KRISTA VARANTOLA: SPECIAL LANGUAGE AND GENERAL LANGUAGE: LINGUISTIC AND DIDACTIC ASPECTS.

Definitions of SL (special language) or LSP (language for special purposes) vs. GL (general language) abound; none is universally applicable, for obvious reasons. Basically, we are dealing with two intuitively correct assumptions that are good as working concepts but which resist clear-cut definition and delimitation.
It is therefore common practice to start from a fairly liberal definition and then narrow it down to whatever is applicable and adequate in the particular context: In other words, a pragmatic and eclectic approach. Hoffmann (1979:16) defines the scope of LSP as "a complete set of linguistic phenomena occurring within a definite sphere of communication and limited by specific subjects, intentions and conditions". Sager et al. (1980:69) prefer to limit the scope of their study of SLs to specialist-to-specialist communication:

Special languages are semi-autonomous, complex semiotic systems based on and derived from general language; their use presupposes special education and is restricted to communication among specialists in the same or closely related fields.

Picht and Draskau (1985:11) list the following aspects as characteristic of SLs: a monofunctional character (SLs are employed only within a specific social framework for communicative purposes); a restricted number of users (i.e., only a subset of the entire language community); voluntary acquisition of SL (in most cases); the independence of GL (varieties of LSP may come and go without endangering the existence of the GL).

Yet another way of studying the issue is to see the opposites of SL vs. GL, SL1 vs. SL2, SLn, or the various text types within one SL as a series of multi-dimensional continua. On the scale from SL to GL use, the rate of LSP-ness would slowly decrease when we move from specialist texts or very specialized SLs towards more general communicative situations or better-known varieties of SLs. When we have firmly reached the domain of GL, we have also reached a zero level of LSP-ness.

On the continuum formed by different SLs, we would discern the prototype areas of various fields such as science, technology, law, religion etc. and also determine interface areas where the different fields fuse. Patent texts, for example, have been called specimens of legal engineering (Langevin 1965:43; cf. also Gläser 1979:11 and Hiltunen & Varantola, forthcoming).

The continuum of text types within a SL is perhaps best seen as a circle with a central common core. The core would then expand in all directions with various realizations of text types at differing levels of specialization and abstraction.

Linguistic aspects

It is also possible to contrast SL and GL use more concretely by studying their characteristics at the different linguistic levels of lexis, syntax and text. Again there is a continuum of views as to which level is the most essential. All levels, however, contribute to the general impression that we have of SL discourse (which, in this context, refers to written language).

Lexis. The vocabulary of a special field, the terms that express the conceptual system of the field, certainly catches the eye
first. Some scholars maintain that terms are really the only thing that deserve the attention of the SL analyst. Stylistic variation among writers in the same field is so great that no regularities can be found (cf. Corbluth 1975:279-280). Similar ideas have been expressed by Ewer & Latorre (1967:223-225) who studied a variety of text types within scientific English and Porter (1976:84) who was unable to find evidence of a unified scientific English style, but some evidence of a style which may be designated "the English of physics" the "English of chemistry", etc. An opposite view is supported by Gallais-Ramonno (1960:61), who has studied the "English of economics" and noticed a long tradition of "economic style" from Adam Smith to the economists of the present day.

It is, however, clear that vocabulary, the terminology of a special field, is both a dominant style marker of SL usage and also a clear indicator of both the field in question and the level of speciality. A high rate of unexplained and highly specific terms is indicative of a text intended for an expert reader who masters the conceptual network hidden behind words which may hold little meaning for the layman. This aspect produces the term 'jargon', commonly understood as a negative label attached to any generally unintelligible use of terms. However, Sager et al. (1980:232) aptly restrict "jargon" to mean "misplaced special language". Aitchison (1986:7) emphasizes the difference between pompous-sounding but sloppy and intolerable usage, frequently syntactical, and the legitimate use of terms in an expert context. I quote two of her examples:

1. (from a driving licence for sufferers from epilepsy). In the case of an applicant who has had such attacks while asleep during that period he shall have been subject to such attacks while sleep but not whilst awake since before the beginning of that period...

2. (from an article on neurology). These cortical striatal fibers... may expand their terminal fields and occupy a number of synaptic spaces on caudate neurons vacated by degeneration of their ipsilateral prefrontal input.

