP texts

Requirements to be met by genres can be formulated from different points of view. On the whole, we can distinguish between requirements to be met from the point of view of the producer, and requirements to be met from the point of view of the recipient.

Examples of requirements to be met from the point of view of the producer are ease of making updates and reusability of data in other types of documents. Both requirements have led to the establishment of new conventions. Ease of making updates is achieved, for example, by using pagination by chapter or even section instead of continuous pagination throughout the entire document. Pagination by chapter or section has the advantage that insertions in one chapter or section only entail renumbering the pages of the chapter or section where the insertion occurs instead of having to renumber all the pages in the document which follow the insertion.

Reusability of digital data in other documents without the necessity of extensive reformatting is made possible by *SGML (Standard Generalized Markup Language)* and *Document Type Definitions (DTDs)*. SGML is a language for structuring and tagging texts. It is used to assign each part of a text its function instead of its formatting information. In the case of a headline, this function assigned by SGML is simply that it is a headline, not its typographic appearance (e.g., larger and bold fonts). The way in which the individual sections are joined together and their typographic appearance are defined later in the *Document Type Definition (DTD)*. The advantage of SGML is that text (ASCII code) and formatting information are separated and can be used with various computer systems and programs.

The question that arises here is what the ideal DTD for each genre or type of document must look like, and how much room there should be in a DTD for individual preferences, matters of corporate design, etc.

These questions lead us from the requirements to be met by documents from the point of view of the producers to the requirements to be met by them from the point of view of the recipients. 'Recipients' may be both human beings and machines (e.g., machine translation systems). Let us begin with the latter.

Increasing political and social interdependence of nations and economic globalization have led to a continuous increase in the amount of translations required, which in turn makes machine translation a necessity. The quality of machine translation can be improved by producing source texts which use only those lexical items and grammatical constructions the machine translation system can cope with and by avoiding structures which the machine cannot disambiguate. Here, we have to take into consideration that what is ambiguous for a machine translation system may also cause comprehension problems for a human reader.

A first step towards the solution of these problems are controlled languages. In contrast to artificial languages such as Esperanto, controlled languages are subsystems of natural languages which use only a limited number of lexical items and a well-defined system of grammatical rules. Today, many multinational companies (e.g., Rank Xerox, SAP, Eastman-Kodak, IBM, Digital, ITT, Ericsson) as well as the American Ministry of Defense use types of more or less controlled languages which are tailored to the specific requirements of the individual firms or institutions, especially to the machine translation systems they use (cf. Lehrndorfer 1996: 42 f.).

To gain an impression of what a controlled language looks like and how it works, let us have a look at a few examples of the *Simplified English* used by the *AECMA (Association Européenne des Constructeurs de Matériel Aérospatial)*. This simplified English is probably the best-known controlled language and has been used internationally for technical documentation in the aerospace industry since 1986 (Lehrndorfer 1995: 123; cf. Lehrndorfer 1996: 41).

The lexicon of the *AECMA Simplified English* comprises approximately 800 entries whose meaning, grammatical forms and use are precisely defined. Each word has only one meaning. The verb *to follow* for example may only be used in the sense of *to come after*, but not in the sense of *to obey rules*. Each word may only be used as a particular part of speech, e.g., *estimate* may only be used as a noun meaning *a calculated approximate result*, but not as a verb. Instead of *to estimate* the noun phrase *to make an estimate* must be used (Lehrndorfer 1995: 123).

To find their way into the lexicon of the AECMA *Simplified English*, words had to fulfil the following criteria:

- They had to be among the most frequently used words of the English language.
- Short and simple words were preferred to long or hard words (e.g., regular verbs were preferred to irregular ones).
- Internationalisms were preferred.
- Idioms, which are a frequent cause of misunderstanding, were avoided.
- Synonyms were not allowed.
- Words had to have a precise meaning (not *should*, *would*, *perhaps*, etc.).
- Filler words were avoided (cf. Lehrndorfer 1995: 123 f.).

