

DISCOURSE ANALYSIS AND READING: A REVIEW OF THE LITERATURE

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Introduction

This paper is the result of an attempt to clarify my own understanding of the discourse research carried out in the field of reading in the 1970's and, less successfully, to present my Mestrado students with a relatively short overview of the same. (1). Initially I felt it was necessary to distinguish between grammatical categories of description, which account for textual structure in terms of the formal relationships between and within sentences, and the recent concern with the characterisation of language as an instrument of communication. It goes without saying that this latter concern has extended the scope of the linguist to cover not only the internal patterns of language as a self-contained system, (i.e. the ordering of linguistic elements), but also the manner in which these patterns relate to the rhetorical functioning of language. Discourse analysis had sometimes been taken to include the investigation of the formal devices used to connect sentences. It had to be pointed out that the concern was with the 'use' of language as a means of discourse rather than the 'usage' of language as units within a code. (2). The distinction was thus made explicit, "that the first has to do with rhetorical coherence of discourse and the second with grammatical cohesion of text:" (Allen 1975:2, my underlining)

Discourse Analysis and Reading

For the discourse analyst reading is essentially an interactive negotiation of meaning in which what is presented on a printed page as written text is converted, by the reader, into discourse functions at a variety of

levels. The interaction helps to create hierarchical structures and combinations of propositions which build up to larger units of communication. There are thus two aspects of the field of study which are of relevance to reading. The first concerns utterance types (i.e. communicative acts) in isolation, of how a single sentence functions as a message. The need is to specify the conditions whereby a certain linguistic form counts as a certain type of utterance, as well as the relationships which establish classes of communicative acts. The second aspect of study concerns the way single sentences link up with other sentences to form units of discourse, the way in which individual acts link to develop larger units of communication, the coherence of utterance in sequence. There is no neat correspondence between linguistic form and communicative function at either an intra-sentential or inter-sentential level.

1. This paper is an adapted version of a chapter of my M.Ed. thesis submitted to the University of Manchester in July, 1981.

2. Thus a useful starting point was the reading of chapters 1&2 of Widdowson's "Teaching Language as Communication", O.U.P. 1976.

The Nature of Written Discourse

Written discourse is far from being a straightforward affair. Form and function overlap, dissimilar parts are intricately related as the message presents meaning at a number of different levels. These include the basic semantic categories of word classes and structures, hierarchical syntactic relationships and textual structure, all of which were discussed in the preceding chapter. There are also the two levels of rhetorical function and discourse coherence. These meanings exist simultaneously but can be described at each level. Hence the message imparted by a piece of

discourse "is a complex product of all individual statements, the order in which they are presented, the relationship, explicit or implicit, holding between them, and the way particular statements are grouped into paragraphs" (Widdowson 1977:1).

Discourse at the Level of Individual Functions

Clearly in any interaction through the written medium the addressee, the reader, is presupposed. No immediate feedback is available hence the writer must ensure that he and the reader share common knowledge. This can often be achieved by starting the discourse with such metalingual acts as 'definition'. Metalingual acts work as signals to help the reader recognise the precise meaning of the writer's terminology, together with modal functions, signalling the writer's attitudes and the so-called 'contact' functions. Metalinguistic functions play an important role in written discourse in the absence of a wealth of paralinguistic features which signal these messages in face-to-face interaction.

Discourse Coherence at the Level of the Paragraph

At another level the sentence can be said to represent a set of clues provided by the writer by reference to which the reader can create propositional or illocutionary meaning. The propositional content is so organized that initially a statement is made which is assumed to be recoverable from shared knowledge. This initial statement may be a topic sentence and may inform the reader of the main premise of the paragraph. It might be seen as an information cue as to how the paragraph will be structured. Candlin (1975:5) has described as example of the possible order of content in a paragraph of academic prose: "repetitive rhetorical patterns can be observed:- a proposition opens, is

