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ABSTRACT OF THESIS

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Title of Thesis TOWARDS A PEDAGOGICALLY-RELEVANT MODEL OF DISCOURSE ANALYSIS.

This Thesis reflects my efforts to build up a theoretical framework for the analysis of discursive capacity. By discursive capacity is meant the various procedures used by competent readers for the interpretation of technical and scientific English discourse. A distinction is made between "rules" and "procedures". Among the rules that are considered in the first part of the thesis are those relating to "grammatical", "textual", and "sociolinguistic" competences. These competences are associated with meanings referred to, respectively, as "literal", "situational", and "contextual" or "pragmatic".

The sociolinguistic approach to discourse is surveyed and also, to some extent, criticised. In the second part of the thesis this approach is modified by taking account of some notions discussed, particularly, by certain philosophers of language. These notions are related to discourse analysis; they included distinctions between, for instance: text and textualisation, process of interpretation and product of interpretation, the primary and secondary system of a discourse, statement and discourse-act. The theoretical discussion is interspersed with analyses of specimen texts.

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On the basis of the theoretical discussion there are put forward a number of propositions embodying certain pedagogic implications of the 'theory'. In the third part of the thesis these pedagogic implications are explained and illustrated. A number of exercise prototypes are then suggested.

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T O W A R D S

A P E D A G O G I C A L L Y - R E L E V A N T

M O D E L O F D I S C O U R S E A N A L Y S I S

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Ph. D.

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1976

T O M Y W I F E

C O N T E N T S

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A C K N O W L E D G E M E N T S

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Heikki Nyyssönen

This thesis reflects some efforts to probe into a mysterious notion which may be called "discursive competence". By this is meant an ability to read English technico-scientific text "discursively", i.e. by engaging one's "interpretative procedures". One of the important distinctions to be made, or to be adhered to, in this thesis is that between rules and procedures. In Part One I talk of C-rules or Chomskyan rules, H-rules or Hallidayan rules and C/W-rules or rules of use (named after Criper and Widdowson). These rules I contrast with procedures. The term procedures comes from Cicourel, the ethnomethodologist. I take up this idea in Part One and develop it in Part Two.

Rules and procedures operate as it were on different levels of interpretations. For the sake of convenience I say that procedures operate on a 'higher' level. This higher level is the level of discursive reading. When I analyse discursive reading I draw a distinction, for instance, between "product" and "process". Product is 'objective' while process is 'subjective'. Products of discourse may, in the domain of technico-scientific English, include such 'objective' things as scientific explanations, or generalisations, or definitions. On these there may be a more or less universal agreement. For instance, there may be an agreement on how a certain kind of paint failure is to be explained. However, there are, certainly, various possible ways 'realising' such an instance of 'explanative' discourse. The actual text that we find in a textbook is only one possible "textualisation" of the explanation.

From the textualisation a competent reader can extract the 'intended' product. The reader's actual reading process is, presumably, a mystery - something we may never be able to simulate accurately. However, we can make hypotheses about the process. This is what I do in Part Two. For instance, in the case of an explanation, I hypothesise that the process re-structures the 'underlying' discourse from the textualisation by recovering the 'elements' of the explanation from it; these 'elements' the process then re-organises into the 'explanative' discourse-act. I will illustrate in Part Two. At this point I will only mention that my conception of the process involves the notions of linkage and summarising inference. Linkage inferences relate to the restructuring while summarising inferences relate to the re-organisation. As a consequence the 'meaning' of a discourse becomes a more or less well-defined "web" of inferences, such as is (maximally) supported by the textualisation.

I develop the notion of textualisation in Part One in which I also review, and offer some critical comments on, a number of "alternative" approaches. The approaches that are reviewed may be subsumed under "grammatical", "textual", and "sociolinguistic" competence, respectively. In passing I take up for preliminary discussion certain notions which assume more prominence later on in the thesis. Among these notions are reference, presupposition and implication.

In Part Two the theoretical framework is further developed. In addition to the notions of procedure, product and process, notions such as "primary" and "secondary" system, Statement and Discourse-act are worked out. I will not dis-

cuss these distinctions here: I will merely comment by saying that the terms have been found in a frame of mind which derives from my reading of philosophy of language. I became interested in the philosophy of language after reading Austin and Searle. From there I moved on to Strawson, Quine, Wittgenstein and others. This affected my outlook as well as my style of writing; the style, too, tended towards the "philosophical". I can only beg the reader's forbearance if at times I am abstract, general and terse.

Hence, the model of discourse that I try to build up is 'philosophical' in its inspiration. In its aim, however, it is dualistic: I strive towards a descriptive 'theory' of discourse which would also be pedagogically-relevant. By pedagogically relevant I mean that the 'theory' that accumulates should also help us design teaching materials, such as exercises, which would develop foreign (in particular, Finnish) ESP-learners' discursive capacity. This is a theme that is underlined on several occasions in the thesis itself, as if by way of reminding that the rather abstract theoretical part has (or at least should have) some relevance in the practical domain as well.

In the way that the "survey" part, Part One, is (hopefully) given some structure and coherence by the above-mentioned competences, and in the way that the theoretical part, Part Two, builds upon the notion of the "discourse-situation", the pedagogical part, Part Three, hangs together by being founded upon a number of "implication-statements" which are derived from the theoretical observations. I discuss the pedagogic implications and suggest some applications.

Thus, after hypothesising about what is involved in discursive reasoning I trasfer to the practical problem of how to develop a foreign ESP-learner's discursive reasoning in reading technic-scientific texts written in English. The development of such reasoning should occur in the context of teaching discourse, rather than in the (more traditional) context of teaching a language.

The notion of teaching discourse derives from Widdowson. In the thesis I anticipate this pedagogic consideration by making a theoretical distinction between language and discourse. For instance, I suggest that we can use different notions to characterise the basic principles of language and discourse, respectively. Thus, we can characterise language in terms of grammaticality whereas we can describe discourse in terms of "rationality", at least in the case of serious technico-scientific discourse. It is Chapter 5, specifically, which is preoccupied with rationality, as well as a few other related basic assumptions of discourse. In this Chapter I do not stipulate but merely suggest; the same, of course, goes for the other Chapters as well.

Since each Chapter is preceded by a separate introduction these general introductory remarks may perhaps suffice. The remarks have, I think, high-lighted the theoretical distinctions which are the most central to my approach. At this point I will only add that each Chapter will be concluded by a summary; hopefully these summaries help clarify, retrospectively, the things that are stated (and implied) in the main body of the Chapters.

Introduction

In this part of the thesis I survey some of the literature which to my mind has relevance to discourse analysis. In the course of the survey I try to move towards a certain position which would be my own approach to discourse. The following features are perhaps characteristic of the method adopted in Part One.

1. Rather than being merely expository I also offer some criticism; this comes from the fact that I try to pursue a line of thought with as much consistency as possible.

2. The line of thought pursued by me in this part of the thesis concerns the issue of so-called discursive competence. I have asked myself: what else, apart from mere knowledge of English, is needed for a successful reading of an English technico-scientific text? I do not claim to be able to answer the question at all adequately. Obviously the competence which is required is very complex. However, I wish to shed some light on it.

3. A metaphoric description of discursive competence might be as follows: an ability to read not only the lines but also 'behind' and 'between' the lines of what is written[1]. I want to show that this is not just an empty metaphor. The demonstration will take me beyond linguistics and 'macro-linguistics' into some areas of philosophy - in particular in Part Two.

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1) Cf. Black (1972).

4. The survey that follows by no means aims at being exhaustive; exhaustiveness would rather be in a conflict with my general purposes. Since I want to consider those notions, put forward by others, which have a bearing on my notion of discursive competence, and since I want to go on developing the theme of discursive competence, I have to leave out or merely mention some issues that otherwise would merit more extensive treatment. Here, however, I feel that such issues would stand in the way of the argument. As a consequence of this general policy a number of fairly important notions appear in the footnotes.

5. Part One is, in a way, an introduction to Part Two. In the latter I try to extend and refine the theoretical framework which begins to appear in the former. In Part Two I also present some of my own analyses (or attempts at analyses) of discourse. Nowhere do I claim that the 'theory' or the analyses are more than crude and very tentative. How could it be otherwise since at the moment there is not even geheral agreement on such basic notions as 'text' and 'discourse'?But perhaps we should not despair. For is there even general agreement on what it is that we call 'language' (or a language), to say nothing of 'knowledge of language'? It seems to me that I can begin this Part by looking at these latter, even more basic, notions.

CHAPTER ONE GRAMMATICAL COMPETENCE

1.1 Language and Knowledge of Language

The reader (and especially learner) of English technico-

scientific texts needs to have a knowledge of the English language. But what is language, and what is knowledge of language?

The following are some of the definitions that have been put forward as definitions of language:

(i) a set (infinite) of sentences which is generated by a transformational-generative (TG) grammar (Chomsky 1976).

(ii) a complex of present dispositions to verbal behaviour (Quine 1960; cited in Chomsky op. cit., p. 190).

(iii) a system of signs that expresses ideas; the most important of such systems (de Saussure 1973; quoted in Guiraud 1975, p.1).

There are other definitions but (i-iii) will have to do for the present purpose; they shed important light on different aspects of the same phenomenon. I think one is perfectly justified in referring to language at some times as a set of sentences, at other times as a set of dispositions and at still other times as a system of signs - provided that the reference is appropriate to the task at hand, and provided that one remembers the many-sided character of language. In discourse analysis we are not, of course, concerned simply with language; to my mind at least, language enters into discourse (or a discourse-situation, as I sometimes prefer to say) as the medium of the discourse. In this way language is, however, not only the medium but also something that is constitutive of the discourse (Macquarrie 1967).

If language is either (i) or (ii) or (iii) what,

respectively, is knowledge of language? Let us take (ii) first. In this case a person's knowledge of language would seem to amount to being able to respond appropriately to relevant stimuli; it is close to being able to know "what to say when". I think it is one of the merits of this definition that it implies an interaction between the person and something in the environment; if not an actual interaction, then at least a possible one.

Quine, for instance, of course never goes much beyond the dispositions; on principle, because mentalism is as much a red herring to him as behaviourism is to Chomsky [2]. However, even though Quine is not willing to touch on that something -- whatever it is - which lies behind the "complex of present dispositions", his definition can all the same be said to presuppose some mental or cognitive structure or structures. It is an open postulation of Chomsky that mind is a set of "second-order capacities", which in turn "construct" cognitive structures. These cognitive structures enter into "first-order capacities" to act and interpret experience (1976, p. 38). For Chomsky, the faculty of language is a cognitive structure, on a par with and interacting with other cognitive structures in performance, i.e. in action and interpretation. According to Chomsky a person's knowing a language means that the person has internalised a "sentence grammar" (op. cit., p. 104). It is the sentence grammar that

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2) On mentalism, behaviourism (as well as rationalism and empricism) see Urmson ed. 1960 .

enables the person to 'generate', in prindple, infinitely many sentences, which are all sentences of his language [3]. Since a native speaker of English, for instance, has internalised the sentence grammar of English, the speaker has a grammatical competence of English.

In Chomsky's system there is no causal link between competence (knowledge of language) and performance (use of language)[4]. Chomsky insists that competence neither causes nor explains performance. A theory of competence, or a theory of setence grammar, purports to make explicit what it is that enable a speaker of (say) English to produce and interpret any sentence of English. However, the theory does not even purport to tell us, for instance whether the speaker will actually utter a sentence or what utterance he will make [5].

Corresponding to Chomsky's competence and performance there are the notions of langue and parole in de Saussure's system (Cf. Jakobson 1973, p. 20)[6]. De Saussure stresses the systematic and social nature of language. This emphasis is in accord with Chomsky's ideal of "a system of formal grammar". However, instead of formal grammar de Saussure refers to "signs" which imply a code, which in turn implies

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3) For some comments on the term 'generate' see Blumenthal (1966, in Lyons and Wales eds., p. 82).
4) On the terms 'competence' and 'performance', see Chomsky (1965), Lyons (1970) and Dreyfus (1972).
5) For a distinction between 'sentence' and 'utterance' see Bar-Hillel (1970, p. 328, 340, 369). Also Lyons (1973, in Minnis ed., p. 61).
6) See also Ivic (1970), Widdowson (1973 A) and MacKinnon (1974, in Philosophy and Phenomenological Research, p.224ff).

a message (Cf. Guiraud op. cit.)[7]. Hence, according to de Saussure's definitions, a person's knowing his language amounts to a capacity to use a certain code in order to convey a message. For de Saussure the primary function of language is communication, which for Chomsky is merely a derivative function (Chomsky op. cit., p. 69).

Summing up the foregoing brief and incomplete discussion we might say the following. Knowledge of language is a competence which has a cognitive basis. As a cognitive structure it interacts with other cognitive structures in discourse. However, it neither causes nor explains actual performance. For instance, I have a linguistic competence of Finnish but this competence in itself neither causes me to speak Finnish nor explains how, when, why and so on I speak Finnish. It is clear that complex social, psychological and other factors contribute to any speech event. But it is doubtful whether even the non-linguistic factors could explain the speech event; rather, the factors merely extend the domain of linguistic competence. This extension is, in a way, already implied in the definitions of Quine and de Saussure. The former suggests interaction, while the latter suggests communication. Neither, however, goes on to describe what is involved in linguistic interaction and linguistic communication, although they do

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7) De Saussure has a trichotomy of signs into 'index', 'symbol' and 'sign' proper. The index is causally connected with what it signifies, the symbol is motivated and the sign is arbitrary. The symbol may be individual (as in dreams); the sign is necessarily social, because it is conventional (see Piaget 1973, p. 115).
In the classification of signs put forward by Peirce (see Piaget op.cit.) 'symbol' is an approximation to de Saussure's 'sign', and contrasts with 'icon' on the one hand and 'index' on the other.

admit that much more is involved than mere knowledge of language.

In Chomskyan terms discursive competence would be a kind of "first-order capacity" (see above). It is my self-appointed task to try and shed some light on what is involved in this capacity (and its use), although I cannot undertake to give any detailed account of the mental processes which occur for instance when a person reads a text. Rather I can try to inquire into some of the things that are logically required in order that the person should be able to read the text. One of the things that are logically required is a purely linguistic competence. In any discursive reading this 'grammatical' competence may be taken to interact with other cognitive structures. Again, I am not prepared to say anything about the exact nature of such interaction between cognitive structures, because it is clearly far beyond me. It is enough that I assume the interaction.

The next sections will be devoted to a discussion of Chomskyan grammatical competence.

1.2 "Literal Meaning"

In the discussion that follows I will not take up such matters as Chomsky's theory of mind, his theory of naming, his controversies with Quine and Searle [8], his arguments concerning learning theory and arguments relating to the concept of explanation in terms of either structure or function.

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8) The "sole serious point of disagreement" between Chomsky and Searle concerns the "essential connection" which Searle claims (and Chomsky disclaims) to exist between language and communication; or between meaning and speech acts (see Chomsky op. cit., p. 59).

My concerns is to find out what Chomsky has to say on a basic kind of competence - the competence which would account for our reading of the written lines, if it were the case that we merely read the lines. In such a hypothetical case we would presumably always just recover what Chomsky refers to as the "literal meaning". In the quotation that follows Chomsky talks of the distinction between literal meaning and "communication-intent".

> We must distinguish between the literal meaning of the linguistic expression produced by S and what S meant by producing this expression ... The first notion is the one to be explained in the theory of language. The second has nothing particular to do with language; I can just as well ask, in the same sense of "meaning", what S meant by slamming the door. Within the theory of successful communication we can, perhaps, draw a connection between these notions. The theory of meaning, however, seems quite unilluminated by this effort.
> (1976, p.76).

Literal meaning is meaning whereas communication-intent earns the raised eyebrows, and thus is"meaning". (Literal) meaning is to be accounted for in the theory of language; communication-intent does not belong there, because it has nothing "particular" to do with language. Chomsky allows, however, that the "theory of successful communication" may be able to establish a connection between the notions of meaning and "meaning".

It is clear from what Chomsky says that it is the theory of successful communication which has more bearing on discourse than the theory of language (in Chomsky's sense). However, it may be interesting to pursue the matter of literal

meaning somewhat further; in other words, to imagine a "possible world" in which no more than the literal meaning would be recovered in discourse. Moreover, it is interesting in itself that Chomsky in his "new-fangled" theory of literal meaning makes some new departures - departures which are hardly even implicit in his earlier work (Cf. Chomsky 1957, 1964). It is likely that the work of G. Lakoff, McCawley, Fillmore and others has exerted a considerable influence on Chomsky and so made him shift, gradually, to the present position [9]. The following quotation conveys a fair idea of what I mean by Chomsky's present position.

> Suppose it is a fact, as I now tend to believe, that a suitably enriched notion of surface structure suffices to determine the meaning of sentences under interpretive rules (insofar as grammar is involved in determining semantic properties ...). It may still be the case - I think it is - that initial phrase markers generated by the base have significant and revealing properties. It also remains true that they enter, though now indirectly, into determining the structures that undergo semantic interpretation ...
> (1976, p. 83); my emphasis.

This quotation captures some of the notions that are typical of Chomsky's 1976- position. Some of the changes from earlier days, are, as is to be expected, merely verbal. Thus, for instance, Chomsky now speaks of "initial phrase markers" instead of earlier deep structures. A more significant change

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9) see the papers of G. Lakoff, McCawley and Fillmore e.g. in Steinberg & Jakobovits eds. (1971). Also Fillmore's paper in O'Brien ed. (1971) can be consulted. Seuren ed. (1974) is a recent exposition of the theory of "semantic syntax" (earlier "generative semantics"). For an account of the succession of GT's since Chomsky (1957) see Maclay (1971, in Steinberg & Jakobovits eds.) An insight into a transitional stage in the development of Chomsky's thinking concerning an "enriched" notion of surface structure is provided in Chomsky (1971, in Steinberg & Jakobovits eds.)

has occured in the role of surface structure. It is now the surface structure which enters directly into determining the "meaning of sentences". More correctly, it is now postulated by Chomsky that only surface structures "undergo semantic interpretations". But what does Chomsky now mean by surface structure, and what does he mean by semantic interpretation? It is to the answering of these questions that I turn next.

1.3. "Surface Structure" and "Semantic Interpretation"

Chomsky's surface structures are no longer those of the "standard theory"; according to Chomsky himself, the new status of surface structure obtains by virtue of the "trace theory of movement rules" (op.cot., p.96). On the trace theory the surface structure of (1) is something like (2):

(1) John seems to be a nice fellow.

(2) John seems /$_s$t to be a nice fellow/.

In the notation of (2) the Symbol 's' marks the subject while the symbol 't' marks the trace. In the corresponding initial phrase marker (3) the trace does not, of course, appear while 's' does:

(3) Y seems / $_s$John to be a nice fellow/.

If we compare (3) and (2) we can see that the trace t in the latter marks that position in the former from which the phrase John is moved (by the transformation rule called NP-preposing). Hence it is the position of the trace in surface structure, i.e. in (2), which allows us to determine the grammatical relation of John as the subject of the embedded sentence, the embedded sentence being to be a nice fellow.

By means of his "traces" Chomsky is now able to give a new account of our intuition that (1) displays a subject-predicate relation not only between John and seems but also, and more importantly, between John and the verb (be) of the embedded sentence. Moreover, Chomsky now thinks he can account for this intuition simply by means of surface structure, whereas he earlier said that the relation in question is determined solely by deep structure. At this point, however, one is inclined to ask whether it is quite in order to call something like (2) the "surface structure" since plainly it is (1) which is there on the surface; it is (1) which appears, normally, on the 'surface' of a written page. One is inclined to suggest whether it would be more appropriate to call (2) the "shallow" structure (Cf. Seuren ed. 1974, introd., p.22).

It is not only the notion of surface structure which is confusing in Chomsky's theory of language (1976). Another notion which is similarly at least potentially confusing is that of 'logical form'[10]. 'Logical form' is that which is obtained after an appropriate semantic interpretation has been applied to surface structure. There are various rules of semantic interpretation, and rules accomplish various things.

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10) Chomsky consistently writes 'logical form' (with the single quotes).

According to Chomsky

> The rules of semantic interpretation assign the scope of logical operators ... and fix their meaning, assign antecedents to such anaphoric expressions as reciprocals ... and necessarily bound anaphors (e.g. "his" in "John lost his way", where "his" must refer to John, as contrasted with the unbound anaphor "his" in "John found his book", where "his" may refer to any male, including John). The result of application of these rules we may call 'logical form'.
> (op. cit., p.104).

In Chomsky's idiom, then, grammatical eompetence is what enables English speakers to recover the 'logical form', i.e. the literal meaning, of any sentence of English. They, as it were, pair the surface form of the sentence with its 'logical form' (Cf. Lakoff 1972, in Davidson and Harman eds., p. 549). As a result of this pairing they recognise such things about the sentence as the semantic and syntactic properties of the words, the subject-predicate and verb-object relations, the scope of the logical expressions and their meanings, the references of the anaphors, the "thematic" relations, such as agency, goal and instrument (Fillmore 1968, in Bach and Harms eds.; 1973 in Shuy ed.). According to Chomsky the speakers even recognise the presuppositions, if any (op. cit., p. 116)[11].

Now I can try to express what it is that I find con-

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11) On presuppositions, see also Kiparsky and Kiparsky (1971, in Steinberg and Jakobovits eds.), Fillmore (1970, in Synthese 21) and Selinker et al. (1974, p. 27).

fusing in Chomsky's notion of 'logical form'. It is not simply that the term itself is ambiguous (see below). It is rather that some of the content of the term is ambiguous between a semantic and a pragmatic interpretation. By "some of the content" I mean especially the notions 'reference' and 'presupposition'.

When Chomsky says (in the above quotation) that in the sentence 'John lost his way' the phrase his must refer to John, and that in the sentence 'John found his book' the phrase his may refer to any male, including John, one is tempted to query: what John? And: since we do not know this John, what distinguishes him from any other male? It is clear that we cannot get any answers to these questions. But the questions arise only because Chomsky makes no distinction between reference and cross-reference.

Other queries might relate to Chomsky's notion of presupposition. For instance, in the sentence 'John lost his way' is the presupposition intended by Chomsky (4) or (5)?

(4) John was on his way somewhere [12].

(5) John exists.

Or are both (4) and (5) intended? These questions arise because Chomsky does not differentiate between various kinds of presupposition.

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12) The sentence 'John lost his way' asserts that John lost his way, and presupposes that John was on his way somewhere. The corresponding denial negates the assertion but the presupposition is not affected (see Kiparsky and Kiparsky op.cit.).

In the next section I will consider two kinds of reference - reference and cross-reference - and I will also make a distinction between two kinds of presupposition, semantic and pragmatic.

1.4. Reference and Presupposition.

It is often emphasised that it is primarily speakers, rather than linguistic expressions, which refer to things (Linsky 1971, in Steinberg and Jakobovits eds). If we follow this maxim we cannot say, simply, that in 'John lost his way' his refers to John. However, if this is said, then it might be understood as being shorthand for something like: the speaker of the sentence uses his to refer to John. This is still shorthand. More correctly we could say: the speaker uses the sentence (to make a certain statement) and thereby he uses the phrase his to refer to John.

It is doubtful whether Chomsky (in the above quotation) would go along with the foregoing analysis of the kind of reference that he has in mind. Chomsky is concerned with sentences, rather than the use of sentences [13]. He himself does not use the sentence 'John lost his way'; he mentions it. He quotes or exemplifies it. He imagines the sentence to be uttered by some speaker in order to state about a male called John that John lost his way. However, as a statement this is quite vacuous because there is no actual reference made - merely a possible reference imagined.

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13) On the distinction between a sentence, a use of a sentence and an utterance of a sentence, see Strawson (1971,p.6). The distinction is taken up by Widdowson (1973A). Widdowson now has "use" as a technical term to refer to "the way in which the language system is realised for the expression of propositions and the performance of illocutionary acts" (Widdowson Mimeo 1).

Instead of writing: "his" in"John lost his way" refers to John, Chomsky might have written: "his" in "John lost his way" refers to "John". Had he used the double quotes all the way he would have avoided any confusion. By using the double quotes he would have indicated that the phrase his was meant to cross-refer to the co-ordinate term John, rather than refer genuinely to some person. As it is, Chomsky almost invites confusion between reference and cross-reference and between use and mention. The consequence is that it is not crystal-clear, at least to me, whether or not Chomsky always succeeds in keeping his theory of language quite separate from the theory of "successful communication". Obviously the use of sentences, in the sense of successful use of sentences, belongs in the latter theory. Therefore it is up to Chomsky to clearly indicate that he is not venturing into the domain of use. Grammar may be concerned with the interpretation of sentences; but it cannot be concerned with the interpretation of utterances, for the reason that "a grammar cannot possibly include all the speaker needs to know for the interpretation of utterances" (Widdowson 1973A, 6.4.1).

I also think that Chomsky might have clearly indicated that his rules of semantic interpretation can only recover such presuppositions as (4), while they are unable to recover such presuppositions as (5). Appropriately the first kind of presupposition may be called semantic, whereas the second kind of presupposition might be called pragmatic (Cf. Stalnaker 1971, in Synthese 22). A 'pragmatic' presupposition such as (5) is an assumption about something's or someone's

existence (Black 1972, p.135). Hence it is clear that pragmatic presuppositions are to be accounted for in the theory of successful communication, rather than in the theory of language. A speaker or writer must gain his hearer's or reader's assent to the presupposition of existence, concerning the topic of his talk, otherwise the intended sommunication will become null and void.

It is obvious that in an actual discourse-situation we are able to recognise when a presupposition of existence is intended, and it is important that we recognise such an intention. However, a grammatical example only implies an imaginary discourse-situation (if it implies even that) and therefore the matter of a pragmatic presupposition does not arise for a grammarian. I am sure that Chomsky would agree with this. What I am not quite sure of is whether he fully realises the ambiguity of the term presupposition.

1.5. 'Logical Form'

I have now indicated some things about Chomsky's concept of 'logical form', and I have also indicated why I find that it is not always quite clear what he has in mind. Since his intentions are sometimes unclear, one is liable to misinterpret what he says. Misinterpretation can, of course, affect anyone; however, one would expect a scholar of Chomsky's standing to make every effort to avoid ambiguity wherever ambiguity may hinder rather than aid communication.

I will now go on to discuss 'logical form' some more; I will, in particular, review a further application of the trace theory in semantic interpretation. We can consider the active-passive pair (6-7):

(6) Beavers build dams.

(7) Dams are built by beavers.

Under the trace theory, the surface structure of (7) would be something like (8):

(8) Dams are $/_{VP}$built *t* by beavers/.

Chomsky says that in order to understand (7) we must know that *dams* is the subject of that sentence; but also we must know that in another sense *dams* is the object of the verb *build*. According to Chomsky all this information, necessary for the understanding of (7), is conveyed in the surface structure, i.e. in (8). In particular the position of trace *t* (which is 'bound' by *dams*) serves to indicate that it bears the appropriate semantic relation (that of an object) to the verb *build*. Thus the active (6) and the passive (7) have in common the relation verb-object; this accounts for the similarity in meaning between the two sentences. Of course, the pair of sentences have also in common the relation subject-predicate, but the subjects differ whereas the object is the same. It is this difference in the word occupying subject position which accounts for the difference in meaning between the sentences. But in what does the alleged difference in meaning consist?

Chomsky sharpens his statement somewhat by saying that sentences (6) and (7) "plainly differ in *range of meaning*" (op. cit., p.97); my emphasis). He goes on:

Sentence (7)[14], in its most natural interpretation, states

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14) Changed numbering

> that it is a property of dams that they are built by beavers. Under this interpretation, the sentence is false, since some dams are not built by beavers. But there is no interpretation of sentence (6) ... in which it asserts that dams have the property that they are built by beavers; (6) cannot be understood as referring to all dams. Sentence (6) states that beavers have a certain property, namely, that they are dam builders, but does not imply ... that their activities in dam building account for all dams; in fact, (6) might be true if beavers never exhibit their species characteristic, say, if all beavers are in zoos. (p. 97-98).

Adapting the Tarskian formula we might put Chomsky's dictum concerning (7) in the following form: the sentence 'dams are built by beavers' is true (in English) if and only if all dams are built by beavers. Since some dams are not built by beavers the sentence is false [15]. Hence "in its most natural interpretation" the passive (7) is false whereas its active counterpart (6) is true. Hence (7) and (6) differ in range of meaning.

Chomsky invites us to note that in the examples (6-7) "a question of quantification seems to be involved" (p.98). The quantification is determined by surface structure; this surface structure of (6) determines that the 'logical form' of the sentence will be (9):

(9) For all beavers, beavers build dams.

Correspondingly, the surface structure of (7), i.e. (8), determines that the 'logical form' of that sentence will be (10):

(10) For all dams, dams are built by beavers.

In other words, sentence (7) states that "it is a property of dams that they are built by beavers", whereas sentence (6) states that "beavers have a certain property, namely, that

15) Tarski's formula allows one to talk of a sentence as true or false (in some language, i.e. in L). This usage need not be in conflict with the dictum according to which "it is senseless to ask, of the sentence, whether it is true or false" (Strawson 1952, p.175; orig. emphasis).

that they are dam-builders." In the quotation Chomsky says, further, that sentence (6) does not imply that the activities of beavers in dam building account for all dams (my emphasis).

The foregoing conveys the essentials of Chomsky's argument relating to the active-passive pair (6-7). In the next section I will offer some comments on the argument.

1.6. Some Comments on the 'Logical Form'.

The comments that follow relate to the questions (i-iii):

(i) the "naturalness" of interpretation

(ii) kinds of ambiguity

(iii) statement and implication.

First of all I would like to query whether a grammarian who deals with context-free sentences is justified in speaking of the "most natural interpretation" of a sentence. It would seem to me that we can only speak of a given interpretation as more or less natural by paying careful attention to the context (Cf. Harré 1967, p.15). Chomsky says above that sentence (7), "in its most natural interpretation, states that it is a property of dams that they are built by beavers". This formulation indicates to me that Chomsky is not treating (7) quite strictly as a sentence, but rather is imagining that (7) is stated or asserted by someone. However, a statement or an assertion always takes place in a context, and Chomsky is not giving one.

Without a context it is rather "unfair" to assign the most natural interpretation to a sentence like (7), or to an imagined statement supposed to be made by a use of that sentence. For, clearly, what in a given case is the most natural

interpretation depends on the context. In the two examples below I give some indication of the context by dint of expanding the sentences somewhat. By means of the examples (11-12) I want to cast some suspicion on the claim that the "property-reading" is, necessarily, the most natural reading of a sentence like (7).

(11) Dams are built, for example, by beavers.

(12) Dams are built by beavers, but not, so far as I know, by any other non-humans.

According to Chomsky, the sentence 'dams are built by beavers' should, in its most natural interpretation, be false in both contexts; however, I do not find it false in either. It seems to me that (11) is, so to speak, a "true example" of dam building. To my mind it does not state either that it is a property of dams that they are built by beavers or that it is a property of beavers that they build dams; and much the same goes for (12).

Of course, we may still grant it to Chomsky that the "literal" meaning of (7) is something like (10); my comments only suggest that the literal meaning and the most natural interpretation are two different things - and not the same thing, as Chomsky seems to be saying.

Next I would like to add the suggestion that a universal quantification does not, necessarily, attach to the plural form in subject position of (say) a passive sentence such as (7). It appears to me that Chomsky is saying that a universal quantification does so attach; if he really is saying so, then I do not agree. I would like to suggest that a plural

form in such a position is or may be ambiguous between a universal ("all") and a particular ("some") reading. As an example consider (13):

(13) Dams are built of a variety of materials.

Obviously (13) does not state that all dams are built of a variety of materials; nor does it state, simply, that some dams are so built. Rather, (13) states that all dams are built of some material (which is obvious) and that the material (or materials) may vary from dam to dam. Hence writing the literal meaning of (13) as the 'logical form' (14) would be a distortion:

(14) For all dams, dams are built of a variety of materials.

I would add that the ambiguity which is inherent in the plural form in subject position enables an economy of expression and is not incompatible with clarity in terms of the task at hand[16].

I continue with the theme of ambiguity. Let us assume that a plural form in subject position may be ambiguous; let us call this kind of ambiguity "ambiguity of construction" (Cf. Quine op.cit., p.135). I think that Chomsky might as well have drawn our attention to the existence (and availability) of such ambiguity. However, it is true that in the case of sentence (6), i.e. 'beavers build dams', he at least implicitly talks of ambiguity of construction. In order to make the matter quite explicit we can say that the construction which is ambiguous in (6) is something like (15):

(15) A plural form as <u>object</u> of a verb that is used

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16) It may be argued that a plural form in subject position is affected by vagueness, rather than ambiguity; but that does not matter in the present case. (On vagueness and ambiguity, see Quine op.cit.).

"dispositionally".

The plural form dams is the object of the verb build which is used dispositionally (as noted by Chomsky in the quotation). Hence the import of (6) is not just that there are, were, or will be dams that beavers will have built; the import is, rather, that beavers are regularly disposed to build dams, "given certain favourable and not exceptional conditions" (Quine op. cit., p.134).

Thus Chomsky's examples, (6) and (7), exhibit two kinds of ambiguity of construction: the first kind is that which affects a plural form as subject, the second kind is that which affects a plural form as object (of a verb used dispositionally). As a "counter-example" to the latter case consider (16):

(16) People build dams.

Here, there is no similar ambiguity; no temptation to read the sentence as asserting that it is a property of people that they build dams. Correspondingly, there is no temptation to read (17):

(17) Dams are built by people

as asserting that it is a property of dams that they are built by people. I suggest that both (16) and (17) are so trivially true that there is, normally, no good reason to assert either.

Lastly, I would like to comment on the dictum of Chomsky that sentence (6) states that beavers have a certain property (are dam builders), but does not imply that their activities in dam building account for all dams. I return to the dichotomy statement-implication later on. Here, I want

to raise the suspicion that Chomsky is not, perhaps, using the dichotomy coherently. I agree (obviously) that a sentence like (6), i.e. 'beavers build dams', states or, rather, may be used to state something about beavers. For instance, (6) may be used (qua a statement) to describe beavers as dam builders. Such a description involves a recognition that beavers are members of the class of dam-builders. Hence when Chomsky says that (6) states that beavers have the property of being dam builders, he is, in effect, treating that sentence as a description.

Now we can note that Chomsky gives the same treatment to the passive member of the pair, i.e. (7). According to him, (7) states that it is a property of dams that they are built by beavers. Paraphrasing Chomsky's dictum we might say: dams are members of the class of things that are built by beavers. This paraphrase is nonsense (I suggest), and it follows that qua a description (7) is equally nonsensical. In other words, as a "descriptive sentence" (7) is not so much false as a piece of nonsense [17].

So far, I have suggested that Chomsky (in the above quotation) fails to make coherent use of the notion of statement. Now I want to suggest that, as a consequence, Chomsky fails to make coherent use of the notion of implication. For rather than say that sentence (7) states that all dams are built by beavers, I would say that (7) implies or may imply so. Hence

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17) Cf. Wittgenstein's notion of use or assertion conditions (Hacker 1972, Ch. 10).

a statement made by using (7) is nonsensical also in the sense that it carries an implication which is patently false. What I am suggesting might be put in a slightly different way: as a statement (7) does not belong in "rational" discourse [18].

1.7. Summary of Chapter One

This chapter focusses on grammatical competence, i.e. knowledge of language (English) in the Chomskyan sense [19]. It is possible to view a person's grammatical (or linguistic) competence as the basis of his discursive competence, i.e. the "first-order" capacity that he has to interpret discourse. The person has internalised a theory of his native language, a "sentence grammar" (in Chomsky's sense). This means that the person has "acquired" a certain cognitive structure. In discourse interpretation the linguistic cognitive structure interacts with other structures; one of the other structures is so-called "common-sense understanding", which is discussed by Chomsky (op. cit., p.35).

Chomsky is pre-occupied with grammatical or linguistic competence; in a parallel fashion I am concerned with a wider discursive competence. Hence the object of my inquiry is not performance, and I do not try to build up any theory of performance (Cf. Chomsky op. cit., Ch.2 and Wales and Marshall 1966, in Lyons and Wales eds.). I agree with Chomsky

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18) See below. On the notions 'grammaticality' and 'sensicality', see Sampson (1975). Sampson (I think rightly) links the latter notion with Wittgenstein's idea of "depth grammar" (op.cit.,p.105). On depth grammar, Wittgenstein (1953) may be consulted. (Also Kenny 1973, Hacker op.cit.).

19) For a recent critique of Chomsky, see Cooper (1975).

that the actual way in which cognitive structures are put to use belongs to the study of performance (behaviour). As I see it, a theory of competence can only hypothesise about the things that are, as it were, logically necessary for the performance of a certain act of interpretation.

From a pedagogical point of view grammatical or linguistic competence is only relevant if we restrict our attention to the level of usage, i.e. to the way in which the language system is "manifested" (Widdowson Mimeo 1). However, one must not forget that linguistic expressions have literal or strict meanings, which are, in a sense, determined by the code. Hence what we can "mean" by a piece of language is, to a certain and very significant extent, constrained by the fact that we cannot choose to have the piece of language "mean" other than what it does. Normally our mutual understanding depends on this function of the code [20].

Chomsky draws a distinction between the theory of language and the theory of successful communication. The former studies literal meaning, whereas the latter studies "communication-intent" and may also be able to draw a connection between the two kinds of meaning. It is true that the notion of literal meaning is not very meaningful outside the sentence (Widdowson, personal communication). Still, it is an interesting notion, in particular when described as the 'logical form'. 'Logical form' is the result of application of the

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20) Cf. the experiment of Wittgenstein's in which he invites us to say 'It's cold here' and mean 'It's warm here' (See Kenny op.cit., p.142-143).

rules of semantic interpretation to surface structure. Here I will not repeat what kind of rules are involved. Instead, I will offer a few additional comments on the notion itself.

The term "logical form" is, of course, an old "war-horse". In one of its senses it relates to Carnap's and Wittgenstein's idea of an ideal language of science (Cf. Passmore 1957). In an ideal language all the terms would be precisely defined and the sentences would unambiguously reveal their "logical form"; there would be no ambiguity, no vagueness and no "open texture". Such a language would not, of course, be a natural language; ambiguity, vagueness and open texture are essential features of a natural language (Cf. Quine 1960, Alston 1964, Waisman 1965).

In a second sense "logical form" relates to such matters as the distinction between the logical subject and the grammatical subject [21]. Finally, in a third sense, the term "logical form" relates to operations used in formal logic to reduce natural-language statements and arguments to their so-called "standard forms" (Copi 1972, p.218). For example, (17) is a statement in natural language and (18) is its standard form:

(17) Jones loses a sale whenever he is late.

(18) All cases in which Jones is late are cases in which Jones loses a sale.

The word cases, which appears in both the subject and predicate of (18), is said to be a "parameter", i.e. an auxiliary

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21) For instance, the logical (as distinct from the grammatical) subject of 'New York is north of Buenos Aires' is, surely, as much or as little Buenos Aires as it is New York; for this proposition isequivalent to, it entails and is entailed by, 'Buenos Aires is south of New York' (Cf. Flew 1971, p.323).

symbol which helps express the original statement, (17), in standard form.

Obviously Chomsky's 'logical form' is different from, although related to, the other senses of the term. The main difference may be in that in Chomsky's usage the term is, despite its name, a grammatical concept. It is a term used in grammatical analysis. For instance, we can take a sentence from an operational, as opposed to a quotational, text and give its 'logical form' in the simple Chomskyan notation [22]. Consider text (19):

(19) Electrical wires are, of course, made of metal; and metals are better conductors of electricity than are any other type of material (...)
(Rossotti, Introducing chemistry, p.55).

With reference to (19) we might say that the success of a 'textual', as opposed to a 'discursive', reading of the text depends, partially, on a recognition that the meaning ('logical form') of the two sentences used in the text involves a universal quantification, as shown in (20) and (21):

(20) For all electrical wires, electrical wires are made of metal.

(21) For all metals, metals are better conductors of electricity than any other type of material.

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22) The distinction between operational and quotational 'instance of language' is made by Halliday (1975, in Davies ed., p.10). In Halliday's strict usage only an operational instance of language is a text.

However, it may be remembered that I suggest an alternative treatment; in my view (19) could be a statement made by using two sentences, and this statement would carry the implication which is expressed in (20) and (21).

CHAPTER TWO "TEXTUAL COMPETENCE"

Introduction

Simplifying, we can perhaps say that Chomsky's language is primarily structure. So grammatical competence is mainly structural, knowledge of sentence structures. Chomsky's linguistic expressions (sentences) are products of base rules and transformational rules. Emphasis in his theory falls on these rules as well as on the rules of semantic interpretation - "interpretive rules" in his sense. As we have noted, interpretive rules recover the literal meaning of a sentence - "sentence meaning", for short. In his up-dated theory Chomsky refers to sentence meaning as 'logical form'.

It may be said that a person who is able to recover the 'logical form' of a sentence is also able to say, for instance, whether the sentence is "deviant". The fact that a person is able to spot deviance indicates that he follows rules [23]. The deviance is usually said to be either syntactic or semantic; however, Chomsky now thinks that the question 'syntactic or semantic?' does not make much sense, and that no reasonably clear criteria exist to settle the question (op.cit., p.95). It is true that deviance comes in various guises, and that the interest should focus on deviance it-

23) See Levinson (1967, in Fann ed.A, p.305).

self rather than on the several forms that it may assume. Thus sentences (22-24) are, in some sense, deviant [24];

(22) My aunt is a woman.

(23) My aunt is a man.

(24) Golf plays John.

It may be said that (22) is vacuous, (23) contradictory and (24) 'absurd'. This is strictly on the level of the sentence. We must not make the mistake of imagining contexts for (22-24) because imagining a context means moving outside the sentence, into the domain of utterance and statement, i.e. into the domain of use, as distinct from usage (Widdowson Mimeo 1). I have suggested that Chomsky himself is liable to break outside the sentence; he is liable to imagine functions for the sentences that he mentions.

Simplifying again, we can perhaps say that for Halliday language is primarily function. So his approach suggests a competence that is functional; for convenience I will say that such competence is "textual".

Halliday's linguistic expressions, which he calls "clauses" rather than sentences, are products of choice, made from the language system or "meaning potential" (1975, in Davies ed., p.11). The clauses are not context-free but are constituents of a given "operational" text; hence we might say, perhaps, that in Halliday's theory emphasis falls on text. A central notion is that of "situation", used in a strictly technical sense. It is the situation which "provides an essential

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24) The examples are taken from Wales and Marshall (op.cit., p.61).

link between the linguistic system and the text" (op.cit., p.14) [25]. Tentatively, we might say that "meaning" for Halliday is primarily situational.

