Jennifer Draskau: Is there a Scientific-Technical Register?

(Part of a plenary paper held on Thursday, 1st September, 1983 at the IVth European Symposium on LSP Symposium, Bordeaux. The paper, with its accompanying bibliography, will appear in full in the Proceedings).

The term "Register" is widely accepted. It appears potentially useful for linguistic description, not least in respect of LSP texts, including scientific-technical discourse. But what exactly is meant by it?

The term was introduced in 1956 by Reid for the "linguistic behaviour of a given individual in different social situations". The relevance of the situation for speech acts had been discovered in 1885 by Wegener, followed by Gardiner in 1932, and from these beginnings the concept was further developed by Firth, Malinowski and Halliday. "Register" began to be spoken of as a fundamental concept of the neo-Firthian school of British linguistics. Continental linguists began to refer to "die britische Registerlinguistik".

In the early 60's the relationship of text and situation was further clarified and the concept of characteristic features or "register markers", for the purposes of typological description, was introduced. "Registers" were defined as the product of three dimensions: "field", "mode", and "style" of discourse (later modified by Halliday into "tenor"). The formal properties of a language event were held to be those associated with the intersection of these dimensions. The greater the delicacy of the classification, the greater the degree of overlap.

Other linguists have proposed alternative arrays of text dimensions and the corresponding terms. Often the descriptive apparatus proposes the conflation or expansion of terms, concepts or both.

Fig. 1

<table>
<thead>
<tr>
<th></th>
<th>Ellis,</th>
<th>Halliday et al.</th>
<th>Gregory</th>
<th>Calford, Strong</th>
<th>Leech</th>
<th>Quirk et al.</th>
<th>Crystal &amp; Davy</th>
<th>House</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEMATIC</td>
<td>&quot;field&quot;</td>
<td>&quot;field&quot;</td>
<td>&quot;field&quot;</td>
<td>&quot;subject matter&quot;</td>
<td>&quot;province&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILOCUTION/FUNCTIONAL</td>
<td>&quot;field&quot;, &quot;role&quot;</td>
<td>&quot;functional&quot;</td>
<td>&quot;register&quot;</td>
<td>&quot;role&quot;</td>
<td>&quot;province&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STATUS/TONE</td>
<td>&quot;formality&quot;, &quot;style&quot;, &quot;personal tenor&quot;</td>
<td>&quot;style&quot;</td>
<td>&quot;attitude&quot;</td>
<td>&quot;status&quot;</td>
<td>&quot;role&quot;</td>
<td>&quot;social role&quot;</td>
<td>&quot;social attitude&quot;</td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>&quot;mode&quot;, &quot;medium, style&quot;, &quot;mode&quot;</td>
<td>&quot;medium&quot;</td>
<td>&quot;medium&quot;</td>
<td>&quot;modality&quot;</td>
<td>&quot;participation&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIALOGUE/STRUCTURAL FEATURES</td>
<td>&quot;mode&quot;, &quot;role&quot;, &quot;tenor&quot;, &quot;style&quot;</td>
<td>&quot;style, mode&quot;</td>
<td>&quot;modality&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
By 1978, Halliday had developed the position that "language is regarded as the encoding of a behaviour potential into a meaning potential, i.e., the encoding of the semantic system into the lexicographical system". Register has become "a form of prediction". The typology of the communication act now provides the deep structure for the register, while the register, as semantic element, becomes in turn the deep structure for the surface structural properties. Halliday is still operating with the tripartite model based on field, mode and tenor: these three categories are used to describe the semiotics of the situation, which, associated systematically with the functional components of the semantic system; render it possible to make predictions about registers.

Criticism. Crystal and Davy have pointed out the inconsistency of applying the term "register" indiscriminately to situationally distinct varieties of language of any kind. "To develop a theory of REGISTER", they say, "is to equate REGISTER with stylistics".