exemplified with evidence, the evidence is estimated, a counter proposition forestalled, further exemplification is provided, an opinion is given and a conclusion made." Explicit coherence relationships of this sort are thought to be labelled by overt clues. Urquhart (1976) has mapped out the information content within units of discourse. He has labelled relationships between propositions as 'paratactic' (i.e. non-subordinating 'additive') or 'hypotactic' (i.e. subordinating). His hypotactic units are composed of either a declarative with a subordinated statement, or an assertion, followed by supporting material to support the assertion. (i.e. statement of exemplification or justification). This latter paragraph structure is also described by Freedle (1972:364) who claimed that "an effective way to present and prove a proposition is to break it down into a series easier propositions." There is experimental evidence with native speaking subjects which suggests that the propositional structure of paragraphs does play a crucial role in comprehension. Clark (1975:329) jumbled the order of the rhetorical functions from a paragraph. Her subjects found it difficult to reconstruct the argument of a text without coherence. In a similar experiment Urquhart (1976:14) compared the readability of narrative texts containing the same information but differing in overall organisation. He found that "the chronologically ordered text proved significantly faster to read and easier to recall than the non-chronological equivalents." Augstein (1973:30) used flow-chart models labelling the structure of paragraphs with rhetorical terminology. (generalisation, specification, illustration, etc.) She claimed that students showed "a significant improvement in their ability to write summaries of paragraphs." However, Urquhart (1976) pointed out that descriptions of discourse are not capable of explaining how a number of statements linked paratactically cohere as a

paragraph. Both he and Augstein (1973:39) pointed to the inability of their experiments to account for inter-paragraph and overall discourse relationships.

Discourse Coherence Beyond the Level of the Paragraph

Freedle (1972:355) has also recognised that in expository prose concepts (e.g. the writer's overall message or purpose) can stretch over several physical paragraphs. Various functions can be stated explicitly together with implicit rhetorical information; a writer may propose certain 'cause-and-effect' relationships on an explicit level to support the validity of a further proposition which is developed over several paragraphs. It is here that presupposition plays a crucial role, the prior knowledge which the writer assumes of the reader is often essential to a full decoding of the discourse message.

The Nature of Written Scientific Discourse

Scientific discourse is a means of organising information into chunks of logically related material to give expression to reasoning processes in the sciences. These describe the structure, properties, state and changes of state which Harrē (1960) calls the 'systems', i.e. subjects, of scientific enquiry. Scientific writing is conceptually structured to display specific, relevant information through the operation of these four systems. Science has particular modes of justifying what is true and it has particular techniques for exploring experience. The following is a synthesis of attempts Beard (1973), Cooper(1974), Marder (1960) and Harrē (1960) to provide a taxonomy of the roles and communicative acts of scientists:-

1. Defining, which includes exemplification and questioning
2. Classifying, which includes matching and differentiating
3. Interpreting, which includes evaluating, generalising, measuring, testing and predicting.
4. Describing:- evidence, inference, hypothesis, states,

processes, quantification, causality, explanation.

Defining, the first of these expository techniques, is an essential activity in scientific reportage and consists of formal definition plus one or more expository functions aimed at ensuring clarity, e.g.:

Explication; Analysis of Division; Description; Illustration; Comparison; Contrast; Analogy; Elimination; Origins, Causes and Effects; Derivations:

In scientific enquiry "the scientist defines, classifies, generalises, describes, predicts and observes events. These acts of communication are paralleled by expository techniques of definition, classification, generalisation etc." Mackay (1972). The reader, a fellow scientist, learns to identify these techniques and to recognise the rhetorical value of the sentences in the overall argument. Marder (1960) claims that the logical presentation of science is based on the three principles of rhetoric, namely: unity, coherence and emphasis. Unity is evident in scientific prose when the various parts combine in a meaningful way; coherence provides a framework for the combinations of meaning, ensuring a smooth development of the subject. The emphases ensure that the elements of information are given their intended degree of importance.