Halliday views language from the standpoint of the child; he is concerned with the way in which "the child exploits language in the learning of other things - in the learning of culture, in fact" (op. cit., p.9). In Halliday there is a shift of emphasis, from the learning of language (and even from language itself) to the learning of culture. Language becomes a means, the means of acquiring cultural rules [26]. However, before a child can acquire the cultural rules which apply, for instance, in Britain he has to learn to "mean" and to assign "meaning" in English. Learning how to "mean" must, itself, involve rules; thus we must attribute to the child some variety of interpretive rules as well. Tentatively, we may say that while Chomskyan interpretive rules (C-rules, for short) comprise a major part of a person's grammatical or linguistic competence, Hallidayan interpretive rules (H-rules, for short) constitute a major part of a person's textual competence. We have already taken a look at C-rules. Now we might ask: what does Halliday say about H-rules?

2.1. Text and Situation

As we have already noted, in Halliday's usage text refers

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25) Halliday's situation is Malinowski's "context of situation". See Malinowski (1972, in Adams ed.); also Blau (1971, im Thompson and Tunstall eds.). The notion of context of situation was taken up by Firth (1957). On Firth's theory of meaning, see Lyons (1966, in Bazell et al. eds.). On an American view of Firth and the London School of Linguistics, see Langendoen (1968).

26) Cf. Bernstein ed. (1971, 1972).

to an instance of language that is operational, as opposed to citational; everything that is said or written in some living context of use (op.cit., p.10). A typical instance of a Hallidayan text is a spoken dialogue between a child and a grown-up. When Halliday analyses a text his point of view is that of an external observer; hence his theory is written in the metalanguage of the observer, rather than the participant (Cf. Cherry 1955, in Ayer et. al., p.49). Halliday says that he studies "how in the course of the most ordinary linguistic interaction the child is all the time learning the structure of the environment ... in all its aspects, material, logical, institutional, and social" (op.cit., p.10) [27]. In other words, Halliday studies the ways in which the child, through language, learns various kinds of rules. In this sense Halliday views things from the child's standpoint as well. However, in another sense which is also relevant to us Halliday does not take the child's standpoint; he fails to show how, in the first place, it is possible for the child to assign a meaning to the happenings that occur in the course of an interaction. I mean that Halliday never discusses how the child himself sees or defines the situation [28]. Halliday only presents his own

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27) On the development of Halliday's views, see e.g. McIntosh and Halliday (1966); Halliday, McIntosh and Strevens (1964). Among the wealth of articles by Halliday we may note those in Fishman ed. (1968), O'Brien (1968), Lyons ed. (1970) and Householder ed. (1972). The grammar created by Halliday is known as "systematic"; see Muir (1972).

28) Cf. McHugh, below.

29) Halliday here relates his scheme to that of Hymes (see below). On speech styles (mentioned by Halliday), see Joos (1962); Leech (1966).

definition of a situation or, more exactly, a situation-type. I quote [29]:

> A situation type ... is characterised by a semiotic structure ... This structure is interpreted on three dimensions; in terms of the ongoing activity, the role relationships involved, and the rhetorical channel. The first of these, the field, corresponds to Hymes' 'settings' and 'ends'; it is the field of action of the participants in which the text is functioning, including the subject-matter as a special case. The second, the tenor, which corresponds to Hymes' 'participants' and 'key', refers to the role relationships among the participants ... including speech styles or levels of formality ... The mode, roughly Hymes' 'instrumentalities' and 'genre', is the channel or wave-length selected ... it includes the distinction between speech and writing.
> (1975, 14; my emphasis).

To summarise. The "structure of a situation type is "interpreted" in terms of three basic notions; Field, Tenor and Mode. The question that arises is: interpreted by whom? Obviously by Halliday, but possibly by the child as well.

We have already noted that Chomsky attributes sentence grammar to grammatically- competent speakers and hearers; linguistics in his view is a part of theoretical psychology (1976, p.102). As a thought experiment we may suppose that Halliday's scheme of situation types forms part of a person's textual competence. On such an assumption, a person is able to recognise a situation token as a token of a particular situation type, somewhat in the same way that he may be supposed to be able to recognise a sentence token as belonging to a specific sentence type. Then it would follow that the person is capable of analysing the situation token (in which he finds himself) into the three components: field, tenor and mode. The 'merit' of this thought experiment is that it allows a shift of the viewpoint from external to internal; we so to

speak attribute the analytical scheme of situation types to the person or persons involved in the linguistic interaction. I return to the matter later on.

According to Halliday the components of the "semiotic structure" of a situation type are, in fact, the environmental determinants of text; given a sufficient knowledge of the situation in terms of the three components "we can predict a great deal of what the speaker is going to say, with a significantly high probability of being right" (op.cit., p.13). We can imagine Halliday saying: if I know enough about the situation I can predict a great deal of what the speaker is going to say. The sense of such a claim would, of course, turn on the intended sense of say. There are senses in which the claim is patently obvious and trivially true. But let us consider that, according to Halliday, we can and do say.

2.2. The Organisation of the Linguistic System

On Chomsky's view we are, in principle, capable of uttering infinitely many sentences of our language; moreover, the sentences may, in principle, be of infinite length and complexity.[30] In such an idealised system the only constraints are those imposed by grammatical rules; no constraints of psychological or social nature apply. When we move on to Halliday At least two of his notions have a bearing on the question what we can and do say.

First, there is the notion of the linguistic system (in

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30) See Greene (1972, esp. p.189).

Halliday's sense); secondly, there is the notion of register [31]. For my purposes, I can think of Halliday's linguistic system as mainly a semantic one, "considered not from a conceptual but from a functional point of view" (Halliday op. cit., p.12). Hence the semantic linguistic system has a functional organisation; it consists of three basic components, and so parallels the organisation of situation types. The components, which may also be regarded as the basic functions of language, are called "ideational", "interpersonal", and "textual" [32]. The first of the components

> is the speaker's meaning potential as an observer; it is the content function of language, language as about something. The second is his meaning potential as an intruder; it is the participatory function of language, language as doing something. The third is the text-forming potential, that which makes language relevant.
> (op.cit., p.12)

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31) The variety according to user is a dialect while the variety according to use is a register (Halliday, McIntosh and Strevens op.cit., p.77). There is an 'early' discussion on register in the same (p.87ff.). More information on register is to be found in Strang (1969, p.21), Derbyshire (1969, p.84-85), Crystal and Davy (1969, Ch.3). See also the review of Crystal and Davy by Hendricks (1971, in Language 47). On register analysis, as distinct from discourse analysis, see Widdowson (1973A).

32) Halliday's trichotomy of language functions parallels but does not coincide with the trichotomy put forward by Buhler (1934). Buhler has Kundgabefunktion, Auslösefunktion, and Darstellungsfunktion; on commentary, see Piaget (1973, p.52-53), Popper (1976, p.74ff.). Jakobson's well-known list of language functions comprises; conative, emotive, metalingual, phatic, poetic, and referential (1960, in Sebeok ed., p.353ff.).
On language functions, see also Guiraud (op.cit., p.6); W.P. Robinson (1972, Ch.2).

Halliday adds that the components are not merely functional; they also have a formal aspect because

> they constitute the basic organising principle of the lexico-grammatical system; this is what enables - and disposes - the child to learn the lexicogrammar; since the system is organised along functional lines, it relates clearly to what the child can see language doing as he observes it going on around him. (loc. cit.).

To sum up: being functionally organised, language enables one to refer to something external to the language and so to talk about that something. For the same reason language enables one to do something: language participates or intrudes in one's actions. Language also enables one, in the first place, to say something, to issue an utterance, to form a text. Using language one can "mean" in the sense that one can refer, one can "speech-act", and one can express and represent one's thoughts as text. Halliday notes that it is the textual function of language which makes language relevant. I would add that it makes language relevant to discourse.

It is easily seen that the ideational function relates to the component of a situation which is called the field: if we had no language we could not talk about anything. We could not, for instance, negotiate a settlement or arrive at a marriage contract (Cf. Hymes 1972), in Gumperz and Hymes eds., p.61). As for the inter-personal function, this relates to the tenor component; by means of language we are able to inter- and transact as well as co-operate; we can issue commands, ask and grant permission, make plans and so on [33].

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33) see over

Lastly, the textual function is associated with the rhetorical mode; language enables us to "textualise" (in my term), in speech or writing. Thus it is, perhaps, the textual function which is the most fundamental, even though it comes last on the list [34].

We can view the Hallidayan system as complementing the Chomskyan one. Something like Chomsky's theory is necessary to account for the fact that we possess a language potential which is infinite though we are finite beings. However, a potential is hardly enough unless we can realise it or some of it. We may not even be aware of our potential for infinite creativity in language, whereas we are always more or less conscious of using language, of making language relevant.[35]. It is the more or less consciously, and purposively, exercised textualising function that can, perhaps, account for the actual relevance of language. Chomsky's theory entails that one can, in principle, say anything (without "meaning" anything by it, though); but not everything is actually relevant. To put it in a slightly different way, not everything

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33) It is suggested by Waddington that language may have originated and developed to enable co-operation in hunting groups (1973, in Kenny et al., p.103). Be that as it may, it is clear that the interpersonal function relates not only to the notion of speech action but also to Wittgenstein's notion of language-games (see Kenny op. cit., p. 162ff.).

34) In the words of Widdowson, the function of texts is to realise discourse (1973A).

35) Monod associates Chomsky's creative function with one of the prime functions "performed by the brain in the animal series", namely, the "simulative function". Monod writes: "Even in its humblest employments language is almost always innovative: for it translates a subjective experience, a particular simulation that is always new" (1974,p.145).

that is textualisable is actually textualised. These reflections yield a first, and rather trivial, answer to the question that was posed at the beginning of this section, namely: we can and do say what we can textualise and what we think worth textualising.

So next we must inquire into Halliday's views on textualisation.

2.3. "Meaning Potential"

It is obvious now that Halliday's linguistic system and Comsky's language are basically very much the same thing; both are 'potentials'. As we have seen, Halliday calls language the "meaning potential". According to Halliday we may think of the meaning potential as the whole semantic system of the language, or alternatively as a specific sub-system , which is associated with a particular class of situations. In the end Halliday opts for the second alternative; he argues that we cannot describe the whole semantic system, whereas the sub-systems are more accessible (op.cit.,p.11). Hence the meaning potential which is 'available' in a given situation consists of a "set of options" which are specific to that type of situation [36].

Now we are in a better position to 'zero in on ' textual-

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36) Halliday thinks it is impossible to describe language as consisting of an infinite number of situations, or speech-events (in the terminology of Gumperz and Hymes). However, as Chomsky's work bears out, it is not impossible to describe something that is potentially infinite, for it is possible to formulate recursive rules. See Lyons (1973, in Minnis ed.,p.68); Lees (1974, in Harman ed., p.71).

isation à la Halliday. Our textualisation is always constrained by the situation. The situation provides an essential link between the code and the text. This link refers to the (alleged) fact that a given situation is always associated ('paired') with a given set of options in meaning. A situation-specific set of options constitutes a semantic variety or register. Hence any text is always an instance of some register. What we can and do textualise depends, according to Halliday, on the register.

Let us pick up a few earlier threads. One was dropped at the point where we began to look to Halliday for an insight into 'rules of textual interpretation', the so-called H-rules. In passing we took account of the claim of Halliday's that given the necessary facts he could predict what the speaker is going to say. Since we now have a better idea of what Halliday means by 'say' we can, perhaps, try to assess the claim. Previous to any assessment, however, I will illustrate some of the things that anyone can predict or, rather, anticipate, in one type of situation [37].

I am thinking in terms of a situation of the following sort. The Chancellor of the Exchequer is going to give a television address on the new Budget, submitted to Parliament earlier today. Obviously, "knowing" the situation and knowing that the speaker "knows" it I can anticipate some of the things that he is going to say. (Iwould also claim that I do, in fact, anticipate.) For instance: I can anticipate that the

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37) The ability to anticipate is an important feature of language use when viewed as a type of skilled behaviour (Herriot 1970, p.23).

Chancellor is going to speak about the Budget in the light of the fact that it will have been submitted earlier the same day, and also in the light of the fact that he is speaking from a television studio (to mention just a few such facts). These considerations will exert an influence on the nature of the references that he will make to the Budget. For example, now that the Budget is an accomplished fact and now that its main features have been reported and analysed at least in some news media, I can expect that the Chancellor will not, probably, spend much time on a description of the new Budget measure; rather, he will put forward a few explanations why the measures were resorted to. Further, I can guess that the Chancellor will strive to bring his speech off in accordance with certain more or less tacit conventions which 'govern' the official appearances of Cabinet Ministers on television, and also that, in a sense, the Chancellor will make an effort to secure the viewers' "blessing" on his measures - however, difficult the bringing off of that 'outcome' may seem. To mention just one more 'prediction', I expect that the Chancellor will adopt a fairly formal, or formal-consultative, style. The foregoing are just a few among the 'predictions', guesses, expectations and so on that will cross my mind, and undoubtedly they will all help me make sense of what the Chancellor has to say. Now we must find out whether Halliday intends this kind of 'prediction'.

In view of the notion of meaning potential Halliday's claim looks like being as follows: he thinks he can predict that the speaker will realise or textualise from among a specific set of semantic options. We remember that any set

of semantic options divides into three basic components, namely, ideational, interpersonal and textual. We also remember that each component has two aspects, functional and formal. In their formal aspect the components constitute the basic organising principle of the "lexicogrammatical system". Since form is intimately connected with function (for Halliday), the components relate to what a person can see language doing as he observes it "going on around him". The interpersonal component, for instance, relates to what the person can see language doing. The formal aspect of the interpersonal component includes such things as "mood" (declarative, interrogative, imperative and so on) and "modality" (for instance, permission). Thus it turns out that Halliday's semantic options are nothing but options in mood, modality and so on [38].

Now we are in a position to render Halliday's claim concerning predictability in a final formulation. He is claiming, in fact, that given a pre-knowledge of certain facts pertaining to a given situation he can predict, for instance, which mood or moods the speaker is likely to opt for; consequently, since he assumes a fairly rigid connection between form and function, Halliday can also predict what speech acts (in some sense of the term) the speaker is likely to perform [39].

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38) On the interconnections between mood, modality and illocution, see Householder (1971, p.86-92).

39) Cf. Charlton (1970, p.104): "there do seemto be certain acts, which might fairly be called acts of speaking, because they can be performed only in languages, and learning a language is learning how to perform them". Charlton accepts assertions, denials, questions, orders and prohibitions. I think that Halliday might agree with this.

As a thought experiment we may imagine what predictions Halliday would on the strength of his theory, be inclined to make concerning the Chancellor's Budget speech. Without going into detail we can imagine, for instance, that on Halliday's prediction the Chancellor would exhibit certain types of transitivity patterns in the clauses he uses; that he would use certain tenses, draw his vocabulary from certain "lexical set" (Sinclair 1966, in Bazell et al. eds., p.427); that he would use more the active than the passive voice, and use more the declarative than the imperative mood, and so on.

To sum up Halliday's procedure. First he decides on the register, which he has already described and, in a sense, made an inventory of. On the basis of the inventory he knows what form classes are associated with the register. He assumes that there is a direct one-to-one connection between a form and what is actually meant by the person who uses that form ia a particular social situation (Cf. Criper 1975, in Davies ed., p.30). Therefore, he calls any choice of a form an option in 'meaning'. For instance, the choice of interrogative mood entails an option in speech act, namely, a question.

The upshot of our discussion seems to be: in Halliday's view any given textualisation is the result of a choice or a series of choices made by a speaker or writer from a set of options which is specific to the social situation. Each choice is a choice of a form, but the forms carry their meanings, as it were, on their shirtsleeves. If the speaker or writer "means" to ask a question he opts for the interrog-

ative; if he opts for the interrogative he "means" to ask a question. There may be a register within which the interrogative is not a "live option"; in such a register, there will be no questions asked.

2.4. Meaning as Situational

I would like to think that the notion of register entails an 'external' description of text, and that the notion of meaning potential implies a 'textual' reading. An external description of a text is like mere observation of signals - as one would observe a signal without responding to it. Such description might be called textual analysis or register analysis (Cf. Widdowson 1973A); it tends to focus on grammatical form ; its method is predominantly taxonomic; its aims may vary. I will illustrate below.

As for textual reading, we might hypothesise that it proceeds on the assumption (already mentioned) that there is always (or almost always?) a direct one-to-one connection between form and function. Such rigid one-to-one correlations would constitute Hallidayan interpretive rules, or H-rules. Obviously rigid adherence to such rigid rules would frequently lead the reader astray. Common sense whispers that acts of reading are more flexible, and that the reader's inferences do not proceed from form to function, unless necessary. Still, let us suppose that people read textually, in the way that we supposed that they read 'literally' when we discussed Chomsky. If it were the case that we read merely textually we would proceed by application of H-rules; but we could not apply H-rules unless we had an interpretive framework which enabled us to assign a meaning to the social

situation. Hence we come back to the "semiotic structure" of situation types.

A Hallidayan textual reader 'cognises' (to use Chomsky's term) an enormous number of situation types and is able to recognise a situation as a token of a particular type. In terms of Field, Tenor, and Mode the person is able to internalise the 'logical form', or definition, of any situation type; in this sense the person has an interpretive scheme pertaining to social situations. On recognising a given situation as a token of a type the person simply 'pairs' the "semiotic structure" of the situation with the corresponding 'logical form', in the way that he pairs the surface structure of a sentence with its 'logical form' [40]. We can hypothesise that in something like this way a textual reader assigns a meaning to the social situation. This assignment is a necessary condition for the application of H-rules (as noted above).

2.5. Textual or Register Analysis

In this section I will discuss Leech's analysis of a text which belongs to the register of "standard advertising English" (Leech 1966, p.112ff.). The analysed text is repeated here as (25):

(25) What's in Woman's Realm this week? A wonderful beauty offer for you.

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40) This exercise in the formalisation of situational meaning is only undertaken for the sake of symmetry. I can add that in order to do the pairing the person may be assumed to have and be able to apply some "second-order" rules. These are called projection rules by Fodor and Katz (1964), and correlation rules by Sampson (1975).

Leech's analysis is as follows:

> This extract illustrates a further type of Yes/No question: an appeal to the consumer to search his memory ... The technique of exposition by question and answer is familiar in many kinds of discourse, particularly in those which aim to explain a complicated subject-matter in a relatively simple way. Psychologically, it may be a means of getting one's audience to grasp a point by presenting it in two separate stages: a problem, then its solution. Linguistically, it may be a means of reducing grammatical complexity, by expressing in two sentences what would otherwise have been most naturally expressed in one more complex sentence. Both these levels of interpretation apply in advertising, except that psychologically speaking, the question seems to be more of an invitation to the consumer to be curious about the information to be divulged. The effect of simplification can be judged by comparing the ... example above with a single sentence paraphrase ...

The single sentence paraphrase mentioned by Leech is here repeated as (26):

(26) There's a wonderful beauty offer for you in Woman's Realm this week.

Leech goes on to remark that (26) would be "an acceptable alternative", but "it contains unusual complexity of clause structure", with three adjuncts in succession, i.e. S P C A A A.

I will use Leech mainly for two purposes: in order to bring out something of the difference between text and textualisation, and in order to adumbrate something of the difference between textual and 'discursive' reading. In order to accomplish the first purpose I argue that complexity of text is not the same as complexity of textualisation.

In the above Leech claims that as a text (26) is more complex than (25); he supports this claim by a grammatical argument which appeals to the notion of clause structure. Leech also suggests that grammatical complexity entails psychological complexity. Finally Leech implies that (26) may

have been considered as an alternative but was dropped in favour of (25) because of the intuitively felt "unusual" grammatical complexity.

I do not wish to dwell on the second of the claims because the matter has to be left to psycholinguistic experimenters (See Slobin 1971, Green 1972 and 1975). At the moment Leech's claim (or supposed claim) is still far from proven by the experiments. Even a priori it would seem that though there may be a contingent connection between grammatical complexity and interpretive difficulty there may not obtain any necessary connection between the two. As for Leech's third claim, it amounts to saying that the producer of (25) considered (26) as an alternative but found the latter unacceptable on the intuition that it contains unusual complexity of clause structure. The producer may have considered the alternative, but there is hardly any way of knowing. Supposing that he did, then it seems to me more probable that he worked his way from (26) to (25) on grounds of rhetorical efficiency, rather than of grammatical complexity (Cf. Fisher and Sayles 1966, in Miller and Nilsen eds.). The end of rhetoric is both persuasion and informative communication. Hence the producer of (25) may have felt that this was more likely to achieve the dual end than (26). He may have felt so because he recognised the inherent efficiency of the question-answer technique.

My counter-claim, then, consists in saying that it is not proven, and perhaps will never be proven, that there is an essential connection between grammatical complexity and psychological difficulty of comprehension; and, secondly,

that if the producer of (25) considered (26) as an alternative, then he decided against the latter and in favour of the former on rhetorical, rather than grammatical, criteria. It is true that Leech refers to the rhetorical considerations when he compares the two alternatives in terms of psychology. He takes note of both the persuasive and the communicative elements. But, to him, it is the difference in grammatical complexity which is decisive [41].

We can agree with Leech that (26) is more complex than (25), as a text. I would suggest, however, that in terms of complexity of textualisation it is the other way round. If this is granted, then it will be granted that there is a difference (which makes a difference) between text and textualisation.

I will approach the matter by saying that what is simple and what is complex is not determinable by means of the same set of criteria in the case of a text and in the case of a textualisation. The criteria that Leech uses are (first) grammatical and (secondly) psychological, but seen from the producer's point of view. I deem the grammatical criteria irrelevant and shift the point of view from the producer to the receiver. I would submit, then, that from the receiver's point of view (25) is more complex than (26), because it requires him to hear (read) the question-part as "an invitation to be curious" and, respectively, hear the answer-part as something which is meant to satisfy the aroused curiosity.

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41) Enkvist (1973,p.89) distinguishes between grammatical and textual complexity. My notion of complexity of textualisation is, however, different from textual complexity.

It seems to me that nothing as complicated would be involved in the interpretation of (26), which is, rather, a straightforward statement of the "I'm telling you this"-type. Thus I suggest that as a textualisation (25) has greater complexity than (26). Viewing the two as textualisations means viewing them merely as different formulations of the same message. This view implies that the receiver is, in principle, able to extract the same intended message from either formulation. This, in turn, implies a crucial difference between Leech's approach and my approach.

Leech's approach, based as it is on the theoretical foundation created by Halliday, assumes that the form, i.e. text, is determined by the "ecology" of the text, i.e. by the "semiotic structure" of the situation type. A register analysis of a text, such as Leech's analysis of (25), therefore consists in showing how the form is determined by the social situation. It is thus an attempt to account for the form. My view differs from this approach because my first priority is to try to account for the fact that a competent reader is capable of extracting something like the intended message from a textualisation. In other words, I search for ways in which to account for discursive reading. Next, I will adumbrate the notion of discursive reading with reference to Leech's text. At this point I will merely touch on the matter.

To put it crudely, in my approach the burden of interpretation is placed on the reader's inferential processes. It is to this that the metaphor of reading 'behind' and 'between' the lines refers. For instance, in the case of both (25) and (26), the textualisation is capable of carrying the same implication, namely (27):

(27) If you buy Woman's Realm this week, then you receive a wonderful beauty offer.

In one sense, then, (27) is the message which is intended in (25), and the same message might be intended in (26). It is up to the reader to recover implication (27) from the actual textualisation, and it would be up to him to recover the same implication from the alternative textualisation. Thus it is possible to account for a 'successful' reading of (25) by saying that the reader is able to read discursively, i.e. in the case of (27), to recover implication (27).

2.6. Mixed and Multiple Functions

In the previous section I suggest that the message put across in (25) is, in one sense, something like implication (27). The implication makes explicit a causal connection which is only implicit in the actual utterance. Psychologically (and rhetorically) speaking, the then-part of implication (27) corresponds to the motive which is aroused or invoked (Bostrom 1966, in Miller and Nilsen eds.). We can note in passing how the advertising copy writer attempts to sharpen, i.e. manipulate the invoked motive by his choice of verbal cues ("wonderful beauty offer") [42].

In another sense, of course, the message of (25) is (28):

(28) Buy Woman's Realm this week!

However, formulating the message in the way of (28) would leave out the motivational aspect and so would be a less subtle method of stimulating the desired action. In comparison

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42) We might say that (25=29) is a piece of argumentative discourse; i.e. the writer argues that (and why) the audience should buy the magazine (see also Ray and Zavos 1966, in Miller and Nilsen eds.).

with (28), (25) has multiple function; it is not simply an imperative. However, the Hallidayan assumption is (to put it in stark terms): one form -- one function. As Criper (loc. cit.) suggest, this is looking at the connections between linguistic form and furtion in a very narrow sense. On the pragmatic or "real-life" level forms (utterances) tend to be multi-functional (Hymes 1972, in Gumperz and Hymes eds.). One kind of utterance tends to serve several functions, and one kind of function tends to be served by different kinds of utterance.

The feature of multi-functionality that language has is of course frequently utilised by speakers and writers in efforts to facilitate communication. I can quote Copi (1972, p. 48) [43]:

> Effective communication demands certain combinations of functions. Few of us stand to each other in the relation of parent to child or employer to employee. And outside the context of such formal relationships as these one cannot simply issue an order with any expectation of having it obeyed. Consequently a certain indirection must be employed: a bold command would arouse antagonism and be self-defeating. Ordinarily one cannot cause action merely by voicing an imperative.

Instead of voicing an imperative, such as (28), the writer of (29=25) uses a more subtle method; I will try and indicate something of the subtlety in the following. Here, first, is the text repeated (29):

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43) Copi's "mixed uses" of language include performative. He says that "a performative utterance is one that in appropriate circumstances performs the action that it appears to report" (op.cit., p.50).

(29) What's in Woman's Realm this week? A wonderful beauty offer for you.

According to Copi (loc.cit.), actions may be caused by evoking appropriate attitudes and by communicating relevant information. I have already referred to the attitudinal and motivational strategies; and, as we have seen, Leech also notes their role. However, I think that he fails to note some rather subtle aspects which relate to the strategy of communicating relevant information.

The obvious relevant information conveyed by (29) is that this week's Woman's Realm is 'out' and that there is a "free gift" attached to the issue. It is in this way that the advertising slogan fulfils the informative function. However, we can note that the "information", though relevant in one sense, in another sense is quite trivial. For instance, one might expect to receive some information concerning the contents of the new issue. I suggest that the subtlety of (29) relates to such an expectation.

Leech fails to notice that the question-part of (29) leads us "automatically" to expect some information about the contents of the magazine. When we 'hear' the question we categorise it as one which is to be followed by a statement conveying 'genuine' information about the topic 'created' by the question. In other words, in categorising the question we also pre-categorise the statement that is to follow it. The pre-categorisation works subtly. It leads us to treat the pre-categorised statement as a 'genuinely' informative; i.e. even in the case, such as (29), where our original expectation is "defeated" so that the received information is

felt to be more pseudo than genuine, the answer is heard as 'relevant' to the question [44].

As we can see an utterance like (29) mixes and combines many, if not most, of the recognised functions of language. For instance, there is an emotive emphasis added to the information conveyed. This is in fact Riffaterre's conception of style (Cf. Ohmann 1971, in Chatman ed., p. 243). Similarly the elements referred to in the above as aroused and defeated expectation (or expectancy) are, according to Riffaterre, constitutive of the so-called "stylistic" function of language (1964, in Lunt ed.). My approach to discourse is not stylistic but I think we can note, in passing, that a recognition of the mixed and multiple functions of language seems to be an essential ingredient of stylistic analysis [45].

2.7. Summary of Chapter Two

In Chapter One I present Chomsky as typical representative of the study of sentence, i.e. a citational instance of language (in Halliday's term); in the present Chapter I present Halliday as typical representative of the study of text, i.e. an operational instance of language. I also contract these two approaches in several ways; for instance, in the way that whereas Chomsky develops the theory of literal meaning, Halliday develops the theory of situational meaning [46].

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44) Cf. Sacks (1972in Gumperz and Hymes eds.; see also Cicourel 1973).

45) Stylistic analysis is by no means impossible on the Firthian-Hallidayan basis. Cf. Rodger (1973, in Fraser ed.); Whitley (1966, in Bazell et al. eds.); Halliday and Hasan (1971, both in Chatman ed.) Leech, and Crystal and Davy have already been mentioned.

46) see over.

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I have discussed ways in which the 'Hallidayan' speaker may be supposed to assign meanings to social situations and ways in which he may be supposed to assign meanings to texts. My hypotheses are 'inspired' by Chomsky's treatment of 'logical form' and interpretive rules (i.e. C-rules).

On Halliday's model, the reader has textual competence. This is a further approximation to discursive competence. The textually-competent reader may be supposed to approach a text, not as what is said (written) but as "what is meant" (Halliday op.cit., p.10). We have seen that "what is meant" is determined by the text's "ecology". Hence the textual reader may be hypothesised to proceed on rules that specify the ways in which a form is determined by the social situation. I have referred to such rules as H-rules. We can hypothesise that the textual reader has internalised the H-rules, in the way that the literal (Chomskyan) reader has internalised the C-rules. Furthermore, we can imagine that the textual reader has internalised a 'text grammar', in the way that the literal reader has internalised a sentence grammar. The text grammar of English would, in fact, have accomplished the "impossible task" of making a full description of each of the different registers within English (Cf. Criper and Widdowson 1975, in Allen and Corder eds.).

My comments on the difference between text and textualis-

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46) A review of other grammatical theories is not possible in this survey. On tagmemics, see Pike (1967); on stratificational theory, Lamb (1971, in O'Brien ed.); on Chafe, see Chafe (1970). I am also unable to include a discussion of the Prague School notion of "functional sentence perspective", but see Danes (1970, in Garvin ed.) and Fried ed. (1972).

ation, as well as on the mixed and multiple functions of utterances, are meant to cast some doubt on the validity of the Hallidayan framework for the analysis of discourse. Halliday himself recognises both text and discourse. For instance, he speaks as follows (in Davies ed., p.136):

> I agree that written discourse has been neglected, but I do not see any need for choice here. Both text and discourse can be and need to be studied.

We know what Halliday means by text but it is not clear, at least to me, what he means by discourse. Also, I do not quite understand what he means when he says that there is no need for choice between the two (terms? concepts? fields of enquiry?). However, be that as it may; let us hypothesise about Halliday's conception of discourse.

We have seen that and how Halliday 'relates' his components of situation to Hymes' components of speech act. Eo ipso Halliday relates his own theoretical scheme to Hymes' model of discourse. On Hymes' view, the level of speech acts is the level of discourse.(Hymes 1972, in Gumperz and Hymes eds., p.57). According to Hymes (op.cit.), a speech act may be, for instance, a joke. The joke may occur within a conversation, i.e. within a speech event. The conversation may occur during a party, i.e. in a speech situation. For Hymes, the joke (speech act) "functions" in a situation in the way that text, for Halliday, functions in a situation.

The parallelism may be pushed further. For instance, for Halliday text is the result of choice made from the meaning potential (in practice, among a set of options specific to

the situation); for Hymes discourse also implies and presupposes choice, namely, choice made, at a given point or points, among a class or classes of speech acts. As regards Halliday's text the choice is made from a meaning potential; as regards Hymes' discourse the choice is made from a kind of "speech act potential" 47).

In this summary I will not recapitulate Halliday's components of situation; instead I will use the opportunity to survey Hymes' components of speech act (or - event). Hymes' list is as follows (op.cit., p.58-65):

(i) Message form.

(ii) Message content.

(iii) Setting, i.e. time, place, physical circumstances.

(iv) Scene, i.e. the phsychological setting.

(v) Participants.

(vi) Purposes, in the sense of "outcomes"; "the purpose of an event from a community standpoint".

(vii) Purposes, in the sense of "goals"; "the purpose of those engaged in the event".

(viii) Key; "the tone, manner, or spirit in which an act is done".

(ix) Channels. "By the choice of channel is understood choice of oral, written, telegraphic, semaphore, or other medium of transmission of speech".

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47) Halliday now sees himself as doing sociolinguistic theory, even though (as he says) he is not sure what sociolinguistics means any more. He says also: "I suppose I have really been doing sociolinguistics all my life, except that I have always called it linguistics" (in Davies ed., p.26).

(x) Forms of speech, i.e. language, dialects, codes, registers.

(xi) Norms of interaction: "that one must not interrupt ... or that one may freely do so"; "that turns in speaking are to be allocated in a certain way" [48].

(xii) Norms of interpretation. These are needed because "an account of norms of interaction may still leave open ... the meanings of norms to the participants"[49].

(xiii) Genres, e.g. poem, myth, tale, proverb, riddle, oration, lecture, commercial [50].

By way of commentary we can note the following. Message form relates to how something is said; message content to what is said. Hymes stresses the "truism", which is "frequently ignored in research", that how something is said is part of what is said. Hymes also gives a context for distinguishing form from content: "He prayed, saying '...'", would be quoting message form whereas "He prayed that he would get well", would be reporting content only.

As for the rest of the speech act components, we can note

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48) There are studies on "turn-taking" by, for instance, Turner (1974, in Turner ed.) and Schegloff and Sacks (1974, in Turner ed.).

49) Cf. Garfinkel's "processes of interaction". Garfinkel (1972, in Gumperz and Hymes eds.) suggests that clinic personnel unconsciously invoke "ad hoc" operations (or simply, ad hocing) in their classifications. He also suggests that parties to a conversation unconsciously establish a "momentary agreement" as to how the talking is to be done and interpreted. As a consequence, the content of a conversation cannot be reconstructed later, in different conditions.

50) For genre studies, see e.g. Hymes (1960, in Sebeck ed.), Levin (1962), Leech (1969), Hasan (1971, in Chatman ed.), Halliday (1971, in Chatman ed.; reprinted 1973, in M. Douglas ed.).

something about "purposes", in both senses, and "norms", also in both senses. Hymes says that "conventionally recognised and expected outcomes often enter into the definition of speech events" (op.cit., p.61). For instance:

> Among the Waiwai of Venezuela, where the central speech event of the society, the cho-chant, has several varieties, according to whether the purpose to be accomplished is a marriage contract, a trade, a communal work task, an invitation to a feast, or a composing of social peace after a death. (Loc.cit.; orig. emphasis).

The purpose of an event from a community standpoint (i.e. the "outcome") need not, of course, be identical with the purposes of those engaged in the event (i.e. their "goals"). Continuing with the customs of the Waiwai, we may note that among them the prospective father-in-law and son-in-law, for instance, have opposing goals in arriving at a marriage contract. To achieve their goals they employ certain strategies; such strategies are "an essential determinant of the form of speech events" (Hymes op.cit.) [51].

Lastly, the "norms". The study of norms of interaction, if undertaken, "implicates"analysis of the social structure, and social relationships generally, of a community. Correspondingly, the study of norms of interpretation implicates analysis of the "belief systems" of communities. These implications show that sociolinguistis is intimately connected with many 'bordering' disciplines, such as sociology and social or cultural

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51) Inquiry into the speech events of a society (and other related matters) is also known as "ethnography of speaking" (Hymes 1971, in Ardener ed.).

anthropology [52].

So, through Halliday and Hymes, we enter into the domain of socio-linguistics; by the same token, we enter into the domain of discourse. The term "discourse analysis" was first used (so I assume) by a structuralist linguist, namely Z. Harris (1952, in Language 28). However, a more appropriate sense of the term discourse analysis is due to a socio-linguist, namely Labov (1972, in Giglioli ed.). It is Labov who is responsible for the approach to discourse adopted by the 'applied linguists' Criper and Widdowson (Widdowson, personal communication). As a conclusion to this "summary" I will review Criper and Widdowson's definition of discourse and discourse analysis; by this means I may also, perhaps, manage to shed some more light on Halliday [53].

There is, perhaps, an implicit reference to Halliday (and his associates) when Criper and Widdowson say that "many linguists" use the term discourse to denote a "sequence of sentences" (i.e. presumably, text), and consequently take discourse analysis to be the investigation into formal devices used to connect sentences together [54]. In this sense, Criper and Widdowson say 'discourse' is to be regarded as a product of the language code, and 'discourse analysis' as an extension

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52) On the term "speech community", see Fishman (1970). No review of socio-linguistics is attempted in my thesis. A good introduction is Criper and Widdowson (op.cit.). The best anthology is Gumperz and Hymes eds. (1972). See also Pride and Holmes eds. (1972). On the connections between language and social anthropology, see Ardener ed. (1973). Also compare Hymes' components with those of Pride (1973), in Archivum Linguisticum 4).

53) For criticism of Harris, see e.g. Pak (1970, in Language 46) and Widdowson (1973).

54) Cf. "cohesion" (Hasan 1968). On the distinction between cohesion and "coherence", see Widdowson (1973A).

of the scope of grammatical description. Criper and Widdowson go on:

> What we are interested in, however, is the connection between what is said and what is meant and done, between linguistic form and social meaning and action. We wish to discover the relationship between sentences and such different actions as requesting, ordering, promising, predicting, and so on. In order to avoid confusion, we might refer to connected sentences as text and the study of such connections as text analysis. The relations between sentences and social meanings and actions we shall call discourse and the study of these discourse analysis. (in Allen and Corder eds., p.200; orig. emphasis).

We may note, first of all, that Criper and Widdowson define text as connected sentences. This is different from the way that Halliday defines text. As we have seen, Halliday wants to use the word text to refer to any instance of language that is operational, as distinct from citational, i.e. to "everything that is said, or written, in some living context of use" (op.cit., p.10). Thus, in grammatical terms, Halliday's text may consist of one word, one phrase, or one sentence. Halliday's term textual function refers to the 'capacity of language' to form text(s). More properly said it is of course users of language who form texts - in my term, textualise [55].

The text can consist of a (great) number of sentences which are connected. Thus textual function comes to mean the ability of language users to connect one sentence to another and then to a third, and so on [56]. By extension, textual

55) Cf. the technique of "approximations to English", i.e. to an English text consisting of one sentence. From a zero-order approximation one gradually arrives at a text (Herriot 1970, p.41).

56) The sentences of an actual text are connected in a trivial sense. In another sense it may sometimes be difficult to say how they are connected. For instance, one of the texts that I analyse later on begins: Oil-bound paints may sometimes fail when used on certain building materials. When an acid and alkali react together the result is salt and water (...).

function comes to mean the ability of users to "relate what is being said to what has preceded and will follow" (Dinneen 1971, in O'Brien ed., p.131). This extension has as a consequence that the distinction between text and discourse tends to become obliterated. This is unfortunate because the distinction is real and should be preserved [57].

Now it is obvious (I suggest) why Criper and Widdowson redefine text as connected sentences. They want to preserve the real distinction between text and discourse. Instead of studying the way in which sentences are connected to form texts, they want to study the way in which "utterance types or communicative acts" are linked together to devdop "larger units of communication" (op.cit.) [58]. Previous to such a study of larger units of communication, however, Criper and Widdowson want to study communicative acts in isolation.

I have suggested that for Halliday "meaning" is situational. Now I suggest that for Criper and Widdowson "meaning" is contextual or "pragmatic". In Chapter Three I turn to a discussion of some of the literature in so far as it is relevant to discourse as a pragmatic 'affair' [59].

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57) In Dinneen's usage, for instance, the distinction becomes obliterated. He says: "the textual function enables us to ... form texts or connected discourse" (loc.cit.).

58) Using Criper and Widdowson's definitions we may dismiss as text analysis e.g. the following: Oomen (1971, in O'Brien ed.), who applies the systems model from General Systems Theory (!); C. Smith (1971, in the Journal of Linguistics 7); Bradley (1971, in Anthropological Linguistics 13) and Rowan (1972, also in AL).

59) Cf. Hymes, according to whom considering discourse as speech acts involves regarding it as "situated" or "contextual" (1974, in Blount ed., p.346-351).

CHAPTER THREE DISCOURSE IN SOCIOLINGUSTICS

Introduction

In the previous Chapters three kinds of 'meaning' have been "isolated", namely: "literal", "situational", and "contextual" or "pragmatic". These meanings derive, respectively, from Chomsky, Halliday, and Criper and Widdowson. The meanings relate, respectively, to sentence, text and discourse. Corresponding to the three kinds of meaning we might isolate, if only in theory, three kinds of reading, namely: literal, textual and discursive. In this Chapter I discuss the broadly sociolinguistic approach to discourse; at the same time I hope to go deeper into the notion of discursive reading.

Obviously a discursive reading is capable of recovering the same content despite differences in the way that the content is formulated or textualised. We noticed something like this in connection with Leech's analysis of a sample of standard advertising English. It may be remembered that (30) was the original formulation whereas (31) was Leech's reformulation:

(30) What's in Woman's Realm this week? A wonderful beauty offer for you.

(31) There's a wonderful beauty offer for you in Woman's Realm this week.

Texts are reformulated for a variety of reasons. The reason why Leech reformulated (30) as (31) was that he wanted to bring out the "unusual" grammatical complexity of the latter in comparison with the former. In Marcuse (1972, p.96-97) there is a discussion on another kind of motive behind reformulation. For instance, a worker's complaint about the working

conditions in a car factory might take the form of (32):

(32) The washrooms are unsanitary.

Marcuse relates how the factory management set its team of researchers ("trouble-shooters") to "work" on the complaint; their task was to"reveal" the so-called "latent content" of (32) [60]. The workman was interviewed and after the interview the original text was reformulated as (33):

(33) On such and such occasion I, the workman, went into this washroom, and the washbowl had some dirt in it.

In this way the original statement was not only re-formulated but also re-interpreted; the re-interpretation was subsequently used by the management to institute "improvements". In this case the motive behind the reformulation was practical (and "ideological"); the reformulation effected a reduction in the vague generality of the utterance, to terms designating the particular situation in which the complaint (supposedly) originated. However, we can note that (32) and (33) are not "realisations of the same discourse" in the way that (30) and (31) presumably are.

Various other comments may be made on the utterance-pair, (30-31), apart from noting that they have, in a sense, the same content while the latter is a kind of reformulation. For instance, it is possible to return to Halliday and make the observation that the utterances display certain "thematic structures" as well as certain "information structures" (Cf.

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60) On the distinction between "manifest" and "latent" content, see Ervin-Tripp (1972, in Gumperz and Hymes eds., p.244). According to Ervin-Tripp, latent content relates to communication-intent. In a manner reminiscent of Chomsky, Ervin-Tripp wantsto leave the study of intent (in the sense of latent content) to others.

Halliday 1970, in Lyons eds., p. 160-164) [61].