Technical names and terms for manufacturing processes are subject to special rules: “Because there are so many technical names and because each manufacturer uses different ones, we do not have a list of technical names. But we have a set of rules which tell you if a word is a technical name or a manufacturing process” (AECMA-Document 1-1-3/Change 2, quoted from: Lehrndorfer 1995: 124).

A word or symbol is accepted as a *technical name* if it belongs to one of the following categories. In this case it may be used in Simplified English even though it is not contained in its lexicon (cf. Lehrndorfer 1995: 124):

- names of parts or sections of planes (*wing, cabin, fuselage, airframe*)
- expressions for tools or equipment (*torque wrench, rigging pin, chock*)
- mathematical, scientific or engineering terms (*radius, diameter, gravity, density*)
- navigation and aviation terms (*altitude, skid, coordinate, heading*)
- expressions for persons or groups (*crew chief, copilot, air force*)
- terms for damage or defects in materials (*corrosion, deformation, crack, discoloration*)
- names of parts of the body (*skin, hand, head*)
- medical terms (*skin irritation, dizziness, dermatitis*)

The grammar of Simplified English is based mainly on the following rules:

- No long sentences may be used.
 - Instructions should not be longer than 20 words.
 - In text passages using declarative sentences (e.g., descriptions), one out of ten sentences may be up to 25 words long on average.
- Only one statement may be made per sentence.
- No ellipses may be used.
- In instructions the imperative must be used.
- No more than six sentences per paragraph are allowed.
- No noun clusters with more than three nouns are accepted.
 - Do not use: The nose landing gear uplock attachment bolt is ...
 - Use: The bolt that attaches the uplock to the nose landing gear is ...
- Nouns have to be used with the article.
- The active voice must be used.
- Only the following tenses are allowed: *present tense*, *past tense*, and *simple future* (cf. Lehrndorfer 1995: 125).

An equivalent controlled version of the German language does not yet exist; at the University of Munich, however, efforts are made to develop such a controlled German (cf. Lehrndorfer 1995: 128; 1996).

Controlled languages such as the AECMA Simplified English, which have been developed as languages for specific purposes (LSPs) only (they are controlled LSPs or, to be more precise, controlled LSPs in the field of science and technology), can be regarded as a first step towards a prescriptive LSP text(-type) linguistics. What must be criticized about this step, however, is the fact that – apart from restrictions due to machine translatability – many of the restrictions the AECMA Simplified English makes are more or less arbitrary, i.e., not based on the results of investigations into the cognitive processability of texts. The inventors of controlled languages, however, originally did not have machine translatability in mind, but aimed instead at a language which would make translation superfluous. This was precisely the objective of the *Caterpillar Tractor Company*, which introduced *Caterpillar Fundamental English (CFE)* for the company's technical documentation in the seventies because it could no longer afford to have its entire product documentation translated into the over 50 target languages of its export countries. Instead of having its documentation translated into the various languages, Caterpillar had the staff in the target countries trained in the basics of the English language (Lehrndorfer 1996: 42).

Now, we have already turned to the requirements to be met by texts from the point of view of human recipients. Such requirements are quick accessibility of information, comprehensibility, in the case of instructions usability, quick cognitive processability, and other genre-specific demands such as, for example, entertainment in the case of popular science texts.

Furthermore, specific genres are also subject to legal requirements. Among these genres are patent specifications (cf. Göpferich 1995c) and technical documentation, especially operating instructions (cf. Göpferich 1998: Chap. 11). These legal requirements are further examples of prescription in text production. What is prescribed here (e.g., completeness, correctness, simplicity, clearness, comprehensibility)³ however, is still too general and needs to be specified.

Whenever we ask what texts of a particular communicative function must look like to be of utmost use *to their (human) recipients*, an answer can only be found empirically, e.g., in usability tests and interviews. First approaches of this kind have been made by psycholinguistic and cognitive LSP research, which constitute the current paradigm of LSP research and which have moved a little closer to the recipient on the pragmatic axis. The cognitive turn in LSP research, which became apparent at the beginning of the nineties, in fact, constitutes the prerequisite for prescriptive LSP text(-type) linguistics.