Individual Functions and Paragraph Coherence in Scientific Discourse

The scientific nature of prose is expressed not so much by the individual functions themselves (we all define, classify and generalise in everyday speech) but by the type of uninterrupted function string cited by Mackay above.

In scientific writing rhetoric controls the amount of information required at any given point in the discourse. (e.g. that needed to justify a hypothesis). Rhetoric organises the information, structuring the linear nature of text into coherent exposition. Jones (1974:24), in describing

scientific discourse has said that "while the conceptual procedures generate meanings and the grammar realizes them it is the rhetoric that organizes the meanings into coherent texts."

Let us, for example, hypothesise a paragraph unit of discourse. The initial proposition, as we have said may have as its rhetorical function 'definition'. This function will often be explicit and easily recognised. The concept being defined can then be named, the class of which the term is a member stated and the essential information about differences which distinguish the concept selected. A second rhetorical function (e.g. classification) may follow explicitly expressed by supplying various information including the name of the class, member of the class and the bases for the classification categories. This might be followed, in turn, by the function of 'generalisation'. These three functional categories of 'definition', 'classification' and 'generalisation' will inter-connect and inter-relate to cohere and provide cohesion within a paragraph. As a string of functions they form a unit of discourse which is not uncommon in scientific prose. The order of content is, of course, in no way intended as a universal account of discourse organisation in any of the sciences. This supra-sentential explicit structure of paragraphs in scientific prose was the subject of Mountford's research. His findings mirror, Urquhart's work in that Mountford claimed that the conceptual process at the paragraph level, with an initial illocutionary act leading to proposition al gots (a sequence of sentences combining into larger coherent units to form a coherent whole) is common to much of scientific prose.

Scientific Discourse Beyond the Level of the Physical Paragraph
Selinker (1978:285) claims that the typical paragraph in scientific prose is "a rhetorical mixture". Paragraphs whose explicit rhetorical purposes are 'description', 'classification'

and 'explanation' for example, may have the buried implicit function of 'defining'. Clearly presupposition plays an important role in the recognition of implicit information. Freedle (1972:362) observed that "overt semantic assumptions invade the structure and semantic import of discourse at every conceivable level, from lexical items to larger units such as sentences and paragraphs". Presupposition may involve the particular specialist meaning of a single lexical item or an entire proposition. Normally the presentation of selected information on a given subject for a given purpose is organised for a set of specialised readers capable of inferential reasoning in dealing within the concepts of their chosen area of study.

Pedagogical Applications of the Discourse Approach in the Teaching of Reading Scientific Prose

-The Identification (by learners) of Explicit Rhetorical Functions

The ability to use the various formal linguistic systems has been seen as a necessary prerequisite for the identification of explicit functions. "There is no point in teaching the code without going on to teach text and discourse, but it is not possible to teach text and discourse unless students have a prior knowledge of the code". (Allen 1973). For Candlin (1975) a knowledge of the code would enable the learner to understand the sequential ordering of sentences in a paragraph, indicating temporal relationships. To recognise discourse relationships the learner would need to be able to be aware of Wilkins' (1972) basic logico-grammatical categories, basic noun phrases and verb phrases and the processes of passivisation, relativisation, nominalisation and thematisation. However, Candlin, Allen and other exponents of what might be called a discourse approach felt that relevant functions, rather than the grammatical code elements, would offer

a satisfactory basis for a programme for scientists. A judicious choice of rhetorical functions relevant to the learners needs was seen to reflect 'the activities of enquiry and exposition in which all scientist regularly engage' (Cowie 1977:79). The materials producer was thought to require a detailed specification of functions performed in, and central to, enquiry in the area of science of the learners involved. Texts could then be selected according to the rhetorical functions they perform and teaching units based on specific functions. Mountford (1975) suggested that idealised texts could best provide the basis of such teaching units. By careful analysis of the prose of a specialist science he attempted to identify typical rhetorical frameworks. He then built up simplified reading passages on these frameworks. In this way he felt that students could learn to recognise and manipulate the different formal devices customarily used to perform specific functions.