Information structure refers to the organisation of utterance or text relative to the notions of "given" (i.e. "old") and "new". In the case of (30-31) we might say that what is given consists in the fact that this week's issue of the magazine is 'out' and what is new consists in the fact that there is a "free gift" attached to the issue. We may note that the original formulation, i.e. (30), neatly separates the given from the new by dint of the question-answer technique.

Another set of comments on (30-31) brings us back to sociolinguistics. For instance, sociolinguists study various kinds of contextual constraint, referred to as rules of "alternation", "co-occurrence", and "sequencing". In this introduction we can take a look at such rules.

As Gumperz and Hymes note in their introduction to the paper by Ervin-Tripp (1972, p.213), alternation concerns choice among options in "ways ofspeaking"; for example, among alternative "forms of address" (Brown and Gilman 1960, in Sebeck ed.; Brown and Ford 1964, in Hymes ed.). Hence alternation rules may be regarded as sociolinguistic analogues of linguistic rules which relate to the paradigmatic axis [62].

The notion of co-occurrence concerns "interdependence

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61) In the Prague School concept of functional sentence perspective the descriptive levels of thematic structure and information structure are, as it were, conflated. See further Benes (1968, in Travaux Linguistiques de Prague 3, p. 267-274).

62) On paradigmatic and syntagmatic axes, see Lyons (1968). The two planes were distinguished by de Saussure (op.cit.). For further discussion, see Barthes (1967, p.58-59) and Jakobson (1973, p.21-22).

within an alternative", i.e. having made a choice among alternative ways of speaking one should stick to it, rather than oscillate between several alternatives. Ervin-Tripp illustrates by means of an example, here repeated as (34):

(34) How's it going, Your Eminence? Centrifuging OK? Also have you been analyzin' whatch'unnertook t'achieve?

Ervin-Tripp (op.cit.) notes that the "bizarreness" of the hypothetical utterance (34) arises from the oscillations between different varieties of speech.

As (30) is a kind of "sequence" I will now briefly discuss some aspects of the work done on sequencing rules by the "ethnomethodologists", Sacks and Schegloff (1972, in Gumperz and Hymes eds.) [63]. One of the sequencing rules that Sacks and Schegloff posit is the "distribution rule". In his analysis of telephone conversations Schegloff refers to the distribution rules as the first rules of such conversations.

The rule is, simply, that "the answerer speaks first". Since the telephone ring may be regarded as a kind of summons, we have a summons-answer sequence [64]. When the telephone is answered, we get a "terminating rule", which is: "the answer

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63) As background reading to the ethnomethodologists, see Sudnow ed. (1972); reviewed by Wash (1972, in the British Journal of Sociology 23, p.488ff.). Sacks' and Schegloff's analyses of conversations may be compared with Turner's 1974, in Turner ed.). There is a criticism of Turner's analysis in McHugh et.al. (1974,Ch.5).

64) Sacks and Schegloff refer to such sequences as "adjacency pairs" (1974, in Turner ed., p.238).

terminates the sequence".

Now it is obvious that we cannot regard (30) as a summons-answer sequence in the same sense that we can talk of a telephone ring-hello as such a sequence. However, it is also somewhat odd to regard (30) as a question - answer sequence, because the 'question' in (30) is only a kind of rhetorical question [65]. The producer, as it were, poses a 'question, only to 'anser' it himself. Hence I suggest that we might view the 'question' in (30) as a kind of summons as well, namely, a summons to the audience to be prepared to receive 'information' concerning this week's issue of Woman's Realm. On this "summons" view, the first part of (30) is something like the common interrogative 'opener' (35):

(35) You know what?

In other words, in a sense the first part of (30) might be regarded as something like (36):

(36) Do you know what's in Woman's Realm this week?

And we might imagine that the audience is 'expected' to give a kind of 'silent' answer to (36), namely (37):

(37) No, what?

The 'silent' answer terminates the sequence, in accordance with Schegloff's terminating rule. The audience's silent answer, i.e. their expected curious response, provides the speaker of the advertisement with adequate grounds for breaking the news about the beauty offer inside the magazine.

The foregoing discussion of the advertising sequence may

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65) In Labov's terms, the first part of (30) is a rhetorical question, in the sense that it serves as an introduction to the main business (Labov 1970, p.58).
On questions, see also Waismann (1965,p.405-417).

perhaps be supplemented by quoting another observation made by Sacks (1972, in Gumperz and Hymes eds., p.341):

> A piece of talk which regularly is used to do some activity - as "Hello" is used to do greeting - may not invariably be so used, but may do other activities as well - as "Hello" is used to check out whether another with whom one is talking on the phone is still there or has been cut off - where it is in part its occurrence in "the middle" and not "the start" of a conversation that serves us to discriminate the use being made of it.

Sacks' observation relates to the discussion of (30) in this sense: the piece of talk which figures as the first part of (30), i.e. 'What's in Woman's Realm this week?', is no doubt used on occasion to do the activity of requesting information. However, in the context of (30) the piece of talk 'What's in Woman's Realm this week?' is not used as a request for information; this is possible because the piece of talk may do other activities as well. In the foregoing it was suggested that the interrogative part is used, among other things, to summon the audience to be prepared to receive information - even if only pseudo-information.

To conclude this introduction to the sociolinguistic approach to discourse I return to the notion of pragmatic meaning, with which my tentative notion of discursive reading seems to be associated.

According to Criper and Widdowson, when we are concerned with discourse, we are concerned with the relations between what is said, on the one hand, and what is meant and done, on the other. Criper and Widdowson do not here specify what they understand by "what is said". I would like to suggest that "what it said" might be equated with the proposition expressed

by using a certain sentence type in a certain context, i.e. with the "determinate proposition" expressed in the sentence (Flew 1971) [65].

With what could we, then, associate the phrase "what is meant and done" in the Criper and Widdowson definition of discourse? Their "what is meant" is clearly related to Chomsky's phrase "what is meant by producing an expression"; in other words, it relates to the communication-intent of the speaker or writer. In order to go deeper into this matter let us reconsider (32), repeated here as (38):

(38) The washrooms are unsanitary.

I have already indicated that the person who uttered (38) meant to complain about the working conditions. Thus his utterance had, as it were, the "social meaning" of a complaint; this is what was meant. Putting it in a different way, the workman in uttering (38) performed the act, action or activity of complaining; this is what was done in the utterance [66].

In describing (38) as complaint we also describe the way in which the workman's words were taken by the audience. The audience, on this view, perceived the "illocutionary force" that was intended by the utterer [67].

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65) In determining the proposition we may have to explicate the references of so-called token-reflexive words and phrases (Flew op.cit., p.249). (See also Bar-Hillel 1970, p.68ff.).
66) See Austin (1962).
67) Austin (op.cit.) distinguishes between locution, illocution and perlocution. In uttering the words in the context, the man performed an illocution; by doing this, the man also may have succeeded in persuading the audience to act in a certain way; in that case the man also performed a perlocution. A locution is just the serious utterance of a sentence with a certain definite sense and reference. (See also Searle 1970).

As an upshot of the foregoing we can re-interpret Criper and Widdowson's definition of discourse as follows: discourse refers to the relations between propositions and illocutionary forces. In each particular case the proposition is the "determinate" proposition expressed in the sentence, and the force is the act intended in using the sentence. This gives us a tentative definition of discursive reading. On the "sociolinguistic" view, one is able to read discursively if and only if one is able to perceive what proposition is expressed, and what act is intended, and relate the two. On the sociolinguistic view, we read discursively when we proceed by correlating the proposition with the force. In order to achieve the correlations we may have Criper-Widdowson rules; in distinction from C-rules and H-rules, let us refer to the Criper-Widdowsonian rules as C/W-rules. Next I turn to a more detailed discussion of the approach adopted by Criper and Widdowson; this approach will have to serve as a kind of paradigm of the sociolinguistic view of discourse.

3.1. "Rules of Use".

Criper and Widdowson set themselves to find out about C/W-rules, or (as they call them) "rules of use". The task is viewed as a sociolinguistic one, involving the relating of language to "the social factors which act as constraints upon its use" (op.cit.). Criper and Widdowson illustrate the kind of rules of use that they have in mind by looking at the conditions which are necessary for a command or order to be given. I quote: [68]

> The conditions which must obtain for an utterance to be intended and interpreted as an order have to do with

68) see over

social constructs, like roles, rights, and obligations, stereotypes, reference groups, categories and attitudes. The characterisation of communication involves specifying how language is related to social structure. We might suggest then that for an addresser A to intend that his utterance should count as an order to an addressee B to carry out the notion referred to, X, A must believe that

1. It is desirable for X to be done
2. A has the right to ask B to do X
3. B has the obligation to do X
4. B has the capacity to do X

(op.cit., p.203)

The conditions (1-4) then are necessary for an order to be given. For someone seriously to intend his utterance to count as an order he must believe that those four conditions obtain. For someone to interpret an utterance as an order he must believe that the addresser believes that these conditions obtain. It is to be noted that it is not a matter whether or not the conditions do, in fact, obtain. It is a matter of whether the addresser believes that they do. In the case of interpretation it is a matter of whether the addressee assumes that the addresser believes that they do.

Criper and Widdowson next look at some examples of the kind of utterance that a school-teacher may make when telling a pupil or pupils to do an exercise. The teacher may use the

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68) Criper and Widdowson's "act-conditions" derive directly from Labov (e.g. Labov 1970). Ultimately, however, they may be said to derive from Searle (1970). Searle lists rules for the use of the "illocutionary force indicating device" (e.g. 'I hereby order ...'). According to Searle, force indicators include word order, stress, intonation contour, punctuation, the mood of the verb, and so-called performative verbs. Searle adds that often in actual speech situations the context will make it clear what the force of the utterance is, without its being necessary to invoke the appropriate force indicator. See also Searle (1972, in Giglioli ed., p.141-142). Rules for the performance of illocutionary acts are sometimes referred to as "constitutive"; see Searle (1970) and Bird (1972, esp. p.74ff.).

imperative: 'Do this exercise by tomorrow morning'. It is the imperative mood of course which is most obviously associated with the command function; thus this mood may serve as a force indicator. However, there is no necessary connection between form and function: the teacher may choose to focus his utterance on any one of the conditions (1-4) and say either (39), (40), (41), (42) or (43):

(39) It would be best if we could have this exercise finished by tomorrow morning (Condition 1).

(40) I expect you to do this exercise by tomorrow morning (Condition 2).

(41) You must have this exercise finished by tomorrow morning (Condition 3).

(42) You will have no difficulty in finishing this exercise by tomorrow morning (Condition 4).

(43) Would you like to do this exercise by tomorrow morning?

According to Criper and Widdowson, all the forms (39-43) convey essentially the same message. By saying (43) the teacher may give the order in "mitigated form" (Cf. Labov 1972, in Giglioli ed., p. 305) [69].

At this point Criper and Widdowson note that many linguistic forms may be used to fulfil the same basic function, by virtue of the fact that the conditions for an order are in fact fulfilled. However, there is another side to the 'coin', for the same linguistic form may be used to fulfil a variety

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69) The imperative-form order may be called the explicit form; hence (39-43) are more or less implicit orders (Labov 1970, p.55). Following Labov we might characterise the explicit imperative form as the "underlying" form of the implicit forms (Labov 1972, in Giglioli ed.,p.303).

of different functions. The imperative is the form of the code which is most directly related to the act of ordering; but an imperative may also function as a request, an instruction, a piece of advice, an appeal, an invitation and so on. This is a reference to the potential multi-functionality of language forms. As a corollary, there is no simple one-to-one correspondence between messages and the forms of the language code which reflect the functions which the messages fulfil [70].

Criper and Widdowson sum up their theoretical discussion as follows:

> What controls whether a given sentence can convey a particular communicative intent is not a set of grammatical rules but a set of conditions which together constitute a rule of use. For the learner to understand the way language operates as discourse he must somehow be made aware of the rules of use of this kind.
> (op.cit., p.206).

3.2. Rules of Use Re-Considered

I have now to comment on what Criper and Widdowson say about rules of use (or, C/W-rules). It will be remembered that I re-defined Criper and Widdowson's definition of discourse earlier on in terms of propositions and illocutionary forces. This suggests that I can begin my comments by look-

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70) As a postscript to Criper and Widdowson's list of "order-conditions" I may add that Alston (1964,p.42-43) gives the following rule of thumb to be followed by anyone who wants to arrive at a list of the conditions "for which the speaker takes responsibility in performing a given illocutionary act". Alston says: "Ask yourself what conditions are such that if the speaker were to admit that one of these conditions did not hold, it would be impossible for him, at that time, to perform the act". According to Alston, if someone says 'I know that that door is already open, but would you please open it' and if he is using 'I know that that door is already open' in the usual way, then he cannot be asking you to open that door.

ing at the foregoing account of rules of use from the viewpoint of my redefinition.

Criper and Widdowson do not mention propositions in their account [71]. Instead of propositions they talk of inguistic forms or forms of the language code. Instead of saying that a given form (sentence) can convey a particular proposition they say that a given sentence can convey a particular communicative intent. One of the main points that Criper and Widdowson make is: it is not the code which controls whether a sentence can convey a particular communicative intent, but a rule of use. I will now relate these dicta to (32=38), which is repeated here as (44):

(44) The washrooms are unsanitary.

(44) was intended by the utterer to be a complaint and it was so taken, in the context, by the audience (i.e. the management). However, we may still ask: what is it that the man complained about? The superficial answer is that he complained about the unsanitary conditions in the washrooms; this is the "manifest" content, as it were. In the same sense we know what the school-teacher (in Criper and Widdowson's examples) ordered his pupils 'about': he told them to finish an exercise by tomorrow. We might say that as an intended consequence of the order the pupils came to know a certain proposition, namely, that they would have to have the exercise finished by tomorrow. In this sense the order conveyed a determinate proposition to the audience of the order. Hence, although it is not said that an order is a proposition we may, perhaps, say that an order can convey a proposition or,

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71) Flew (1971, p.204) says that proposition means "whatever can be asserted or denied".

in Criper and Widdowsons terms, convey a particular communicative intent. By stretching our language somewhat we might say: the teacher 'informed' the pupils of the circumstance that the exercise would have to be finished by tomorrow.

However, let us return to (44). I would suggest that just hearing or reading that utterance and not knowing enough about the background (the "discourse-situation") it is difficult to know what determinate proposition the sentence used by the utterer expresses. When the man spoke or wrote (44) was he speaking merely for himself or was he perhaps acting as a spokesman for part or the whole of the work-force in the factory? Did he make any other complaints at the same time; was (44) perhaps one in a series of complaints? Was the man referring to a particular washroom, was he referring to all of the washrooms? Was the complaint he made symptomatic of a more general and chronic state of dissatisfaction among the work-force; was there behind the complaint a general demand for more democracy at the work-place?

It is to be noted, I think, that purely on the basis of the manifest content (which is an indeterminate proposition) it is not easy to get a set of act-conditions for the utterance of the workman, i.e. formulate its rule of use. The manifest content (in the sense of wording) of the school-teacher's utterances made it relatively easy to formulate the rule of use; or to see how each of the utterances focussed on a particular condition. Thus our ability to recognise the rule of use seems to depend on our ability to recognise what (determinate) proposition the utterance conveys. Therefore, it seems to me that we should not talk of discourse in terms

of the relations between form and function but, rather, in terms of the relations between (determinate) propositions and functions.

It will be remembered that the management set its team of trouble-shooters to reformulate (44) so as to assign it a 'harmless' latent content. This was not, however, the content which was intended. The true latent content (or covert proposition), which was of course perceived by the management in the pragmatic context, was that the work-force wanted more say in the company's decision-making [72]. In other words, (44) was a demand addressed to the management and we might perhaps represent it as (45):

(45) We want you to do X.

In this formula, 'to do X' means 'to give us more say in decision-making'. The formula makes the workman's utterance similar to the school-teacher's utterances, for we might represent the latter's utterances as (46):

(46) I want you to finish this exercise by tomorrow morning.

Having assimilated the workman's utterance to the teacher's utterances we can try to formulate a set of act-conditions

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72) The notion of pragmatic context comes from Stalnaker (1971, in Synthese 22, p.275-276). The pragmatic context includes:
- the intentions of the speaker;
- the knowledge, beliefs, expectations or interest of the speaker and his audience;
- other speech acts performed in the same context;
- the time of utterance;
- the effects of the utterance;
- the truth value of the proposition expressed;
- the semantic relations between the proposition expressed and some others involved in some way.

for such cases as (44), i.e. for cases which look like complaints but are 'really' demands [73].

I might suggest, then, that for the workman (who was acting for the whole work-force at the factory) to intend that his utterance should count as a "demand" to the management to carry out the notion X (give the work-force more say), the workman must believe that

1. It is desirable for more say to be given to the work-force.
2. The work-force have a right to 'complain' the management into giving them more say.
3. The management have the obligation to give the work-force more say.
4. The management have the capacity to give them more say.

Perhaps the workman's utterance focusses on Condition 2, and thus was recognised by the addressees as a kind of combined complaint + demand. By dint of their reformulation of the utterance the addressees, i.e. the management reduced it to a mere complaint about a minor defect in one of the washrooms.

In this brief re-consideration I have wanted to suggest that most of our utterances occur in a very complex "real-life" context; correspondingly, the "interpretative procedures" that we use must also be very complex. There may well be several levels of interpretation, for instance. I go into

73) How was it possible for the management to interpret the workman's utterance as a complaint? Presumably some kind of rule of use was involved. However, I do think that the code was also involved. For clearly some sentences have a central illocutionary force (Urmson 1968, p.138-141). Thus the central force of a sentence like 'The washrooms are very good' is that of a commendation. Perhaps the management took (44) as a complaint because they recognise the difference between 'The washrooms are unsatisfactory' and 'The washrooms are very good'.

these matters more in detail in Part Two. However, I will adumbrate something of the matter in the sections that follow.

3.3. Levels of Interpretation

In the work cited Criper and Widdowson stipulate act-con--ditions for orders; however, they suggest that it may be possible to formulate conditions for other types of communicative acts as well. I will not try to do so because I am working my way towards an approach which is not sociolinguistic. The non-sociolinguistic approach that I envisage (and develop further in Part Two) shifts the emphasis from the relations between propositions and functions to the relations between textualisations and people's reasoning processes.

In the foregoing I subsumed a person's complaint-demand under Criper and Widdowson's schema of necessary conditions for orders. An order is a typical case of utterance which is made because the speaker or writer wants someone else to take some action. Following v. Wright (1971,p.96) we may say that, in such cases, the utterer wants to bring about a given state of affairs. For instance, a school-teacher may want to bring about the state of affairs that his pupils have some homework done; a workman may want to bring about the state of affairs that he and his co-workers have more say in the management of their factory. In order to achieve this purpose the workman may reason in terms of a "practical syllogism" the structure of which is as follows:

(PS) 1. I want to bring about S.

2. I consider I cannot bring about S unless I do A.

3. Therefore I will do A.

The workman does A, i.e. files a complaint or, possibly, a series of complaints. The management understand what the man does as a complaint; this is interpretation on one level. However, now the management may want to ask why, in a sense they may want to 'explain' the man's act. They are able to 'explain' the act in so far as they are able to "reconstruct" the practical syllogism which is behind the act. The reconstruction involves getting at the reason, purpose or motive lying behind the act; it involves seeing the act in wider perspective, setting it in a context of aims and cognitions (v. Wright op.cit.,p.115) [74]. This is interpretation on a level "higher" than the level of sociolinguistic act-conditions.

Thus we have tentatively separated out two "levels of interpretation"; call them what-level and why-level, respectively. We may want to describe utterances in terms of what-level, for instance, by formulating act-conditions. On this "lower" level we postulate rules of use (C/W-rules). Alternatively (or in addition) we may want to analyse speech or written discourse in terms of why-level, for instance by formulating practical syllogisms [75]. On this "higher" level we postulate inference processes; we may call them "procedures". If we take the second line we will relate discourse to logic because syllogisms are formalisations in the logical metalanguage of our inferences. We will also relate discourse to contexts of aims and cognitions, i.e. to pragmatic contexts. This will lead to different conceptions of

74) V. Wright calls this "explicative" interpretation.
75) On practical syllogism, see Raz (1975).

text and discourse, and also to different conceptions of the relationship of discourse and language.

3.4. Some Possible Wrong Emphases in the Work Reviewed so far.

In the foregoing I point to the possiblity of distinguishing levels of interpretation; I will return to the matter later on. In terms of the first tentative distinction there is room for the study of "lower" level comprehension; this may concentrate on developing rules of use of the kind that Criper and Widdowson postulate. There is also room for the study of "higher" level comprehension; this may presumably concentrate on (other) procedures which underlie the interpretation of discourse.

I suggest now that the study of "procedures" conceives of linguistic expressions in a way that is different from the way in which the study of "rules" conceives of them. The study of procedures views linguistic expressions as a kind of "indexical devices". I quote Jakobovits:

> Linguistic expression are merely indexical devices for conjuring up in the mind of the recipient some cognitive processes that might correspond to the thought that the sender has and wishes to convey.
> (See Kaplan 1972, p.29).

I come back to the indexicality and cognitive processes in the next Chapter. At this point I want to indicate that because Halliday as well as Criper and Widdowson conceive of linguistic expressions in a certain way it is possible that, as a consequence, one can occasionally detect a misplaced emphasis.

We recall that on Halliday's view we have a choice among

certain options when we 'textualise'; the options are options within a given register. A register is a kind of sub-code. Such sub-codes are the Englishes of advertising (of which there are many varieties), conversation (of which there are innumerable varieties), religion, legal documents, broadcasting, science and so on, indefinitely. For instance, the general "province" of scientific language can be further differentiated into a great number of "distinct uses", such as "the language used in reporting an experiment, in discussing a problem, in giving instructions as to how an experiment should be performed, in stating laws, in defining a concept" (Crystal and Davy 1969, p.251). These are distinctions made along the dimension of "modality", which in Crystal and Davy's usage refers to the purpose the speaker or writer had in mind when conveying his message (op.cit. p.82) [76].

However, it may be asked: isn't the purpose the writer has in mind when he conveys a "thought", simply, to convey that thought? For instance, in the case of the factory workman - wasn't the purpose he had in mind to convey the message, manifestly, that the work-force were dissatisfied with the conditions in the washrooms and, latently, that they wanted more say in the factory management? Didn't the recipients, i.e. the management, infer the workman's intent on the basis

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76) I suggest that rather than look at the uses of scientific language as distinct registers one might look at them as so many "language games". Then what one has to do is to "look at the whole context of extra-linguistic social activity within which the language is embedded" (Kenny 1976, in The Listener, vol. 95, no. 2458, p.641).

of what he said (the linguistic expressions he used as indexical devices) and not on the basis of whether he said it in a letter, a postcard, a note, a telegram, or a memo - or in so many spoken words? In the interests of "external" description it may be important to correlate text, along various dimensions, with such things as occupational activities, relative social standing, personal idiosyncracies, etc., etc.; but what is the weight of such factors in an actual discourse-situation? In an actual discourse-situation there is one primary consideration for the sender: it is to "index" the thought or message that he wishes to convey; it is only a secondary, and contingent, factor that he will also, in many cases, "index" his occupation, status, individuality and so on. For the receiver it is a primary consideration to try to infer, on the basis of the indexical devices used by the sender, the thought or message that is conveyed. The information that the receiver gets about the sender's occupation, relative status, personality and so on is frequently inessential in comparison with the centrality of the message [77].

The point I want to make here is that something like excessive fidelity to (one's mental representation of) the register, and corresponding infidelity to one's primary concern, may and sometimes does result in partial or even

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77) I am, of course, thinking of such situations where the communication of a factual content is the primary concern. On the transmission of messages by means of language, see also the "cognitive social psychology" of Rommetveit (1968); Carswell and Rommetveit (1970).

total failure of communication.

On Criper and Widdowson's view, when we textualise (for instance, an order) we have a choice, too: provided the necessary conditions are assumed to obtain we can focus on any one of the conditions and textualise accordingly. Here again I think that a wrong emphasis may intrude. As I have already suggested, it is the primary concern of the school-teacher to "inform" his pupils that the exercise is to be finished by the given date; this is the message the teacher wants to "index". In comparison, it is of secondary import-ance whether he also indexes that it is his wish, expecta-tion or what not; and whether he indexes that he is, in a sense, threatening the pupils, or predicting that they will find the exercise easy enough to do and so on [78].

In this connection, too, I think that if the teacher, instead of focussing on the main business, focusses excessive-ly on "mitigation", communication may, as a consequence, be impaired.

One final comment. In school there is no such thing as giving orders tout court. Rather, there are varieties of the language game which consists of giving and obeying orders; if there were not, school would not be school. Children learn these language games pari passu that they learn the school subjects (and the other things that are learnt in school). Thus the rule conditions, or rules of use, cannot (and I think should not) be separated from their context in the language games. In other words, whether a given piece of

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78) On this use of the verb "index", see Cicourel (1973,p.56).

language conveys a particular communicative intent is not controlled, entirely, by a set of rule conditions; it is also controlled, to a variable degree, by the code and the language game within which the piece of language is embedded [79].

3.5. Summary of Chapter Three

According to Criper and Widdowson, the "ultimate aim" of discourse analysis, in its first aspect, is to provide a characterisation of different communicative acts in terms of the conditions which must obtain for such acts to be effectively performed (op.cit.). On this formulation, the aims of discourse analysis and the theory of successful communication (Cf. 1.2, above) seem to coincide [80].

I agree, of course, that successful communication is, as it were, the core of discourse analysis; but is there no more to be done than to provide the characterisation of different communicative acts in terms of rule conditions? In Part Two I try to show that the discourse-situation involves a whole 'constellation' of basic principles which have to be 'there', i.e. have to be assumed to obtain for the act of communication to be successful. The basic principles that I will try to get at derive from the philosophy of language; and, to an extent, from what is referred to by Cicourel as "cognitive sociology". I have gone outside linguistics for the reason which is mentioned by Widdowson in

79) Linsky (1967, in Fann ed.A,p.175) writes:"A language game is a use of language for some purpose ... Asking and answering questions, describing a room ... complaining of pains, expressing fears and doubts, proving a theorem ... are language games ... in which various portions of our language are woven into activities aimed at some goal".

80) See further Widdowson (1973B, p.74-76).

the following:

> Advances in our understanding of discourse have come not from linguistics as it is generally understood but from the two areas of inquiry which we might call the sociology of language on the one hand and the philosophy of language on the other.
> (Widdowson 1973B, in Corder and Roulet eds., p.72).

In the foregoing discussion I have referred to the Criper-Widdowson approach to discourse as sociolinguistic; I have done so for the sake of convenience. Maybe other characterisations are possible, in particular as there have certainly occurred new developments in the work of both scholars. For instance, Widdowson now lays great emphasis on the distinction between "use" and "usage" (as I have already indicated). I recapitulate here that usage refers to the way in which the language system is "manifested", whereas use refers to the way in which the language system is realised for the expression of propositions and the performance of illocutionary acts (Widdowson Mimeo 1). Adapting these these definitions we might say that discourse analysis is analysis of use while text analysis is analysis of usage [81].

I have related the sociolinguistic approach to my notion of discursive reading by suggesting that such an approach is concerned with a specific "level of interpretation". On this level we 'perceive' what propositions are expressed and what illocutionary acts are indicated or otherwise intended. I

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81) The Widdowsonian distinction between use and usage may be compared with the distinction between the "grammatical function" of a sentence and its "utterance function" (Wilkins 1972, p.147ff.).

have suggested that we have to ascend to a "higher" level if we want to read further 'behind' and 'between' the lines of what is said or written. On the higher level of interpretation discursive reading becomes a matter of trying to reconstruct the writer's "intentions" on the basis of the textualisation.

Criper and Widdowson's approach 'inspires' me to suggest that there is lower-level discursive reading, which is dependent on "rules", and higher-level discursive reading, which is also dependent on "procedures" [82]. I can envisage that such a distinction may open up new possibilities for discourse analysis. In the present thesis I do no succeed in working out the full implications of the distinction, far from it. However, I do try to approach the matter from a few angles in Part Two.

For our present purposes we might think of "rules" in terms of Criper and Widdowson's rules of use.[83]. As for "procedures", these may well be on a second-order level; later on I will sometimes refer to them as "rules of inference". I will suggest that we need to posit procedures in order to account for our discursive ability to recover references as well as to see how informational possibilities are created ("left open") and, subsequently, resolved. My work on procedures is part of a tentative stage of inquiry for there is very little earlier work to go on.

The foregoing reflections indicate, at least to me, that

82) I have learnt the distinction between rules and procedures from Widdowson (personal communication).
83) On rules of use, see also Candlin (1973, in Corder and Roulet eds.).

the aim which Criper and Widdowson set for discourse analysis is not, perhaps, ultimate enough. We must try to go beyond the characterisation of communicative acts. Also, we must not separate the acts from the people who perform and interpret them. I think that Criper and Widdowson's definition of the aim of discourse analysis does not quite sufficiently bring it out that we merely observe a sentence or text, whereas we respond to other human minds. Most obviously I, for instance, communicate with another person, say, a writer, when our discourse works as an "information relay", allowing the writer to describe to me what he is in a position to know but I, less well positioned, cannot know [84].

CHAPTER FOUR DISCOURSE IN ETHNOMETHODOLOGY

Introduction

In the quotation from Jakobovits (3.4., above) there is a reference to "indexical devices" and another to "cognitive processes". Both these notions relate to the work of Cicourel, the writer of Cognitive Sociology (1973). Beside Garfinkel, Cicourel is perhaps the most representative member of the "West Coast School" of sociology, called ethnomethodology. The writings of these "ethnosociologists" are notoriously difficult, but some of the concepts that they introduce are also very interesting and relevant [85]. In this chapter I will try to approach discourse through ethnomethodology. This does not, however, entail any detailed exposition of the whole

84) In the first instance discourse may well have worked, socially, as a "sense relay"; this is suggested by Thom (1975, p.310).

85) See also Cicourel (1970, in Dreitzel ed.), (1971, in J.D. Douglas ed.) and (1973, in Shuy ed.). There are also numerous references to the work of Cicourel and Garfinkel in Filmer et al. (1972). (foot-note continued over)

movement.

Central to ethnomethodology is the question of the meaning of social actions; ethnosociologists consequently tend to cut off all macro-sociological considerations in order to concentrate on the "basic rules" of everyday communication and interaction [86]. As Dreitzel writes (introd. to Dreitzel ed. 1970):

> While members of our secularised society try to find a meaning for their own and their fellow people's actions, ethnosociologists try to analyse just how people go about finding a meaning in their mutual actions; doing interpretation, i.e. the procedure of understanding the other, is the phenomenon under investigation. (original emphasis).

"Doing interpretation" implies some "interpretive procedures", i.e. basic rules which are constitutive of the social member's sense of social structure and organisation (Ciccurel op.cit., p.44). The procedures enable the member to define social situations and actions. Dreitzel (op.cit.) claims that the social reality in which people live their everyday activities is built not on the "objective" facts of a situation but on the "subjective" definitions of a situation (Cf. McHugh 1968).

The "subjectivism" of ethonomethodology consists in the fact that it attempts to understand social reality from the

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85) cont'd.
Many of the basic ideas of Ciccurel come from his "mentor", Schutz. There are brief extracts from Schutz in M. Douglas ed. (1973). Ethnomethodology derives from Phenomenological Philosophy; see Pivcevic ed. (1975), esp. Manser's paper on Austin' "linguistic phenomenology" (Manser 1975, p.109-124).

86) Ethnomethodologists are interested in the experience of the member or actor but maintain that we can never actually get at that experience (Cf. Armistead 1974, introd. to Armistead ed., p.23).

viewpoint of the member ("actor"). Ethnomethodologists claim that, for the actor, the meaning of social situations and actions is not settled once and for all, but is subject to constant revision, i.e. is a "contingent, ongoing accomplishment" (Garfinkel 1972, in Gumperz and Hymes eds., p.309).

It is interesting to note that Cicourel links up with both Chomsky and Halliday. For instance, corresponding to Chomsky's sentence grammar, Cicourel has the notion of "interactional grammar", supposed to be internalised by interactionally-competent social members. The basic rules of interactional grammar, i.e. the interpretive procedures, "prepare and sustain an environment of objects for inference and action" (Cicourel op.cit., p.52). In the way that the Chomskyan speaker-hearer possesses a tacit basis which enables him to assign literal meaning to any sentence of (say) English, the Cicourellian member possesses an added tacit basis which enables him to assign a social meaning to any everyday activity performed in the "life-world" by a fellow member or by himself. Analysing the interpretive procedures thus means analysing the additional basis: how is it possible, in the first place, for us to "do interpreting"? [87].

How does Cicourel connect with Halliday? In two ways, at least. First, both share a developmental interest. On Halliday's view, texts show clearly how in the course of linguisic interaction the child is all the time learning the structure of the environment in which he is growing up. Similarly,

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87) Discourse and interpretive procedures were connected by Widdowson, who says (Widdowson Mimeo 2, p.7): "If we cannot account for the interpretation of discourse ... by grammatical knowledge, how then can we account for it? We can account for it, I suggest, by invoking the concept of interpretive procedures".

Cicourel thinks that the acquisition of interpretive procedures parallels the acquisition of language, with the child's interpretive procedures being gradually replaced or displaced by adult interpretive procedures (op.cit.).

A second point of connection between Halliday and Cicourel consists in their shared interest in the interactional situation. However, their conceptions differ: Halliday defines the situation from an external viewpoint and in static terms, whereas Cicourel defines it from a participant viewpoint and in dynamic terms. The "ecology" of text is far more complex, when it is viewed from the internal viewpoint and when the meaning of the situation and the actions is seen to emerge and change "over social time and across social space" (McHugh op. cit.). Halliday also fails to notice that the meaning of events can develop new and different features even after the event has occurred or before it happens (McHugh op.cit., p.35).

The theme of interpretive procedures runs through Cicourel's work. The procedures are defined in many ways. They are basic rules that permit the actor to identify situations and actions; they enable the actor to generate appropriate responses in changing situations; they are invariant properties of "everyday practical reasoning", necessary for assigning sense to norms (Cicourel opcit.,p.52).

Interpretive procedures are behind appropriate invocation of norms. We can illustrate this as follows: One component of speech events is constituted by "norms of interaction" (Hymes; see 2.7. above). For instance, there are norms that govern the allocation of turns at talking. How-

ever, when we say that there are such norms we take many things for granted. These taken-for-granted things, i.e. interpretive procedures, underlie the relative orderliness of conversations in the way that the taken-for-granted grammatical rules underlie the relative orderliness of our sentences [88].

For instance, there cannot be any allocation of turns in conversations unless there is at least a temporary agreement on what it is that counts as a turn. Several interpretive procedures may be involved in such agreements; consider the one which Cicourel refers to as "Normal forms" (op.cit., p.53). There exist certain normal forms of acceptable talk on which members rely for assigning sense. Hence we can assume that, depending on the pragmatic context, parties to conversations agree, for the time being, that turns will conform to certain normal forms [89]. The agreement is established tacitly, in the way of an unconscious "ad hoc" operation (Garfinkel; see 2.7. above, fn. 49).

I will now review Cicourel's detailed account of the interpretive procedures.

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88) Orderliness or regularity is contextual, i.e. always as orderly as is necessary for the purpose at hand. An ideal ordering of discourse, like an ideal ordering of traffic, is not a meaningful notion. Cf. Dreyfus (1972, p.183); see also Wittgenstein (1967, p.78).

89) We may conjecture that discoursants have tacit knowledge of "normal forms" of speech acts in their pragmatic contexts. Scriven, for example, maintains that discourse and translation depends on the psychological reality of what he calls "natural units", i.e. illocutionary acts, produced in a particular context (1960, in Hook ed., p.127). It is also claimed that we "cognise" well-formed textual units, such as paragraphs (Koen, Becker and Young 1968, in Zale ed.) and discourse units, such as narratives (Shuy and Fasold 1971, in O'Brien ed.).

4.1. Interpretive Procedures

Cicourel observes that our present knowledge of the nature of interpretive procedures is "sparse" (op.cit., p.52). In addition to the procedure of "Normal forms", mentioned above, Cicourel lists (i-iv):

(i) "Reciprocity of perspectives"

(ii) " Et cetera assumption"

(iii)"Retrospective prospective sense of occurrence"

(iv) "Descriptive vocabularies as indexical expressions"

Reciprocity of perspectives refers to the basic assumption that the discoursants would "probably" have the same experience of the "immediate scene" even if they were to change places. The same procedure also informs the discoursants to ignore any personal differences, so that each is able to attend the immediate scene in an identical manner. As a corollary, discoursants assume that each will produce recognisable and intelligible utterances, and each will try to reconstruct the other's intentions [90].

The reciprocity of perspectives procedure cannot operate unless other procedures accompany its use. One of the accompanying procedures is the et cetera assumption; this permits us to allow utterances pass despite their vagueness or ambiguity. In other words, we may defer judgment on a vague or an ambiguous item until additional information is forthcoming. Alternatively the item is assigned tentative sense and then

90) Cicourel conceives of intentions in the way of Schutz who says (1964, p.11) that he is interested not in the overt behaviour of others but in their intentions, in the sense of their "in-order-to motives" for the sake of which, and their "because-motives" based on which others act as they do. For affinities between ethnomethodology and "ethogeny", see Harré and Secord (1972).

"locked-in" retrospectively when a clarifying phrase appears later in the discourse.

At this point the et cetera rule links up with that of retrospective-prospective sense of occurrence, which says that discourse depends on the participants waiting for later statements to decide what was intended before (Cicourel op. cit., p.54). Cicourel characterises this important procedure as follows (loc.cit.):

> Speakers and hearers both assume that what each says to the other has, or will have at some subsequent moment, the effect of clarifying a presently ambiguous utterance ... This ... enables the speaker and hearer to maintain a sense of social structure despite deliberate or presumed vagueness ... Waiting for later utterances (that may never come) to clarify present descriptive accounts, or 'discovering' that earlier remarks or incidents now clarify a present utterance, provide continuity to everyday communication.

As seen from the quotation, the retrospective-prospective procedure relates to the continuity and coherence of discourse. In a sense, the coherence of discourse is constructed by the interpreter (Cf. Silverman 1972, in Filmer et al., p.6). Discoursants "tolerate" vagueness and ambiguity for they are able to "normalise" discrepancies. The interpreter can also connect an elucidatory comment retrospectively to a previous utterance which he has been able to recognise as being in need of elucidation.

These matters relate to the notions of "emergence" and "relativity", put forward by McHugh (op.cit.,p.37-45). Emergence concerns the temporal axis of discourse; its components include "theme", "elaboration", and "revelation". Relativity is spatial and characterises an item in its rel-

ationship to other items. The theme "rule" says, at its simplest, that discoursants assume before the interaction that a pattern of meaning will be discovered in the 'acts' perceived. A theme will appear, is portrayed, and re-appears "in the guise of individuated instances"; it is these instances of the theme that elaborate it.

The third component of "emergence", revelation, relates to the retrospective clarification of utterances. McHugh expresses the matter by saying that the earlier vague or ambiguous item, which is conceptualised as something that is in need of clarification, is perceived, by the interpreter, to stand in a "syncategorematic" relation to the later utterance, which in turn is conceptualised as something that clarifies (op.cit.) [91]. A revelation, i.e. an insight, occurs, connecting the two.

Such insights presumably occur when we read discourse; they may, for instance, be studied under McHugh's "relativity", especially under the component of relativity called "causal texture" (op.cit., p.44). I quote:

> Members point to some phenomena as the conditions under which still other things will occur. The causal texture when a man cries, for example, may include drunkenness or bereavement. Causal texture is the common-sense version of cause and effect, the scenic auspices of events.

It is easy to relate McHugh's notion of causal texture,

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91) The term "syncategorematic" may refer to the fact that, together, the earlier clarifiable item and the later clarifying item add up to something that is more than the mere sum of the two. Compare the phrase 'false prophet', in which the adjective 'false' is used syncategorematically. The phrase has a meaning which is not just the "sum" of 'false' and 'prophet'. For instance, a false prophet is no prophet at all (see Quine 1960, p.132).

for instance, to Sacks' analysis of a two-sentence story, composed by a child of two years and nine months [92]. The story reads in the way of (47):

(47) The baby cried. The mommy picked it up.

The causal texture when a baby cries may include some state of discomfort. Hence the reader of (47) may "point" to the discomfort as the conditions under which "still other things will occur". In other words, when we read about an event which we conceptualise or categorise as a baby crying we may reason: the baby is crying because it is not feeling confortable, and under such conditions still other things will occur. We expect still other things to occur; this kind of practical reasoning refers to the prospective sense of occurrence. Reading on we read about another event which we categorise as mommy picking up the crying baby. We conclude that this other event is, in fact, the anticipated other event; this practical reasoning refers, in turn, to the retrospective sense of occurrence.

In something like this way the reader constructs the story intended on the basis of the linguistic expressions, used as "indexical devices" by the writer [93]. I might add, however, that the foregoing analysis, which is meant to give a partial account of the interpretive work undertaken by the reader, still leaves out a good deal. For instance, it leaves

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92) For Sacks' analysis, see Sacks (1972, in Gumperz and Hymes eds.; reprinted in Turner ed. (1974). There are comments on the analysis in Cicourel (1973, p.69-70). I return to Sacks' notion of "membership categorisation device" later on.

93) It might be of interest to see what stories people would come up with given an "indexical" two-sentence sequence to go on. As an example, consider: 'The man cried. The woman placed her arm round him.'

unanswered such a question as: what did the "wee" writer wish to 'say' by the story? In my term, what "discourse act" did he or she wish to perform? However, I anticipate. I must turn to Cicourel's last interpretive procedure, namely, descriptive vocabularies as indexical expressions.

4.2. "Indexicality"

Previous to a discussion of the last interpretive procedure - how would we characterise Cicourel's list, other than as a list of interpretive procedures? I think it is possible to say that they constitute a sub-set of the "total" set of basic principles of discourse: a sub-set of the implicitly shared "assumptions", relevant to the discourse-situation. In Stalnaker's terms, they are the "presuppositions of discourse", propositions that are implicitly assumed "before the relevant linguistic business is transacted" (op.cit., p.280) [94].

Discourse assumptions are the routine grounds of interaction. They help prepare and sustain coherence. They are "ethno-methods" which have their basis in the corresponding cognitive structures in our minds. The ethno-methods are taken for granted in everyday life, and they are also taken for granted in some discourse analyses. As an example, consider the following (48) [95]:

(48) T: I want you to write down the answer in your exercise book.

P: My pen is broken.

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94) See also Landesman (1972).
95) I refer to Criper and Widdowson (op.cit.).

A question that an analysis of (48) raises is: how should we account for the fact that this exchange is coherent as discourse without being cohesive as text [96]? The analysis may conclude that P's utterance counts as a guarded refusal to obey. This gives us an account of the intuitively felt coherence: the sequence reads as an order followed by a refusal to obey.