Features which in empirical investigations turn out to improve (cognitive) processability may form the basis for genre-specific text production guides, i.e., prescriptive genre profiles. These prescriptive genre profiles may supersede the criteria for text evaluation which, up to now, have almost exclusively been based on what we are used to finding in actual texts. A few such features which influence text processing positively have been found by instructional psychologists such as Langer, Schulz von Thun and Tausch (1993) and Groeben (1982). Another contribution to research into text-processing processes has been made by cognitive scientists. Their research

³ Cf. DIN V 66055 1988: 2; DIN V 8418 1988: 2; VDI 4500 Blatt 1: 3 ff.

results give us an insight into the reasons why certain textual features improve comprehensibility and allow us to specify the results of instructional psychology (cf. the summary by Christmann 1989).

Both instructional psychologists and cognitive scientists, however, have more or less neglected the communicative functions of the texts whose comprehensibility they tried to evaluate, i.e., they have ignored their genres. Furthermore, the specific requirements to be met by LSP texts have not been taken into consideration adequately: what was measured was the texts' *comprehensibility for the general public* – their *general comprehensibility as a sociocultural characteristic*. This is clearly inadequate for the evaluation of specialist communication. These mistakes must be avoided by prescriptive genre linguistics, whose objective must be to define genre-specific and readership-specific text production guidelines, i.e., guidelines geared to the specific communicative purposes of texts (cf. section a). In the following, I will discuss a few methodological issues which should be considered when setting up such text production guides.

5 Prescriptive LSP text(-type) linguistics: the methodology of investigating what is needed

As stated in the previous section, requirements to be met by texts can be formulated from different points of view: from the point of view of machine translation, from the point of view of text producers, from a legal point of view, or from the point of view of the prospective readership. In this section I am going to confine myself to the perspective of the readership. The question as to which one of several text variants is most suitable for a specific purpose from this perspective can only be answered on an empirical basis, e.g., on the basis of usability testing. Furthermore we have to take into account that the requirements to be met by specific text types are subject to change, so that the results of empirical investigations need to be verified from time to time.

a) Definition of the communicative purpose

Usability testing must always be preceded by an exact definition of a text's communicative purpose and intended readership. Communicative purposes may be rapid processability and knowledge extraction by specialists in a particular field, usability of instructions by laymen, optimal retainability even after short reading times, etc. The readership may, for example, comprise specialists in a particular field, laypersons with a certain educational and/or professional background (engineering background vs. linguistic background, etc.).

b) Production of text variants

In the next step, we must find or produce several (at least two) text variants written for the defined communicative purpose. In doing so, we can make use of the results of descriptive LSP text(-type) linguistics, especially the results of interlingual or intercultural analyses. The intercultural differences revealed by these analyses make us aware of the fact that things can be expressed in a way completely different from what is common in our own language and help us to take a critical look at our conventions instead of taking them for granted. Imitating those

conventions of other cultures which are not common in the culture in which they are imitated, a process termed *interference* in translation science, is one method of producing text variants.⁴ Alternatively, text variants can be produced by first collecting expressions or grammatical constructions which more or less serve the same communicative purpose and then replacing them with each other. Here, too, we can make use of the results obtained by descriptive LSP genre linguistics. In directive speech acts in German operating instructions, for example, we find imperatives (*Schalten Sie das Gerät ein.*), imperative infinitives (*Gerät einschalten*), as well as constructions using *müssen* (*Das Gerät muß eingeschaltet werden.*) or *sein zu* + infinitive (*Das Gerät ist einzuschalten.*). In order to determine what position in a text requires what kind of construction for the text to serve its purpose best, we have to produce several text versions differing in the constructions used in the individual positions and then present each version to another test group. Tratschitt (1982: 164 f.), for example, found out that German operating instructions are best suited for laymen if a series of instructions is introduced by an imperative, which addresses the reader directly, followed by imperative infinitives, which have the advantage of being the shortest grammatical means of giving instructions in German.