- The Identification (by the learners) of Explicit Rhetorical Coherence within Paragraphs

Widdowson (1977:25) suggested that the paragraph would provide a natural unit for each section of a reading syllabus. Within each section new coherence relationships might be introduced. These relationships were assumed to be marked by overt clues which highlight specific functions (e.g. 'for example' marks exemplification; 'that is to say' marks restatement; 'however' indicates concession). Each unit would focus on the coherence relationship of a paragraph type. The propositional content of a paragraph would be clearly mapped out as a framework for recognition and exercises (e.g. 'main statement' - 'support' - 'exemplification' - 'classification' - 'conclusion'). These units (i.e. paragraphs) would be presented in a careful sequence. The conceptual framework built up by this sequence of units was felt to mirror the coherence relationships of scientific prose. Thus Widdowson and Mountford produced

theoretical justifications for their simplified discourse models. They felt that these models were the best means of providing students with a training device for the interpretation of the various levels of meaning within discourse.

- The Identification of Implicit Discourse Features and Inter-paragraph Coherence.

Decoding of the 'total message' (Selinker's term: 1978) of a piece of scientific discourse "requires the simultaneous perception and understanding of not only word meaning but relationships between word, within and between sentences, within and between paragraphs" (Mackay 1978:136) my underlining). To understand the coherence of discourse beyond the physical paragraph the learner/reader will need to recognise the main themes, ideas and overall purpose. Recognition comes from an awareness of the signals of rhetorical change and the implicit subordination of one function to another. However, function shifts are not always recognised by native speakers. Readers with different orientations and interests may extract different main themes, ideas and overall purpose for the same piece of discourse. Implicit relationships between functions are not signalled by overt connectives; connectives are often used differently in different texts. The conscious analysis of overt connectives and of explicit functions does not always facilitate a grasp of function shift. At times rhetorical study in depth slows down the reading pace and thus hinders a grasp of overall meaning.

Pedagogical Implications and Conclusions

Many learners attending ESP courses are adult, literate specialists in their field. It is hoped that they understand the reasoning processes in their science and the concepts as expressed in their native language, Portuguese. It is assumed that they have already been trained in analysis,

explanatory systems and in integrating principles with models. They will now need to translate their knowledge and recognise the same scientific logic in English. Widdowson (1974:28) has said that in discourse terms the learning goal of specialist students should be seen "not as the acquisition of new knowledge or experience but as the extension of what the learner already knows". Cohen (1979:564) has pointed out that explicit functions are dealt with in a similar way in the scientific rhetoric of several languages including English, Spanish and Japanese. Indeed, Sugimoto (1978:195) has remarked on the "striking similarity between English and Japanese technical rhetorical structures". Ewer (1979:30) has claimed that "it looks very much as if, as the logic might suggest, the structure of scientific writing for various purposes, is roughly the same in all languages; hence, for example, the Spanish-speaking reader who is familiar with the organization of scientific writing in Spanish will be able to transfer this knowledge to scientific English". Mage's (1978:164) postulation of rhetorical "universals of scientific and technical discourse" is certainly borne out by my own observations of academic prose in Portuguese within the fields of Economics and Geology.

It would, therefore, seem reasonable to argue for only a limited number of exercises at the level of explicit functions and for these functions and for these functions to be selected from those which are found to be either difficult for Portuguese speakers to recognise or deemed to be important possibly for reasons of frequency within the discourse of the specialist field. (e.g. the typical sequence of ideas in 'cause-and-effect' or 'comparison-and-contrast').

Transfer of rhetorical skills from Portuguese into English might will be enhanced by expliciting authentic statistical figure, flow charts and diagrams together with linear texts to which they refer. The pedagogical advantages or non-verbal texts have been clearly demonstrated by Widdowson (1978).

They reduce the need for verbal explanation and convey the point that the language being learned is applicable to different contexts.