We can accept that the analysis sketched accounts for the coherence of (48) but recognise that the analysis has proceeded by taking for granted the interpretive procedure which permits us, and T, to recover the "full relevance" of P's answer. This particular interpretive procedure will here be referred to as indexicality, and I will next try to indicate what I interpret Cicourel to mean by it [97].

In his discussion of indexicality Cicourel draws on Garfinkel's observations of how members take for granted their reliance on the existence and use of descriptive vocabularies for handling information, "where the vocabularies themselves are constituent features of the experiences being described" (Cicourel, op.cit., p.56). Indexical expressions are a feature, for instance, of organisational contexts. We may speak of "organisational socialisation",

96) Discourse coherence, as distinct from text cohesion (Widdowson 1973B), refers to the intuition of a member of "how one utterance follows another in a rational, rule-governed manner" (Labov 1972, p.299).

97) Gumperz (introd. to Gumperz and Hymes ed. 1972) writes: "Indexicality refers to the fact that the interpretation of communicative acts always without exception depends upon the speakers' background knowledge. For this reason the spoken message is always an imperfect realisation of what was in the minds of speakers and hearers". On indexicality, see also Heritage (1974, in Armistead ed., esp. p.276). At this point we can also note that a trichotomy may be established as to kinds of information which is exchanged in conversations, namely, "cognitive", "indexical" and "interaction-management information". (Laver and Hutcheson eds., 1972, introd.).

meaning the processes which make an individual become part of the organisation (Manning 1971, in J.D. Douglas ed., p.239). Becoming part of the organisation implies and presupposes the acquisition of the competence to use descriptive terms and phrases for the handling of bodies of information. The descriptions may consist of items similar to Sacks' "membership categorisation device" (Sacks 1972; see 4.1. above, fn.92). For instance, in the organisational setting of a hospital, in the emergency room, staff may use the "category" broken leg as a reference to a patient. In the minds of the members of the staff such a use of the category broken leg may be linked to the "device" emergency; there is tacit knowledge distributed among the staff which makes such linkage possible [98].

Now to the question as to how the foregoing analysis of (48) neglects the taken-for-granted indexicality. The analysis fails to make it problematic how in the first place T, i.e. the teacher, is able to recover the full relevance of P's, i.e. the pupil's reply. An alternative account of the coherence of the exchange might proceed by appeal to the notion of practical syllogism (3.3. above). Thus we might say that there is a practical syllogism which is 'used' by the pupil. In the (PS) below, S refers to the state of affairs that the pupil need not write down the answer in the exercise book, and U refers to his utterance:

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98) Manning (op.cit., p.253): "Means by which conversations are maintained are called devices, with two or more categories socially used in a setting ... to refer to a population of objects".

(PS) 1. I want to bring about S.

2. I believe I cannot bring about S unless I 'do' U.

3. So I will do U.

The pupil 'does' U, i.e. utters 'My pen is broken'. The teacher reconstructs the practical syllogism and infers that the pupil replied so because he wished that he would not have to write down the answer. In other words, the teacher takes the pupil's utterance as a guarded refusal to obey, as the earlier analysis noted.

Now, however, it is to be observed that in constructing the practical syllogism we assigned a meaning to S (state of affairs) in an arbitrary way. Since we knew nothing of the background we conjectured that the pupil wanted to be exempted from writing down the answer in his exercise book. It is equally likely that he would have liked to do as requested but was not able to because (as he says) his pen was broken. Hence the pupil's utterance might be interpretable as a kind of notification. In the corresponding practical syllogism S would mean: (I want to bring about the state of affairs) that the teacher knows that and why I, the pupil, am unable to write down the answer in my exercise book. If the teacher can reconstruct this syllogism he will infer that the pupil has, correctly, taken his utterance as an order but that the pupil, by means of his reply, attempted to explain why he was unable to comply with the order.

The above is merely one alternative analysis of (48), i.e. such an analysis which takes the discoursants' background knowledge into account. In saying that the interpretation of the pupil's reply depends on the teacher's (and our) background knowledge we say that the pupil's reply is indexical. For instance, we do not know but may wonder under

which category of the device pupil the teacher would classify the pupil. Would the teacher refer to the pupil in question using the category swot or would he refer to him by using the category skiver? If the first category was applicable, then the teacher would, perhaps, "read" the pupil's reply in the way of (49):

(49) This swot's pen is broken.

Consequently, the teacher would try to reconstruct a practical syllogism of the latter kind and infer that the pupil was explaining why he could not do as requested. If, however, the second category ('skiver') was appropriate, then the teacher would presumably reconstruct a practical syllogism of the former kind and infer that the pupil was trying to "excuse" himself from having to do as requested.

To sum up. In this section I have attempted to illustrate the ethnomethodological notion of indexicality by reference to an analysis of a teacher-pupil exchange. What I have said boils down to the observation that the interpretation of discourse always depends upon background knowledge [99]. For instance, the pupil's reply is 'heard' by the teacher as a kind of excuse or as a kind of explanation, depending on how the teacher's background knowledge causes him to categorise the self-referential expression my pen in the pupil's reply.[100]. Since the replier is a pupil, i.e. falls under that "membership categorisation device", the teacher will, for the purpose at hand, categorise him as either a swot or a skiver, or perhaps an in-between. The analysis which absol-

99) For an ethnographic analysis of certain social "occasions", as conceptualised by members of the society, see Faris (1973, in M. Douglas ed.).

100) Perhaps my pen might be called a "reflexive" expression (see Anscombe 1975, in Guttenplan ed., p.46).

utely labels the pupil's reply as a guarded refusal to obey (in order to account for the coherence of the exchange) treats of the reply as an "objective" rather than an indexical statement. In the objective view, whatever the pupil says in reply to the teacher's order can count only as either an indication to do as requested or as an indication to disobey. What is more, unless the pupil clearly indicates his willingness to obey, his reply is liable to be interpreted as a more or less guarded refusal to obey. These reflections show, to my mind, that the objective analysis of (48) is bound to oversimplify the discourse-situation in comparison with the indexical analysis [101].

4.3. Displayed vs. Implied Information

In this brief section I want to note how Cicourel uses the term 'indexical' in a way which permits a tie-in with our earlier discussion of Chomsky and with a later discussion in Part Two. In the earlier discussion I made a distinction between what is stated and what is implied, and I will continue the theme of implication later on. At this point I will observe, first of all, that according to Cicourel surface structure(i.e. textualisation) is "indexical", in the sense that "it always implies more information than is displayed" (op.cit., p.107).

We can relate Cicourel's dictum to Chomsky's 'logical form'; recall (19), here repeated as (50):

(50): Electrical wires are, or course, made of metal;
and metals are better conductors of electricity

101) However, it may be a good thing to remember that (all) analysis is an infinitely open process (Cf. Gurwitsch, 1964, p.231).

than are any other type of material.

I have suggested that (50) implies, but does not state, that it is true of all electrical wires that they are made of metal and that it is true of all metals that they are better conductors of electricity than any other type of material. In Chomsky's view, these implications are included in what he calls the literal meaning of the sentences used in (50). Be that as it may, but we might refer to the implications in question as "quantifier implications".

Implications are, generally, taken to be propositions which follow from a statement if the statement is true (Wiggins 1971, in Steinberg and Jakobovits eds., p.2o) [102]. For instance, on the assumption that (50) is true it follows that the particular electrical wire that I hold in my hand is made of metal; i.e. (51) is implied even if not displayed in textualisation (50):

(51) This electrical wire is made of metal.

Another implication, though as it were 'twice removed' from the textualisation, would be (52):

(52) Copper is a better conductor of electricity than wood.

In order to distinguish (51) and (52) from the "quantifier implications" we might call them "propositional implications".

Thus we have observed two ways in which a textualisation may be indexical, in the sense of implying more information than is "displayed". The textualisation may yield other kinds of implicit information as well; what implied information is extracted may depend on the reader's purpose at hand. It seems that recovery of implicit information is a necessary

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102) On the matter of implications, see also MacKay and Mountford (1973, in Grêve et al. eds.).

condition for the interpretation of even relatively small units of sustained discourse.

Let us relate the distinction between displayed and implied information, briefly, to the other interpretive procedures. For instance, (50) is only the opening of a paragraph; in reading it one may keep wondering: why is the writer telling me this? (After all, I know it already.) What is he getting at? Such self-addressed questions would indicate that one has already interpreted, on some lower level, what one has read and is now "waiting-and-seeing" what it is all going to add up to on the higher level. One is trying to read 'between' the lines. In doing so one is relying on one's interpretive procedures, such as reciprocity of perspectives, et cetera rule and retrospective-prospective sense of occurrence. This means that the reader assumes that the writer will produce recognisable and intelligible utterances, while the writer assumes that the reader will (try to) reconstruct his intentions - for instance, in terms of some relevant practical syllogism. Moreover, both writer and reader assume that vagueness and ambiguity will be cleared up in time and tentative meanings will be locked-in. Finally, the writer assumes that the reader will strive to sustain coherence, continue to elaborate the theme (once found) and be on a constant look-out for the "point" in what the writer is saying. All this involves the reader's "processing" not merely what is on display but also what is there by implication.

4.4. Summary of Chapter Four

In this summary I will re-iterate some notions put forward by ethnomethodologists which I find useful and relevant in discourse analysis (i.e. in the analysis of discursive reading, as I conceive it). However, I also feel that in certain respects the ethnomethodological approach goes too far, and I will point to some ways in which balance might perhaps be restored.

These are some of the useful notions short-listed:

(i) The interpretive procedures as invariant properties of discourse. I think that it is possible to conceive of the interpretive procedures in terms of an inclusive ability to see the relevance, and in a specific way, of other than purely linguistic knowledge to the production and interpretation of discourse. Obviously, this is a category which has to be gone into in a proper fashion; at the moment our knowledge concerning the procedures is sparse, as Cicourel notes. The task is to make explicit something that we, as competent members, know implicitly. How the task is to be carried out is another question; but we must remember the invariant nature of the procedures: they are something that is invariant from one individual to another, and across different languages. It is a mistake to confuse them with such mental processes and states which obviously vary, in so far as individuals and even different speech communities are concerned.

(ii) Interpretation as a contingent, ongoing accomplishment. Members are methodical in discourse, but they only accomplish discourse by effort. They do interpretation. Meaning is not assigned once and for all, but by gradual clarification. It

is not settled once and for all, but is always subject to revision. Finally, meaning is never 'finalised' but is something that is open-ended.

(iii) Discourse assumptions.

The notion of interpretive procedures suggest that discoursants proceed (and can only do so) relying on certain implicitly shared assumptions. The assumptions concern, as we have seen, such things as the recognisability and intelligibility of utterances, their definability as specific communicative acts; the implicit agreements - the one that lets vague and ambiguous utterances pass on the further assumption that they will be clarified later, and the other that enables the discoursants to link an earlier utterance to a later one, whether the linkage happens by insights or by rules of inference or by both. A further assumption concerns the fact that natural languages have indexical properties. In this connection I will quote once more, this time Heritage (1974, in Armistead ed., p.276) [103]:

> For fully socialised persons ('members') who have mastery of a natural language, many of the things we say only have their sense against the context or background in which they are said. Equally the sense of statements is elaborated by some knowledge of the context in which they are said. Thus the statement 'I am a social psychologist' will be heard to have different 'fringes of meaning' depending on whether it is said, for example, in a witness box, during a church sermon, at a psychology convention and so on. The addition of knowledge about the precise linguistic context of the statement will provide a competent hearer with more implicative detail.

The ethnomethodologists thus also stress the significance of

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103) Cf. the quotation with Jakobovits (1970, in Lugton ed.).

the pragmatic context but they go on to investigate the ways in which the pragmatic context is significant. It is to be noted, as well, that they do not completely ignore the "precise linguistic context" of utterances.

(iv) Information display and implicative information. The indexicality of natural language means that in a textualisation everything communicated is not, as it were, on display but on the contrary much of what is communicated is (in Heritage's term) "implicative detail". The ethnomethodologists claim that it is also the interpretive procedures that "generate" all the implicative detail. In this generative aspect the procedures are sometimes called methods of practical reasoning [104].

My criticism of the ethnomethodological approach starts from the question: is discourse merely or nothing but what it is suggested to be in this approach? Obviously it is something else as well and thus the ethnomethodological view is somewhat distorting. I will mention just two respects in which it is clearly distorting [106]. First, although the approach can disclose members' taken-for-granted assumptions, it is uncritical of such assumptions. If objectivity is merely a practical accomplishment, then objective description becomes impossible. There are, however, such things as general statements and objective concepts; if there were not, science would be impossible. Secondly, and as a corollary to the first point, ethnomethodology illicitly reduces every-

104) This practical reasoning is not the same concept as is studied, for instance, by Raz (1975) and v.Wright (1971). Practical syllogism belongs to this latter kind of theorising.

105) I refer here to Resler and Walton (1974, in Armistead ed.).

thing to one plane of social reality, namely, individual consciousness [106]. This entails a false reduction of meaning, to meanings held by individual actors. The social world is not merely an ongoing, practical achievement. There is a subjective world, and an objective world; Popper calls the former World 2 and the latter World 3 [107]. World 2 is the world of subjective experiences, of mental states and processes. However, thoughts have contents and these contents can be and are objectified. As a result we have World 3, the world which consists of the products of the human mind. The products are descriptions, explanations, theories. Language, the coding system, is also one of the products; it is as real as the others - "as real as (or perhaps even more real than) a social institution, such as a university or a police force" (Popper 1976, p.186).

To sum up. There are subjective thoughts and subjective meanings, and there are objective thoughts and objective meanings; and the latter are not reducible to the former. However, ethnomethodology attempts such a reduction; this is clearly wrong and we must do something to redress the balance. One step towards redressing it is taken if we at least distinguish between process and product. In Part Two I will do so for my present purposes. At this point I must already warn the reader that I have not as yet clearly enough grasped the full implications of this distinction. At this tentative stage of inquiry I am merely groping towards the right kind of approach.

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106) See also the review of J.D. Douglas ed. by Roche (1972, in the British Journal of Sociology 23).

107) World 3 is presumably also the world of Foucault's "statements"; see Foucault (1974) and the debate between Foucault and Chomsky in Elders ed. (1974).

PART TWO TOWARDS A "PRAGMATIC" MODEL OF DISCOURSE

Introduction

In this Part of the thesis I feel my way towards certain basic principles of discourse analysis. For this purpose I take up a few notions which have been mainly discussed by some philosophers of language. To my mind these notions have a bearing on our "discursive capacity", i.e. our capacity for processing information from textualisations.

Part Two divides in two main sections: the discourse-situation, and the directions and dimensions of discourse. First of all, I will present a diagrammatic 'skeleton' of the discourse-situation; this is meant to bring out the distinction between the notions 'language' and 'discourse'. When we cross the boundary between two speech communities the medium of discourse, i.e. language, may change, but the discourse-situation stays 'invariant'. In another sense of 'medium' we speak of course of spoken and written discourse; in this sense, too, the discourse-situation survives a medium-change. Later on in the thesis I will emphasise that written discourse may also be viewed as inter-action - even although in a sense which differs from spoken discourse.

Hence I admit that the diagram of the discourse-situation is not, as such, self-explanatory; however, the whole of Part Two reflects an attempt to flesh out the skeletal notion.

In the remainder of the present introduction I will try to explain, prospectively, a few of the notions that will crop up in the exposition that follows. First, the notion of 'true in L', i.e. true in a given language (5.3. and

5.4. below). This is a notion that comes, to me, from David Lewis. The notion is associated with Tarski's so-called semantic theory of truth. Tarski's theory is, in effect, a formalisation of the familiar correspondence theory of truth. The theory says that an utterance of a sentence, i.e. a statement, is (simply) true if it corresponds with the facts. In other words, the sentence has to be asserted and it must be 'descriptively adequate'. Tarski, however, dispenses with the notions of assertion or statement and talks merely of sentences. Sentence he takes to be 'language-specific'; thus, for instance, the linguistic forms 'Ceasar is dead' and 'César est mort' are different sentences, although (as known to anyone who can translate from English into French, or vice versa) the sentences express the same proposition. Since Tarski, in his formalisation of the correspondence theory of truth, recognises the sentence (rather than the statement or proposition) and since the sentence differs from language to language, Tarski must speak of the sentence as being 'true in L'. Hence, to my mind, there is not much more than a verbal difference between saying that a sentence is true "in English" and that a statement made by using an English-language sentence is true.

A sentence expresses a proposition and different sentences may express the same proposition. Now, as Russell notes (1959, p. 135), behind the proposition there is belief. People who can speak, i.e. discourse, are apt to express their beliefs in sentences (though sentences may have other uses besides the expression of belief). In Part Two I put forward a model of technico-scientific discourse and this

model is dependent on a number of implicit assumptions shared by the participants in the discourse-situation. One of these implicit assumptions is that the beliefs expressed by the writer in a discourse are 'held true' by him. Hence they are taken to be true, and so informative, by the reader. This shows that there is an even more basic assumption in discourse (on my model), namely, the assumption of agreement. The assumption of agreement does not mean that the reader must blindly believe whatever the writer tells him; however, another basic assumption, namely that of rationality, instructs the reader to generally trust the writer and also to take account of the arguments that the writer puts forward in justification of his claims.

Neither does the general assumption of agreement mean that the writer and reader have, necessarily, to be in complete agreement about everything. Usually the participants' agreement in discourse is "weighted": to some propositions more weight is assigned than to others because the communication depends more on the former than the latter.

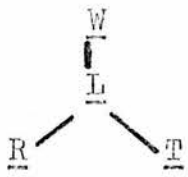
On my 'biased' model of discourse writers express beliefs which they hold true (under the circumstances); they do so because they want their readers to accept the beliefs. Readers, in turn, are able to 'replicate' writers' motives and so are able to infer what the latter are trying to 'get at'. Such inference may be called "practical", as we have observed earlier on in this thesis, and I have some reason to return to practical inference (and the related notion of teleological explanation) below.

In Part Two I also discuss some other types of inference because I think that no enough attention has, so far, been given to this notion in discourse analysis. I advance the tentative thesis that interpretative procedures may be thought of as cognitive structures which license or trigger the kind of inferences that are appropriate for the interpretation of a given piece of discourse. Thus interpretative procedures allow us to read 'behind' and 'between' the lines; it is these metaphors that I try to substantiate in the sections that deal with the directions and dimensions of discourse.

CHAPTER FIVE DISCOURSE-SITUATION

5.1. Discourse and Language

It will be convenient to make a theoretical distinction between the two interrelated notions, 'discourse' and 'language'. Criper and Widdowson - we remember - make such a distinction, even if only implicitly, when they refer to 'discourse' as the relation between "what is said" and "what is meant and done". Their definition implies that "what is said" is said in a language. I want to suggest an alternative definition; according to this 'discourse' refers to a three-term relation between a sender (writer), a receiver or an audience (reader), and a (generally extra-linguistic) subject-matter (topic). In this alternative definition, which is adapted from Macquarrie (1967), 'language' figures explicitly as that which "mediates and indeed constitutes" a discourse. The whole affair may be represented in the form of a diagram (Diagram 1):



W = Writer

L = Language

T = Topic

R = Reader

Diagram1 Discourse-Situation

The diagram shows that the concept of 'discourse' is wider than that of 'language'; also discourse has more concreteness, contextuality and 'personalisation' than language. These features of discourse are heightened, as it were, in the utterances of poetry. As Macquarrie says:

> A poetic or paradoxical utterance, for example, might appear complete nonsense when subjected in abstraction to logical analysis; indeed a paradox could appear as nothing but nonsense or self-contradiction if we regard only the internal syntax of the language, but such utterances, poetical and paradoxical, might make very good sense in their own discourse-situations. (op.cit., p.66-67).

As regards technic-scientific discourse, this is of course often contrasted with poetic discourse; as Macquarrie puts it, "probably scientific language is the kind that gets along best in abstraction from any discourse-situation" (op.cit., p.67). It is indeed possible to form a logical model of 'scientific language' - as it is possible to form a logical model of language simpliciter (cf. Chomsky) [1]. A logical

1) A "logical model" of scientific language can perhaps best be associated with the so-called logical positivist school of philosophy, which was very much under the influence of Mach and "the early Wittgenstein". Their logic was the logic of Frege and Russell. Among the associates of this 'Vienna Circle' were Carnap, Hempel, Popper, Morris and Ayer. (See Heath 1960, in Urmson ed., p. 168).

model of 'language', which is justified for some purposes, abstracts language from discourse-situations; it de-contextualises and de-personalises langage. Such abstraction is, of course, necessary for the study of the rules of syntax and (formal) semantics. However, it follows that the methods of syntax and (formal) semantics are not applicable - at least as such - in the study of discourse. When we study discourse we, as it were, relate an instance of language-use to its discourse-situation. This kind of study is associated with pragmatics and with a theoretical (or conceptual) model of 'language'. It is these two notions that I will discuss in the next section.

5.2. Pragmatics. Theoretical or Conceptual Models

The division of "semiotics", or the theory of signs, into syntactics, semantics, and pragmatics is due to Morris and Peirce (See Cherry 1957, p.8-9). Pragmatics is the most inclusive level of study, including "all personal, psychological factors which distinguish one communication event from another, all questions of purpose, practical results, and value to sign users. It is the 'real-life' level" (Cherry op.cit., p.223) [2]. These observations link up with Macquarrie's remark that relating language to its discourse-situation means confronting it "in its living concreteness" (op.cit., p.66).

Both Cherry's pragmatics and Macquarrie's discourse-

2) It may be interesting, in this connection, to note the dictum of Searle that he has "never found this distinction, between pragmatics on the one hand and syntax and semantics on the other, very useful"(Searle 1969, in Fann ed.B, p.217).

situation link up, in turn, with the idea of a theoretical or conceptual model, in this case, of language. Following Shanin (1972, in Shanin ed., p.8) we can say that the theoretical model differs from the logical models "by its necessary relation to, or representation of, reality, in terms of which its validity can be judged". The theoretical model carries over from logic the idea of interpretation of a deductive system, while at the same time it is rooted in the reality studied by its use. A theoretical model provides "a meaningfully selective and symbolic representation of reality".

We need a model in order to have some kind of a theory; and I think that we need a theory of discourse in order to impute such a theory to any discursively-competent reader - in somewhat the same way as Chomsky imputes his theory of 'logical form' (i.e. sentence-grammar) to his idealised speaker of a language. As Shanin says (op. ci., p.9), the basic function of theoretical models is their use as "the major bridge" between the meta-language of theory and the object-language of empirically collected data [3]. We analyse data (i.e. texts) in a descriptive meta-language; in the analysis we use a conceptual model which helps us to select and simplify. Hence, on the basis of unique data we are able to generalise.

The use of conceptual models is by no means unproblematic. One of the problems is how much to simplify; also, it may be difficult to find a model that is relevant. There is

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3) On the distinction between object-language and meta-language, see e.g. Salmon (1963, p.121).

a great danger inherent in the use of conceptual models: the danger lies in "the implicit tendency to reify models, i.e. to approach them as reality and not as a simplified and purposefully biased representation" (Shanin, op.cit., p.9; my emphasis).

5.3. A Language and Language

We are now in a position to link the idea of the discourse-situation with the theoretical scheme put forward by Lewis (1974, in Harman ed.). Lewis makes a distinction between a language and language tout court.

A language, in Lewis' scheme, corresponds to symbol L in the diagrammatic presentation of the discourse-situation; it is "something which assigns meanings to certain strings of types of sounds or marks" (Lewis, op.cit., p.253). Hence Lewis conceives of a language as a kind of code [4]. Language, in constrast, is in Lewis' scheme "a social phenomenon which is part of the natural history of human beings; a sphere of human action" (loc.cit.). Lewis also refers to language as "verbal activity" (p.254). Thus, Lewis' language tout court may, I think, be taken to correspond to Macquarrie's discourse.

What is the connection between a given language (say, English) and discourse (Lewis' language tout court)? The answer is, according to Lewis, that the connection consists in the fact that a given language L is used by a given pop-

4) The word 'code' is one of those systematically ambiguous terms; it is sometimes used equivalently or near-equivalently with 'language' (in one of its senses). At other times the two terms are distinguished (e.g. Cherry op.cit.,p.32-41). Black refers to the fact that we all 'speak in code', at least now and then (op.cit.p.136). For instance, someone might say 'The service is frightful in this hotel', meaning - by implication - that he did not intend to tip.

ulation P. Lewis says that this connection holds by virtue of the conventions of language prevailing in P; under suitably different conventions, a different language would be used by P. Hence there is some sort of convention whereby a certain more or less well-defined "population" uses the English language - but what is this convention, Lewis asks. This is how he proposes to answer his self-addressed question:

> My proposal is that the convention whereby a population P uses a language L is a convention of truthfulness and trust in L. To be truthful in L is to act in a certain way: to try never to utter any sentences of L that are not true in L. Thus it is to avoid uttering any sentence of L unless on believes it to be true in L. To be trusting in L is to form beliefs in a certain way: to impute truthfulness in L to others, and thus to tend to respond to another's utterance of any sentence of L by coming to believe that the uttered sentence is true in L. (op.cit., p. 257-258; original emphasis).

So the convention whereby an English writer and an English reader use the English language in a discourse situation may be a convention of "truthfulness and trust" in the English language. For the writer this would mean to avoid uttering any sentence of English unless he believes it to be true "in English"; for the reader it would mean to respond to the writer's utterance of any sentence of English by coming to believe that the uttered sentence is true "in English". In order to get clearer about what is involved we must inquire into the notion true in L - for instance, true in English.

5.4. The Problematic Notion 'True in L' and the Methodological Assumption of Rationality

The notion 'true in L' is central to the so-called semantic theory of truth, first set out by Tarski in 1931 (see

O'Connor 1975, p.91-111). Tarski's theory is highly technical, but the core idea is easy to illustrate. The following is an example taken from Davidson (1975, in Guttenplan ed., p.17): for speakers of English, an utterance of the English sentence 'It is raining', by a speaker X at time t, is true if and only if it is raining (near X) at time t [5]. Similarly, for speakers of Finnish an utterance of the Finnish sentence 'Sataa', by a speaker X at time t, is true if and only if it is raining (near X) at time t. Hence the Tarskian formula can serve in translation; sataa means it is raining.

The Finnish sentence sataa and the (equivalent) English sentence it is raining exemplify a type of sentence which may be referred to as observational. Many written sentences are, of course, theoretical (Quine and Ullian 1970). For instance, the Finnish sentence Puu on huono johdin and the English sentence Wood is a poor conductor are theoretical sentences. Such sentences or, rather, their utterances, are true 'eternal' or standing sentences (Quine 1960, p.12). Observation (or 'occasion') sentences, i.e. their utterances, are true 'under the circumstances' - if they are true, that is.

With this 'if' we come back to Lewis' 'use-convention'.

5) The bi-conditional expresses the so-called T(ruth)-Convention (à la Tarski). It is the central notion of referential semantics (See Lewis, op.cit., p.265). The extreme form of referential semantics recognises only the 'references' of singular terms and the 'extensions' of predicates. This theory also equates 'meaning' with 'information'. What is this information? "It is just information to the effect that the sentence is true, that the world is such as to meet the truth-conditions of the sentence" (Hintikka, 1971, in Linsky ed., p. 146).

For it is just this 'if' which Lewis' convention proposes to eliminate. When a person belonging to the English "population" hears or reads an English sentence from the mouth or pen of another person belonging to the same "population", the reader/hearer can take it that the utterance of the sentence is true (under the circumstances) - simply because the speaker/writer holds the sentence true (Davidson, op.cit., p.14).

By eliminating the disbelieving 'if', by exorcising it from the mind of the hearer/reader, Lewis' convention also facilitates the achievement of agreement between the discoursants. As Follesdal notes (in Guttenplan ed.,p.39), one important purpose of language and communication is to achieve agreement. Follesdal writes:

> When one asserts a sentence, it is often in order to get others to believe something. Questions often aim at getting information, that is, coming to know and possibly share the beliefs of others; similarly for other uses of language.
> (op.cit.).

We can picture Writer and Reader (cf. diagram 1) as obeying a maxim which directs them to maximise agreement, but we can qualify the matter by saying that the goal is weighted agreement. It is through the policy of weighted agreement that the reader can take into account the way in which the writer reasons and tries to justify his beliefs (Follesdal, op.cit., p. 40). In doing this, the reader assumes that the writer is (at least to some extent) rational, like he is himself. Following Follesdal we say that such an assumption of rationality is basic to understanding and communication, i.e. basic

to discourse.

5.5. Rationality and Coherence

I am trying to work out a theoretical or conceptual model of discourse for the purpose of analysing technico-scientific English. I need a model which is "a simplified and purposefully biased representation of reality". The Lewisian-Davidsonian principle of 'honest assertion' seems to fill that requirement [6]. Thus the "honesty" principle may be taken to be one important aspect of the tentative model of the discourse. We have noted that another aspect is constituted by the notion of weighted agreement, which may be regarded as one of the main purposes of serious, informative communication. Such communication is, for the most part, rational (as Follesdal notes). Lewis characterises the rationality of verbal activity as follows (op.cit., p.254):

> He who produces certain sounds or marks does so for a reason. He knows that someone else, upon hearing his sounds or seeing his marks, is apt to form a certain belief, or act in a certain way. He wants, for some reason, to bring out that belief or action. Thus his beliefs and desires give him a reason to produce the sounds or marks, and he does. He who responds to the sounds or marks in a certain way also does so for a reason. He knows how the production of sounds or marks depends upon the producer's state of mind. When he observes the sounds or marks, he is therefore in a position to infer something about the producer's state of mind. He can probably also infer something about the conditions which caused that state of mind. He may merely come to believe these conclusions, or he may act upon them in accordance with his other beliefs and his desires.

So the rationality of discourse refers to the fact that 'producers' and 'respondents' have reasons for thinking and acting

6) Consider how unreliable, unsuccessful and inefficient technico-scientific communication would be if it did not, ideally, conform to the convention of truthfulness and trust (in L).

as they do; furthermore, the participants themselves are implicitly aware ('cognise') this rationality. In consequence, each is able to "replicate" the other's reasons, and also able to replicate the other's replication of his own reasons (Lewis, loc.cit.) [7].

Members of the English "population" know the conditions under which utterances of sentences (in English) are true; this knowledge, internalised by the members, enables them to recover what Chomsky calls the literal or linguistic meaning of utterances. Lewis, in the above quotation, is more concerned with communication-intent. It is a corollary of the thesis of communication-intent that members of the English population have internalised another 'theory', somehow linked to the former, which enables them to 'explain' each other's speech-actions. In Lewis' words, a respondent is in a position to <u>infer</u> something about the producer's state of mind. One way of trying to account for such inferential competence is to subsume it under the <u>teleological</u> explanation of action (v.Wright, op.cit.).

As Davidson notes (op.cit., p.11), the cogency of a teleological explanation rests on its ability to "discover a coherent pattern in the behaviour of an agent". Davidson goes on:

> Coherence here includes the idea of rationality both in the sense that the action to be explained must be reasonable in the light of the assigned beliefs and

7) Therefore, the so-called Gricean mechanism operates in discourse: W intends to bring about a response on the part of R by getting R to recognise that W intends to bring about that response; R does recognise W's intention, and is thereby given some sort of reason to respond just as W intended him to. (Cf.Strawson 1969, in Fann ed.).

desires, but also in the sense that the assigned beliefs and desires must fit with one another.

Let us illustrate briefly. A man raises his arm; an explanation might be that he wanted to attract the attention of a friend; i.e. we infer: he wanted to attract the attention of a friend. In order to infer the explanation we 'replicate' a practical syllogism of the man; in this replication we assign the man a desire and a belief, in the way of (PS):

PS 1. I want to attract her attention.

2. I believe that raising my arm will attract her attention.

3. Therefore I have a reason to raise my arm [8].

By replicating the man's reason, which is given in the conclusion of the practical syllogism, we succeed in inferring "something about the producer's state of mind".

The teleological explanation exhibits the rationality of the observed action ('a man raises his arm'); the explanation discovers "a coherent pattern" in the action. The action of raising one's arm is "reasonable" in the light of the assigned belief (cf. 2. in the practical syllogism) and the desire (cf. 1. in the same). Also, the assigned belief and the assigned desire "fit" with each other. Hence, the man's action is coherent [9].

8) For the form of this practical inference, see v.Wright (op.cit.) and Raz (op.cit., esp. p.34)

9) Note that the methodological presumption of rationality does not make it impossible to attribute irrational thoughts or actions. However, the presumption does impose a burden on such attributions. Consider a man pulling on both ends of a piece of string. If we assume that the man is rational, as we are, no problem arises. We can explain the man's action by inferring that he wants to break the string. Such an explanation rationalises the action. Some other explanation would require much more elaborate backing. (Cf. Davidson, op.cit., p. 11-12).

So far we have noted that rationality, coherence and agreement are some of the basic assumptions of technico-scientific discourse. The discourse itself depends, to a significant extent, on truthful assertions. In the next sections I will inquire further into the notion of assertion.

5.6. Assertion or Stating

According to Lewis, when someone "produces certain sounds or marks" he wants to bring out some belief or action. This kind of 'producing' might be referred to as asserting or stating [10]. We can say, roughly, that a person cannot bring out a belief unless he asserts the sentence he uses. The opposite of 'assert' may be 'mention' [11]. I can illustrate by means of an example taken from Langer (1953, p.293): In saying 'Some people believe that four-leaved clovers bring luck' I do not assert that "four-leaved clovers bring luck"; I assert that such a proposition (P) is believed by some people. Hence my assertion is: 'Some people believe that P'. As Langer notes, when P is used in another proposition it is not asserted: it is merely talked about or mentioned.

A reader must presumably be able to discriminate between assertion and mention. The former has assertive force while the latter lacks it. In Hare's terms, an asserted sentence has a 'neustic' while an unasserted sentence has no neustic (See Hudson 1970, p.239). In speech it may sometimes be the

10) I use the terms 'assert' and 'state' as near-equivalents here. O'Connor uses the term 'affirm' in a similar way (op.cit.)

11) Cf. the pair of opposites 'use' and 'mention' (e.g. Salmon 1963, p.118-121).

tone of voice which corresponds ('mark') Hare's logical particle; in writing there may be no visible mark to correspond to the neustic. Such cases of no visible marking may pose problems for any attempt to account for the reader's recognition of the writer's 'propositional attitude'[12]. Occasionally the utterance of a sentence may genuinely be force-ambiguous (Strawson 1969, in Fann ed.B, p.391; Furberg, ibid., p.463). In a case of such force-ambiguity the reader may be able to connect the ambiguous utterance with another utterance which serves as a kind of "force-elucidating comment" on the former (Strawson, op.cit.). If the ambiguous utterance is ambiguous between assertion and non-assertion it may be followed by an expression such as 'That is true', which confirms the statement without repeating it (Urmson 1960, in Urmson ed., p.285).

Lewis' truthfulness and trust convention may be viewed as a constraint on assertion. The constraint might be expressed in the form of an injunction: 'If you decide to tell something, tell your tale so that it is true under the circumstances'. A further constraint on assertion may be implicit in the 'axiom' of rationality, which enjoins the speaker to refrain from assertion unless he has a good reason for it. In the next section I will consider two further constraints on stating and assertion; the first is Strawsonian while the second comes from Searle.

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12) On the term 'propositional attitude', see e.g. Flew (1971, p. 363)

5.7. Topical Talk and Remarkable Remarks

Strawson sheds considerable light on the notion of stating by means of two principles: the principle of Relevance and the principle of the Presumption of Knowledge (1971, p.92-95). These two principles may help us to put some more flesh on the skeleton of the discourse-situation.

The principle of Relevance starts from the fact that statements have topics or centres of interest. It is often possible, Strawson says, to give a fairly definite answer to the "higher-order" question, 'What is the statement about?' For -

> Stating is not a gratuitous and random human activity. We do not, except in social desperation, direct isolated and unconnected pieces of information at each other, but on the contrary intend to give or add information about what is a matter of standing or current interest or concern.
> (op.cit., p.92).

So statements have more or less recognisable topics, and the information which is conveyed by a statement is relevant to the topic - hence relevant to the addressee. The principle of the Presumption of Knowledge complements the picture by saying that statements are not generally "self-sufficient units", in respect of their informativeness, but depend for their effect "upon knowledge assumed to be already in the audience's possession" (loc.cit.). We can take these two principles to embody Strawson's constraints on stating.

In so far as the informative use of language is concerned, a violation of Strawson's constraints (as well as the other constraints that have been mentioned) results in a communication-failure. Suppose that my friend were to say to me now

that 'The present King of France is bald'; if his statement purports to give or add information about a topic, i.e. describe what the present King of France is like, it is 'null and void'. Since there is no present King of France, there can be no true or false, right or wrong, descriptions-of-what-the-present-King-of-France-is like (Cf. Strawson, op. cit., p.1-27) [14].

Since there is no King of France, my friend cannot coherently assume that I possess identifying knowledge about such a King.

Before considering Searle's constraint on assertion, we can tentatively note some of the implications carried by Strawson's constraints for the model which we are attempting to develop of a discursively-competent reader. We have already noted that such a reader must be able to recognise an instance of stating (or assertion) - as opposed, for instance, to an instance/mentioning. Now it seems that our /of reader must be able to recognise the topic of a statement [15]. The reader must also be able to see <u>how</u> the information conveyed in the statement is relevant to the topic and to himself. It is of course a separate question what it is that

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14) Austin refers to "the things that can go wrong" in communication as 'infelicities' (1962, p.14). Davidson notes that someone who knows under what conditions his sentences are socially true cannot "fail to grasp, and avail himself of, the possibilities in dishonest assertion - or in joking, story-telling, goading, exaggerating, insulting, and all the rest of the jolly crew" (op.cit., p.17). The same applies to someone who knows under what conditions his 'sentences' are communicatively 'happy'.

15) According to Black (op.cit.,p.62), the terms 'topic' and 'comment' derive from Hockett (1958). Furberg (op.cit., p.463) analyses the topic of 'The gift is generous' as follows: it says that the gift exceeds the limits within which most givers keep. It also says that there is a positive attitude towards this immoderation.

enables the reader to 'do' these recognitions.

Compressing Strawson's two theses about stating into a nutshell we might say: there is no point in informing someone that the present King of France is bald (as opposed to informing someone that the present President of Finland is bald). Similarly, there is no point in remarking 'The Chairman is sober today' if it is, as it were, out of the question that he might be otherwise. There is no point in asserting of a "standard of normal" situation that it is standard or normal, unless there is some reason for supposing that it might have been non-standard or abnormal (Searle 1969, in Fann ed.B., p.212). This is how Searle defines what it is to make an assertion:

> To make an assertion is to commit oneself to something's being the case as opposed to that thing's not being the case. But if the possibility of its not being the case is not even under consideration, or if its being the case is one of the assumptions of discourse, then the remark that it is the case is just pointless. (loc. cit.).

So an assertion may fail if there is no reason for supposing that the state of affairs asserted to obtain is worthy of note or in some respect remarkable. When a normally sober company Chairman is addressing the Board of Directors, the remark 'The Chairman is sober today' simply is not 'remarkable'; it is an assertion without "assertability" [16].

16) The notion of (warranted) assertability derives from Dewey, whose concern was with "the conditions under which the hypotheses we adopt are or are not warrentedly assertible. It is those conditions which must be our guide in judging discourse, not the esoteric notions of professors about truth by correspondence (See J.W. Smith 1960, in Urmson.ed., p.79).

From Strawson we draw the lesson that a discursive reading is able to connect what is stated to the discourse-topic, as well as to what the reader already knows about the topic. From my point of view, then, Strawson sheds some light on one of the sub-capacities of the more general 'discursive-reading' competence. The Strawsonian sub-capacity has the feature of enabling the reader to discount non-informativeness, while the Lewisian sub-capacity has the feature of allowing him to discount non-truthfulness. Now Searle tells us that a discursively-competent reader is also able to discount non-remarkableness. Freed from making judgments along these three dimensions, the reader can concentrate on the extraction of the intended message [17].

At least the following 'lessons' follow from Searle's definition of asserting. In a discourse-situation, prior to the act of assertion, there is uncertainty in the mind of Reader whether of not something is the case. Of course, it is a major tenet of the statistical theory of communication that information can be received only where there is uncertainty (Cherry 1957, p.170) [18]. From Writer's assertion Reader can infer (i.e. decide) that the case is so (Correspondingly, from Writer's denial Reader can infer that it is not so). This is, as it were, lesson one.

17) An utterance may, of course, convey more than what was intended, either directly or by implication. As Black notes, for the purpose of "improved interpretation" we are led to ask, for instance, 'How much is intended, how much merely revealed, without the speaker's consent?' (op.cit., p.151-152).

18) If there is uncertainty between two equally likely alternatives, the amount of information we need to make a decision between them is one "bit" (Miller 1967, p. 24).

Next we note that making an assertion is *eo ipso* the undertaking of a commitment (Cf. Searle's 'definition' above). Using distinctions made by Furberg (op.cit., p.450-451) we can say that in the case of "practical" discourse the asserter's commitment derives from a decision (to use his powers to bring about some state of affairs). In the case of "theoretical" discourse the asserter's commitment derives from confidence, observational or theoretical, that something is the case. As regards the reader, it is important for him to be able to infer (a) whether the writer's utterance is "theoretical" or "practical" [19]; and (b) how good the grounds, or 'backing', of the utterance are. As Furberg notes, "at least when the speaker is unwilling to stand staunchly by his words, it is important to him to indicate to what degree his grounds support his utterance - otherwise he will be blamed if his hearers get into trouble because they rely too heavily on him" (p.451). According to Furberg there are available to speakers (and, perhaps, writers) discourse-marking devices whose "invariable" duty is to mark (a) how the utterance is to be taken and (b) how good the grounds of the utterance are. These observations contain Searle's lesson two - supplemented by Furberg.

Searle's lesson number three is, to my mind, that a discursively-competent reader is aware of certain propositions which are relevant in the discourse-situation but are

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19) Furberg uses these terms in a technical sense. In "theoretical" discourse an utterance of the sentence 'The roof will be repaired tomorrow' hints that the speaker possesses some information that it will be so. In "practical" discourse, in turn, an utterance of the same sentence hints at the speaker's decision to use his 'power' to bring it about that the roof will be repaired tomorrow. Hence, unless the hearer is able, in each case, to allocate the utterance to the appropriate discourse, he will fail to interpret it correctly.

just taken for granted, and thus left unstated (Cf. Searle's "the assumptions of the discourse"). When the occasion arises the reader is able to recognise the bearing of an unstated assumption on what is being stated.

