

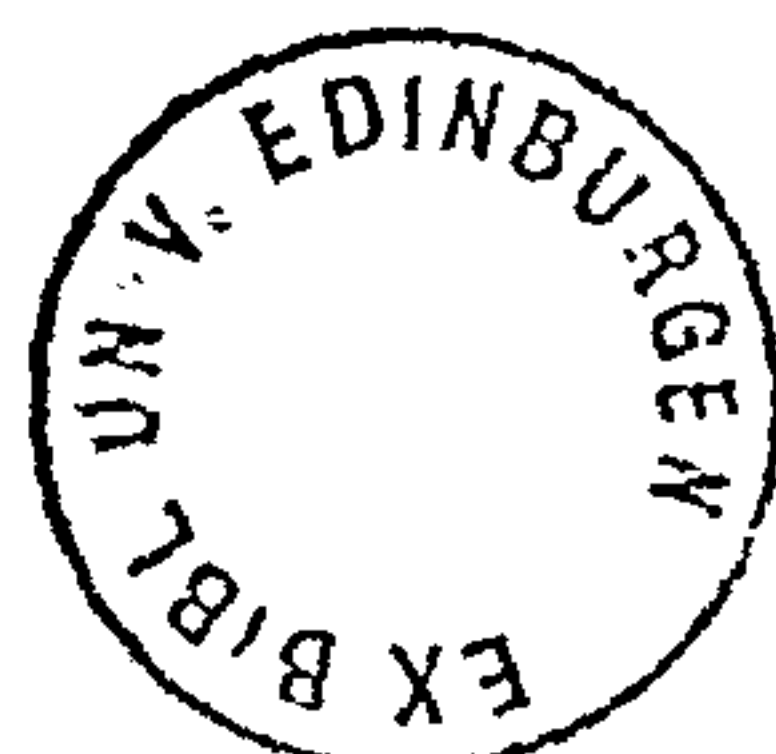
Aspects of the Information
Structure of Spoken Discourse

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for Willie and Annie

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Abstract

This thesis is a data-based investigation of the way speakers structure what they want to say in terms of 'given' and 'new' information. It is presented as a contribution to the study of the pragmatics of natural language in which the structure of discourse utterances is viewed as deriving, not from primarily syntactic or semantic criteria, but from the functional requirements of efficient communication in context.

The recorded conversational speech of Edinburgh Scottish English speakers is analysed to determine whether intonational criteria, as suggested by Halliday (1967), can be taken as the formal features which define the organisation of information in spoken discourse. It is proposed that intonational cues are only a partial, and unreliable, guide to information structuring.

A detailed examination is then presented of a corpus of spoken data elicited in a situation in which several parameters relating to the nature of information transfer were controlled. As a result, a comprehensive description of the linguistic realisation of information structure elements is provided.

This leads to a reconsideration of conversational data and the ways in which elements in the information structure of messages interact and are influenced by larger structuring processes in the organisation of conversational contributions.

Conclusions from the investigation are presented along with suggestions for continuing the research.

Chapter 1 Introduction

1.1 The Investigation

This thesis is devoted to an investigation of the way speakers structure what they want to say in terms of old or 'given' information and new information. The approach involves taking a view of language as an instrument of communication and not as an object to be considered independent of its function. If the work reported here can be treated as a contribution to a theory of language, then that theory will be generally of the type described by Isard (1975) :

"a theory which allows a speaker to accomplish something by speaking makes a more promising start towards a larger theory of language use than one which just passes judgements on the propriety of what has been said"

(Isard, 1975 : 288)

The data for the investigation consists of recorded spoken discourse. The type of investigation undertaken is consequently within the general field of discourse analysis. It is not, however, to be considered an example of the type of discourse analysis which employs primarily sociological or ethnomethodological categories. Little attention will be paid to the structure of conversational discourse in terms of 'turn-taking' (Sacks et al., 1974), 'moves' (Sinclair & Coulthard, 1975), sequences of speech acts (Labov, 1972; Widdowson, 1978), 'sequential negotiations' (Jefferson & Schenkein, 1978) or any other comparable formulae for the characterization of conversations as 'interaction'. Instead, a detailed analysis of the internal structure of contributions to a discourse will be undertaken, with a view to capturing those features which make discourses 'transactions'. Such an analysis seeks to account for linguistic choices in a speaker's contribution in terms

of the function of elements in the information-transfer process. The categories old/given and new are correspondingly treated as functional categories, following a longstanding tradition in European linguistics.

The beginnings of this tradition are most commonly associated with the work of Mathesius (e.g. 1942). However, Firbas (1974) traces the origins of what he characterises as the 'Czechoslovak approach' back to Weil (1844). In Weil's account of the development of word order in modern languages, he appeals to a functional division in parts of the sentence, in that a sentence contains

"a point of departure, equally present to the speaker and hearer, their rallying point, the ground on which they meet, and a goal of discourse which presents the very information that is to be imparted to the hearer"

(Weil, 1878 : 29-30)

The view that formal linguistic realisations must be investigated in terms of what they are used for is stated even more explicitly by Mathesius,

"The starting point of the investigation will be the communicative needs of the speaker, and from this fact two consequences will of necessity follow: the way will lead from speech, as something which is immediately given, to language, as a system having an ideal reality only, and from the functional necessities to the formal means by which they are satisfied."

(Mathesius, 1936 : 97-8)

However, this type of 'functional perspective', while considered to be an insightful account of Czech, was not automatically transferred to

the analysis of languages such as English. Indeed, Mathesius claimed that "English differs from Czech in being so little susceptible to the requirements of functional sentence perspective as to frequently disregard them altogether" (Mathesius, 1942). Later investigators of the Prague School (e.g. Vachek, Firbas, Daneš, Sgall) have since applied their functionally-based methodology to the analysis of English sentence grammar (e.g. Sgall, Hajičová & Benešová, 1973) and to English text structure (e.g. Daneš, 1974). When discussing English, the Prague School writers do not seem to have reached a consensus on the number of functional elements to be considered in the analysis of an English sentence form. Daneš (1970) works with a 'bipartite structure' of theme/topic/old - rheme/comment/new, while Firbas (1974), admitting that his categories are derived from an account of "the Czech system of word order" (1974 : 13), operates with "a tripartition of theme - transition - rheme" (1974 : 25). The inclusion of the third element, the 'transition', is never made a strong issue by any of those who argue for its existence and Firbas himself points out that, between transition and rheme, "the delimitation may become less distinct or perhaps even difficult to determine" (1974 : 27).

When Halliday (1974) places his analytic approach within the Prague tradition, he proposes a two-element division of 'communicative units in information structure' (1974 : 52). Since it is initially the Hallidayan position - especially as expressed in the 1967 paper - that I will adopt in the present study of the information structure of spoken English, I will be mainly concerned with a bipartite division. This is also the general approach taken by Chafe (1970; 1976) in discussing information structure.

While I would like to suggest that the present study is conducted within the general spirit of the Praguean FSP approach, a basic difference in methodology is occasioned by two factors: little interest in the study of sentential word order in my investigation, and an emphasis on the actual information structure of discourse utterances rather than the potential information structure of system sentences. In connection with this latter point, it should be noted that one of the most basic problems encountered in the writings of FSP advocates and their followers is what Palková & Palek (1978 : 218) describe as the incongruity resulting from different attitudes to communication. Palková & Palek (1978 : 219) point out that different analytic terminology often accompanies different perspectives for the description of a text (e.g. from the point of view of speaker or listener or in terms of the structure of text independent of speaker and listener). Thus we find Daneš (1974) using a 'theme-rheme' dichotomy to describe text structure. For Sgall et al. (1973) the 'topic-focus' dichotomy is derived from the way the speaker is considered to organise his sentences. For Dahl (1969) the 'topic-comment' dichotomy is part of the structure of a sentence and "a reflection of the order of elements in the base structure" (Dahl, 1969 : 6). The trichotomy of 'communicative dynamism' used by Firbas (1965) is based on an analysis of communicative importance of elements from the speaker's standpoint. However, despite the confusion of terminology, there remains a consistent application of the analysis to written sentences. When the utterance of those sentences is considered, it is in terms of the set of potential utterances possible for a particular written sentence. The most extreme version of this attitude can be found in the attempt (Firbas, 1975) to produce an 'intonational' description of a written extract from John Wain's novel 'The Contenders'.

The type of analysis undertaken by Firbas (1975) is one example of the way the Prague functional approach has been employed in 'text linguistics'. There is a substantial literature in this field (cf. Petöfi & Rieser (eds.), 1974; Ringbom (ed.), 1975; van Dijk, 1978; Dressler (ed.), 1978 for surveys) which is principally concerned with the analysis of written texts and the development of 'text grammars'. That is, the text analysis undertaken is concerned with the identification of those features which, in addition to features identified within a sentential grammar, produce cohesion in texts at a supra-sentential level. These investigations attempt to define a set of supra-sentential grammatical rules (e.g. Kiefer, 1975; Petöfi, 1975; Harweg, 1978) or to simply list the types of overt cohesive links which operate across sentences in texts (e.g. Halliday & Hasan, 1976; Hasan, 1978; contributions in Östman (ed.), 1978).

A common factor in all such approaches to text-analysis is a restricted view of the interpretation of texts as the interpretation of the 'words on the page'. This 'text-as-object' view does not normally take speakers/writers/hearers/readers into account, nor does it allow for hearers/readers bringing a lot of information of various kinds to bear in their interpretation of the 'words on the page'. Since I will be taking a view in this thesis that the interpretation of 'text' involves more than the strict interpretation of the 'words on the page', I shall generally avoid the textlinguistic methodology, but nevertheless appeal on occasion to some of the relevant findings of writers in that field. Thus, I shall take the position that there is not only a general inapplicability of analytic criteria from written text studies to the study of casual spoken data, but that there are also

specific aspects of the 'cohesion approach' which may be quite inaccurate as characterisations of how people understand discourse, written or spoken (cf. chapter 8).

It should also be noted that even among the 'text-as-object' school of thought, there has been a growing concern with a distinction between cohesion (explicit connections across sentences within texts) and coherence (implicit connections). Enkvist (1978) has demonstrated that a constructed text having only cohesive links may appear totally incoherent. From the interpretive point of view, Morgan (1979) argues that it is, in fact, on the basis of an assumption of coherence that hearers can use the so-called cohesive devices in texts. Indeed, the general trend in computer modelling of language understanding in recent years has been towards creating 'frames' (Minsky, 1975), 'scripts' (Schank & Abelson, 1977; Riesbeck & Schank, 1978) or 'schemata' (Rumelhart & Ortony, 1977; Rumelhart, 1977; Anderson et al. 1977) in order that the understander system has a basis for filling in the 'holes' which exist between sentences in a text - in other words, making both cohesive and non-cohesive texts coherent. The idea that hearers/readers bring some knowledge of 'the way the world is' or a conceptual schema to bear on the interpretation of the literal meaning of linguistic sign(s) is, of course, not new, and can be found in Kant (1781 : 182).

That there should be a need to reassert the importance of factors beyond the actual 'words on the page' in the interpretation of sentences and texts has been occasioned by an emphasis in linguistic investigation over an extended period on the importance of producing a formal model and restricting the analysis to constructed sentences cited without contexts of any kind. The quest for formalisms resulted in what Morgan describes as :

" a tendency to lose sight of the fact that the proper goal of linguistics is not to invent some ingenious formal apparatus for translating natural language into a form to which the rules of mathematical logic can be applied, but to discover how people work as language-users."

(Morgan, 1973 : 422)

And although there were good reasons, within a structuralist paradigm, for restricting analyses to constructed, context-free 'data', the net effect is that, in Givon's terms :

"artificial-sounding sentences, in isolation of communicative function and communicative context, became the stock-in-trade of linguistic evidence, to be analyzed, dissected and 'explained'."

(Givon, 1979a : 25)

Givon (1979a) criticises at some length the Chomskyan methodology and there have been a number of similar assaults on the limited 'data' of the transformational/generative school (cf. Rommetveit (1974), Tyler (1978), de Beaugrande (1980) and the contributions in Givon (ed.) (1979)). Probably the most extreme position is that taken by Garcia (1979) where the very notion that there is a level of syntax is disputed. However, there is a danger, in such an extreme reaction to the excesses of a structuralist approach, that a lot of the insights gained into some of the underlying regularities of linguistic structures will be discarded. Although I will be seeking to account for some of the structural regularities in my data in largely functional terms - treating language as an instrument designed to carry on communication - I will appeal to the findings and arguments of many writers who have worked within a TG framework.

There is one aspect of the highly formal approach which I suspect has not actually been adequately exercised and which I would like to comment on briefly. It involves a problem which Wittgenstein noted :

"the confusions that occupy us arise when language is like an engine idling, not when it is doing work"

(Wittgenstein, 1953 : 132)

There is still a tendency in linguistic description to treat whatever data is being interpreted as, in some sense, "static". That is, the 'meaning' of an utterance is worked out once the utterance is completed and has become a complete object to decode. Tyler (1978) suggests that this view of interpretation operating over static linguistic objects is counter-intuitive and, if correct, would result in conversations "filled with long silences while the hearer desperately worked out the meaning of the after-the-fact utterance" (1978 : 239). Intuitively, a much more realistic version of how interpretation takes place is a dynamic one, where bits of messages are partially interpreted, are connected with previous bits, produce predictions which get confirmed or, if unconfirmed, lead to reinterpretations etc., all taking place while the message is coming into being. This is clearly a view which looks upon the analysis of spoken discourse in processing terms. It is a view which leads the analysis into considerations of what speakers and hearers are doing, and accounting for linguistic data as the means employed in what they are doing. It is, quite obviously, a pragmatic approach and some general justification must be made for an approach which holds, among other things, that "considered from the point of view of pragmatics, a linguistic structure is a system of behaviour" (Morris, 1938).

Morris' definition of pragmatics as the study of "the relation of signs to interpreters" (1938 : 6) is reiterated in Carnap's more explicit version :

"If in an investigation explicit reference is made to the speaker, or, to put it in more general terms, to the user of the language, then we assign it to the field of pragmatics" (1942 : 9).

The pragmatic approach to the study of language, then, is clearly concerned with language in use, taking speaker and hearer into account. The language users have since been considered to be only part of the more general extra-linguistic context of a piece of language-in-use, and the area of pragmatics has extended to cover any contextual feature which influences the production or interpretation of linguistic strings. In a recent survey, Gazdar (1980) provides a list of what are essentially pieces of problematic 'data' in contemporary linguistic theory, all of which have to be "relegated" (Gazdar's term) to the pragmatic component (i.e. dealing with "non-truth conditional aspects of utterance meaning" (1980 : 50)). In what is essentially a list of remarks on the research of others, the general basis of all the "pragmatic constraints" described is, in one form or another, the influence of 'context'. In other words, for a theoretical approach which takes as its 'data' a set of constructed sentence-forms, the problems arise because there are no speakers, hearers, settings or purposes connected with those sentence-forms. Gazdar (1980) does not offer any account of how these pragmatic features can be incorporated in an existing theoretical framework, nor does he suggest that the context-free sentence-based methodology may be an inappropriate account of natural language. On the contrary, Gazdar (1979) is responsible for one of the clearest expressions of commitment

to the constructed-data approach :

"I shall assume throughout this book that invented strings and certain intuitive judgements about them constitute legitimate data for linguistic research" (1979 : 11).

This approach places pragmatics on the periphery of linguistic analysis, as a sort of additional set of constraints on the use of sentences which themselves can be independently produced. I will present an alternative view, in which the so-called pragmatic 'constraints' are primary, and to be treated as the motivation for the structure and content of linguistic strings. However, before developing such an analysis, I would like to point out that even among writers who take a highly formal approach, there is an awareness that pragmatic issues cannot be simply pushed to the periphery.

In contrast to Gazdar's claim that pragmatics is only involved in "non-truth conditional aspects of utterance meaning" (1980 : 50), there is a proposal in Sgall (1980) that "even the truth conditions of sentences may depend on pragmatic issues" (Sgall, 1980 : 236). Among those factors discussed by Sgall is a point which I will investigate at some length in the course of this thesis - "the change in the hierarchy of activation (foregrounding) of the elements of the stock of knowledge the speaker has and assumes to be shared by the hearer" (1980 : 236). (The effect of this 'change in the hierarchy of activation' is investigated in some detail in chapter 7.) The specific element in the above quote from Sgall (1980) which I would like to emphasise at this point is the notion of 'activation', for it is a crucial consideration in any discussion of 'context'.

If the notion of 'speaker's assumptions about the hearer's knowledge' is considered more generally, it should become apparent that the notion of 'context' which one requires in a pragmatic approach is not a neutral description of all available features of physical surroundings, for example, but some form of 'activated context'. It is this 'activated context' which the speaker indicates, in the utterance of a linguistic message, he assumes is available to his hearer. That is, within a linguistic pragmatics, the analyst's concern is essentially to account for the use of linguistic features by a speaker on a particular occasion and not to provide an account of the occasion itself. (This latter activity I take to be generally the province of ethnographers or sociologists.)

That there is a need to take the speaker's assumptions, point of view, and intentions into account in describing aspects of his linguistic message has been pointed out in detail by a large number of writers recently. I shall mention a few examples in addition to those listed by Gazdar (1980), simply to establish some precedent for the approach taken in the rest of this thesis. More detailed discussion of specific issues is presented in the chapters which follow.

The effect of the speaker's point of view, or his orientation, on the form and content of the linguistic string he produces has been demonstrated by several authors. There are, for example, structural variations on a single sentence form (logical content being constant) which have to be attributed to differences in "empathy foci" (Kuno & Kaburaki, 1977). That is, the speaker/writer can indicate, structurally, part of his attitude or his relationship to the referents of expressions in his message. The use of deictics (Kirsner, 1979) and certain verbs (Fillmore, 1971; Clark E., 1974) have a comparable bias deriving from the attitude of the speaker.

An appeal to speaker assumptions and intentions must also be made in accounting for a wide range of linguistic data. Schachter (1977), considering the basis on which expressions such as "John, you mustn't" and "May I ? - Please do." (i.e. containing propredicates) are interpreted, points out that neither syntactic nor semantic criteria will suffice (contra Hankamer & Sag, 1976). What is required is a pragmatically based interpretation of the speaker's intended message on the particular occasion of use. That a pragmatic account is needed for proforms generally and anaphoric pronominals in particular has been proposed by Lasnik (1976), Morgan (1979), Partee (1978) and Yule (1979). The interpretation of anaphora (via speaker assumptions and intentions) can be seen as a limited case of a more general consideration regarding the interpretation of reference. Since I will be appealing to a non-semantic treatment of reference throughout this thesis, I would like to cite some authoritative support for the pragmatic approach.

The fact that 'reference' is a pragmatic notion has been argued by several writers, notably Strawson :

" 'referring' is not something an expression does; it is something that someone can use an expression to do "

(Strawson, 1950)

In a similar vein, Stalnaker emphasises that :

" referring is something done by people with terms, not by terms themselves. That is why reference is a problem of pragmatics, and why the role of a singular term depends less on the syntactic or semantic category of the term itself (proper name, definite description, pronoun) than it does on the speaker, the context, and the presuppositions of the speaker in that context. "

(Stalnaker, 1970 : 286)

It is indeed the 'role' of the terms mentioned by Stalnaker that I will attempt to provide an account of, working with pragmatic categories towards an explanation of the circumstances in which different formal realisations can occur.

If further support is necessary for advocating a pragmatic approach to reference, the view of Searle, pointing out that reference is, in fact, a speech act, can be quoted :

"in the sense in which speakers refer, expressions do not refer any more than they make promises or give orders"

(Searle, 1979 : 155)

Even when a difference is proposed between 'speaker reference' and 'semantic reference', as in Kripke's (1977) account of Donnellan's (1966) referential/attributional distinction, the basis of the difference is ultimately in terms of different types of intentions :

"the semantic reference of a designator (without indexicals) is given by a general intention of the speaker to refer to a certain object whenever the designator is used. The speaker's referent is given by a specific intention, on a given occasion, to refer to a certain object."

(Kripke, 1977 : 264)

This difference is clearly pragmatic, in that an interpretation of both types of 'reference' depends upon a hearer's recognition of the speaker's intention in using the designator.

From a quite different point of view, Nunberg (1978) also argues that even when lexical items are considered to have some form of referring function, "the referring function has to be such that, given

the argument, the hearer is enabled to pick out the value" (Nunberg, 1978 : 31). Nunberg concludes then that

"a function can be used in referring only if it yields values at the demonstratum that are members of the 'range of reference' determined by the nature of the predication, and by the conversational context." (1978 : 31)

The idea that reference depends on "the nature of the predication" and "the conversational context" are points worth noting here, for they are points which I shall investigate at length in the course of this thesis.

If 'referring' is to be treated as something people do, then surely 'presupposing' should be treated in the same way, for as Stalnaker (1970) points out :

"people, rather than sentences or propositions are said to have, or make, presuppositions" (1970 : 279)

Morgan (1973) makes a similar point when he argues that "a relation of presupposition holds between the speaker and a certain proposition" (1973 : 417). Thus, in this thesis, I will take the pragmatic view, and following Karttunen (1974) and Givon (1979a), claim that all presuppositional phenomena in natural language are pragmatic, that is, "defined in terms of assumptions the speaker makes about what the hearer is likely to accept without challenge" (Givon, 1979a : 50). In this treatment, what Keenan (1971) characterises as 'logical' presupposition is only a restricted case of pragmatic presupposition.

Having provided some general background to the 'spirit' in which this investigation was carried out; I would like to summarize the general aims of the undertaking and remark briefly on the organization of the following chapters as they reflect the development of the research.

The type of discourse analysis presented here is not that commonly found in primarily sociolinguistic approaches where it is the nature of the 'interaction' which is investigated. Rather, it is an approach which considers spoken discourse as a form of 'transaction' in which one participant transfers 'information' to another. Consequently, the notion of 'information' involved is not of the social or interpersonal type, but is treated as propositional and intentionally conveyed. In the terms used by Lyons (1972) and Laver & Trudgill (1979), it is "communicative (=intentional)" and not "informative (=unintentional)" aspects of speech which will be investigated. In the process of information transfer, the speaker is considered to have assumptions about what information is already in the hearer's possession - the 'old', 'given' or 'non-new' information - and to have the intention of adding information which he believes the speaker either does not have or is not currently thinking about - the 'new' information. In order to communicate efficiently, the speaker structures his utterances into units of information containing these 'given' and 'new' elements. The approach taken is based on the fact that such structuring is not derived from syntactic or semantic criteria, but from the functional requirements of efficient communication in context. From this point of view, the categories 'given' and 'new' are pragmatic categories which can be assigned, not to a static representation of a sentence-as-object, but to an evolving representation of an utterance-as-process at a specific point in the development of a discourse. Operating with these categories, an attempt is made to identify their formal linguistic realisations, not as 'rule-governed', but in terms of regularity of occurrence under identifiable conditions.

Chapters 2, 3 and 4 are mainly devoted to an inquiry into the suitability of using intonational criteria, following Halliday (1967), as the formal features which define the organisation of information structure in spoken discourse. The type of spoken discourse considered

at this stage was free conversation. It was found that intonational cues were only one set of options available to speakers to mark elements in the structure of their messages and that such cues did not have a discrete information-structuring function. It also became apparent that conversational data left too many important questions regarding speakers' knowledge and intentions unanswered. Consequently, an exercise was developed in which several important parameters regarding the nature of 'information transfer' could be controlled while allowing participants freedom to produce their own, undirected, spoken discourse. This research is reported in chapters 5, 6 and 7. As a result of this investigation of the controlled data, some observations on the linguistic realisations of information structure elements are made. It then became possible to reconsider conversational data and to produce a fuller account of the various ways in which elements in the information structure of messages interact. The results of this investigation are presented in chapter 8. In chapter 9, I discuss some of the implications of the research and suggest directions for future research in this area.

1.2 The Data

At the beginning of chapter 5, the controlled data used in chapters 5, 6 and 7 is described at some length. Extended extracts from this data are included in Appendix 2. In chapters 2, 3, 4 and 8, the extracts analysed are taken from the data-base of Social Science Research Council Project HR3601, held in the Department of Linguistics, Edinburgh University. Extended extracts are included in Appendix 3. This data-base includes over 20 hours of the tape-recorded casual conversational speech of (primarily) Edinburgh Scottish English (ESE) speakers. The ages and social backgrounds of the informants vary, but they are all adult native (Scottish) English speakers. When particular attention is paid to an individual speaker in this investigation, relevant details are provided, either as a footnote (e.g. chapter 2, note 4) or as part of the contextualising detail accompanying an extract (e.g. chapter 8, extract 8.9).

In transcribing this spoken data, an attempt has been made to record as faithfully as possible what was said and to avoid 'tidying up' the language used. Consequently, some apparently ungrammatical forms, as well as dialect forms, appear in several of the extracts analysed. The following are typical examples :

- [1.1] in that area there was hundreds of families
- [1.2] the shops is non-existent now
- [1.3] dancing's no really a pastime
- [1.4] the people didnae want to go out of the town
- [1.5] central south side was very bad hit

In addition to this type of dialect variation, there are also examples of repetition and incomplete sentences, commonly found in transcripts

of conversational speech. Since there are no points made in this thesis which depend on the acceptability/unacceptability of examples used, I have simply transcribed the conversational speech as I heard it and attempted to analyse the information structure of what was said rather than what might have been said (or even constructed) by, say, a speaker of standard Southern English in comparable circumstances.

In the transcriptions, the occurrence of pauses is marked by the plus sign '+', or for extended pauses, '++'. A discussion of the significance of pausing in the analysis of spoken discourse is presented in chapter 6, section 6.11.

In the intonational descriptions which accompany many extracts, a simple three line stave is used. The lines of the stave represent the top, mid and low points in the speaker's pitch range. Where F_0 measurements have been made for a particular speaker, they are included in support of the auditory analysis. (Notes on the pitch range used by the particular speaker are included - e.g. chapter 2, note 4, and on the instruments used - chapter 6, note 15.) For the most part, the intonational transcription is impressionistic and features are described in perceptual rather than in acoustic terms. The description presented owes a lot to the work of Currie (1979b) and Brown et al. (1980) on Edinburgh Scottish English intonation. The most general difference noted between ESE and RP intonation is in the relatively flat base-line of the former versus the inclined base-line of the latter. Brown et al. (1980) also point out :

"In ESE the excursions from the base-line on stressed syllables involve relatively little pitch movement ('steps') compared with the amount of pitch movement on RP stressed syllables ('contours')."

(Brown et al., 1980 : 19 - 20)

It is worth noting here that the base-line - the normal level of unstressed syllables - is not the same as the bottom line of the stave - the lowest point in the pitch range used by the speaker. More specific aspects of intonational features encountered in the data are described in detail in chapters 2 and 3. One technical term adopted from Brown et al. (1980 : 31) is the expression "boosted pitch height" which is used to describe an extra high pitch occurring on certain items in the extracts (cf. chapter 3, for fuller discussion).

It must be emphasised that the analysis presented in this thesis is firmly based on a particular body of data. I have tried, in presenting my descriptions and discussion, to include some caveat to that effect. Consequently, I am not claiming that the regularities found in the data investigated are necessarily to be found in all uses of English by all speakers of English. I do wish to claim, however, a high degree of descriptive adequacy for the analysis, in the sense that the generalisations made will hold for other data of a similar type.

Chapter 2 Intonation and Information Structure :
The Given Elements

2.1 Givenness

On those few occasions when the information structure of spoken English has been investigated, there has been a tradition of seeking relationships between what is said and how it is said. Halliday, to take one example, stated the position quite clearly when he claimed that "information structure is expressed by intonation" (1970a : 162). It is a position which is also associated with writers of the Prague school, such as Daneš, who proposes that "in English, it is the suprasegmental phonological structure that signals the points of the highest amount of communicative value" (1970 : 136). In this and the following two chapters, I will continue the tradition and investigate the relationship between elements in the information structure and intonational features. This investigation, however, differs in some important respects from previous approaches. It represents an attempt to analyse examples of what was actually said by some Edinburgh Scottish English speakers, in largely spontaneous conversational speech, in terms of how they actually said it. The emphasis on actual speech is important. Most of the writers quoted in the following pages have been largely concerned with promoting distinctions between elements in the structure of sentences based on context-free, constructed examples. In this chapter, I will be concerned with the investigation of one element in the information structure, the 'given' element, how it can be identified in non-constructed examples and how it is realised, intonationally, in the conversations of Edinburgh Scottish English speakers.

It is necessary first of all to outline briefly the scope of the terms used, in particular, 'givenness', and also to state the specific features of intonation which will be appealed to.

The major problem for a practical investigation of givenness is the consistently non-formal nature of the definitions offered by writers on the subject. Although he was specifically accounting for the internal structure of relatively small units of the language within his own constrained analysis, Halliday did establish the basic concepts involved in describing the given element :

"the given is offered as recoverable anaphorically or situationally" (1967 : 211)

" 'given' means here is a point of contact with what you know" (1970a : 163)

Such proposals for the identification of given elements may be intuitively satisfactory, but they are difficult to relate to formal criteria. The same difficulty is present in definitions offered by writers discussing givenness which extends beyond the bounds of the single sentence :

"given information is suggested to be that which the speaker assumes to be already present in the addressee's consciousness at the time of utterance"

(Chafe, 1974 : 112)

"given information serves as an address directing the listener to where new information should be stored"

(Haviland & Clark, 1974 : 520)

Faced with the absence of formal linguistic criteria in such definitions, one has to check through the data used in the exemplification of those definitions to try to extricate the formal features which the writers have assumed to be carriers of givenness. It becomes clear that there are several identifiable linguistic elements conventionally associated with given status. These are listed below. It should be emphasised that these are conventional forms employed with given status. The extremely general nature of the definitions quoted previously is probably motivated by the need to account for all the occasions on which a speaker treats something as given. It has been noted by Halliday (1967 : 211) that a speaker, in an appropriate context, can choose to treat any element as given, and by Chafe (1974 : 130) that such choices can be extremely idiosyncratic. What are listed below, however, are examples of forms conventionally analysed as given.

2.2 Elements conventionally associated with givenness

In the following sets of sentences, the 'given' elements are underlined 1.

1. a) There goes a beggar with a long beard.

b) There goes the beggar with the long beard.

(Harris, 1971 : 216)

2. a) Does John rent this house ?

b) No, he's bought it.

(Halliday, 1967 : 206)

3. a) Has anyone seen the play ?

b) I think John has done.

(Halliday, 1967 : 206)

4. a) Yesterday I saw a little girl get bitten by a dog.

b) I tried to catch the dog, but it ran away.

(Chafe, 1972 : 52)

5. a) Where are you going today ?

b) We're going to the races.

(Quirk et al., 1972 : 940)

6. a) I just found some books that belong to Peter.

b) I wish I knew where Peter's living now.

c) I'd like to give these books back to him.

(Chafe, 1974 : 113)

7. a) We got some beer out of the trunk.

b) The beer was warm.

(Haviland & Clark, 1974 : 514)

8. a) We checked the picnic supplies.
b) The beer was warm.
(Haviland & Clark, 1974 : 515)
9. a) William works in Manchester.
b) So do I.
(Allerton, 1975 : 219)
10. a) (Sag produces a cleaver and prepares to hack off his left hand)
b) He never actually does it.
(Hankamer & Sag, 1976 : 392)
11. a) (Addressee is looking at a picture on the wall)
b) I bought it last week.
(Chafe, 1976 : 31)
12. a) I bought a painting last week.
b) I really like paintings.
(Chafe, 1976 : 32)
13. a) Look out. It's falling.
(Carpenter & Just, 1977 : 236)
14. a) Yesterday, Beth sold her Chevy.
b) Today, Glen bought the car.
(Carpenter & Just, 1977 : 237)
15. a) What happened to the jewels ?
b) They were stolen by a customer.
(van Dijk, 1977 : 120)

16. a) I walked into the room.
b) The chandeliers sparkled brightly.
(Clark, 1977 : 259)
17. a) A bus came roaring round the corner.
b) The vehicle nearly flattened a pedestrian.
(Garrod & Sanford, 1977 : 77)
18. a) Mary was dressing the baby.
b) The clothes were made of soft pink wool.
(Sanford & Garrod, 1978 : 26)
19. a) Robert found an old car.
b) The steering wheel had broken off.
(Clark, 1978 : 310)
20. a) When are you going to buy the turkey ?
b) We already have done.
(Allerton, 1979 : 269)
21. a) John's house is very cold.
b) The windows all seem to be draughty.
(Allerton, 1979 : 268)
22. a) Yesterday I met a woman who had written a book on viruses.
b) She had studied them for years and years.
c) It was selling very well.
(Clark & Sengul, 1979 : 37)
23. a) A dusty Packard pulled up by the lunchroom a few minutes
after one o'clock.
b) There were two men in the car.
(Crothers, 1979 : 34)

24. a) I must tell you the news about John and Mary.
 b) They have just got married.

(Brown & Miller, 1980 : 359)

25. a) I saw two young people there.
 b) He kissed her.

(Sgall, 1980 : 238)

2.3 The Set of Regularly Given Forms

From these twenty-five examples, it is possible to establish a set of forms regularly associated with givenness.

1. (i) Lexical units² mentioned for the second time, as in (1b), (4b), (5b), (6b), (6c), and (7b). In fact, Kuno (1972 : 271) has suggested that simply "previous mention" might be used as a way of deciding what would be treated as given information. In Quirk et al. (1972), the only examples used to illustrate the given element involve an exact repetition of lexical items from a preceding question.
- (ii) Lexical units which are presented as being within the semantic field of a previously mentioned lexical unit (18b), in particular as generic expressions with regard to a previously mentioned particular (12b), or where the relationship between the two units is similar to that between hyponyms and semantic superordinates (8b), (14b), (17b), (23b), or where a 'whole-part' relationship exists between the two units (16b), (19b), 21b).³

2. (i) Pronominals, used anaphorically, where the full lexical form has already occurred in the immediately preceding sentences (2b), (4b), (6c), (15b), (22b), (22c), (24b), (25b).
- (ii) Pronominals, used exophorically, where the referent is present situationally (10b), (11b), (13a).
- (iii) Pro-verbals, though less commonly discussed, are present in (3b), (9b), (10b), (20b).

The types of forms listed above as those conventionally having given status are investigated in this chapter with a view to determining their typical intonational realisations in my data.

2.4 The New Element

So far I have ignored the second element in the given-new dichotomy. The reason for treating the two elements separately is not arbitrary. The discrete formal realisations of specifically new information are less readily identifiable, both lexically and intonationally. Furthermore, there appears to be no immediately recognisable formal distinction in the realisations of different functions such as 'emphasis', 'contrast' and 'new'. It follows that to attempt to uniquely identify an element as 'new' in this discussion could not be supported by formal criteria. A fuller discussion of this issue is presented in chapter 3. To avoid identifying an element as 'new', 'emphatic' or 'contrastive', the more neutral term 'focus' will be used

for any realisation of these functions. Thus, although stretches of conversation will be considered to have, at least, both focused and given elements, the primary interest of this chapter is in the given elements.

2.5 Phonological Correlates

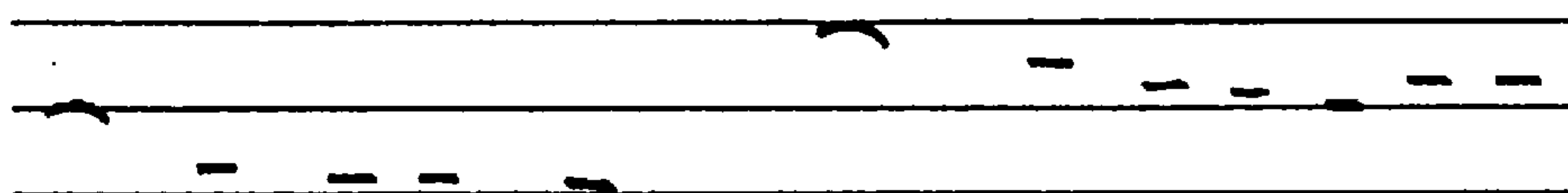
The intonational features investigated as correlates of given elements will be primarily pitch level and pitch movement. These parameters are chosen as the most consistent realisations of phonological prominence (or non-prominence) available for investigation. Clearly, these are not the only relevant parameters. The status of such features as length (particularly vowel length), loudness, and even the full articulation of normally reduced forms, within the study of intonation, is sometimes difficult to determine. They clearly interact with features such as pitch height and pitch movement, but whether obligatorily or optionally is not always obvious. Nor is it clear, to take a specific case, when a large pitch movement coincides with lengthening of a vowel, which of them is the determining factor or which is perceptually more potent. One might suspect that, in order to utter a normally attenuated pro-verbal such as "doing" (cf. extract [2.13]) as a fall from high to mid or low, the vowel has to be lengthened to carry the fall. Such phonetic problems are outside the province of the present discussion. While remaining aware of the potential influence of other phonetic parameters, the present investigation will, as a practical expedient, concentrate on the pitch of elements identified as 'given'.

The givenness of lexical units is conveyed by a speaker uttering them low in his pitch range, or at the same level that he uses for unstressed syllables.

This would be in accordance with the claim that "the second occurrence of a given lexical item in a sentence is normally deaccented" (Cutler & Isard, 1980 : 266).

That this analysis may be too simple is illustrated in extract [2.2]. (The larger stretch of discourse in which this occurs is presented later as extract [2.13].)

[2.2] even the dancing thing + dancing's no really a pastime
 100 200-190



The first mention of "dancing" in the discourse is very low and the second mention very high in the pitch range. Does this represent a serious counterexample to the simple analysis proposed above? It may not. It does at least suggest, however, that the formal linguistic criteria derived from the analyses of givenness in primarily sentential terms may not be available for use in the analysis of discourse without some modification.

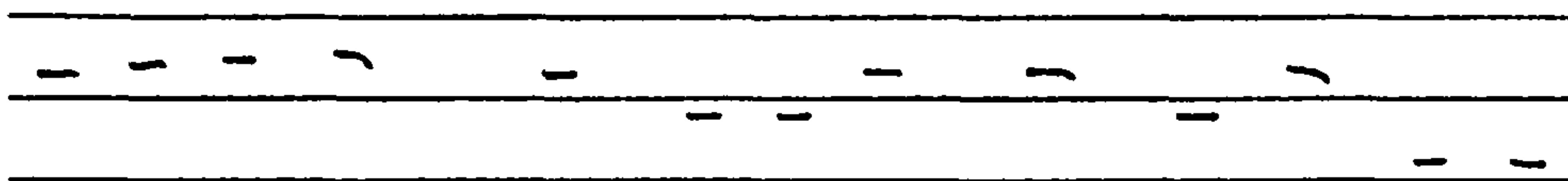
In the larger discourse context surrounding extract [2.2], the speaker has previously been discussing in very general terms the idea that "if you work at a thing + you enjoy it". The lexical unit which appears first in extract [2.2], then, is not "dancing", but "the dancing thing". "The dancing thing" is one example of 'things which are enjoyed if one works at them'. For the speaker, perhaps, there are many such 'things' and, having mentioned them generally, he offers one brief example.

The second mention of "dancing" is as a lexical unit by itself. In the following stretch of discourse (cf. extract [2.13]), subsequent mentions of "dancing", and the pro-forms which 'substitute' for it, all occur low in the pitch range. This second mention of "dancing" has a lot in common with "shops" from extract [2.1]. Both are high in the pitch range, have little pitch movement and are followed by repetitions which are low in the pitch range. To capture this similarity and also to retain the formal linguistic criteria, a modified version of the earlier proposal regarding givenness can be offered.

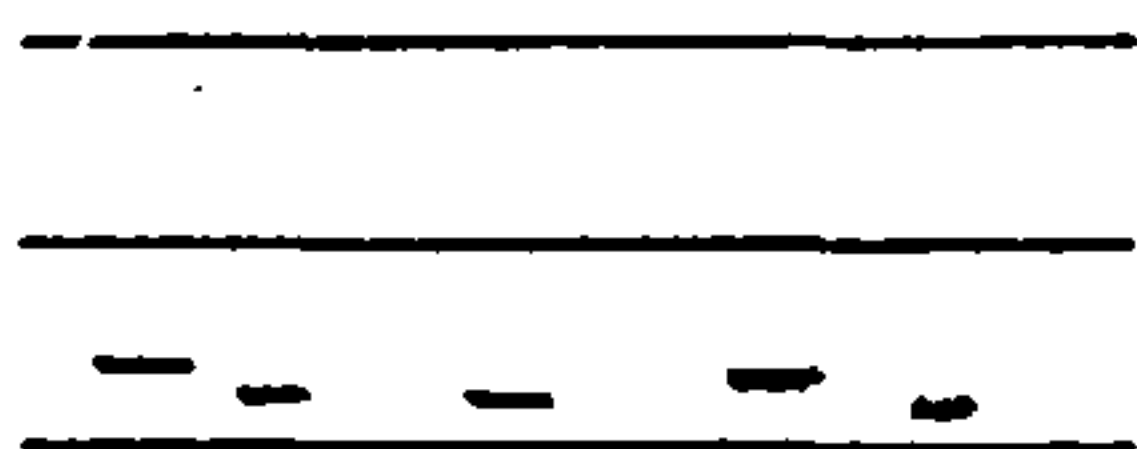
The givenness of lexical units on subsequent mention, after an initial mention which has high pitch, is conveyed by a speaker uttering them low in his pitch range.