A third method of producing text variants is first testing one version of a text, for example, by having test persons read the text and asking them to pinpoint and comment on the sections they do not understand, and by subsequently producing variants which differ from the original text in exactly the positions indicated by the test persons.

When producing text variants in our multimedia age, we also have to take into account that we have to find out the most suitable medium (picture, video, sound, text) for each type of information. This means that we have to produce document variants which differ in the allocation of different types of information to the various media. A few investigations of this kind have already been carried out. Experiments by Wintermantel, Laux and Fehr (1989) revealed that test persons solved tasks more rapidly (but also made more mistakes) when given pictorial instructions than when given verbal ones. Stone and Glock (1981) found out that test persons having to assemble a toy model were more successful when given combined pictorial and verbal instructions than when given either verbal or pictorial instructions alone. This suggests that in instructions both media should be used in a complementary way.

c) Testing the document variants

To test which document variant is most suitable for the purpose defined (cf. section a), each document version is presented to a different test group. Subsequently, text reception by each group is compared. To measure text reception, questions can be used (e.g., multiple-choice questions, cloze procedures) either immediately after the test persons have read the text or after an interval to be specified. The first method is more suitable when emphasis is placed on comprehension, not retention; the second, when retention is to be measured. Good retention results, however, seem to be an indicator of comprehensibility as well, since – as we know from our own experience – what has been understood can be retained more easily.

A test method particularly suitable for testing instructive texts is usability testing. It is the best method of pinpointing the parts of a text which need optimization – a diagnostic task which

⁴ Here we have to take into account that we need to get accustomed to new conventions which have been ‘imported’ from another language or culture.

cannot be solved by relying on readability formulas, reading times or propositions reproduced in retention tests (cf. Schäflein-Armbruster 1994: 507 ff.). Redish and Schell (1989: 67 ff.) differentiate three types of usability testing, which all have their specific advantages and disadvantages:

1. “User edits” for short sets of instructions, in which the user is told to read the text aloud and to follow the instructions as closely as possible. By noting where the user stumbles, hesitates, or misreads, the researcher can tell where the instructions need to be clarified (Redish and Schell 1989: 68).
2. “Protocol-aided revisions” in which “typical users are asked to perform tasks similar to those that customers will eventually do with the product” and to talk aloud as they perform the task. The thinking-aloud protocols reveal how the test persons interpret the instructions while they are trying to use them. The questions they ask themselves and their misinterpretations help the researcher in pinpointing text sections which need optimization. Since talking to themselves is embarrassing for some people, it can be useful to have two test persons perform a task together and talk to each other about what they are thinking, thus giving them the feeling of having a conversation. In contrast to method 1, protocol-aided revisions can also be used to check whether the test persons can access exactly the information they need in a specific situation.
3. Beta testing (used in the computer industry) where test persons are given a new product and its documentation to try them out and to report any problems they find and/or to respond to questionnaires. This method has the disadvantage that it does not allow a systematic evaluation of the documentation tested (cf. Redish and Schell 1989: 69 f.).

These tests can be accompanied by questions on the part of the researcher or interviews following the test itself (cf. on these “communicative methods” Schäflein-Armbruster 1994: 508 ff; Pfeiffer, Strouhal and Wodak 1987: Chap. 8). Technical equipment which can be used in such tests are devices for recording eye movements during document reception (cf. Winterhoff 1980) as well as programs for registering the keys pressed while using software in protocol files (cf. Bock 1993: Chap. 3).

In all three types of usability testing, the test persons must be representative of the group of people who actually use the product, and the tasks to be performed in the test must be similar to the work real users would actually do with it. The results of such usability testing form an empirical basis for text production guidelines which lead to texts tailored to the requirements of our information and communication society. These guidelines may have to supersede existing conventions which have grown out of date. Furthermore, they may serve as a means of orientation for technical communicators and translators, as well as for all those who have to produce and evaluate LSP texts.