The most notorious defect of register linguistics - the circularity of definition arising from the confusion of formal features and situational context - has now been almost eliminated by the introduction of notions of prediction and causal determination. But the disinclination to analyse thoroughly the relationship between REGISTER and SITUATIONAL CONTEXT persists. This may reflect the neo-Firthian resistance to the programmatic artificiality of the Saussurean dichotomy; but a register linguistics also shows rigidity - in its attitude to text typologies, for instance. This area has been paradoxically characterised by excessive eagerness to accommodate the taxonomy, and a lack of flexibility. Textual function has been widely adopted as a basis for text typologies. The value of a simplistic equation of language function with text function or type rests on a programmatic taxonomy based on what has been called an "illogical contention".

Given that: language has functions \(a\) to \(n\)

and that: any given utterance is a self contained instance of language

then: any given given utterance must be able to exhibit any of functions \(a\) to \(n\), not just one.
This severely limits the application of a functionally-based text typology. Similar objections arise when the function of the communication act is equated with the deep structure of registers.

The determination theory fails when applied, for example, to a genre-bound text such as a sonnet. (Halliday suggests the inclusion of genre-bound texts under his dimension of "mode". The problem with this solution is that the essential dichotomy between linguistic and non-linguistic elements is exploded as soon as the dimension "mode" is permitted to become a conflation of both types of element. It appears impossible to reconcile the desire for a sufficiently universal concept of "act" to accommodate all text types, with the need to derive registers from the context of the speech act. Even the adoption of a partial solution in the form of Pike's "behavioureme" does not in the view of some critics prevent register linguistics from falling between two stools, in that: utterances are "speech acts" - but the concept of the speech act is so loosely formulated that, in theory and on paper, a neat and quite unrealistic balance always appears to exist between the two. It seems that the thesis "register is in effect a communication act" is either of very limited application, or, if wider application is claimed for it, the definition must be diluted until its value becomes questionable.

Again, there has been no attempt to delimit the range of type choices available in any given situation, nor to ascertain whether certain elements may be incapable of combination. Neither is the rationale behind the arrival at the posited three text dimensions forthcoming: Why THREE text dimensions? Why only three? Why these three?

Fig. 3

Evidently, to ensure both delicacy and universality, text dimensions must be flexible. The traditional solution has taken the form of ad libitum subclassification with or without the corresponding expansions of the terminology.
Halliday describes his dimension "field": "Field of discourse refers to what is going on: to the area of operation of the language activity. Under this heading, registers are classified according to the nature of the whole event of which the language activity forms part ... we can recognize registers such as politics, and technical registers such as biology and mathematics ... at the same time the language activity in a situation may be unrelated to the other activities ... if two people discuss politics while doing the washing up, the language activity does not form part of the washing up event, and the field of discourse is that of politics ...". Even granted such exemplary single-mindedness that the humble domestic events of the context of situation did not at any point intrude at linguistic level: ("Thank you ... use the other towel ... pass me that cup, please") every utterance must be described in respect of theme and situation: "field" appears here as a portmanteau term requiring subdivision. Similarly, "mode of discourse" appears to cover the areas of "medium", "the language of" ("journalism", "the law", etc., objected to by Crystal and Davy, elements which could as well be classified under "field" if in the "washing up" example "politics" could be so classified) - and "genres" or convention-restricted text varieties. The dimension of "style" or "tenor", defined in terms of status and roles, both temporary and permanent, appears to demand a similar process of refinement. The seductive purity of the tri-partite model appears more than a little tarnished at second glance.

Currently obtaining defects of the terms and concept(s)

The tentative character of the investigation, and the arbitrary establishment of the categories of text dimensions, have never been surmounted. Small consideration has been given to the distinction between the thematic and the functional aspects of a text, although there have been claims such as "the text dimension is universal, while the text type (that is, the range of possible alternatives) is language-specific". Nor has the possible interfacing of categories been studied in a productive systematic way. No systematic allowance has been made for the co-occurrence of different registers within one text.

However, by far the greatest disadvantage of "register", as both term and concept, remains the terminological confusion: the polysemious usage, the absence of adequate definition. What definitions are available, are strikingly lacking in potency or universality.