Thus far, the low pitch associated with given elements has been presented as a simple, easily identifiable phenomenon. What is being referred to is, in fact, 'relatively low' pitch. Extracts [2.3] and [2.4] contain the lexical unit "dancing" which is, in formal terms, 'given' in both cases.

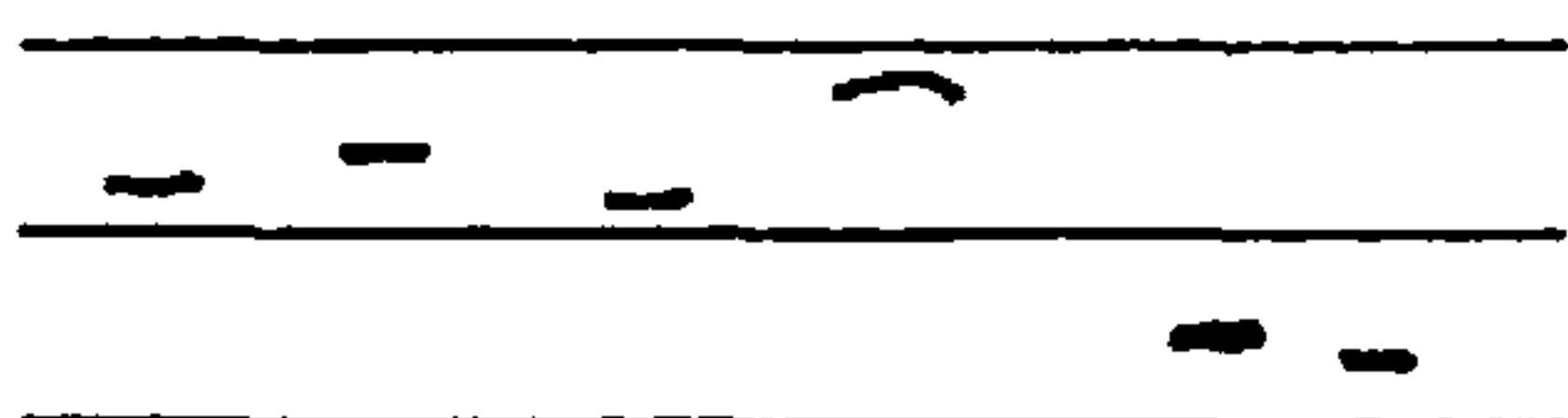
[2.3] but in my young + like when I was + sixt- fifteen sixteen



going to dancing
100-90



[2.4] you had to learn dancing
120-110



No significance in terms of their functions as 'given' elements should be attributed to the different pitch levels of these lexical units. They simply occur in different phonological environments. Extract [2.3] is an example of what Bolinger (1970) would term a type of parenthesis. Within a parenthesis, according to Bolinger, "we find normal syllable-by-syllable contrasts but the importance of the entire parenthesis is signaled as low in the utterance as a whole" (1970 : 137). For this speaker, relative lowness is manifested in a lowered baseline of unstressed syllables (including given elements). Thus, "dancing" (100-90 cps.) happens, in this particular environment, to occur on a lowered baseline.

Extract [2.4] is an instance of a process virtually the opposite of that evidenced in [2.3]. It is very similar to what Brown et al. (1980) have described as a 'shift-up in key'. For any one of a variety of reasons, the speaker may raise his baseline. In such circumstances, unstressed syllables (including given elements) are realised higher in the pitch range. Thus, "dancing" (120-110), in this particular environment, happens to occur on a raised baseline.

Throughout this paper, all references to low pitch will be intended to carry the meaning of 'low, relative to the pitch environment'.

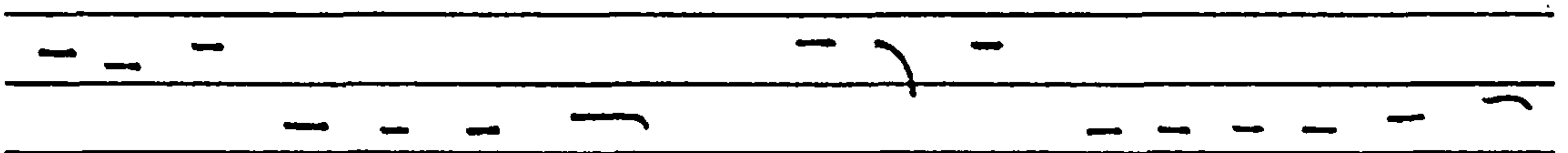
How the speaker continued, following extract [2.4], presents an opportunity to investigate his treatment, intonationally, of lexical units which appear to be within the semantic field of a previously mentioned lexical unit.

answer, taking extract [2.5] as an illustration, is that, in terms of pitch, givenness has a single realisation. Whichever lexical units a speaker treats as 'given', he will treat in the same way, intonationally. This statement should not be seen as a refutation of Chafe's proposal. It is intended as a description of the realisation phenomena in the intonation system which result from a speaker's treatment of a lexical unit as 'given'. How a speaker comes to treat a particular lexical unit as 'given' may indeed be subject to the probability considerations that Chafe was proposing.

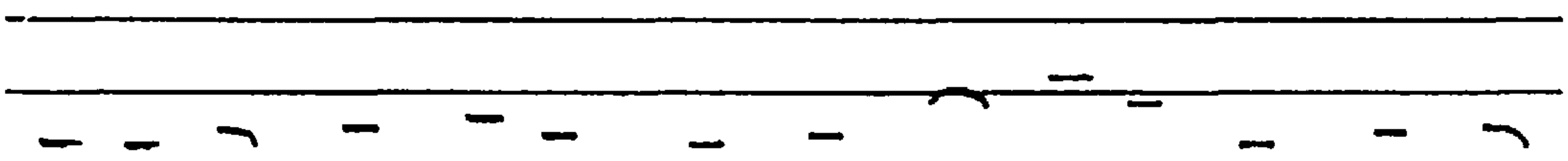
2.7 Proforms

It was apparent in many of the sentences used by writers to discuss givenness that pro-forms, particularly pro-nominals, were generally associated with given status. In extracts [2.6] - [2.10], the pro-nominals, "they", "their", [2.6]; "it" [2.7]; "them" [2.8]; "he", "his" [2.9]; and "he", "who" [2.10], which almost all follow the mention of a full lexical form, are given.⁵ They are all uttered with low pitch and no pitch movement.

[2.6] eighty per cent of the people ++ didnae want to go out of the town



didnae want their gardens they were quite happy where they were
 115 100 110



[2.7] (an old part of Edinburgh)

I can remember a lot of it like you know +
115

[2.8] some of these houses never had baths + they put them in of course
110

[2.9] on the flight back there was an American sitting next to me and

he got plastered + he fell asleep and he burnt a hole in my

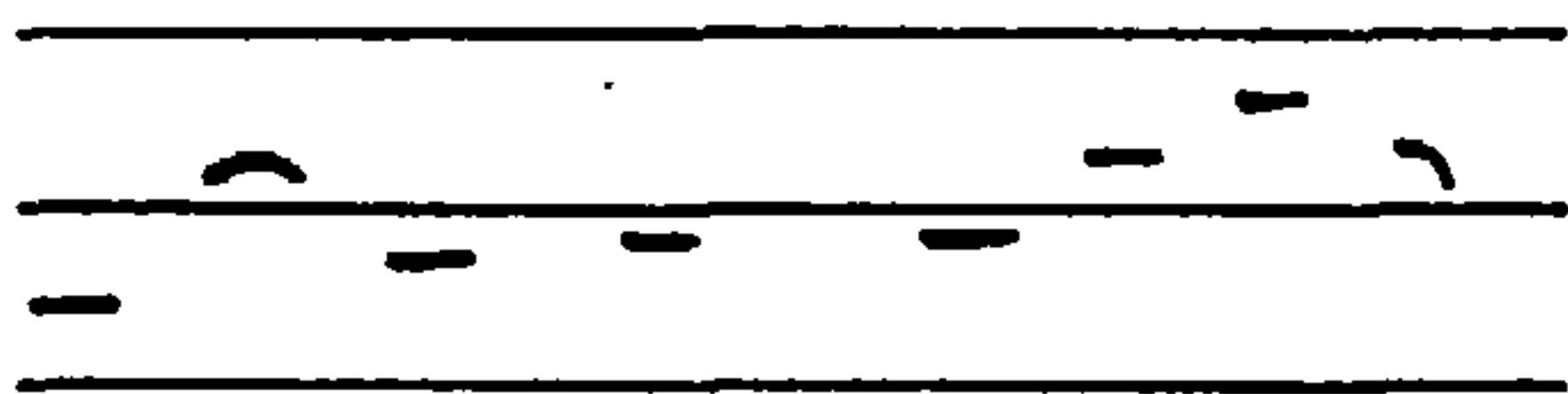
trousers with his cigarette

[2.10] (looking at a book of old photographs)

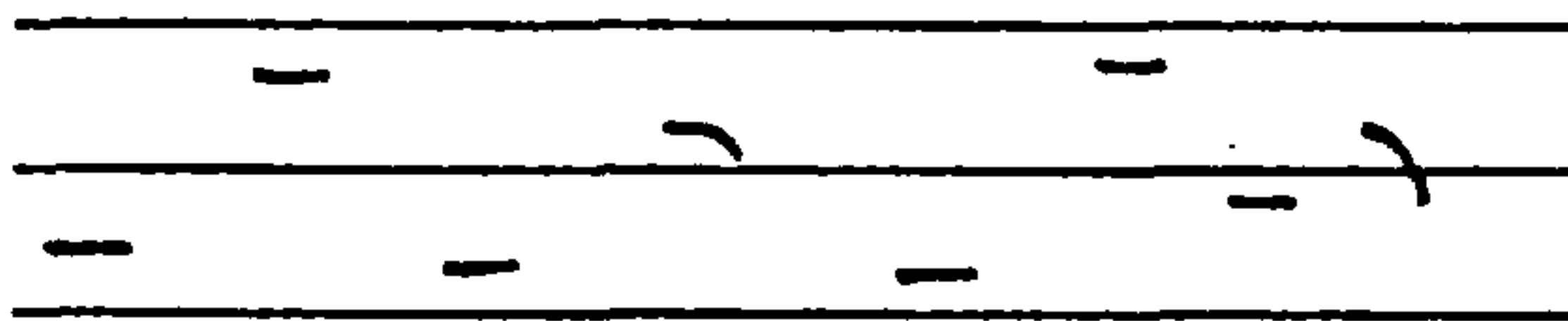
A : it's quite an interesting book actually + he was a surgeon

and photographer

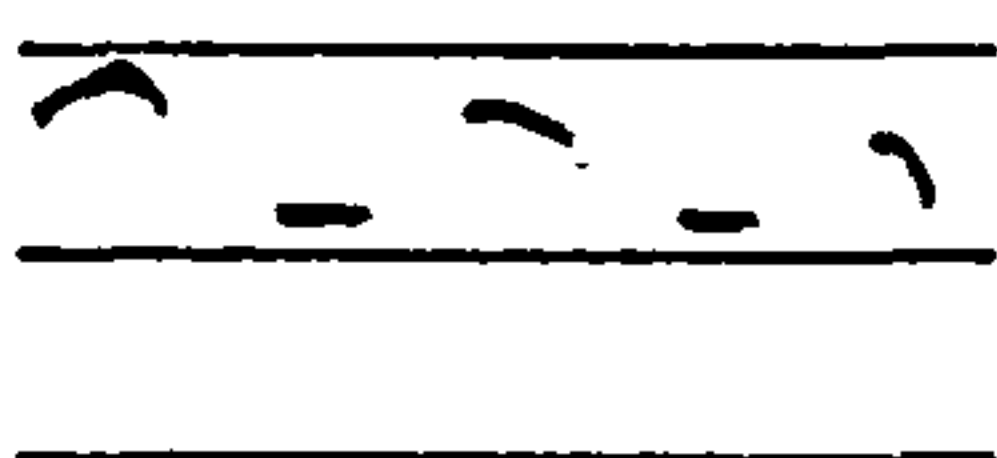
B : a surgeon and photographer



A : the man who took the photographs



B : Oh I see I see



In extract [2.10], there is an example of a pro-form, "he", used without a previously mentioned lexical unit. The full form is expressed later, in response to an expression conveying the failure of the interlocutor to identify the referent for "he". Extract [2.10] provides an interesting example of how wide the description 'situationally present', used earlier, must be, in order to capture all the anaphoric uses of pro-form. Such pragmatically controlled anaphors, discussed in some detail in Yule (1979), are not realised any differently from other anaphoric pro-forms. For the present analysis, it is sufficient to note that the speaker, using a pro-nominal, has uttered it low in her pitch range. The interpretation of [2.10] is reconsidered in more detail in section 4.6 later.

Extract [2.11] is included here as an example of how, even with pro-forms absent, the referent can be maintained.

[2.11] one of the barmen + there was about twenty of them behind the bar +

would rush up and sort of shovel + so many glasses underneath the

hot water tap and + start doing the rigmarole for + for Irish coffee

The agent of the various actions described in extract [2.11] is "one of the barmen" throughout, but no pro-form is used. Where there is no pro-form, no pitch correlates, for obvious reasons, can be discerned. It is perhaps predictable that the processes which can result in an element being pro-nominalised and uttered with low pitch, both attenuated realisations, can, under certain circumstances, allow the element to disappear completely. Null anaphors, having no formal realisations, are not really within the province of this part of my investigation (cf. section 7.2).

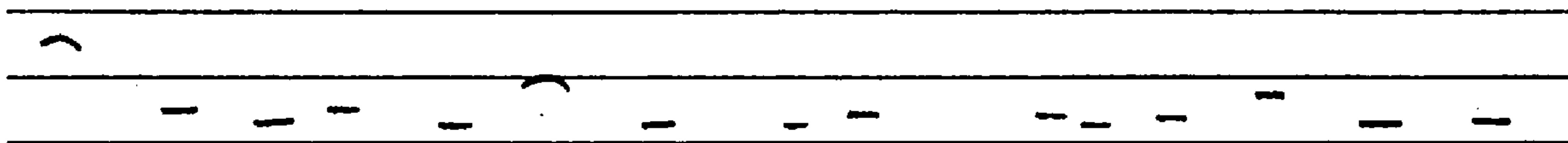
2.8 Extending the Analysis

The series of brief extracts discussed so far indicates an apparently standard correlation between given elements and low pitch. In the lengthier extracts which follow, this correlation does, for the most part, continue to hold. There are, however, some examples of

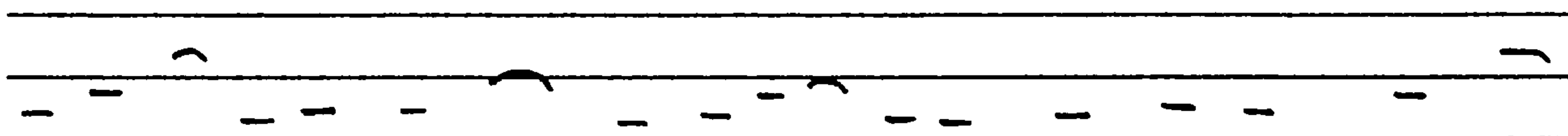
what might be expected, from the formal criteria established earlier, to be given elements being uttered with quite high pitch and some pitch movement. The use of pitch height and pitch movement has been associated by several of the writers mentioned earlier with the functions discussed here under the general term 'focus'. It will be necessary, in the course of the analysis, to consider to what extent and under what circumstances a formally given element is 'focused' (cf. also chapter 3).

[2.12]

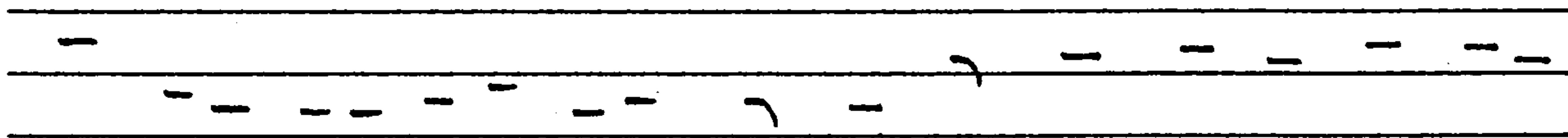
1. baths were unknown in those days ++ I mean ++ very few people had baths
140 100



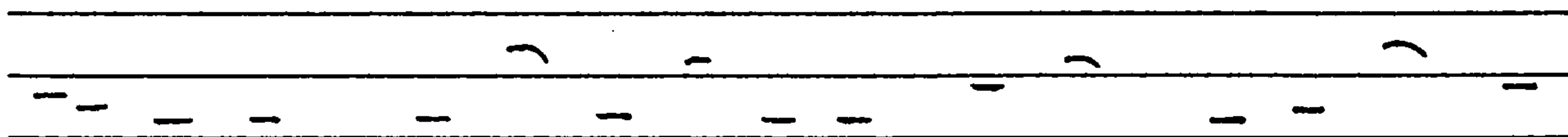
2. if you had a bath you stayed in the elite area + what they term + well even
110



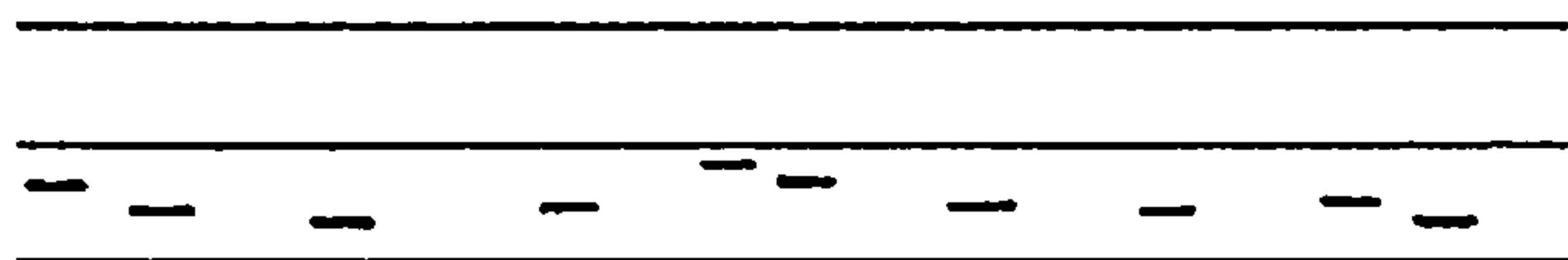
3. though I was going to say Lutton Place but even there some of these houses



4. never had baths + they put them in of course you know ++ eh but baths when
100 110 150



5. I was young was never known in houses +

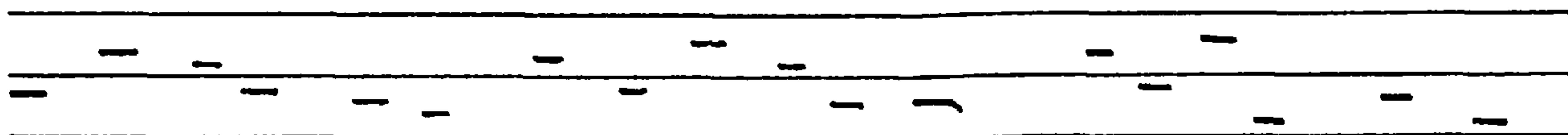


After the first mention of "baths" (140), relatively high in the pitch range, the subsequent mentions "baths" (100), "bath" (110), "baths" (100) and "them" (110) all have the low pitch and absence of pitch movement which have been proposed as the correlates of 'given' elements. However, in line 4, "baths" (150) is uttered high in the speaker's range, with a slight fall. The reasons for this 'focusing' may derive from the speaker's desire to re-establish the topic expression after a digression into a consideration of "houses" in a certain area. Moreover, those "houses" are described as having baths 'put in', leading to the impression that, after all, baths were not a completely 'unknown' phenomenon. To dispel this impression and to return to his primary topic, the speaker raises "baths" in the pitch range. Lending support to this interpretation is the echoing of the predicated elements "never known" ("unknown"), "when I was young" ("in those days") which occurred with the initial mention of "baths" in line 1.

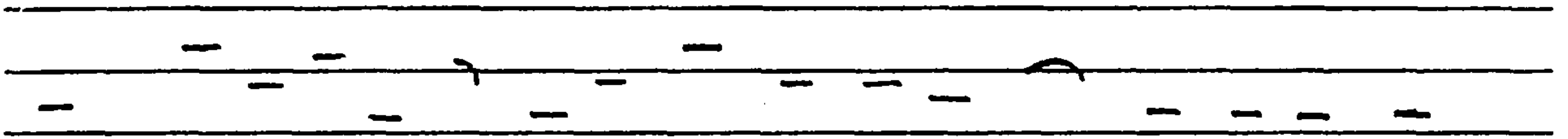
It is clear that such an analysis is no longer based on formal criteria. It is an interpretation. The formal criteria proposed for the identification of 'given' will enable an investigator to find the most frequent intonational correlates of 'givenness' - the unmarked cases. There remain cases where the criteria do not simply identify 'given' elements. Extract [2.12] is one such case, extract [2.13] is presented as another.

[2.13]

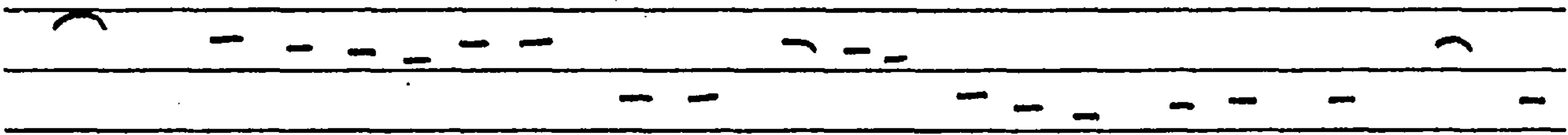
1. I think always when if + if you work at a thing + you enjoy it + you know +



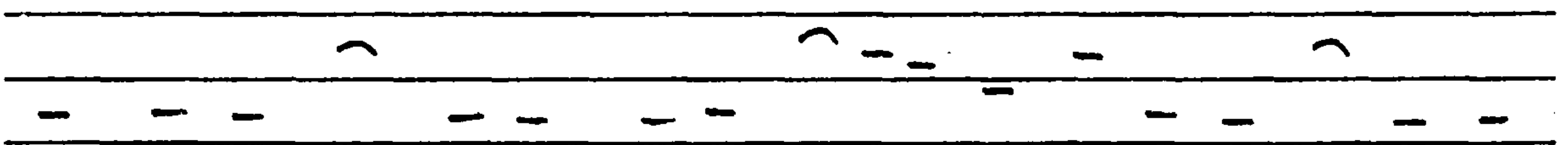
2. that's what I always say to my youngster the day even the dancing thing +
100



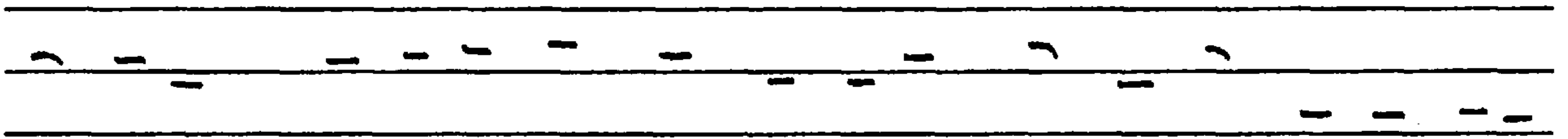
3. dancing's no really a pastime because anybody can do it + I mean the daughter
200-190 110 100



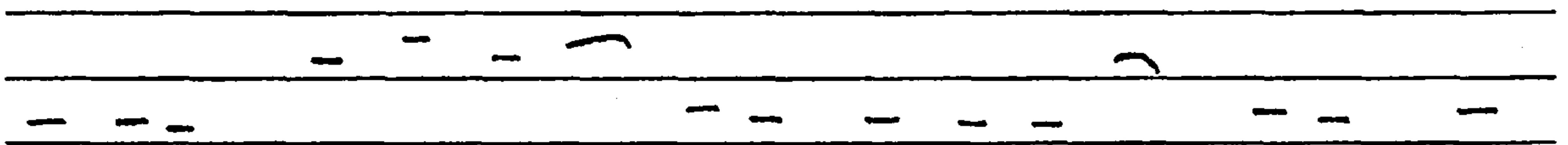
4. says that I'm wrong I mean + I mean anybody can get up and try and it's
110



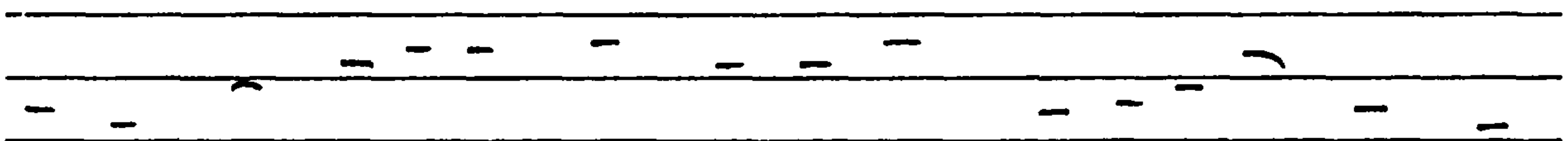
5. good enough + but in my young like when I was + sixt-fifteen sixteen going



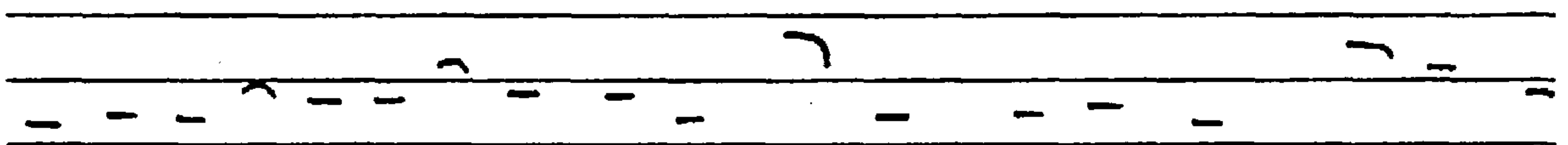
6. to dancing + you had to learn dancing you had to learn quicksteps slows
100-90 180 120-110 145 120-110 120



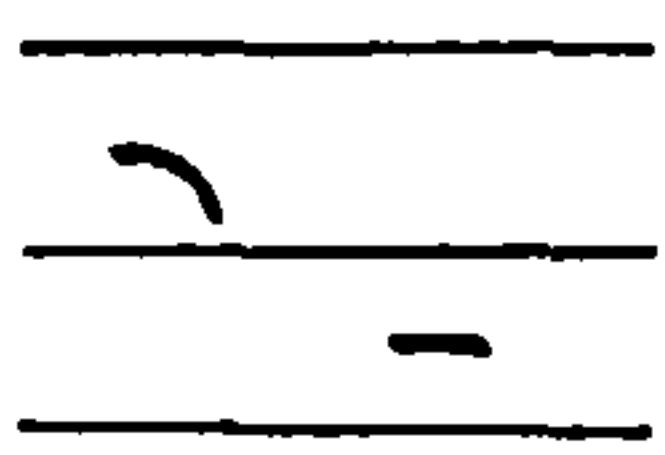
7. waltzes + and + I always thought if you learned it you achieved it + and
120-100 160 120 120



8. you got a lot of enjoyment out of doing it + because you're learning to
195 120 180



9. do that +
170 120



In extract [2.13], the lexical unit "dancing", after its initial high pitch realisation in line 3, occurs twice subsequently with relatively low pitch in line 6. The lexical units "quicksteps", "slows" and "waltzes", in lines 6 and 7, discussed already as hyponyms of dancing, also have low pitch realisations. The pro-nominal "it", in lines 4 and 7, also has relatively low pitch, as has the pro-verbal, "do it", in line 3. For all these elements in this piece of discourse, the proposed correlation between givenness and low pitch seems justified.

However, "learn" (180) in line 6 is the initial mention of a lexical unit with high pitch. According to the formal criteria (cf. section 2.3) it should, on subsequent mention, be given, and low pitch realisations would be predicted. The three subsequent mentions in lines 6, 7 and 8 - "learn" (145), "learned" (160), "learning" (180) - are all noticeably high in the pitch range. The most likely interpretation of this use of pitch height on lexical units repeated by the speaker is that he wishes to emphasise the 'learning' element involved in "dancing". For the speaker, the most important aspect of "dancing", as something to be enjoyed, was that the enjoyment came from successfully 'learning' the different types of dances. Since he feels that "dancing", to his daughter and possibly to his younger interlocutor, does not involve any 'learning', he must give prominence to the 'learning' element in his message. Emphasis can be conveyed by pitch height. It represents, therefore, like the re-establishment of a topic expression in extract [2.12], a constraint on the general applicability of the proposed correlation between formally given elements and low pitch (cf. further discussion in chapter 3).

A similar constraint may be in evidence in the use of the two pro-verbals, "doing it" (195-120) and "do that" (170-120), in lines 8 and 9. As pro-verbals, they would be expected, like "do it" (110-100) in line 3, to be treated as given elements and uttered low in the pitch range. They are conventionally 'given' forms, and presumably could be replaced by 'dancing' and 'dance', yet they are spoken not only with pitch height, but with extended falling pitch movement on both "doing" and "do". The reasons behind the speaker's focusing these two normally given forms may be, in fact, quite complex. It is sufficient for present purposes to note that the speaker is emphasising the type of "dancing" that results from learning, and that the activity, the "doing it", involved much more than the "dancing" that "anybody can do", which is presumably associated with "the daughter". The emphasis is on a qualitative difference between two types of "dancing".

Whether the above interpretation is a reasonable one or not, the examples of conventionally given elements being used with high pitch appear to represent exceptions to the general 'givenness - marked by - low pitch' proposal. This proposal, however, can be supported by a lot of data in which linguistic elements conventionally associated with given status are indeed uttered with low pitch. The proposal has, in other words, a certain degree of descriptive adequacy. Should the exceptions then simply be listed as potential minor variations from a general discourse rule that requires given elements to be uttered with low pitch? I believe not. Such an approach would be based on a misunderstanding of some of the fundamental processes involved in spoken discourse.

2.9 Summary

As a procedural heuristic, the investigation of givenness in terms of its conventional linguistic realisations has proved illuminating. This type of investigation, however, tends to obscure the point that givenness is not lexically-, syntactically-, or even discursively-governed, but is a speaker-determined feature. Both Halliday (1967 : 211) and Chafe (1974 : 130) have commented on this. However, neither has presented the speaker's control of what is treated as given as the primary consideration. This is also true of Clark & Clark (1977) in their discussion of the 'given-new contract'. They take those formal elements which speakers most frequently treat as given as the basis of their discussion. What a speaker does most frequently, however, should not be re-interpreted as what a speaker is required to do. There is no requirement, in the form of a discourse rule of the type mentioned earlier, that speakers must use low pitch when uttering repeated lexical units and pro-forms. Rather, the requirement is of the interpretive type - that if one such element is uttered with low pitch, the speaker will have intended it to be taken as given. Under this interpretation, givenness is not a function of discourse at all. It is a product of speakers' intentions. What I have discussed in this chapter are the conventional means employed by Edinburgh Scottish English speakers to mark their intentions regarding the givenness of parts of their messages. Although for analytic purposes, the lexical and phonological realisations have been discussed separately, they are not, in practice, discrete systems. It is the combination of certain lexicalisations and low pitch which indicates the intended givenness.

I would like to propose that givenness must not be regarded as simply an anaphoric feature with predictable formal realisations. Instead, there are formal linguistic features which can be used by a speaker to indicate how he wants parts of his message to be taken. The speaker's decision regarding what he treats as given is made as he proceeds to speak and need not be determined by what has already been said in the discourse. Above all, the givenness of elements in spoken discourse is a product of the speaker's intentions.

2.10 Notes

1. It should be noted that the writers quoted are not only, nor even primarily in some cases, discussing givenness in their papers. Chafe proposes a semantic unit which he terms 'foregrounded' (1972) and is making claims about 'the addressee's consciousness' (1974). Harris (1751) is discussing a distinction between things unknown which become known, 'our primary perception' and 'our secondary perception' (1751 : 215-6). Both Crothers (1979) and Carpenter & Just (1977) are illustrating 'old' information. Sanford & Garrod (1978) are discussing 'contextually motivated inferential bridges' and the operation of inference is also the main concern in the different papers of Clark and his co-researchers. Allerton (1975) and Hankamer & Sag (1976) are interested in mainly syntactic issues.
2. The expression 'lexical unit' is used in preference to 'word(s)', which is too vague, 'lexical item', which suggests a single element, and 'noun phrase/verb phrase', which have associations with specifically syntactic analyses. It is an analytic category, defined essentially by its ability to be replaced by a pro-form.
3. A distinction between 'given' and 'known' has been proposed in respect of examples such as these last three. Throughout Clark's writings, the consideration of definite noun phrases is always presented in terms of the 'given-new' contract

(cf. Clark & Clark, 1977). Examples similar to those used in his discussions of 'inferred identities' are treated without appeal to givenness by van Dijk (1977) and Hawkins (1978). It may be that the sources of 'definiteness' in grammatically definite noun phrases should be considered independently of the notion 'givenness' in spoken discourse (cf. Chafe, 1976). I return to this point in chapter 7.

4. Extracts [2.1], [2.12] and [2.13] are from the relatively 'clean' recording of one speaker (22BS), allowing the provision of F_0 measurements in support of the auditory analysis. The pitch range used by the speaker is between 210 cps. - the top line of the stave, and 90 cps. - the bottom line of the stave. The middle line is taken as 130 cps. The speaker's normal baseline for unstressed syllables is around 110 cps..
5. In extract [2.9], the pro-forms "me" and "my" are also uttered low in the pitch range. Although they have not been mentioned specifically in this paper, the forms which indicate the speaker and the hearer in a conversation must derive their given status from the physical presence of the interlocutors, rather than from a previously mentioned lexical unit. The phenomenon has been noted by Chafe (1976 : 32). As with the "he" of extract [2.10], the referent of "I" or "you" must be considered to be, in some sense, 'situationally present'.

Chapter 3 Intonation and Information Structure :
The Focused Elements

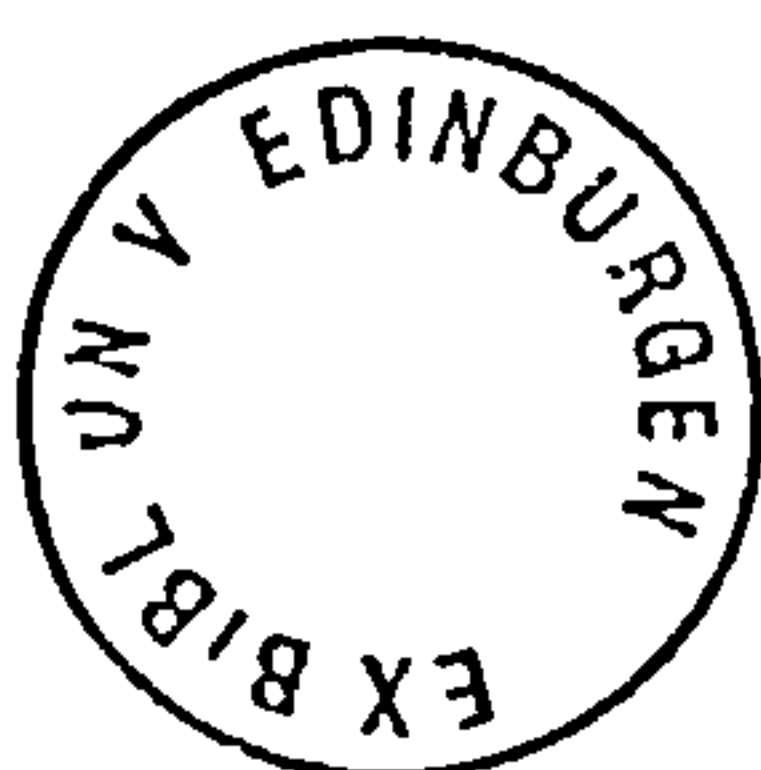
Chapter 3

An extremely simple version of the information structure - intonation relationship might be expressed in terms of the following equations : given elements = phonologically non-prominent; new elements = phonologically prominent. Such a view is frequently taken by those constructing sentences to be used in speech perception studies (cf. Nootboom et al., 1978). I have attempted to demonstrate the non-categorical nature of the first of these equations in the discussion of given elements in chapter 2. In this chapter, I will explore the functions of phonological prominence in spoken discourse in order to ascertain the appropriateness of the second equation presented above.

One major problem encountered in investigating phonological prominence is the difference of opinion in the literature regarding the number of functions to be associated with such a formal marker. In the course of this chapter, I will discuss the different approaches and present an analysis in terms of multiple functions. First of all, however, the formal nature of phonological prominence as it occurs in the data under investigation must be described.

3.1 Formal characteristics

As emphasized in section 1.2, the data-base of actual recorded conversational speech used in this investigation involves Edinburgh Scottish English (ESE) speakers. It is necessary, at this



point, to reiterate some relevant differences between the intonation of ESE and that of the type of southern English which has been the basis of standard descriptions of English intonation, to be found in Crystal (1969) and Halliday (1970b). Instead of a regular rising or falling baseline, ESE speakers normally have a level baseline which is low in their pitch range (cf. Currie, 1979a). Unstressed syllables and items treated as 'given' by speakers are often found on, or near to, this low baseline, as described in chapter 2. Consequently, the intonational option available to southern English speakers whereby very low pitch, in conjunction with rising pitch movement, can be used to give prominence to an item is not found in ESE. For Halliday (1967 : 203), phonological prominence is primarily a matter of pitch movement, not pitch level, whereas in ESE intonation, pitch level (specifically, pitch height) has been found to be the main phonetic feature involved in making a syllable or constituent phonologically prominent.¹ Whenever pitch movement appears to contribute to the perceptual salience of a syllable or constituent in ESE, it generally involves movement from high pitch. Thus, phonological prominence in ESE is achieved primarily through the utterance of syllables with raised pitch², and only secondarily through falling pitch movement.³

3.2 Functions

Phonological prominence has been presented as having either a single discourse function, or, for some writers, two distinct discourse functions. For Halliday (1967) phonologically prominent items carry 'new' information, and 'contrast', for example, is treated as a type

of 'new'. The single discourse function approach is discernible also in Bolinger's argument that 'in a broad sense every semantic peak is contrastive' (1961 : 87), and 'semantic peak includes contrastive accents along with other accents' (1961 : 84). Bolinger's principal concern was, in phonetic terms, to deny the existence of any uniquely contrastive pitch phenomena.

Chafe, however, has proposed that 'contrastive sentences are qualitatively different from those which simply supply new information' (1976 : 34) and, in more specific terms, that 'every item which carries contrastive pitch is distinguished by its own pitch drop' (1974 : 119).

There appear to be two opposing views - a single function for a single realization against a double function because of two distinct realizations. I would like to suggest that these different views are not irreconcilable. The difference between, for example, the opinions of Halliday and Chafe arises because they are discussing essentially different phenomena, but which they both term 'contrast'. In simple terms, when Halliday treats a single point of prominence as 'contrast', he is discussing implicit contrast, which I hope to show is realized in a way similar to new information. When Chafe analyses two related points of prominence as an illustration of 'contrast', he is discussing explicit contrast, or what has also been called 'formal contrast'. This latter type of contrast need not involve the introduction of new information, but may be used to present a new relationship, especially between 'given' elements in the discourse. I would like to maintain a distinction between these two realizations of contrastive function - implicit contrast, on a single point of prominence, and explicit contrast, on paired points of prominence.

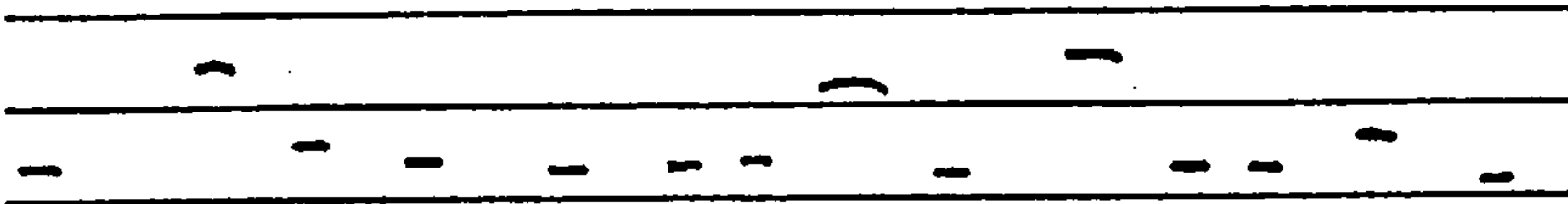
It is not uncommon in spoken discourse to find a phonologically prominent item being used with more than one function. Several instances of this plurality of function are noted. Where possible, however, examples illustrating each particular function in turn have been sought. The functions of single points of prominence are discussed first. These are 'emphasis', 'implicit contrast' and 'new information'. Mention is also made of the use of phonologically prominent items to mark 'deixis' and 'speaker's topic'. The function of paired points of prominence is discussed under 'explicit contrast' and the marking of negative elements in the environment of explicitly contrasted items is noted.

