The 'S' in the acronym 'LSP' is now generally taken to stand for 'specific' (as above), thus replacing the earlier form 'special'. At one level this seemingly trivial change in terminology can be seen as marking a decade of intensification of theoretical and pedagogical work whose effects are by no means trivial. Thus the somewhat more specific term 'specific' may be indicative of the attempt by LSP researchers to define their activities by way of clarifying their goals. And any formulation of these goals in LSP would seem to start with the needs of the learner, and consequently have to answer, in any particular case, such questions as: who are the learners (in terms of linguistic and cultural background, levels of ability...); what are they studying the language for, i.e. what particular skills will they be needing, in what set of particular situations and to what particular end?

But the needs-orientated trend has brought with it a certain scepticism about the nature of 'special languages', where we mean those domain-specific varieties like, medical, legal, technical ... English, French, etc. which have been traditionally associated with LSP. This may also underly the choice of 'specific': it is significant, for instance, that whereas we talk of 'specific needs', we do not talk of 'specific languages' (in the sense of sub-codes, at least). In contrast, 'special' is Janus-headed in that it turns both towards language and towards learner needs. But does such a tendency mean an undercutting of the role of linguistic research in the LSP field? Hopefully not. It is probably truer to say that many of the more hard-headed LSP practitioners have eschewed any long-term aim of describing overall such macro-varieties of the type mentioned in favour of ad hoc investigations of those particular areas thought, or found, to be relevant to the solution of the learner's specific (needs-defined) linguistic problems. The collection of articles under review clearly demonstrates the virtues of the prevailing pragmatic approach which brings linguistics nearer to actual learner needs.

'English for Specific Purposes: Science and Technology' opens with an article written by Larry Selinker in 1968 which serves to remind us that even only a decade ago such a complaint could be justifiably made: '... it may not be unfair to say that most EFS programs have been and still are beside the point as regards the complex and interesting series of problems concerning English and its relation to the success or failure of the FS in a particular field.' (p. 1). Much has changed in terms of attitude amongst language teachers and course designers since this was written. This is not to say that the problem of gearing materials and methods to learner requirements is no longer with us. A change of attitude of itself cannot help matters while such things as the heterogeneity of learner needs in terms of specialism, desired complexity of language and content, etc. continue to provide the stumbling block for the teacher's/designer's honest objectives. Thus the tailor-making of courses for smaller groups with similar needs has become something of a necessity as textbooks of the required degree of specificity are hardly viable in publishing terms. It thus falls to the lot of the teacher himself to design the course.

A teacher in this position will find interest in part 5 of this anthology (on ESP curriculum development), where organizational schemas relating to the needs-means nexus are elaborated. It should be emphasized in this connection, however, that a priori schemas sometimes fall foul of practical realities: for instance, is the designer's perception of learner needs always in fact authentic and is she/he willing to modify the program ongoingly to make an ever-closer fit? It is a salutary side of this book that the balance is redressed by such admissions as: 'I have tried to detail how the forces of reality - budget, administration, student attitudes, and other factors influenced and changed the original theoretical design of the course.' (Drobnic, 'Mistakes and Modification in Course Design an EST Case History' (p. 313)). Equally honest is the statement by Hirayama-Grant and Sedgewick in 'ESP Syllabus Design Processes in Retrospect' (p. 331): 'Through placing our syllabus design project in retrospect, we have become aware of the great importance of intuitive factors in design work. Our syllabus design seemed to conform to a logic when viewed in retrospect; however, in reality ad hoc
decision-making, intuitive and educated guesses provided much of our momentum and direction'. In contrast, we may find Frederickson's proposal rather too rarefied: 'An effective curriculum development plan represents a systematic and sequenced educational experience which compensates for individual differences and is supportive of and responsive to the total learning process.' 'How to Develop an English for Special Purposes (ESP) Curriculum.' (p. 295).

We are also brought down to earth by Hitchcock's outline of the sort of extra-linguistic variables that may militate against the neat propositions of the a priori approach when the ESP practitioner is teaching in the field. Thus conditions in Iran are, for instance, markedly different from those obtaining in many Western countries, and deductions made upon a Euro-centric or American basis will obviously have little application. The LSP teacher must consider such local conditions as the state of the educational system concerned, the degree of literacy of the community, the social-educational role of the students, and the effects of the previous learning experience (pp. 9-52).