It is with the recognition for implicit rhetorical functioning, relating to inter-paragraph relationships and overall discourse framework, that one can anticipate student difficulties. Students will require training in recognising how explicit functions are subordinated to the overall purpose of writers.

REFERENCES

- Allen, J. P.B.(1974). " Teaching the Communicative Use of English". IRAL.7,I
- Allen, J.P.B.(1975). " English, Science and Language Teaching: The Focus Approach". Educec, Mexico,November.
- Augstein,S.; Thomas,L.(1973)." Developing Your Reading". Open University Educational Studies, Unit 7.
- Beard, R.(1973). " Objectives in Tertiary Science Education" in Billing, Furniss, Aims,Method and Assessment in Advanced Science Education, Hayden.
- Candlin,C.N.et al(1975)."Developing Study Skills in English" in "English for Academic Purposes", ETIC Occasional Paper, British Council.
- Clark,R.81975)."Adult Theories, Child Strategies and Their Implications for the Language Teacher" in Allen & Corder(ed.) Papers in Applied Linguistics. Oxford University Press.
- Cohen, A.D.; Fine,J.(1978)."Reading History in English: Discourse Analysis and the experince of native and non-native readers". in

Working Papers in Bilingualism, 1978, 16,
55-7, Toronto.

- Cooper, M.C. (1974) "Language Roles in the Study of Science",
ELT Documents, The British Council, 74/2 p/p2-10.
- Cowie, A.P.; Heaton, J.B. (1977) "Preparing a Writing Programme
for Students of Science and Technology", English
for Academic Purposes B.A.A.L./The British Coun-
cil.
- Ewer, J.R. (1979). "Preparing Speed Reading Material for EST".
English Teaching Forum, 17, I.
- Freedle, R.O.; Carroll, J.B. (1972). "Reflections" in Language
Comprehension and the Acquisition of Knowledge.
Winston & Sons.
- Harré, R. (1960). An Introduction to the Logic of the Sciences
Macmillan.
- Jones, K. (1964). "The Role of Discourse Analysis in Devising
Undergraduate Reading Programmes in English for
Science & Technology". Unpublished Mimeo. ETIC
The British Council.
- Mackay, R. Mountford, A. (1972). "A Programme of English for
Postgraduate Students in the Faculties of
Sciences, Applied Sciences and Agriculture at
the University of Newcastle upon Tyne". ASLA/
AIMAV Conference, Stockholm.
- Mackay, R. Mountford, A. "Theory and Practice" in English
for Specific Purposes. Longman.
- Mage, T. (1978). "Contrastive Discourse Analysis in EST and SST"
in Trimble, J.T. et al (1978). English for Specific
Purposes: Science and Technology, Oregon State
University.
- Marder, D. The Craft of Technical Writing (1960) Macmillan.
- Mountford, A. (1975) Discourse Analysis and the Simplification
of Reading Materials for English for Specific

- Purposes. Unpublished M.Litt Thesis, University of Edinburgh
- Selinker, L. Trimble & Trimble (1978) "Rhetorical Function Shifts in EST Discourse". TESOL Quarterly, 12.3.
- Sugimoto, E. (1978). "Contrastive Analysis of English and Japanese Rhetoric" in Trimble et al (1978) op. cit.
- Urquhart, A.H. (1976) "The Effect of Rhetorical Organisation on the Readability of Study Texts". Unpublished P.Hd. Thesis. University of Edinburgh.
- Widdowson, H.G. (1974) "An Approach to the Teaching of Scientific English Discourse". RELC Journal, 5.
- Widdowson, H.G. (1977). "The Communicative Approach and its Applications" in English for Specific Purposes: An International Seminar. Paipa, Columbia. The British Council.
- Widdowson, H.G.; Urquhart, A.H. (1978) King Abdul Assis University: Reading Research Project First Annual Report, University of Edinburgh, October.
- Wilkins, D.A. (1972) Grammatical, Situational and Notional Syllabus. Julius Groos Verlag.