3.3 Emphasis

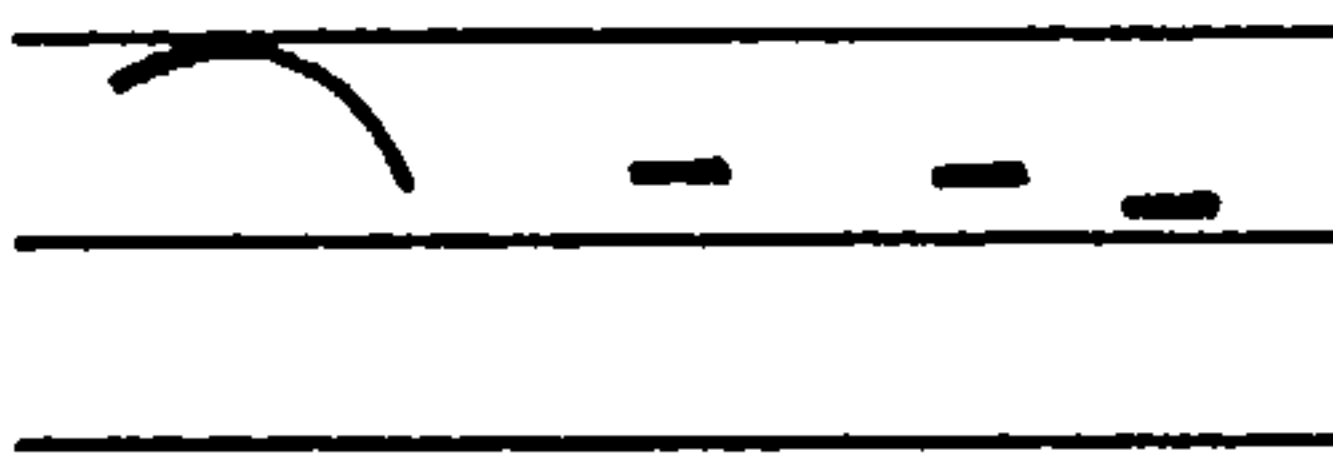
In its pre-theoretical sense, 'emphasis' is used in a very general way to cover any instance of phonological prominence. I would like to narrow its application in the present discussion to describe a function of phonological prominence which is quite distinct from the more commonly discussed functions of 'new' and 'contrast'.

The use of phonological prominence on the intensifier 'really' in extracts [3.1], [3.2] and [3.3], by three different speakers⁴, is best seen as conveying the type of assertion the speaker wishes to make rather than marking new information. In each case the speaker is repeating and reinforcing a point made already in his/her contributions to the discourse.

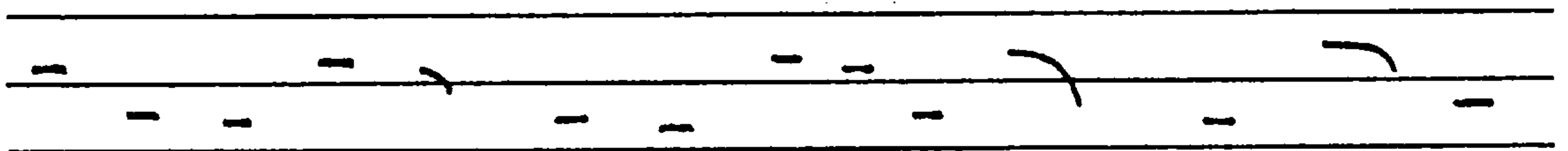
[3.1] it's marvellous how many people stayed in such a +



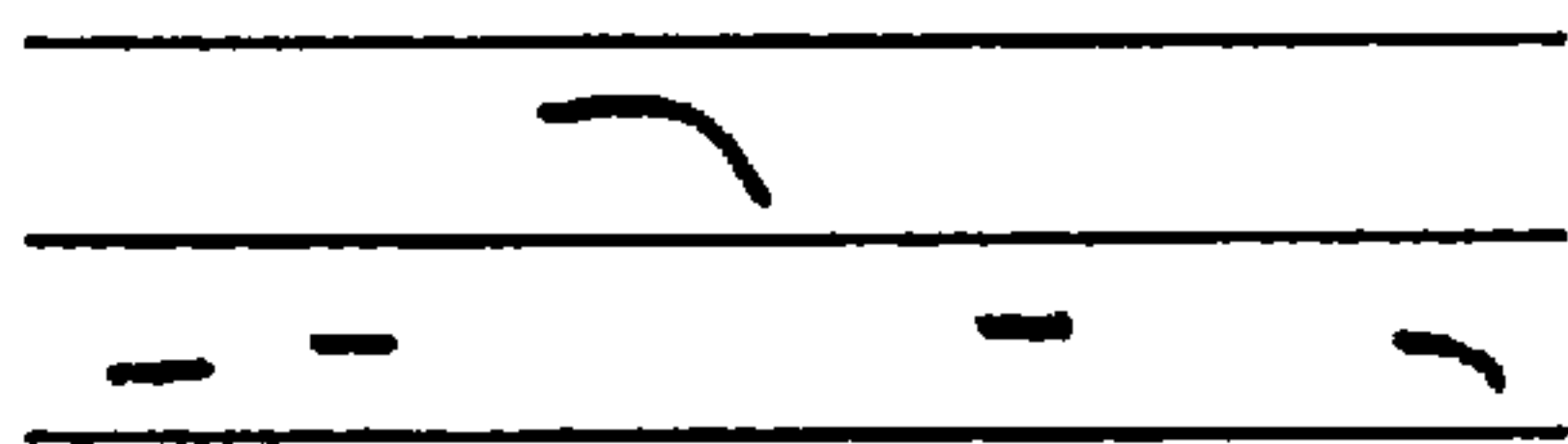
really small area +



[3.2] some of the buildings there are beautiful really + they really are +



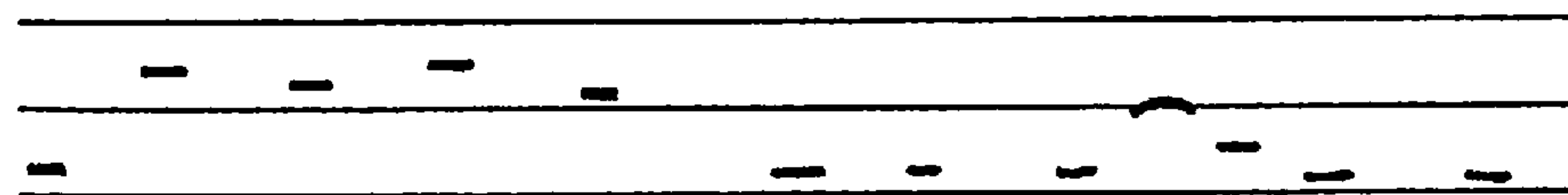
[3.3] but I really don't know



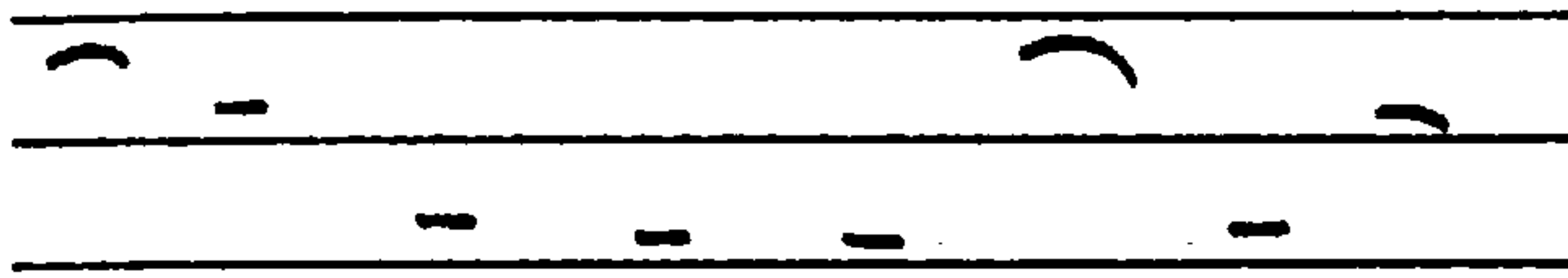
If an element of contrast was sought in these examples, it could be a contrast between what the speaker asserts and the negation of that assertion. It does seem unnecessary, however, to propose that speakers are denying the negation of the propositions they express when they assert something with emphasis. They may simply be making an emphatic assertion.

In extract [3.4], pitch height and movement on 'very' is, I think, another example of emphasis.

[3.4] I think the south side though of + of Edinburgh was +



central south side was very bad hit +



Halliday, discussing what he terms 'marked focus' on an intensifier such as "very", argued that it 'should perhaps be regarded as a special case of unmarked focus, since it seems not necessarily to define a given - new structure' (1967 : 208). It is, indeed, inappropriate to appeal to functions from the thematic organization of utterances in a discussion of items like "very". The use of "very" and "really", as in the preceding extracts, is clearly part of what Halliday treats elsewhere in terms of the modality of utterances. This particular example of phonological prominence, on "very" in extract [3.4], is not a product of the speaker's organization of his utterance, but an indication of the type of assertion being made. Its function is to mark the strength with which the speaker wishes to make this emphatic assertion.

3.4 Implicit Contrast

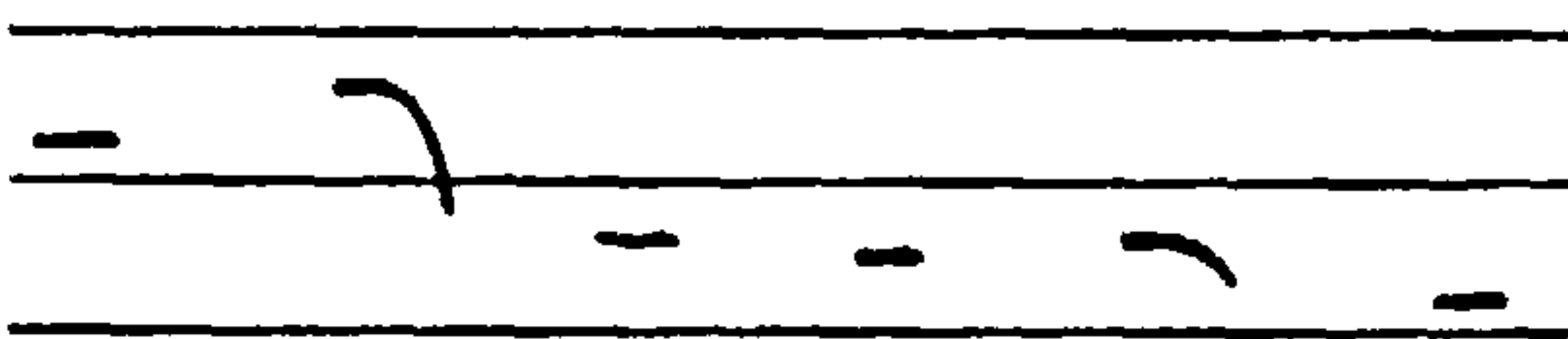
In extract [3.4], greatest pitch height is reached on "central". It is unlikely to be an instance of the marking of new information, as the speaker has already used the expression several times. What he appears to be doing is making sure that the specific area he is describing will be correctly identified by his hearer. He has to distinguish one particular part of the area from the rest of the "south side". He is,

in effect, putting central south side in contrast with any other part of the south side, without making the contrast explicit. It is an example of what I will describe as implicit contrast.

3.4.i The most common elements used with implicit contrast are those non-anaphoric closed-set items such as verbal auxiliaries and prepositions, where the contrast involved is with other members of the closed set. In extract [3.5], the contrast on "down" is with the limited number of other appropriate prepositions in the closed set.

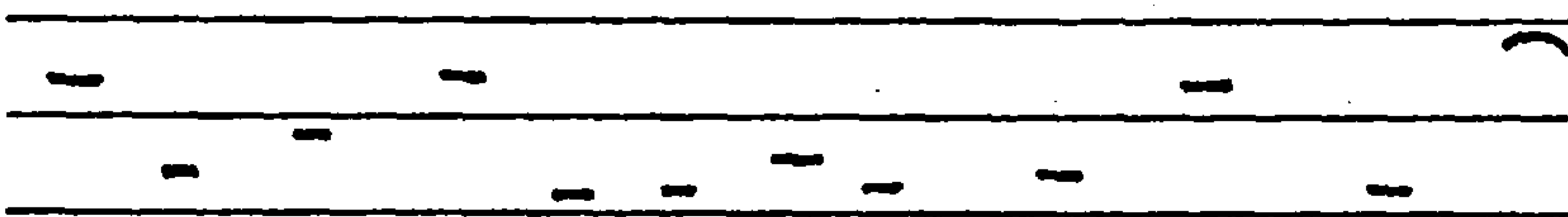
[3.5] (looking at a building in an old photograph)

it's down from Saint Giles then

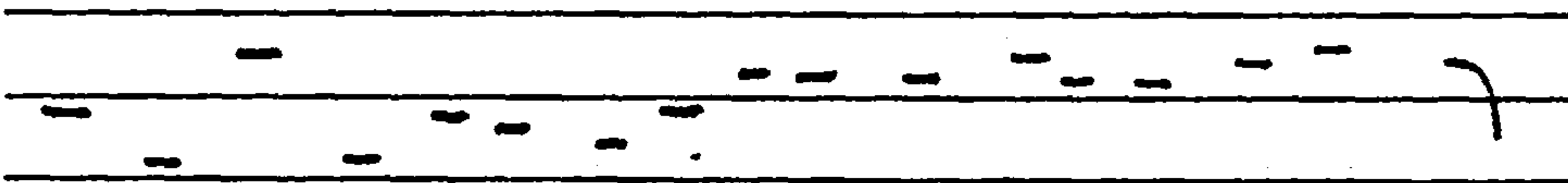


The contrast can, of course, operate within a very limited set, as on the auxiliary "did" of extract [3.6].

[3.6] failing completely to realise that cost + it did



cost a little money to educate somebody at Boroughmuir +

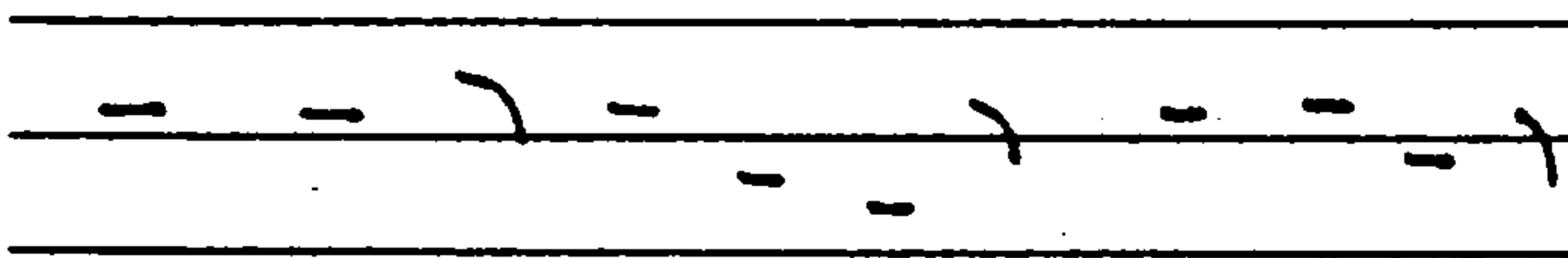


The speaker in extract [3.6] is pointing out the error of another person's reported assumption. The assumption is not made lexically explicit, with an expression such as 'it didn't cost anything', so the prominence of "did" here has to be characterised as implicit contrast.

3.4.ii If single anaphoric items, conventionally associated with 'givenness' (cf. chapter 2), are made prominent, they too must be considered examples of implicit contrast. In extract [3.7] the use of "some" is an example of what Halliday would describe as 'anaphoric by substitution' (1967 : 206).

[3.7] (snow during the holiday)

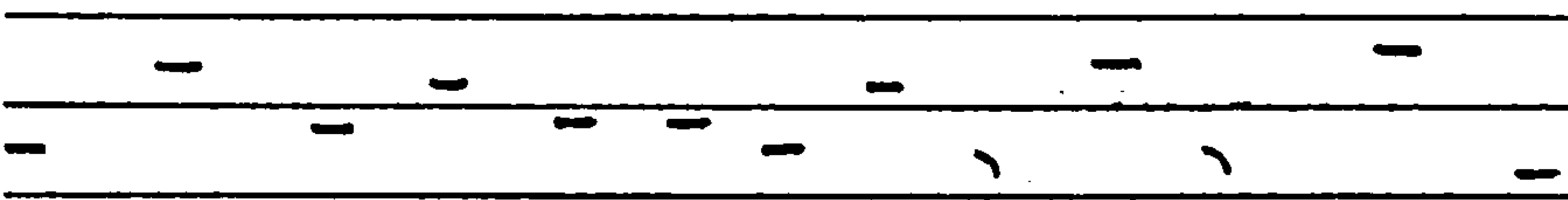
there was some actually on + at Hogmanay



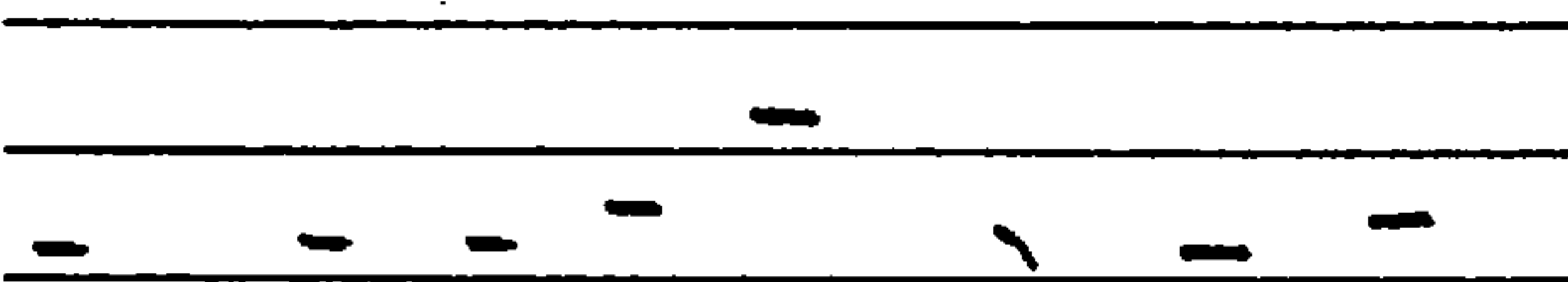
The new information items "on" and "Hogmanay" are also prominent, but it is the implicitly contrasted "some", as opposed to 'none' or 'a lot', which receives greatest pitch height.

3.4.iii Items which are 'anaphoric by reference' (Halliday, 1967 : 206) and raised in pitch, such as "those" in extract [3.8], are also instances of implicit contrast.

[3.8] in those days if you had an inside toilet + that was



eh + quite an achievement you know +



The contrast involved, the reverse of that found in the use of "now" in extracts [3.9] and [3.10] is between the

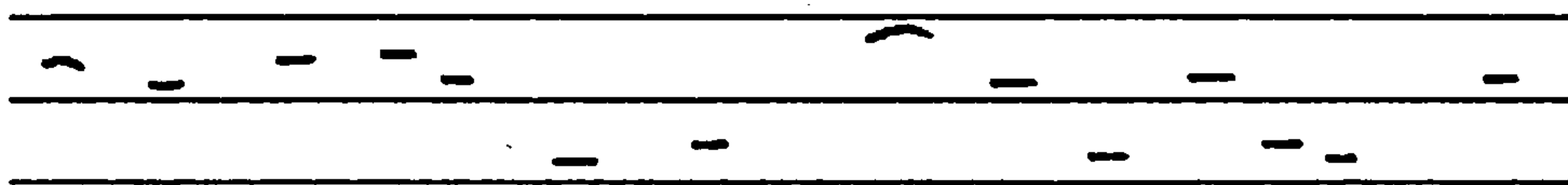
formally unstated time of speaking, which might be expressed by 'nowadays', and the past time explicitly referred to, "in those days". The pitch realisation of "that" in extract [3.8] is similar to that found on the other anaphoric items discussed in this section. It is not, however, an example of implicit contrast. Its function is not to make a contrast of any kind, but is primarily deictic. The relationship between anaphoric and deictic reference is discussed in Lyons (1979), who notes that deixis is 'stressed'. It is sufficient to note in this instance that the marking of contrast is no different, in terms of the phonological realisation, from the marking of deixis. Both "those" and "that" are uttered with raised pitch. A very common type of implicit contrast is between a situation at the time of speaking and a previous situation. If the situation being described at length is in the past, as in extracts [3.9] and [3.10], then an expression indicating present time, such as "now" can be used in implicit contrast.

[3.9] the people that were brought up in the Canongate + eh +

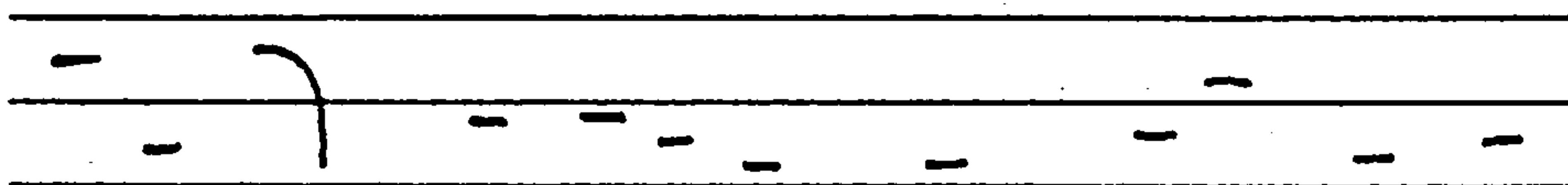
they couldn't afford the rents that they're charging

now in the Canongate
180

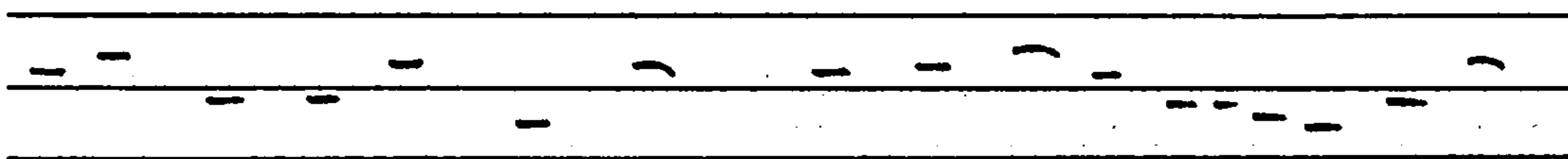
[3.10] well in that area there was + hundreds of families + and
195



looking now ++ well actually + they've rebuilt but just
180-100



before they rebuilt the flats ++ it was hardly any area at all +



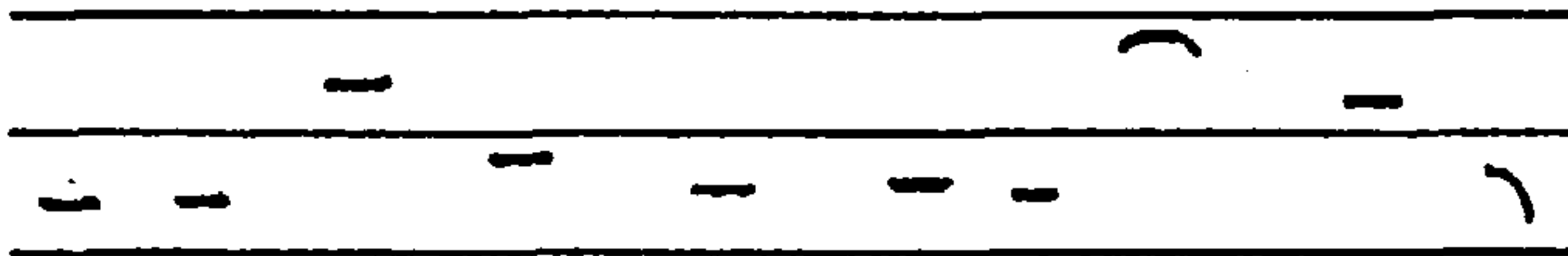
3.5 New Information⁵

Although I present 'implicit contrast' and 'new information' as distinct in functional terms, there is no consistent distinction in terms of perceived pitch height. In extract [3.10], the constituent containing new information, "hundreds of families", has pitch-height prominence (195 cps.) on the first syllable of "hundreds". It is very high in this speaker's pitch range (205-90 cps.) and also has a lengthened vowel. It is tempting to suggest that this extra prominence (or 'boosting') is the result of a combination of functions. Not only does "hundreds of families" contain new information, it also contributes to a contrast between two impressions of the "area" under discussion. Although it is not made verbally explicit, there is a contrast between what must be an area large enough to house "hundreds of families" and

"hardly any area at all". I suggest that an item which has the functional features (new + contrast) will have more 'boosted' pitch than an item which only has (new). Brown et al. (1980 : 31) have made a similar observation on the occurrence of boosted pitch.

3.5.i In the type of implicit contrast centred on "hundreds" in extract [3.10], there is an element of 'contrary to expectation'. This may be the element which accounts for the occasional boosting of pitch on the adjective in an adjective phrase such as that illustrated in extract [3.11].

[3.11] in the kitchen there was a huge dresser

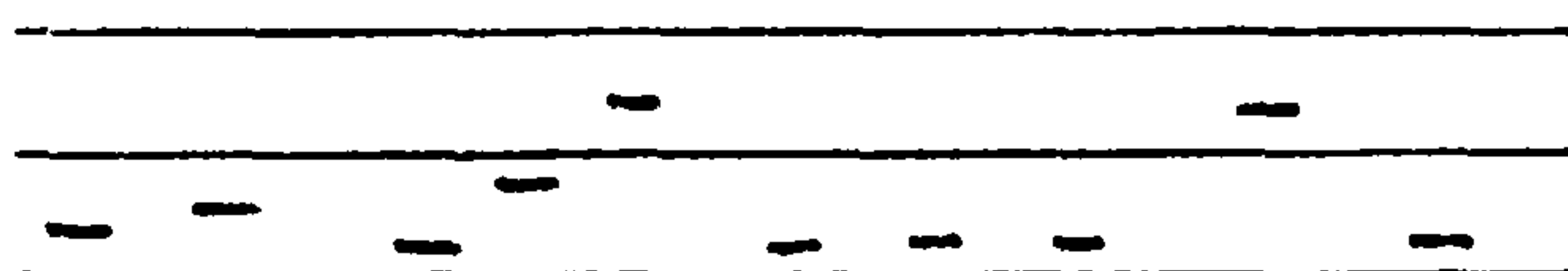


Both "dresser" and "huge" are new information at this point in the speaker's contribution. It would be normal for the noun, as the last lexical item and the 'highest rank constituent' in Halliday's analysis (1967 : 207), to be made phonologically prominent. Indeed, in extract [3.8], the noun phrase "inside toilet" has greater pitch height on the noun "toilet", already mentioned in the immediately preceding discourse, than on "inside", which is 'new' and even potentially contrastive. What is the distinction between these two phrases that occasions opposing pitch realisations on the adjectives? I think the answer lies in how the speaker is treating the new information he presents. If the speaker treats the information as new, but not unpredictable, in the context of his discussion, then no special marking is necessary. If, however, he is presenting new information which he considers 'contrary to expectations' or even 'contrary to the norm' for whatever he

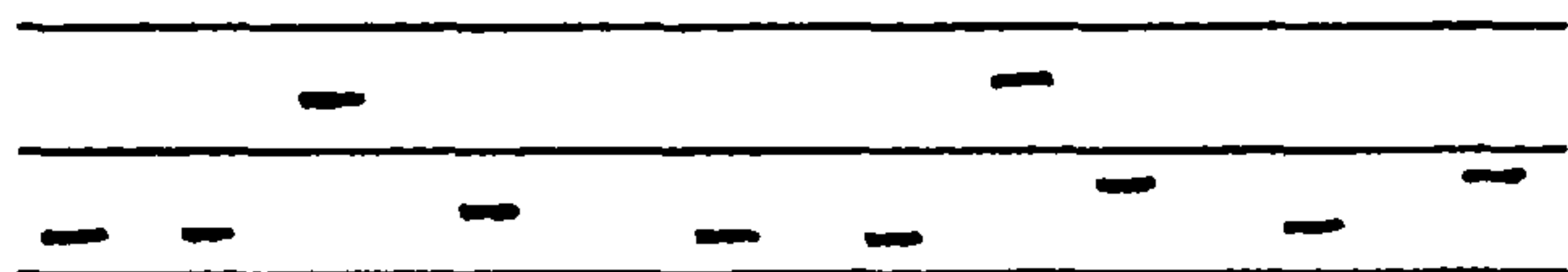
is describing, then he will give extra prominence to the item. I think this 'contrary to the norm' aspect is precisely the reason for the very high pitch on "huge" in [3.11], simply because a "dresser" would not be particularly unpredictable in the type of kitchen he describes, but one that is extremely large would be unusual. The boosted pitch of "huge", then, is a product of its status as new information plus implicit contrast with a norm.

3.5.ii It is noticeable that elements which carry new information, but have no contrastive or emphatic aspect, are not generally introduced with particularly high pitch.

[3.12] we were the elite if you had two rooms
140

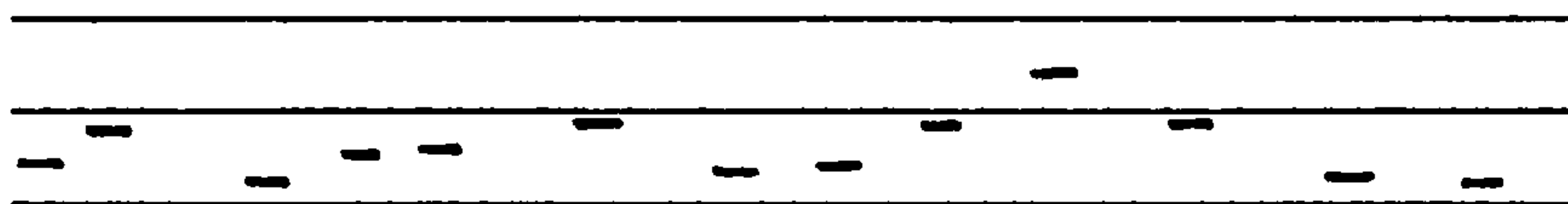


and a kitchen + and a toilet you know
140 160



In [3.12], the three new information peaks on "two", "kitchen" and "toilet" are not particularly high, nor do they have pitch movement. Similarly, in [3.13], from a different speaker, the new information "six-packs" is raised higher in pitch than any other elements in the clause, yet does not have very high pitch.

[3.13] I used to go in there to get my six-packs at night

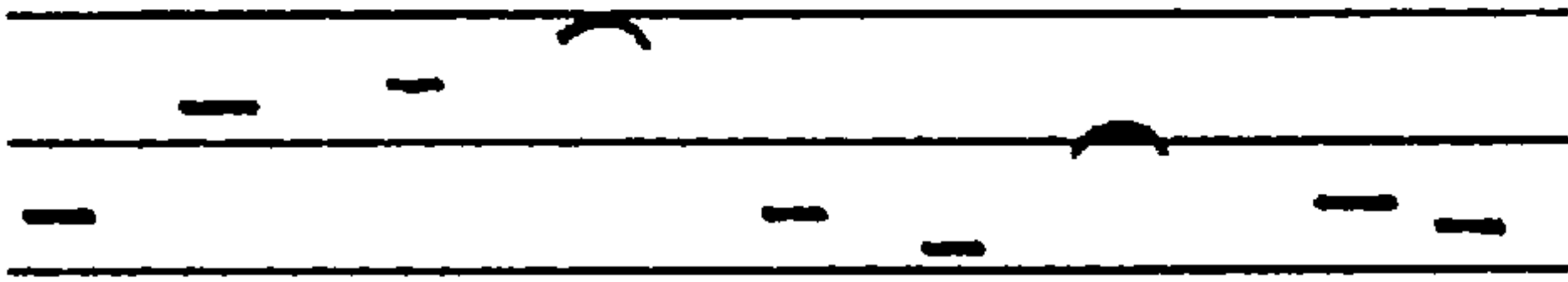


Other examples of 'raised', but not 'boosted' pitch on lexical items carrying new information can be noted in previous extracts: "stayed" [3.1], "buildings" [3.2], "hit" [3.4], "inside toilet", "achievement" [3.8], "people", "Canongate" [3.9], "rebuilt", "flats" [3.10].

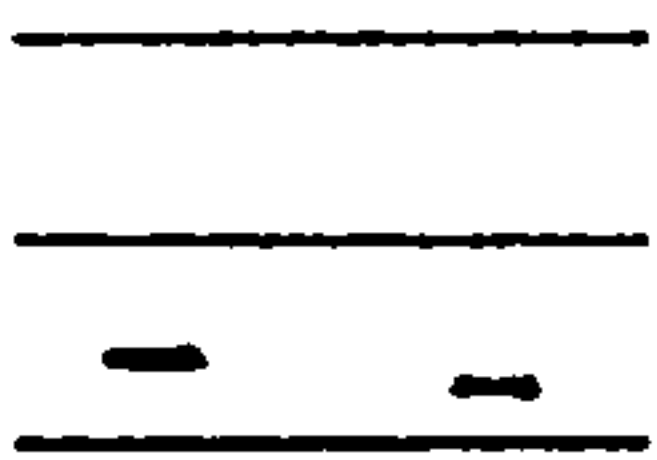
3.5.iii Two ways in which the marking of new information in ESE differs from that of the southern English data which Halliday described should be noted. First, as already observed, it is pitch level, specifically in the range mid to high, and not pitch movement, which is used to mark new information. Second, the items marked as new need not be last lexical items in the tone groups. Both these observations have recently been made elsewhere (cf. Brown et al., 1980).

3.5.iv New information can be given boosted pitch when it is presented by a speaker as his 'topic' in a particular stretch of discourse. Thus, in extracts [3.14] and [3.15], both "drink" and "shops" are at the top of the pitch range used by these speakers. These two items are used by the speakers to mark the beginning of stretches of discourse in which "my drink" and "shops" are the 'topics' of a speaker's contribution. This boosting is, I suspect, the result of another double function, (new + speaker's topic). The notion of 'speaker's topic' is investigated in more detail in chapter 4.

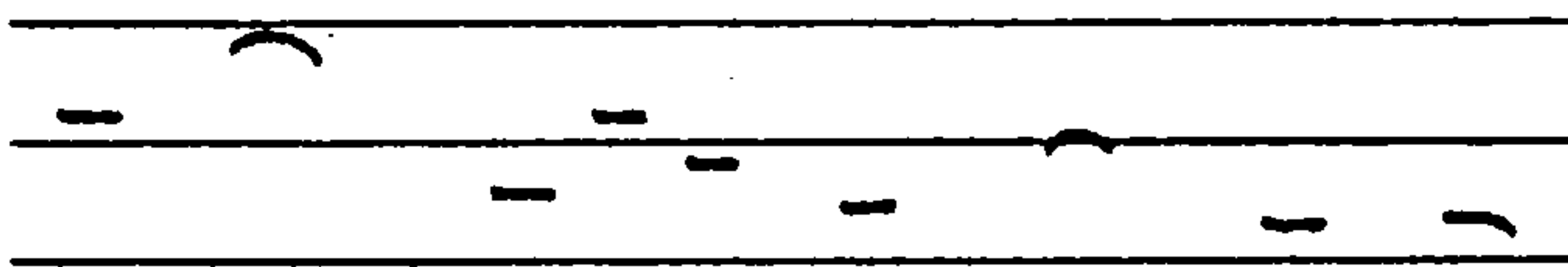
[3.14] I found my drink was a great problem



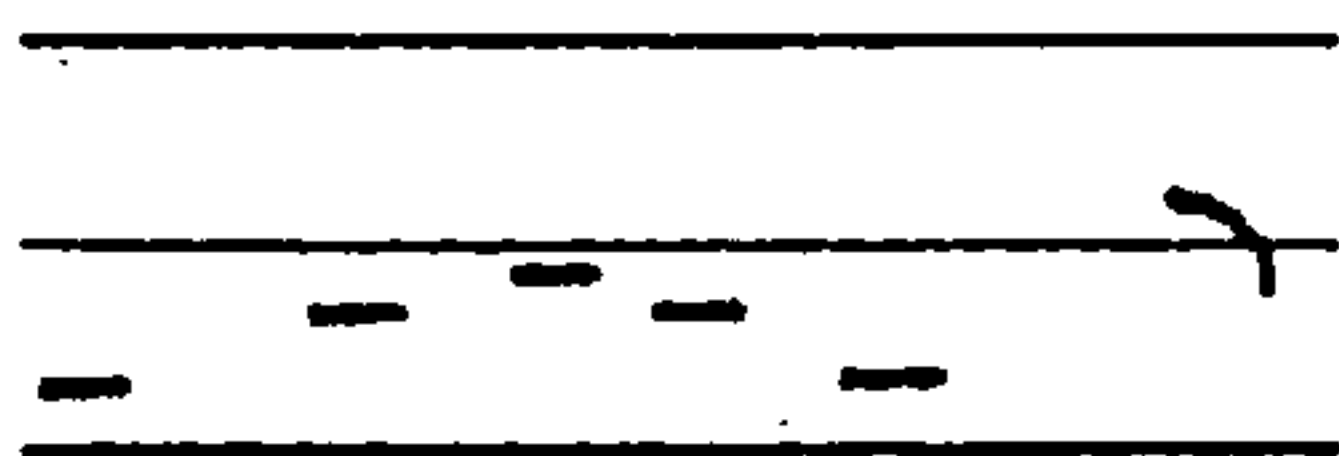
with them



[3.15] the shops + another bad thing the shops



is non-existent now



3.6 Explicit Contrast

The phonological aspects of formal contrast, where one lexical item is presented explicitly in contrast with another, have been discussed by several writers (Bolinger, 1961; Jackendoff, 1972; Schmerling, 1974; Chafe, 1976; Isard, 1978; *inter alia*.). Unfortunately, the types of constructed examples used by many of these writers in their analyses simply do not occur in the quite large body of data of conversational speech used as the basis of this investigation. I think it is important to present, briefly, some reasons why exchanges such as the following are rare in everyday speech. (Items treated as contrastive are in capital letters.)

(A) Who did they elect what ?

They elected ALICE PRESIDENT (Chafe, 1976 : 37)

This exchange is constructed by Chafe in order to illustrate a phonetic distinction he proposes between contrastive intonation and new information intonation. He has already noted that 'it is often difficult or impossible to tell the difference between contrast and new information on a phonetic basis alone' (Chafe, 1976 : 35). However, Chafe argues that when two lexical items are uttered, one immediately following the other, their pitch realizations differ according to whether they are foci of new information or of contrast. If the only environments in which this distinction is perceived are like (A) above, then I suggest the distinction is not primarily occasioned by pitch behaviour, but by the presence or absence of a pause, or silent ictus, between the two items. (Personally, I can only make both these items foci of contrast by giving them equal pitch height and pausing between them. A substantial pitch drop on the first is not necessary.) No empirical argument can be presented against Chafe's proposal at the present time, simply because, in the data under investigation, an exchange comparable to that illustrated in (A) never occurs.

(B) Well, what about FRED ? What did HE do to the beans ?

FRED ATE the beans. (Jackendoff, 1972 : 261)

Not only is the type of two-question set, illustrated in (B), absent from my data, it is quite difficult to imagine the type of natural language data in which it would appear. Even admitting such a question as a likely utterance, the most likely reply would not have two points of prominence. It would have one, on the verb, and anaphoric pronominalizations would accompany it, as in (C).

(C) He ATE them.

Thus, it is difficult to investigate the validity of the two distinct types of 'pitch accent' Jackendoff suggests for FRED and ATE in the reply (B) when the predictable reply would have only a single 'intonation centre' on ATE, as in (C).

The preceding discussion is not intended as simply a negative assault on other writers' data. It is an attempt to illustrate how the particular data used enables a particular type of analysis to be put forward and, in a sense, limits the applicability of the analytic criteria to only that type of data. The analysis cannot be put to practical use if an investigated natural language data-base never contains fragments of language remotely resembling those analysed.

3.6.i The realisation of explicit contrast found in ESE conversational speech is of two basic types. Both the contrasted items may be made prominent, with high pitch and, optionally, falling pitch movement, or only one item is prominent and the other is not.

Raised pitch on only one of two explicitly contrasted items is illustrated in extracts [3.16], [3.17] and [3.18].

[3.16] I mean that was the position before +

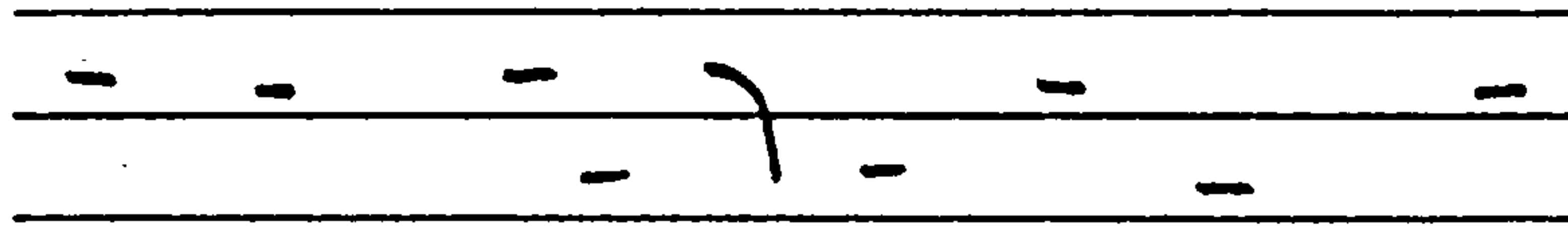
A handwritten pitch contour on a three-line staff. The contour starts with a low level, rises to a high level for the word 'before', and then falls back to a low level. There are several short horizontal dashes representing pitch levels at various points along the contour.