What are the possibilities for the rehabilitation of "register" and its reinstatement as a useful term and concept?

Despite criticism, and a general awareness of the need for redefinition, there has been little appreciable progress in several of the most problematic areas. This may be ascribed to the nature of the criticism, which has not often been constructive. In the first place, the substitution for "register" of alternatives such as "Textsorte", is no solution, since "register" and "Textsorte" are not synonymous.

Hymes has offered contextual co-variants of characteristics of a verbal act, justifiably presented as consequences rather than determinants. Yet, if the concept of "register" includes a functional element, the determinative factor cannot be excluded. Critics of register linguistics have been aware of this fact, yet most of them have ignored it when devising their own taxonomies. In the second place, it is not helpful to regard FUNCTION as a simple unit incap-
able of complexity. The overlap of functional elements may be reclassified into "primary" and "secondary" functions, necessitating a new taxonomy able to indicate clear distinctions. A theory of REGISTER should be able to account for the features of any text, without having to resort to dispensatory procedures to deal with the formal restrictions of the notion of "genre", and for aesthetic function. (We might stick our necks out and suggest that the total absence of ANY consciousness of formal qualities whatever is unusual in all types of discourse, also the scientific/technical).

If there is no method which conclusively supports unity of function, or harmony of function with genre, then neither can register be considered a unified category. Yet the use of the term persists — possibly "faute de mieux", because of the failure of attempts to redefine it, and because of the lack of a satisfactory alternative term or an empirical analytical method which would replace the traditional atomistic register analysis by means of isolated markers, by a hierarchic process which would permit the analysis to move from elements to text. Such a method should also include a means of assessing the significance of elements for stylistic distinctions, making it possible to establish the presence of different registers.

Widdowson has suggested that the best way of characterizing different language registers is to discover what rhetorical acts are commonly performed in them, how they combine to form composite communication units, and what linguistic devices are used to indicate them.

A possible method for achieving this aim has been implemented in Copenhagen with the aid of data-processing procedures. Register markers are taken as linguistic devices which indicate the nature of the communication act, and are assumed to have a similar function to that of "descriptors" in documentation — that is, to make thematically relevant statements about semantic content. At surface level, register "descriptors" are analysed for their occurrence, co-occurrence, and combinatory properties for composite textual units. These are in turn processed to provide a profile indicative of co-occurrence with communication act profiles based not only on sender function descriptions, but on receiver-oriented, empirically observable or intuitively witnessed results of the communication act.

The idea is that sufficient breadth of sampling and sufficient delicacy and acuteness of the elicitational techniques will eliminate both the scepticism aroused by a highly intuitive-subjective material and the manipulability of statistical evidence.

We feel that insufficient attention has been paid to communication act consequences, and also that the "intuitions" of both scholars and their "native speaker informants" have been too random, too limited, and too sensitive to manipulation. We hope to be able to provide a solid foundation for more accurate statements about the nature of communication acts and their typologies. We do not conceive of our method as either exhaustive or infallible, but as one possible means towards the more scientific investigation of linguistic phenomena. It may offer new approaches and prove capable of development and of ever wider application — a process which, although innovatory, does not exist in isolation. By rejecting initial rigidity and resisting the temptation to make exaggerated claims, we hope to avoid arbitrary distortions of the taxonomy to accommodate new data.
At present, however, the acceptance of "register" in the current sense as a viable term and concept is axiomatic for the existence of a scientific/technical register. Before we accept the validity of "register", we may consider:

**firstly**, if "register" refers both to surface realization (the result of the contextual configuration) and the deep structure, on what level does "register" operate?

**secondly**, an adequate theory of register should be able to account for which surface features are traceable to, or predictable from, the deep structure. This is something the current theory of register does not appear able to do.

**thirdly**, if "function" appears in the taxonomy only in illocutionary aspects (classified under field, and partly under mode) while function of the communication act is posited as the deep structure for the whole typology, on what level does function operate as a category?