5.8. Assertability and a Specimen Text

To my mind there is a need for such discourse-methodological principles as would have a kind of axiomatic status. These 'axioms' would give us the "bias" which is necessary for discourse analysis, as well as for the development of a 'theory' of discursive reading. In other words, the 'axioms' would give us a theoretical model of discourse. It is true that we may ultimately want to focus on practical problems but this is not easy because we are "constantly being hindered by our lack of theoretical knowledge" (Davies 1975, in Davies ed., introd., p.4).

Focussing on discourse analysis itself, in the sense of analysing a specimen text, constitutes an example of focussing on a practical problem. It is not the least aspect of the practical problem of analysis that any method we choose is "underdetermined" (Chomsky, op.cit., p.38) by the empirical data, i.e. the text. Innumerable analyses are, in a sense, compatible with any given text. The only solution that I can see is to search for pragmatic criteria. The pragmatic criteria that we adopt may be determined by the nature of our 'grand' goal and, more directly, by the nature of our temporary sub-goal. My 'grand' goal is to cast as much light as possible on the notion of discursive reading, in so far as it applies to the comprehension of written technico-scientific English. This 'grand' goal sub-divides into temporary

sub-goals; when a given sub-goal has been established it constitutes the then analytical task at hand. Thus, on each occasion of analysis, there is no pressing need to take on more than one can 'swallow'.

A scientific experiment furnishes a parallel - at least in some respects. According to the Whiteheadian view, the basis of scientific knowledge is not in any set of scientific entities, such as atoms; it is in experiments, which are "occasions of experience" (Waddington 1973, in Kenny et al. p. 75-76). In the words of La Lumia (1966, p.102), an experiment has "methodological character and involves professedly cognitive purpose and initiative that distinguishes scientific from non-scientific observation". The function of an experiment is to test a hypothesis, in order to "amplify the meaning or conventional definitions of a scientific-object name" (La Lumia, op.cit., p.103). In the following experiment - that is, analysis - I have a limited aim (as usual); it is to "test the hypothesis" that a 'discursive' reader can discount non-assertability, i.e. that such a reader can operate on the maxim 'no remark without remarkableness'. The text is as follows [21]:

(1) 1. Electrical wires are, of course, made of metal; 2. and metals are better conductors of electricity than are any other types of material. 3. But different sorts of wire behave in different ways when they conduct electricity. 4. All wires increase in temperature when an electric current passes through

21) see over

them. 5. But some metals get hotter than others;
6. and for any particular metal, a thin wire heats more than a thicker one.

(Rossotti, Introducing Chemistry, p.55)

The reader is free to proceed on the tacit assumption that there is no such thing as non-remarkableness in discourse; hence every 'remark'in (1) has a point to it, if only one can discern it. As Black says, the point of an utterance is normally implicit - "it has to be understood, without being formulated" (op.cit., p.130 fn.). Bearing this in mind, let us focus on sentences 1. and 4., in this order.

Prima facie it would seem that a sentence like 'Electrical wires are made of metal' is not assertable unless there is a reason to suppose that a sentence like 'Some electrical wires are not made of metal' is true [22]. However, it is enough if there is a reason to suppose that the latter sentence might be supposed by someone to be true (Searle, op.cit., 0.210). The writer of (1) says in the preface of the book that the book is intended, not as a text-book, but rather as a guide for the "unseasoned traveller". There may, perhaps, be some unseasoned travellers among the audience of the book who have lost their tracks, in the sense of not feeling quite up

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21) In my analysis of (1) I follow the Quinean maxim of "shallow analysis", which enjoins; Expose no more than seems useful for the task at hand (See Quine 1960, p.160).

22) It will be remembered from an earlier chapter that even a purely linguistic ('logical form') interpretation is able to assign 1. the reading 'ALL electrical wires are made of metal'.

to deciding between the truth of a sentence like 1. and its opposite (see above) or negation ('Electrical wires are not made of metal'). Such ignorance seems unlikely, but not totally inconceivable. Be that as it may, we have to 'cut the cackle' on this unpromising topic, and say that sentence 1. is (very) weakly assertable, in so far as Searle's dictum is heeded.

What about sentence 4.? Again prima facie, it seems that such a sentence is more strongly assertable than a sentence like 1. In this case there seems to be more reason to suppose that the assertion made in uttering the opposite or negation of that sentence might be thought by some reader to be true. For instance, conceivably some reader might be inclined to think - come to think of it - that when an electric current passes through a wire, the wire may or may not increase in temperature. This is more conceivable than the idea that some reader might be inclined to think that if something is an electrical wire, then it may or may not be made of metal. So we say that a sentence like 4. is (at least) fairly assertable. As a matter of fact, it is quite 'remarkable'.

So we seem to have found that the circumstances, i.e. the discourse-situation, may be such that even a sentence such as 1. is (in Dewey's phrase) warrantedly assertible - even if only very weakly. It is possible that the use of the expression of course (in 1.) registers or marks the writer's feeling that the sentence, taken by itself, is only 'weakly remarkable'. Perhaps this particular discourse marker signals to the audience something like: 'I know that this is pretty obvious - but wait, there is a reason for it' [23]. In other

23) see over

words, from the use of the marker of course (in 1.) the reader infers something about the writer's "state of mind".

We can describe the reader's initial inference about the writer's state of mind almost trivially by saying that the reader expects the writer to 'spin a yarn' about electrical wires [24]. It is up to the reader to reconstruct the 'yarn' from the evidence provided in the textualisation. The reconstruction involves relating the utterance (cf. sentence 1.) "internally to the rest of the discourse" (Widdowson 1973, p.255) [25]. According to Widdowson, reading is primarily a "rhetorical operation", involving the recognition of the "value" that linguistic elements (larger and smaller) assume when they are used in acts of communication (op.cit.) Following Widdowson, we might say that a reader indeed discounts non-assertability (in Searle's sense) in favour of

23) The term 'discourse-marker' comes from Vendler (1967, in Foundations of Language 3, p. 310). What is basically the same notion is also referred to as 'indicator' (Salmon, op.cit., p.6), 'operator' (Habermas 1970, in Dreitzel ed., p. 139) and 'signal' (Furberg, op.cit. and Black, op. cit).

24) The reader, prior to the writer's utterance of sentence 1., is in a certain state of psychological expectancy (or 'set') towards the communicative event. The 'set' depends upon his past experience, which, among other things, has given him a 'storehouse of his language statistics' as well as a knowledge of typical contexts of speech. The prior state of expectancy is represented by a number of weighted hypotheses concerning the writer's utterance. The reading of the utterance confirms or denies hypotheses, thereby changing the reader's 'set' (Cherry, op.cit., p.275).

25) It is open to question what, in each case, is meant by "the rest of the discourse". The human processor has some in-built limitations (e.g. a limited span of immediate memory), which restrict prospective-retrospective relating. It is possible that while we read we "recode" already-processed information into "chunks" which are easier to retain in memory (Miller 1967, p.47).

communicative value.

It seems to me that my analysis of (1) has now achieved its limited purpose. The hypothesis 'No remark without remarkableness' in 'confirmed'. It is a correct and necessary assumption for the reader to make that every utterance (of a text) has a point, i.e. "value"; and it is a good maxim for the reader to follow that the point can be discerned if the utterance is related internally to the rest of the discourse.

Although our current concern does not require it, we can consider one way in which sentences 1. and 4. might be supposed to inter-relate with the rest of the discourse. The way under consideration involves regarding the whole of (1) i.e. the 'yarn spun' in it, as an enthymeme or the natural language form of an argument (Copi, op.cit., p.224). In other words, we restrict our analytical observations to text (1), discounting, for convenience, its larger context. By calling (1) an enthymeme we mean to make the notion of reading as a rhetorical operation more precise.

So we can say, for convenience, that what the reader of (1) expects (is led to expect) from the writer is some kind of 'argument'. After all, the writer has already told him that he is concerned to show "how we can change a substance by purely mechanical means". The reader expects an argument, and we can put this in a different way by saying that there is an argumentative structure 'underlying' the textualisation. In order to interpret the discourse (in the 'higher-order' sense of interpretation) [26] the reader must be able to re-

26) See Part One. Cf. also Miller (op.cit.,p.76-77),who distinguishes six levels of interpretative acts. Miller's levels five and six correspond to my notion of higher-order comprehension (also referred to by Black as "improved understanding"; op.cit.,p151).

spond to the formal underlying structure. In the simplest terms we can think of the basic structure (base, for short) as consisting of a claim together with supporting evidence. For it is the writer's task not only to make the reader understand what he is saying and intentionally implying but also to persuade the reader, i.e. to make him believe that the claim is "valid in terms of its relevance to his (the reader's) own conduct" (Miller, op.cit., p.77). And it is the reader's task to follow the argument to its conclusion, and judge the validity and relevance of the writer's claim in terms of the principle of weighted agreement.

In the foregoing, we haveatentative framework for further analysis of texts such as (1); I will take up the thread at a later stage. At this point, I merely want to recall La Lumia's dictum concerning the function of an experiment; it is to test a hypothesis in order to amplify or modify the 'meaning' of a "scientific-object name". Now we can ask: Has our 'experiment' with text (1) resulted in a modification of the 'meaning' of some scientific-object name? First, what would that scientific-object name be? Suppose that it is 'assertion'; even though this term names no object, it may be taken to refer to a certain concept. Let us say that, prior to the 'experiment' we conceived of assertion in terms of Hare's neustic, i.e. in terms of an assertion-sign which sets cases of asserting apart from cases of mere mentioning. This prior (and a priori) conception of assertion implies that all cases of asserting are basically the same. However, the analysis of text (1) indicates that we have conceived of assertion in too simplistic terms: cases of asserting can be

contrasted with one another, not only with cases of non-asserting. When cases of assertion are contrasted with one another we might say that they have all an identical neustic (they are all assertions), but add that they may differ in tropic (they differ in 'strength') [27]. It is in this sense that the analysis of (1) may have resulted in a modification in the 'meaning' of the concept-name 'assertion' [28].

5.9. Summary of Chapter Five

My purpose in this Part Two of the thesis is to capture as many of the theoretical implications carried by the notion of discourse-situation as possible. In the present Chapter I have started to fill in the details; the following summing-up represents a selection of a few of them.

1. It is suggested that for the study of discourse we should recognise a pragmatic system, which "specifies the implicit assumptions and claims entitled to recognition in standard linguistic situations" (Black, op.cit., p.22). In order to get clearer about discourse and discourse analysis we need a theoretical or conceptual model.

2. Recognition of the pragmatic system and use of a

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27) Hence the neustic shows that the speaker subscribes to the proposition ('phrastic') that he utters; i.e. it shows that the speaker uses the sentence which expresses the propositions instead of merely mentioning or talking about it. The tropic, in turn, shows the illocutionary force (See Hudson, loc.cit.,).

28) In the neustic-sense, an assertion may be a propositional attitude; in the tropic-sense, it may be an illocutionary act. (See Cerf 1969, in Fann ed.B, p.351-379); for a critique of the concept of illocutionary force, see Cohen, ibid., p. 420-444).

theoretical model may allow the working out of a 'theory' of discourse and the development of a methodology for discourse analysis.

3. The object of my enquiry is the notion of discursive reading; this is an inclusive competence which is associated with higher levels of understanding [29]. In order to derive and test Hypotheses concerning discursive competence I can analyse empirical data which consist of technico-scientific texts. My ulterior purpose is to help design new pedagogic materials for the use of teachers of English in Finland.

4. For my purposes, a pragmatic model of discourse looks like a logical solution. For one thing, technico-scientific discourse is a predominantly cognitive use of language, which involves the passage of information from writers to readers (Cf. Black, op.cit., p.128-129). Secondly, such discourse exhibits rationality; under this umbrella term we may class certain pragmatic notions such as truth, self-consistency, (weighted) agreement, acting on reasons and coherently, as well as desires, beliefs, intentions, and what not. These considerations relate to the relevance of the model to the data. However, there is a separate consideration; this is related to hypotheses about the nature of discursive reading. These hypotheses about the required competence, which is an ability (no doubt a very complex one) to read not just the lines but also 'behind' and 'between' the lines - metaphoric

29) There is an important distinction between subject-matter and (behavioural) evidence; we may quote Longuet-Higgins (1973A) in Kenny et al., p.1): Like Chomsky I value the distinction between subject-matter and evidence. A baby's behaviour may be a very good clue to its mental processes, but this does not imply that the object of our enquiry is the behaviour itself.

expressions, but there is a great deal of substance concealed in them. It is the substance concealed in the metaphors that Black refers to when he talks about the "implicit assumptions and claims entitled to recognition" 30).

5. Here then is a tentative list of some tacit assumptions which are presumably shared by the participants in a discourse-situation. I will offer little comment here because this is a summary, and because there is still a lot of work to be done to determine the full relevance of such assumptions to discourse analysis. Thus there are shared implicit assumptions (presumptions, presuppositions) concerning, for instance:

(i) Types of speech-acts that are or are not performable (Cf. Criper and Widdowson)

(ii) Reciprocity of perspectives, treatment of ambiguity and vagueness, maintenance of coherence in spite of these 'drawbacks' of discourse, wait-and-see 'game', normalising of "ab- or non-normal" utterances, treatment of indexicality, etc. (Cf. Cicourel and others)

(iii) Truthful talk and trusting response (Cf. Lewis)

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30) Since it goes beyond linguistic and communicative competence, the notion of 'analytic' competence, which is postulated by Bruner, has similarities with my 'discursive' competence (Bruner 1975, in Davies ed.).

(iv) Over-all rationality; intentional and purposeful speech, reasons and replication of reasons (and common knowledge that this is common knowledge), use of practical syllogisms, imputations of rational argument to others, etc.
(Cf. Davidson, Follesdal, Lewis, v. Wright)

(v) Topic- and audience-relevance, pre-knowledge in the possession of the audience [31]
(Strawson)

(vi) Existence of the thing referred to in the topic ('presupposition of exist ence'); "First catch your topic and then talk about it"
(Strawson)

(vii) Assertability of propositions
(Cf. Searle)

(viii) Propositions that are or can be left unstated in a natural-language argument (or enthymeme)
(Cf. analysis of text 1.)

6. Finally, the analysis of text (1) hopefully conveys some idea of my view of discourse analysis; I return to the matter below.

31) The assumption of pre-knowledge must, or course, be balanced with a stronger assumption of initial ignorance in the 'possession' of the audience (Cf. the notion of uncertainty; Cherry, above).

CHAPTER 6 DIRECTIONS AND DIMENSIONS OF DISCOURSE

6.1 Reading 'behind' the lines.

The previous chapter is mainly concerned with reading 'behind' the lines, i.e. with the supplementary and essential "interpretative underpinning" upon which all successful transmission of knowledge depends (Black, op. cit. p. 131). Harking back to the summary at the conclusion of the previous chapter we can say that the ability to read 'behind' the lines of a technico-scientific text refers to an ability to recognise the relevance of implicit assumptions, such as (i - viii). What kind of ability is this? Generalising Cicourel's notion we might say that it is a set of interpretative procedures. The interpretative procedures are cognitive structures used in an act of discursive reading. It is true that such procedures or structures are very subtle and variable; however, it is more possible to describe the procedures than the ways in which they are made use of; the first kind of study poses "only" problems, whereas the second kind of study is bound to remain a "mystery" (Cf. Chomsky 1976, P. 138).

The interpretative procedures of, and their use by, an English speaker, who is in "a mature state of knowledge and belief" (Chomsky, loc. cit.), may perhaps be characterised as 'discursive' habits. Being habits, they tend to become routinised, taken for granted and also rather rigid, so that they "take a lot of changing" (Flew 1975, p.77). In other words, the 'unlearning' of old discursive habits can be both hard

and slow[32].

A Finnish student of science and technology, who wishes to be able to read English better, wants to learn a new use of "old" discursive habits. He is in a position of considerable disadvantage, as compared with a 'native reader'. For he has not what the latter has, namely:

> An enormous storehouse of his language statistics, as habits and conventions, at both syntactic and semantic levels. He stores rules of spelling, word orders, grammar, idioms, and cliches; again he stores typical vocabularies and phraseology which are used for specific subject matters, and he can predict to some extent from his knowledge of topics or of the writer's point of view. All such prior information is brought to bear on the reading of a text. (Cherry, op. cit., p. 118).

Of course, a Finn already knows the statistics of at least one language (Finnish or Swedish), and this knowledge may help, as well as, perhaps, to some extent hinder, him in his acquisition of the new use of "old" discursive habits. However, as long as a Finn is still in the process of learning the new use most of his energy is spent on reading the lines themselves. Admittedly the concentration on the text itself is necessary for the acquisition of the statistics of the foreign language, at least at the initial stages. At the later stages of learning English, however, efforts must be made to 'save' the Finn from the danger of falling into the rut of 'textual' reading. By "efforts" I mean work on the nature of discursive, as opposed to merely textual, reading; recognition of all the results of such work; and, finally application of this

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[32] People may develop wrong discursive habits; for instance wrong reasoning habits, called 'fallacies' (See Flew 1975; Michalos 1970; Flesch 1951; and Thouless 1930).

knowledge to the design of pedagogic aids.

I am inclined to think that a Finn learns to read English better, i.e. discursively, when he has acquired enough statistics of the English language and can relate these statistics to his ability to read 'behind' and 'between' the lines in his own language. When a Finnish student is able to do this relating we can say that he has acquired new discursive habits.

Wherein lies the novelty of the new use of old discursive "habits"? Mainly it lies in the Finn's fresh ability to make a new kind of use of his old, Finnish, interpretative procedures. There is no need for him to unlearn any interpretative procedures he has already acquired; such unlearning would be both hard and slow. Hence I am suggesting that the Finn needs to relate the (English) code to the interpretative procedures he habitually uses when reading a text in the (Finnish) language. This is what he has to learn. What he has to unlearn (or, learn to ignore) is the difference in status of the two linguistic mediums, where "status" refers to the manner in which each linguistic medium has been acquired.

Hence what I am suggesting is that a Finnish learner of technico-scientific English can, and indeed should, ignore the aspect of language acquisition. (The same goes, of course, for a Finnish teacher of technico-scientific English). He should not think, even of the native language, as a language, which is used by the Finnish "population" by virtue of the 'convention' that a child learns the language of his parents. Rather he should think, even of Finnish, as a code, which is used by the Finnish population by virtue of the (Lewisian)

convention of thruthfulness and trust in Finnish. Thinking of one's own language in this way means ignoring the fact that it is learnt 'organically and over long periods of time". In the specific pedagogic context which I have in mind the 'developmental' fact can be ignored as 'irrelevent'.

Thinking of one's own language and the second language as being both 'governed' by the (Lewisian) T-convention means affording to the two 'codes', in principle, the same status. This, in turn, entails affording to discursive reading, in principle, the same constant status, independent of the code used. In other words, I reject the thesis according to which reading a second language can never be the same as reading one's native language. The two things need not be different (at least in so far as all essentials are concerned) if one's reading a text in a second language includes reading 'behind' (as well as 'between') the lines. Such reading implies a tacit recognition that the structure of a discourse-situation (Cf. Diagraml) can be invariant from one language to another, the change in the language being only due to a different T-convention.

6.2 Directions of Discourse.

By the directions of discourse I mean the fact, noted by Strawson and Furberg (op. cit.) that an 'act of saying' is always directed (a) to a topic, and (b) to an audience (Cf. Diagram 1). An utterance of a sentence or a sequence of sentences gives or creates the topic of the utterance[33]. An utterance of the sentence 'the air is a mixture' may create

[33] For the distinction between 'sentence' and 'utterance', see also Lyons (1971, in Minnis ed., p. 61).

its topic, as being the air. If it constitutes a discourse or a part of one, the utterance of the sentence 'the air is a mixture' may, in so far as its topic-directed aspect is concerned, be termed a Statement[34]. As a Statement the utterance of 'the air is a mixture' may constitute, for instance, a description. There is the selection of the air to be the topic of the description, and there is the recognition of the air as belonging to a certain kind or as being a member of a certain class, namely the class of mixtures[35].

Audience-direction is the second aspect of an act of saying. An utterance may, qua a Statement, exhibit the two logical features of a description, but it may or may not be intended to be taken as a description. For instance, consider text (2), in which 'the air is a mixture' occurs as an 'embeddment':

(2) MIXTURES

1. It is now necessary to distinguish between mixtures of atoms or molecules and compounds of atoms.

2. In nature, mixtures are very common; 2. for example the air which we breathe is a mixture, principally of diatomic molecules of oxygen and nitrogen (...)

(Isaacs, Introducing Science, p. 27: latter emphasis mine).

In (2) the discourse marker for example guides the reader to take the writer's utterance of the sentence 'the air is a

34) In this technical sense I write with capital 'S'.

35) Logically speaking description involves such a selection and such a recognition (See Harré 1960, p.8).

mixture', in its audience-directed aspect, as an exemplification. In saying this I register the reader's recognition of 'sentence' 2. as a Discourse-act[36].

I view 'Statement' and 'Discourse-act' as analytical units of discourse description; I also think something corresponding to a Statement, as well as something corresponding to a Discourse-act, is or may be recognised by a discursively-competent reader.

The reader of a technico-scientific text may be more concerned to find out what the text as a whole is about, and how the text as a whole is to be taken, than to recover the information conveyed in some of the 'sentences' of the text. Hence we can describe text (2) as a whole (and unabridged) also as a Statement; i.e., as being about mixtures. Correspondingly we can describe text (2) as a whole also as a Discourse-act; i.e., as to be taken as a sort of 'explanation' of the distinction between mixtures and compounds of atoms.

6.3 A Specimen Text; Process and Product.

It may be the case that a recognition of what Statement or Statements are made in a text helps the reader to recognise what Discourse-act or -acts are performed in the text. I will illustrate what I have in mind by means of the following extract (4):

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36) My use of Statement as a technical term is 'inspired' by Bar-Hillel (1970; p. 84). Bar-Hillel employs the device of an ordered pair in his definition of a statement; however, no formal definition is required for my purposes. As regards Discourse-act, I have moulded it on 'speech-act', but the two are not the same in conception.

(3) 1. Pliny the Elder in his highly unreliable Natural History gives directions for distinguishing a genuine diamond. 2. It should be put, he says, on a blacksmith's anvil and smitten with a heavy hammer as hard as possible: 3. if it breaks it is not a true diamond. 4. It is likely that a good many valuable stones were destroyed in this way because Pliny was muddling up hardness and toughness. 5. Diamond is the hardest of all substances, but it is quite brittle so that, even if one could get it cheaply in large pieces it would not be a very useful structural substance. (Gordon, The New Science of Strong Materials, p.98).

Text (3) is the first paragraph of a chapter called "Crack-stopping - or how to be tough". After the 'introduction' in the first paragraph the writer goes on to explain what is meant by lack of toughness, and to discuss the distinction between tough and brittle substances.

When we are concerned with Statements our concern is with the creation of topics. Titles and sub-titles of course serve to create the topics of the chapters and sections they preface. Hence they are linguistic devices which are available for topic-clarification. For instance, the chapter-name 'Crack-stopping - or how to be tough' will provide clues to the reader of (3) concerning the Statements made in it. In order to get clearer we have to imagine ourselves in an appropriate discourse-situation.

Suppose, then, that we are among the people who pick up a book on the "New Science of Strong Materials" out of certain interest or curiosity. We are likely to have some prior knowledge but are mainly ignorant and do not mind learning more. Presumably we are the kind of audience that the writer has in mind. By the time we start reading the first paragraph of chapter 5, i.e. (3), we have already read about

stresses and strains, cracks and dislocations. We read (3) and go on reading, perhaps the rest of the chapter, or even further. By the time we finish we may hardly remember the writer saying something about Pliny the Elder. What we retain are some facts about toughness, brittleness and crack-stopping.

The above is a partial sketch of the kind of discourse-situation that is relevant to the analysis of (3). The analysis can distinguish between what I call the process and the product. The process is a clockable episode in the reading history of a reader; the product is a change in his state of belief (Cherry, op. cit., p.250). It must be a defining feature of the process (whatever it may be actually) that it discriminates between the relatively useless and the information that 'really matters'[37]. Hence the process is not only interpretative but also evaluative. It is evaluative in two ways: first, by weighting the 'points' made by the writer as he goes on; secondly, by weighting the writer's claims in terms of their relevance to the reader's own conduct.

The product consists of some belief or beliefs which are added to the reader's "stock of knowledge" (Strawson 1974,p.55). The product, obviously, depends on (the efficacy of) the process. Qua an analyst, I can suggest what beliefs, in particular, the reader of a text should accept; because those beliefs stand out as the 'main points'. Qua a 'pedagogue', if I find

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[37] This is putting it in strong terms, but we have to simplify. Incidentally, Waddington (1973, in Kenny et al., p.78) makes a similar distinction between "info" (the relatively useless) and "gen" (the real stuff you need "to know to tell you how to operate").

that a student has not accepted such main points I can draw the conclusion that something is wrong with his reading process. In the case of text (4) I suggest that the reader (say, one of my Finnish students) should accept, at least, the belief:

- It is a property of a structural substance that it is tough. The reader is not able to accept this belief unless he recognises that the writer is making a Statement about toughness (and lack of it): and unless he recognises, further, that the writer is trying to 'explain' (by means of the Pliny example) what it is that distinguishes a (useful) structural substance from other substances. Hence there is an intimate connection between the way in which the text is topic-directed and the way in which it is meant to be taken. It is essential that the reader should recognise the connection[38].

6.4 Information-Management, Redundancy, and Summarising Inference

I am suggesting that the 'hard core' information (the 'gen', in Waddington's terms) conveyed in text (3) consists of the Discourse-act (DA):

DA 'Explanation' of what distinguishes a useful structural substance from a useless one.

The'explanation', in turn, consists of asserting that a useful structural substance is tough while a useless one is brittle; i.e., breaks when a load is applied on it. This theme is continued in the next paragraph of the chapter, in which 'breaking' is reformulated as "the propagation of cracks":

38) As a (fairly unlikely, admittedly) contrast consider the case where the reader of (4) takes the text to be about diamonds and, further, takes the writer to be arguing with Pliny about the way in which a true diamond is to be distinguished.

> The worst sin in an engineering material is not lack of strength or lack of stiffness, desirable as these properties are, but lack of toughness, that is to say, lack of resistance to the propagation of cracks. (Gordon, loc. cit.).

I think we can say that if the reader of text (3) understands the 'explanation' (DA), and believes it to be acceptable, then this is an indication that he has succeeded in his 'process', and that there has occurred the right kind of change in his "state of belief". Also, we can expect that the reader will have no difficulty in interpreting the next paragraphs.

Suppose it is accepted, at least for the sake of argument, that something like an understanding of the 'explanation' (DA) means recovering the main point, or message, conveyed in text (3). Then it can be said that there is a good deal more written in the text than is strictly necessary to convey the message. This "more" can be accounted for by saying that it has utility in terms of information- or interaction-management (Laver and Hutcheson eds. 1972, introd.) and redundancy (Cherry, op. cit., p. 118; Miller, op. cit., p. 19).

Strategies of interaction-management allow the participants to initiate and terminate the interaction in a conventional, mutually acceptable way. One conventional and mutually acceptable way of initiating a discourse is to tell an 'anecdote': this is what the writer of text (3) does. Of course the anecdote has to be pertinent to the topic and to the theme[39]. Moreover, it is up to the reader to recognise the

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39) I make no hard-and-fast distinction between these two terms in the present thesis, for the reason that I have, for now, no capital to make out of such a distinction. I only refer back to McHugh and His notion of 'emergence'. Emergence describes the temporal dimension of discourse. Readers assume that a theme will be discovered; if the readers are competent, this expectation will lead them to actually discover the theme and recognise the instances in which it is elaborated. Retrospectively the reader 'gets' insights which connect theme-instances to each other.

relevance of the anecdote; in the case of (3) the relevance is fairly obvious.

Numerous devices are available for a writer to 'manage' the passage of knowledge to the reader; the devices are too numerous to be discussed here. In a sense we can consider that all "audience-guidance" (Furberg, op. cit.) has to do with the management of communication. Thus we would have to conduct a detailed enquiry into the uses of such devices as "archetypal performatives" ('I name this ship...'), illocutionary force indicators ('I warn you that...'), force-elucidating comments ('That was a warning'), "master speech acts" ('I'll tell you what happened'), parenthetical verbs (P, I suppose'), and so on; i.e. all manner of use of all kind of discourse markers[40]. I can envisage the study of discourse marking as a profitable line of future enquiry since, in a sense, such devices constitute what might be referred to as a "secondary system" of a discourse; i.e., a system which has an explanatory or a guiding function with respect to the "primary system" of propositions[41].

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40) On the distinction between "performatoriness" and illocutionary force, see Furberg (op. cit.). On illocutionary force indicators see Searle (1969). The notion of force-elucidating comment is due to Strawson, see above. On master speech acts, see Fotion (in Philosophical Quarterly, Vol. 21, No. 84, p. 232ff). Parenthetical verbs are discussed, e.g. by Stalnaker (op. cit.).

41) The notions 'primary system' and 'secondary system' derive, originally, from the philosopher Ramsey. They have been adopted by Ayer (See 1973), p. 109, 152). The conditional (indicative and subjunctive) is a typical device of a secondary system. Consider the pattern 'If P, then Q'. The conditional arranges P with Q, in that it offers what is asserted by P as at least a partial explanation of what is asserted by Q. In another aspect, the conditional 'invites' us to suppose that P, and then to derive Q "only in the story which this supposition originates".

Redundancy, which is also an essential and ineliminable feature of a 'natural' language (like ambiguity and vagueness), may be considered as a 'device' which is available for information-management. In a text redundancy is distributed in a "most complex way" among the various elements of language statistics (Cherry, op. cit., p. 118). Hence we cannot say what elements may be "stripped off" a given text before the message will fail to be conveyed to a given reader. It is very difficult, if not outright impossible, to determine what are the "bare bones" of a message.

It may be admitted that the "bare bones" of a message will remain a mystery to the statisticians of communication. However, it can hardly be denied that discursively-competent readers have some kind of 'intuitions' about the 'hard-core' message conveyed in a given text. It is on such intuitions that we rely when we have to give a summary of a text. It is also possible that we implicitly draw up summaries at certain intervals when we read a longer text[42]. In other words, we "recode" the information 'input' - repackage it into a few "chunks rich in information" (Miller, op. cit., p. 47).

Generalisation and definition are verbal devices which are available for repackaging information into formats which are "rich" in "bits", i.e. informational value. In a general statement we sum up the information conveyed by many particular

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[42] Miller (op. cit.) makes an interesting distinction between the material and the psychological lengths of a text. In order to determine the latter we have to count the "larger subjective units, called ideas", which are conveyed in the text. My 'products' seem to have a certain correspondence to Miller's "subjective units".

statements (Harré 1960, p. 15); much the same goes for definitions - indeed, it is often hard to decide whether or not a generalisation is a definition. There is, however, an important difference between generalisation and definition: a generalisation conveys factual information about the world; it is a 'synthetic' statement, whose truth is determined by inspection of the world[43]. A definition, strictly speaking, conveys information about the word that it defines; thus considered a definition is an 'analytic' statement, whose truth depends on the meanings of the words used and not on the facts.

Harking back to text (3) we remind ourselves of my suggestion that the reader 'processes'the following 'product' from the text:

- A structural substance is tough.

It can be seen that the 'repackaging' has given a generalisation (so-called "member generalisation"; Harré op. cit., p. 12) as a result or product. The 'core' information has been put into the 'code' which 'governs' the generalised form of expression. However, the procedure which recovers the content of the 'product' has to be named in some way. I will call it a summarising inference.

6.5 Dimensions of Discourse.

In the previous sections we have adopted a 'two-directional' view of discourse, corresponding to Austin's distinction between the locutionary and illocutionary aspects of a speech-act (Austin 1962, p. 98, See also Cerf 1969, in Fann ed., p. 359).

43) According to Kant a 'judgment' is analytic if its negation results in a logical absurdity ('A father is male'). Synthetic are all judgments about empirical matters of fact ('Copper conducts electricity'); see Körner 1960, in Urmson ed., p. 145). On Quine's controversial views on the analytic-synthetic issue, see Quine (1953, p. 22ff).

This view has given us a few analytical notions; namely, Statement, Discourse-act, product, process, summarising inference and so on. There is another way of viewing the discourse-situation. For instance, we can take our departure from the person who does the saying (node W in Diagram 1). When a person says something, he expresses himself, or expresses his thoughts, and so on (Macquarrie, op. cit., p. 68; Davidson, op. cit., p. 7). Therefore, discourse has an expressive dimension (E-dimension, for short). Within this dimension, various modes of expression may be differentiated, e.g., from concrete to abstract, from personal to impersonal.

Next we may ask: how does the subject-matter (or topic, as we have said) enter into the discourse-situation? Macquarrie's answer is as follows (op. cit., p. 71):

> There are, I think, two ways in which we commonly describe the relation of talk to that which is talked about. We can say that the talk 'refers' to its subject-matter, or we can say that the subject-matter is 'represented' in the talk.

This dimension of discourse may thus be referred to as the referring/representing dimension (R/R-dimension, for short). Again, there are different modes of referring/representing, proper to different kinds of discourse. Some modes are concrete, direct and subjective; others are abstract, indirect and objective[44].

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[44] The term 'discourse' is ambiguous, e.g. in the sense that on the one hand there are "enormously many varieties of discourse, with different functions and different ways of fulfilling them", (Pears 1971, in Magee ed., p. 58). On the other hand, however, we can think of discourse as a universal, because the discourse-situation is an invariant from language to language, and also irrespective of the different functions and different ways of fulfilling them.

Finally, when we look at the discourse-situation from the point of view of the person to whom something is said (node R in Diagram 1), discourse presents itself as communication; hence we have, lastly, a communicative dimension (C-dimension, for short). A good deal has already been said concerning this dimension in the foregoing pages. For instance, we have taken it from Strawson that "stating" is, essentially, a matter of giving or adding information about what is a matter of standing or current interest or concern. Such a conception of stating is part of the particular theoretico-conceptual model of discourse that I have adopted. On this model, 'meaning' and information are inseparably intertwined (Quine 1960)[45].

In the remainder of this chapter I will discuss the dimensions of expression and referring/representing.

6.6 Expression.

I shall be very brief with this E-dimension. The reason is (apart from limited space) that the "interesting" kind of expression, which is concrete, direct, personal and non-neutral, is not proper to technico-scientific discourse. In Furberg's terms, technico-scientific discourse (henceforth, T-S discourse) is "theoretical", i.e. the assertions are based on 'observational' confidence, rather than personal decision. Thus, forecasting and predicting are typical of T-S discourse, whereas promising is not. Promising carries a personal commitment, while the commitment carried for instance by an act of forecasting is standard to the "theoretical"discourse. (Imagine a weatherman

[45] In Hintikka's system 'meaning' is information, i.e. information to the effect that "the sentence is true, that the world is such as to meet the truth-conditions of the sentence" (1971, in Linsky ed., p. 146).

promising, instead of forecasting, that it will be sunny and warm all over the country tomorrow).

T-S discourse and poetic discourse are sometimes set against each other as polar opposites, in so far as the E-dimension is concerned. Perhaps it was something like this polarity which was in the minds of Ogden and Richards when they distinguished between the 'symbolic' and the 'emotive' uses of language (1949). The first serves for identifying or cataloguing things, actions or relationships. It is true, as noted by Cherry (op. cit., p. 75), that many scientific words perform this function. The function puts a premium, for instance, on the kind of expressions that Kripke refers to as "rigid designators" (1972, in Davidson and Harman eds., p. 269). Kripke's definition of a rigid designator includes the notion of a "possible world": "Let us call something a rigid designator if in any possible world it designates the same object". The term 'metre' is an example. Its reference is, as it were, uniquely fixed. It is conceivable that objects which are one metre long in "the actual world" might start contracting or expanding, but this would not change the fact that the phrase 'metre' is meant to designate rigidly a certain length. The 'possible world' definition of such symbols as 'metre' may make us realise even better that they are linguistic devices which enable us to have access to the things denoted, i.e. to the things that are, for instance, one metre long, without any vagueness or error.

As a counterweight to Kripkean correctness and precision, even across the "worlds", we may think of Polanyi's argument that there is a personal factor in all knowing, and that even scientific understanding involves personal participation,

without thereby becoming merely subjective (1962). Polanyi's picture of the scientist as one who participates personally in doing science - and here 'personally' must be taken in more senses than one - conflicts with the 'accepted' view. However, this only goes to show that the accepted view is mistaken. Polanyi points up an important fact about the producers and readers of T-S discourse. The producer of T-S discourse, particularly in the role of the expositor of his own research results, has to communicate the generalisations he has arrived at by inductive reasoning. In order to accept what the writer says the reader is required to make a similar 'inductive leap', i.e. extrapolate beyond his present knowledge. However, even more than cognitive understanding may be necessary. Einstein, for instance, says that there is "no logical path" to universal generalisations, that "only intuition, resting on sympathetic understanding, can lead to them" (See Hoffman 1975, p. 222). Correspondingly the reader may have to muster imagination, intuition and faith in order to "accept something hitherto quite out of his ken" (Cherry, op. cit., p. 77).

I want to emphasise that it is part of understanding, in the "higher-order" sense, that the reader should accept what the writer truthfully states. Acceptive understanding may require acts of intuition and faith, as well as acts of cognition. This seems to be true of T-S discourse to the extent that the polar opposition between this mode of discourse and the other modes, such as poetic and theological discourse, begins to lose the remnants of its even initially doubtful validity.

6.7 Discourse as Reference and Representation.

6.7.1 Ways of Drawing Attention and Conveying Information

The subject-matter (or topic, in this sense) enters into the discourse-situation through the 'mechanisms' of reference-cum-representation. Hence, when we discuss the R/R-dimension of discourse we delve deeper into the notion of Statement, which - it may be remembered - is to be our unit of discourse analysis, in so far as the topic-directed aspect is concerned. Our digging deeper means asking questions such as: what subsidiary acts of recognition, so to speak, accompany the reader's recognition that a Statement is made.

When a reader recognises a Statement he may be said to recognise that (a) his attention is drawn to a feature of the world, and (b) he is given information about the feature. Suppose I am walking in the Botanical Gardens with a knowledgeable friend. My friend points to one of the more interesting-looking trees and says (4):

(4) That tree is a swamp cypress.

I recognise that my attention is being directed to a particular tree ('feature of the world'), and, on the assumption that my friend is making an honest assertion, I also recognise

46) Here my friend 'defines' the tree to me by ostension (Lyons 1968, p. 409). In order to interpret the 'definition' I must know in advance the significance of the gesture of pointing in the context, and I must also correctly identify the object that is pointed to. When my friend makes his Statement he assumes that I can do those things. So here ~~we here~~ we have one more assumption of discourse. Sharing such assumptions means, in Wittgensteinian terms, sharing of a 'form of life' (See Kenny 1973, p. 163). In the absence of a shared form of life it is very difficult to learn the meanings of words (Cf. Quine 1960, Ch.2).

that I am being told that the indicated tree is a member of the species named ('Swamp Cypress'). Hence I recognise that a Statement is made, and I also recognise what Statement is made[47].

I may have been alone in the Gardens, come to the same tree and read the label fixed on it (Taxodium distichum/Swamp Cypress/). In that case the labelling is a Statement; and it is a true Statement so long as the label is attached to a tree of the species in question. The sense of the Statement is conveyed in the legend of the label; its reference by the place to which the label is attached[48].

In written T-S discourse we find labellings, as well as Statements like (4). As an example, consider text (5):

(5) VOLUME AND WEIGHT

> 1. If we look at an object we get an idea of its size; if we lift it we get a measure of its weight. 2. In order to be more precise we can measure its dimensions with a ruler to obtain its volume - provided that it has a regular shape. 3. For a solid of rectangular section (Fig 1) the volume is found by multiplying the three principal dimensions: length x breadth x depth (L x B x D). (Fig 1 Rectangular solid).
> (Adams, Science in Building, p. 1; orig. emphasis).

Consider the label "Rectangular solid', which is attached to a certain drawing (Fig 1). Recognising the label as a Statement means recognising that the word 'rectangular solid' is being defined. Here the reader's attention is not drawn to a feature

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47) In Searle's terms, I recognise an act of reference and an act of predication (1969). Expressing a proposition involves these subsidiary 'propositional acts'. (See also Forguson 1973, in Berlin et al., p. 180).

48) Frege tried to account for the fact that the assertion 'the evening star is identical with the morning star' is informative, whereas 'the evening star is identical with the evening star' is not. In order to understand why this is so we have to recognise that the two expressions differ in 'sense' even though they refer to the same object (See Passmore 1957, p. 151).

of the world but, to a feature of the discourse; the reader is given information about the way in which a particular term is used in the discourse. Thus, in the audience-directed sense, Fig 1 serves as a Discourse-act to explain the meaning (in the sense of use) of the term 'rectangular solid'[49].

6.7.2 Successful Reference. General Terms.

We have noted that the reader has to recognise when his attention is being directed to something and also what it is that his attention is being directed to. These acts of recognition are customarily accompanied by others, which 'register' that information is being conveyed about the 'referent', and that the information is of a certain kind; it may be about the world and it may be about the discourse itself. However, no information will pass unless the two "R's" - reference and representation - are accomplished successfully or adequately.

Consider sentence 3. of (5). It requests the reader to think of a rectangular solid and it tells him how to find the volume of such a solid. How is it that the Statement makes a success of these jobs? It is a necessary condition of successful reference that each of the participants should know what he means by the referring expression ('rectangular solid'), as used in the discourse, and each must mean or understand the same thing (Strawson 1974, p. 47). The condition can be put in another way: both participants should share knowledge of at least one identifying description of the 'name' involved. 'Rectangular solid' is the 'name' involved. It is actually a

[49] On Wittgenstein's notion of meaning as use, see e.g. Hacker (1972). Hacker observes that the notion of 'use' must be understood as "conditions which justify using a term or sentence" (op. cit., p. 283).

general term (Quine 1960, p. 90) whose utility lies in its function to identify, describe and sort solid objects[50]. It is possible that the writer and the reader might not share knowledge of at least one identifying description of the general term 'rectangular solid'. To eliminate this possibility the writer supplies an identifying description in the form of Fig 1.