I don't know what it is now +

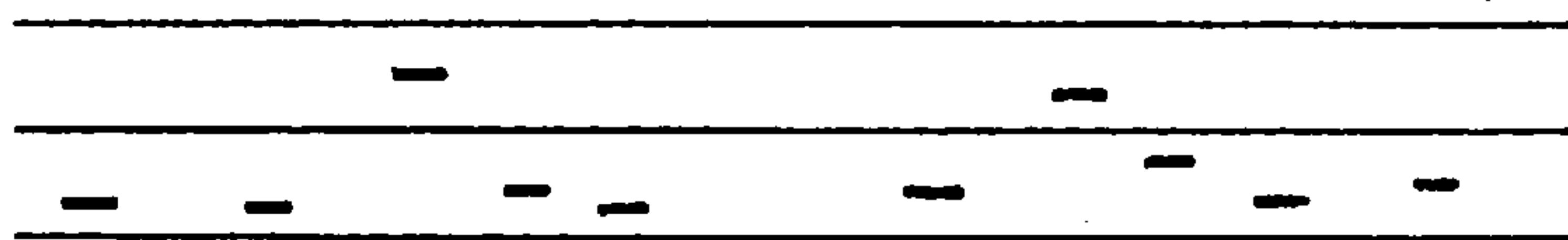
A handwritten pitch contour on a three-line staff. The contour starts with a low level, rises to a high level for the word 'now', and then falls back to a low level. There are several short horizontal dashes representing pitch levels at various points along the contour.

The predictability of "now" appearing as the second item in this contrast [3.16] allows the speaker to treat it as 'given'. He makes the first item, "before", prominent with raised pitch and falling movement. The second element, "now", simply has a low fall.

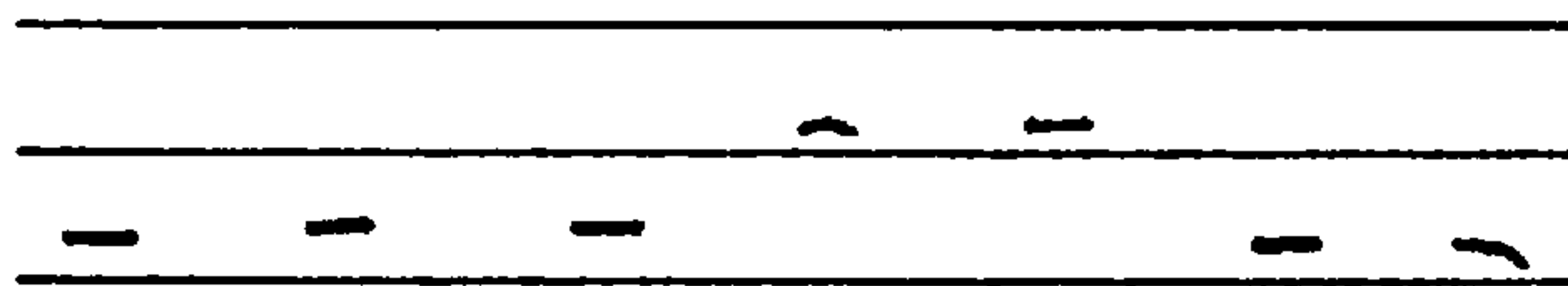
[3.17] what they're doing now like what they've done



with the Dumbiedykes + just recently like +



they should have done that years ago

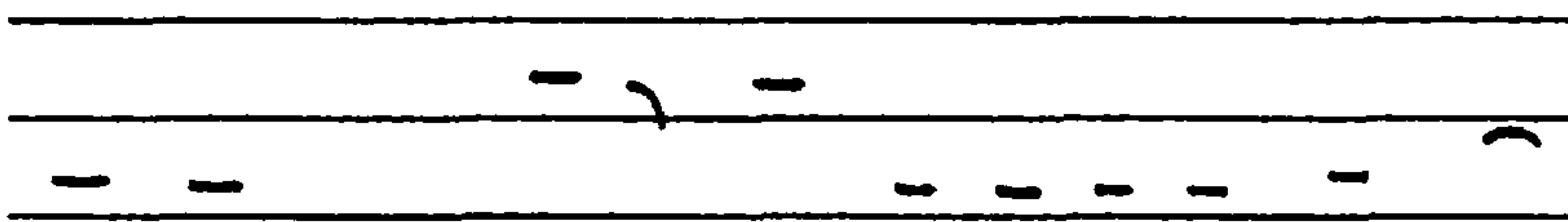


With a pitch height, a large fall on a lengthened vowel in "now", plus raised pitch on "recently", and the morphologically contrasted "doing" and "done", the high predictability of a past time expression being used in explicit contrast means no marking of the final expression is required. Indeed, the vague past time expression, "years ago", is uttered very low in this speaker's pitch range.

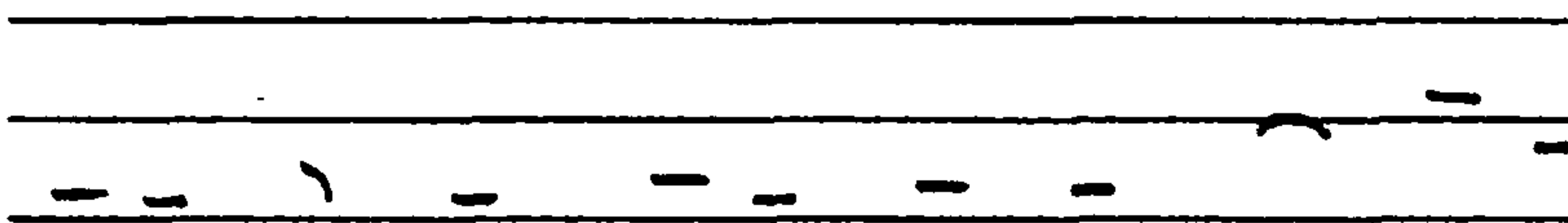
The status of "now" in extract [3.16] and "years ago" in [3.17] allows the speaker to treat them as 'given' elements in the discourse. When one of the two explicitly contrasted items has, in fact, been mentioned several times in the preceding

discourse, for example "out" in extract [3.18], it can be treated as 'given' and uttered low in the pitch range while the other contrasted item receives prominence.

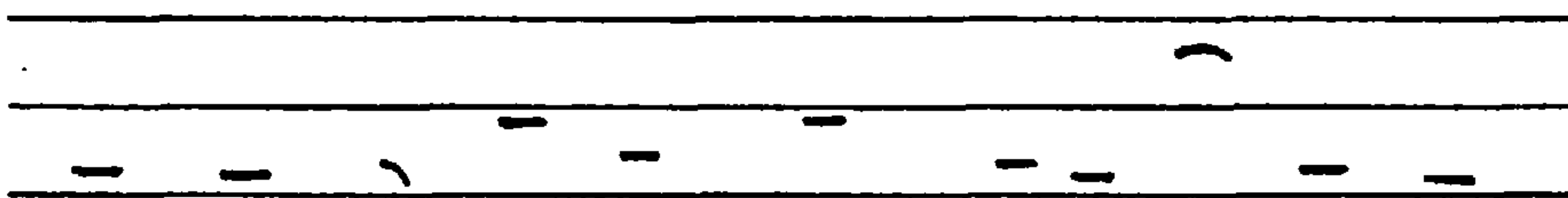
[3.18] the people ++ didnae want to go out of the town



didnae want their gardens they were quite happy

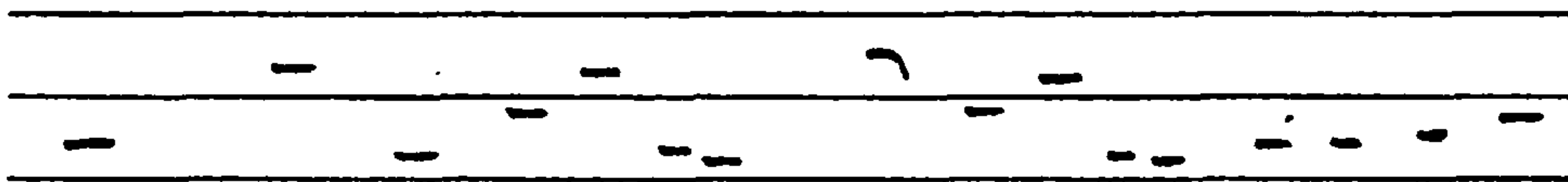


where they were if they'd built houses in the town ++



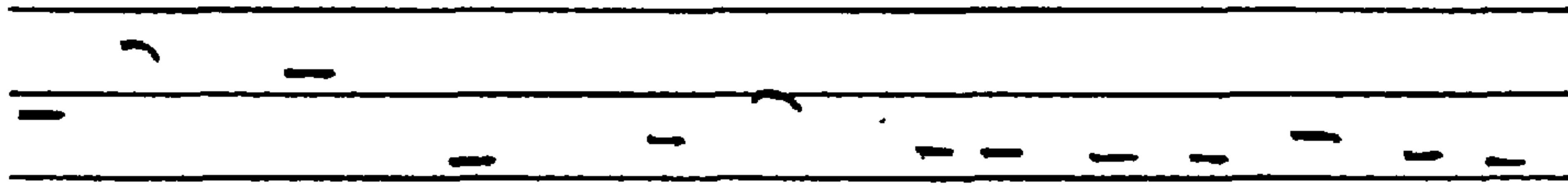
The natural extension of a speaker treating parts of explicit contrast as given should be situations where the actual contrast itself is treated as given. In extract [3.19], essentially a repetition of ideas already expressed by the speaker, the lexical contrast between "new" and "old" is minimally marked in the intonation.

[3.19] they've lost the community ++ no community spirit at all



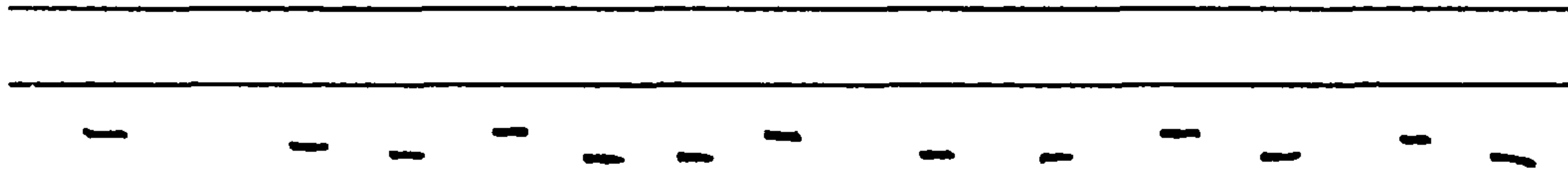
I don't think you've the same spirit in the new housing

125



schemes ++ as you had in the old + type of dwellings you know

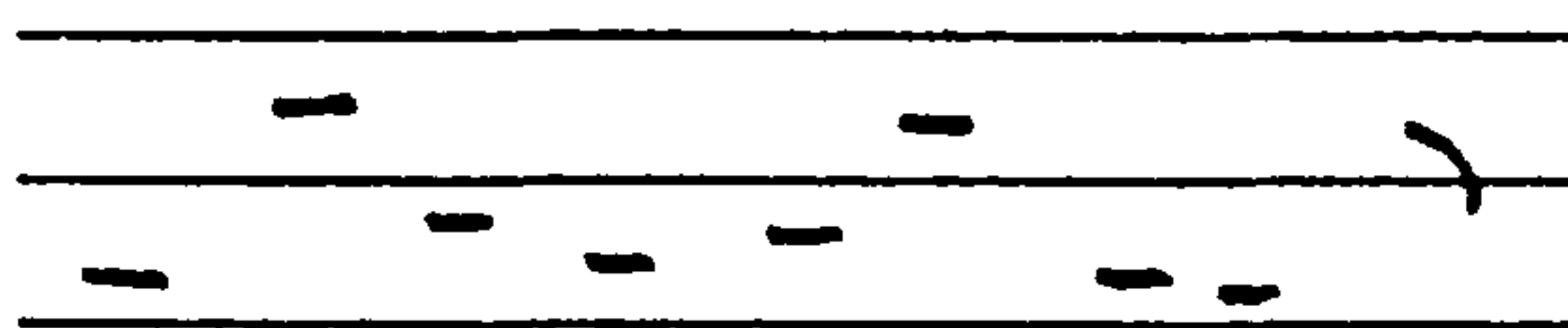
120



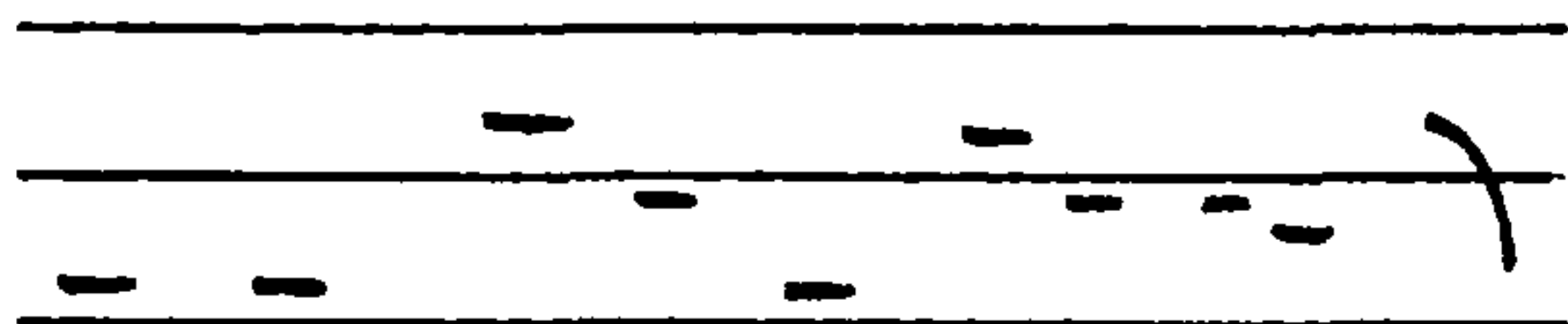
The two peaks "new" (125 cps.) and "old" (120), are not examples of raised pitch prominence comparable to others discussed in this chapter. They are presented as evidence against too strong a theory equating explicit (i.e. lexical) contrast with high pitch. The realisation of explicit contrast, although conforming to a general pattern as described here, is not unaffected by the discourse context and is ultimately, like the other functions discussed in this chapter, speaker-determined.

3.6.ii Of course, the speaker can choose to make both contrasted items phonologically prominent. In extract [3.20], the pitch of "winter" and "wet" is slightly lower than that of "summer" and "dry" respectively, but all four items are raised in pitch.

[3.20] the summer is tremendously dry +



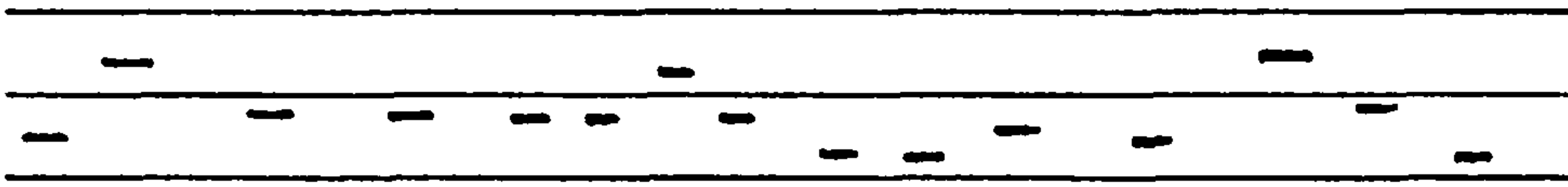
and the winter is very very wet



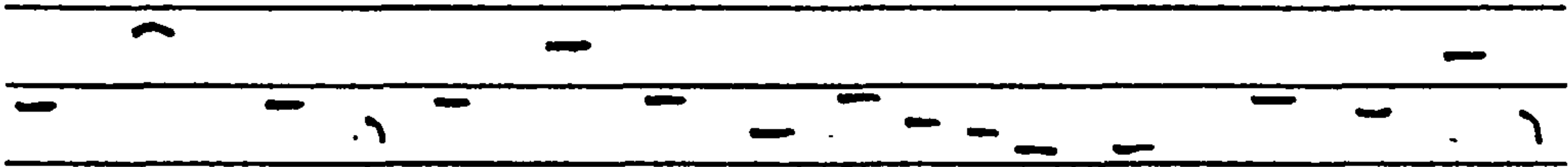
No particular significance, in terms of contrastive function, should be attached to the extended fall on "wet". It is an example of what has been termed a 'finality marker' (Brown et al., 1980), marking the end of a syntactic unit. A similar view of the 'sentence-final intonation' has been expressed in Chafe (1980 : 173).

In extract [3.21], the contrast between "Norway" and "Scotland" is realised by raised pitch on the first syllable of each item.

[3.21] I don't know what emigration in a place like Norway is +



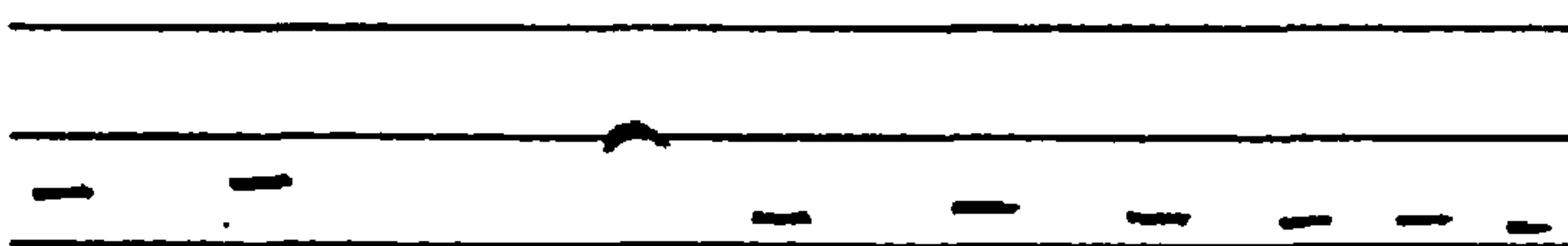
in this country in Scotland in particular it's pretty hefty



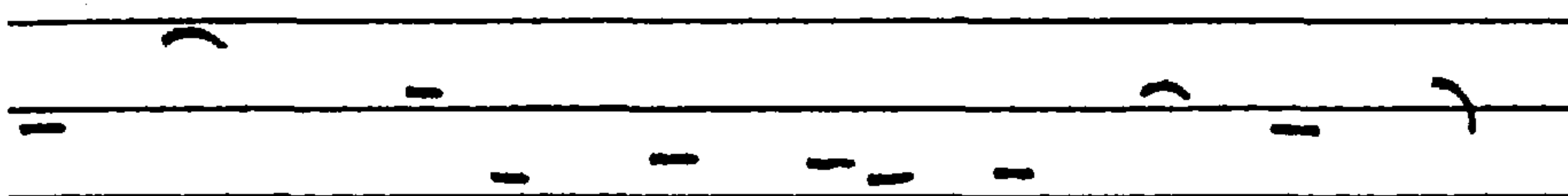
Neither item is being mentioned for the first time in the discourse, so none of the boosting associated with the features (new + contrast) is necessary. The prominence of "this" is partly attributable to its deictic function, which, as Lyons (1977 : 664) has noted, is often marked intonationally. There is also implicit contrast in the expression "this country" (as opposed to other countries). "This" appears to be another example of an expression being used with more than one function, (deixis + contrast), which explains why it is boosted in pitch.

Explicit contrast, with both items raised in pitch, can also be found in contexts where the speaker is contrasting two names, as in [3.22], or is using one expression in contrast to another, as a form of self-correction, as in extracts [3.23] and [3.24].

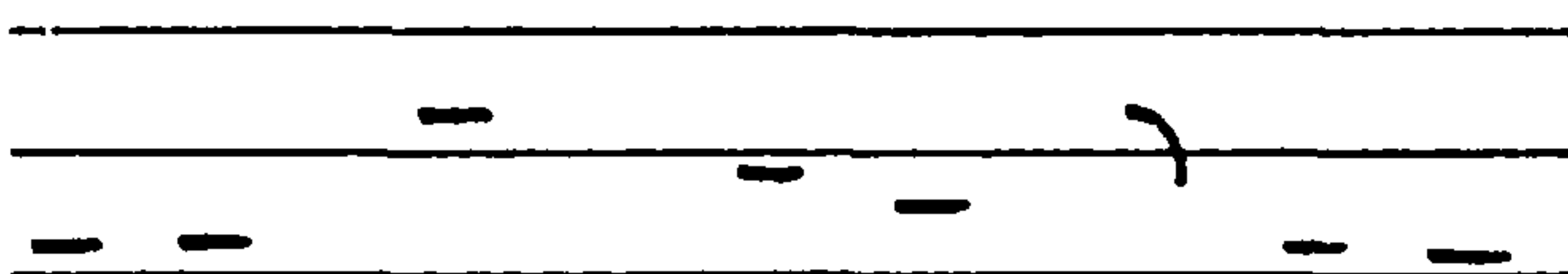
[3.22] it's called + Blackford something or other



it shouldn't be it's miles away from Blackford Hill +

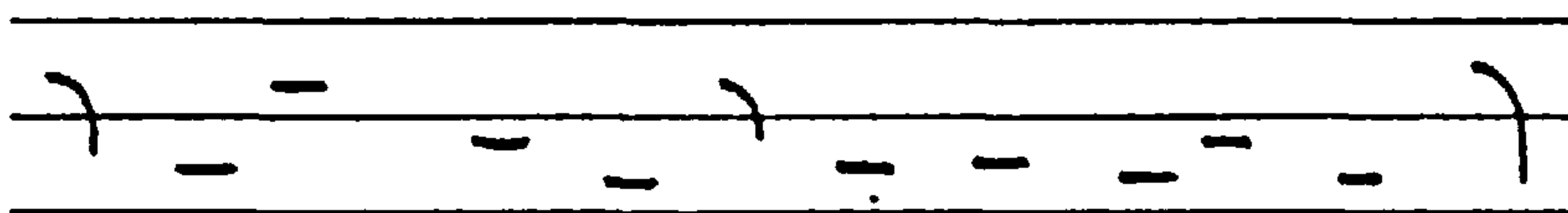


but it's called Blackford Road I think

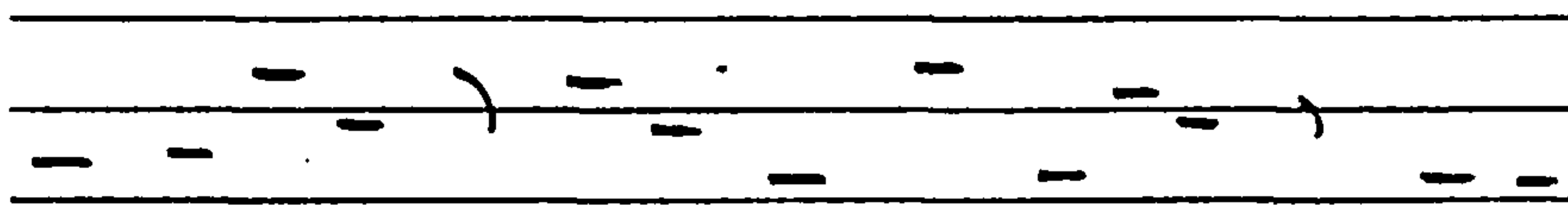


The foci of contrast, "Hill" and "Road", are not particularly high in the speaker's pitch range, but are given equal prominence. In [3.23], both "go" and "walk" have high pitch and some movement. The extended fall on "walk" is best seen as a 'finality marker'.

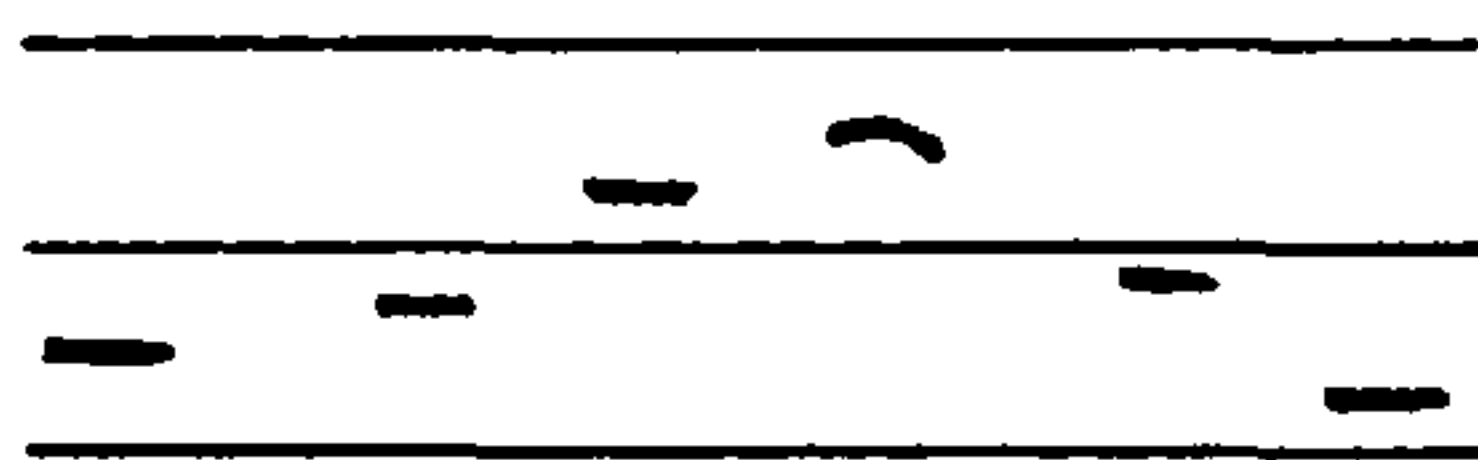
[3.23] No + I didn't use to go that way + I used to walk



[3.24] it's an open air market + er not an open air market



it's an indoor market



Extract [3.24] illustrates the process whereby a speaker, having uttered a lexical expression with raised pitch, marking it as new information, suddenly realizes it is not the expression she intends and has to boost the correct expression when it follows as both new information and in contrast to the preceding inappropriate expression. Thus,

"indoor" is another example of an item with the functional features (new + contrast) being boosted in pitch.

A further interesting point in all three extracts is the pitch on the negative elements in each case: "shouldn't" [3.22], "No", "didn't" [3.23], and "not" [3.24] are all uttered high in the pitch range. The scope of these negatives is limited to the following item receiving pitch prominence. One might characterise this type of explicit contrast as having the form - NOT X but Y.

3.6.iii While many of the examples used in this section to illustrate explicit contrast have been based on a form of lexical opposition, or rather, semantic opposition carried by lexical items, it is also possible to find anaphoric pro-forms used in explicit contrast. In extract [3.25], the relevant new information element is "four". When the speaker uses raised pitch on "I", "them" and "me", he is most likely doing so with contrastive function.

[3.25] we've got a sort of rota system there's four of us

and if I'm taking them I drop them off at + Ferranti's +

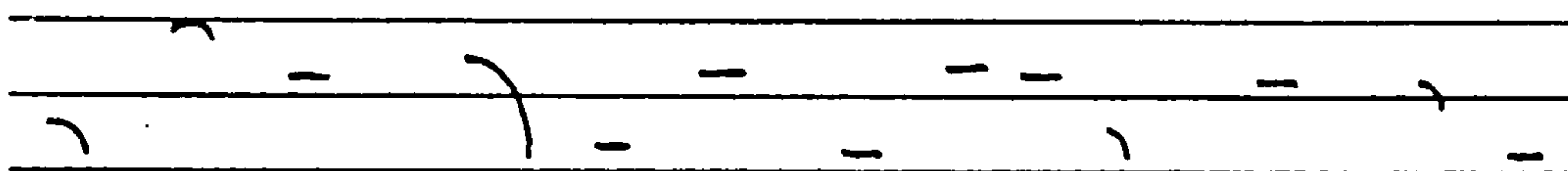
and if they're taking me + well we come straight down

This type of explicit contrast involving pro-forms has featured frequently in arguments over the proper characterization of contrastive stress (cf. Bolinger, 1961; Lakoff, 1972; Postal, 1972; Schmerling, 1974). As has already been pointed out in this paper, there appears to be no significant consistent difference in the pitch realizations of items with explicit contrastive function from those with other functions requiring phonological prominence. In fact, extract [3.25] might best be seen as supporting the essentially semantic basis of explicit contrast on pro-forms which Schmerling (1974) proposes. The basis of the contrast between "if I'm taking them" and "if they're taking me" can be viewed as "a difference in semantic relations in the two conjuncts" (Schmerling, 1974 : 613). In this particular example, the difference between the two expressions being contrasted is in the 'taker' and 'taken' relations. The explicit contrast, then, is not occasioned by the fact that pro-forms are being used, but because two different relationships are being contrasted.

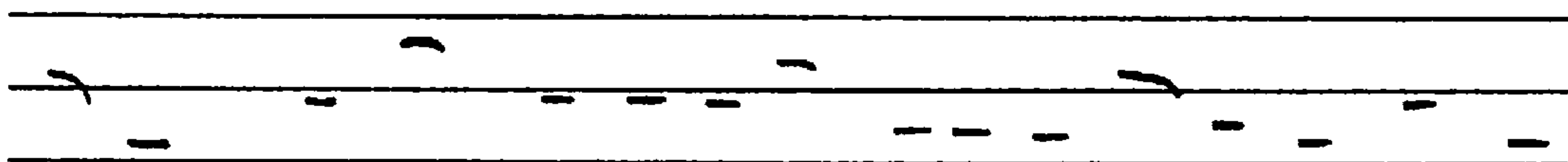
I proposed earlier that there was an affinity between the expression of some types of implicit contrast and the expression of new information. Both are realised on a single point of prominence. It is also possible to see a connection between the type of explicit contrast in [3.25] and the expression, not of new information, but of new relationships. The realisation requirement is paired points of prominence.

3.6.iv A feature of the expression of explicit contrast, noticeable in [3.25] and several other earlier extracts, is the structural parallelism of the syntactic units carrying the contrasted items. It is possible for speakers to exploit this structural basis of explicit contrast to establish a pair of primary contrasts within which several secondary contrasts are also expressed.

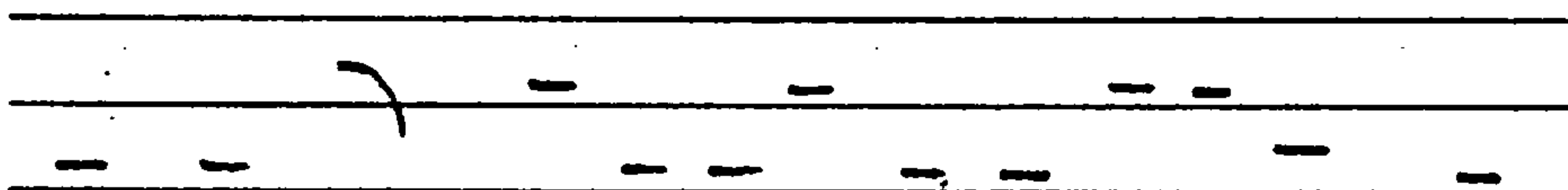
[3.26] well when you're young of course you visualise streets big and
 200 175-110 160



long and + but when you see it now 'n up you realise it you know
 180 160 140



they were never nearly as big as you visualised them +



In extract [3.26], the two initially parallel structures, both beginning with "when", also have parallel intonations, with the pitch heights reached in the second unit approximately 10 - 20 cps. lower than in the first :

when (200)	young (175)	visualise (160)
when (180)	now (160)	realise (140)

In both structures, the high initial onset pulls the baseline up to mid and the speaker then moves to pitch peaks from a falling baseline.

When the speaker abandons the structural parallelism after "realise", he doesn't produce the predictable "big" - (small), "long" - (short) contrast. As gradable antonyms, "big" and "long" allow a less extreme type of opposition through the use of a negative. Thus, in the second part of the contrasted utterance, "never" is focused with an extended fall from high pitch. This provides a contrast set - (speaker) "young" - X = "big"; (speaker) "now" - X = NOT "big". However, the scope of the negative is not simply "big", but the bigness as "visualised". Moreover, the 'negative - visualised - big' element is subordinated to the factive verb "realise", which is itself set in contrast to "visualise" in the first unit. The whole of the structure within the scope of the factive is also in the past tense, suggesting that the temporal features involved in this contrast may actually be the most important. That is, although there are contrasts to do with age, perception and the size of streets, these are secondary contrasts. The primary contrast is between two points in time, and this is marked by phonological focus - greatest pitch height prominence on "when" at the beginning of the utterance and repeated in the conjoined clause. These contrasts may be summarised:

Primary contrast

Secondary contrasts

Time X : 'when'

'young' 'visualise' 'big'

Time Y : 'when'

'now' 'realise' 'not big'

Although the series of contrasts in [3.26] may appear quite complex, the contrasted elements are given prominence, intonationally, in much the same way as other contrasted items discussed in this section.

3.7 Summary

It is clear that 'contrast' as a function, although often realised in the pitch range at the same level as 'new information', can occasionally attract higher pitch. Very high pitch is also used by ESE speakers when an element in the discourse has more than one function. Combinations noted were 'new plus contrast', 'deixis plus contrast' and 'new plus speaker's topic'. However, even when expressing a formal contrast, elements treated by the speaker as 'given' need not be raised in pitch. Finally, pitch prominence was found on negative elements used to negate one member of a pair of explicitly contrasted items.

As in the conclusion to chapter 2, I would like to emphasise the point that although there are intonational realisations which can be regularly, or even conventionally, associated with elements in the information structure of spoken discourse, it is impossible, without some appeal to the speaker's intentions, to be sure, in the analysis of fragments of spoken discourse, that a particular realisation form has a particular function. I will return to this point in chapter 4.2 and set out in detail in chapter 5 an analytic methodology for controlling the 'intention variable' in spoken data so that the way speakers realise their intentions in terms of information structure can be investigated in a consistent way.

3.8 Notes

1. Chafe (1970 : 213), describing American English, also takes pitch height to be the primary phonetic feature of phonological prominence.

2. Rising pitch movement is extremely rare in the data. Consequently, the intonation of ESE differs substantially from the English intonation described by Brazil (1975). Although examples to match his description of proclaiming tone (straight fall) can be found, no examples of his intensified proclaiming tone (rise - fall), are found. Nor is 'shared' information commonly presented on his referring tones (fall-rise or straight rise).

3. The avoidance of terms such as 'tonic nucleus' and 'tone groups' in this study is occasioned by the results of recent experimental investigations in which trained phoneticians found it impossible to mark, with any consistency, either the tone group divisions or single tonics in stretches of conversational speech. Since the nature of the units in which phonologically prominent items occur is not within the scope of my discussion, I have avoided terms which involve a commitment to a particular analytic framework. A report on the experimental work is included in a comprehensive descriptive study of ESE intonation in particular (cf. Currie, 1979b) and referred to in a discussion of the nature of frameworks for the analysis of intonation systems in general, which can be found in Brown et al. (1980). For the study on tonics alone, see Currie (1980, 1981).

4. The extracts presented in this paper are from many different speakers. The relatively 'clean' recordings of some speakers allowed accurate F_0 measurements, which are provided where possible, in support of the auditory analysis. The three-line stave, representing the upper, mid and lower points in the pitch range used by the speaker, allows a very explicit transcription of the intonation of each extract. If an identification of 'nuclear tones' and 'tone group' divisions is felt necessary, they can possibly, in an informal way, be equated with 'constituents having raised pitch' and 'pause-defined units' respectively. Brief pauses (marked here by '+') were suggested by Crystal (1969 : 243) as potential tone unit (i.e. tone group) boundary markers. Notice, however, that if tone groups are treated as 'pause-defined', then they can contain more than one 'tonic'. The multiple-tonic tone group has already been proposed in Brown et al. (1980). A more detailed argument for the place of 'pause-defined units' in the analysis of information structure is presented in chapter 6.
5. A fairly strict interpretation of the concept 'new information' - as, for example, meaning 'not mentioned in the immediately preceding discourse' - is used in this discussion. This is not an ideal characterisation of 'new' when treating conversational data. However, it does provide an external formal constraint on an analysis using 'new' as a category and prevents circularity of argument (e.g. it's new because it's prominent and it's prominent because it's new).

Chapter 4 Intonation and Information Structure :
Residual Problems

Chapter 4

This chapter is divided into two parts, both dealing with the relationship between elements in information structure and intonational features.

In the first part, 4.1 - 4.5, I will investigate the role of intonation in the structuring of large stretches of conversational discourse, and illustrate in detail some claims made in chapter 3 regarding the influence of speakers' topics on the realisation of elements in the information structure of contributions to a discourse.

In the second part, section 4.6, I will demonstrate that, although there are regular, or even conventional, correlations between intonation and information structure elements - as described in chapters 2 and 3 - no categorial form-function equations are possible. Mainly because of the multifunctionality of intonational cues, hearers may perceive the formal phonological features, but misinterpret their function on a particular occasion of use. The points made can be summarised as two caveats on Halliday's claim that "information structure is expressed by intonation" (1970 : 162). First, information structure is not expressed by intonation alone, and, second, while intonation can be used to express information structure, it can be used to express a good deal more.

4.1 Topic

In the preceding two chapters, I have mentioned, but not considered in any detail, the fact that speakers can use intonational cues to mark not only 'given' and 'new' elements, but also to indicate aspects of the larger structural organisation of their contributions. I will reconsider some brief extracts presented earlier - example [2.1] from chapter 2 and examples [3.14] and [3.15] from chapter 3, as well as other extracts - within their larger discourse contexts and show how the influence of considerations of 'speakers' topics' can account for some of the intonational phenomena encountered. Examining larger stretches of conversational discourse, with some contextual detail taken into account, also lends support to the need for a pragmatic account of givenness, as suggested earlier in chapter 2.

The term 'topic' has been used, in one sense, as part of the 'topic/comment' description of sentence structure (cf. Dahl, 1969, and other references in chapter 1). However, there is also a general pretheoretical notion of 'topic' as "what is being talked about" in a conversation. I think it is this latter notion that Morgan wishes to emphasise when he argues that "it is not sentences that have topics, but speakers" (Morgan, 1975 : 434). In this discussion, I shall follow Morgan and base my investigation on a consideration of 'speaker's topic' rather than on 'sentential topic'.

4.2 Discourse Topic

There is, of course, a more general term, 'discourse topic' used by Keenan & Schieffelin (1976) to describe "what is being talked about" in a conversation. Although Keenan & Schieffelin point out that "discourse topic is not a simple NP, but a proposition (about which some claim is made or elicited)" (1976 : 380), there is an implication in the use of the term, 'discourse topic', that there must be, for any conversation, a single phrase or proposition which represents 'the topic' of the whole of that conversation. Such a view is certainly too simplistic, since 'what is being talked about' will be judged differently at different points in a conversation. This is the case not only with spoken, but also with written discourse. In some of the experiments reported by Bransford & Johnson (1973), subjects were presented with short constructed texts and asked to provide 'the topic'. The assumption behind the experiments appears to have been that there is, for any text, a single correct expression which is 'the topic'. This seems to suggest that for any passage there is one, and only one, 'title'. I will propose an alternative view, namely, that for any text or conversation, there are, potentially, many different expressions which could be used as a title or reported as 'the topic'. Each different expression would represent a different judgement on what is being written/talked about in the discourse¹. For the purposes of analysing spoken discourse, I think terms like 'the topic' or 'the discourse topic' are best avoided. Instead, what is required is a characterisation of 'topic' which would incorporate all potential titles, or all reasonable judgements of 'what is being talked about'. I think such a characterisation can be developed in terms of a 'topic framework'.

4.3 Topic Framework

One obvious reason for different judgements on 'the topic' in conversational discourse is the fact that different speakers do not 'talk about' exactly the same thing in their contributions. There is typically some degree of overlap in 'what is being talked about' by two different speakers in consecutive turns, for example, but there are also typically some aspects which differ. The area of overlap is presumably what has been recognised as the thing both speakers are 'talking about' and what has led to attempts to characterise 'the topic' independently of what each speaker is specifically talking about in his turn. However, this area of overlap, properly specified, may involve a large number of elements which one speaker can reasonably expect the other to know about. Among those elements are many of the contextual features such as the time and place of the conversation and various background details relating to the participants. Several writers (e.g. Jakobson, 1960; Hymes, 1964; Lewis, 1972) have produced lists of the types of contextual features which must be taken into account in describing, in Hymes' terms, "any communicative event" (1964 : 22). One example, in the data under investigation, of the relevance of this contextual information is the different interpretation in different conversations of the expression "the war". For several speakers, "the war" means the First World War, and for others, the Second World War. Knowing which "war" is intended is at least partially, and often primarily, a matter of knowing the age of the speakers.

Contextual features are one set of elements to be treated as part of the overlap which participants in a conversation have in common. Such features are discourse-external. There is also a set of

discourse-internal elements which must form part of the overlap. These elements are introduced in the 'text' of the conversation² and form part of what Karttunen (1974) and Stenning (1978) describe as the 'domain' of discourse. The domain of discourse, at any point, includes those propositions and referents already established in the conversation prior to that point. It must also include a large set of propositions and referents which the speaker may reasonably expect the hearer to infer on the basis of the propositions and referents explicitly introduced. An example of this type of reasonable inference in extract [4.5] is the expectation the speaker clearly has that, if she is talking about 'drinks' and 'bars', then she can assume the hearer will realise there are 'people' serving drinks in those bars. (I will discuss the effect of such inferences in greater detail in chapter 8 and show how one type of discourse domain is created in chapter 6, section 6.3.)