In the Selinker article cited above the vexed question of the LSP teachers 'subject knowledge' is raised. In other words can a teacher legitimately teach the linguistic variety associated with an area of specialism in which he is totally or partially unversed. The problem at its most basic level involves the gap between the 'two cultures'. The language teacher has traditionally been drawn from the ranks of the humanities graduate, and many earlier criticisms of pre-LSP teaching were in fact directed against the irrelevance of the sort of programs which the humanities trained teacher foisted upon the technology-orientated learner. Certainly, with a bit of native wit added to a modicum knowledge of the basic principles of science culled from their secondary education, some teachers could survive in certain situations, and provide satisfaction. But when we consider, on the one hand, that the level of the learner's subject matter knowledge can range from the basic science of secondary education right up to the graduate level and beyond, and on the other that some forms of technological specialism are so arcane that even practitioners themselves can be bemused, what hope is there for the non-subject-specialist language teacher in the extreme case.

But there is worse than this. The knowledge of any particular specialism is not circumscribed by a body of acquired facts; knowledge implies a constant evolution, the possibility of innovation. An anecdote will illustrate the problems of the LSP teacher in this connection. A teacher of my acquaintance who was well able to manage the conceptual demands of a course on 'English for Watchmakers' in the early sixties was completely floored by the extremely abrupt transition from the mechanical to the electronic mechanisms of the seventies.

It seems here that we cannot disregard the connection between knowledge of the world, embodied by a discipline we wish to teach, and the semantics of the language. The teacher must know the meanings of terms as such, and the meanings of the sentences in which the terms occur, but also their sentential and textual relation to the conceptual structure of the discipline concerned. It is particularly about our semantic awareness of the world of knowledge that Selinker seems to raise the problem.

As he puts it, 'Who among us could help the chemical engineering FS decode the compound gas mixture product? As native speakers of the language, what is clear to us about this compound? Well, it is a type of 'product' which concerns mixing of gases in some way. But beyond that, does it mean a 'product with which one mixes gases' or a 'product in which the gases are already mixed'? Clearly, knowledge of the universe in which the discourse contains this compound is essential to correctly choose the latter gloss.' (p. 5). Answers to this (none are given) and other related problems in that very recent field, LSP teacher training methodology, might have provided a further section to an otherwise extremely comprehensive coverage.

Knowledge of content is, of course, not the only problem. Amongst the desiderata in the training of today's LSP (EST) teachers suggested by Hitchcock is that of 'giving traditionally-trained teachers a general background in the rhetoric and structures of scientific English and a sufficient preparation in linguistics to enable them to act,
react, create, and innovate'. This book does much to give such a teacher some idea of what the relevant linguistic knowledge might entail. Thus part 3 concerns those linguistic problems that the learner encounters through mother tongue interference. Incidentally, the backlash of such contrastive studies is of course an increased knowledge of English scientific discourse. Part 4 deals with the intra-lingual linguistic study of EST, namely of its lexical and syntactic features, and rhetorical functions. In this section, some account might have been taken of inter-variety comparison along functional perspective lines. Recent work by the Prague school shows that the theme-rheme patterning of texts will tend to differentiate 'scientific' from 'non-scientific' discourse. A knowledge of the relationship between such patterning and rhetorical function ought thus to form part of the equipment of the EST learner (especially as a writer of technical discourse) at some level of development.

Mary Todd Trimble and Louis Trimble's article in part 2 ('EST and Teaching') admirably illustrates the difficulty in separating the so-called theoretical aspects of LSP from the pedagogical. 'Admirably' firstly because the bridge between linguistics and its application in course design and teaching is not an easy one to build. Secondly, because when built it is more clearly seen that applied linguistics is justified as an autonomous discipline. The Trimbles, in connection with a skills course in the reading of technical manuals, set themselves the following questions as a preamble to the course design: (1) What are the special characteristics of the English of technical manuals? (2) Are these characteristics sufficiently different from those of scientific English or 'general English' to warrant detailed study? If so, 'how' do they differ? (3) Finally, are there differences great enough to require special types of teaching and special teaching materials? They found it significant regarding (1) that all manuals were written for the native speaker, and also that they made little concession to the reader's pre-professional background. They also found that though rhetorically and grammatically the linguistic differences were more in terms of degree than in kind, the particular bias of these differences justified distinctive treatment. At the lexical level problems particularly arise with 'sub-technical vocabulary', i.e. those common words that have taken on special meanings in certain scientific and technical fields.

It is also interesting that this article points up the fact that the dichotomy between 'English for Academic Purposes' and 'English for Occupational Purposes' may be more blurred than has been assumed. The 'grey area' in between may be important enough in terms of the increasing market to justify a tertium quid category, 'English for Vocational Purposes', or some such term.

This book is a welcome newcomer to the so far surprisingly diminutive collection of published books in English on the LSP theme.

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