If the latter extract were to be found in, say, the medical section of Newsweek we would clearly be confronting a case of a speech act "wrongly addressed to a layman" (Sager et al.) or "jargonitis" (Aitchison). When, however, the context is legitimate (a specialist journal) we are confronting merely the specialist's right to be special. His language is a tool used to express his ideas in an accurate and economic manner, what Halliday (1966) calls "economy grammar". Newsweek would explain a medical issue differently as the following recent extract (June 9, 1986:42) shows:

3. ... the active ingredient in sunlight is ultraviolet radiation, the high-energy rays that are capable of deranging the molecular structure of DNA... Exposed to sunlight, special cells called melanocytes release granules of the protective pigment me-
lanin, which absorbs and scatters subsequent doses of ultraviolet ... All people have at least some melanin in their skins at all times, and blacks, for example, have quite a bit.

Compare also the following extracts written at least partly by the same authors and discussing the same phenomenon:

4. Supernovae of type II are generally believed to occur at the end of the evolution of more massive stars, in the range 8 to perhaps 100 solar masses. When the nuclear fuel in the core of the star is exhausted, the centre of the star begins to undergo gravitational collapse, and falls inward until the core rebounds, or "bounces"... (Nuclear Physics A375, 1982:481-482).

5. The death of a large star is a sudden and violent event. The star evolves peacefully for millions of years, passing through various stages of development, but when it runs out of nuclear fuel, it collapses under its own weight in less than a second. (Scientific American, May 1985:40).

The two sets of extracts, specialist versions and more popular ones, have clearly different rates of unexplained terms, in line with their communicative targets. It is obvious that the writer’s expectations of the readers’ background knowledge for the two sets vary a great deal. If the writer assumes that the reader has a full command of the system of concepts of the special field, no explanations of terms is needed. If, on the other hand, the starting point is that the readers have only a hazy idea of the concepts, it is in the writer’s interest to give the necessary information in the context and in general to avoid excessive and overspecialized terminologies which would in no way benefit the reader or contribute to his understanding of the special field.

The division of lexical items into special terms and general expressions is by no means stable. Terms that have been the property of specialists only may become well-known and "generalized" for a number of reasons. Floppy discs, memory capacities, modems, interfaces, etc. have become far more frequent in everyday contexts with the spread of home computers. Today, most people know that rems, millirems and becquerels are units used for measuring levels of radioactivity. The opposite is also true in the sense that general items acquire highly restricted meanings in particular systems of concepts, e.g. butterfly (a type of nut) (cf. Picht & Draskau 1985:106 ff.). On the other hand, it should be borne in mind that terms which become more generally known seldom mean the same thing when used by experts or non-experts. Within a general context, users do not need to worry about the accuracy of terms or their relation to other concepts in the network in quite the same way as in a SL context.

Syntax. Syntactic properties of SL vs. GL are best studied in quantitative, statistical terms. The syntaxes of SL and GL are not two separate and divergent entities; the syntactic choices of SL are dependent upon their existence in GL. Admittedly, certain
SL conventions, e.g. deletion of the definite article in engineering English in cases which would in GL be considered ungrammatical, test the limits of tolerance of GL syntax but may still be viewed as exceptions possible in semantically-restricted contexts where they do not hamper understanding.

Phraseology lies on the borderline between lexis and syntax. Verb + noun collocations that do not exist in GL are particularly common in SLs. From the verbal angle this means that, in addition to possessing a special "terminological" meaning, a verb may also change its syntactic behaviour. GL expectations of transitivity and types of NP complementation may require modification and may appropriately be the subject of a Valency-type analysis, e.g.:

6. Synthesized search or tuning can be accomplished by entering a frequency step from the keyboard.

The module can buffer and latch 14-bit addresses for memory selection.

In many industrial applications it is frequently necessary to float an oscilloscope.

Archaic style manifested by the use of strange prepositions, conjunctions and adverbs attracts attention in legal English (cf. Crystal & Davy 1969), e.g. hereinafter, aforesaid, notwithstanding. These, like complicated and incomprehensible sentence structures, are often the target of fierce criticism (cf. Maher & Cutts 1986:11 for the objectives of the Plain English Campaign).

Quantitative studies have shown the following kinds of statistical syntactic deviations from GL practice. Passives are much more common in scientific/technical English than in GL. The same is true of nominalizations + semantically-empty verbs, e.g. Steam generation is by... On-site spigot preparation can be done... Modification of nouns is much heavier than in GL, e.g. A straight spur gear drive system with two intermediate gears and a distributor gear, an arrangement designed to ensure maximum torsional stiffness and minimum backlash. In particular, premodification patterns differ from GL use because of their heaviness and high rate of modification of nouns by nouns. In legal English, on the other hand, binomial expressions are common, e.g. acquittal or conviction, amending or replacing, clean and efficient (cf. Gustafsson 1984). The depth of clausal embedding clearly exceedsthat of GL and causes problems for the layman. Left-branched complex subordination is also a style marker of legal English (cf. Hiltunen 1984).