If, taking these and other factors into account, we still find ourselves able to accept "register" as term and concept — supported by redefinition and a stronger taxonomy — does, then, a Scientific/Technical Register exist?

There persists a widespread belief that it does. Thus Ulijn speaks of "le registre scientifique et ses constantes et variantes" — significantly, in the English summary the author reverts to the supposedly synonymous term "scientific language". In the same publication, a couple of years later, Dr. Gläser writes: "LSP registers have been included in language teaching, with special reference to their styles" — she refers to Linton Stone, who like D. Wilkins, writing in the 70's, assumes the teachability of "registers" as palpable entities. For Wilkins and his colleagues, registers are "potentially important in language learning because many people have an occupational purpose in learning a foreign language". Like Wegener and many earlier scholars, Wilkins equates registers with LSP, distinguished solely from the point of view of "subject field": it is supposed that there are distinct varieties of language associated with people's occupations and to these the name "register" has been given.

*Fig. 4.*

### SYNTAX

<table>
<thead>
<tr>
<th>form content</th>
<th>Extended list</th>
</tr>
</thead>
<tbody>
<tr>
<td>verb frequently passive voice</td>
<td>e.g. &quot;to slacken the tension&quot;</td>
</tr>
<tr>
<td>tense simple</td>
<td>&quot;to tighten a nut&quot;</td>
</tr>
</tbody>
</table>
| mood indicative or imperative |...
| parataxis |...
| 

### LEXICON

<table>
<thead>
<tr>
<th>form content</th>
<th>Extended list</th>
</tr>
</thead>
</table>
| LSP collocations e.g. "to slacken the tension" |...
| "to tighten a nut" |...
The scale of technicality is often referred to as a cline, an intersecting stratum. The cline of technicality recalls the other problematic cline for LSP texts, that of the demarcation of LSP from common-core. At what point does density of markers place a text conclusively within LSP? If it is difficult to draw a demarcation line for LSP, it is equally problematic to locate a given "register" within LSP, and to distinguish that "register" from other "registers", both LSP and common-core.

The systemic static knowledge of the rules of language and its potential offers a range of alternative realization possibilities. Some of these surface features have a higher level of predictability for scientific/technical texts, as secondary markers. Field is here a primary element – not merely one of three or more contributory categories; the secondary markers which may typically co-occur with it are, for instance, in English for Science and Technology, frequency of passives, simple tenses, impersonal forms, nominal predominance with many abstracts and similar etymology – often classical derivation, reflecting the international nature of the field. In English for Science and Technology, premodification, omission of determiners, and so on, presupposes a shared cognitive competence. The field-specific vocabulary is the most characteristic formal feature of the field. It is also the main stumbling-block for the uninitiated (who often assume their problems are with the terminology, whereas in fact they are with the concept). The syntax – typically paratactic and asyndetic – is unobtrusive. The fact that the field, as expressed in lexical items and collocations, is paramount, means that even texts with a relatively low level of secondary marker density – popular articles on scientific and technical subjects – instructions for the layman, and so on – with special terminologies shaved to a minimum – also tend to be classified as LSP texts, by virtue of the subject matter expressed in specialized vocabulary. Even if we retain a tripartite neo-Firthian apparatus, where FIELD is only one of three text dimensions, there will be some predictability in: illocutive function – often directive, didactic, and so on. The status or formality parameters will show "consultative" – the asymmetrical authority in LSP texts derives not from the usual socio-cultural factors but from the knowledge of the special field. Collocations may be typical elements, such as to "take in the slack of a hawser" (from marine technology), "to tighten a nut".
If we maintain that a "Scientific/Technical register" exists - or a set of such registers - identifiable by linguistic analysis, and by the same token permitting of a break-down into modules conducive to teaching strategies, it follows that such registers must be definable in terms of formal linguistic properties. Yet the problem is not one of LINGUISTICS, but of COMMUNICATION.