A phrase such as 'a solid of rectangular section', used referentially, as in sentence 3. of (5), is an indefinite referring expression. An indefinite referring expression, which is grammatically a general term, is used to refer, not just to one thing, but to a class of things. It is said that a general term has an extension, whereas a singular term has a designation. The extension of 'a rectangular solid' covers all those things of which it is true to say that they are solids of rectangular section. Hence the reader of sentence 3. of (5) should recognise that the writer is talking about any rectangular solid. We might express this recognition in the following form (6):

(6) for any x, the volume of x is found by M

(6) expresses the same proposition as sentence 3. but in a 'regimented' form. The symbol 'x' is a variable which takes as its values only rectangular solids; 'M' is a constant which abbreviates the given method by which the volume of a

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50) According to Strawson (1974, p. 42), an understanding of linguistic function "pre-eminently involves an understanding of the utility of linguistic forms in communication between human beings variously circumstanced and variously equipped" (orig. emphasis).

rectangular solid is calculated. 'For any x' is a universal quantifier which ranges over the class of rectangular solids. Thus the notation (6) gives something like the 'logical form' of sentence 3. of (5).

6.7.3 Singular terms.

Much of T-s discourse depends on general terms; for instance, we constantly come across statements such as the following (7-9):

(7) If we look at an object we get an idea of its size.

(8) A body displaces its own volume when immersed in a liquid.

(9) The hydrometer operates according to the principle of flotation.

We may take special note of (9). In this sentence the phrase 'the hydrometer' is used as a general term, i.e., the Statement made by using the sentence is true of any instrument which is called a hydrometer.

If a term is used so that it designates just one object it may be called a singular term. Singular terms may be concrete, abstract or mass terms. Starting from the end of the list, in sentence (10) 'diamond' is used as a singular (mass) term:

(10) Diamond is the hardest of all substances, but it is quite brittle.

We can say that in (10) 'diamond' is used as a singular term to designate that "scattered object" which is the world's diamond stock (Quine 1960, p. 99).

Next we may consider abstract terms. Their utility in discourse lies largely in "abbreviated cross-reference" (Quine, op. cit., p. 121). As an example, consider text (11):

(11) 1. Whether or not a particle can rotate and vibrate depends on its shape and on the way its mass is distributed. 2. A spherical ball, pinned to the ground through its vertical diameter, would be indistinguishable in one position from any other, provided that its surface were entirely uniform. 3. The same would be true of an ellipsoidal rugger ball if it were anchored vertically through its long axis.
(Rossotti, op. cit., p. 97; my emphasis).

Here the writer makes an elaborate remark regarding a spherical ball (in sentence 2.); in the next sentence he avoids a laborious repetition very conveniently by using the abstract term 'the same' in an anaphoric cross-reference.

Concrete singular terms include, apart from proper nouns, definite descriptions, pronouns and titles, for instance the following:

(a) demonstrative singular terms ('this river');

(b) indexical terms ('this', 'you', 'now', 'here', 'tomorrow')[51];

(c) "degenerate demonstratives" ('the river')[52];

(d) minimum descriptions ('the + a pro forma substantive); and

(e) abbreviations of minimum descriptions ('he', 'she', 'it').

The demonstrative singular term 'this river' is obtained from the general term 'river' by prefixing a demonstrative

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[51] Indexical terms are also known as indicator words (Quine, op. cit.), shifters (Jespersen; see Quine) and token-reflexive expressions. Flew defines the last one as follows: "A word or expression is called token-reflexive when its reference varies with, and is in some wayafunction of, the situations of its tokens" (1971, p. 249).

[52] Quine (op. cit., p. 102): "Often the general term that follows 'this' or 'that' suffices, along with the circumstances of the utterance, to direct attention to the intended object without a gesture. In such cases 'this' and 'that' tend to be weakened to 'the': thus 'the river'".

particle ('this'). By using 'this river' instead of the name of the river we are saved the burden of knowing the name (Quine, op. cit., p. 100). By using a demonstrative singular term we can also refer singly to an object which simply has no proper name, for instance: this apple.

6.7.4. Reference and Rules of Inference.

We have now discussed reference and some of the linguistic means that are available to meet a referring need. At this point we can have a look at another text, with a view to enlarging the theoretical framework. Let us consider text (12):

(12) 1. The majority of alloys are prepared by mixing metals in the molten state; then the mixture is poured into moulds and allowed to solidify. 2. Generally the major ingredient is melted first; then the others are added to it and should completely dissolve (...)
(Adapted from Widdowson 1973); See also Widdowson Mimeo 1).

For the sake of analysis let us suppose we have the following 'hypothesis': we simplify texts for learner-readers but do not replace a word or expression if it occurs in their 'interlanguage'. However, even if the learner thus knows the dictionary meaning of a word he may still have to recognise the communicative value that the word takes on in the context. In order to understand the value the learner has to relate the word anaphorically to something in the preceding discourse.

In order to test the hypothesis we analyse (12) as follows: The communicative (or rhetorical) value of mixture is derived by reference to by mixing metals in the molten state. This gives it the value the mixture of metals. The value of ingredient, in turn, comes from recognising a certain sense

relation, namely A mixture contains ingredients. Since mixture has the value mixture of metals, ingredient takes on the value of metal (Widdowson 1973)[53].

Clearly our initial hypothesis has been confirmed. It seems, in fact, that the learner has to carry out the rhetorical operations such as we described. However, knowing that any method of analysis is "underdetermined" by the text we may want to explore an alternative avenue. We may note, for instance, that sentence 1. as it were creates referring needs. One need that arises is to be able somehow to refer to the 'thing' which is the result of mixing metals in the molten state; another need that arises is to be able to refer to the metals which were mixed in the molten state in order to get the 'thing'.

Looking at text (12) we note that the writer has occasion to refer to the 'thing', i.e., the 'soup' of liquid metals, in his second 'utterance'. He solves this referring problem by using what Quine calls a minimum description. The minimum description consists, in this case, of a weakened 'this', i.e. 'the', together with a pro forma substantive, i.e. 'mixture'. The general term mixture (which follows the degenerate demonstrative) suffices, along with the circumstances of the utterance, to direct attention to the intended object "without a gesture", i.e., without introducing the cross-reference in some formal way (Bar-Hillel 1964, p. 341).

We seem to be saying that the learner's interpretation of the phrase 'the mixture' in (12) depends on a recognition of reference. But on what does the recognition of reference

53) Cf. this analysis with Bar-Hillel's remarks on "text-dependent synonymities" (1964, p. 341).

depend? I suggest that it depends on a recognition that a certain rule of inference is applicable. However before going any further with the analysis let us look at the following:

> Alongside the language faculty and interacting with it in the most intimate way is the faculty of mind that constructs what we might call "commonsense understanding", a system of beliefs, expectations, and knowledge concerning the nature and behaviour of objects, their place in a system of "natural kinds", the organization of these categories, and the properties that determine the categorization of objects and the analysis of events.
> (Chomsky 1976, p. 35).

I take Chomsky's faculty of "common-sense understanding" to correspond, at least partially, to the ethnomethodological concept of "practical reasoning". The faculty of common-sense understanding is organised into cognitive sub-structures which may be called interpretative procedures. The interpretative procedures license rules of inference. A rule of inference may formally be represented as a modus ponens (Salmon, op. cit., p. 24).

The reader of (12), given that he has understood the first part of sentence 1., should recognise that the following 'common-sense' rule of inference is applicable for the 'disambiguation' of the phrase the mixture (RI):

(RI) If some things are mixed, then a mixture is obtained.

Applying the rule of inference the reader reasons: metals are mixed (in the molten state); therefore, a mixture is obtained. The phrase the mixture is seen by the reader to (cross-)refer to the conclusion of the 'common-sense' reasoning, i.e., to the inference a mixture is obtained.

It is in something like this way, I suggest, that the

recognition of the reference of the phrase the mixture depends on a further recognition that a certain (common-sense) rule of inference is applicable, due to the cirucmstances of the utterance.

My alternative analysis differs from Widdowson's analysis in two respects: first, it supplants his notion of rhetorical value (of a lexical item) with the age-old notion of reference. Secondly, it introduces the notion of rule of inference. However, it may be that when Widdowson talks of value and I talk of reference (in this sense) we intend much the same. For Widdowson says: in order to understand the phrase 'the mixture' (as well as the phrase 'the major ingredient') the learner has to "relate it anaphorically to something in the preceding discourse". My analysis agrees with this dictum.

I have also tried to make Widdowson's dictum more explicit. The learner will not succeed in relating the phrase anaphorically to the preceding discourse unless he reasons in something like the way that I have suggested. It is also clear the learner must reason 'in English', in the manner of (RI). For suppose that he reasons 'in Finnish'; in that case his rule of inference would be: jos aineita sekoitetaan, niin saadaan seos. If the Finnish learner reasons in this way he will have the added difficulty of correlating the English word mixture with the Finnish word seos. Granted that the correlating may not be too difficult in this case. However, it is easily seen that it would be much more difficult in the case of the word ingredient.

It seems that the Finnish learner had better learn to reason 'in English'. English readers of course have the trick. They may reason in the manner of the above (RI). Supposing that they do; then their disambiguation of a phrase may depend on a recognition of reference. If this can account for the feat of disambiguation, is there any need to posit value?

Widdowson (1973) makes use of a dichotomy between value and what he calls 'signification'; he writes, for instance:

> Interpretation...depends on a recognition of value, and value is recognized by correlating the signification of linguistic elements with features of the context or the situation of utterance.

He explains that the correlating is done by

> adjusting the code meaning so that it conforms to the meaning that the context or situation requires it to have.

As we have seen, the reader of text (12) is supposed to adjust the code meaning of 'ingredient' so that it will conform to the "meaning that the context or situation requires it to have",; i.e., the word "takes on the value of metal". Widdowson seems to be saying that in the context of text (12) 'ingredient' means 'metal', whereas I am saying that it refers to a metal. We might combine the two accounts and say: in the context the word 'ingredient' means 'metal' because (or, in the sense that) it refers to a metal. However, saying so is tantamount to assimilating meaning to reference, at least in the present case. But it is assimilating the contextual meaning, or value, to reference; I am not denying thereby, that individual lexical items have code meanings, or significations.

The code meaning of the word 'ingredient' seems to be something like 'a component of a compound

or mixture[54]. This might be called its dictionary meaning. But what are dictionary meanings? It turns out, on reflection, that they are not meanings, but definitions[55]. As Miller says:

> The dictionary definitions are derived from the contexts in which the word occurs. There are no meanings in the dictionary. There are only equivalent verbalizations, other ways of saying almost the same thing. (1951, p. 112).

The dictionary 'meaning' of 'ingredient' - for instance, 'component' - is an alternative verbalisation derived from the contexts in which the word has been used previously. Thus to know the word 'ingredient' in the sense of knowing an alternative verbalisation is to know that word definitionally.

There is another sense in which we may be said to know a word; this is the recognitional sense (Flew 1971, p. 312). In this sense, to know what the word 'ingredient' is means, simply, to be able to use it correctly in ordinary and typical contexts. Thus the writer of (12) was able to use 'ingredient' properly, in the context of the discourse, to refer to a metal (component of a mixture).

I suggest that Widdowson takes code meaning in the dictionary sense. According to his view the signification of 'ingredient' is (roughly) 'something that is contained by a mixture'. On this view the reader bases his interpretation on the definitional sense.

As a contrast I take code meaning in the recognitional

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54) The word 'mixture' need not occur in a definition of 'ingredient'. Compare the sentence: 'Alcohol is one of the ingredients in beer'. However, beer is not a mixture (of alcohol plus something else).

55) In contrast to my botanist friend's 'ostensive' definition of the tree dictionary definitions are 'intensional'.

sense; according to this view the signification of 'ingredient' may be a rule of use, or an interpretative procedure of a special kind, which enables the writer to deploy the word to refer and enables the reader to recover the reference[56]. The rule of use instructs the writer to refer by means of the word 'ingredient', rather than, for instance, by means of words such as 'fragment' or 'particle' - to say nothing of 'shortstop' or 'ortcutt'.

So, to answer the question posed above, whether there is any need to posit the notion of value, in so far as the interpretation of words and phrases is concerned, I would say that from my point of view there is no such need.

6.7.5. Possibilities left Open

We have now succeeded in extending the theoretical framework in at least some measure. This means that we have succeeded in shedding some more light on the notion of discursive reading. Such an ability seems to involve the use of rules of inference in the recognition of discursive reference. The rules of inference are, or are based on, cognitive structures which I have called interpretative procedures. One of the interpretative procedures is glossed as prospective-retrospective sense of occurrence (See Cicourel, above). It is an aspect of this procedure that will be discussed now.

An informal generalisation, which follows from the mathematical theory of communications, runs: the degree of

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56) It helps the reader to recover the intended reference that he and the writer share a 'reciprocity of perspectives' (Cf. Cicourel, above). A basic taken-for-granted assumption of discourse is: the speaker and hearer would probably have the same experiences of the "immediate scene" if they were to change places.

information which is conveyed by a Statement is a measure of the number of possibilities that it leaves open. The less possibilities are left open, the higher the degree of information conveyed.

It has already been noted in the foregoing that a general statement sums up the same information which might be conveyed by many particular statements[57]. There operates in a language the so-called 'generalising function' (Cf. O'Connor, op. cit., p. 116). It can describe types of things and events, and in this way types of things and events can be represented in discourse. Consider, for instance, sentence (13):

(13) All wires increase in temperature when an electric current passes though them.

Statement (13) leaves no possibilities open, in so far as we are only concerned to know whether or not something that is an electrical wire increases in temperature when it conducts electricity. In this respect, then, Statement (13) is fully informative. However, we may also want to know, knowing that there are different sorts of wire, whether or not those individual differences make any difference to the amount by which wires increase in temperature. In this respect, Statement (13) does leave possibilities open, and so is not fully informative.

Suppose, then, that we are given to understand that individual differences between wires do make a difference to the amount by which the wires heat up. Our informant may say so, or he may

57) It is also true that when we possess a generalisation we have a greater grasp of the facts conveyed by it than we could have "if we were confined to numerous particulars" (Harré, op. cit., p. 15).

imply so. Suppose that after making Statement (13) the informant makes Statement (14):

(14) However, some metals get hotter than others; and for any particular metal, a thin wire heats up more than a thicker one.

It can be seen that the writer of (13) informs us in (14), not by actually saying so but by implication, that if certain wires are different then they will heat up differently. Hence the writer, by his Statement (14), resolves our uncertainty concerning the possibilities that were left open by Statement (13).

Of course Statement (14) is even more informative when we think of what it says, instead of merely implying. It tells us, retrospectively, what kind of difference was under consideration when we were told that different sorts of wire behave in different ways when they conduct electricity. We are told that it is the difference in respect of thickness (or size). We are told, in other words, that the heating-up capacity of a wire is a function of its size[58].

What I have been saying so far is: a Statement may leave us (i.e., readers) in uncertainty in respect of a particular 'matrix of alternatives'[59]. Often we are left without power to choose between two alternatives - which may or may not be equally likely. It is, of course, up to us to recognise (a) that there is a choice, and (b) what the choice is. It is also up to us to recognise, in such cases, that additional

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[58] On functions and functional relations, see Kline (1953, p. 216).

[59] The phrase 'matrix of alternatives' derives from Quine (1970, p. 4).

information is forthcoming; this is the rule or procedure of 'prospective sense of occurrence'.

Allied to the prospective rule is another rule which instructs us to look out for implicit, as well as explicit information. I will look at some varieties of implication below. What I want to repeat here is that the retrospective rule, which is paired with the prospective one, instructs us to resolve our uncertainties, as the discourse develops. It also instructs us to connect bits of information, which are dropped along the way, to earlier occurrences even if, at the moment, we fail to recognise that something more was under consideration than was said to be (or was even implied to be).

I will now relate the above discussion to text (12). However I will have to make short shrift and dispense with all niceties.

Text (12) opens with the Statement which is here repeated as (15):

(15) The majority of alloys are prepared by mixing metals in the molten state(...)

The reader may or may not recognise that (15) leaves open the possibility that a small number of alloys are prepared by a method which is different from the one specified in text (12). Now a competent reader may fail to recognise this possibility, not for lack of perceptiveness, but because he has learnt to neglect inconsequential uncertainties. The rule of inference which instructs a competent reader to neglect an inconsequential uncertainty, such as the one noted in (15), may be termed perceptual. A perceptual inference is one which is taken from

direct experience, in which the connection may be remembered (Cf. Cole et al. 1971, p. 19). Thus, from past experience a competent reader may remember that there is a connection between the writer's stating that most A's are B's and his concentrating on those A's that are B's to the exclusion of those A's that are not B's. The remembering of such connection is a perceptual inference. The inference may, occasionally, prove to be mistaken but neither does it start to rain every time that the appearance of thunder clouds leads us to expect rain. Still, we continue in the habit of perceptual inference; this shows that it has 'survival value'.

To return to (15). The reader should recognise that the Statement leaves open two choices (16-17); he should also expect additional information, regarding the choices, to be given in later 'utterances'.

(16) (a) equal proportions of each metal are taken for the mix

(b) unequal proportions are taken

(17) (a) the metals are melted at a time

(b) the metals are melted in turn.

Having recognised these 'matrices' and having been led to expect additional information relative to them, the reader should recognise that the writer then provides him with power to choose in the Statement which is here repeated as (18):

(18) Generally the major ingredient is melted first(...)

Finally we may ask how does the reader arrive at the matrices? This may involve a recognition that Statement (15) carries the

implications (19) and (20):

(19) The metals are mixed.

(20) The metals are melted.

I suggest that it is from these 'implications' that the matrices derive; hypothesising about the method of derivation would mean going into the niceties that I promised to dispense with.

6.8. Summary of Chapter 6.

In this chapter I have dealt with the directions and dimensions of discourse; the discussion is not complete, in the sense that I have something more to say concerning the communicative dimension.

I prefaced the general discussion with a few remarks on the nature of discursive competence, taking the view that such competence is a complex set of interpretative procedures; i.e., cognitive structures which embody tacit knowledge in a general form about the discourse-situation. In other words, from an epistemological point of view, the tacit structures may be thought of as generalisations, which support the inferential processes.

I will now recapitulate some of the main points made in the chapter.

1. In its topic-directed aspect, a piece of discourse may be regarded as a Statement (e.g. a description); in its audience-directed aspect, it may be regarded as a Discourse-act (e.g., an exemplification)[60].

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60) For a logical analysis of describing and exemplifying, see Chisholm (1969, in Fann eds., p. 101-126).

These have the status of discourse-theoretical constructs; they involve not only what is said but also what is implied, and therefore are not co-terminous with utterances (Lyons 1971, in Minnis ed., p. 61).

2. There are devices which are more or less conventionally used to clarify the topic and to give clues as to how the Statements are to be taken. The second kind of clues may be called devices of audience-guidance. In my view they constitute a secondary system of a discourse; i.e., a system which has an explanatory or guiding function in relation to the primary system of propositions expressed.

3. We cannot describe the actual process by which a 'pragmatic meaning', or product, is extracted from a text-ualisation. However, it is possible to construct a model of the process. On my model, the process has (at least) these three features: it is discriminative, evaluative and 'accumulative' (Widdowson, personal communication). The reader has to discriminate, for instance, between 'info' and 'gen', evaluate the informational value in terms of relevance, and weight the writer's claims in terms of the principle of weighted agreement. The more efficient such sub-processes are, the 'better' the product.

4. Discursive reading involves the 'application' of a wide variety of inferences; my model is capable of separating a few of them. There are inferences that summarise, inferences which are applied in the recovery of reference, inferences which relate to the recognition of 'possibilities left open',

and to the solution of such uncertainties. All these may be termed conceptual inferences; i.e., ones which are based on experience but reached through the exercise of the reasoning faculties. In addition to conceptual inferences, inferences called perceptual may or may not be applied in discursive reading.

5. Discourse may be viewed in terms of expression, reference/representation and communication. The separation of these dimensions is artificial but necessary. The focus in the present chapter is mainly on the 'R/R'-dimension. I deal with features such as: 'acts of recognition' relating to the mechanisms of reference and representation; conditions of adequate reference; referential use of singular and general terms;[61] referential problems that arise in discourse, and how such problems may be solved (e.g., by the use of 'minimum descriptions').

6. An alternative analysis of a text originally dealt with by Widdowson was offered. On the alternative analysis, the interpretation of certain words or phrases in discourse would seem to involve the recognition of reference, rather than value. From my point of view, the notion of value is dispensable, in so far as words and phrases are concerned. In my analysis I also suggest an alternative perspective to the notion of code meaning or signification. I would prefer to regard knowledge of code meaning as recognitional, rather than definitional.

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61) For a distinction between the referential and attributive use of definite singular terms, see Donnellan (1971, in Steinberg and Jakobovits eds., p. 100-114). Donnellan's analysis is commented on by Stalnaker (op. cit.).

CHAPTER SEVEN THE DIMENSION OF COMMUNICATION

7.1. Reading 'between' the Lines

When we look at the discourse-situation from the point of view of the 'receiver', discourse presents itself as communication. In a very important sense, discourse *is* communication; also, in a very important sense, communication is discourse. As Hall notes:

> All communication ... can be viewed as a discourse ... while the ability to participate in the discourse is a function of programming.
> (1971, in Bosmajian ed., p.82).

Hall's "programming" corresponds to my notion of discursive competence. If the reader is adequately programmed, he stores a fair amount of the statistics of the language used; secondly, he can satisfactorily perform the preliminary task of reading 'behind' the lines to the assumptions which are taken for granted by the participants in a discourse-situation [62]. And thirdly, the adequately-programmed reader can cope with the further task of reading 'between' the lines of what is said. He has to be able to cope, because

> It would be short-sighted inteed to regard 'what is being said' as fully expressed by the words the speaker uses.
> (Black, op.cit., p.133).

In other words, part of 'what is said' is not said but implied.

Of course, it is not enough just to be programmed; the reader must be active, he must respond to the 'signs' that

62) The assumptions that are taken for granted in the discourse-situation may be viewed as 'norms', i.e. as shared patterns for perceiving and thinking, shared modes of communication and interaction, common attitutedes and beliefs, and so on. (Cf. Argyle 1967, p. 129)

are 'transmitted' by the writer. Responding is different from mere observation; it is interpreting and observing the consequences (Cherry 1971, in Minnis ed., p.28). It is, occasionally, questioning and challenging; it is, in short, discourse.

For some reason or reasons a response may not be 'triggered' in the discourse-situation; or a response may be triggered but is 'sub-standard'. However, as Labov has demonstrated (1970), sub-standard response does not imply sub-standard cognitive skills [63]. In the case of a Finnish student, for instance, a sub-standard reading of an English-language text may imply a sub-standard knowledge of English. There are clear cases in which poor reading can be associated with a poor knowledge of the language; in such cases, when the reader acquires a better command of the language his reading is found to get better as well. However, a persistent difference may remain between the way in which the person reads in Finnish and the way in which he reads in English. The difference is between using one's inferential capacity to the full and using it only partially.

In quite general and vague terms, it is the patterns of inference that have been 'aroused' by the reading of a text which constitute the 'sense' of the text (Cf. Clowes 1973, in Benthall eds., p.203). The meaning of the discourse-situation, in turn, constitutes the context for the patterns of inference. The discourse-situation 'prejudices' the reader to infer certain things, to the complete or partial exclusion of others; for instance, in the case of text (3) above, the reader is or should be prejudiced to infer that a substance has to be tough in order to be structurally useful. This in-

ference, prejudiced by the situation, as it were, summarises the information conveyed in the text.

Inferences are knowledge-based; but in order to 'function' properly the reader must be able to see the relevance of a particular type of knowledge in the current contxt. For instance, in the case of the "Pliny-text" the reader has to see that it is his knowledge of substances and their properties which is relevant, rather than his knowledge of (say) history. If a Finnish learner sees the relevance of this particular variety of knowledge in the context of the Pliny-text, then we can conclude that his knowledge of English interacts with his knowledge of the world, and interacts in an appropriate way [64].

Knowledge of substances and their properties is, in an important sense, knowledge of certain causal relationships. Hence a Finnish reader of an English technico-scientific text may be helped, in some cases, if he recognises that a particular causal relationship is suggested, even though not explicitly stated. Consider again the following sentence, here repeated as (21):

(21) All wires increase in temperature when an electric current passes through them.

63) On the "psychology of skills", see Herriot (1970,p.21ff).
64) In such a desirable case the learner may be said to be functioning "heterarchically"; there is established a two-way traffic between the varieties of knowledge that the learner has 'internalised'. The textual inferences that the learner draws are supported by his technico-scientific knowledge, and, in turn, the inferences modify the factual knowledge, so that there is a constant interplay between the two.

This general statement, in fact, suggests a causal implication (22):

(22) If an electric current is passed through a wire, then the wire increases in temperature.

If the Finnish reader knows (about) the causal implication or relationship, which is expressed in (22), it will presumably be easier for him to interpret (21) correctly. More than that, however, the reader will see how (21) and (22) interrelate as statements. He will see that the change from the former to the latter means that information in one form is transformed into information in another form. In other words, on reading (21), he can infer (22), preserving the information-content of the former. Then the reader goes on to the next sentence of the text, namely (23):

(23) For any particular metal, a thin wire heats up more than a thicker one.

On the basis of (22) the reader knows how a wire can be made to heat up; in relation to this bit of knowledge (23) now tells him how a wire can be made to heat up even more. We can say, perhaps, that the reader's inference (22) becomes modified, after his reading (23), into something like (24):

(24) If the wire is thin or is made thinner, then it will heat up more.

The reader may need to know (24) because he is or wants to be an electrician. Alternatively, he may want to know (24) just because it explains the fact that thinner wires are used in fuses than, for instance, in electric heaters.

Recovering causal implication is certainly one way of

reading 'between' the lines; it is also an important way because the Statement of a causal implication communicates an explanation of some particular event or fact. Hence it seems that the ability to read 'between' the lines and the ability to take a piece of discourse as, for instance, an explanation, are closely inter-dependent.

7.2. Implications and Explanations

My project in this chapter does not require an exhaustive account of the two notions of implication and explanation; even if it did, I would hardly be able to give such an account. To my knowledge, no-one has ever attempted an exhaustive taxonomy for instance of implications. Neither is there any satisfactory account of the distinction between implication and inference. It is sometimes said that implication is a purely formal relationship (between statements), while inference is a human activity (Passmore 1957, p.173) or a psychological process (Salmon, op.cit., p.8). However, these definitions treat of implication in the restricted sense of logical implication (Copi, op.cit., p258). An example of a logical implication would be the following (25):

(25) If all men are mortal and Socrates is a man, then Socrates is mortal.

We can view (25) as a conditional statement which asserts that its antecedent (the if-part) logically implies its consequent (the then-part). An alternative way of 'textualising' (25) would be (26):

(26) All men are mortal.
Socrates is a man.
Socrates is mortal.

Textualisation (26) is the well-known illustration of a categorical syllogism (Salmon, op.cit., p. 50-70). Hence (26) exemplifies a valid deductive argument ; by validity is meant purely formal validity. Our intuition of the formal validity makes it that even if nonsense terms are used, as in (27), the resulting sequence will, in a sense, be 'comprehensible':

(27) All hoodles are snurds.
This gabooge is a hoodle.
This gabooge is a snurd.

It is possible to put (27) in the form of modus ponens, as in (28):

28) If this gabooge is a hoodle, then it is a snurd.
This gabooge is a hoodle.
So it is a snurd.

We derive (28) from (27) in the following way: we note that 'all hoodles are snurds' is equivalent to 'if anything is a hoodle, then it is a snurd'. The latter implies, in turn, that 'if this gabooge is a hoodle, then it is a snurd'; this conditional becomes our first premise and together with the second premise it gives us the argument (28).

A syllogism, such as (28), is a reconstruction of what may be said to be a "devious" psychological process (Miller 1951,p.226). It is a law of logic, and laws of logic are not, perhaps, the "dynamic" rules of thought (Cf. Miller, loc. cit.) However, it may also be claimed that what logic does is to articulate and make explicit those rules which are in fact "embodied" in actual discourse (MacIntyre 1973,p.76). The notion of validity is already presupposed by the use of all those words in ordinary language which function as

logical connectives: 'if-then', 'and', 'or', 'but', 'because', 'not' and so on. Following MacIntyre we can say that our understanding of those words, which are basic to our vocabulary, presupposes an understanding of and an ability to use certain logical laws [65].

No formal system can give a comprehensive account of the logic (say) of subject-predicate statements (Strawson 1952, p.193); one reason is that in 'natural' syllogisms there are personal references and tense alterations, which are absent from the artificial counterparts [66].

So a logical implication is a reconstruction and a formalisation; however, its structure underlies some important forms of discourse. As an example, consider the scientific explanation par excellence, called the 'covering-law' explanation (Hempel 1966, Rudner 1966). Thus someone may wish us to explain to him why it is that a certain wire became red-hot. We explain the event by saying that an electric current was passed through the wire; we may say, in fact, (29):

65) If a Finnish learner of English can solve the following little problem we may conclude that he understands the use of the words 'or' and 'not', in MacIntyre's sense of understanding. The problem is: Jack or Jill is in the house. Jack is not in the house. Where is Jill?

66) Consider the following 'pieces of dialogue' which may be said to be underlain by a syllogistic structure. (Taken from Strawson 1952).
A: A man has just drunk a whole bottle of methylated spirits.
B: No one who takes a dose like that ever survives it.
A: So he'll die.
We may note how the indefinite first term ('a man') yields to the definite pronoun ('he') in the conclusion; and how the tense alters at each step. These are departures from the strict syllogistic schema, but they cannot be eliminated without destroying the sense of the 'natural syllogism'.

(29) The wire became red-hot because an electric current passed through it.

By saying (29) we imply a universal generalisation relating all cases when wires become red-hot and all cases when an electric current is passed through them. Thus our saying (29) carries the implication (30):

(30) Whenever an electric current is passed through wires, the wires become red-hot (or: increase intemperature, and so on)

It is precisely by virtue of this implied universal generalisation that the passing of the electric current through the wire acquires the explanatory role which the because-statement of (29) ascribes to it. Hence it is at least in some sense true to say that the 'receiver' of (29) will not understand it (on the higher-order level) as an explanation unless he recognises the implication (30). We can put the matter in another way. The receiver will not understand the explanation unless he reconstructs a deductive argument ('syllogism') which has the universal generalisation as the first premise, the because-statement as the second premise, and the explanandum ('the wire became red-hot') as the conclusion.

Understanding a scientific explanation is thus not simply a matter of reading the lines; it is also a matter of reading 'between' the lines of a scientific explanation. In so doing one recognises the explanatory force of what is stated; recognising the explanatory force means recognising the relation of the explanation to other similar problems and to other explanations [67]. For instance, if one understands (29) in

67) Cf. Scriven (1961, in Hook ed., p.123) and Popper (1976, p.93).

the correct way one can relate it to such problems as why it is that some wires become white-hot(and emit light) and why it is that other wires (used as fuses) melt and so prevent any further conduction.

There are other uses of the sentence-type 'x occurred because of y', i.e. of the type of (29), which do not carry the implication of a universal generalisation, such as (30). As is noted by Taylor (197o, p.13), a common use of this sentence-type is to assert that x would not have occurred but for y [68]. As an example consider (31):

(31) The accident occurred because the car skidded.

An 'explanation' such as (31) is not a scientific explanation, for it is not universally the case that wherever a car skids an accident occurs. Hence (31) does not explain (in the scientific sense) why the accident occurred; however, it 'explains' why the car crashed rather than continued normally. In other words, saying (31) implies (32):

(32) The car would have continued normally if it had not skidded.

Our interest in a case such as (31) is not so much in the explanation of why the car crashed as in the difference between the explanation of the crash and what would have been the explanation of the 'non-crash', had the car continued normally. The interest is satisfied if we understand both what

68) Taylor (op.cit.) classifies explanations into scientific, what- and reason-giving explanations. While a scientific explanation implies a universal generalisation, a reason-giving explanation implies another kind of relating factor. Consider the following:
A: Why do you believe the picture to be by Rembrandt?
B: Professor Smith says it is.
In his reason-giving explanation B implies that (he thinks that) Prof. Smith is an expert.

is said and what is implied in (31) [69].

7.3. Pragmatic Implicature

We have noted that understanding an explanation requires the addressee to 'reconstruct' the addresser's argument, from which argument the explanandum more or less logically follows. The psychological process involved in the work of reconstruction is describable as a deductive inference. In the case of a proper scientific explanation the inference is from a given universal generalisation and the relevant circumstances to the event to be explained itself. In working out the explanation we note the circumstances and recognise the implicit generalisation. (Of course the generalisation may also be explicitly stated.)

In the case of the non-scientific explanation it is not a universal generalisation that is implied, but for instance a subjunctive 'counterfactual' conditional, such as (32) [70]. In some non-scientific explanations an implication may be carried that reports a decision of the speaker or writer, to behave in a certain way under certain circumstances. As an example consider the dialogue (33):

(33) A.: You ate your hat, Bernard. Why?

B.: Hearts lost their game.

In order to understand the 'explanation' A. has to recogn-

69) On explanations, see also Dakin (1970, in Journal of Linguistics 6).

70) The non-scientific explanation (31) implies a counterfactual conditional (32), i.e. saying (31) means at least that if there had been no skidding the accident would not have occurred. Also, recognising the implication (32) leads us to consider the alternative possibility, i.e. the counterfactual case where the car would have continued normally. When we consider the alternative possibility we 'feign belief' in a possible world where the car did not crash. (See Quine 1960, p.222). On Counterfactuals, see also Mackie (1973) and Stalnaker (1968, in Rescher ed.).

ise an implication such as (34):

(34) If Hearts lose their game, then I'll eat my hat.

This 'decisional' implication, along with what is said by B., constitutes an 'explanation' of the particular hat-eating. From what B. says A. infers that B. had made a decision such as (34) and is now acting on that decision [71].

We can put it down as a general convention of technico-scientific (as well as other varieties of) discourse that all sorts of implications are intended by speakers and recovered by hearers. Some of these implications are occasionally called 'pragmatic implicatures' (Wiggins 1971, in Steinberg and Jakobovits eds., p.20).

To sum up the argument so far: Our knowledge of what is involved in a scientific explanation enables us to infer, on the basis of what is said, a given universal generalisation which connects the explanans with the explanandum. Our knowledge of what is involved in a non-scientific explanation enables us to infer other kinds of relating factors. Our knowledge of the existence of a general truthfulness-convention enables us to infer that the speaker or writer strives after an honest assertion of the causes or reasons. The notion of pragmatic implicature refers to another component of the knowledge which enables us to interpret discourse correctly. For we take it for granted that the speaker or writer asserts,

71) A statement which carries neither a logical, causal, definitional nor decisional implication may carry a so-called 'material' implication (Copi, op.cit., p.262; Strawson 1952, p.82-90). As an example of a material conditional consider the following: If Hitler was a military genius, then I'm a monkey's uncle. No 'real connection' obtains between the antecedent and consequent in this example. The conditional is, in the words of Copi, "an emphatic or humorous method of denying the antecedent", i.e. denying that Hitler was a military genius.

what he asserts, so as not to hold back any relevant information.

Pragmatic implicature is needed to stop the loopholes left open by the truthfulness-convention. For instance, consider the following case (35), where A. demands an explanation of the disappearance of a letter:

(35) A.: What has happened to the letter I left on my desk?

B.: Clement posted it or burnt it.

If Clement had posted the letter, B's statement is true. (Also B's statement is, of course, true if Clement had burnt the letter.) However, although B is, as it were, speaking truthfully in English, he is not giving an explanation. An explanation should genuinely convey information, but B's reply is tautologous and trivially true. No matter how many "or" 's are added A is still left in the same state of uncertainty.

B's disjunctive utterance in (35) is 'true' but weak; if he knows that Clement did in fact post the letter he should, unless there is good reason against doing so, commit himself to the stronger utterance (36) [72]:

(36) Clement posted it.

The implicature of (36), as an answer to (35 A.), consists in the fact that it excludes all other possibilities (such as burning the letter , throwing it away and so on) [73]. Hence recognising the explanatory force of (36) means recognising the implicature. For A's interest is not simply in the

72) On pragmatic implicature, see also Edgley (1969,p.170) and Raz (op.cit., p.30). Of course if B. does not know, for certain, what had happened to the letter, the question of conveying information hardly arises (Cf. Black, op.cit. p.139). However, B. can, even in that case, assert (36) but he should add a discourse marker indicating that he is only guessing, expressing an opinion, reporting hearsay and so on.

73) Popper's dictum "the more a theory forbids, the more it tells us" also applies to Statements in discourse (See Popper 1976, p.41).

explanation why the letter is not on the desk where it was left; if this was A's interest, then (35 B.) would do as an explanation of sorts. A's interest is much more in finding out, for instance, whether or not he must write a new letter altogether.

As an upshot of the foregoing discussion of scientific explanation we can say that such an explanation is communicative because it implies (if it does not explicitly state) a certain universal generalisation, and thereby relates the problem under consideration to other relevant problems. Furthermore, such an explanation is informative because it implicates the speaker or writer in the strongest possible utterance.

7.4. "Textualisation" and a Specimen Text

The explanations that we have considered in the foregoing have been cases of explaining a particular event - the heating-up of a certain wire, the crashing of a certain car, the eating-up of a certain hat. All these examples are easy ones because the link connecting the explanandum with the explanans, i.e. the generalisation or some other implication, is so obvious. In real-life situations, of course, the trouble is precisely that the link is not obvious. Consider, for instance, the following problem (37):

(37) The paint on this surface has blistered.

We seek an explanation, i.e. a cause, of the particular instance of paint failure which is described in (37). For instance, we may want to be able to prevent such a defect in the future.

Seeking an explanation of an event, such as (37), involves both looking for a generalisation under which the event in question can be subsumed, and then with the help of this generalisation identifying the cause. Hence what we look for

first is a suitable generalisation (Cf. Harré, op.cit., p.29). Only when we have the generalisation can we identify that special antecedent which is the cause.

We have imagined ourselves in a situation where we seek an explanation of the type of paint failure of which (37) is a token; we look for a generalisation, such as would help us to identify the cause. Imagine now a writer who knows the sought-after generalisation, and is ready, willing and able to tell us. In order to give us a deeper understanding of what is involved the writer has to discuss some of the relevant properties of building materials and paints, and also some of the chemical reactions that take place. This discussion will, in a way, help us to understand the generalisation itself. For convenience, let us say that the task of the writer is to expound the 'theory' relating to paint failure type (37).

Now, 'theories' (and theories, for that matter), say T_1 and T_2, may be formulated in entirely different terms (words, phrases, sentence-types, and so on) and may still be 'equivalent', in the sense that we can say that T_1 and T_2 are merely different formulations of one and the same 'theory'. Let us call the one and the same 'theory' which is merely formulated in two entirely different ways, the pragmatic meaning conveyed. Then let us call the two different formulations, the textualisations, T_1 and T_2, of that pragmatic meaning [74]. The textualisations may be said to be pragmatically (or, perhaps, logically) equivalent. (Instead of pragmatic meaning, we might as well speak of logical meaning, or simply of content.)

74) Cf. Popper (op.cit., p.23).

Here is an actual, i.e. one possible, textualisation of the 'theory' of paint failure of type (37); the textualisation is (38):

(38) 1. Oil-bound paints may sometimes fail when used on certain building materials. 2. When an acid and alkali react together the result is a salt and water. 3. If the acid is fatty such as linseed oil, then the result is a soap and water. 4. This is known as saponification. 5. Many building materials such as lime mortars and plasters, Portland cement and asbestos cement develop alkalis. 6. If such surfaces are coated with an oil-bound paint, particularly in the presence of even small quantities of moisture, they will cause saponification. 7. The paint may blister in a mild attack or show yellow soapy runs in a severe attack.
(B.J. Smith, Construction Science, p.72)

It is not difficult to see that the 'universal' generalisation (which is sought after by the readers) conveyed in (38) is something like (39):

(39) Oil-bound points "lose adhesion" when they are applied onto "new" cement (or lime mortar, or plaster) surfaces.

Supposing that we wish to find the cause of event (37), i.e. 'the paint on this surface has blistered', we extract product (39) from textualisation (38). The direction in which we are to look for the cause has thus been established: did we use an oil-bound paint? did we paint on "new" cement? Supposing that the answers are yes and yes, then we have succeeded

in identifying the cause of the failure - and will be able to prevent such failures in the future.

Of course, the writer of (38) does much more than just give the generalisation (39); in a sense he explains the generalisation. Thus the Discourse-act that the writer performs in (38) might be said to be (40):

(40) An explanation of why it is unsuitable to paint "new" cement surfaces with an oil-bound paint.

The explanation is in chemical terms, and it is given in the hope that it will make the reader understand why painting "new" cement surfaces with an oil-bound paint is unsuitable. The explanation may be said to consist of the following 'elements' (41-45):

(41) Painting new cement surfaces with an oil-bound paint causes saponification.

(42) Saponification is the result of a reaction of a fatty acid with an alkali.

(43) Oil-bound paints contain linseed oil, which is a fatty acid.

(44) Cement develops alkalis.

(45) "New" cement contains moisture which serves as a catalyst of the saponification reaction.

Looking at text (38) we can see that element (41) of the explanation 'correlates' with sentence 6. (if, by reference to sentence 5., such is replaced by new cement). Further, element (42) correlates with sentences 2., 3. and 4. - or with the 'product' of those three sentences. What about element (43)? This element has two parts, the second of which is linseed oil is a fatty acid. This part corresponds to the antecedent in sentence 3. The first part, oil-bound paints contain linseed

oil, is left to be understood, i.e. inferred - presumably by means of some 'common-sense' rule of inference. As regards (44), this is said in sentence 5. Finally (45): part of this is said while part of it is implied in sentence 6.

It is possible to say that the reader has to reconstruct the explanation (40) from the elements (41-45); it goes without saying: not necessarily in that particular order. However, it seems clear to me that the reader has to do some re-organising of the textual material, so that the order of the two principal operations seems to be: re-structure, re-construct. The re-structuring operations I call linkage inferences, and the re-constructing operation I call a summarising inference. The first sort (when necessary) re-organise, discriminate between mere information and 'genuine' information, assess claims in terms of validity and probably do many other things as well. The summarising inference, as the name indicates, sums up or abstracts or resumés the content (in terms of the task at hand).

The foregoing is an attempt to reconstruct the reading process of text (38); the reconstruction is made on logical grounds, as it were. It is not the result of introspection; I have not attempted to describe my own impression of the way in which I think that I read (analyse and synthesise) the text. I have attempted to determine what it is that the reader has to do in order to extract (40). Obviously, given this 'controlled' reading, the reader really has to build up the explanation out of its elements.

7.5. The Reader's "Procedure" vs. the Writer's "Procedure"

In the foregoing I have attempted to sketch the reader's "procedure", in so far as text (38) is concerned, and from a logical-cum-pragmatic point of view. The sketch is very crude and very tentative, but perhaps susceptible of further refinement. Simplifying, we might say that the reader's discursive procedure involves re-organising and summarising. Now we can ask: what would the writer's procedure be? And: how do the two procedures inter-relate?