On the other hand, there are typical low-frequency structures in SLs. Some are self-evident and arise through the communicative functions and situations of SLs, such as the scarcity of the second person ("you") in scientific/technical discourse. Others are more interesting, e.g. the low rate of pronominal reference in the same SL.
These examples show just a few types of syntactic preferences that can be statistically established in SL usage. The reasons for their presence are usually to be sought in textual factors which condition and even predetermine which of the available syntactic alternatives will be selected.

Textual characteristics. How the information flow is structured in written SL communication, what the conventions of a particular field or text type are, what effect the level of LSP-ness has on the style, are all aspects that can be illustrated from a textual angle. Typically, scientific/technical style aims at such qualities as exactness, compactness and impersonality (cf. Hoffmann 1976:372 ff.). Textually, these often find reflection in high information content and lack of structural and textual redundancy, i.e. as a kind of economy grammar which relies on knowledge - shared by author and reader. This economy style requires modification when the specialist is not writing for a peer group but for students or a for lay audience (cf. examples 2, 3, 4, 5 above). Changes should not only affect vocabulary choices but also textual structuring. Redundancy and background information must be built into the text by means of definitions and explanations. Knowledge of relations between concepts may no longer be taken for granted and the level of the terminology used must be pitched correctly. Principles of this kind may be summarized pragmatically by the Gricean maxims: "Make your contribution as informative as is required", "Do not make your contribution more informative than is required" and "Be relevant!" (cf. Lyons 1977: 593 ff.).

Adherence to these maxims is manifested by the high rate of inferred items in expert-to-expert communication in scientific/technical language. Overt textual cues are few and it is assumed that the reader is familiar with the logical connection between a series of concepts. The following extract from a news item on paper machine development illustrates the point:

7. The headbox has been greatly simplified, with no internal showers, fewer rotation parts (i.e. removal of rectifier rolls and their drive), and by making it easier to seal.

The reader is expected to know what the connection is between headbox - internal showers - rotating parts and rectifier rolls. No overt explanations are given. An expert might even feel his professional competence is being questioned if he detects "didactic" overtones in a highly specialized context. It is obvious that finding the correct level of LSP-ness is a two-way process. The above extract would be out of place in an introductory textbook or a general context. The syntax of SL discourse does not usually cause problems. If the normal limits of complexity are not exceeded, syntactic simplification does not seem to lead to "real simplification". Ulijn & Strother (forthcoming) comment:

--- "what is needed is not syntactic rewriting of professional texts to increase readability. The sentence is not a good unit for rewriting. As has become apparent from recent experiments (Kieras 1982, Bouwman et al. 1985 and Bouwman & Ulijn, in preparation) textual and lexical rewriting will have much more effect."
Wood (1982:124-126) points out that structural simplification is actually dangerous for the rhetorical build-up of authentic scientific texts. It may distort the logic of a passage if thematic structures and original emphases suffer from the alterations.

Syntax can cause problems if the normal limits of complexity are violated as is often the case in "legal" writing (cf. Hiltunen 1984:108). It is no wonder that "legalese", typical of bureaucratic language, is the prime target of the Plain English movements (cf. Maher & Cutts 1986). Paradoxically, however, the complexity of legal English "proper" seems to be due to a striving to eliminate ambiguity (cf. Hiltunen 1985). Legal style aims at conveying the rules in autosemantic, self-contained units in order to avoid misinterpretations made possible by shorter sentences and potential referential ambiguity.

It is also typical of SL usage that the style and structure of some text types is strictly controlled, almost formula-like and allows very little freedom for the writer (e.g. patent texts, warrantly declarations etc.).

It has been claimed above that the syntactic choices of a SL often depend on textual criteria. Such criteria seem, for example, to lie behind the high rate of passives in scientific/technical style. Strevens (1973:225) points out that in the sentences The temperature of the solution was maintained at 60°C by a thermostat and A thermostat maintains the temperature of the solution at 60°C it is the theme of the passage that lies behind the choice of either passive or active. Tarone et al. (1981) contrast the rhetorical functions of the passive and we + active forms. Passives are used to describe standard procedures, work done by other people or proposed future work. We + actives are chosen when the authors’ own contributions are described.

Premodification has a different textual function from postmodification. Premodifiers categorize whereas postmodifiers are more specific and temporary (cf. Bolinger 1952:1117 and his examples an under-the-counter sale vs. a sale under the counter or Leech 1974:37, Sørensen 1980:79).

Nominalizations + empty verbs help in conceptualizing a process as a series of independent operations (cf. examples above). The nominalizations form rational building blocks that are syntactically fully mobile. They can act as subjects, objects, adverbials, be in the theme or the rheme, be modified etc. A verbal construction would be much more cumbersome.