Thus, to properly characterise the nature of the overlap which is shared by speakers at a specific point in a conversation is clearly not a small task. It would require an extended, multi-faceted descriptive apparatus. Some highly conventional examples of partial descriptions are the 'frames' (Minsky, 1975), 'schemata' (Rumelhart & Ortony, 1977) and 'scripts' (Schank & Abelson, 1977) used in the computer modelling of language understanding. A complete description would represent all the elements involved in what both speakers share, and treat as the 'topic' of their conversation. Rather than extend the use of this already overworked term, however, I will treat the full description as the 'topic framework' of the developing conversation. The notion of 'topic' as a 'framework' has been suggested by both Chafe (1976) and Haiman (1978). In Chafe's (1976) terms, what we think

of as 'topic' is essentially a framework which places constraints on the nature of discourse contributions. That is, at any point in the discourse, there exists a topic framework which is a set of constraints, deriving from the discourse context and the discourse domain, with which the speaker must comply in order to continue 'speaking topically'. The notion 'speak topically' can be treated as one aspect of the general conversational convention Grice (1975) expresses as 'Be relevant'. However, whereas Grice does not provide an answer to the question, 'Relevant to what?', I suggest that one answer to this question could be 'Relevant to the topic framework'. Thus, another way of expressing the notion 'speak topically' in a conversation could be 'make your contribution relevant in terms of the existing topic framework'. Indeed, it may be possible, in an extended analysis (cf. section 9.2), to develop topic frameworks for conversational discourse which would provide a practical basis for describing the operation of the intuitively satisfactory, but rather vague Gricean maxims, especially those of 'quality' and 'relation'. Developing topic frameworks is clearly beyond the scope of the present thesis. I will, however, illustrate the significance of some elements in the topic framework by providing a partial framework for extracts [4.4] and [4.5]³.

While speakers comply with the existing topic framework, they also typically provide additional information in the course of their contributions. That is, within the general constraints of the topic framework, the speaker will develop what he specifically wants to 'talk about'. I will present some examples from conversational discourse to illustrate the way a speaker structures his contribution and describe the intonational (and other) cues he typically employs

in marking this structure. The evidence I present provides support for the existence of structural units of spoken discourse which have been described by Brown (1977) as paratones.

4.4 Paratones

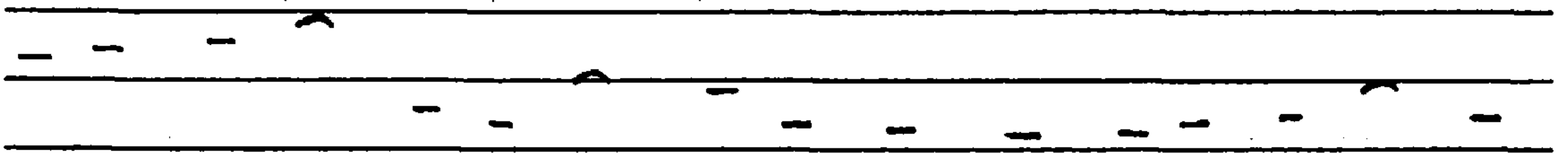
The existence of paratonic structure in speech has already been noted in Brown (1977) and Brown R. (1978). Rees & Urquhart (1976) also reported on a structuring of stretches of spoken discourse analogous to the orthographic paragraph. In Brown R. (1978), paratones were proposed as higher level units used by speakers to organise texts when reading them aloud. Clearly, the implications of the study were not only restricted to the activity of reading aloud, they were bound to extend to the organisation of all spoken discourse. Although there are arguments in support of viewing reading texts aloud as a very special type of speech activity - involving postsyntactic processes - the regularity of the underlying pattern is worth noting. One might expect such a pattern to appear in stretches of speech where a speaker 'has the floor', doesn't expect to be interrupted and is describing or narrating events which are already organised in memory or which have been 'rehearsed' in previous tellings or in preparation.

The underlying pattern of a paratone, as described by Brown R. (1978), is for the first stressed syllable to be raised high in the pitch range, followed by a descending order of pitch height on subsequent stressed syllables until the final stressed syllable, which is realised as a fall from high to low. This low pitch, followed by a pause, marks the end of one paratone and a shift-up to high on the next stressed

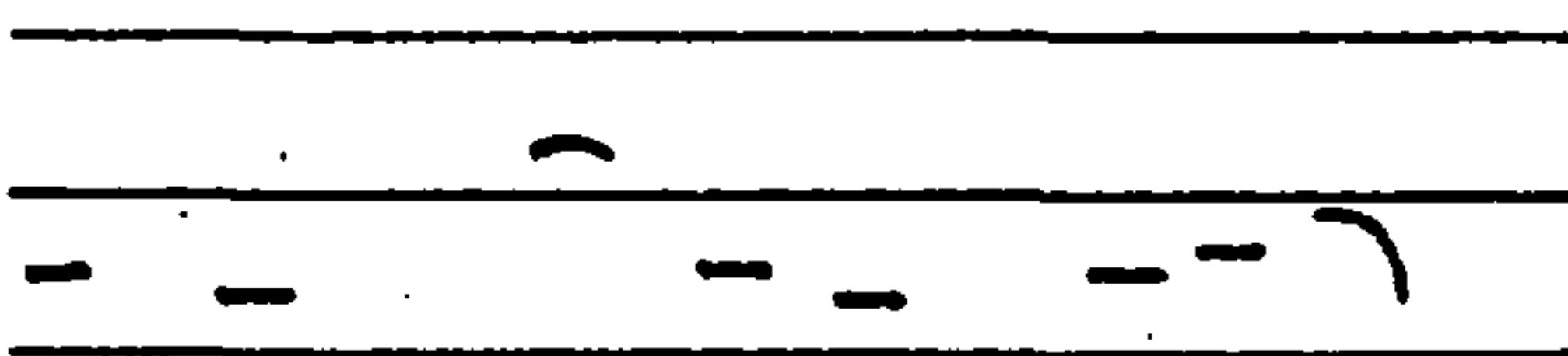
syllable marks the beginning of the next paratone. This is an abstract of the pattern, ignoring various intervening phenomena such as hesitations, fillers, and non-declarative forms.

What is missing from this type of analysis of the paratone as a unit is a satisfactory non-phonological motivation for its boundaries. If the paratone could be shown to be co-extensive with a certain type of syntactic unit, for example, it might become a more objectively valid unit. In extract [4.1], the phonological criteria are present for a paratone extending over two clauses, forming, in conventional syntactic terms, a sentence.

[4.1] I found my drink was a great problem with them because at that time

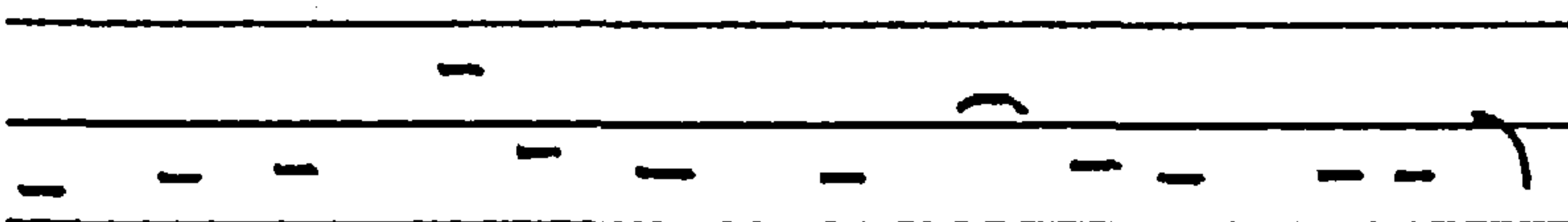


I drank whisky and lemonade +

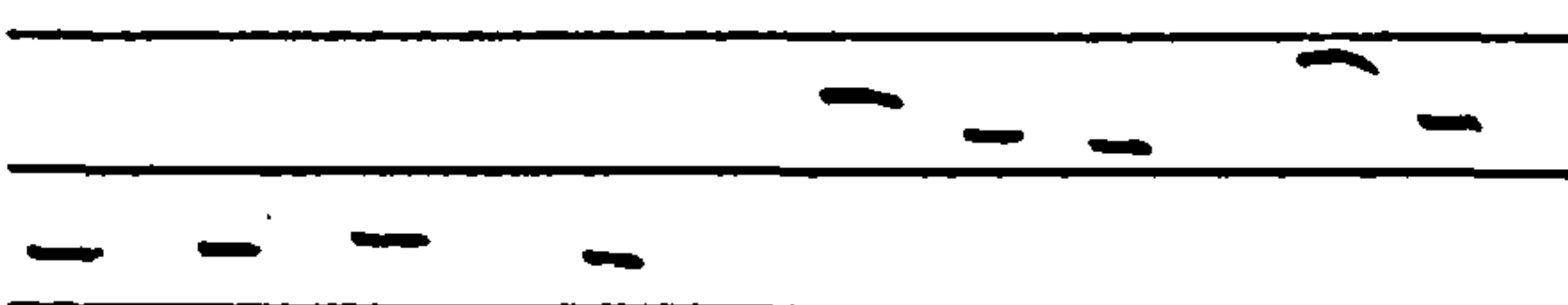


There is initial height, followed by a series of lesser peaks which do not regularly descend, but culminate in a fall to low and a pause. Is a paratone then simply a phonological unit comparable to a syntactic unit such as a complex sentence? The speaker continues, in extract [4.2].

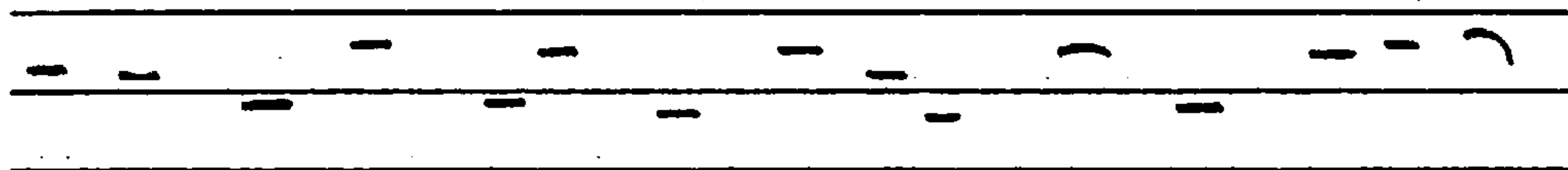
[4.2] 1 and I would go and ask for whisky and lemonade



2 and I would get whisky and lemon +

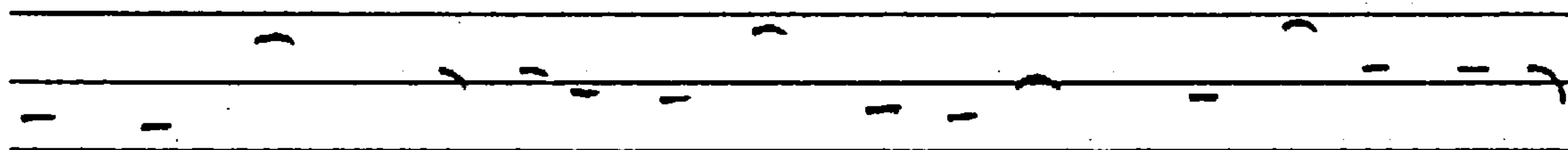


3 because you have to ask for whisky or scotch and seven up +



Is the first line a paratone? It is sentence length, it has a high point and it ends with a fall. Do lines 2 and 3 of extract [4.2] constitute a single paratone or two? The evidence of extract [4.1] suggests a single paratone, but there is the complication of the pause before "because" and the extra height on "lemon" and "seven up". What is complicating the analysis is, of course, the effect of placing items in contrast, which, as another distinct discourse function (cf. chapter 3), exploits the same limited set of formal intonational features as are proposed for paratonic structuring. In fact, it is by no means clear that only the latter two expressions are contrastive. Isn't it possible that the contrast is already being set up on the last element of extract [4.1], "lemonade", and continued through "lemonade", "lemon" and "seven up" of extract [4.2]? The problem being presented is one that accompanies any attempt to try to isolate discrete functions for the limited options available in the intonation system. The problem is particularly acute in a search for paratones in spontaneous speech. Perhaps extract [4.3], a continuation of the previous extracts, will demonstrate the non-applicability of the notion of paratone as it has been described so far.

[4.3] and they couldn't get over the fact that I didn't like ice in whisky



If "couldn't" is the initial high, why is "fact" slightly higher, and why is "ice" highest of all? There is no pause after "whisky" which, although the most natural item on which to produce the requisite paratonic terminal fall from high to low, has none. If there is paratonic structuring at this level, it is obviously the least potent of the competing systems, giving way, in extract [4.2] to contrast, in extract [4.3] to negation focus on "couldn't" and the operation of given - new marking on "ice in whisky".

It was possibly predictable that a very regular unit such as the paratone, formulated from the evidence of how speakers read sentences aloud, should not be realised in spontaneous speech. It was perhaps also predictable that the paratone as an analytic unit would be impractical. It was proposed by Brown (1977 : 86) as a unit of organisation above the tone group. That could mean it consisted minimally of two or three tone groups, as, for example, are often found in a single sentence. Its etymology, however, suggested a status comparable to the orthographic paragraph, which, of course, can contain at least a dozen sentences. The term suffers simultaneously from being too narrow and too wide in its application. There is, nevertheless, a sense in which the term fills an analytic gap, or, more accurately, at least two analytic gaps. One might propose, in the absence of suitable alternative terminology, that the narrow applications be discussed as minor paratones and the wider applications as major paratones⁴.

Thus, what have been discussed so far are essentially minor paratones. The difficulties of identifying their salient intonational features in spontaneous speech remain. They may have to be treated

as abstract underlying units⁵, affected in their realisations by various other functionally motivated uses of options within the intonation system.

4.5 Major Paratones

As noted earlier, the term 'paratone' was originally proposed for the description of larger structural units of spoken discourse, "after the model of 'paragraph'" (Brown, 1977 : 86) in written discourse. I will suggest that the occurrence of major paratones in conversational contributions is occasioned by the speaker's organisation of what he wants to say into 'speech paragraphs'. In each 'speech paragraph', the speaker presents what he specifically wants to talk about, his contribution to the conversation, within the constraints of the existing topic framework. As with the orthographic paragraph, the most salient identifying markers of a major paratone are at the beginning and end. The end-marking of paratones was pointed out by Brown (1977 :87). I will describe, in the extracts which follow, those markers used by speakers to introduce and close major paratones within their conversational contributions. (Note that a speaker's conversational 'turn' may contain more than one major paratone.)

At the beginning of a major paratone, a speaker typically uses an introductory expression to announce what he specifically intends to talk about⁶. This introductory expression is made phonologically prominent through the use, in the Edinburgh Scottish English data investigated, of very high pitch, often at the top extreme of the pitch

range used by the speaker in the discourse. Clear examples are "the shops" in extract [4.4] and "my drink" in [4.5]. There is also a noticeably raised baseline on some occasions, as in extract [4.8], which is best described in terms used by Brown et al. (1980) as a shift-up in key. Alternatively, there is a falling baseline after the initial height, as in extract [4.5].

The end of a major paratone is marked in a way similar to the interactive process of 'giving-away-turn' (cf. Schegloff & Sacks, 1973). It can be marked by very low pitch, even on lexical items, loss of amplitude and a lengthy pause. Alternatively, the speaker can use a summarising phrase, often repeating the introductory expression, as in extract [4.5], not necessarily low in pitch, but also followed by a lengthy pause. The most consistent marker is the long pause, normally exceeding one second.

In the series of extracts which follow, I will present evidence for the intonational correlates of major paratones, as described above. I will also provide, as introductory headings to extracts [4.4] and [4.5], some relevant details from the topic frameworks which exist at the point when the speaker begins speaking. As I have already argued, complete versions of existing topic frameworks would be extremely large. Faced with a comparable problem, Enkvist has pointed out that "the context analyst's first embarrassment is richness" (Enkvist, 1980 : 79). To avoid having the contextual background overwhelm the actual chunk of recorded speech, I will keep the headings to a relevant minimum. (The extended discourse context of these extracts can be found in the data transcripts included in Appendix 3.)

[4.4] Elements in the topic framework

place discussed : Edinburgh (specifically the South side area)

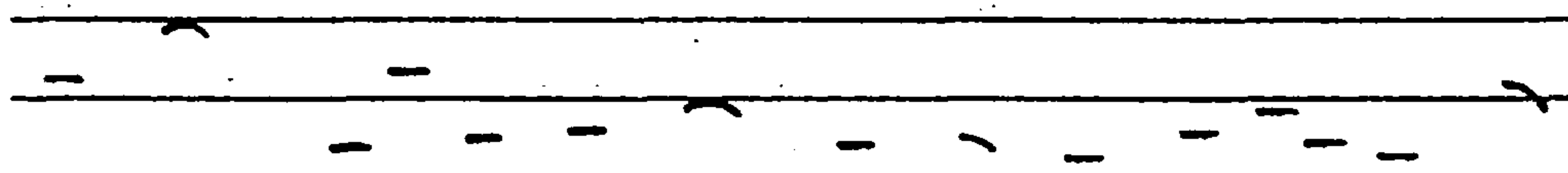
time discussed : the present and the speaker's youth

(40+ years before)

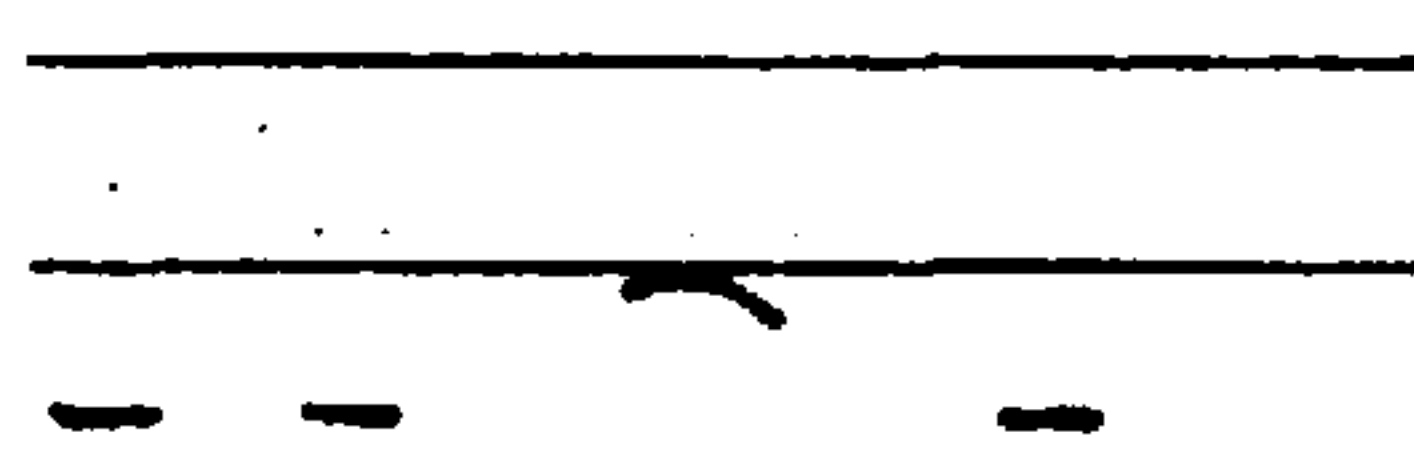
previous paratone-introductory expressions : 'changes' (in the area)

'moving people out' (of the area)

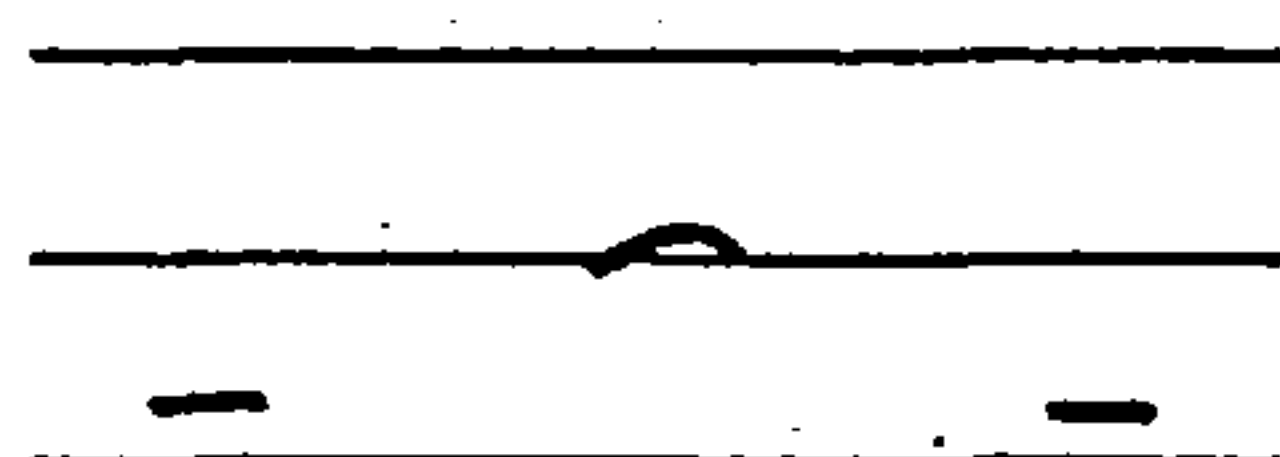
A : the shops + another bad thing the shops is non-existent now



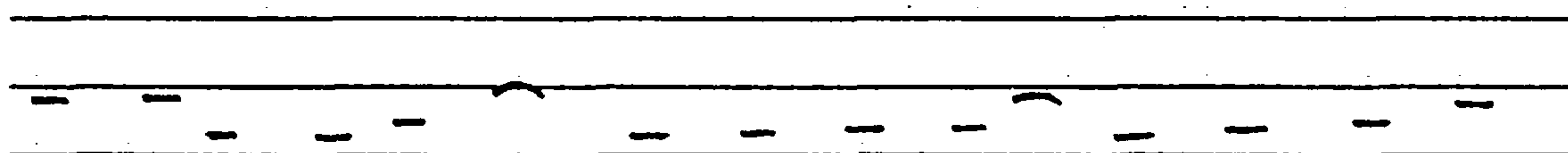
in the South side +



B : there's none there



A : not really + at one time there was quite a hive of shops you know ++



Extract [4.4] contains a brief major paratone, maintained across a speaker boundary. The introductory expression "the shops" has very high pitch (205-195 cps.), given that the range used by this speaker is between 210 - 90 cps. throughout the whole conversation. Other peaks in this extract are lower, and the final mention of "shops" is noticeably low (110 cps.), followed by a long pause (1.4 seconds).

Extract [4.5] is an example of a much more extended major paratone, with a more obvious interpretive dependence on the elements in the topic framework.

[4.5] Elements in the topic framework

place discussed : America

time discussed : recent holidays

previous paratone-introductory expressions : 'in America'; 'bars'
'a Harvey Wallbanger' (drink)

1 I found my drink was a great problem with them because at that time I drank

2 whisky and lemonade + and I would go and ask for whisky and lemonade and I

3 would get whisky and lemon + because you have to ask for whisky or scotch

4 and Seven Up + you know + I eventually cottoned on to it + but + and they

5 couldn't get over the fact that I didn't like ice in whisky and of course

6 they either gave me ice whether I wanted it or not or they stacked the glass

7 up + right up to the level that you would normally have if you had ice in

8 your drink anyway + and consequently I got ploughed + frequently + and that's

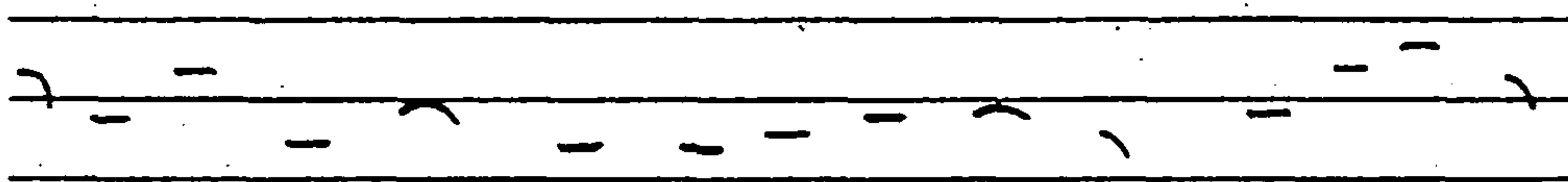
9 that's I + I tended to stick to my drink ++

It is only by virtue of the elements in the topic framework that several anaphoric expressions are interpretable in extract [4.5]. The most noticeable are "them" (line 1), "they" (4), "they", "they" (6), which have to be interpreted as being the people who worked in the 'bars in America'. It is presumably to those same people that the request for a drink was made - "I would ask (X) for whisky and lemonade" (line 2), and from whom the drink was received - "I would get (from X) whisky and lemon" (line 3). The expression "at that time" (line 1) also receives interpretation only in terms of the existing topic framework. All of these expressions appear to be used by the speaker as conveying given information, yet the source of this givenness is not comparable to the sources conventionally proposed (as outlined in section 2.2 earlier). This is information which is given within the topic framework. I shall discuss such examples of givenness in greater detail in chapter 8.

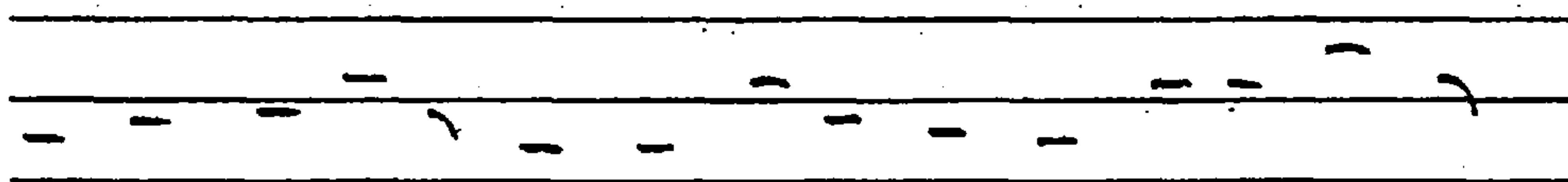
Intonation clearly plays a part in the speaker's marking of features in the internal structure of extract [4.5]. However, the primary interest of this section is in the boundary-marking. There is an introductory expression, "my drink", uttered very high in the pitch range at the beginning, and the same expression is used, low in the pitch range, as part of the speaker's summarising at the end of the major paratone. The first tone group (or syntactic unit) is uttered on a falling baseline. The internal pauses are brief, not exceeding 0.5 seconds, but the final pause, marking the end of the paratone, is long (1.6 seconds).

Having marked the end of one paratone, the speaker begins another, as in extract [4.6]. In introducing this major paratone, the speaker makes two introductory expressions prominent - "an Irish bar" and "Irish coffees". In the course of the paratone, she 'talks about' both the bar and the Irish coffee made there. It seems quite reasonable to assume then that when a speaker is organising a 'chunk' of his/her contribution which has two connected elements as the foci of that 'chunk', both elements are made phonologically prominent in the introductory part of the major paratone.

[4.6] oh apart from once when we went we found em + an Irish bar



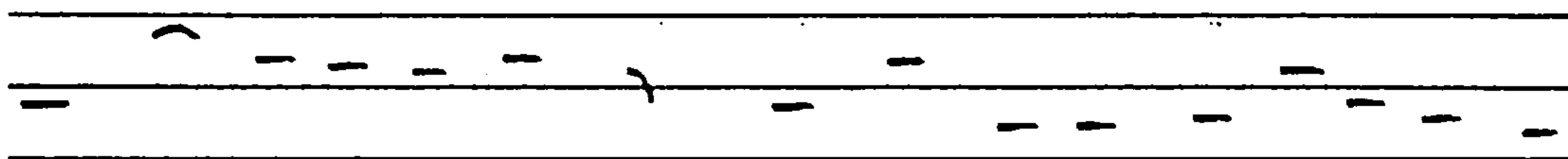
in San Francisco that was famous for its Irish coffees +



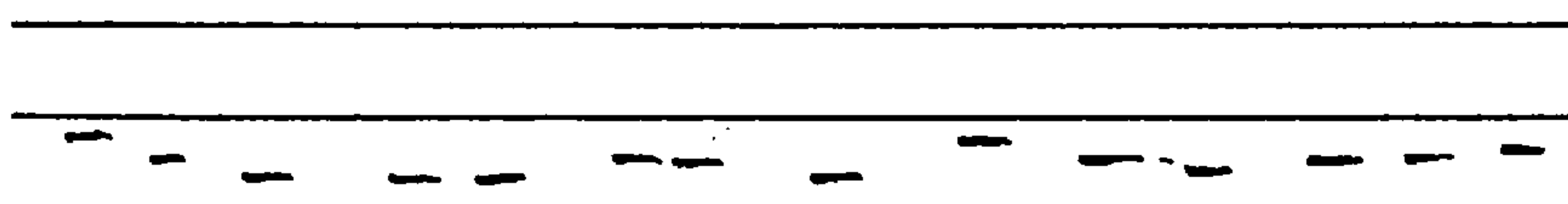
If a single expression had to be provided as the 'title' of what this speaker 'talked about' in this major paratone, the expression "Irish coffee" might be most suitable, for it is used not only as an introductory phrase, but also as part of the summarising phrase - "it was very good Irish coffee too" - before the final long pause. (The complete paratone can be found in the full version of this conversation in Appendix 3). Notice that although the phonologically prominent items in extract [4.6] are indeed the introductory expressions for the major paratone, they do not occur immediately at the beginning, as in extracts [4.4] and [4.5]. I will now consider some other examples of paratonic onset where the markers I described earlier are not as immediately identifiable as in extracts [4.4]- [4.6].

While the phonological marking of major paratone boundaries - high pitch onset, low pitch close, plus long pause - is regularly identifiable in conversational speech, the form of the introductory and summarising expressions is subject to some variation. An anaphoric expression can be used at the end of a major paratone, as in extract [4.8], or at the beginning, as in extract [4.9]. The expression introducing what the speaker is going to 'talk about' can, in fact, be displaced as the expression carrying the pitch height of paratonic onset, as in extract [4.7].

[4.7] I've seen actually something + in Thins an old + em selection of



photographs taken before the turn of the century +



This is the beginning of a long major paratone in which a "selection of photographs" is described at length⁷. The paratone is indeed introduced with high pitch and a falling baseline, but these phonological markers do not occur on the introductory expression. I think this disassociation of the two features of paratonic onset can be explained in terms of a competition at this point between the interactive and discoursal systems, which the interactive forces win. It is an example of a speaker 'taking his turn' in the conversation⁸ before he has fully formulated the introduction to what he is going to talk about. The turn-taking expression which has raised pitch is referentially vague - "something". Its syntax also appears to have been poorly organised before uttered - "I've seen actually" instead of the more usual "I've actually seen". There are also brief pauses and a filler, indicating some hesitation, or planning, before the introductory expression is produced.

In extract [4.7], the beginning of a major paratone coincides with a 'change of turn' in the conversation. As the speaker is, in fact, starting to speak at a point where the previous speaker might have continued, he marks, with raised pitch and increased loudness, this 'turn-taking'. In the course of a long contribution to a conversation, a speaker can mark the beginning of a new paratone, as in extract [4.9], with no 'turn-taking' aspect involved. When a speaker does begin a contribution to the conversation without a fully formulated introductory expression, the marking of 'turn-taking' can take precedence, as in extract [4.7].

A speaker can, of course, mark both his turn-taking and his introductory expression. In extract [4.8], line 5, both the "Well", which is spoken over part of the previous speaker's contribution, and

"Glasgow" are raised in pitch. The introductory expression, "Glasgow", is not particularly high in the pitch range. This may be the result of the context in which speaker B begins his contribution. Speaker B is taking over an expression provided by his interlocutor. In fact, speaker A has, in a sense, directed speaker B to talk about "Glasgow" with the question in line 1. Speaker B could have maintained the referent "Glasgow" by continuing to use the pro-form 'it' found in speaker A's contribution in line 3.

[4.8]

1 A : Do you know Glasgow at all?

2 B : A bit yeah

3 A : I don't know it + I've just been through it and it looks really bad +

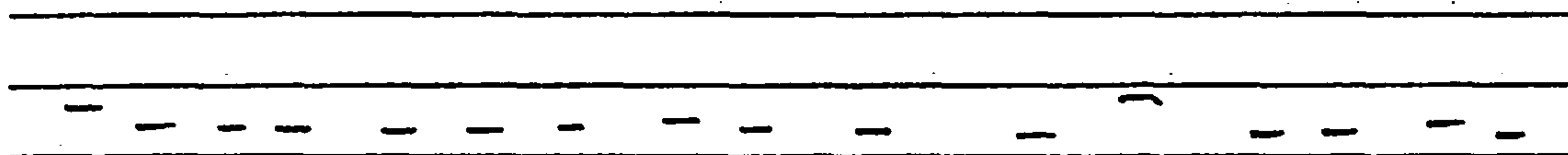
4 the parts I have seen + I don't know what

5 B : Well I must admit I mean Glasgow's changed so much in the last ten

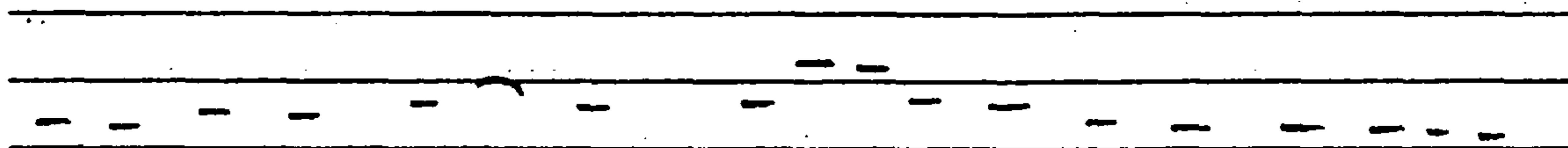
6 years + they've got all these freeways over the top of it you know +

7 just like L.A. + where you can + where you can actually drive through

8 whereas before you had to + to go through the centre of the city +



9 and it just got + I see they've demolished half of that now anyway ++

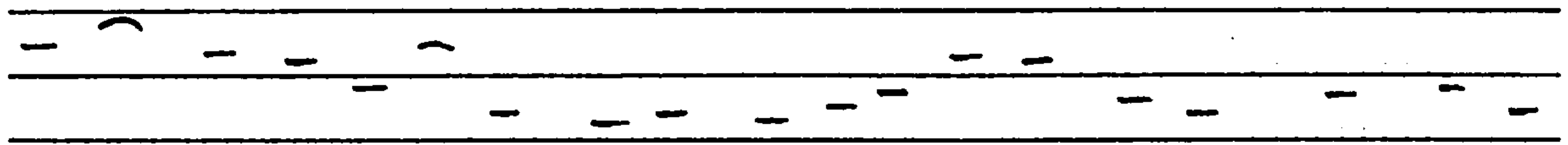


What speaker B does, in line 5 of extract [4.8], is mark with raised, but not very high pitch, that he is going on to talk about "Glasgow". Although "Glasgow", in line 5, is not very high in the pitch range, it is higher than any other ensuing peaks reached in the paratone. It functions, then, as the introductory expression, beginning a paratone which ends with the long pause (2.00 seconds) after 'anyway', line 9. However, at the end of the paratone, the actual introductory expression is not repeated. What is found is an anaphoric expression, "that", which, with "the centre of the city" in line 8, and "Glasgow" of line 5, have the same referent. It is apparently not necessary to repeat the introductory lexical expression at the close of a paratone. An anaphoric pro-form can fulfil the role.

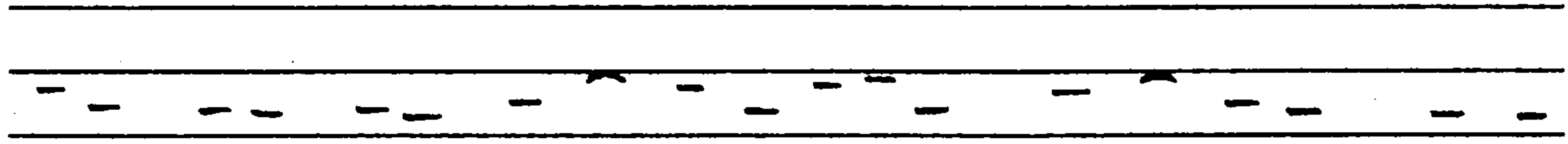
It is also possible for a pro-form⁹ to occur at the beginning of the paratone. In extract [4.9], very high pitch occurs on "this" in line 1, the meaning of which is explicated in the course of the paratone. The summarising expression which closes the paratone, "smoking on the way home", in line 11, could be substituted for "this", line 1, and successfully convey the meaning intended by the pro-form. There is a final pause of 1.8 seconds, whereas internal pauses do not exceed 0.6 seconds.

[4.9] (The speaker has started to describe his way home from school)

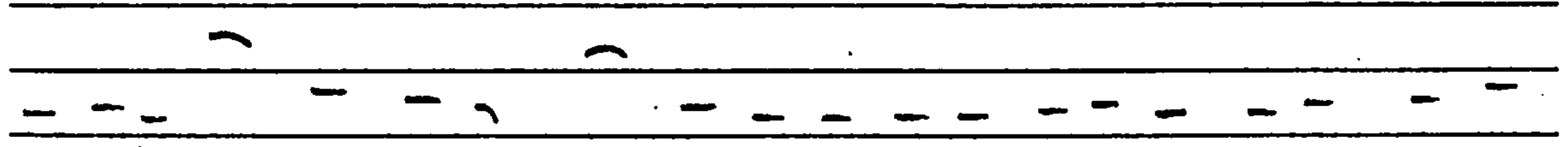
1 Ah this was why I did it + I used to go up Albert Terrace + half way up



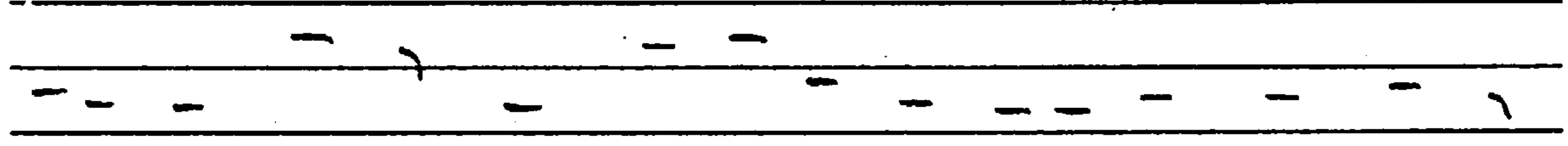
2 Albert Terrace I used to light up a cigarette + you see because that was



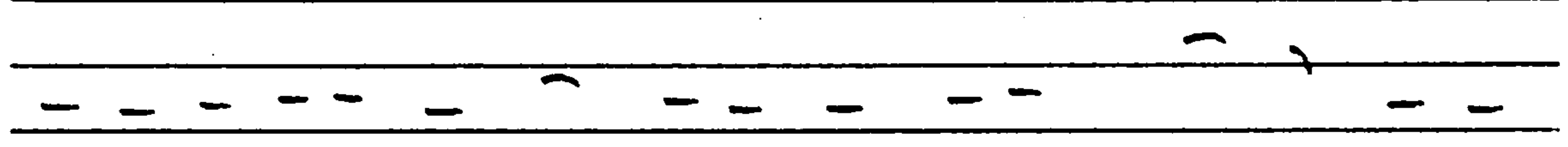
3 a very quiet way to go + now when I lit up my cigarette I used to find



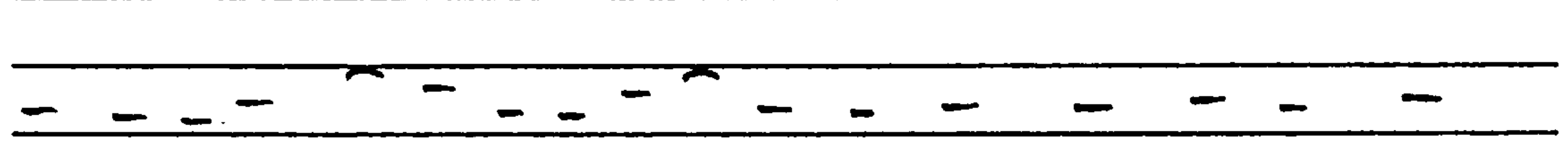
4 myself at Churchill + and the quickest way to get back from Churchill



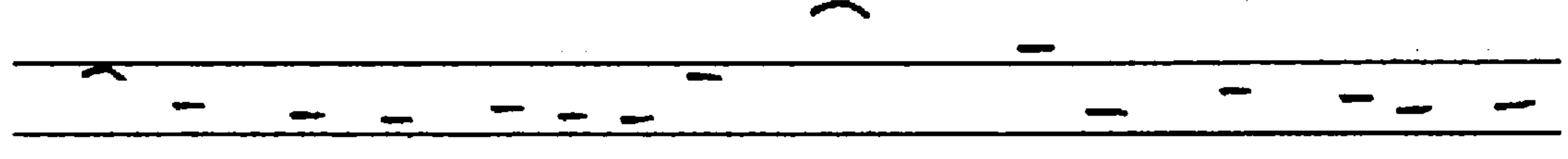
5 was to walk along long down Clinton Road + along + Blackford something



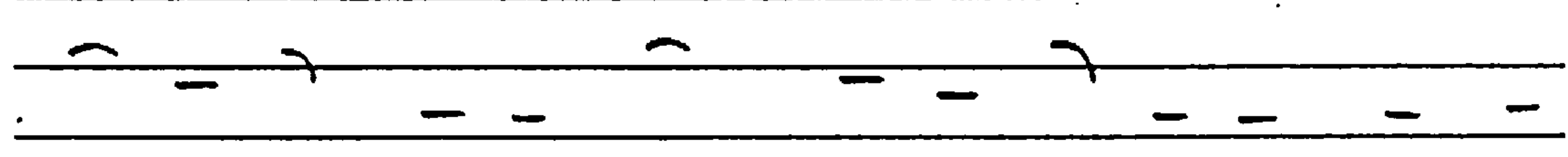
6 or other it's actually an extension of Dick Place but it's called +



7 Blackford something or other it shouldn't be it's miles away from



8 Blackford Hill + but it's called Blackford Road I think + em + and



9 .then along to Lauder Road and down Lauder Road + which used to allow

10 for the consumption of two cigarettes on the way back + and also it

11 was a route which no masters took + so I wasn't liable to be pulled

12 up the next day + smoking on the way home ++

This longish paratone satisfies the criteria for major paratones set out earlier. It does, of course, have internal structuring, not the least interesting of which is the digression in lines 5 - 8, partially discussed as extract [3.22] in chapter 3, as the speaker tries to remember the name of a street. It is tempting, from a discourse point of view, to treat this digression as a unit, with "Blackford something or other" [1.5] initiating some kind of sub-unit within the major paratone and "Blackford Road I think" [1.8] closing it. It is bounded by hesitations and brief pauses. It has a referent in subject position, of which information is predicated, which differs from the primary referent of the major paratone. From a phonological point of view, however, it doesn't appear to be marked as a unit, mainly because the limited intonational options are being used for more than one function. There is the parenthetical aspect, which might predictably have led to a shift down in the baseline, as described by Bolinger (1970).