We must assume that the writer's and the reader's aims mirror each other; in other words, the writer aims at giving explanation (40) and the reader aims at recovering the same. I have already noted what the reader's discursive procedure involves. Correspondingly, the writer's discursive procedure involves planning and textualising (organising). The writer of (38) operates in terms of a (more or less) consciously-formulated plan. But what is involved in making and in carrying out this plan?

In making a plan, one may decide to do A and then B in order to carry out the plan (Cf. Longuet-Higgins 1973 B, in Kenny et al., p.104). But in order to do A one has to do x and then y, and to do B one may have to do w and then z. So, if one is going to carry out the whole plan one first does x and then y, and then one turns to the next stage in the plan and proceeds in the same manner (See Diagram 2).

Diagram 2 The Writer's Procedure



Applying this schema to text (38) we can easily see that corresponding to the first stage (A) there is a discussion of the chemical reaction of saponification, and that corresponding to the second stage (B) there is a discussion of the relevance of this chemical reaction to a specific case of painting surfaces of certain building materials. We can also see that in order to 'do' discussion A the writer has to discuss the reaction of an acid and an alkali (x) and then discuss the reaction of a fatty acid and an alkali (y). Then the writer turns to the second stage. Here, in order to 'do' B, the writer has to discuss the phenomenon of certain building materials developing alkalis (w) and then discuss the phenomenon of saponification being caused when surfaces of such building materials are, under certain conditions, painted with an oil-bound paint (z). Proceeding in this manner, the writer succeeds in carrying out the whole plan.

Looking at text (38) we see that to Stage A there correspond sentences 2., 3. and 4., and that to Stage B there correspond sentences 5. and 6. (I leave sentences 1. and 7. out of the account). Looking specifically at the linguistic realisation we note that the chemical reaction x is realised by means of a sentence-type consisting of a when-clause plus a main clause, and that the chemical reaction y is realised by means of a sentence-type consisting of an if-clause plus a main clause; both sentences make general Statements whose import is the same as that of the corresponding chemical formulas (Cf. Guiraud 1975, p.55).

Comparing Stage A with the list of the elements (41-45) of explanation (40) we note that this stage corresponds to element (42).

To Stage B there correspond in text (38) sentences 5. and

6., as noted above. Sentence 5. lists some of the building materials which "develop alaklis"; cement is one. Sentence 6., again, is a general Statement, given in the form of an indicative conditional (Cf. Strawson 1952, p.200).

Comparing Stage B with the list of the elements of the explanation we note that this stage corresponds, roughly, to the rest of the elements (that is, excepting 42).

From the above account (which is a conjecture) we can see that while there is a certain symmetry and balance in the writer's procedure (and in the textualisation) there is an asymmetry in the reader's procedures - supposing that it is something like suggested by the list of the elements (41-45) of the explanation (40). The writer uses three separate sentences to 'do' Stage A; the reader takes it all in one bite. Nor is there a one-to-one correspondence as regards the textualisation of Stage B and the reader's re-organisation. Hence it seems really to be the case that the reader re-organises what the writer has originally organised. In psychological terms, the focus of the reader's procedure is on sentence 6. (z in the writer's procedure); it seems that if the reader succeeds in making good sense of that Statement he will also succeed in making good sense of the whole paragraph. Obviously, the reader will succeed in making good sense of this focal Stagement if he can in a sense subsume the real-life practical phenomenon described in that Statement under the more general and theoretical chemical reaction. The sequence of elements (41-45) are an informal hypothesis of the reader's interpretative act of subsumption. More formally, the reader constructs a deductive argument in

which the first premise is the chemical 'law', the second premise the circumstances of coating certain surfaces with an oil-bound paint, and the conclusion a proposition such as would do for (40).

So, finally, to answer the question posed earlier on, namely: how do the writer's and the reader's procedures inter-relate? A difficult question, but we may hypothesise. On my present hypothesis the matter is so that the writer organises the content (textualises) according to a (more or less consciously) pre-conceived plan, while the reader re-organises the content ('does' linkage and summarising) according to a (more or less consciously) anticipated argument. Hence the original question boils down to another one: how do the writer's preconceived plan and the reader's anticipated argument inter-relate? At least in the case of text (38) there is an apparent (if not real) congruence: Stage B coincides with the second premise in the reader's deduction and Stage A coincides with the first premise in the same. In order to deduce (40) the reader has to recognise the stages as the premises.

Thus the upshot of my discussion is somewhat paradoxical. The reader re-organises the textual material supplied by the writer, in terms of his reading-task in hand, into the elements out of which he reconstructs explanation (40). However, the end-result of the re-organisation is congruent with the original notion behind the writer's organisation. But this is as it should be. For if the reader did not re-structure in order to re-construct there would have to obtain, always, a one-to-one correspondence between content and textualisation. There

would only be one set way to formulate and expound the 'theory' relating to blistering paint failures; a change in wording or in the order of the Statements would result in a total breakdown of communication.

7.6. Summary of Chapter Seven

In this chapter I have begun to consider what is involved in reading 'between' the lines. I would like to emphasise that my remarks above are merely a beginning; they belong to the trial or 'dogmatic' phase of inquiry (Cf. Popper, op.cit.). I am attempting to locate and formulate relevant problems; I am also trying to find tentative solutions. Errors cannot be eliminated at this stage - even in the final analysis it is true that "death alone can save one from making blunders" (Einstein; See Brockman and Rosenfeld eds., 1973, p.219).

Apart from the inevitable errors there are also inevitable instances of loose terminology in these theoretical chapters. I can only appeal to the (alleged) fact that the metalanguage of discourse description and analysis is far from being established. The new terms and notions that I myself advocate are, 'by definition', unestablished.

Reading 'between' the lines means drawing inferences from what is explicitly said (written). I have suggested that it is the web of inferences so drawn which may be said to constitute the 'sense' of a text. The 'sense' of a text would be synonymous with the set of inferences which is, as it were, maximally supported by the (reading of the) text. However, it is clear that any single act of reading captures only a subset of such a maximal set. This is as it should be.

For pedagogic purposes, it is important, at least to my

mind, to try to isolate the subset of inferences, drawn on the basis of a technic-scientific text such as (38), which constitutes the so-called 'relevant product'. If we put ourselves in the appropriate discourse-situation we can have fairly reliable intuitions concerning such products. I mean intuitions which enable us to paraphrase and summarise a text. (Presumably these are intuitions akin to those which enable us to report a sentence in indirect speech.)

When we have isolated or identified the content of a text which is relevant to the task at hand we have a 'control' on the learner's inferential processes. If we take it that the writer of the text is mainly concerned to explain why it is unsuitable to paint new cement surfaces with an oil-bound paint, we can ask the learner to read the text and explain, "in his own words", why such painting is unsuitable. If the learner can comply with our request we take it that he was able to build up the explanation out of its "elements" - those elements being recoverable from the words used by the writer. If the learner, however, is unable to "extract the product" we can assume that he was, for some reason, unable to recover the elements; or perhaps unable to put them together. Then we can ask ourselves whether any pedagogic measures might be taken to develop the learner's discursive competence.

I have in this chapter tried to inquire into the matter of writing 'procedure' versus reading procedure. The chief difference seems to be that while the writer proceeds in terms of a 'plan', the reader proceeds in terms of a 'hypothesis' (an "anticipated argument"). The implications carried by

such a distinction have to be pursued elsewhere. At this point I will merely suggest that while the writing procedure of a text might perhaps be described as hierarchical but linear, a reading procedure of the text might perhaps be described as hierarchical but 'cyclic'. The writer proceeds in stages while the reader proceeds in 'loops'. This is, of course, a logical rather than a psychological description.

PART THREE PEDAGOGICAL RELEVANCE

CHAPTER EIGHT IMPLICATIONS AND APPLICATIONS

Introduction

In this chapter I will suggest some pedagogical implications and applications of the theoretical work presented in Part Two. After the introduction the chapter will fall into two main sections: in the first of these I will summarise and discuss the pedagogic implications that I can separate out provisionally - I will attempt to explain what I mean by the implications and I will also illustrate by examples taken from technico-scientific texts. Already in this part I adduce exercise types and in the second part I will supplement the exercises as well as present a summary of the exercises. The exercises presented are of course mere prototypes and subject to further experimentation.

The exercises that are presented in this chapter are mainly intended to be such as would help develop Finnish learners "discursive competence" in reading English texts. I have particularly in mind learners who have gone through the elementary and even intermediate phases of learning English as a foreign language in a secondary school and are now learning English for special purposes at university level. These learners of course know how to read[1] but many of them still have difficulty in

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[1] On the teaching of reading, see Fries (1968, in O'Brien ed.), Wilkinson (1971) and Dakin (1973, in Fraser and O'Donnel eds).

extracting what I have called the (relevant) "product" from reading texts in their own field. Hence it may be surmised that such students are not proficient enough to "process" the 'intended' message: in other words, their knowledge of the code and conventions of English is not sufficient and, secondly, they have not yet been able to "transfer" the interpretative procedures they employ in reading texts in their native language to the reading of texts in the foreign language[2]. On this assumption of non-transfer, or inadequate transfer, one can suggest one major pedagogic objective: design of such exercises as would facilitate the transfer of "interpretative procedures". We should design exercises which train the learners in the new use of the 'old' discursive capacity and help to consolidate the new use[3].

I will begin this introduction by illustration of what I mean by inadequate extraction of the (relevant) "product". For this purpose I will re-instance the following text as (1):

(1) Pliny the Elder in his highly unreliable Natural History gives directions for distinguishing a genuine diamond. It should be put, he says, on a blacksmith's anvil and smitten with a heavy hammer as hard as possible: if it breaks it is not a true diamond.

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2) On the question of transfer (though not in the same sense), see Fries (op. cit).

3) See Davies and Widdowson (1975, in Allen and Corder eds.) on training and maintaining the reader's inferential procedures.

> It is likely that a good many valuable stones were destroyed in this way because Pliny was muddling up hardness and toughness. Diamond is the hardest of all substances, but it is quite brittle so that, even if one could get it cheaply in large pieces it would not be a very useful structural substance.

In the analysis of text (1) it was noted that the discourse-act which is 'performed' by the writer is something like (2):

(2) A useful structural substance has toughness.

In addition we might say that there is another discourse-act performed which is something like (3):

(3) Toughness is not the same thing as hardness.

In other words, the writer explains what is meant by the notion of 'useful structural substance' and he also 'explains' the important distinction that there is (and has to be observed) between the notions of toughness and hardness. These two discourse-acts may, then, be taken to constitute the "product" that we might expect the science student to extract from text (1). The student should be able to "process" the text accordingly.

Clearly the student needs some knowledge of English (an 'interlanguage'[4]) in order to do the adequate extraction. However, the interlanguage is not enough: the student must also employ the same interpretative

[4] See Corder (1973, p. 269).

procedures that he uses (say) when reading a translation of text (1)[5]. I have suggested that the interpretative procedures involve, for instance, the use of 'linkage' and 'summarising' inferences. The former involve, as it were, the re-structuring of the text so as to extract the 'elements' of the explanations (2) and (3); the latter, in turn, involve the re-organising the elements of the explanations: putting them together in the appropriate manner.

It is, of course, possible to design comprehension questions to see whether the learner-reader is able to recover the two discourse-acts, (2) and (3), from text (1). For instance, we might have two comprehension questions, corresponding to the two discourse-acts; the questions might be something like (4) and (5):

(4) According to the text, what property must a substance possess in order to be a useful structural substance?

(5) True or False? If we describe a substance as hard, we imply that it is not brittle.

An acceptable answer to (4) might be (6):

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5) Normally the science student would of course read the translated text in the context of the book. In such 'contextual' reading the student would implicitly recognise how the continuation of text (1) 'builds upon' the latter; i.e. builds upon the introduced notion of toughness.

(6) It must possess toughness.

Since it may be difficult for the learner to produce the whole sentence (6)[6] as an answer (even though he has comprehended the text and so knows the answer) we may supply an answer-frame, such as (7):

(7) It must possess _____

As regards the other comprehension question, namely (5), the learner has answered correctly if he judges the implication as false. At this point, however, we may need what may be called a 'supplementary question'. The supplementary question requires the learner to justify his judgment. In the present case it might be something like (8):

(8) Why is it (i.e. the implication) false?

An acceptable answer to (8) might be (9):

(9) It is false because hardness is different from toughness.

Again an answer-frame will facilitate answering: the frame may be, for instance, (10):

(10) It is false because _____ is different from _____.

So far we have 'tested' whether the learner is able to do the adequate extractions from the text under consideration; furthermore, we have also tested whether the learner is able to justify his answer to the second comprehension question, namely (5). It is of course possible to go on putting to the

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6) On recognition as opposed to production exercises, see Corder (op. cit.).

learner more comprehension questions like (8); for instance, we might, if the learner can answer in the way of (9), now request him to explain what he means by saying the hardness is different from toughness; i.e. we might ask (11):

(11) In what way is hardness different from toughness?

In answering (11) correctly the learner relates his earlier answer (9) to his still earlier judgment about the falsity of the implication in (5). A correct answer to (11) might be, for instance (12):

(12) A substance which is not brittle is tough, not hard.

Since the question, namely (11), is advanced in difficulty we can again provide a frame, such as (13):

(13) A substance which is not brittle is _____,
not _____.

The frame (13) will help to make the original question at least intermediate in difficulty.

I have now illustrated what I mean by the extraction of the relevant product. In the discussion I have also exemplified the type of comprehension question that may be used to test whether the learner is able to do the extractions; i.e. whether he is able to read the text "discursively". It is clear that such comprehension exercises may be used to develop, as well as to test, the learner's ability to employ his interpretative procedures. After all, we should try to develop the learner's ability to comprehend texts, not to guide him to a comprehension of a text (Cf. Davies and Widdowson op. cit.).

In conclusion to this introduction I can illustrate, for the sake of contrast, what a mere 'textual' reading of text

(1) might be able to recover. For the sake of symmetry I will also give examples of comprehension questions which would relate to such textual reading.

If we say, for convenience, that the 'discourse' in (1) consists of the two discourse-acts (2) and (3) then we might say, correspondingly, that the 'text' in (1) consists of the following "text-acts", (14) and (15):

(14) A description, á la Pliny the Elder, of a 'hardness' test.

(15) A re-description of the same as a toughness test (which shows that diamond will not do as a useful structural substance).

We might say that the point about discursive, as opposed to textual reading, is that it recognises the point in the two "text-acts". It may be interesting to note a few of the things that discursive reading 'neglects' as it opts for the point in the "text-acts". These 'subsidiary' things are probably 'read off' the text, with relative ease, only to be forgotten as their significance fades. Thus the reader of (1) gets to know (if he did not know before) that:

- there was a Roman writer called Pliny the Elder
- he wrote a book called Natural History
- the book is "highly unreliable"
- in it Pliny gives directions for distinguishing a genuine diamond
- the directions are such and such
- probably, as a result, "a good many valuable stones were destroyed"

- diamond is the hardest substance there is
- it is, however, quite brittle
- it is not obtainable in "large pieces", etc.

All the above items are, as it were, elements of the two "text-acts", (14) and (15). They represent 'textual' information which is recoverable from (1); however, it is easily seen that much of it is 'irrelevant' particularly in view of what follows the opening paragraph. This is another way of saying that most of those bits and pieces of 'textual' information would not re-appear in a summary of the whole chapter, while the discourse-acts (2) and(3) presumably might[7]. It is also easy to see why the 'textual' information is 'irrelevant' in the light of the main business: even though the writer, for a reason, mentions all the things that are listed above he does not, in a deeper sense, talk (discourse) about them.

As examples of comprehension questions relating to the 'textual' information of (1) we might consider the following (16 - 21):

(16) Who wrote the book called Natural History?

or

(17) What book did Pliny the Elder write?

(18) What, for instance, does Pliny do in this book?

or

(19) What kind of directions does he give in this book?

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7) However, we must not forget that what I have here termed 'textual' information has a function in information-management.

(20) What are the directions?

(21) Is diamond a tough substance?

It is easy to see that, in contradistinction to (4), (5), (8) and (11), the comprehension questions (16 - 21) are rather "mechanical"; they are not 'problem-solving' exercises in the sense that the former are. More important is, however, that they relate to textual rather than discursive reading.

From these introductory illustrations I now turn to a discussion of the pedagogic implications of my tentative model of discourse analysis.

8.1 Pedagogic Implications (1)

In the following sections I will give a resumé of what to me seem to be some of the pedagogic implications of my analyses of discourse; in the discussion that follows I will try to adopt a less theoretical tone. Here, first, is a provisional list of the implications (22 - 27):

(22) Use of the "secondary system" of a discourse.

(23) Responding to the formal ('underlying') structure of a discourse.

(24) Use of linkage inferences and summarising inferences.

(25) Interpretative use of reference.

(26) Recognition of "incoherence" in a discourse.

(27) Recognition of "matrices of alternatives".

In the theoretical chapters I made a distinction between the "primary and secondary systems" of a discourse. The term 'primary' refers to the topic-directed system of Statements while the term 'secondary' refers to the audience-directed

system of Discourse-acts; thus the former term refers to the propositions expressed while the latter term refers to the various 'devices' which are available for "audience-guidance". In the theoretical discussion I called such devices of audience-guidance "discourse markers". At this point it may be helpful to give a few examples. Consider, for instance (28 - 32):

(28) Toughness may be defined as the amount of energy which a material can absorb before it fractures.

(29) Electrical insulators are used to prevent leakage of charge and to protect plant and personnel. Examples are rubber and porcelain.

(30) Since cementite is very hard and brittle, white iron is not normally a suitable structure for castings.

(31) A very large number and variety of aluminium alloys, both cast and wrought, are in use today and we shall mention only a few of the more commonly used.

(32) So scientific explanation does not really seem an explanation at all because it never ends.

To put it in simple terms, the 'device' used in (28) guides the reader to take the statement made as one definition of toughness; correspondingly the device used in (29) guides the reader to take the two substances named as examples of electrical insulators. In (30) we have a device which 'marks', prospectively, the part after the comma as a conclusion which follows from the premiss (i.e. the part before the comma), together with some additional premiss(es).

In (31) the underlined 'device' tells the reader that the writer is going to 'mention' a few aluminium alloys. Finally, in (32) the 'device' so (in the context) marks the statement that follows it as an inference made on the basis of a foregoing discussion - a kind of summarising inference, really - while because marks its sequel as something that, very briefly, explains the writer's statement that a scientific explanation seems not to be an explanation at all.

The examples adduced above are rather obvious. I think, however, that the secondary system may also operate in more subtle ways; correspondingly there are more subtle ways in which readers respond to discourse on the level of audience-guidance. Here I will merely point to the multiple functions of many paragraph openers. For instance, consider (33) and (34):

(33) Several metals are widely used because of their conductivity.

(34) Why is it that some substances float on water, and others do not?

It is obvious that a paragraph opener such as (33) leads us to infer that the writer is going to talk about some metals that are used because of their conductivity. The discursive function of the why-question, as a paragraph opener, may be even more subtle. Clearly, in this case, it invites the reader to entertain a mental picture of certain events, at the same time that it invites him to consider a certain difference in behaviour as something that the writer is going to seek an explanation to, and so on.

In my theoretical discussion I referred to the formal

structure of a discourse as its "base". I will illustrate this further by means of text (35):

(35) Why is it that some substances float on water, and others do not? It may be tempting to think it is a question of weight. But a log of wood and an iceberg are both much heavier than an iron nail; and it is the nail that will fall to the bottom of a pond while the other two float. Ability to float does not depend on the weight of an object, but on the density.

It will be seen that the last sentence of (35) is to be taken as a kind of conclusion; however, there is no overt discourse marker, such as 'therefore'. On what does this reading of (35) depend? It seems to me to depend on the fact that the formal "base" of (35) is a deductive argument pattern (reductio ad absurdum). In order to show what I mean I will 'reconstruct' this underlying structure in the way of (36):

(36) To prove: ability to float does not depend on weight (but on density)

Assume: it depends on weight

Deduce: supposing it depends on weight: a log of wood and an iceberg are both much heavier than an iron nail, therefore a log of wood and an iceberg fall to the bottom and an iron nail floats.

But this is false.

Conclude: ability to float does not depend on weight. It depends on density.

It can be seen that the conclusion in (36) corresponds to

the last sentence in (35). In order to be able to read the last sentence as a conclusion the learner thus has to 'reconstruct' the "base", i.e. (36). Hence text (35) may serve to illustrate the second pedagogic implication on my provisional list, namely (23). Later on I shall consider a type of comprehension question which would help to test and develop the learner's capacity to respond to the "base" structure.

I think it might be a usable pedagogic practice to 'build' short texts upon simple formal structures and attach to the text a comprehension question meant to control the learner's reading of the text and to help develop his discursive capacity. As an illustration consider the following little text (37):

(37) These objects are made of a brittle substance. They are not made of a tough substance. If one is dropped on the floor it will shatter.

I have actually built text (37) upon the 'conjunction' of two (conditional argument) patterns (modus ponens), namely (38) and (39):

(38) If an object shatters if dropped on the floor it is made of a brittle substance.

One of these objects shatters if dropped on the floor.

Therefore it is made of a brittle substance.

(39) If an object won't shatter if dropped on the floor it is made of a tough substance.

One of those objects won't shatter if dropped on the floor.

Therefore it is made of a tough substance.

We can say that (37) is one possible textualisation made on the "base" of the conjunction of the two formal structures (38) and (39). The relevance of the second of the formal structures may not be obvious yet; therefore I will have to adduce here the whole exercise, i.e. the text and its associated comprehension question. Consider (40):

(40) (40a) These objects are made of a brittle substance. They are not made of a tough substance. If one is dropped on the floor it will shatter.

(40b = problem) It is possible that those other objects are made of a tough substance. How can we find out?

In order to solve the problem posed in (40b) the learner will have to read text (40) in a definite way: he will have to recognise not only the underlying structure that as it were justifies the application of the term brittle to a given object but also the underlying structure that justifies the application of the term tough to another given object. As a result of his reconstruction the learner may be able to give (40c) as a solution:

(40c) We can drop one on the floor. If it won't shatter it is made of a tough substance. (Or: if it won't shatter the objects are made of a tough substance).

We can facilitate answering by supplying a frame, for instance (41):

(41) We can _____ one _____. If it _____ it is made of a tough substance.

Supplying the answer-frame will help to make the exercise at least intermediate in difficulty.

I think that the pedagogic practice which is illustrated by means of (37 - 41) might promote the learner's capacity to respond not only to the "content" of a textualisation but also, and specifically, to its formal structure. By means of such fairly simple exercises we might also be able to help a Finnish learner of ESP to transfer his use of interpretative procedures to the reading of technico-scientific English. As suggested in pedagogic implication (24) the transfer would involve the use of linkage and summarising inferences in discursive reading. I have already discussed such inferences in the case of the Pliny-text. However, I can illustrate the matter further with reference to text (40).

We have talked about the 'reconstruction' of formal underlying patterns. As a matter of fact, this is one side of the coin: the other side consists of linkage and summarising inferences. For in order to reconstruct the "base" upon which I built text (40) - or, rather, the whole comprehension exercise - the learner must make linkage inferences and a summarising inference. In this particular case, the 'web' of linkage and summarising inference might be represented in the way of (42):

(42) (42a) Objects are made of substances.

(42b) The substances are either brittle or tough.

(42c) They are brittle if they shatter when hit hard (= when dropped on the floor).

(42d) They are tough if they won't shatter when hit hard.

(42e) Objects made of a tough substance won't shatter when hit hard.

(42f) If one of those objects won't shatter when hit hard the objects are made of a tough substance.

We might refer to (42) as the 'web' of inferences which is elicited by means of a comprehension question such as (40b). The series of inferences, in a sense, constitute a 'ladder' that the learner has to climb in order to reach the summarising inference (42f). In drawing the summarising inference the learner as it were kicks the ladder away. To put it differently, the learner has gradually to discard the 'mere' textual information in terms of the discourse-act. In the case of text (40) the discourse-act elicited by means of the comprehension question may be something like a description of the criteria of toughness: the criteria that justify one in applying the term tough to a given substance. With the help of such an exercise the learner may come to develop hypotheses about the association of certain linguistic items with particular criteria - for instance, the association of the item tough (and toughness) with resistance to breaking (i.e. crack propagation).

Before going on to discuss the remainder of the pedagogic implications I would like to offer another illustration of the use of linkage and summarising inference. For this purpose I adduce text (43):

(43) Electrical wires are, of course, made of metal; and metals are better conductors of electricity than are any other types of material. But different sorts of

of wire behave in different ways when they conduct electricity. All wires increase in temperature when an electric current passes through them. But some metals get hotter than others; and for any particular metal, a thin wire heats up more than a thicker one.

In order to 'compel' the learner to make the desired inferences we can attach a suitable comprehension question, for instance (44):

(44) Two wires, A and B, are made of the same metal. However, when a current passes through them, A heats up more than B. What could be the cause of this difference in their behaviour?

The rationale behind this type of comprehension question includes the consideration that the 'intended' product of the discourse in (43) may be taken to be something like (45):

(45) If wires are made of the same metal the amount by which each increases in temperature, when a current passes through it, depends on the cross-section.

In other words, something like (45) is the generalisation which sums up the knowledge conveyed in text (43).

As regards the 'web' of inferences which is elicited by the comprehension question, I suggest that this might be represented as (46):

(46) (46a) If A and B are electrical wires then they are made of some metal.

(46b) Since they are made of metal they can conduct electricity.

(46c) If a current passes through A and B then the wires increase in temperature.

(46d) If A and B are made of different kinds of metal then one will heat up more than the other.

(46e) If A and B are made of the same metal and if A is thinner than B then A will heat up more than B.

The last, summarising, inference will give the learner the solution to the problem posed in (44); in other words, he will be able to provide the answer in the way of (47):

(47) A is thinner than B.

Again we can make the exercise easier (intermediate) if we supply a frame, such as (48):

(48) The difference in behaviour is caused by the fact that A _____ than B.

When the learner gives the solution (47) or (48) to the problem which is posed in the comprehension question he in a sense provides an explanation to a particular event that has been described to him in the introduction to the question proper . From this point of view the comprehension question sets the learner to seeking an explanation, and we remember that a suitable generalisation is the prior requirement in such search. This means that in answering the question the learner must implicitly recognise the generalisation in the discourse-act (45).

These considerations indicate that an exercise such as (43 - 44) may, simultaneously, be an exercise in (scientific) explanation: the solution to the comprehension question supplies an explanans which is, as it were, "coherent" with the phenomenon to be explained. The matter of "coherence", and "incoherence", relates to another pedagogic implication,

namely (26). I will discuss this particular implication as well as the two other remaining ones in the next section.

8.2 Pedagogic Implications (2)

The next pedagogic implication on the list is (25); it is glossed as the interpretative use of reference. In the theoretical part of this thesis I discussed reference, for instance, with application to a text originally analysed in terms of signification and value by Widdowson. In this connection I pointed out that the 'disagreement' between our respective analyses is verbal rather than one of substance. I look at the matter, as it were, from a slightly different point of view. At this stage I will not re-iterate any of the theory; instead, I will adduce some examples by way of explanation of what I have in mind. Consider, for instance (49 - 52):

(49) A more drastic change occurs when water boils. When the liquid is heated to 100°C, the strong forces which act in the liquid are largely overcome by the increased movement of the molecules.

(50) In so far as we can equate ease of electron loss with 'metallic' behaviour, we can say that, for a series of elements of analogous electron structure, metallic character increases with increasing mass and size of the atom.

This trend is perhaps best illustrated by the analogues of carbon, in which ...

(51) A spherical ball, pinned to the ground through its vertical diameter, would be indistinguishable in one

position from any other, provided that its surface were entirely uniform. The same would be true of an ellipsoidal rugger ball ...

(52) A great deal of information about the state of a car can be obtained from a glance at the dashboard. Some of the information is of the yes/no variety: are the headlamps dipped or at full beam? Some, such as the total distance which the car has been driven, is in digital form.

(All examples from Rossotti, Introducing chemistry.)

We can think of the underlinings in (49 - 52) as marking such stages in the development of the discourse at which a specific "referring problem" arises for the writer. My suggestion is, briefly, that the reader recognises not only the writer's problem but also the specific way in which the writer can solve the problem, i.e. there is a shared knowledge of the referring devices that are available. I mentioned some of the devices in the corresponding theoretical discussion. The examples (49 - 52) illustrate the use of the "minimum description" (the liquid), the demonstrative singular term (this trend) and the abbreviatory cross-reference (the same, some).

It seems to me that the discursive use of referential devices is very varied and can also be very subtle; correspondingly, the interpretative procedures that recover references must be subtle. In the theoretical sections I illustrated one procedure which would involve the application of a 'common-sense' "rule of inference". Perhaps I can now

briefly adduce another "rule of inference"; this relates to example (50). Waiving all theoretical backing I will just say, simply, that the learner who wants to interpret the discourse in (50) correctly has to use "rule of inference" (53):

(53) If X increases with the increase of Y then this is a trend.

This inference helps the learner to relate what is being said in the second paragraph to what is said in the first.

On the basis of the above considerations I can suggest that the learner's comprehension of reading passages might be aided by means of giving them some of the applicable rules of inference. This pedagogic practice might help the learner to relate items in English texts in the same way that he relates items in texts when he reads Finnish. We can begin with simple cases and gradually move on to more difficult ones. Something like (53) may, presumably, be given in that very form (using the variables) to learners who are proficient enough to read texts of advanced difficulty such as (50). (It is also possible, I think, to help the learners get used to the use of variables).

Having discussed a fairly advanced case of the use of reference (by means of applying the appropriate "rule of inference") I may perhaps now illustrate a simpler case. For this purpose I recur to a text that was first adduced in Part Two. The text is the following (54):

(54) The majority of alloys are prepared by mixing metals in the molten state; then the mixture is

poured into moulds and allowed to solidify. Generally the major ingredient is melted first ...

The reader's problem is to relate correctly what is said in the first statement to what is said in the second - i.e. in the statement beginning with 'generally'. I think we can help the learner-reader to work out this relation by means of giving him (somehow) a clue in the form, for instance, of the "rule of inference" (55):

(55) If a thing is prepared by mixing some other things then the other things are ingredients.

Having the "rule" (55) the learner can reason that the rule is applicable in the case of (54): if he comprehends what is said in the first statement he comprehends, by the same token, that it describes a particular case in which a thing is prepared by mixing some other things. He will also recognise that if the writer wants to say something about the "other things" the term ingredient is available for the purposes of reference.

It goes without saying that the interpretive procedures which are suggested in the pedagogic implications (22 - 27) do not work separately but in unison. Thus. for instance, the interpretative use of reference presumably works as an 'aid' in the "process" which, among other things, discriminates between the relatively useful and the relatively useless information ("gen" versus "info"). Hence in aiding the learner in his interpretative use of reference we aid him in the processing of the information. Another method of aiding the learner's "process" prospectively involves the

pedagogic implication that is referred to as "matrices of alternatives". However, before going on to consider the matrices I will illustrate pedagogic implication (26), glossed as "recognition of incoherence".

I recur first to the end of 8.1 where we were talking about an explanans being "coherent" with the thing to be explained. Specifically, the fact that one wire is thinner than another explains why the former heats up more than the latter (when we know that both wires are made of the same metal). It explains the difference in behaviour noted because there is a suitable generalisation (a 'law') which relates the difference in behaviour with the difference in cross-section.

A scientific explanation is an argument and it is coherent if it conforms to its own rules. As an example of another kind of coherence I would like the reader to recall text (35); the coherence of this textualisation is underlain by the noted pattern of 'deductive proof'. The writer proves that ability to float depends on density. This proved generalisation may, in turn, be used to explain events. For instance, after the learner has read text (35) we may want to see whether he can now produce a satisfactory explanation of a given phenomenon. This may happen by assigning the learner an exercise of the following type (56):

(56) (56a) An object remained floating while another object fell to the bottom of the pond.

(56b) Why did the first object remain floating?

(56c) Why did the second object fall to the bottom?

In order to facilitate answering we may give the frames (57) and (58):

(57) It remained floating because it was made of a substance which has a lower _____ than water.

(58) It fell to the bottom because it was made of a substance which has a greater _____ than water .

The above type of exercise requires the learner to produce (know and formulate) an acceptable explanation to a described phenomenon. In addition to such production exercises we also need recognition exercises - in this case, recognition of "incoherence". For instance, we may want to see whether the learner can recognise the incoherence in the offered explanation. Consider (59):

(59) (59a) An object remained floating while another fell to the bottom of the pond.

(59b) Why did the first object remain floating?

(59c) Because it weighed less than the second object.

(59a) describes a certain phenomenon (a conjunction of two events); (59b) asks for an explanation; (59c) offers one. The learner is given these and the question (59d):

(59d) Does (59c) explain (59a)?

If the learner answers 'no' we give him a supplementary question (59e):

(59e) Why not?

An advanced learner may be able to produce the correct answer to (59e), for instance (59f):

(59f) Because ability to float does not depend on weight.

In order to make the exercise intermediate we may supply a frame, such as (59g):

(59g) Because ability to float does not _____ on _____.

We may also want to see whether the learner can 'spot' the same kind of incoherence in a 'chain of reasoning'. For instance, consider (60):

(60) (60a) In the light of the text you have just read (= text 35), is the speaker below reasoning correctly?

(60b) This thing is much lighter in weight than that thing.
So this thing will float on water and that thing will fall to the bottom.

(60c) Yes/No, his reasoning is/is not correct.

If the learner chooses the right alternative, i.e. (60d),

(60d) No, his reasoning is not correct.

then we can give him a supplementary question, such as (60e):

(60e) Why is his reasoning not correct?

Here an advanced learner may be able to produce a satisfactory answer, e.g. (60f):

(60f) His reasoning is based on a faulty premiss, namely that ability to float depends on weight.

However, if we grade the exercise intermediate we may provide the frame (60g):

(60g) His reasoning is based on a faulty premiss, namely _____.

It may be observed that I am here feeling my way towards such exercise types which would require the learner to engage "all" his knowledge, i.e. his knowledge of the 'world' as well as his knowledge of the code and the associated conventions. For instance, exercise (60) may be administered to learners even if they have not "just read" text (35) or some equivalent. Similarly, I think that we might give the next 'incoherence-spotting' exercise to learners even if they have not read the Pliny text (or an equivalent). The exercise might be as follows (61):

(61) Below the speaker claims one thing (a) and supports his claim by (b). Is his argument correct?

(a) This substance possesses extreme hardness. (b) a sample of it, even if subjected to a strong crushing force, will not be broken.

The correct answer is obviously 'no'. If the learner answers 'no' he may have 'spotted' the incoherence. In order to make sure we give him a supplementary question, such as (62):

(62) Why is the argument faulty?

The exercise is probably (fairly) advanced even if we supply a frame. The frame might be (63):

(63) It is faulty because the speaker muddles up hardness and _____.

We have now considered the 'spotting' of incoherence in explanation and argument in general. In the exercises adduced I have deliberately created the incoherence in order to help make the learner more aware of technico-scientific discourse is based on "rational" assumptions. In the theoretical parts I have tried to indicate that the implicit discourse assumptions lie 'behind' the lines of a textualisation; if the learner is able to read 'behind' the lines he may also be able to 'spot' cases of incoherence.

From the recognition of incoherence I now go over to the last of the pedagogic implications, namely (27), which is glossed as "recognition of matrices of alternatives". In the theoretical discussion I subsumed this notion under the heading 'possibilities left open'. We are dealing here with a facet of informational development in discourse. Briefly, in the same way that writers have to 'create' referring occasions in order to develop the discourse they also have to create uncertainty. For the sake of simplicity I have concentrated on cases where the uncertainty may be said to obtain between two (more or less equally likely) possibilities; in such cases the reader has to recognise a matrix of alternatives, one of which is going to be eliminated.

I feel, honestly, that this is the weakest 'link' in the 'chain' of pedagogic implications and also one that yields applications only with difficulty. However, since it clearly refers to a phenomenon which is central to information

processing in general I will hold on to it, hoping that I can make more sense of it later on. At this point I will illustrate with an example; this is text (43) which is here repeated as (64):

(64) Electrical wires are, of course, made of metal; and metals are better conductors of electricity than are any other types of material. But different sorts of wire behave in different ways when they conduct electricity. All wires increase in temperature when an electric current passes through them. But some metals get hotter than others; and for any particular metal, a thin wire heats up more than a thicker one.

I suggest that the following matrices of alternatives may be operative in the "processing" of text (64), i.e. (65), (66) and (67):

(65) (65a) All electrical wires are made of the same metal.

(65b) They are made of different kinds of metal.

(66) (66a) When a current passes through them, wires increase equally in temperature.

(66b) They increase unequally in temperature.

(67) (67a) All wires are the same size (thickness, cross-section).

(67b) They vary in size.

At different points of the discourse these uncertainties are resolved, For instance, the uncertainty which is 'created' at the point of the statement 'All wires increase in temperature...' is resolved at the point of the next

statement: the reader is told that (66b) in fact is true. This confirmation is information.

However, we may remember that the discourse-act which is performed in text (64) is a generalisation which relates matrix (66) and matrix (67), saying that the one depends on the other: the increase in temperature is a function of the size of wire. This is the "product" that the learner should extract. Obviously it will help him to extract it if his knowledge of the world tells him, in advance of reading the text, which of the alternatives, in each case, is true. First, however, we must let him see what the alternatives are. As a pedagogic practice I suggest, then, that the learner before reading the text is given the list (65 - 67). The list might be referred to as an 'auxiliary' text. Going through the alternatives and judging the truth-value of each alternative will prospectively help the learner to make better sense of the text they relate to.

When the learner has gone through the list of alternatives (65 - 67) he may be given the text together with the associated comprehension question, namely (44). This pedagogic strategy should help him to answer the question.

Generally it will help the learner-reader if he can organise the uncertainty created in the text in the form of specific alternatives. I will illustrate further by means of example (68):

(68) The presence of pores in a material naturally influences its mass, and therefore affects determinations of its density and specific gravity.

Here there is uncertainty which may be put in the form of (69):

(69) In what way exactly do the pores "affect determinations" of density and specific gravity?

The learner will be more 'attuned' to the discourse if he can recognise the two possibilities (70) and (71):

(70) Their 'effect' causes that lower values of the two variables are found.

(71) Their 'effect' causes that higher values are found.

If the matrix (70 - 71) is even vaguely recognised by the learner he is, as it were, prospectively adjusted to later developments in the discourse. It is this prospective adjustment that I hope may be facilitated by means of giving the appropriate matrices beforehand.

There now follows one more section in which I will summarise the exercise types presented so far and also suggest some additional ones.

8.3 Mainly about Application

On the whole my pedagogic approach stresses the necessity to develop the ESP-learners use of inferential procedures in order to achieve good reading results in spite of insufficient knowledge of the "code and conventions" of the English language. It is clear that the linguistic knowledge develops simultaneously; with the development of the linguistic knowledge the inferential procedures find more room to play, and so we get a mechanism of mutual conditioning operating between the two components, inferential and linguistic.

I can divide the exercises that I have considered in the foregoing into four main types (72 - 75):

(72) those that are meant to develop the learner's awareness of particular "discursive" functions of certain linguistic 'devices'. These come under the use of the "secondary system" (discourse markers, mainly) and the interpretative use of referential 'devices'.

(73) those that are more specifically meant to develop the learner's inferential procedures. These fall under 'reconstruction' of the formal 'underlying' structure and use of linkage and summarising inferences.

(74) those that are meant to help bring the underlying assumptions of discourse more into the learner's awareness; recognition of "incoherence" belongs here.

(75) those that are meant to aid the learner in the "processing" of information from a textualisation- here I include the cases in which it may be in order to give the learner some clues in the form of rules of inference or in the form of "matrices of alternatives".

In the foregoing I have suggested some prototype exercises to go with all but one of the major categories (72 - 75). The prototype-category correspondencies are as follows:

(73) exercise (1 - 13), exercise (40) and exercise (43 - 48).

(74) exercise (56 - 59), exercise (60) and exercise (61 - 63).

(75) exercise (54 - 55), exercise (64 - 67) and exercise (68 - 71).

Thus there is no exercise presented to go with the first category, (72). I will try to correct this situation later on. First, however, I would like to make a few comments on the exercises that already have been presented.

It is typical of the exercises presented in the introduction and in 8.1. that they are based on a short text; to the text is attached a comprehension question which directs the learner to recover a specific "product" from the text. Thus the assignment defines a purpose for the learner's reading. I think that this is a desirable pedagogic practice in the case of technico-scientific texts, but the reading of other kinds of texts is a separate matter.

The learner is required to produce a 'solution' to the problem posed in the comprehension question; we can control the answer by means of a ready-made answer-frame, for instance. The answer-frame method requires the learner to complete a sentence. Such completion exercises are, in theory, open-ended but in practice the reading text will, to some extent, determine the completion. Another method would be to provide multiple-choice; I have not presented such types in the foregoing so I might present a few here. The following (76 - 78) are multiple choice comprehension questions relating to text (1 = the Pliny text). However, it is of course not necessary to administer the exercises in connection with any reading text.

(76) Since diamond (a) is not obtainable in large pieces
(b) lacks toughness
(c) is so hard
(d) is so scarce,

it is not a useful structural material.

(Intermediate; correct choice (b).)

(77) In describing a substance as tough I imply that it is

(a) hard

(b) soft

(c) malleable

(d) not brittle.

(Intermediate; correct choice (d).)

(78) In describing a substance as extremely hard I may imply that it is

(a) virtually unbreakable

(b) tough

(c) like diamond

(d) not brittle.

(Intermediate; correct choice (c).)

As regards the set of exercises that are presented in 8.2 these differ from the earlier exercises in a few respects. Firstly, they are more text-independent; secondly, they are recognition or combined recognition-production exercises; and, thirdly, some of them are a kind of 'auxiliary' exercises, meant to facilitate the processing of a text and/or the doing of a text-dependent comprehension exercise.

After this summary of the exercises presented so far I would like to use the remainder of this section in three ways. First, I will suggest one more "text-based" prototype; second, I will suggest a few exercises meant to develop the learner's awareness of the "discursive" functions of

devices of the "secondary system"; and, lastly, I will present a couple of more "text-independent" exercises.

For the first purpose I take up the thread that was dropped in the discussion of text (35). I will resort to the practice of simplifying that original text somewhat; in this process I preserve the underlying formal pattern but reduce the complexity of textualisation. The result is (79):

(79) Why is it that some substances float on water, and others do not? Is it a question of weight? A log of wood and an iceberg are both much heavier than an iron nail; and it is the nail which will fall to the bottom of a pond while the other two float.