Wells (1960:215) speaks of "the fitness of manner to matter": this, I think, is a very important notion to keep in mind when studying the syntactic and textual preferences of SLs. It is also a notion that is not restricted to one language or language group only.

International characteristics of special languages. Hoffmann (1976:372 ff.) points out that certain SL phenomena become more international at the higher levels of syntax and semantics. The
way of reasoning in science and technology, for example, calls for similar syntactic means (nominalizations, passives) in different languages, within language-specific limits, clearly. Finlay (1973:23) advocates the same line of thought when he says that professional industrial translators often acquire new working languages, particularly related languages, in the course of their careers. Ulijn (1979:153) and Draskau (1983:91) stress the importance of "Universals" in scientific/technical communication. We should, however, not jump to conclusions that would be too general. An "international way of thinking" does not apply to all SLs. Karcsay (1977) discusses internationalisms from a translator's angle and emphasizes the fact that a common frame of reference (in ideal cases) is a special property of science and technology. In legal and sociological contexts, ideological and cultural differences play a very important role. He also points out a further aspect that makes scientific and sociological discourse appear as opposing poles on the scale of straightforward translatability. According to Karcsay, in scientific contexts the results generally exist prior to writing, in the form of statistics, calculations etc. In sociological contexts (used in the widest sense) the form of expression, how the matter is analysed and the theme developed, is an essential part of the result. Lehto (1985:159) illustrates conceptual differences between Finnish and English legal terminology:

When choosing an equivalent, the translator should treat dictionary equivalents with extreme care, as even the newest dictionaries are not necessarily based on reliable terminological comparison of the two systems in question and seldom contain equivalents that can be used, for example, to describe a hierarchical system of terms (for an example taxation terme, cf. Letho 1984:6). The translator should always make a point of checking the terms in English-English or Finnish-Finnish dictionaries or, even better, in textbooks written about the field of law in question.

A further aspect is the existence of "false friends", such expressions as petrol and motor industry in the field of technology that easily lead the translator astray through apparently innocent homonymy.

The special position of English as a lingua franca, a new Latin, adds an extra dimension, that of "international English", used particularly in scientific/technical contexts and international agreements. Lehto (1985:165) comments on the problems it causes translators. She concludes "International English is, on the other hand, at times also an aid to the translator as a source of generally accepted and employed terms." Problems crop up also in technological contexts. Within the International Organization for Standardization (ISO), long arguments for and against followed the question of whether expressions used for international standards should be the same as those used for the national standards for English-speaking countries. Nowadays, the two contexts are considered to be separate even from a linguistic
point of view. Another quality of "international English" is implied by the concept of ISO-English as contrasted with standard English. International English is a fact of life which both complicates and facilitates the overall situation. A few complications have been mentioned above. For a non-native speaker, international English makes communication easier particularly in political, industrial and scholarly contexts. English has never been a normative language. There are a number of national varieties of English and a multitude of people whose mother tongue is something else but who nevertheless use English as a means of professional communication. All of these facts have increased grammatical tolerance and relaxed grammatical rules, efficient communication becoming the central issue. For the translator, the existence of these two basic varieties demands an extra awareness of the possible origins of a SL text in English.

**Comprehension and production problems**

Learning problems associated with SLs clearly depend on the type of learner. In a nutshell, medical or engineering students needing SL instruction for their studies are almost diametrically opposed to translator trainees who want to specialize in one or the other field. The "professional" students acquire the conceptual system and the expert knowledge of the field in the course of their training while linguistic skills remain in the background. The translator trainees develop their expert knowledge, including good-to-excellent command of the foreign language(s), in translation skills. The conceptual network of a special field, however, normally remains at a non-professional level. Problems that may arise from this situation have been implied above; the greater part appear to centre around the lack of extralinguistic knowledge necessary for a full understanding of SL texts. From a didactic point of view, this means that ways have to be found of building up the translator trainee's special field knowledge to compensate for the lack of expert background. I shall not go into detail but merely point out that, over and above the usual human and non-human sources of assistance, a sound theoretical knowledge of terminological principles is indispensable. This will help the translator both to identify potential problems and to assess the value and reliability of the help obtained from the various auxiliary sources; dictionaries, glossaries, word lists, other reference material, information services, term banks and field specialists. The responsibility, in the final analysis, rests with the translator. Stylistic awareness is another factor whose importance should not be underestimated. If the translator's linguistic intuitions are basically GL intuitions, problems will arise, particularly in the production of authentically sounding SL text. When the translator becomes aware of SL conventions, style markers, text type characteristics and their justification, it will be easier to avoid giving an impression of amateurishness.
References

Ulijn, J. and Strother, J. Forthcoming. "Is Syntactic Simplification a Real Simplification of EST Texts?".