However, the baseline doesn't change in any significant way. Phonological cues such as relative pitch height are concentrated, in this instance, on both a contrastive structure (the different candidates for the X slot in "Blackford X") and a negative ("shouldn't", line 7). In attempting to identify sub-units within major paratones the analyst encounters exactly the same problems which were found in the attempted identification of minor paratones in spontaneous speech. The limited resources of the intonation system are, quite simply, multifunctional. This multifunctionality effectively prevents any unequivocal identification of a single system at work in any one stretch of spontaneous speech. It is the context of the realisation which identifies the function(s), not the phonological form. The function of pitch height prominence on an item can be determined more readily by analysing the discourse function of that item in that instance. And that function is ultimately what the speaker intends the item to fulfil, a point argued more fully in section 4.6.

It is, of course, quite possible to propose highly abstract underlying systems and to discuss discourse realisations as variations. If, however, it is difficult to recognise consistently the realisation forms of an abstract underlying unit, the unit has extremely limited practical application in discourse analysis. The analytic unit, the major paratone, is presented here at an accessible level of abstraction. It is frequently identifiable in spontaneous speech, not by its internal structure, but by its boundaries. Those boundaries enclose what a speaker marks as a unit of discourse. Since the marking of the boundaries of these larger discourse units involves intonational aspects, it would be misleading to try to account for the intonational

phenomena involved in terms of Halliday's information structure elements. Intonation, then, is not only used to express information structure, it is also used by speakers to express other structural aspects in the organisation of their contributions to conversational discourse.

4.6 Intonation, speaker's intention and the interpretation of elements in information structure

In the preceding discussion, I have illustrated how speakers can, to some extent, exploit options in the intonation system to indicate how they intend their utterances to be interpreted by their hearers. When a speaker uses pitch height, for example, to give prominence to a part of his message, he intends that the hearer recognise the phonologically prominent item(s) as, in some sense, marked for his attention. As argued in chapter 3, however, the options in the intonation system do not provide unique realisations for each function. A speaker can use pitch height, with or without perceptible pitch movement, to get his hearer to pay attention to an item for any one of a number of different reasons. The hearer can recognise that an item is made prominent, phonologically, but, in order to interpret the function of the prominent item, he must make a decision about what function the speaker intended that item to fulfil.

In this section, I will present some examples, from the conversational data investigated, where there is evidence of a misunderstanding between participants, in which the misinterpretation

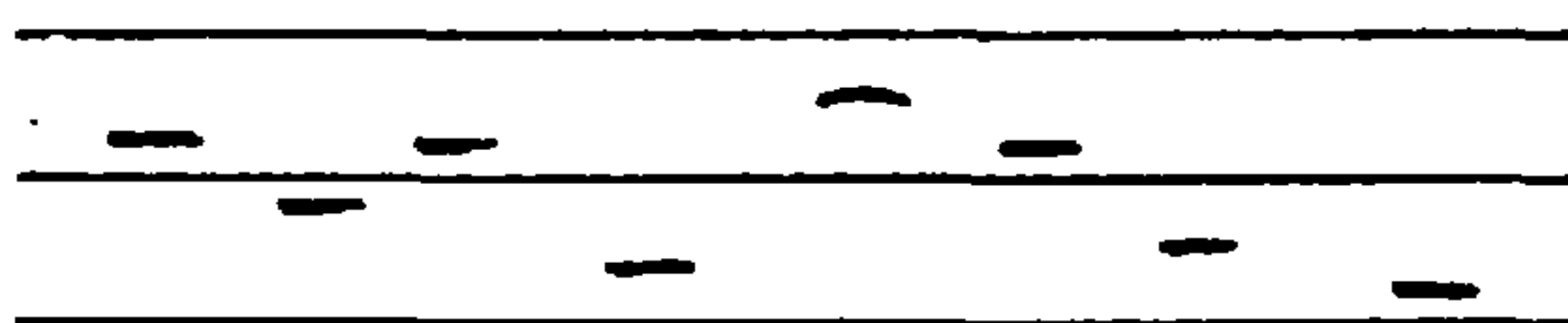
of the function of intonational cues contributes to the misunderstanding. In extracts [4.10] and [4.11], there is some confusion connected with phonologically prominent items, and in [4.12] and [4.13] with the absence of phonological prominence. The point I wish to emphasise is that it is impossible to treat intonational cues alone as unequivocal markers of the given/new elements in information structure.

[4.10]

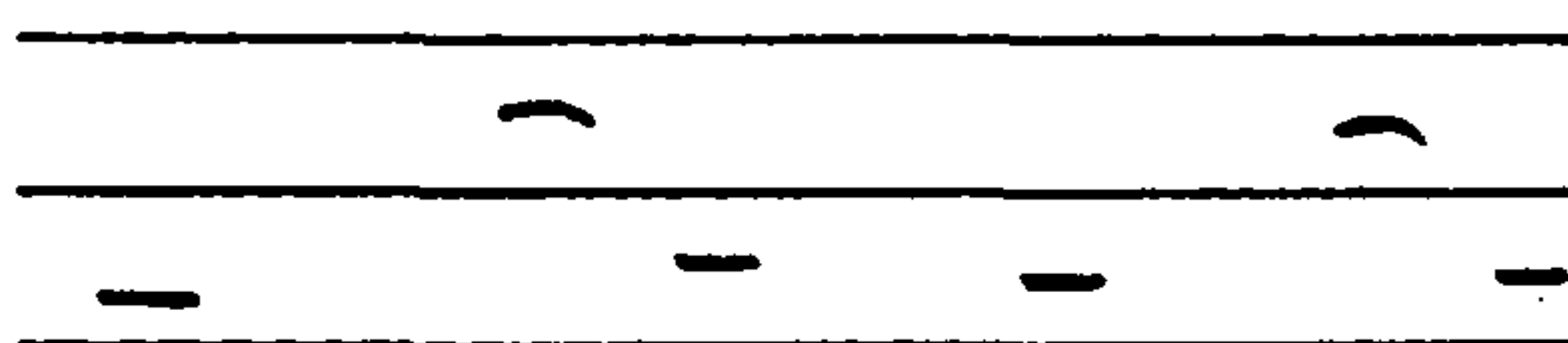
1 A : Do you have any children

2 B : Aye I've got three + two boys and a girl

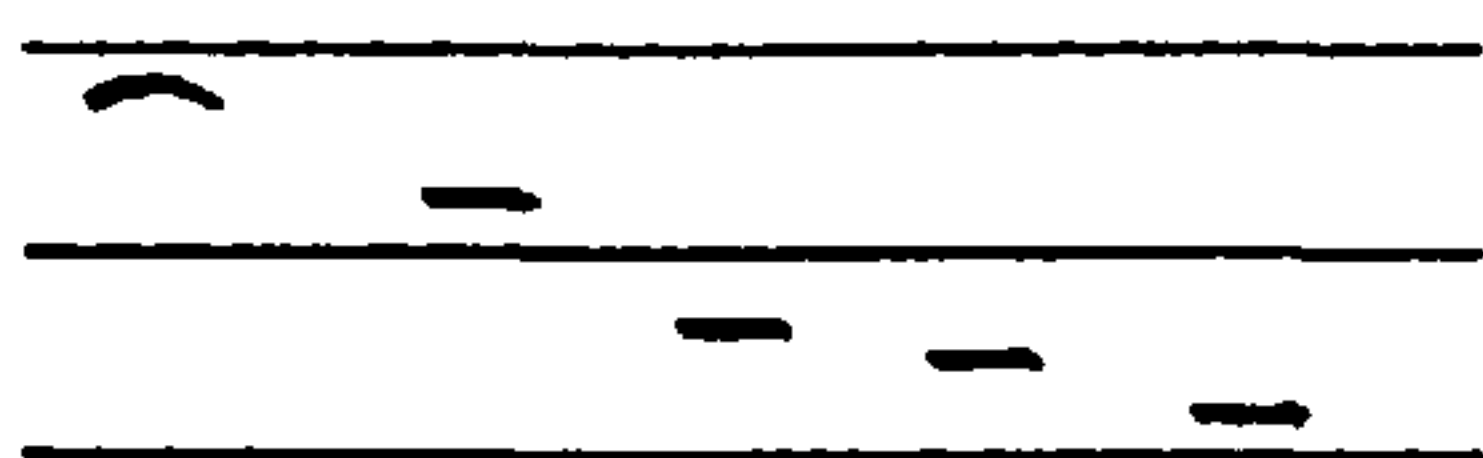
3 A : Whereabouts do they go to school



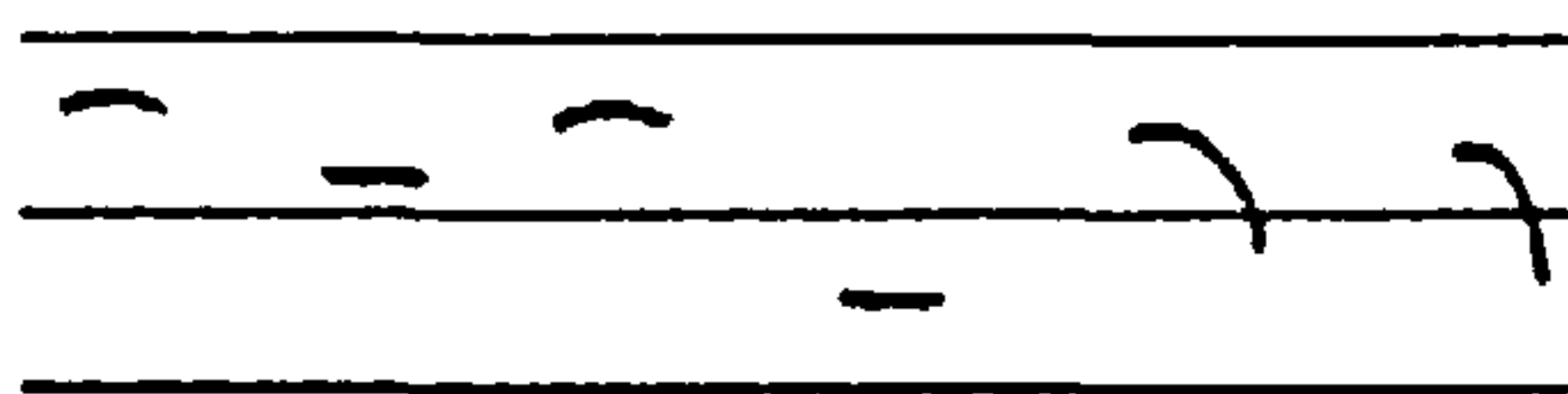
4 B : They're married + they're older



5 A : did they go to school



6 B : Oh they went to school aye



In extract [4.10], line 5, speaker A uses pitch height and amplitude on "did", which she contrasts with "do", in line 3. Speaker A is essentially repeating, in line 5, the question she asked in line 3, with one formerly misleading item made more explicit.

Speaker B, however, in line 4, has given an indirect answer to the first question concerning his children and school, which, in its indirectness, contains an implicit negative. The scope of this negation is restricted to what he considers the time domain of the question (present time), but he may be aware that the unspecified negation could be taken as having wider scope, that is, a larger time domain. The phonologically prominent "did", in line 5, is heard, not as it was intended (as part of a wh- question), but as the stressed initial element of a yes/no question, that does seem to range over a larger time domain. Hence the nature of the response in line 6, not an answer to the "whereabouts" question begun in line 3, but a response to the 'Is it the case that X is true ?' question taken from line 5. Speaker B gives pitch prominence to both "went" and "school" in line 6, anxious to deny the possible implication that his children hadn't attended school at all.

Of course, the misunderstanding in evidence in extract [4.10] is not due solely to features of the intonation. Speaker A's treatment of "whereabouts" as still applying in line 5 contributes to the misinterpretation by the hearer. However, what should be noted in this fragment of conversation is that the function of the phonologically prominent "did", as interpreted by the hearer, was apparently different from the function intended by the speaker.

In extract [4.11], speaker D appears unable to decide how to interpret the preceding utterance. Speaker D not only incorporates doubt in the expression of her proposition (partially due to the effect of the rising baseline), she is willing to accept the negation of the proposition immediately after uttering it.

The syntax appears to suit interpretation (i). Speaker D, although doubtful, seems to have taken interpretation (ii). No disambiguating remark is provided by speaker C in the rest of the conversation. The point being made here is that, although speaker C has used intonational cues (and other markers) to indicate his intentions, those intentions are not immediately transparent to his hearer.

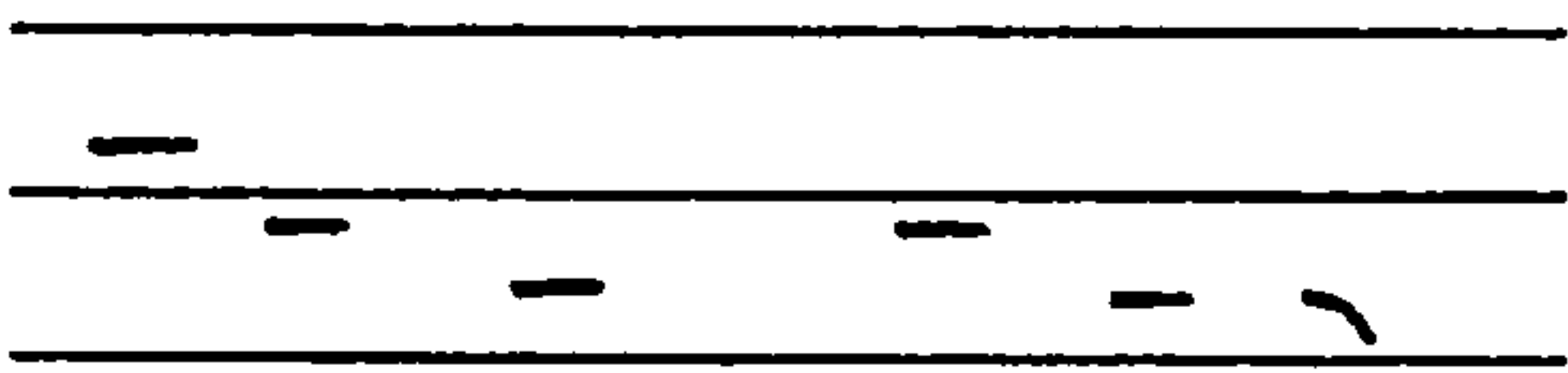
The absence of pitch prominence can also lead hearers to misinterpret speakers' intentions. Clearly, speakers do not encode utterances with a full awareness of all potential meanings of the heard message. So it may be that, intending a simple request for more specific information within a domain that has been established by the discourse, a speaker produces a reduced wh- question, low in the pitch range, unaware of the potential ambiguity, as in extract [4.12].

[4.12]

1 E : The Oddfellows was only ninepence and sixpence

2 F : Aye the Oddfellows that's in Forrest Road +

3 G : Forrest Road + whereabouts +



4 E : just round from the Royal Infirmary + just round from Teviot Place

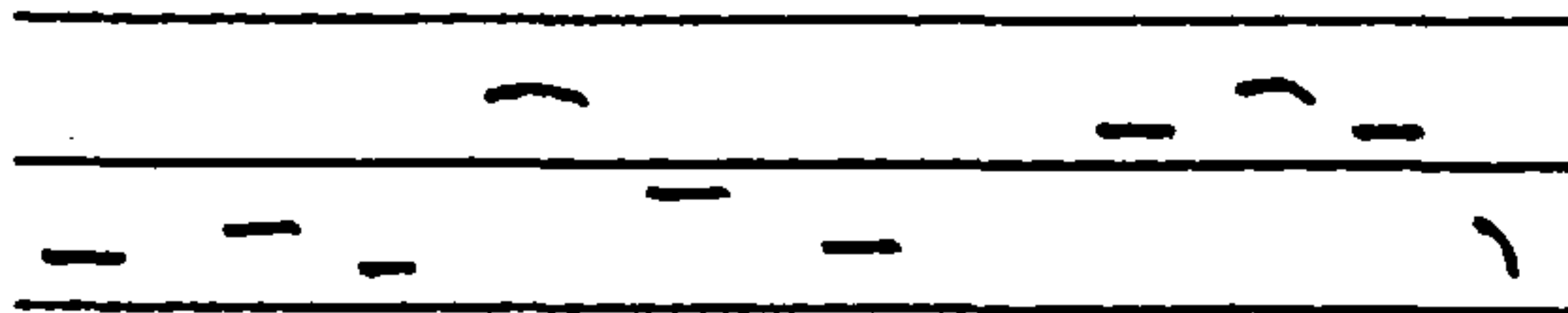
5 G : Oh + $\hat{A}h\hat{A}$ + yeah I know where Forrest Road is but whereabouts was the Oddfellows

It is a misinterpretation of what has been deleted from the reduced wh- question in line 3, extract [4.12], that produces a brief misunderstanding. It is, as in extract [4.10], an instance of a hearer's failure to recognise a speaker's intended meaning. Contributing to the failure is the use of an intonation form by the speaker which conveys his treatment of certain elements as 'given' from the preceding discourse. The hearer does not get the intonation cue wrong, he correctly interprets that something is being treated as 'given', but wrongly identifies it.

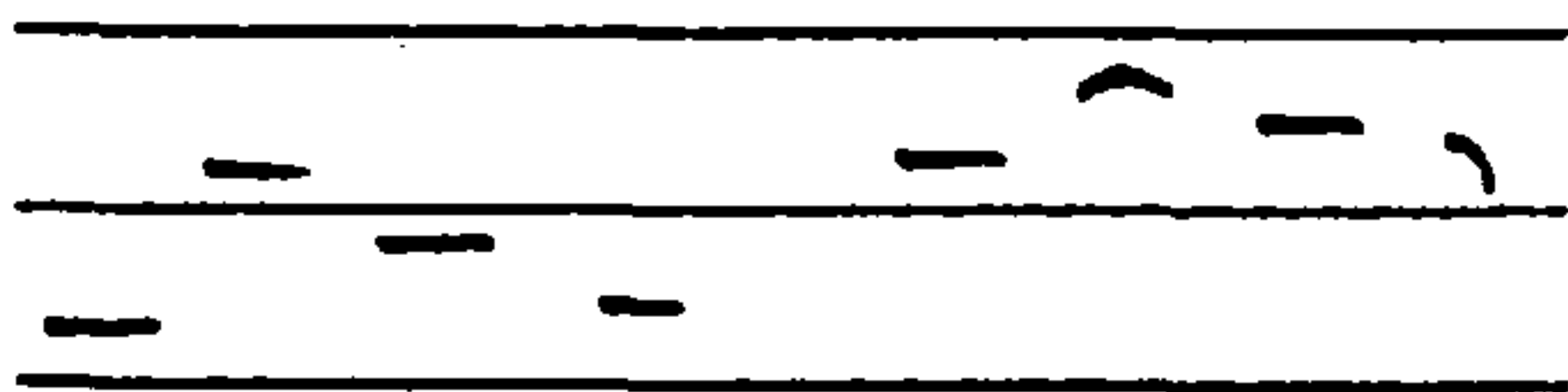
Extract [4.12] provides an instance where anaphoric elements have been deleted by the speaker, and the null anaphors are wrongly reconstructed by the hearer. In extract [4.13] it is the treatment of an anaphoric pronominal which creates a problem.

[4.13] (looking at a book of old photographs)

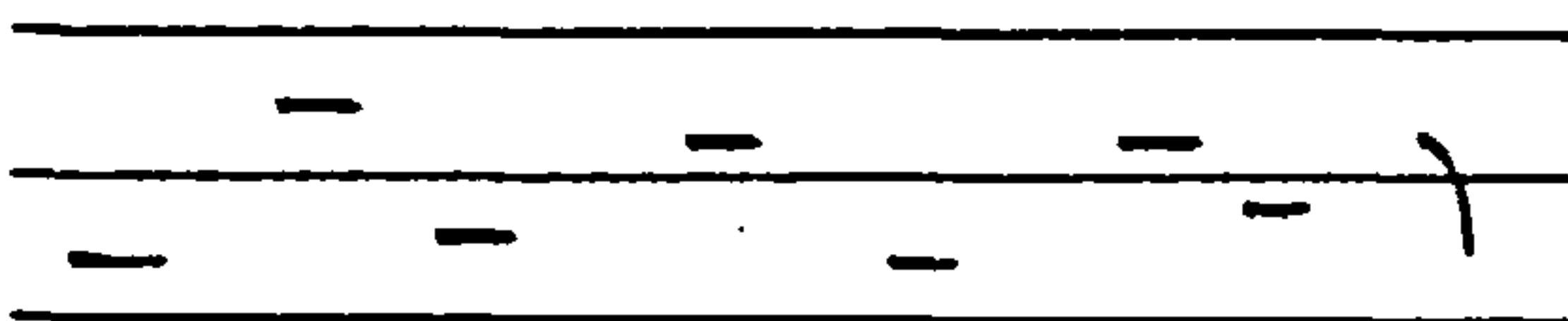
- 1 X : It's quite an interesting book actually
- 2 he was a surgeon and photographer



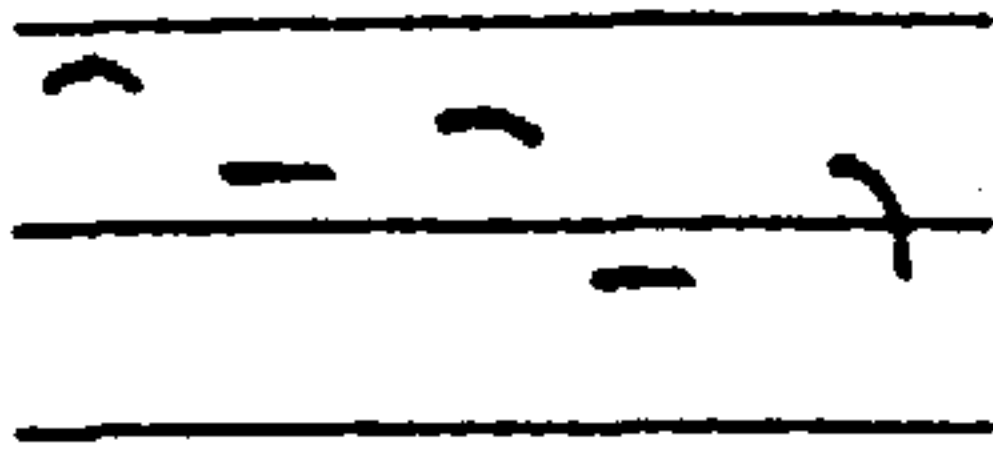
- 3 Y : a surgeon and photographer



- 4 X : the man who took the photographs



5 Y : Oh I see I see



There may be some reservations about discussing extract [4.13] as a 'misunderstanding'. There do not appear to be two competing interpretations, unless one sees speaker Y's confusion, in line 3, as a conflict between one existing, but unknown, interpretation and a zero interpretation. The zero interpretation is presumably most common when hearers either do not hear or mishear constituents. Among the range of strategies employed in such a situation are repetition of the constituent(s) which caused confusion, similar to line 3 here, or a request for a repetition, using "what ?", "pardon ?", among others. It would seem unlikely in a cooperative conversational interchange that one participant would accept a zero interpretation as the only one possible. He would presumably have to operate on the principle that, although he arrives at a zero interpretation, the speaker must have intended that at least one interpretation would be possible. What the hearer fails to 'understand' in extract [4.13], then, is the interpretation intended by the speaker of the expression used in line 2.

The cause of the confusion in extract [4.13] is, in fact, the pragmatically controlled anaphor "he" which speaker X utters with low pitch and low intensity, in line 2. If speaker X had produced "he" with higher pitch or greater pitch movement or greater amplitude - any prominent-making intonational option - his hearer Y would most likely have taken the "he" as deictic and been less likely to experience doubt with regard to the referent X has in mind. Some paralinguistic signalling, such as pointing to the book, would have helped. That Y is in doubt is apparent from his intonation - rising baseline, ending high in his pitch range - in line 3. His zero interpretation is

presumably brought about by the physical absence of any appropriate referent, and he hasn't, at this point, actively made speaker X's pragmatic presupposition that, if a book is being discussed, then that book must be by or about someone.

Once again, in a situation with absence of pitch prominence on a constituent, the hearer (Y) does not get the intonation cue wrong. The hearer recognises that there is some referent which the speaker (X) treats as 'given' (low pitch, pronominalised realisation), but he has to indicate his inability to identify that referent. As noted in other examples in this section, the hearer can recognise what the speaker is doing (intonationally), but not his specific intention, in so doing.

This brief consideration of some instances of misunderstanding attributable, in part, to the multifunctionality of features of English intonation is presented as evidence that an account of information structure in English spoken discourse which is based solely on intonation will be inadequate. What is needed is an analytic approach which takes intonation into account, but which also considers other options available to speakers for structuring the information in their messages. In the following chapters, I will develop a methodology which is designed to provide a principled basis for making claims about not only the phonological, but the general linguistic realisations of elements in the information structure of spoken discourse.

4.7 Notes

1. A similar opinion is expressed by Tyler (1978) when he notes that any expression used for 'the topic' must be treated as "one possible paraphrase" (1978 : 452).

2. The 'text' of a conversation consists of the actual words uttered. For the analyst, it is essentially the 'discourse record', which is retained in the form of a tape or a written transcript. Two points must be emphasized about the 'text' of a conversation. First, the 'text' alone is far from being a complete version of what is communicated in a conversational exchange, or in a reading (cf. Estes, 1977; Levelt, 1978; Crothers, 1979; Spilich et al., 1979; Beattie, 1980). Second, there is experimental evidence that participants in a conversation do not retain verbatim accounts of the 'text' (cf. Thorndyke, 1976; Keenan et al., 1977; Carroll et al., 1978; Hayes-Roth & Thorndyke, 1979; Masson, 1979). The most common account of how information conveyed in a 'text' is integrated in memory is in propositional terms within some form of hierarchical organization (cf. Kintsch, 1974; McKoon, 1977; Hupet & LeBouedec, 1977). Thus, although the 'text' is what the discourse analyst most commonly has available for investigation, it may often be a poor record of what was communicated. Consequently it must be treated as only one source of what the participants have as their records of the conversation.

3. What I describe as a 'topic framework' has a lot in common with Venneman's (1975) proposal that there is a 'presupposition pool' which contains information "constituted from general knowledge, from the situative context of the discourse, and from the completed part of the discourse itself" (Venneman, 1975 : 314). What neither Venneman nor I have yet managed to develop are ways to limit this potentially massive amount of information. For the purposes of the present investigation, I will attempt to indicate only those constraints which seem (to me) highly relevant to the analysis of the extracts discussed.
4. These terms were suggested by Dr Brown as developments of her original paratone concept.
5. This view is very much influenced by the proposals of Currie (1979b : 409 - 432) that there are several basic underlying systems involved in the intonation of Scottish English. Although the systems are presented as latent or abstract, the realisation of units of these systems can be identified in actual conversational speech.
6. The introductory expression may be compared, in functional terms, to the 'topic sentence' which van Dijk (1977) claims can be identified at the beginning of written texts. In his analysis, the topic sentence indicates the 'macro-structure' of the passage. Spontaneous conversational speech does not generally exhibit the concentrated structuring of written text. What written 'topic sentences' and spoken 'introductory expressions' do have in common is, in van Dijk's terms, "a cognitive function they facilitate comprehension" (van Dijk, 1977 : 150).

7. For those who cannot reconstruct the topic framework of the speaker of extract [4.7], "Thins" is the name of an Edinburgh bookshop.
8. The terminology of 'turn-taking' is mostly derived from the work of Schegloff & Sacks (1973), Jefferson (1973) and Sacks et al. (1974). Situations comparable to that found in extract [4.7] have been described in terms of the speaker 'taking over the floor' (Duncan, 1974) or 'claiming the turn' (Duncan, 1973).
9. While "that", line 9 of extract [4.8] can be treated reasonably confidently as anaphoric, the status of "this", line 1 of extract [4.9] is less certain. For Halliday & Hasan (1976 : 68), it would be cataphoric. For Lyons (1979 : 96), it would be 'impure textual deixis'. While favouring the latter characterisation, I will, for the limited purposes of this investigation, use the neutral term 'pro-form' and note that it is functioning as the introductory expression.

Chapter 5Establishing a controlled discoursedomain for the analysis of informationstructure

5.1 Problems in the Analysis of the Information Structure of Spoken Discourse

In the preceding three chapters, the problems of identifying the formal markers of features such as 'given' and 'new' in the information structure of spoken discourse have been investigated. In the course of that investigation, it became clear that existing definitions of the categories 'given' and 'new' were not sufficiently rigorous to permit the consistent identification of their formal linguistic realisations. It does not seem that the problem can be solved by adopting an analytic framework which, in using different terminology, appears, on the surface, to offer more rigorous criteria. For example, the "presupposition-focus" dichotomy appealed to by both Chomsky (1971) and Jackendoff (1972) and the "presupposition-assertion" version of Bickerton (1975) do not offer a definition of 'presupposition' which can be used to predict specific linguistic realisations. Rather, the claim (cf. Chomsky, 1971; 1972) that the presuppositions of a sentence can be read off by replacing the focus with a variable - a proposal quite justifiably disputed by Kempson (1975 : 22) - suggests that it is linguistic realisations such as 'normal sentence stress' which determine the analytic categories. That is, the formal markers are used to identify the categories they realise. Yet, as Rommetveit (1974 : 104) has pointed out, those categories are initially described in terms of their functional contribution to the sentence, as in Chomsky's claim that "the focus must be composed of full lexical items - more generally, items that make a contribution to the meaning of a sentence" (Chomsky, 1972 : 101). There is a circular argument involved in such an approach (i.e. an item is stressed because it's the focus of the sentence and an item is the focus of the sentence because it's stressed). I shall explain (section 5.2) how such circularity is avoided in the present analysis.

Rommetveit (1974), and many other writers since (cf. Givon, 1979a; and contributions in Givon (ed.), 1979), have objected to the Chomskyan approach to considerations of 'presupposition' as if it were a sentential phenomenon (i.e. as if it is sentences, as opposed to speakers, which have presuppositions). This aspect of the 'presupposition-focus' dichotomy makes it particularly inappropriate for the type of investigation I am undertaking (cf. discussion in section 1.1).

One further reason for avoiding categories proposed in the formal analysis of system sentences is their restricted application to relationships holding within sentential boundaries. That is, any relationship between a category (which is defined as sentence-internal) and its formal realisation may not be applicable across sentence-boundaries. Nor will it necessarily be applicable across utterance-, or speaker-boundaries in a discourse. In the present study, it is precisely such relationships which I wish to investigate. I will, as a consequence, continue to use the terms 'given' and 'new', but attempt to impose some explicit constraints on their application in the analysis of spoken discourse.

It must be remembered that 'given' and 'new' are terms which are intended to describe the function of parts of the speaker's utterance. When both Halliday (1967) and Chafe (1976) consider a linguistic expression in terms of its being 'new' information, they base their considerations on the general principle that 'new' means 'treated by the speaker as new to the hearer' and 'given' means 'assumed by the speaker to be known to the hearer'. The analysis of these categories, then, is essentially an analysis of what speakers are using linguistic expressions for. The source of the problems relating to rigorous definitions of 'given' and 'new' is then quite apparent. The discourse

analyst is seeking a means of defining the knowledge plus the intentions or purposes or even beliefs of speakers.

How, then, does the analyst, in order to discover the formal linguistic realisation of 'given', set about deciding that a speaker can 'assume' a particular referent is known to his hearer? Note that the analyst has to be constrained from following the clearly circular route involved in deciding that a referent is 'given' because a particular linguistic expression is used. One way in which the analyst might be justified in deciding what a speaker's intentions are, at any point, would be as a result of the analyst's actually providing the speaker with limited 'intentions'. The speaker could also be provided with a limited amount of pertinent 'knowledge' and a means of ascertaining his hearer's 'knowledge' too. In short, the analyst can limit the domain within which a speaker produces his discourse. In this way, the analyst can identify referents which the speaker must treat as 'new', for example, and the formal linguistic realisation of this 'new' information can then be identified. Since the aim of the present investigation is to discover how speakers refer to and structure the 'given' and 'new' information in discourse, the constraints placed on the discourse domain must nevertheless leave the speaker free to produce his own spoken discourse.

In an attempt to meet the requirements listed above, the elicitation of spoken discourse in a highly controlled situation within a limited domain was undertaken.

5.2 The Controlled Data¹

A group of university undergraduates, in pairs, were asked to take part in a simple exercise. Participant A had a drawing (of lines, triangles, squares or circles) in front of him, which participant B could not see. B had a blank sheet of paper, a black pen and a red pen. A was required to tell B what was in the drawing in such a way that B could reproduce the drawing as accurately as possible. B was allowed to ask questions. The participants knew they were being recorded.

A few lines of what was recorded may give a reasonably clear idea of the type of spoken discourse elicited.

[5.1] A : Halfway down the page draw a red horizontal line of about two inches. On the right hand side, just above the line, in black, write ON.

B : ON ?

A : Above the line.

Draw a black triangle, a right-angle triangle, starting to the left of the red line, about half a centimeter above it.

Spoken discourse of this type provides the analyst with a specific set of 'known' features relevant to a discussion of information structure.

Among the significant features are the following :

a) One of the major problems in the analysis of spoken discourse is that every piece of discourse is, in some sense, a fragment. This is particularly true of free conversational discourse where the relationship of the speakers, their previous conversations, and their

mutual knowledge, *inter alia*, are rarely available to the analyst in any detailed way. Thus, while the transcribed text (or the tape recording) of a discourse may represent an albeit limited 'record' of what was actually said, it can be a poor indication of what was communicated. The discourse record, taking a specific case, may provide no basis on which to decide whether a particular referent is 'given' or 'new' at any point.

If, however, the discourse domain is established within narrow limits, then the analyst has access to the same body of relevant shared knowledge as the participants. Moreover, in following the record of the discourse, the analyst can identify those points at which a particular speaker has a reasonable warrant for assuming that the identity of a referent or a specific proposition is part of the participants' mutual knowledge.²

Thus, what the speaker can treat as 'new' and 'given' information at any point in the discourse is relatively constrained. When speaker A, in extract [5.1], mentions "a red horizontal line" for the first time in the discourse record, he is giving B some information which, in this discourse, at this point, is 'new'. In the record of this type of spoken discourse, 'new' and 'given' information can be identified principally because the discourse has a fixed point of departure. The analyst knows where the discourse begins and knows what salient referents (e.g. 'paper' and 'pens') exist in the physical context for both speaker and hearer.

b) The discourse is primarily transactional with respect to what type of information is passing from A to B. In this situation, the speaker is principally engaged in transferring propositional information to his hearer. He is less likely to be, as in conversational speech of

a primarily interactional type, transferring information about his attitudes, social status, the state of his health, among a plethora of other aspects, both intended and unintended, of what can be described loosely as 'information'. Thus, there is some confidence in the analysis that it is the communication of propositional information, intentionally conveyed, that is available for investigation.³

c) There is a specific purpose to the interchange. It is, in effect, 'goal-directed'.⁴ The speaker is required, by the nature of his task, to structure his contributions to the discourse. He is less likely simply to 'ramble on' - a possibility in informal conversational interchanges - and more likely to organise what he has to say in order to give his hearer 'chunks' of information in a helpful sequence. He may, of course, organise his contributions efficiently or inefficiently.

d) The intended perlocutionary effect of the vast majority of a speaker's utterances is largely predetermined. The allocation of 'roles', and the limited nature of the task, contribute to making explicit the felicity conditions for A's utterances to be treated by B as instructions to do something.⁵ In extract [5.1], the imperatives "draw X" and "write Y" convey the speaker's intention regarding the hearer's behaviour in a fairly obvious and direct way. Although other speakers use "there is X" or "you've got X" among other less direct forms in comparable circumstances, such forms must be taken by the hearer, not simply as existential statements, but as covert instructions to "make it the case that there is X".

e) The limited nature of the task and the availability (in the form of the drawing) of the 'information' to be conveyed remove some

of the problems which might arise from 'memory limitations' on the part of the speaker if he had to recall and describe an event or situation from the past.

f) The task is co-operative. The instructor effectively 'holds the floor' and is not likely to have to employ strategies associated with 'turn-holding' or 'turn-taking' in competition with his instructee.⁶

5.3 Notes

1. There are, at present, thirty-seven taped interchanges using this exercise. The drawings used are provided in Appendix 1. In Appendix 2, a large sample of the data-base transcriptions is provided.

2. The basic distinction, as used by Clark & Carlson (1980), between 'shared' and 'mutual' knowledge may be noted here.

Knowledge is shared if A knows that p.

B knows that p.

Knowledge is mutual if A knows that B knows that p.

B knows that A knows that p.

A knows that B knows that A knows that p.

B knows that A knows that B knows that p.

3. The need for such a constraint on discussions of 'information' was pointed out by Dahl (1976) in his criticism of the extremely loose terminology used in treatments of 'new' and 'old' information.

4. In this respect, the discourse elicited is similar to that found in the 'task-oriented' discourse modelling of Grosz (1978).

5. Expressed in these terms, this description comes very close to what Fillmore described as "the presuppositional aspects of a speech communication situation" (1971 : 276). Langendoen & Savin (1971 : 55) similarly make 'presupposition' the conditions which must be satisfied for a sentence to be a statement, command or question. Thus, (d) expresses the control existing on what Keenan (1971 : 49) calls the "pragmatic presuppositions" of contributions to this type of discourse.

6. Both points (b) and (f) are intended to show that, although the structure of conversational discourse may be influenced by interactive pressures (cf. Sacks et al., 1974), an attempt has been made to control out interactive variables in this type of discourse.

Chapter 6The Controlled Data Analysis :Information Content, Structure andPhonological Correlates

6.1 Basic Elements in the Speaker's Contributions to the Discourse

In the discourse situation being described, the type of information and the nature of the task predispose the speaker to include in his utterances a set of basic elements which enable the hearer to derive the information required for the drawing to be completed.

- a) The speaker has to give the hearer some instruction regarding the activity involved. The forms used in extract [5.1] are "draw" and "write". This element in the speaker's utterances will be called an Instruction (I).
- b) The speaker, moreover, has to indicate what it is that the hearer should draw or write. It may be one of several different entities, as, for example in extract [5.1], "a black triangle" or "a red horizontal line". This element in the speaker's utterances will be called an Entity-referring expression (E).
- c) The speaker is also required to indicate the location of the entity, normally in relation to another entity. Expressions conveying this relationship are, for example, "above" or "half-way down" in extract [5.1]. Such an element in the speaker's utterances will be referred to as a Relator (R).

Thus, in an initial analysis of part of extract [5.1], the following identification of elements involved can be made.

halfway down the page draw a red horizontal line of about two inches

R

E

I

E

- d) In using expressions to refer to entities, speakers are also required to include certain properties which specify some relevant characteristics of the entity involved. Such properties are, for example, "red", "horizontal", and even "of about two inches" in extract [5.1]. Any such element in the speaker's utterances will be referred to as a Property (p). It will be treated as part of the entity component and attached to the element in the entity-referring expression which defines the basic type of entity involved. The defining part of an entity-referring expression is typically a nominal and will be referred to as an entity-referring base (e).

Thus, in the following extract, one of the E elements can be further analysed.

halfway down the page draw a red horizontal line of about two inches

p
p
e
p

R
E
I
E

It would be unlikely that each of these element-types would be expressed in a uniform way throughout a discourse or across discourses, and so some remarks on the varied realisation forms of each element are required.

6.2 I - Expressions

Extracts [6.1] - [6.11] are presented as instances where the underlined element will be treated as an I-expression in this analysis. In the whole body of data, imperative forms generally outnumber non-imperative forms, (ratio 7:5), but no particular significance is attached

to this. Many speakers use one form consistently throughout the exercise, to the exclusion of the other.