Finally, let us return to a macroperspective and look at the development of LSP research from a global point of view; then we see:

- *descriptive LSP text(-type) linguistics* of the eighties and the first half of the nineties, which revealed what variables are available to authors producing LSP texts,
- *cognitive LSP text(-type) linguistics* of the nineties – and certainly also the year 2000 –, which has investigated and will investigate how these variables must be used to obtain suitable texts, and finally

- *prescriptive LSP text(-type) linguistics*, which transforms the results of cognitive LSP text (-type) linguistics into guidelines for text producers and should thus lead to more effective specialized communication.

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translate all kinds of documents and books and manuscripts into Standard English. The invention of the printing press brought books, which had formerly been the expensive luxury of the few, within the reach of the masses. The products of printing presses were – and still are – able to exert their influence upon language as well as upon thought.

Therefore, the etymology of a language, and not just the rudiments of its grammar, should be common knowledge to all translators, in order to put their profession into perspective. A translator is, after all, expected to provide a product that is not only linguistically correct, but also pragmatically and culturally appropriate. Translating begins and ends with language, both general and specific, and the better a translator commands his or her languages, the lesser chance there will be for misunderstandings and interference.

You could say that Professor Göpferich and I are as different as chalk and cheese – different backgrounds, nationalities, mother tongues, ages and perhaps life experience. Yet we do have one thing in common – our keen interest in translation, even though our points of departure are different.

I am what you could call a generalist cum specialist translator, engaged in the practical aspects of translation rather than the theoretical. I earn my living from practical translation and as those of you in the same position know, deadlines leave little time for theoretical and methodology reflections.

Even though I have a foot in two camps – in the academic world and the business world – I am more interested in the practical side of translation than in translation methodology and theory. After all, it is the quality of the end product – the actual translation – that counts at the end of the day and not which translation method or theory the end product was based on. However, as a part-time lecturer in practical translation at the University of Oslo, I do realize that translation methodology and theory are vital ingredients in any translation studies at university level and I always refer to them in all discussions relating to practical translation.

The following is therefore some of my own reflections about translation in general and about the work I carry out as a staff translator and language consultant in the business world in particular. As English is my mother tongue, I generally follow the golden rule and translate from Norwegian into English, when pushed, from English into Norwegian and from French into English.

What do we mean by "mother tongue"? It can be defined as the native language of a person, which normally means the language learned by that person during childhood. It is therefore possible for someone to have more than one mother tongue e.g. when a child spends the first years of his or her life in an environment in which two or more languages are spoken concurrently to more or less the same extent.

Is it possible, then, to translate specialized texts into another language if you only master a language that is used for general purposes and have no expert knowledge of the specialized subject in question?

The following example is a caption from a brochure presenting a small industrial town on the west coast of Norway, produced for the general public, not for experts!

Elektrolysen

Prebakeomnane i A-hallen er mellom dei mest moderne som finst i aluminiumindustrien. Dei 80-cellene vart starta opp i 1981, og med en strømsstyrke på 222 kA produserer kvar av dei fire gonger så mykje primæraluminium som ein Søderbergomn i den eldre C-hallen, som var bygd i 1959 og vidare utbygd i 1965.

The obvious problem in this example are the nouns elektrolysen, prebakeomnane, A-hallen, cellene, strømsstyrke, kA, primæraluminium, Søderbergomn, C-hallen – nine words that can be categorized as language for specific purposes (LSP), and the rest as language for general purposes (LGP). Change the nouns or the verbs and you change the meaning. The LGP words glue everything together to give the sentences meaning. But there are also other problems, but not quite as obvious, unless you have the technical know-how to recognize them. For example, two terms have been used for the same piece of equipment – omn and celle – and some "false friends" are lurking in the background – elektrolysen, hall. What information is contained in the terms prebakeomnane and Søderbergomn? To explain all this in detail would take too much time, so I present the actual translation instead.