To this we may attach a comprehension question, for instance (80):

(80) True or false? Ability to float depends on weight.

If the learner answers 'false' we continue with a supplementary question, such as (81):

(81) Why is it false?

To control the answer somewhat we provide a frame, for instance (82):

(82) Because, if it were true then _____.

To control the answer more we may provide another frame, say (83):

(83) Because, if it were true then the iron nail _____ and the log of wood and the iceberg _____.

For even more control, for instance the following strategy is available: we preserve the frame (83) but give the 'fillers' ('would fall to the bottom','would float') and leave it to the student to supply the right 'filler'

to the right slot. This strategy will, of course, help make the exercise elementary.

In a sense the learner's interpretative use of the"secondary system" involves his interpretation, as correctly as possible, of the writer's intentions. The intentions may be "discourse-marked" by means of a specific device which is conventionally associated with a given function. I exemplified some devices of this type earlier on in this chapter. In that connection I also noted that the "secondary system" may work in more subtle ways. Specifically I referred to two cases in which paragraph openers have multiple functions. In the exercise that follows I adduce another paragraph opening and base my comprehension questions on that. Here is text (84):

(84) The effect of porosity on density and specific gravity has now been seen. Various other properties of materials are influenced by it, and these will be discussed later. To understand them it is necessary to understand how pores are formed, and how this affects the material.

(E.C. Adams, Science in Building 1.)

The question might be in the form of multiple choice, e.g. (85):

(85) In the next few paragraphs the writer goes on to discuss:

(a) some properties of materials that are affected by the presence of pores

(b) the ways in which pores affect density

(c) the ways in which pores originate.

This is an intermediate to advanced exercise and the correct answer is (c). To make it definitely advanced we may, after the learner has done (85), add one more question, namely something like (86):

(86) What other topic does the writer discuss in the next few paragraphs?

A correct answer to (86) might be (87):

(87) He also discusses how the formation of pores affects the material.

If the learner holds the item this in his answer to (86), and so just copies the answer, we must insist that he should elaborate, i.e. expand the item this in the way of the formation of pores.

As it stands the 'supplementary question' (86) transforms the exercise into a very difficult one and we may want to keep it down to a less advanced level. I suggest giving a frame for (87), for instance (88):

(88) He also discusses how the _____ affects the material.

This frame blocks the learner's possible attempt to insert this.

There now follow a few additional exercises meant to develop the learner"s discursive capacity to utilise the "secondary system". The first takes its departure from the following 'combined statement', discourse-marked by since.

(89) Since it affects the ease with which the paint can be applied viscosity is an important property of paints.

The exercise itself is as follows (90):

(90) (90a) Using the clue, combine (i) with (ii):

(90b) (i) Viscosity affects the ease with which the paint can be applied

(ii) Viscosity is an important property of paints.

(90c) Clue: (i) gives a reason why (ii).

The solution is of course given in (89). The exercise is intermediate.

The next one requires the learner to make a decision on the basis of the discourse-marker however; in similarity with many other "discourse-marker exercises" this calls for a 'logical' solution. Here is (91):

(91) (91a) Complete the statement:

(91b) Rubber as a solid sheet cannot absorb water, and is said to be impermeable. Foam rubber, however, is sponge-like in structure and _____ a great deal of _____.

The 'fillers' are <u>can absorb</u> and <u>water</u>. I would grade intermediate. This is a type of exercise that should be 'fed' to the learners until they get the 'trick' of the requisite inferential habit.

The fourth 'secondary system exercise' also requires the learner to utilise the reference 'marked' by <u>this</u> interpretatively. The other sub-task involved is to trace the <u>explanandum</u> and so complete the explanation. This exercise is (92):

(92) (92a) Describe the event which is explained in the last statement of the text below:

(92b) The balloon is lightly inflated and placed inside the vacuum jar. After the jar has been sealed air is pumped out until the balloon inside can be seen to expand. This happens because as the air is removed the pressure on the outside of the balloon is reduced.

In this particular form the exercise is advanced. If we want to control the answer we can, for instance, resort to multiple choice in the way of (92c):

(92c) Choose the description from among (a), (b) and (c):

(a) The balloon can be seen to expand.

(b) The air is pumped out.

(c) The balloon expands.

In this latter form I would grade the exercise intermediate; the correct choice is (c).

The last prototype in this group is meant to exemplify the kind of 'suppletion' exercise which seems susceptible of further refinement. Consider (93):

(93) (93a) Insert one of the items listed in the empty space.

(93b) for example, as a result, obvicusly, for this reason. Boiling will kill bacteria in water, but _____ this method of sterilisation is not practicable on a large scale.

The correct insertion is obviously and the grading is intermediate.

From these "secondary system exercises" I finally turn to a rather 'motley' group of exercises; they are meant to extend the present scope of application and indicate further lines of

development. The first two exercises request the learner to form a definition on the basis of the information that is given. Here is (94):

(94) (94a) Study the text below. Then give a definition of a compound.

(94b) A vast majority of materials are made up of molecules composed of atoms of different kinds. These substances are called compounds.

(94c = solution) A compound is a substance which is made up of molecules composed of atoms of different kinds.

Since there is some copying involved in this exercise I think that it may be graded intermediate even if no answer-frame (or other clues) are given. To make it more elementary we can give a 'definition-frame', such as (94d):

(94d) A compound _____ which _____

The other 'definition-exercise' is the following (95):

(95) (95a) Study the text below. Then give a definition of soft water.

(95b) Water is said to be hard if it does not easily form a lather with soap, and soft if the reverse is true.

(95c = solution) Soft water is water which easily forms a lather with soap.

An obvious frame would be (95d):

(95d) Soft water _____ which _____.

In common with most of the exercises that I presented (95) is also intermediate in difficulty. (In the 'non-frame' form it

is probably advanced).

Since I have mostly suggested intermediate-to-advanced exercises (these are the most suitable thinking of my students in Finland), I may perhaps conclude with a couple of more elementary exercises. The first of these exercises is based on the following modus ponens (96):

(96) If poor conductors can be used as insulators and air is a poor conductor, then air can be used as an insulator.

The exercise itself consists of giving the learner the two premisses and requesting him to draw the conclusion; here is the exercise (97):

(97) (97a) Study the two statements below. What conclusion can you draw?

(97b) Poor conductors can be used as insulators.
Air is a poor conductor.

(97c = solution) Air _____

I think (97) may be graded elementary if the clue is provided.

The last exercise prototype is on the same pattern as the previous one. It goes as follows (98):

(98) (98a) Study the statement below. Draw a conclusion.

(98b) Water pipes burst when the water they contain freezes.

(98c = solution) Therefore, water must contract/expand on freezing.

If the items contract and expand have lately been taught we can use a frame, such as (98d):

(98d) Therefore, water _____ on freezing.

After these final presentations nothing more remains to be done than conclude the present chapter.

8.4 Conclusion of Chapter Eight.

In this chapter I have tried to work my way from theory to application. This route is extremely important but for one who is burdened with a fairly 'philosophical' cast of mind it is not always easy.

I have provisionally extracted six pedagogic implications from the theoretical findings. I concede that, at the moment, the implication-statements are formulated in a way which is too theoretical. It is a symptom of this that some of the exercises have, as a result, a rather theoretical look about them. The task ahead is, thus, to further de-theoretisise the implications as well as the applications. However, it must also be remembered, I think, that the exercises suggested are, in any case, merely prototypes and need considerable testing.

After a lengthy discussion of the pedagogic implications - in the connection of which I also suggested some applications - the potential exercise prototypes were classified under four major headings (72 - 75); I think that the four headings may, in turn, be subsumed under an all-inclusive label, saying: the exercises have all in common the property that they aim at developing the foreign learner's awareness of the principles on which discourse (especially technico-scientific discourse) operates. In the future we need to know more about the principles so as to form a better picture of their relevance in the practical domain.

CONCLUSION OF THE THESIS

I would like to begin these concluding remarks by three quotations which have stuck to my mind; they run as follows:

(i) What is reading but silent conversation? (Walter Savage Landor)

(ii) Reading furnishes the mind only with materials of knowledge; it is thinking makes what we read ours. (Locke)

(iii) The best of life is conversation, and the greatest success is confidence, or perfect understanding between sincere people. (Emerson)

These quotations relate to certain specific emphases in the foregoing thesis. For instance, the first one links up with the notion of inter-activity, i.e. the idea that even written discourse - its success - depends upon an interaction between the reader and the writer. As I say, the reader has to respond to the writer (and vice versa), rather than to the text.

The notion of inter-activity in written discourse is an important principle; however, as it stands, it is a rather 'bare' notion. It requires to be elaborated on. We need to know, more exactly, what it is that goes on in the silent conversation between the writer and the reader; at the moment too little is known about the ways in which writers anticipate readers' reactions and the ways in which writers adjust their discourse in order to take account of this.

It goes without saying that it is almost equally little

that is known about the ways in which "thinking makes what we read ours". We need to look more closely into those interpretative procedures that I have been trying to probe into in this thesis. This may well entail much more co-ordination and integration of work that is being done separately, inside various disciplines. It is a commonplace now that discourse phenomena interest many other disciplines besides linguistics: psychology, sociology, content analysis and artificial intelligence - among others - are involved. The aims of course vary. But, in spite of this variation, there is a considerable common core of interest. I suggest that at the moment the 'common core' is not sufficiently tapped. In time it will be and, as a consequence, our knowledge of what is involved in making what we read ours will increase.

Certainly discourse analysis, as an 'off-shoot' of linguistics, will continue its own progress. It seems likely that its meta-language will gradually become more established. We need more theoretical as well as practical discussion; this, hopefully, will clarify the notions and bring them better into focus. Irrelevancies will be removed and so cease to confuse the issues. I want to mention one such irrelevancy; it might be dubbed the 'definitional Fallacy'. It is not necessary, I think, to formulate a definition of every notion that is under discussion. For instance, discourse analysis may well proceed even if there is no agreed-upon definition of discourse - to say nothing of text.

The foregoing reflections may, rightly, imply that

"perfect understanding" between all the "sincere people" that are interested in discourse analysis is a very remote prospect. In actual fact, such a perfect understanding is, of course, only an idealisation. However, it seems that we cannot live without idealisations. We need the limiting case as a background. As I have suggested all discourse has a background of tacit shared assumptions; in the summary of one of the Chapters I listed a few of them. It is to be hoped that even this list of discourse assumptions may raise discussion, debate, controversy. Perhaps such discussion will help create fresh perspectives, new ways of looking at the old problems.

Finally, I will turn some of the notions discussed in the foregoing pages back on to the thesis itself, which also is an instance of written discourse. It may be in order to remind the reader of this thesis that the 'meaning' of any discourse is open-ended. The 'product' of any discourse is not its total meaning - in fact, there is no such thing as total meaning in discourse. In the final analysis, all we can do - and must do - is to establish a temporary agreement. There are some things in this thesis that I, for all intends and purposes, hold "true"; these things have to be accepted as "true" - until proven otherwise - before any discussion can even begin. What is more, I should not mind if the things that I hold "true" were gradually proven otherwise, i.e. falsified, because it is likely that this is the way that science is done.

B I B L I O G R A P H Y

Adams, E.C. (1973) — Science in Building 1. Hutchinson Educational.

Adams, P. (1972) — Language in Thinking. Penguin.

Allen, J.P.B. and Corder S.P. (eds)(1974) — The Edinburgh Course in Applied Linguistics. Vol. 3., Oxford University Press.

Allen J.P.B. and Corder S.P.(eds)(1975) — The Edinburgh Course in Applied Linguistics. Vol. 2., Oxford University Press.

Alston W.P. (1964) — Philosophy of Language. Prentice Hall.

Anscombe G.E.M.(1975) — "The First Person"; Guttenplan (ed)

Argyle M. (1967) — The Psychology of Interpersonal Behaviour. Penguin.

Armistead N. (1974) — "Introduction"; Armistead (ed).

Armistead N. (ed)(1974) — Reconstructing social Psychology.Penguin.

Austin J.L. (1962) — How to do Things with Words. Oxford University Press.

Ayer A.J. et al. (1955) — Studies in Communication. Secker & Warburg.

Ayer A.J. (1955) — "What is Communication?"; Ayer et al.

Ayer A.J. (1973) — The Central Questions of Philosophy. Weidenfeld and Nicolson.

Bach E. and Harms R.T. (eds)(1968) — Universals in Linguistic Theory. Holt, Rinehart and Winston.

Bar-Hillel Y. (1964) — Language and Information. Addison Wesley.

Bar-Hillel Y. (1970) — Aspects of Language. Magnes Press, Hebrew University.

Barthes R. (1967) — Elements of Semiology. Jonathan Cape

Bazell C.A. et al. (eds)(1966) — In Memory of J.R. Firth. Longman.

Benes E. (1972) — "The syntax of Scientific German in Foreign Language Teaching"; Fried (ed).

Benes E. (1968) "On two Aspects of Functional Sentence Perspective"; Travaux Linguistiques de Prague.

Benthall J. (ed)(1973) The Limits of Human Nature. Allen Lane.

Berlin et al. (1973) Essays on J.L. Austin. Oxford Univerity Press.

Bernstein B. (1971) Class, Codes and Control, Vol.I. Routledge and Kegan P.

Bernstein B.(ed)(1972) Class, Codes and Control, Vol.II. Routledge and Kegan P.

Bird G. (1972) Philosophical Tasks. Hutchinson University Library.

Black M. (1968) The Labyrinth of Language. Praeger Inc.

Black M. (1970) "Comment on N. Chomsky"; Borger and Cioffi (eds).

Blau P.M. (1971) "Social Exchange"; Thompson and Tunstall (eds).

Blom J.-P. and Gumperz J.J. (1972) "Social Meaning in Linguistic Structures; Code Switching in Norway"; Gumperz and Hymes (eds).

Blount B.G. (ed)(1974) Language, Culture and Society. Winthrop.

Blumenthal A.L. (1966) "Discussion on Wales and Marshall"; Lyons and Wales (eds).

Borger R. and Cioffi F. (eds)(1970) Explanation in the Behavioural Sciences. Cambridge University Press.

Bosmajian H.A.(ed)(1971) The Rhetoric of Non-Verbal Communication. Scott, Foresman and Co.

Bostrom R.N. (1966) "Motivation and Argument"; Miller and Nilsen (eds).

Boyle D.G. (1971) Language and Thinking in Human Development. Hutchinson University Library.

Bradley V.M. (1971) "Jibu Narrative Discourse Structure"; Anthropological Linguistics 13.

Brockman J. and Rosenfeld E. (1973) Real Time. Pan Books, Picador.

Brown R. and Ford M. (1964) "Address in American English"; Hymes (ed).

Brown R. and Gilman A. (1960) "The Pronouns of Power and Solidarity"; Sebeok (ed).

Bruner J. (1975) "Language as an Instrument of Thought"; Davies (ed).

Buhler K. (1934) Sprachtheorie. Jena, Gustav Fischer.

Candlin C.N. (1973) "The Status of Pedagogical Grammars"; Corder and Roulet (eds).

Carswell E.A. and Rommetveit R.(eds)(1970) Social Contexts of Messages. Academic Press.

Cerf W. (1969) "Critical Review of How to do Things with Words"; Fann (edB).

Chafe W. (1970) Meaning and the Structure of Language. University of Chicago Press.

Charlton W. (1970) Aesthetics. Hutchinson University Library.

Chatman S.(ed)(1971) Literary Style: A Symposium. Oxford University Press.

Cherry C. (1955) "Communication Theory - and Human Behaviour"; Ayer et al.

Cherry C. (1957) On Human Communication. The M.I.T. Press.

Cherry C. (1971) "Language and Extra-Linguistic Communication"; Minnis (ed).

Chisholm R.M. (1969) "Austin's Philosophical Papers"; Fann (edB).

Chomsky N. (1957) Syntactic Structures. Mouton.

Chomsky N. (1965) Aspects of the Theory of Syntax. The M.I.T. Press.

Chomsky N. (1971) "Deep Structure, Surface Structure and Semantic Interpretation"; Steinberg and Jakobovits (eds).

Chomsky N. (1976) Reflections on Language. Temple Smith.

Chomsky N. and Foucault M.(1974) "Human Nature:Justice versus Power"; a debate in Elders (ed).

Cicourel A.V. (1970) "Basic and Normative Rules in the Negation of Status and Role"; Dreitzel (ed).

Cicourel A.V. (1971) "The Acquisition of Social Structure: Toward a Developmental Sociology of Language and Meaning"; J.D. Douglas (ed).

Cicourel A.V. (1972) "Cross-Modal Communication"; Shuy (ed).

Cicourel A.V. (1973) Cognitive Sociology. Penguin.

Clowes M. (1973) "Man the Creative Machine: A Perspective from Artificial Intelligence Research"; Benthall (ed).

Cohen J.L. (1969) "Do Illocutionary Forces exist?"; Fann (edB).

Cole M. et al.(1971) The Cultural Context of Learning and Thinking. Methuen.

Cooper D.E. (1975) Knowledge of Language. Prism Press.

Copi I.M. (1972) Introduction to Logic. MacMillan.

Corder S.P. (1973) Introducing Applied Linguistics. Penguin Education.

Corder S.P. and Roulet E. (eds)(1973) Theoretical Linguistic Models in Applied Linguistics. Aimav/Didier.

Criper C. (1975) "Discussion on M. Halliday"; Davies (ed).

Criper C. and Widdowson H.G. (1975) "Sociolinguistics and Language Teaching"; Allen and Corder (eds).

Crystal D. and Davy D. (1969) Investigating English Style. Longman.

Dakin J. (1969) "The Teaching of Reading"; Fraser and O'Donnell (eds).

Dakin J. (1970) "Explanations"; Journal of Linguistics 6.

Danes F. (1966) "A Three-Level Approach to Syntax"; Travaux Linguistiques de Prague 1.

Danes F. (1970) "One Instance of Prague School Methodology: Functional Analysis of Utterance and Text"; Garvin (ed).

Darbyshire A.E. (1968) Exercises in Linguistics. Edward Arnold.

Davidson D. and Harman G. (eds)(1972) Semantics of Natural Language. D. Reidel Publishing Co.

Davidson D. (1975) "Thought and Talk"; Guttenplan (ed).

Davies A. and Widdowson H.G. (1974) "Reading and Writing"; Allen and Corder (eds).

Davies A. (1975) "Introduction"; Davies (ed).

Davies A.(ed)(1975) Problems of Language and Learning. Heinemann.

Dinneen F. (1971) "Linguistics in Great-Britain in the Sixties: Perspectives to the Seventies"; O'Brien (ed).

Donnellan K. (1971) "Reference and Definite Descriptions"; Steinberg and Jakobovits (eds).

Douglas J.D. (ed)(1971) Understanding Everyday Life. Routledge and Kegan P.

Douglas M.(ed)(1973) Rules and Meanings. Penguin Education.

Dreitzel H.P. (1970) "Prologue: The Ethnomethodological Paradigm"; Dreitzel (ed).

Dreitzel H.P.(ed)(1970) Recent Sociology No.2. MacMillan.

Dreyfus H.L. (1972) What Computers can't do. Harper and Row.

Edgley R. (1969) Reason in Theory and Practice. Hutchinson University Library.

Einstein A. (1973) "The Born-Einstein Letters"; Quoted in Brockman and Rosenfeld (eds).

Elders F.(ed)(1974) Reflexive Water. Souvenir Press.

Enkvist N.-E. (1973) Linguistic Stylistics. Mouton.

Ervin-Tripp S. (1972) "On Sociolinguistic Rules: Alternation and Co-occurrence"; Gumperz and Hymes (eds).

Fann K.T.(edA)(1967) Ludwig Wittgenstein: the Man and his Philosophy. Delta Books.

Fann K.T.(edB)(1969) Symposium on J.L. Austin. Routledge and Kegan P.

Faris J.C. (1973) "'Occasions' and 'Non-Occasions'"; M. Douglas (ed).

Fillmore C.J. (1968) "The Case for Case"; Bach and Harms (eds).

Fillmore C.J. (1970) "Subjects, Speakers, and Roles"; Synthese 21.

Fillmore C.J. (1971) "Some Problems for Case Grammar"; O'Brien (ed.)

Fillmore C.J. (1971) "Types of Lexical Information"; Steinberg and Jakobovits (eds).

Fillmore C.J. (1972) "A Grammarian looks to Sociolinguistics"; Shuy (ed).

Filmer P. et al. (1972) New Directions in Sociological Theory. Collier-MacMillan.

Firbas J. (1966) "On Defining the Theme in Functional Sentence Analysis"; Travaux Linguistiques de Prague 1.

Firbas J. (1972) "On the Interplay of Prosodic and Non-Prosodic Means of Functional Sentence Perspective"; Fried (ed).

Firth R.J. (1957) Papers in Linguistics (1934-1951). Oxford University Press.

Fisher W.R. and Sayles E.M. (1966) "The Nature and Function of Argument"; Miller and Nilsen (eds).

Fishman J.A.(ed)(1968) Readings in the Sociology of Language. Mouton.

Fishman J.A. (1970) Sociolinguistics. Newbury House.

Flesch A. (1951) The Art of Clear Thinking. Collier.

Flew A. (1971) An Introduction to Western Philosophy. Thames and Hudson.

Flew A. (1975) Thinking about Thinking. Fontana.

Fodor J. and Katz J. (eds)(1964) The Structure of Language. Prentice-Hall.

Follesdal D. (1975) "Meaning and Experience"; Guttenplan (ed).

Forguson L.W. (1973) "Locutionary and Illocutionary Acts"; Berlin et al.

Fotion N. (1971) "Master Speech Acts"; Philosophical Quarterly 21.

Foucault M. (1972) The Archeology of Knowledge. Tavistock.

Fraser H. and O'Donnell W.R.(eds)(1969) Applied Linguistics and the Teaching of English. Longman.

Frege G. (1962) Philosophical Writings (ed. P.T.Geach and M. Black). Basil Blackwell.

Fried V.(ed)(1972) The Prague School of Linguistics and Language Teaching. Oxford University Press.

Fries C.R. (1968) "Linguistics and Reading"; O'Brien (ed).

Furberg M. (1963) Locutionary and Illocutionary Acts. Gothenburg Studies in Philosophy I. Erlanders Boktryckeri AB.

Furberg M. (1969) "Meaning and Illocutionary Force"; Fann (edB).

Garfinkel H. (1972) "Remarks on Ethnomethodology"; Gumperz and Hymes (eds).

Garfinkel H. (1974) "'Good' Organisational Reasons for 'Bad' Clinical Records"; Turner (ed).

Garvin P.L. (ed)(1970) Method and Theory in Linguistics. Mouton.

Giglioli P.P.(ed)(1972) Language and Social Context. Penguin Education.

Gordon J.E. (1968) The New Science of Strong Materials. Penguin.

Greene J. (1972) Psycholinguistics. Penguin.

Greene J. (1975) Thinking and Language. Methuen.

Grève M. de et al.(1973) Modern Language Teaching to Adults: Language for special Purposes. Aimav/Didier.

Grice H.P. (1971) "Utterer's Meaning, Sentence-Meaning, and Word-Meaning"; Searle (ed).

Guiraud P. (1975) Semiology. Routledge and Kegan P.

Gumperz J.J. (1972) "Introduction"; Gumperz and Hymes (eds).

Gumperz J.J. and Hymes D. (1972) Directions in Sociolinguistics. Holt, Rinehart and Winston.

Gurwitsch A. (1964) The Field of Consciousness. Duquesne University Press.

Guttenplan S.(ed)(1975) Mind and Language. Oxford University Press.

Habermas J. (1970) "Toward a Theory of Communicative Competence"; Dreitzel (ed).

Hacker P.M.S. (1972) Insight and Illusion. Oxford University Press.

Hall E.T. (1971) "Adumbration as a Feature of Intercultural Communication"; Bosmajian (ed).

Halliday M.A.K., McIntosh A. and Strevens P. (1964) The Linguistic Sciences and Language Teaching. Longman.

Halliday M.A.K.(1968) "Syntax and the Consumer"; C'Brien (ed).

Halliday M.A.K.(1968) "The Users and Uses of Language"; Fishman (ed).

Halliday M.A.K.(1970) "Language Structure and Language Function"; Lyons (ed).

Halliday M.A.K.(1971) "Linguistic Function and Literary Style: and Inquiry into the Language of William Golding's The Inheritors"; Chatman (ed).

Halliday M.A.K.(1972) "Options and Functions in the English clause"; Householder (ed).

Halliday M.A.K.(1973) "The Syntax enunciates the Theme"; M. Douglas (ed).

Halliday M.A.K.(1975) "Talking one's Way in: a Sociolinguistic perspective on Language and Learning"; Davies (ed).

Hamblin C.L.(1970) Fallacies. Methuen.

Harman G.(ed)(1974) On Noam Chomsky. Anchor Books.

Harré R.(1967) An Introduction to the Logic of the Sciences. MacMillan.

Harré R. and Secord P.F.(1972) The Explanation of Social Behaviour. Basil Blackwell.

Harris Z.S.(1952) "Discourse Analysis"; Language 28.

Hasan R.(1968) Grammatical Cohesion in Spoken and Written English. Longman.

Hasan R.(1971) "Rime and Reason in Literature"; Chatman (ed).

Heath P.L.(1960) "Logical Positivism"; Urmson (ed).

Hempel C.G.(1966) Philosophy of Natural Science. Prentice-Hall.

Hendricks W.O.(1971) "Review of Investigating English Style by D. Crystal and D. Davy"; Language 47.

Heritage J.(1974) "Assessing People"; Armistead (ed).

Herriot P.(1971) An Introduction to the Psychology of Language. Methuen.

Hintikka J.(1971) "Semantics for Propositional Attitudes"; Linsky (ed).

Hockett C.P.(1950) A Course in Modern Linguistics. MacMillan.

Hoffman B.(1975) Albert Einstein. Paladin.

Hook S.(ed)(1960) Dimensions of Mind. Collier-MacMillan.

Householder F.W.(1971) Linguistic Speculations. Cambridge University Press.

Householder F.W.(ed)(1972) Syntactic Theory 1: Structuralist. Penguin.

Hudson W.D.(1970) Modern Moral Philosophy. MacMillan.

Hymes D.(1960) "Phonological Aspects of Style: Some English Sonnets"; Sebeok (ed).

Hymes D.(1971) "Sociology and the Ethnography of Speaking"; Ardener (ed).

Hymes D.(1972) "Models of the Interaction of Language and Social Life"; Gumperz and Hymes (eds).

Hymes D.(1972) "On communicative Competence"; Pride and Holmes (eds).

Hymes D.(1972) "Towards Ethnographies of Communication: the Analysis of Communicative Events"; Giglioli (ed).

Hymes D.(1974) "The Ethnography of Speaking"; Blount (ed).

Isaacs A.(1963) Introducing Science. Penguin.

Ivic M. (1970) Trends in Linguistics. Mouton.

Jakobovits L.A.(1970) "Prolegomena to a Theory of Communicative Competence"; Lugton (ed).

Jakobson R.(1960) "Concluding Statement: Linguistics and Poetics"; Sebeok (ed).

Jakobson R.(1973) Main Trends in the Science of Language. George Allen and Unwin.

Joos M.(1962) "The Five Clocks"; IJAL vo.28,no.2,part 5.

Kaplan R.B.(1972) The Anatomy of Rhetoric. The Center for Curriculum Development Inc.

Kenny A.J.P. et al.(1973) The Development of Mind. Edinburgh University Press.

Kenny A.(1973) Wittgenstein. Allen Lane, The Penguin Press.

Kenny A.(1976) "German Philosophy Today"; The Listener vol.95, no.2458.

Kiparsky P. and Kiparsky C.(1971) "Fact"; Steinberg and Jakobovits (eds).

Kline M.(1953) — Mathematics in Western Culture.Penguin.

Koen F.M., Becker A.L. and Young R.E.(1968) — "The Psychological Reality of the Paragraph"; Zale (ed).

Kripke S.A.(1972) — "Naming and Necessity"; Davidson and Harman (eds).

Körner S.(1960) — "Kant"; Urmson (ed).

Labov W.(1970) — The Study of Nonstandard English. National Council of Teachers of English.

Labov W.(1972) — "The Study of Language in its Social Context"; Giglioli (ed).

Lakoff G.(1971) — "On Generative Semantics"; Steinberg and Jakobovits (eds).

Lakoff G.(1971) — "Presupposition and Relative Well-Formedness"; Steinberg and Jakobovits (eds).

Lakoff G.(1972) — "Linguistics and Natural Logic"; Davidson and Harman (eds).

La Lumia J.(1966) — The Ways of Reason. George Allen and Unwin.

Lamb S.M.(1968) — "The Crooked Path of Progress in Cognitive Linguistics"; O'Brien (ed).

Landesman C.(1972) — Discourse and its Presuppositions. Yale University Press.

Langendoen D.T.(1968) — The London School of Linguistics. The M.I.T. Press.

Langer S.K.(1953) — An Introduction to Symbolic Logic. Dover Publications.

Laver J. and Hutcheson S.(1972) — "Introduction"; Laver and Hutcheson (eds).

Laver J. and Hutcheson S.(eds)(1972) — Communication in Face to Face Interaction. Penguin.

Leach E. (1970) — Lévi-Strauss. Fontana.

Leech G.N.(1966) — English in Advertising. Longman.

Leech G.N.(1969) — A Linguistic Guide to English Poetry. Longmans.

Lees R.B.(1974) — "Review of Syntactic Structures"; Harman (ed).

Levin S.R.(1962) — Linguistic Structures in Poetry. Janua Linguarum 23.

Levison A.(1967) — "Wittgenstein and Logical Laws"; Fann (edA).

Lewis D.(1974) — "Languages, Language,and Grammar"; Harman (ed).

Linsky L.(1967) — "Wittgenstein on Language and some Problems of Philosophy"; Fann (edA).

Linsky L.(ed)(1971) — Reference and Modality. Oxford University Press.

Linsky L. (1971) — "Reference and Referents"; Steinberg and Jakobovits (eds).

Longuet-Higgins H.C. (1973A) — "The Frontiers of Psychology"; Kenny et al.

Longuet-Higgins H.C. (1973B) — "Comment on A. Kenny"; Kenny et al.

Lugton R.C.(ed)(1970) — Notes on English as a Second Language: Current Issues. The Center for Curriculum Development Inc.

Lunt H.G.(ed)(1964) — Proceedings of the 9th International Congress of Linguistics. Mouton.

Lyons J. and Wales J.R. (eds)(1966) — Psycholinguistics Papers. Edinburgh University Press.

Lyons J.(1966) — "Firth's Theory of Meaning"; Bazell et al. (eds).

Lyons J.(1968) — Introduction to Theoretical Linguistics. Cambridge University Press.

Lyons J.(1970) — Chomsky. Fontana/Collins.

Lyons J.(ed)(1970) — New Horizons in Linguistics. Penguin.

Lyons J.(1970) — "Structural Organisation of Language,2-Grammar"; Minnis (ed).

McCawley J.D.(1971) — "Where do Noun Phrases come from?"; Steinberg and Jakobovits (eds).

McHugh P. (1968) — Defining the Situation. The Bobbs-Merrill Co.

McHugh P. et al.(1974) — On the Beginning of Social Inquiry. Routledge and Kegan P.

McIntosh A. and Halliday M.A.K.(1966) — Patterns of Language. Longmans.

MacIntyre A.(1970) — Marcuse. Fontana/Collins.

Mackay R. and Mountford A.(1973) "A Programme in English for Post-Graduate Students in the Faculties of Science, Applied Sciences and Agriculture in the University of Newcastle upon Tyne"; Grêve et al. (eds).

Mackie J.L.(1973) Truth, Probability and Paradox. Oxford University Press.

MacKinnon E.(1974) "Language, Speech, and Speech Acts". Philosophy and Phenomenological Research vol. 34.

Maclay H.(1971) "Overview"; Steinberg and Jakobovits (eds).

Macquarrie J. (1967) God-Talk. An Examination of the Language and Logic of Theology. SCM Press.

Magee B. (ed)(1971) Modern British Philosophy. Paladin.

Malinowski B.(1972) "Supplement to 'The Meaning of Meaning'"; Adams (ed).

Manning P.K.(1971) "Talking and Becoming: A View of Organisational Socialisation"; J.D.Douglas(ed).

Manser J.(1975) "Austin's 'Linguistic Phenomenology'"; Pivcevic (ed).

Maranda P.(ed)(1972) Mythology. Penguin.

Marcuse H. (1972) One-Dimensional Man. Abacus.

Michalos A.C. (1970) Improving Your Reasoning. Prentice-Hall.

Miller G.A.(1951) Language and Communication. McGraw-Hill.

Miller G.A.(1967) The Psychology of Communication. Penguin.

Miller G.R. and Nilsen T.R.(eds)(1966) Perspectives on Argumentation. Scott, Foresman and Co.

Minnis N.(ed)(1971) Linguistics at Large. Paladin.

Monod J.(1972) Chance and Necessity. Fontana/Collins.

Muir J.(1972) A Modern Approach to English Grammar. B.T. Batsford.

O'Brien R. (ed)(1968) Georgetown University Round Table: Selected Papers on Linguistics. Georgetown University Press.

O'Brien R.(ed)(1971) Georgetown University 22nd Round Table Meeting on Linguistics and Language Studies. Georgetown University Press.

O'Connor D.J.(1975) — The Correspondence Theory of Truth. Hutchinson University Library.

Ogden C.K. and Richards I.A.(1947) — The Meaning of Meaning. Routledge and Kegan P.

Ohmann R.(1971) — "Speech, Action, and Style"; Chatman (ed).

Oomen U.(1971) — "New Models and Methods in Text Analysis"; O'Brien (ed).

Pak T.(1970) — "Review of 'Discourse Analysis Reprints' by Z. Harris"; Language 46.

Pak T.(1971) — "Fallacy of Formal Discourse Analysis"; Lingua 28.

Pak T.(1974) — "Searle's Illocutionary Fallacies"; Semiotica 11.

Passmore J.(1957) — A Hundred Years of Philosophy. Duckworth.

Pears D.(1971) — "Conversation with David Pears"; Magee (ed).

Perelman C. and Olbrechts-Tyteca L.(1958) — The New Rhetoric. University of Notre Dame Press.

Piaget J.(1971) — Structuralism. Routledge and Kegan P.

Pike K.(1967) — Language in Relation to a Unified Theory of the Structure of Human Behaviour. Parts 1-3. Mouton.

Pivcevic E.(ed)(1975) — Phenomenology and Philosophical Understanding. Cambridge University Press.

Polanyi M.(1962) — Personal Knowledge. Routledge and Kegan P.

Popper K.(1976) — Unended Quest. Fontana.

Pride J.B. and Holmes J.(eds)(1972) — Sociolinguistics. Penguin.

Pride J.B.(1973) — "An Approach to the Sociolinguistics of Commands and Requests in English"; Archivum Linguisticum 4.

Quine V.W.(1953) — From a Logical Point of View. Harvard University Press.

Quine V.W.(1960) — Word and Object. The M.I.T. Press.

Quine V.W.(1970) — Philosophy of Logic. Prentice-Hall.

Quine V.W. and Ullian J.S.(1970) — The Web of Belief. Random House.

Quirk R. and Greenbaum S.(1973) — A University Grammar of English. Longmans.

Ray J.(1975) — Practical Reason and Norms. Hutchinson of London.

Ray J. and Zavos H. (1966) — "Reasoning and Argument"; Miller and Nilsen (eds).

Rescher N.(ed)(1968) — Studies in Logical Theory. Basil Blackwell.

Resler H. and Walton P.(1974) — "How Social is it?"; Armistead (ed).

Rhees R. (1974) — "Questions of Logical Inference"; Vesey et al.

Riffaterre M.(1964) — "The Stylistic Function"; Lunt (ed).

Robinson W.P.(1972) — Language and Social Behaviour. Penguin.

Roche M.(1972) — "Review of Understanding Everyday Life, ed.J.D.Douglas"; British Journal of Sociology 23.

Rodger A.(1960) — "Linguistic Form and Literary Meaning"; Fraser and O'Donnell(eds).

Rommetveit R.(1968) — Words, Meanings, and Messages. Academic Press.

Rossotti H.(1975) — Introducing Chemistry. Penguin.

Rowan O.(1972) — "Some Features of Paressi Discourse Structure"; Anthropological Linguistics 14.

Rudner R.S.(1966) — Philosophy of Social Science. Prentice-Hall.

Russell B.(1959) — My Philosophical Development. George Allen and Unwin.

Sacks H.(1972) — "On the Analysability of Stories by Children"; Gumperz and Hymes (eds).

Salmon W.C.(1963) — Logic. Prentice-Hall.

Sampson G.(1975) — The Form of Language. Weidenfeld and Nicolson.

Saussure F. de(1973) — Course in General Linguistics (trans. Wade Baskin). Fontana/Collins.

Schegloff E.A.(1972) — "Sequencing in Conversational Openings"; Gumperz and Hymes (eds).

Schegloff E.A. and Sacks H.(1974) "Opening up Closings"; Turner (ed).

Schutz A. (1967) The Phenomenology of the Social World. Northwestern University Press.

Schutz A.(1973) "Multiple Realities"; M.Douglas (ed).

Scriven M.(1960) "The Complete Robot: A Prolegomena to Androidology"; Hook (ed).

Searle R.J.(1969) "Assertions and Aberrations"; Fann (edB).

Searle R.J.(1970) Speech Acts. Cambridge University Press.

Searle R.J.(ed)(1971) The Philosophy of Language. Oxford University Press.

Searle R.J.(1972) "What is a Speech Act?"; Giglioli (ed).

Selinker L., Trimble L. and Vroman R.(1974) Working Papers in English for Science and Technology. Dept. of Humanistic-Social Studies, College of Engineering, University of Washington.

Seuren P.A.M.(1974) "Introduction"; Seuren (ed).

Seuren P.A.M.(1974) Semantic Syntax. Oxford University Press.

Shanin T.(1972) "Foreword: Models and Thought"; Shanin (ed).

Shanin T. (ed)(1972) The Rules of the Game. Tavistock.

Shuy R.W. And Fasold R.W. (1971) "Contemporary Emphases in Socio-linguistics"; O'Brien (ed).

Shuy R.W.(ed)(1972) Report of the 23rd Annual Round Table Meeting on Linguistics and Language Studies. Georgetown University Press.

Silverman D.(1972) "Introductory Comments"; Filmer et al.

Silverman D.(1975) Reading Castaneda. Routledge and Kegan P.

Sinclair McH.J.(1966) "Beginning the Study of Lexis"; Bazell et al. (eds).

Slobin D.I.(1971) Psycholinguistics. Scott, Foreman and Co.

Smith B.J.(1971) Construction Science. Longmans.

Smith C.S.(1971) "Sentences in Discourse: An Analysis of a Discourse by Bertrand Russell"; Journal of Linguistics 7.

Smith J.W.(1960) "John Dewey"; Urmson (ed).

Stalnaker R.C.(1968) "A Theory of Conditionals"; Rescher (ed).

Stalnaker R.C.(1971) "Pragmatics"; Synthese 22.

Steinberg D.D. and Jakobovits L.A. (eds) (1971) Semantics. Cambridge University Press.

Strang B.(1969) Modern English Structure. Edward Arnold.

Strawson P.F.(1952) Introduction to Logical Theory. Methuen.

Strawson P.F.(1969) "Intention and Convention in Speech Acts"; Fann (edB).

Strawson P.F.(1971) "Identifying Reference and Truth Values"; Steinberg and Jakobovits (eds).

Strawson P.F.(1971) Logico-Linguistic Papers. Methuen.

Strawson P.F.(1974) Subject and Predicate in Logic and Grammar. Methuen.

Sudnow D.(ed)(1972) Studies in Social Interaction. Free Press.

Taylor D.M.(1970) Explanation and Meaning. Cambridge University Press.

Thom R.(1975) Structural Stability and Morphogenesis W.A. Benjamin Inc.

Thompson K. and Tunstall J.(eds)(1971) Sociological Perspectives. Penguin Education.

Thorne J.P.(1970) "Generative Grammar and Stylistic Analysis"; Lyons (ed).

Thorne J.P.(1972) "Models for Grammars"; Shanin (ed).

Thouless R.H.(1930) Straight and Crooked Thinking. Hodder and Stoughton.

Turner R.(1971) "Words, Utterances, and Activities"; J.D. Douglas (ed). Also Turner (ed).

Turner R.(ed)(1974) Ethnomethodology. Penguin Education.

Urmson J.O.(1960) "Truth"; Urmson (ed).

Urmson J.O.(ed)(1960) The Concise Encyclopedia of Western Philosophy and Philosophers. Hutchinson of London.

Urmson J.O.(1968) The Emotive Theory of Ethics. Hutchinson University Library.

Vendler Z.(1967) "Review of How to do Things with Words by J.L. Austin"; Foundations of Language 3.

Vesey G. et al. Understanding Wittgenstein. MacMillan.

Waddington C.H.(1973) "The Evolution of Mind"; Kenny et al.

Waismann F.(1965) The Principles of Linguistic Philosophy. MacMillan.

Wales R.J. and Marshall J.C.(1966) "The Organisation of Linguistic Performance"; Lyons and Wales (eds).

Wash D.(1972) "Review of Studies in Social Interaction, ed.D.Sudnow"; British Journal of Sociology 23.

Whitley E.M. (1966) "Contextual Analysis and Swift's Little Language of the Journal to Stella"; Bazell et al. (eds).

Widdowson H.G. (1973A) An Applied Linguistic Approach to Discourse Analysis. Unpub. Ph.D. Thesis; University of Edinburgh.

Widdowson H.G.(1973B) "Directions in the Teaching of Discourse"; Corder and Roulet (eds).

Widdowson H.G. "The Use of Simplification and the Simplification of Use"; Mimeo 1.

Widdowson H.G. "Interpretive Procedures and the Importance of Poetry"; Mimeo 2.

Wiggins D.(1971) "On Sentence-Sense, Word-Sense and Difference of Word-Sense"; Steinberg and Jakobovits (eds).

Wilkins D.A.(1972) Linguistics in Language Teaching. Edward Arnold.

Wilkinson A.(1971) The Foundations of Language. Oxford University Press.

Wittgenstein L.(1953) Philosophical Investigations. Basil Blackwell.

Wittgenstein L.(1961A) Notebooks 1914-1916. Basil Blackwell.

Wittgenstein L.(1961B) Tractatus Logico-Philosophicus. Routledge and Kegan P.

Wittgenstein L.(1967) Zettel. Basil Blackwell.

v. Wright G.H.(1971) Explanation and Understanding. Routledge and Kegan P.

Zale E.M.(ed)(1968) Proceedings on the Conference on Language and Language Behaviour. Appleton-Century-Crofts.