Imperative Forms

- [6.1] draw a red horizontal line of about two inches
- [6.2] at the top angle draw a line
- [6.3] draw a black triangle
- [6.4] underneath the circle write IN
- [6.5] to the right of that put a red cross
- [6.6] continue that line another inch
- [6.7] about half a centimeter down begin a red line

Non-imperative Forms

- [6.8] in the bottom right hand corner there's a red five
- [6.9] there is a red line underneath the black line
- [6.10] it's a right angle triangle in the centre
- [6.11] about halfway down is the top line of a black square

The most frequent instruction is, predictably, of the form, 'draw X'. The relatively high frequency of the indirect instruction form, 'there is X', might suggest that the status of the I-expression may be similar to that of existential quantification and could be captured more formally as $\exists x$ (it is the case that there is an x). This would be an adequate analysis if we viewed the speaker's activity as simply a matter of describing the drawing he has, regardless of his co-participant's activity. The speaker of the expression 'there is X', however, is committed, by the conditions of the interchange, to intend that the hearer produce an 'X' in his drawing as a consequence of the speaker's

utterance. The hearer's role, moreover, requires of him that he recognise that intention and, in fact, produce an X in his drawing, if he can, consequent upon the speaker's utterance. I suggest that a better analysis of the nature of all I-expressions (in terms of the intended perlocutionary effect) in this type of interchange, whether they are of the 'draw a line' or the 'there is a line' form, would be as "Make it the case that there is a line".

This formula captures what the different I-expressions have in common. The reason for their different realisations might best be explained by appeal to a difference in the position from which the speaker views the whole activity. If the speaker's view is concerned solely with accurately conveying the details of the drawing in front of him, then he will tend to use the 'there is X' construction more frequently. He may be, in effect, saying : "In my drawing, it is the case that there is X". If, however, the speaker projects his viewpoint into the hearer's position, exhibiting behaviour generally described as 'speaker's empathy' (cf. Kuno, 1976; Chafe, 1976; Kuno & Kaburaki, 1977), then he may use the 'draw X' construction more readily. The instruction, in this case, can be paraphrased as : "In your drawing, make it the case that there is X".

In support of the relevance of a consideration of 'speaker's empathy', there are occasional expressions involving 'you have' or 'you've got' as the I-element, as in extracts [6.12] and [6.13].

[6.12] you've got a red square

[6.13] in the top right hand corner you've got a black five

In using such expressions, the speaker appears to be viewing the task completely from the hearer's side. There is only one occasion¹ in the body of data where a speaker uses personal reference in his utterance, and forms such as 'I've got X' never appear. It may simply be that the task as a whole is conducive to the operation of speaker's empathy in the type of expressions used. Equally, it may be that some individuals generally avoid expressing direct commands.

There are a few occasions on which there is the 'non-realisation' of an I-element in an utterance. In extracts [6.14] - [6.16], the "make-it-the-case-that-there-is-" element is not overtly expressed. Such examples may best be treated as instances of ellipsis, where an earlier I-element, such as 'draw', 'write' or 'there is', is considered by the speaker still to be in force. This phenomenon, treated in syntactic analyses as 'gapping', has mostly been discussed in environments of conjoined structures. In this data, it apparently also operates in some paratactic constructions - as in extract [6.15] - where no co-ordinating conjunction is present.

[6.14] and a black cross to the left of that

[6.15] letters I and N underneath the line

[6.16] one inch along to the right and then one inch up

There are also some examples where the presence of expressions such as "another" and "again", as in extracts [6.17] - [6.19], indicate that the non-realised I-element is to be treated as simply a repetition of the previous one.

[6.17] then vertically for another inch

[6.18] and then again another inch

[6.19] then another diagonal to the bottom left hand corner

There is, moreover, the possibility of the repetition aspect being made explicit through the use of the VP-anaphor "do the same" as in extract [6.20].

[6.20] and do the same with a vertical one going down

The fact that the I-element can be realised as a VP-anaphor or, in fact, non-realised, should not be very surprising since there exists, in the preparatory conditions of the discourse type, some form of predetermination that the speaker will require some action of a limited type on the part of the hearer, consequent upon the speaker's utterances. It is, indeed, conceivable that if the I-elements were removed from a series of utterances, the utterances might take on a somewhat telegraphic appearance but their 'information content' would not be seriously reduced. For example, in extract [6.21], the brackets indicate where an I-element has been removed.

[6.21] in the middle () a black triangle with the right angle at the bottom right, and in the bottom left hand () a small red two; underneath the triangle () a red line

My suggestion is that, in terms of what information the speaker must give the hearer, the I-elements in the speaker's utterances may be considered, in some sense, to have less information content than other elements. This suggestion derives partly from the fact that the I-element can be 'non-realised', realised as a pro-form - as the barely discernible "is" or "'s" form, and very frequently as the lexically empty "there is/there's" form. In addition to these realisations, perhaps generally classified as 'attenuated', in the sense used by

Chafe (1974 : 112), it appears from an initial auditory analysis, that the realisations of all I-expressions, in terms of the parameters of pitch, length and loudness, are also phonologically attenuated. I will reconsider this point in section 6.14, where the phonological correlates of all elements in the information structure of this type of discourse will be discussed.

To summarise the discussion of I-elements in the speakers' utterances : I-expressions are to be taken as instructions to "Make it the case that there is", and are realised as -

imperative forms:- draw / write / put / continue / begin X

non-imperative forms:- there's / you've got / it's X

reduced non-imperative forms:- X is / is X

pro-form:- do the same

non-realised forms:- and \emptyset X / and \emptyset X again / and \emptyset another X

6.3 E - Expressions

Prior to discussing the realisation forms of E-elements, I would like to repeat some basic points (already introduced in chapter 4) in connection with the concept of the "domain of discourse". The basic assumption is that none of the utterances investigated here exists in isolation. Each utterance is made in the context of preceding utterances and has an interpretation relative to that context. In this view, the context of an utterance consists, at least partially, of the set of propositions which have been established by all utterances prior to that utterance. Preceding utterances also serve to establish a set of referential objects. Thus, the domain of discourse for any utterance

is taken to be the set of propositions and the set of referential objects already established prior to that utterance. The domain of discourse is augmented by referential objects existing, by virtue of their physical presence, in the situation of discourse. This limited view of the domain of discourse is derived from formal approaches to the analysis of relations existing between (mainly) sentence pairs, as found, for example, in Karttunen (1974), Stenning (1978) and McCawley (1979). Such a characterisation of what constitutes the domain of discourse does not make explicit how specific propositions and referential objects are established, nor does it provide any indication of the internal structure, if there is any, of the sets involved. An investigation of this second point will be undertaken in section 6.8. The first point can be discussed in terms of E-expressions in the data.

E-expressions are used to refer to entities. I will make a distinction between expressions used to refer to entities which, at a given point, are already in the domain of discourse and those which are being introduced into the discourse for the first time. In the controlled data used in this investigation, the entities a speaker can introduce into the discussion are limited and explicit. There is, therefore, some external constraint on what, at any point, may be treated as a 'new' entity in the domain of discourse. Similarly, at any point, the 'non-new' entities can be identified simply by checking for their existence in the domain of discourse up to that point.

Simply for ease of reference, and without any commitment to alternative theories employing these or similar terms², I suggest that, at any point, the E-expressions used to refer to 'new' and 'non-new' entities can be consistently identified, quite independently of notions such as "presented by the speaker as 'new'" (Halliday, 1967 : 205).

In order to make explicit the realisation forms of E-expressions used for 'non-new', as distinct from 'new' entities, some basic conditions for the identification of these components are required.

In the analysis of this data, I will identify as a 'non-new' component any expression used to refer to an entity which exists in the domain of discourse by virtue of :

- (A) its being physically present in the situation of discourse
- (B) its having been referred to, and fully specified, in the preceding discourse
- (C) its standing in one of a limited set of conventional relationships (specified in the inference rules) with an entity specified by condition A or B

Inference Rules³

- (i) $\forall x (D(x) \rightarrow L(x))$ e.g. 'Every diameter is a line'
- (ii) $\forall x y (C(x) \& D(y) \rightarrow \text{HAVE} (x,y))$ e.g. 'Every circle has a diameter'

Any expression used to refer to an entity which does not exist in the domain of discourse by virtue of conditions A, B or C will be treated as an E-expression introducing a 'new' entity.

Some exemplification may make the range of these conditions clearer. In the controlled situation of this discourse, the entities specified by condition A are primarily : piece of paper (page), black pen and red pen. (They also potentially include any other visually salient entities in the particular situation, such as chair, microphone, door, etc.) Examples are underlined in [6.22] - [6.26].

- [6.22] in the middle of the page
 [6.23] from the left hand side of the paper
 [6.24] black pen
 [6.25] the black pen
 [6.26] the red pen

Reference of this type has generally been discussed as either 'exophora' (Halliday & Hasan, 1976) or 'pragmatically controlled anaphora' (Hankamer & Sag, 1977; Yule, 1979).

Entities covered by condition B are those to which reference is made subsequent to an initial reference.

- [6.27] draw a black triangle underneath the triangle
 [6.28] draw a red horizontal line just above the line
 to the left of the red line about half a centimeter above it
 [6.29] there's a black circle above it there's
 [6.30] draw a red line at the end of this line
 [6.31] there's a red line to the left of that line
 [6.32] a vertical line to the right of that
 [6.33] a black triangle the black one

This type of reference is described as 'endophoric' (Halliday & Hasan, 1976) or 'syntactically controlled' (Hankamer & Sag, 1977), and has provided the basis of most discussions of 'given' information (as pointed out in chapter 2).

Condition B requires that the entity not only be previously referred to, but that the entity be 'fully specified'. A single introductory mention of an entity may not be sufficient to establish the existence of that entity in the domain of discourse if properties essential to its status as a particular entity have yet to be mentioned.

[6.34] draw a square, a red square, a fairly small square

and to the left of that square

In extract [6.34], the entity being introduced into the discourse domain is, in fact, "a fairly small red square", which, once fully specified, becomes subject to condition B, and is referred to by the underlined expression. From the discussion of example [6.34], it is apparent that the properties of entities are of some importance in the treatment of E-expressions. The nature of properties is discussed in section 6.4.

Condition C is an attempt to state explicitly a relationship which has been investigated mainly in the psycholinguistic literature (e.g. Haviland & Clark, 1974; Sanford & Garrod, 1978), but which has also been discussed at some length by Chafe (1974, 1976). The first inference rule is intended to capture a relationship I discussed in chapter 2 in terms of hyponyms and semantic superordinates, and its operation seems to account for the inclusion in the discourse domain of certain E-expressions which have not occurred previously, as in extract [6.35].

[6.35] the diameter is in black the black line

Although the diameter-line connection is generally acceptable, the inference rule does not depend on such obvious connections and is intended to capture more idiosyncratic equivalences such as the one expressed in [6.36].

[6.36] draw a red square a black square

the black box is underneath the red box

The second inference rule is designed to capture the part-whole relationships exemplified in extracts [6.37 - [6.39].

[6.37] there's a black circle the circumference is
 the diameter is

[6.38] a triangle the base line
the base
the bottom line
the angle
the top angle
the apex
the hypotenuse

[6.39] a square the top line
the bottom line
the top
the bottom
the side
the top right hand corner
the bottom left corner

It is clear from the variety of 'parts' that the mention of a 'whole' can introduce into the discourse domain, that the inference rules obviate the need on the speaker's part to state explicitly the existence of a large number of 'entities'. They provide a type of 'short cut' which virtually excludes from the discourse any sequence of the form :

draw a triangle
 the triangle has a base
 the base is

The inference rules also apply to entities covered by condition A, as exemplified by the occurrence of sequences like the following :

[6.40] the page the paper

[6.41] the pen the lid

[6.42] the page the top / side / corner / middle

I will return to a discussion of the locational aspects of entities present in [6.38], [6.39] and [6.42] in the section of R-expressions later (cf. section 6.5).

The two inference rules defined here are sufficient for the analysis of the limited range of such relationships found in the data under investigation. There are, potentially, many other relationships to be found in other types of discourse (some are listed as "coherence relations" by van Dijk (1977 : 106)) which might require different inference rules, such as relating set-membership.

What must be emphasised about these inference rules, whatever form they take, is that they are descriptive in nature. They are not prescriptive. Although they may describe a highly conventional inferential relationship for many speakers, they are in no sense obligatory inferences. Nor need any inferential relationship assumed to exist by an individual speaker necessarily express a 'true' relationship. What the inference rules attempt to capture is what the speaker is implicitly asking the hearer to accept as true in the domain of discourse. Because of this, the inference rules to be found in the analysis of spoken discourse may involve propositions which are patently false but which are accepted by the hearer. Extract [6.43] may provide an illustration of such a situation.

[6.43] draw a triangle the right angle is at the bottom right

If the inference involved here is presented as an example of material implication as in [6.43a],

[6.43a] (triangle (t) & right angle (r) \rightarrow Have (t, r))

then, assuming universal quantification as this formalism does, a false proposition is expressed. What the speaker in [6.43] appears to be assuming his speaker can infer is not of course that every triangle has a right angle, but that this particular triangle has a right angle.

Or is he? How does one decide? Perhaps the speaker does believe that every triangle is right-angled. The inference rules, however, are not intended as statements of speakers' beliefs. They are simply an attempt to capture, in as general a way as possible, the relationship between E-expressions at certain points in the discourse. As such, they may, of course, appear to misrepresent any individual speaker's beliefs, even those of the two individuals who combine to produce an equilateral right-angled triangle.⁴

Having established some principles for the identification of E-expressions used for 'new' and 'non-new' entities, a summary of the realisation forms is now possible.

E-expressions ('new'): (p) {a} (p) (p) e (p)

a line

a black line

a red horizontal line

a line of about two inches

in black a line

The indefinite article is the most consistent indicator of 'new' entity referring E-expressions. It will be included in any analysis of E-expressions in the form {a} , simply to distinguish it from the optional status associated with the use of the other brackets.

E-expressions ('non-new'):	<u>the</u> (p) (p) e	the line
		the red line
		the little red line
	<u>this</u> (p) e	this line
		this red line
	<u>that</u> (p) e	that line
		that black square
	<u>it</u> / <u>that</u>	
	∅	

The 'non-realisation' (\emptyset) of 'non-new' entity referring E-expressions has to be argued for on much the same grounds as those presented on behalf of 'non-realised' I-expressions. At the beginning of a discourse, a form such as [6.44] must be interpreted as [6.44a].

[6.44] in the middle draw a black triangle

[6.44a] in the middle (of the page) draw a black triangle

The existence of non-realised E-expressions, particularly in the interpretation of utterances, follows from the fact that every R-expression must be interpreted relative to some E-expression, and if the R-expression is not followed by an E-expression, then one must be understood as existing in the domain of discourse. How it is decided that one entity in particular in the domain of discourse is intended in the case of not only non-realised, but also of pro-form realisations of E-expressions will be discussed in chapter 7.

I have omitted from the realisation forms of E-expressions those expressions containing the substitute 'one'. I have done so because 'one' can be used in both 'new' and 'non-new' E-expressions, as illustrated in extracts [6.45] - [6.48], and, unlike 'it' or 'that', is not a distinguishing feature in the identification of types of E-expressions.

[6.45] draw a horizontal line a short one

[6.46] draw a line do the same with a vertical one going down

[6.47] a black triangle a red triangle the base of the red one

[6.48] draw a red triangle a right angle triangle like the black one

Halliday & Hasan's (1976 : 91) classification of this use of 'one' as a nominal substitute seems to me quite correct. It is a grammatical substitute, primarily replacing the 'e' part in this analysis. It can be considered to substitute for some of the 'p' forms plus the 'e' form, but when it does so, it is accompanied by another distinguishing 'p' form. In none of the above examples can the 'one' be treated as a referring expression. Whereas the pro-forms 'it' and 'that' are properly treated as E-expressions, instances of 'one' are considered '(p)e' substitutes and as such only function as parts of E-expressions.

To conclude this discussion of E-expressions, I would like to note that, as in the consideration of I-expressions, the possibility of pro-form realisation and non-realisation does suggest that non-new E-expressions may have, in some sense, a lower information content than other elements in the speaker's message. (The whole issue of relative information content is discussed later in section 6.6.)

6.4 P - Expressions

In the data under investigation, p-expressions are used by speakers to define various properties of entities. Any p-expression is, in a sense, contingent information, in that, unless it is considered part of an E-expression and attached to an e-element, its function in the utterance cannot be determined. An illustration of this contingency might be the non-occurrence of sequences like [6.49a] compared with the common format of [6.49b].

*[6.49a] draw something black it's a line

[6.49b] draw a line it's black

This is not to suggest that p-expressions cannot be separated from the entity-referring base (e), nor that one p-expression cannot apply to more than one e-expression at a time. Examples of both these situations are present in extracts [6.56] and [6.57] respectively. However, the majority of p-expressions do occur around e-expressions, as in extracts [6.50] - [6.55]. P-expressions are underlined.

[6.50] a red horizontal line of about two inches

[6.51] a small black five

[6.52] an inch square red

[6.53] OUT in black in capitals

[6.54] a black triangle a right angle triangle

[6.55] a black circle a fairly big circle

[6.56] in black write ON

[6.57] the red pen draw a straight line
and there's a line

In extract [6.57], the property 'red' of 'pen' must also be considered a property of the two lines which are subsequently referred to. There are several examples in the data of the colour-property, once mentioned for one entity, being 'non-realised' within the E-expressions used to refer to several other subsequent entities. Such non-realisation of a property appears to have a basis very similar to the non-realisation of I-expressions, discussed in section 6.2. Because of the nature of the discourse situation, once the black pen, for example, is in use, the entities to be drawn will have the property 'black' until a different colour is specifically mentioned, either as attached to 'pen', or to another entity. Colour p-expressions, then, will be treated as non-realised in E-expressions when the 'p' of a preceding E-expression is still in force.

Although the majority of p-expressions are adjectives, they may also appear adverbially. I will maintain, for the purpose of this analysis, that, despite the grammatical distinction between [6.58a] and [6.58b], they both function to introduce into the domain of discourse the proposition in [6.58c]. In the proposition, there is an e-element and a p-element.

[6.58a] draw a horizontal line

[6.58b] draw a line horizontally

[6.58c] Make it the case that $\exists x$ (line (x) & horizontal (x))

Thus, whether in adjectival or adverbial form, expressions used to introduce properties into the discourse will be treated as p-expressions which are part of some E-expression. Included as p-expressions, therefore are forms such as 'in black', 'in capitals',

and 'of about two inches'. (The motivation for placing a p-expression, if such alternatives are possible, either close to or quite separately from the e-element in the E-expression seems to be a structural rather than a categorial issue and will be discussed later in chapter 7.)

Those p-expressions which form part of E-expressions can be divided into three categories, defining the colour, size and type of entity involved. In the analysis which follows, these p-expressions will be referred to as p_c , p_s , and p_t respectively. Examples of each type are presented below.

[6.50] a red horizontal line of about two inches
 p_c p_t e p_s

[6.51] a small black five
 p_s p_c e

[6.52] an inch square red
 p_s e p_c

[6.53] OUT in black in capitals
e p_c p_t

From an analysis of all utterances in the data in which new E-expressions occur, it is possible to produce, in [6.59], not only the distributional options for the inclusion of p-expressions, but also to indicate the ordering relations if p-expressions occur together.⁵

[6.59] (p_c) I (p_c) {a} (p_s) > (p_c) > (p_t) e (p_s) > (p_c) > (p_t)

It is typically the case that p-expressions occur within E-expressions which introduce new entities into the domain of discourse. Their function is to specify the identifying features of the e-element. It is less usual to find the p-expressions repeated when a non-new E-expression is used. The normal sequence is of the following sort :

Although there is also a limited range of what can be described as p-expressions occurring within R-expressions, discussed in section 6.5, I will conclude this section by listing some of the realisations of p-expressions as they are found within E-expressions in the data.

p_c red, black, in red, in black
 p_s small, big, short, about an inch, two inches long
 p_t horizontal(ly), vertical, diagonal, straight, right angled, equilateral, in capitals⁶

6.5 R - Expressions

It will become clear from the examples presented in this section that R-expressions, or 'relators', typically precede non-new E-expressions. Many of the R-expressions are simply prepositions and combine with an E-expression to form what in syntactic analyses are treated as preposition phrases. Examples of simple R-expressions are underlined in [6.63].

[6.63] <u>above</u> the line	<u>in</u> the circle
<u>underneath</u> it	<u>inside</u> the triangle
<u>below</u> the red square	<u>outside</u> the circle
<u>under</u> that square	<u>beside</u> the red line
<u>across</u> the circle	<u>on</u> the line

All of these R-expressions provide locational information. The nature of the task, however, frequently requires that the speaker provide very detailed information regarding the exact location of a new entity relative

[6.65a] at the left hand side of the red line

As evidenced by "the left hand side" in [6.65], an internal E-expression in a complex R-expression will take the form of a non-new E-expression, a phenomenon already accounted for by the second inference rule of condition C, discussed in section 6.3, and exemplified in extracts [6.37] - [6.42].

The amount of locational detail included in the R-expression can vary, as shown in examples [6.66] - [6.68].

[6.66] in the middle of the page

[6.67] in the right hand corner of the triangle

[6.68] in the bottom right hand corner of the black square

It is a feature of the p-expression within R-expressions that they can be treated as the e-elements of the internal E-expressions, as in extracts [6.69] and [6.70].

[6.69] on the right of the triangle

[6.70] at the top of the black line

It is also fairly common for R-expressions to occur in environments (cf. [6.71] and [6.72]), where a non-realised E-expression, as described in section 6.3, must be posited.

[6.71] there's a red square
and in the top right hand corner ()

[6.72] draw a line
to the right hand side ()

In the examples provided so far, only a single R-expression has been used to specify the relation of a new entity to a non-new. Speakers can, of course, use more than one co-ordinate in attempting to locate the new entity, as in extract [6.73].

[6.73] on the right hand side just above the line
 R R E

I suggest that the structure involved here is not, in fact, one of two R-expressions and an E-expression, but rather, a structure of the form, R (E) R E, where one of the E-expressions is non-realised. Such non-realizations of E-expressions, or even the pro-form realisation in extract [6.74], occur when the entity related to is the same for both R-expressions.

[6.74] to the left of the red line about half a centimeter above it
 R E R E

Two R-expressions can, of course, take two different non-new entities, as in [6.75] and [6.76].

[6.75] draw a straight line across the circle underneath the diameter
 I E R E R E

[6.76] underneath the red line inside the circle write IN
 R E R E I E

All the R-expressions described so far have been locative⁹ in their specification of the relationship between entities. There is, however, a small number of expressions used in the data which function essentially as p-expressions, but which have the distributional characteristics (i.e. ('new') / _____ / ('non-new')) of R-expressions. I would like to treat such forms in the present analysis as, in fact, relators which do not provide locational information, but, instead, serve to specify a property of a new entity in relation to a property of a non-new entity. Thus, in extracts [6.77] - [6.80], the size (p_s) of the new entity is not conveyed by a simple p-expression, but by a complex form containing both a relator and a non-new E-expression.

[6.77] draw a red five about the same size as the black five

[6.78] there's a black square about twice the size of the
other square

[6.79] start a red line the same length as the black one

[6.80] draw in red another triangle smaller than the black one

The R-expressions in extracts [6.77] - [6.80] contribute to the specification of the ' p_s ' of the new entity. In extracts [6.81] and [6.82], they specify the ' p_t '.

[6.81] a right angle triangle like the black one

[6.82] a line parallel to the red line

Although there are no examples in the data, R-expressions such as "the same colour as" and "on the same side as" might have been used to specify the p_c and p_1 of new entities.

If the small set of property-specifying relators can be designated R_p , and the location-specifying expressions R_l , a summary of the realisation forms of R-expressions can be provided.

R_l (simple) above, below, in, on, across

(complex) about a centimeter above
 in the middle of
 at the left hand side of
 in the top right hand corner of
 at the top of

R_p about the same size as
 smaller than
 parallel to

I have attempted to describe all the various forms of R-expressions in some detail, because they seem to fulfil a special role in the information content of any utterance. At any point in the discourse, excepting the trivial cases of repetition, the use of an R-expression by a speaker will provide the hearer with crucial information about the location of entities which he did not previously have. Thus, R-expressions do carry 'new' information. They are also not liable to either pro-form realisation or non-realisation, unlike both I-expressions and non-new E-expressions. I will conclude this consideration of R-expressions with the observation that, on the criteria adopted in this analysis (i.e. susceptibility to attenuation), R-expressions would appear to have a higher degree of information content in the speaker's message than both I-expressions and non-new E-expressions.

6.6 An Information Content Hierarchy for the Basic Elements

Implicit in many of the comments made with regard to the components identified here, has been a notion of the relative amount of informational content carried by those components. I would like to propose a preliminary version, to be compared with evidence from the phonological parameters described in section 6.14, of the relative informational importance of these components, in the form of a hierarchy.

The speaker has to tell the hearer principally what there is and where it is and if either of these elements has precedence over the other, it is brought about by the fact that the need to say "what there is" occasions the need to add "where (what there is) is". Consequent upon the need to provide locational information comes the need to make the location relative to an already existing co-ordinate, or, to say "where (what there is) is (relative to what)". Only optionally does the speaker have to make explicit the already announced purpose of the transaction - that the hearer will not only receive the information, he will act, in the most literal way possible, upon that information.

Based upon this version of the speaker's task, the hierarchy shown in [6.83] is presented. Whether this rather abstractly conceived hierarchical relationship has any correlation with the structuring of messages at any given point in the discourse will be investigated in section 6.12.

[6.83] new E > R > non-new E > I

For ease of reference in future discussion and to formalise the distinction 'new' versus 'non-new' E-expressions, a simple numerical notation can be attached to E-expressions as they are introduced into

the domain of discourse. For those E-expressions which refer to entities existing in the situation of discourse by virtue of condition A (e.g. 'page'), the notation E^0 will be used. The zero notation is intended to capture the fact that such entities don't have to be introduced as 'new' entities into the discourse. As each 'new' entity is introduced in sequence, it is given a numerical superscript, as in [6.84].

[6.84] draw a line in the middle of the page and above it write ON
 E^1 E^0 E^1 E^2

The numerical superscript also attaches to the internal elements of the E-expression referring to the 'new' entity, as illustrated in [6.85].¹⁰

[6.85] about the middle of the page you've got a black square about two inches
 e^0 p_c^1 e^1 p_s^1
 E^0 E^1

and in the bottom right hand corner () you've got a red five
 E^1 p_c^2 e^2
 E^2

At any point in the discourse, the 'new' E-expression is that with the highest n, and any 'non-new' E-expression will be $n - \geq 1$. Thus, [6.83] can be rewritten in the form of [6.83a].

[6.83a] $E^n > R > E^{n - \geq 1} > I$

6.7 A note on Negatives and Questions

So far, all the elements in speakers' utterances have been treated as parts of messages which are positively stated to be the case. A speaker can, of course, provide information in the form 'it is not the case that X'. Moreover, the participant fulfilling the other role can ask for clarification of the nature of elements by asking a question : 'is it the case that X ?'.

In order to include these options and yet keep the analytic notation simple, I will use the symbols \sim and $?$, for negation and questioning respectively and suggest that they are attached to particular elements in the speaker's message, operating with narrow scope over only those elements. Examples [6.86] - [6.97] illustrate these points.

[6.86] in the centre of the page not against the side draw

$\sim R$

[6.87] on the bottom line not on the right

$\sim R$

In extracts [6.86] and [6.87], negation is restricted to the R-expression. In [6.88], it is an E-expression which is being negated ¹¹, and in [6.89], a p-expression.

[6.88] in the angle not the right angle

$\sim E$

[6.89] draw a square not a massive square

$\sim P_S$

Extract [6.89] provides a good example of the narrow scope aspect attributed to negation in the analysis of this data. It is not, as in

a wide scope interpretation, the nature of the e-element 'square' to which negation applies. The speaker obviously does not intend to say that the entity to be drawn is not a square. Nor can the negation be interpreted as having either the I-expression or the following R-expression within its scope. Negation here applies to the p-expression alone, 'not massive'. Attaching the negative operator to 'p_s', and not to the E-expression in which it occurs, captures this distinction.

In a similar way, the question operator will normally be attached to a specific element within an utterance. Thus, in extracts [6.90] and [6.91], it is the nature of the R-expression which is being questioned, in [6.92] and [6.93], the E-expression, and in [6.94] - [6.97], p-expressions.

[6.90] A : draw a black right angled triangle

B : is the right angle at the right hand side

?R

[6.91] is the red number two in the left hand corner

?R

[6.92] A : ... in black write ON

B : ON

?E

[6.93] A : there's a red five

B : five

?E

[6.94] A : ... a number five

B : in black

?p_c

[6.95] A : write IN in black

B : in capital letters
 ?p_t

[6.96] A : ... a triangle

B : is it an equilateral triangle
 ?p_t

[6.97] A : ... a triangle

B : how tall is it
 ?p_s

It is, of course, possible, though infrequent, that both the negative and question operators are attached to a single elements, as illustrated in extract [6.98].

[6.98] is ON not in the triangle
 ? ~R

Although it has not been made explicit, the analysis of certain forms as questions, especially those in [6.92] and [6.93], is based on an identification crucially dependent on intonational cues. Both 'ON' and 'five' in those examples are uttered with rising pitch, as is the non-lexical expression used to convey some confusion, doubt or failure to understand, exemplified in [6.99].

[6.99] A : ... the bottom left hand corner of a black square
 bigger than the first square ...

B : [e:] ()

Obviously, it is not possible to attach the question operator to the single element here. If the [e:] is correctly treated as a question, then it is a question about the feasibility of a combination of elements

or about the possible conflict of this information with previous information. Whatever the correct interpretation of the focus of this interjection, its function in the discourse seems intonationally cued. I will discuss intonational cues in greater detail in section 6.14.

6.8 Information Content - A formal Version

An attempt was made, in controlling the discourse situation (cf. chapter 5), to ensure that speakers conveyed primarily propositional information. It might seem reasonable, then, to assume that the propositions expressed could be accurately captured in a representation employing the formal notation provided by predicate logic. For example, I-expressions could be (partially) represented as existential quantifiers, e-expressions as individual terms functioning as arguments of predicates, p-expressions as one-place predicates and R-expressions as two-place predicates.

Thus, the analysis of [6.100] could be presented as in [6.100a].

[6.100] there's a black circle in the middle of the page

[6.100a] $\exists x$ (circle (x) & black (x)) & $\exists y$ (page (y))
& in the middle of (x, y)

Such a representation [6.100a] is unsatisfactory for several reasons. Firstly, it asserts the existence of both the circle and the page, whereas [6.100] appears to presuppose the existence of the page and assert the existence of the circle. The formula could be amended to reflect this relationship, and, additionally, to include the instructional aspect assigned to all I-expressions, as [6.100b].

[6.100b] It is already the case that $\exists y$ (page (y))

Make it the case that $\exists x$ (line (x) & black (x)) &
in the middle of (x, y)

Although [6.100b] is an improvement, it fails to take into account the fact that "page" in [6.100] is not, as [6.100b] suggests, a variable, but is, in fact, a referential constant. An extended argument for this distinction is presented in Karttunen (1976). In Karttunen's terms, 'discourse referents' are introduced into the domain of discourse in existentially quantified propositions as bound variables, but, once they have become part of the domain of discourse, they cease to be variables and become referential constants in that domain. In the type of discourse under discussion, one might say that 'new' referential objects are best treated as variables until assigned all their predicates, at which point they become fully specified as individual (and constant) discourse referents. This characterisation could be taken as simply a terminological variant of the distinction between 'new' and 'non-new' entity-referring expressions. 'New' E-expressions contain 'variables' and 'non-new' E-expressions contain 'constants'.

It should be possible, then, employing the existing notation of superscripted E-expressions, to convert quantified variables into constants in the discourse domain. The inclusion each time of a presupposed quantified variable, as in [6.100b], is therefore unnecessary. Using \mathcal{M} to represent the "Make-it-the-case-that-" function, the foregoing points can be exemplified in [6.100c].

[6.100c] Representation of
discourse fragment

(\mathcal{M}) $\exists x$ (circle (x) & black (x))
& in the middle of (x, E^0)

Representation of
relevant fragment
of discourse domain

E^0
(x=) E^1

Additionally, the representation within the discourse domain can include the predicates as an ordered stack, attached to the e-element. Such a representation would enable referents, in effect, to carry their (asserted) predicates with them. Thus, a fuller representation of discourse fragment [6.101] would look like [6.101a].

[6.101] there's a black circle in the middle of the page
across the circle there's a red line.

[6.101a] Representation of
Discourse Fragments

Representation of
Discourse Domain Fragments

(M) $\exists x$ (circle (x) & black (x))
& in the middle of (x, E^0)

E^0 [page]
(x=) E^1 [circle
black
in the middle of (, E^0)]

(M) $\exists z$ (line (z) & red (z))
& across (z, E^1)

(z=) E^2 [line
red
across (, E^1)]

The 'stacks' of 'frames' which contain the predicates of an individual constant could, of course, be represented discourse initially as a set of empty slots waiting to be filled, as in [6.102]. The existence of an empty slot consequent upon the specification of an entity might be one motivation for questions in the discourse.

[6.102]

(x=) E^n

[e^n _____
 p_c^n _____
 p_t^n _____
 p_s^n _____
R _____ (E^n _____ , E^{n-1} _____)]

Admittedly, such a formal approach would go some way towards capturing the content of speakers' messages. What it would destroy, however, because of the internal syntax of the calculus, would be the structure, (principally, the linear structure) of those messages. Since it is, in fact, the structuring of the content of messages in their utterance that is the subject of the present study, the adoption of such a formal apparatus - as attempted by McCawley (1979), Stenning (1978) and Webber (1978) for the analysis of fragments of discourse - would, in the present investigation, prove to be of only limited value. It is an approach, nevertheless, which provides some insight into the type of propositions consistently being expressed in the data and suggests a way in which the discourse domain might be organised for the purpose, for example, of computer modelling of this type of discourse.

The nature and organisation of predicate sets attaching to referring expressions will be further investigated in the sections dealing with conversational discourse later. Having noted the importance of the structure of speakers' contributions to the type of discourse presently under investigation, I would like, in the next five sections, to present an analysis of how the various elements, identified in the preceding sections, are combined.

6.9 Information Structure

The preceding section has described a set of discrete components which have been identified as the information-carrying elements in the speaker's message. Each element can be viewed as having a degree of information content.

I would now like to consider in which ways, if any, such elements can be combined to form larger structures. In other words, the discourse is poorly analysed if simply described as an unstructured succession of I-, R- and E-components. If each component conveys a certain amount of information, can it be described as a unit of information? Or, is an information unit a particular combination of components? How these questions are answered depends on what principles are used to define the notion of 'information unit'.

6.10 The Information Unit

The concept "information unit" is derived from Halliday (1967). For Halliday, the information unit is co-extensive with the phonologically defined tone group and contains an information focus, realised in the constituent containing the tonic syllable. Recent research and experimental work has raised some doubts about the validity of both the tone group and the tonic nucleus as discrete, consistently identifiable (using Halliday's criteria) elements in the stream of speech. Currie (1979b; 1980) has shown that, in her data, the single tonic tone group is the exception rather than the rule and Brown et al. (1980) have argued that the boundaries of the Hallidayan tone group are determined on syntactic (as well as phonological) grounds more frequently than on phonological grounds alone. Although the primary interest in the present analysis is not in phonological correlates of elements in the information structure of spoken discourse, any experimental work in that area which undermines the basic identifying features of the Hallidayan tone group must also disturb the conventional foundations

of the information unit as a formal category in the analysis of the organisation of spoken discourse. It is worth noting, however, that it is not the existence of the information unit which is being called into doubt, but the characterisation (the identifying set of features) which is being challenged. If an investigation of information structure in spoken discourse is committed to a level of analysis which includes a feature called an 'information unit', it must provide alternative identifying criteria.

I think Halliday was quite correct in his proposal that speakers do organise their messages into what he called "quanta of information or message blocks" (1967 : 202) and that this organisation is not simply a result of the ordering of constituents in syntactic terms, but rather that "the distribution of information specifies a distinct constituent structure on a different plane" (1967 : 200). Where he was possibly mistaken was in attempting to limit the organising mechanisms to options within the intonation system, evidenced in his claim that "in English, information structure is expressed by intonation" (1970 : 162). If that was the case, then the sequence of information units should be easily identifiable from a content-indecipherable, but tone-clear recording. In practice, it is not. That the sequence of information units cannot be marked out in the stream of speech on the basis of intonational evidence alone should be obvious to any phonetician who has ever confronted (without verbal transcript) a pitch-meter printout, containing all necessary fundamental frequency, intensity and duration readings, or even the more specifically frequency-based output of a laryngograph. What Halliday surely can not mean is that information structure is expressed by intonation alone. The claim, as it is expressed, is too strong.

In seeking additional criteria with which to define the information unit, it is important to remember that one is investigating an aspect of the pragmatics of language - in the traditional sense (Morris, 1938 : 1946) of the relationship between signs and their users. An information unit is, ultimately, what the speaker decides to encode as a unit of information. Such an entity is liable to variation on several different parameters and will differ according to different contexts and situations of utterance. For example, in terms of content, the information units in the speech of a scientist will differ according to whether he is addressing a colleague or a layman, whether reading a paper or speaking extempore, whether talking in quiet or noisy circumstances, whether freely or surreptitiously, at his own pace or subject to frequent interruption, and so on. I wish simply to introduce the possibility of 'type-and-situation-of-discourse-specific' features of information units. Indeed, I suggest that any discussion of the internal features of the information unit should always be related to a specific type of discourse. I will, accordingly, only discuss, and hence make claims about, internal features of information units as they occur in the particular type of data used as the basis of this investigation.

The problem of defining the boundaries of an information unit remains. The procedure adopted by Currie (1979b) for the analysis of 'chunks' of speech (which she found to be comparable to the tone group of Halliday (1970) and the tone unit of Crystal (1969), but which failed to comply with their specifications for such 'groups' or 'units') was to reconsider the function of pause phenomena in dividing up the stream of speech. She found that, despite the occurrence of brief pauses which resulted from hesitations, or 'planning', and which frequently interrupted major syntactic constituents, there was a consistent use of slightly

longer pauses to mark the boundaries between units of speech. While Currie's (1979b) work was primarily concerned with producing a phonological description, her findings support an analysis of information units in spoken discourse as 'pause-defined'. Recent work reported in Chafe (1979) also appeals to the use of pauses as markers in the structuring of contributions to a discourse. Butterworth (1980) and many of the contributions in Dechert & Raupach (1980) suggest that the role of pausing in speech has been seriously underrated.

6.11 Pause-Defined Units

The use of pause phenomena as a base on which to build an analysis of spoken data chunking might, at first glance, seem a rather precarious undertaking. The number and duration of pauses used by a speaker will obviously vary according to his rate of speech. Moreover, it would be unlikely that any one pause length, say one second, would have a single function for all speakers in all speech situations. The most one might hope to achieve would be the identification of types of pauses which occur with some frequency in a stretch of spoken discourse.

As an example, extract [5.1] is repeated below as [6.103] with measureable pauses included, the numbers representing seconds and fractions of seconds.

[6.103] A : halfway down the page (0.3) draw (0.65) a red (0.4)
 horizontal line (0.25) of about (0.5) two inches (16.00)
 on [e:] (1.1) the right hand side just above the line (1.9)
 in black (0.15) write ON (3.2)

B : ON (3.4)

A : above the line (14.00) draw (0.2) a black (0.65) triangle (1.00) em (1.9) a right angle (0.2) triangle (1.9) starting to the left (0.25) of the red line (1.00) about (0.95) half a centimeter above it (3.9)

In extract [6.103], the following pause types, defined in terms of relative length, can be identified.

Extended Pauses are the very long pauses of 16.00 and 14.00 seconds which occur at points where the speaker has provided sufficient information to allow the hearer to actually draw or write what has been described. If 16.00 seconds represents, in this extract, the upper limit on the length of this type of pause, the lower limit appears to be in the region of 3.2 to 3.9 seconds.

Short Pauses have, in this extract, a lower limit of around 0.15 - 0.2 seconds and an upper limit of about 0.65 seconds.

Long Pauses have as their range, from around 1.00 second, including 0.95 to about 1.9 seconds in this extract.

If the extended and long pauses can be proposed, as a working hypothesis, as boundary markers for units of some kind, and the short pauses treated as unit-internal, then the extract can be divided up in the following way. (As a simple shorthand for the types of pauses involved, the extended pauses are represented by ++, the long pauses by +, and the short pauses by -.)

[6.103a] A : halfway down the page - draw - a red - horizontal line -
of about - two inches ++
on [e:] +
the right hand side just above the line +

in black - write ON ++

B : ON ++

A : above the line ++

draw - a black - triangle +

em +

a right angle - triangle +

starting to the left - of the red line +

about +

half a centimeter above it ++

Such an analysis, while providing a potentially useful way of dividing up the speech into units which may reveal information structure, also produces some anomalies. There appear to be three possible units of information containing "+ on [e:] +", "+ em +", and "+ about +". Since little would be gained from treating these three 'chunks' as, in fact, carrying 'information' of the propositional type, I will propose that any unit bounded by long pauses and containing an element from a major syntactic unit which is completed in the following unit should, in this type of analysis, be attached to the following unit. Thus, "+ on [e:].+" should be attached to "+ the right hand side +", and "+ about +" should be attached to "+ half a centimeter+". In those cases where a unit contains a hesitation filler, such as "+ em +", it can simply be treated as an empty unit.

In order to show that the pause types proposed for the analysis of extract [6.103] are not simply a peculiar idiosyncrasy of one speaker, extract [6.104], from a different speaker, is presented with pause lengths included. For this speaker, the following pause type ranges can be proposed. Short pauses are 0.15 - 0.6 seconds, long pauses 0.8 - 1.5 seconds, and extended pauses 5.00 - 12.00 seconds.