If we accept the typology of the Speech Act as Deep Structure, from which the Semantic Component arises, with subsequent realization in formal surface features, HOW MAY a situational deep structure be analysed so that it may be transmitted as a systematized unit in a teaching situation?

HOW MAY the individual formal features of a so-called "scientific-technical register" be traced conclusively to elements in the deep structure?

The apparent uniqueness of each situational deep structure for communication acts may be outweighed by considering an available array of alternative realization possibilities bound by situational and communicative restraints. Between these, the "sender" may make his selection in accordance with certain "restricted" choices dictated by genre and function...

If we accept the modified taxonomy for the scientific/technical register, then "register" may be considered a useful term for LSP description. But, in order to meet the basic requirement for linguistic terminology, which is to distinguish between actual taxonomies and metataxonomic deliberations, which can be of interest only in so far as they deal with a system of terms whose definitions, unique and unambiguous, form part of a closely-knit system, then the apparatus of concepts must be developed and refined.

We must ask ourselves whether the retention of the term "register" offers palpable advantages over its apparent synonyms - "style", "discourse", "variety", "language" and the like.

More concretely, we must ascertain what features can be described, what features are "teachable". The answer must be: "characteristic formal features" and only these - but in scientific/technical discourse, it will usually be the systemic common core features of the communicative competence of the target language which need to be learned, rather than the shared concepts of the field-specific cognitive competence. This latter will often exist independently of the language communities, to the degree the epistemological levels harmonise. The codifiability of the concepts of the field within the target language system needs to be acquired. Scientific/technical "register" may be analysed only at surface level, but it is present at a deeper level as secondary cognitive competence. In register linguistics, the confusion between form and function persists. So does the preoccupation with text as an instance of language usage revealing certain variations. In scientific/technical discourse especially, the concern should be with the communicative function of the text as discourse, and the main preoccupation should be with universals - also their non-linguistic realization. The focus on formal features automatically restricts the concept of register to mono-lingual application. The similarities of text types, methods and strategies in the field, its field-specific features and non-linguistic illustrative materials, invite a unified category. But can this usefully be called "register"?
Traditional, atomistic register analysis appears problematic as a method of description for LSP texts. The field-competence component of the cognitive deep structure is textualised differently in different languages, but retains its character of field-specific universality.

To sum up: objections to the reinstatement of "register" in the traditional sense seem prohibitive. Preoccupation with formal features prolongs problems of assessing individual relevance of markers, and the difficulty of moving from markers to text and from deep structure to surface structure. The multiplicity of more or less arbitrary subclassifications of text dimensions, which are themselves arbitrary, is another problem. There remain too many unanswered questions: how to deal with the demarcation of LSP registers from common core registers, that of literary from non-literary discourse, technical from non-technical, how to deal with mixed or corrupt registers, registers which borrow, more or less consciously, from each other. How to cope with Searles's discrepancy between "literal sentence meaning" and "speaker utterance meaning".

All in all, it appears the term "scientific/technical register" is both too rigid and too vague. So long as we bear in mind, in the first place, that the special field is the sole primary element, and in the second, that, although certain probabilistic predictions become possible, these are consequences, not determinants, we may identify a variety in which certain sets of language-specific formal features reflect certain deep structure dimensions related to a non-language-specific shared cognitive competence. This is what we call "scientific-technical discourse".

In theory, one would have to expect to find as many variations in this discourse type deriving from the field-typical deep structure as there were

- language users
- language uses
- types of communication act embedded in contextual and co-textual, field-typical situations

This would virtually preclude the possibility of making generalizations by use of a term such as "register". So long as there has been developed no system of concepts in which "register" occupies a unique and unambiguous position, fulfilling all the requirements of term and concept, the essential stringency and coherence is lacking. This results in the devaluation of the term. We hope our computer-aided study may make some contribution to this aspect of discourse analysis. Although it has provided a fruitful basis for discussion, we fear "register" may prove a lightweight in the long run. But we shall do all in our power to make an honest term of it.