Potrooms

The 80 prebake cells in potroom A are some of the most up-to-date in the aluminium industry. These cells came on stream in 1981, and with an amperage of 222 kA, produce four times as much aluminium as one Søderberg cell in the oldest potroom C, which was built in 1959 and expanded in 1965.

I think we can all agree that our task as translators is to communicate the message in the text we are translating to our readers, and to be able to do this, we must understand the rudiments of both the source language and the target language in order to be able to translate it with absolute accuracy. We must also be able to recognize words and their characteristics as lexical units and we must be able to select the appropriate ones in the the target language (TL). We must be aware of words that more or less correspond in the source language (SL) and TL but are not exact equivalents – elektrolysen, hall. We must be familiar with life in the SL and TL countries to be able to grasp allusions in texts that are not fully explained because they are familiar to the SL reader, be able to express and understand references to things existing in one country, but not in another. How do you translate the following examples into the TL English?

rakefisk	smalehovud	farikål
mølboland	Løvebakken i Tigerstaden	
bikkja i bakken	julebord	
buljongpar	Bislettbrøl fra Store Stå	
Baller av stål – eller har Braathen frynsete nerver?		

The two sentences we looked at initially were taken from a brochure intended for the general public, in other words, a brochure that anyone who thinks he or she masters the English language should be able to translate. However, this is not the case. To be able to translate the two sentences correctly, you need to have some specialist knowledge of the subject area. You don't have to be an expert, just a specialist! Which means as a translator, you have to be both a generalist and a

specialist rolled into one, which in turn means that you have to master both language for general purposes (språkkunnskap) AND language for specific purposes (fagkunnskap).

A translator must also be able to combine his or her linguistic skills with encyclopedic knowledge, be able to comprehend both language and facts. You can only translate well what you know well, be it general and/or specific knowledge, and extra linguistic knowledge is essential for understanding and reexpressing the message in the text, i.e. you require not only language proficiency and linguistic knowledge, but also all the essential extra-linguistic knowledge and life experience, both general and specific, which is so vital to a translator. It is this extra-linguistic knowledge – our cultural, historical, geographical, political, social, musical, mathematical, scientific, technical everyday knowledge – we draw on when we translate. Unfortunately, such extra-linguistic knowledge is not something that can be acquired over night, but is amassed throughout a lifetime, both consciously and unconsciously.

Is it possible then, as the title of this seminar suggests, to translate documents, etc. for specific purposes if you only master language for general purposes and your knowledge of language for specific purposes is limited, or are the two inseparable?

Language for general purposes is generally defined as the language relating to everyday life, the language we find in newspapers, brochures, general correspondence, ads, instruction handbooks, documents, reports, general texts on consumer affairs, politics, drugs, leisure, economics, sports, cooking, fitness, health, travel, etc. – in other words everyday texts that are intended to convey and communicate information and instructions, as apposed to literary texts, to the general public. And it is this general type of text the majority of translators are asked to translate, so they should be able to get by with just language for general purposes, yet we know that this is not the case.

Where then do we use language for specific purposes or should I say terminology for specific purposes? Because isn't that what it really is – terminology that is specific for certain disciplines, such as science and technology, economics, finance, commerce, etc., wrapped up in, enclosed in language for general purposes.

The following extract from a technical document contains lots of language for general purposes, as well as language or terminology for specific purposes. And the danger here is that if the kitty is getting low, a translator might agree to translate a document that covers areas he or she simply knows far too little about, may even assume that his or her knowledge of language alone will see him or her through. It is a fact of human nature that we can all make mistakes from time to time – and I am no exception. Nobody is perfect and the occasional mistake testifies that a translator is both mortal and fallible, even though it may cost him or her dearly.

Anodeskift

Det ble utarbeidet et nytt settemønster, med 2 enkeltskift i syklusen. Dette ble tilpasset driften slik at enkeltskiftene ble tatt sammen med ovnene i neste kullskifteseksjon. Dermed ble det ikke behov for å skifte fra åk til enkeltgriper på krana. Settemønsteret er vist i vedlegg 1.

Anodeskiftet ble utført etter en modifisert SP. Det er normalt tre personer involvert i denne operasjonen; (1) Operatør "mellom ovnene", (2) Kranfører og (3) Truckfører. Under forsøket var det i tillegg en fjerde operatør som betjente anodeklemmene, (4) Operatør "Klemmeløfter". Punktvis foregikk anodeskift etter denne lista:

1. Tre deksel blir løftet av.
2. På vanlige posisjoner blir det meislet i sidekanal og mot nabo butts. Det blir ikke meislet mot nabo nysatte kull. I hjørne- posisjoner blir det meislet på begge langsidene. Det blir meislet ett hull midt mellom anodene som skal skiftes.
3. Kranfører fører anodegriperene i posisjon og tar tak i anodestavene. Systemet blir satt i spenn slik at anodene ikke skal sige ned når klemmene blir løsnet.
4. Dekslene legges på plass, operatør "klemmeløfter" går opp på dekslene og løsner klemmene og henger dem i opp i stativ for dette.

Such a text cannot be successfully translated by someone who has no specialist knowledge of the subject, one of the reasons being that you have to understand more or less how the operation is carried out, how the equipment works, so that no misunderstandings arise. In other words, you have to have some technical know-how. I had difficulty myself with the text, because in some places, it wasn't clear what the authors were referring to or meant.

På vanlige posisjoner blir det meislet i sidekanal og mot nabo butts. Det blir ikke meislet mot nabo nysatte kull. I hjørne-posisjoner blir det meislet på begge langsidene. Det blir meislet ett hull midt mellom anodene som skal skiftes.

What for example did they mean by "på vanlige posisjoner blir det meislet i sidekanal og mot nabo butts, etc." I knew where, but not exactly why, or which equipment was to be used. After discussions with the authors and other experts, it was decided that the English text should be more explicit and precise than the Norwegian text to prevent any form of misinterpretation, as the translated document was to be used by engineers who do not have English as their mother tongue.

In ordinary positions, a crust breaker was used to make holes in the crust in the side channel and against the neighbouring anode. No hole was made next to a newly set anode. Holes were made along both long sides of the anode at the corner positions. A hole was also made in the crust in the centre, between the anodes to be changed.

Let's look at some texts that are related to everyday life. How much extra linguistic knowledge do you need to have to translate this into Norwegian?

"Mr Piper, the English are paragons of cleanliness. It is a well-known fact that they use more soap per capita than anyone else in Europe."

Mr Piper would snort derisively at this. "That doesn't mean diddly-squat, boy just because they're cleaner than a bunch of Krauts and Eyeties. My God, a dog's cleaner than a bunch of Krauts and Eyeties. And I'll tell"

from "The Lost Continent" by Bill Bryson

What does diddly-squat mean and what/who are Krauts and Eyeties? To which period in history do these words belong? What does it tell us about the speaker? His age? His attitudes? What's his nationality? If this had been written by a Brit, he would have written Jerries and wops instead of Krauts and Eyeties.

And the following advertisement?

The main message in this ad is very simple and should be easy to translate, but we must keep in mind the target group. People who live in deserts with no trees, for example, might have difficulties understanding the message. National psychology and attitudes can cause ads to misfire when transferred from one country or continent to another.

Many years ago, before cultural awareness was considered important, an American company, I believe it was, decided to market one of its pharmaceutical products in the Middle East. They decided to use illustrations instead of words to get their message across. It took some time before they realized why this great product of theirs was no success in those countries. I don't have the actual ad, but I think the following illustrates the point.

What they forgot was that ads are read from right to left in Arabic countries, not from left to right as in the Western world. The marketing department had just not done its homework, nor the advertising agency that produced it.