'chunk' or even part of a larger 'chunk', I propose that such potentially anomalous units be combined. The limit on such combinations of pause-defined units is determined by the point at which, on combination, a major syntactic constituent is completed. This limitation allows the analysis to combine units on those relatively few occasions when there are extended hesitation or planning pauses within major syntactic constituents. It also constrains the combination of units to only those occasions. A basic feature of this analysis is the attempt made to capture what the speaker has produced as a pause-defined unit, that is, the speaker's information unit, and to keep such units separate as far as possible.

This minimal regularization of the data can be made explicit. In the analysis which follows, forms such as those listed in [6.105], which, in a strict interpretation of long pauses as boundary markers, would be treated as 'units', will, in practice, not be considered units carrying propositional information.

[6.105] + on [e:] + + [e:] + + em + + ah +
 + um + + about + + and + + and it +
 + and then + + and there's + + from the +

Any other pause-defined unit will be treated as an information unit.

Since no attempt will be made to discuss the function of short pauses with regard to the information structure of this type of spoken discourse, they will not be marked in the extracts used subsequently, except in cases where they are of some assistance in determining where a speaker has repeated or corrected some item, as in extracts [6.106] and [6.107].

[6.111] + in the top one there's a red square +

R E² I E⁴

[6.112] + to the right of that put a red cross +

R E² I E³

[6.113] + in the bottom left hand corner of the black square

R E⁶

draw a red five +

I E⁷

[6.114] + above it write ON +

R E¹ I E²

An alternative permutation of the four elements is also used by speakers, both discourse-initially, as shown in extract [6.115], and non-initially, as [6.116] and [6.117]. The order of elements in these examples is I Eⁿ R E.

[6.115] + draw a line in the middle of the page +

I E¹ R E⁰

[6.116] + draw a diameter across it +

I E² R E¹

[6.117] + there's a red letter X at the top of the black line +

I E⁸ R E⁷

6.12.ii Extended Paradigm Information Units

It is generally the case that paradigm information units such as those illustrated in [6.108] - [6.117] are the largest units to be found in the data. There are, however, some instances of what might best be described as 'extended' paradigm units, shown in [6.118] and [6.119].

[6.118] + draw a straight line across the circle underneath the diameter +

I E⁵ R E¹ R E²

[6.119] + at the right hand side of this line write the word ON

R E³ I E⁴

just above the line +

R E³

Both these units contain the elements R E in addition to the basic elements present in the paradigm forms. These additional elements can best be treated as an optional extension on the two basic, and more common, paradigm information unit structures.

6.12.iii Reduced Paradigm Information Units

It is hardly surprising, remembering the information content hierarchy proposed in section 6.6, that each of the two elements lowest in the hierarchy can be omitted from an information unit. In such cases, the resulting three-element unit may be regarded as a 'reduced' paradigm information unit. Examples where a non-new E-expression is non-realised discourse-initially are presented in units [6.120] and [6.121], and non-initially in [6.122] - [6.125].

[6.120] + on the left hand side () there's written in black the word OUT ++

R (E⁰) I E¹

[6.121] + there's a circle in the middle () ++

I E¹ R (E⁰)

[6.122] + in the bottom left hand () draw a small red two +

R (E¹) I E²

[6.123] + in the top right hand corner () there's the number five in black ++

R (E⁴) I E⁵

[6.124] + there's a line at right angles () +
 I E⁷ R (E⁶)

[6.125] + in the right hand corner () there's a two +
 R (E⁵) I E⁶

The non-realisation of an I-expression, under circumstances already discussed in section 6.2, is exemplified in extracts [6.126] and [6.127].

[6.126] + () letters I and N underneath the red line in black +
 (I) E⁹ R E⁵

[6.127] + () black letter X to the left of the red line +
 (I) E¹⁰ R E⁷

A summary of the forms of the paradigm information unit can now be presented in [6.128]. There are two basic structures, each having optionally realised elements.

[6.128] + R (E) I Eⁿ (R E) +
 + (I) Eⁿ R (E) (R E) +

6.12.iv Partial Paradigm Information Units

In the two basic structures described as the paradigm information unit, the alternative organisations of the unit can be viewed as a permutation, not of four single elements, but of two double elements. The unit is either R E before I Eⁿ or vice versa. A basic point must be made here : that is, there is not free ordering of elements in these paradigm information units. The relator colligates¹³ with the 'non-new' E-expression and the instruction element with the 'new' E-expression. These close relationships are reflected in the organisation

of information units containing only two elements. In a large number of cases, two consecutive two-element information units can be viewed as sharing the structure of one paradigm information unit. Thus, in [6.129], there is the sequence + I Eⁿ + R E +, and, in [6.130], the alternative sequence + R E + I Eⁿ +.

[6.129] + there's a two + in the corner of the bottom triangle +

I E⁸ R E⁵

[6.130] + in the top right hand corner of that square + draw a black five +

R E¹ I E²

In both [6.129] and [6.130] there are two information units. I will describe such two-element units as 'partial' paradigm information units. They need not always be used as one part of a two-part paradigm form. Isolated partial paradigm forms are exemplified in extracts [6.131] - [6.134].

[6.131] + in the circle +

R E¹

[6.132] + underneath the triangle +

R E¹

[6.133] + at the top of the triangle +

R E¹

[6.134] + draw a red line +

I E³

The use of R-expressions to relate the property of one E-expression to another, as described already in section 6.5, also tends to result in the formation of a partial paradigm unit, illustrated in [6.135] and [6.136].

[6.135] + about the same size as the black five +

R E²

[6.136] + about twice the size of the other square +

R E⁴

I would also like to treat the units illustrated in [6.137] and [6.138] as partial paradigm information units. In both cases, an R-expression is the only element in the information unit, but, as argued in section 6.6, an R-expression can only receive interpretation in relation to a non-new E-expression. A non-realised E-expression is therefore included in the analysis of these units.

[6.137] + in the top left hand corner () +

R (E⁰)

[6.138] + to the left () +

R E¹)

The forms of the partial paradigm information unit are summarised in [6.139].

[6.139] + I Eⁿ +

+ R (E) +

6.12.v Minimum Information Units

Information units containing a single element, apart from the instances of single R-expressions discussed above, generally occur in environments where a 'new' E-expression has been introduced and to which a further property is added. The common element in all minimum information units is a pⁿ-expression.

In extracts [6.140] and [6.141], the p_s of the e-element in the preceding information unit occurs in an information unit alone.

[6.140] there's a red square + about an inch +

$$p_c^4 \quad e^4 \quad p_s^4$$

[6.141] draw a line + about two inches +

$$e^1 \quad p_s^1$$

Where the single element is an E-expression, it always consists of a repetition of an e-element from the preceding information unit plus a p-expression, not previously mentioned, as shown in extracts [6.142] - [6.145]. In each extract, the 'new' p-expression is underlined.

[6.142] draw a black triangle + a right angle triangle +

$$p_c^3 \quad e^3 \quad p_t^3 \quad e^3$$

[6.143] draw a black five + a small black five +

$$p_c^2 \quad e^2 \quad p_s^2 \quad p_c^2 \quad e^2$$

[6.144] draw a line + [e:] + a diagonal line +

$$e^3 \quad p_t^3 \quad e^3$$

[6.145] there's a two + a black two +

$$e^6 \quad p_c^6 \quad e^6$$

In each of these examples, the E-expression in the minimum information unit is treated as a 'new' E-expression, as described already in section 6.3. The introduction of a new entity into the domain of discourse is not complete until all its relevant specifying properties have been mentioned. Thus, a 'new' p-expression is sufficient to give an E-expression the status of a 'new' E-expression,

even although the e-element has already been introduced. The form of a minimum information unit may be expressed as in [6.146].

[6.146] + pⁿ (eⁿ) +

I have attempted in the preceding discussion to demonstrate that the discourse is not simply a string of I-, R-, and E-elements, but that these elements are combined into units. An immediate question arises. Is the discourse, then, simply a string of information units, or can these units be combined to form larger structural 'chunks' ? I suggest that there is a level of discourse structure above the information unit. In specific terms, I propose that information units can be combined to form information 'clusters' and that the boundaries of such clusters are regularly marked by speakers.

6.13 Information Clusters

In the analysis of pause types presented earlier, it was noted that speakers not only used long pauses to mark the boundaries of 'chunks', but also occasionally produced extended pauses. I suggested that, in the speech situation under consideration, these extended pauses occurred where the speaker paused to allow his hearer to draw or write the entity described, in the location specified. Extended pauses may therefore be taken as indications of points in the discourse at which some sub-part of the speaker's task is treated by the speaker as complete. As such, they may be appropriately considered as markers of the boundaries of information clusters. The internal requirement for a 'chunk' of discourse to be treated as an information cluster is that it introduce into the discourse domain a new entity. (It may be noted

that this is not a requirement of the information unit.) Moreover, the use of the term 'cluster' is intended to capture the fact that the information-carrying elements are grouped or clustered around a 'core' element which is the e-element of the new entity-referring expression. Some exemplification may make these points clear. An information cluster must minimally contain one information unit. As illustrated in [6.147] and [6.148], a single information unit - specifically, a paradigm information unit - may, by itself, form an information cluster.

[6.147] ++ halfway down the page draw a red horizontal line of about two inches ++

(16.00 seconds)

[6.148] ++ there's a red letter X at the top of the black line ++

(4.1)

(2.65)

In extracts [6.149] and [6.150], two information units are combined to form an information cluster, once again with a core e^n , of 'square' and 'OUT' respectively.

[6.149] ++ in the top one there's a red square + about an inch ++

(5.00)

(0.9)

(9.5)

[6.150] ++ and- in a- write OUT in black felt pen + at the end

(5.2)

(0.95)

of that line ++

(3.2)

In extract [6.151], there are three, and in extracts [6.152] and [6.153], four information units combining to form one information cluster each time.

[6.151] ++ there's a black circle in the middle of the page +

(1.1)

a fairly big circle +

(0.9)

about an inch in radius ++

(4.2)

[6.152] ++ then from the top left hand corner of the little red square +

(2.5)

(1.05)

draw a straight line +

(0.85)

[e:] + a diagonal line +

(0.95)

(0.8)

downwards ++

(5.2)

[6.153] ++ draw a black triangle +

(14.00)

(1.00)

em + a right angled triangle +

(1.9)

(1.9)

starting to the left of the red line +

(1.00)

about + half a centimeter above it ++

(0.95)

(3.9)

In all these extracts, there is a single core e-element around which a group of predicates is clustered. The formal propositional analysis of the content of utterances, presented earlier in section 6.8, was an attempt to capture this same feature. Information clusters, in this respect, are the predicate sets of 'new' E-expressions.

A frequent, but by no means necessary, corollary of the beginning of an information cluster, especially non-initially in the discourse, is the occurrence of the expressions "now", "then", "okay", "well", and "right", alone or in combination.

It is also frequently the case that questions from the instructee coincide with the extended pause between information clusters. This latter phenomenon may, of course, be attributed to the highly co-operative nature of the transaction. Since there is no competition for the 'turn', as that term is used by Sacks et al. (1974) and Duncan (1973) inter alia, it is fairly predictable that the instructee will avoid interrupting on both the short and long pausing of the instructor and wait for the extended pausing which marks a completion point with regard to the specification of a particular entity. For, if the specification is marked as complete and the instructee does not have sufficient specification to draw or write the entity, he must (or is most likely to) indicate that the specification, for his purposes, is not complete. He therefore typically asks a question about a particular element. Otherwise, he typically remains silent and follows instructions.

An information cluster, then, is bounded by extended pauses and consists of one or more information units. It introduces a new entity into the discourse and the core feature of the cluster is the e-element of the new E-expression.

There are two occasions in the data where this general description of the nature of information clusters appears to be inadequate.

In extract [6.154], there is a possible completion point in the pause lasting 2.15 seconds, but the speaker continues, ostensibly adding further specification. Moreover, having added further specification, the speaker does not produce an extended pause before embarking on the specification of another entity.

[6.154] ++ in the top left hand corner +

(1.35)

draw a square a red square + (+)

(2.15)

red square equal sided quite small si- [e:] quite a small square +

(1.8)

and in the

I suspect that in [6.154] the speaker has in fact completed her specification of the new entity with the first two information units and pauses (2.15 seconds) to allow the hearer to draw 'the square'. She then decides to provide additional information, possibly while the hearer is drawing the square. One item of this additional information is, in fact, relevant to the specification of the entity - the p_s -element, "quite small". The other item "equal sided", a potential p_t -element, is, in the circumstances, tautologous. I will treat the additional specification which this speaker provides here as, in fact, part of the information cluster around the e-element "square", and accept that, although the extended pause is a very regular feature between clusters, it has, on this occasion, been partially 'filled' by the speaker.

In another example, extract [6.155], which does not conform to the otherwise consistent formula proposed for the information cluster, the speaker introduces two new entities within a single cluster.

[6.155] ++ there's a two +

(2.85) (0.85)

in the corner of the bottom triangle - and the - in the angle +

(0.85)

at the bottom +

(0.95)

left hand side +

(0.85)

and there's a two +

(0.8)

in the top triangle in the - in the right angle + (+)

(1.85)

(followed by a question from the instructee)

A simple explanation for the speaker's inclusion of two new entities in one cluster may be derived from the fact that the two entities involved do not require a lot of specification (e.g. no 'p'-expressions), nor do they require a lot of drawing time. They are also the last two entities described in this discourse and the speaker may, quite understandably, have been in a hurry to get it over with.

Such explanations can have no formal justification. They could be justifiably criticised as 'ad hoc'. The present analysis, however, is not intended as a total account of all the factors which bear upon the structure of speakers' utterances in this type of discourse. It is an attempt to describe the regularities to be found within what is often dismissed as unanalysable performance data. Consequently, and this has to be stressed, the analytic account of the information structure of spoken discourse provided here is an account of what is consistently, but not necessarily always, done by speakers. The discussion is in terms of regularities rather than of rules.

I have claimed, in this section, on the basis of the regularity of phenomena, that the stream of spoken discourse can be divided into information clusters bounded by extended pauses, and that, within these clusters, there are information units bounded by long pauses. Within these information units, there is a limited set of structures used by speakers to combine the basic I-, R-, and E-expressions, described in the previous section.

I introduced this discussion of units in the information structure by adopting Halliday's (1967) notion of the information unit, but proposing a different way of defining such units. Halliday's description of the internal structure of the information unit was expressed primarily in terms of the phonological features of elements in those units. In the next section, I will present an analysis of the phonological correlates of elements in the somewhat differently identified information units described in the present investigation.

6.14 Phonological Correlates of Elements in the Information Structure

For Halliday (1967, 1970), the information unit contained an obligatory 'new' constituent. In this analysis, the elements E^n , R and p^n have, on different occasions, all been described as carrying 'new' information. Surveying the types of information units described here, it is fairly clear that there is no unit-type proposed which does not have a 'new' element. However, the Hallidayan information unit is described as having only a single new constituent. This, continuing the comparison, is the case for both the partial paradigm and the minimum information unit types described in this analysis. It is not the case

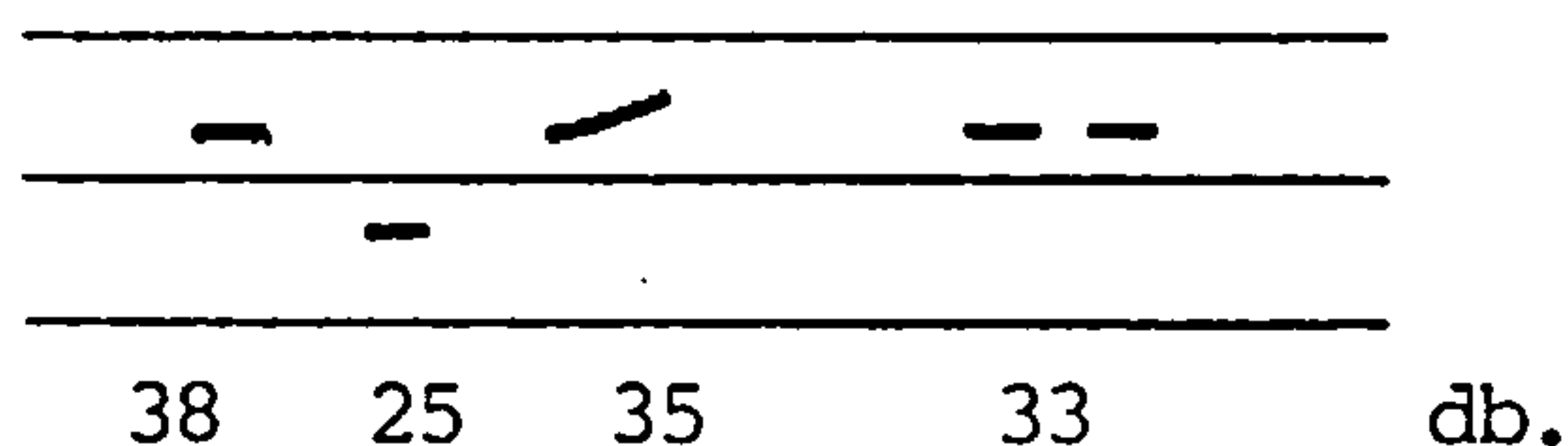
for the paradigm and reduced paradigm information units, which have two 'new' elements. Nor is it true of the extended paradigm unit which must be considered to have three 'new' elements.

Halliday's discussion of the single new element per information unit was based on the identification of a single phonologically prominent constituent.¹⁴ It should follow that, if phonological prominence is a fundamental correlate of 'new' information in the speaker's message, then the paradigm information units proposed here should have two points of phonological prominence. Concomitantly, those elements in the speaker's message which carry 'non-new' information, referred to as 'given' by Halliday (1967 : 204), should not be phonologically prominent. A basically similar binary distinction between 'new' - prominent and 'old' - non-prominent is expressed by Chafe (1970 : 116; 1974 : 112; 1976 : 31). Converted into the terms adopted in the present analysis, this should mean that the top two elements in the hierarchy (E^n and R) will be more prominent than the bottom two (E^{n-1} and I).

Although both Chafe and Halliday regard pitch as the key phonological parameter, they differ in their descriptions of what aspect of pitch is involved in the marking of new information. For Halliday, it is "pitch movement, not pitch level" (1967 : 203) and for Chafe (1970 : 116) it is pitch height. In chapter 3, I argued that Chafe's criterion, presumably based on a consideration of American speech, was more appropriate in a description of Scottish English than that based on the Southern British English speech described by Halliday. It will become clear in the extracts analysed here that pitch height is a more consistent marker of perceived phonological prominence than pitch movement. However, in an attempt to give as complete a picture as possible of the pitch phenomena in the data, I will represent, in the transcriptions, both pitch height and movement.

Although considered to be of only secondary importance by Halliday (1967 : 203), the relative intensity or amplitude of elements seems to play a part in producing phonological prominence as against non-prominence. Chafe consistently appeals to both pitch and amplitude as 'indices' of the distinction (cf. 1972 : 51). While there is a complex relationship between differences in frequency vis à vis differences in intensity (cf. Gulick, 1971), there would appear to be a basic correlation of high pitch and high intensity with perceived prominence and low pitch plus low intensity with non-prominence in Scottish English (cf. Currie, 1979b). I have therefore included measurements¹⁵ of intensity as additional evidence in support of the attribution of prominence to certain elements in the information units. In the transcriptions which follow, the fundamental frequency (f_0) measurements are above the stave and the intensity measurements below. The top and bottom lines of the stave represent the upper and lower limit of the pitch range used by the speaker. Since speakers differ in the extent of pitch range used, the upper and lower limits in any extract are to be understood as those of that particular speaker. It is impossible to set a figure, either in the frequency scale or the intensity scale, and say that above such a figure means prominence, and below, non-prominence. Consequently, all claims regarding prominence or the lack of prominence are relative and involve taking X as more prominent than Y in the specific context discussed. Transcriptions on the stave represent both pitch level and movement. Thus, for example, in the following extract (6.156),

[6.156] + draw a black triangle +
 250 225 250-300 250 cps.

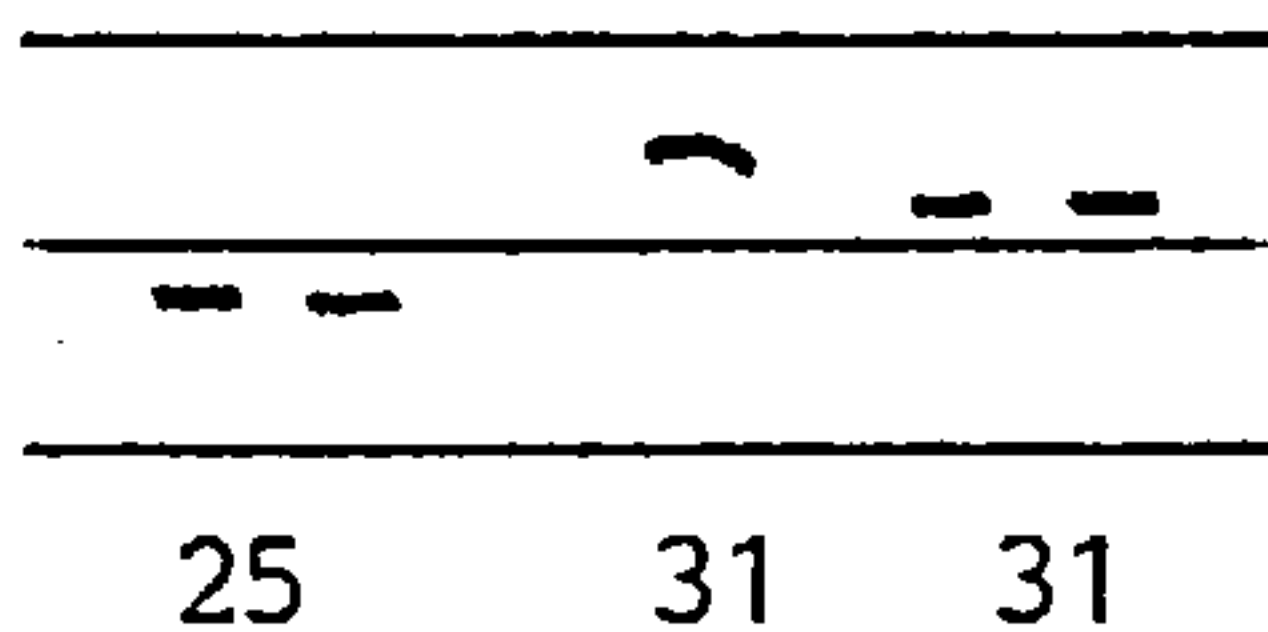


the numbers above the stave are f_0 readings in cycles per second (cps.),
 the numbers below the stave are intensity readings in decibels (db.)
 and the stave contains level pitch marking for 'draw' and 'triangle',
 with rising pitch movement for 'black'.

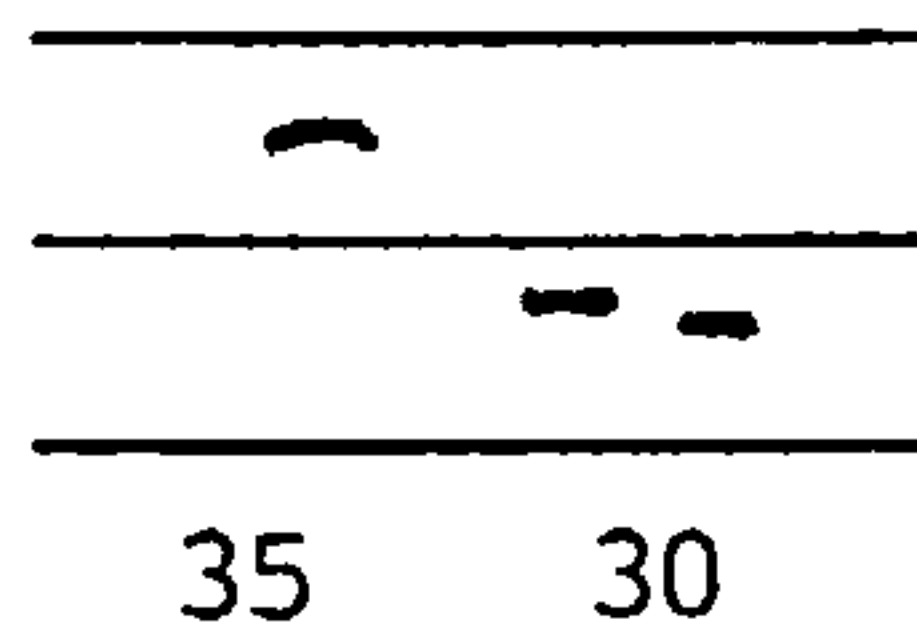
Using this fairly clear representation of the relevant¹⁶ phonetic
 parameters involved, I can now investigate some examples of the different
 types of information units discussed in the preceding section.

Extracts [6.157] - [6.158] are minimum information units of the
 type - p^n (e^n).

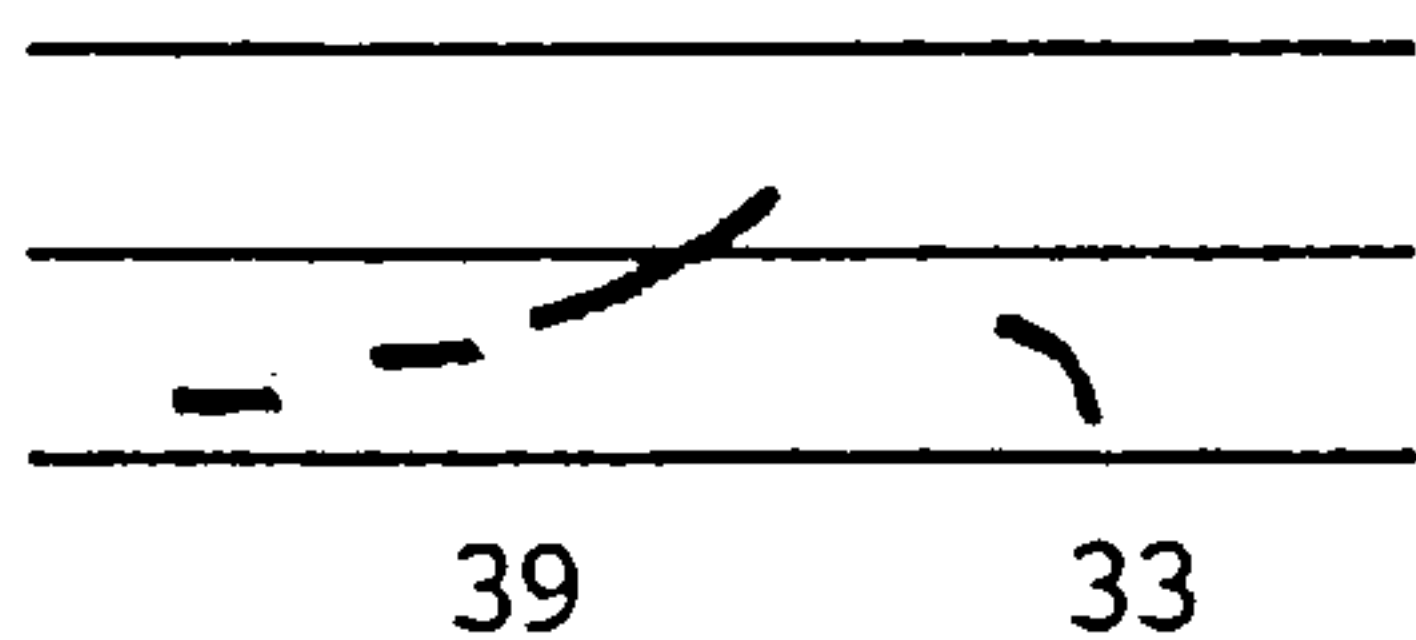
[6.157] + about two inches
 225 260 240



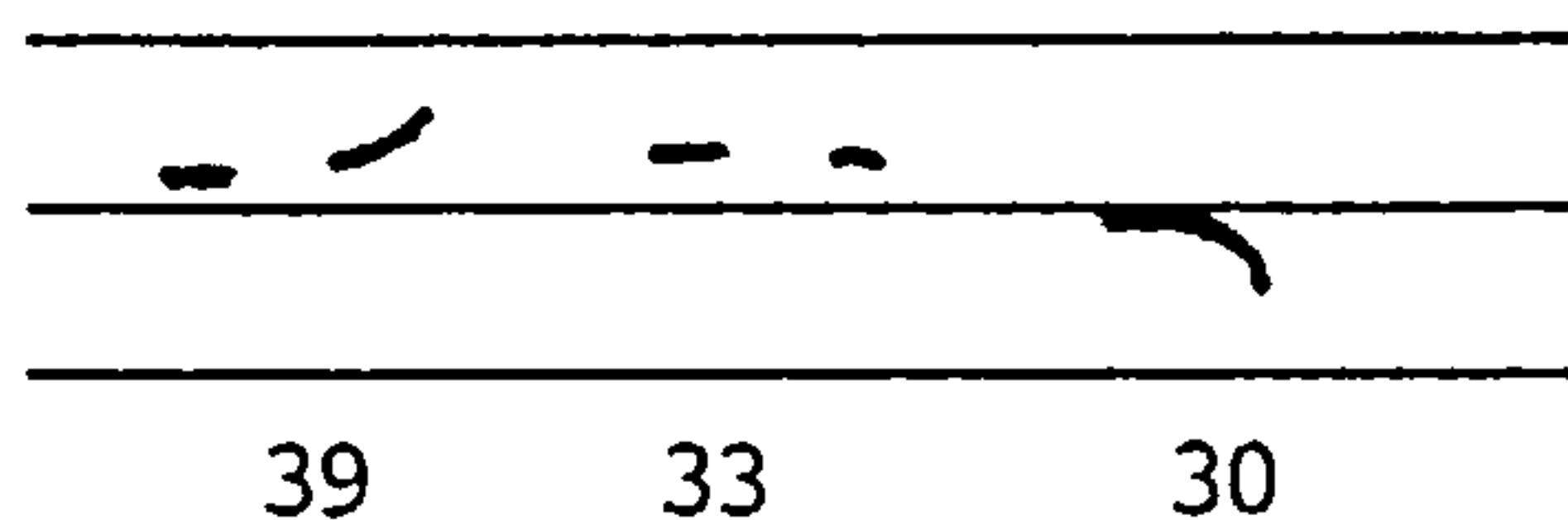
[6.158] + two inches
 260 225



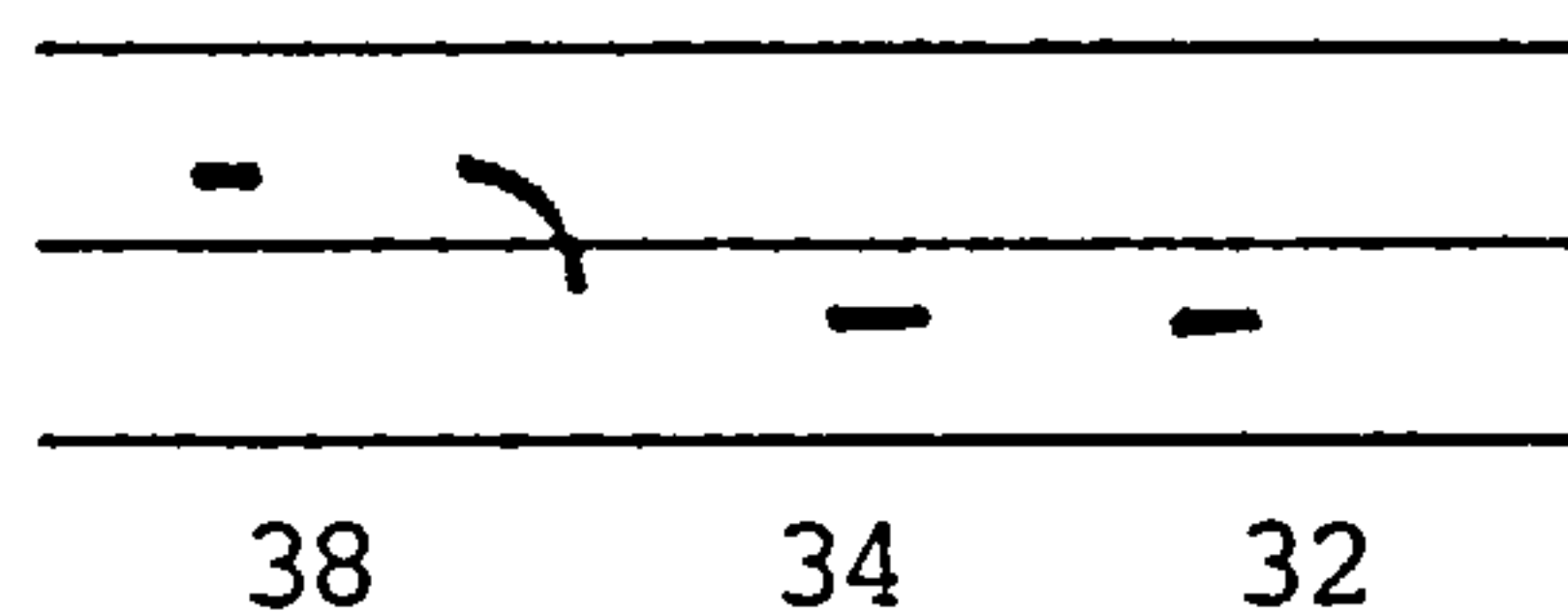
[6.159] + a diagonal line +
 190 200-240 210-190



[6.160] + a right angled triangle +
 230-260 250 230-210



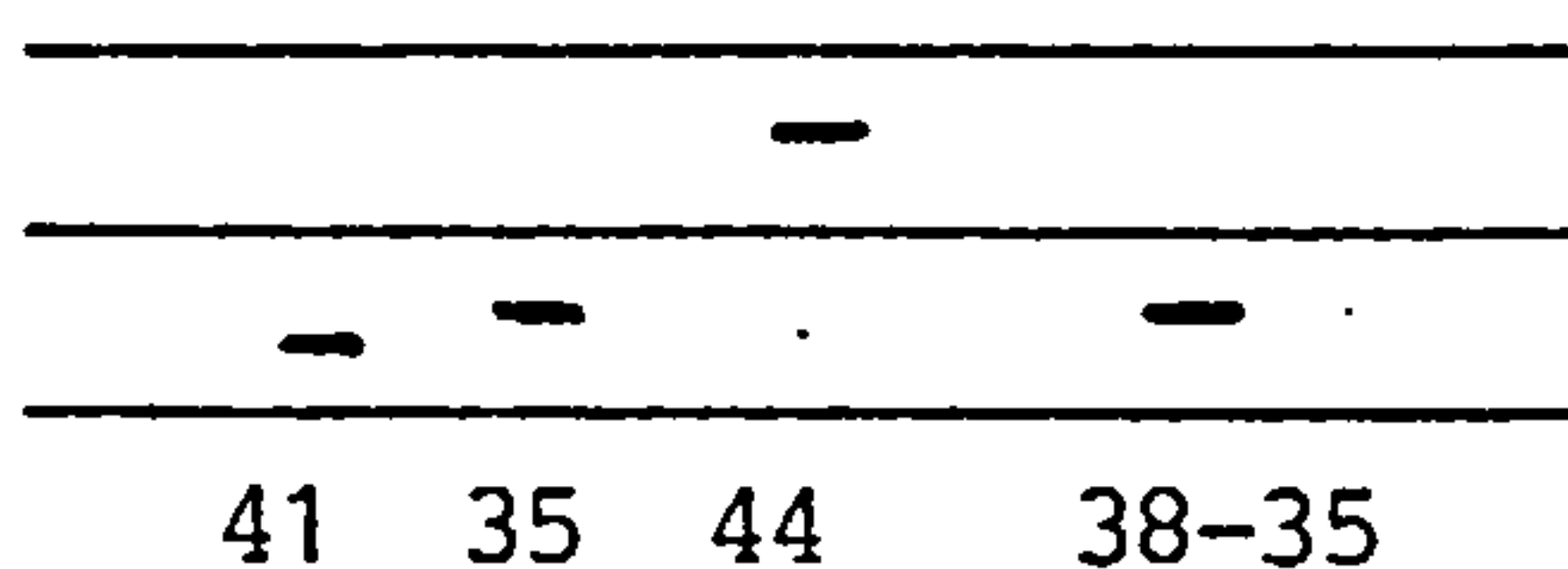
[6.161] + a small black five +
 250-225 225 225



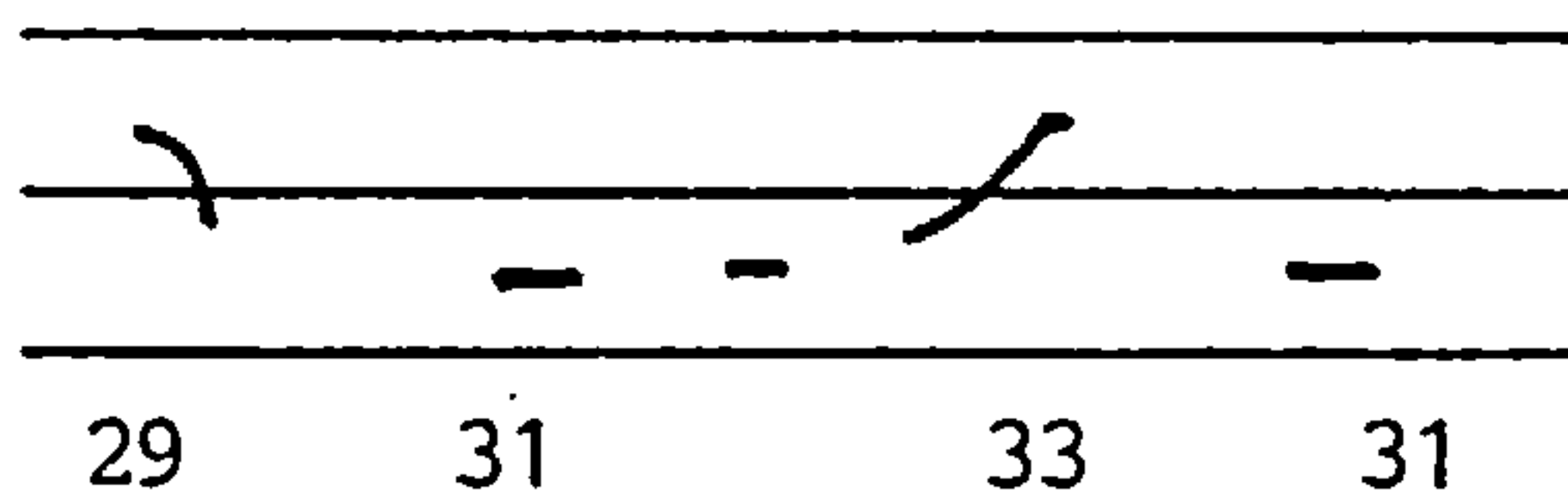
Extracts [6.157] and [6.158] contain only p-expressions. When the minimum information unit contains a repeated e-element, [6.159] - [6.161], pitch and intensity are highest on the p-expression introduced.

Extracts [6.162] - [6.165] are examples of partial paradigm information units of the $(I E^n)$ type, and [6.166] - [6.170] of the $(R E^{n-1})$ type.

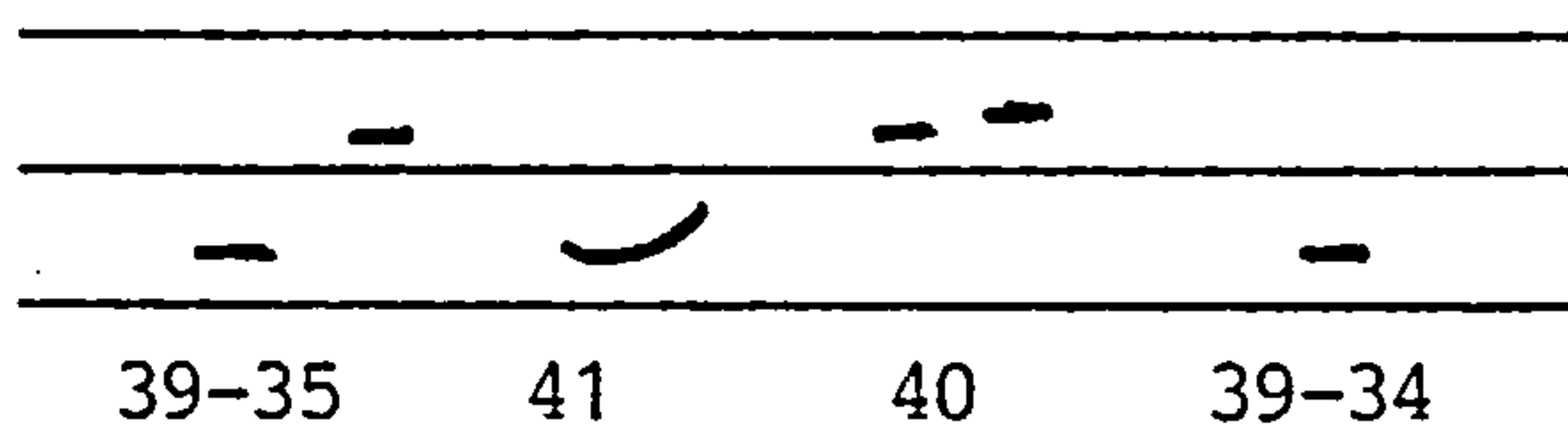
[6.162] + draw a straight line +
190 200 260 200



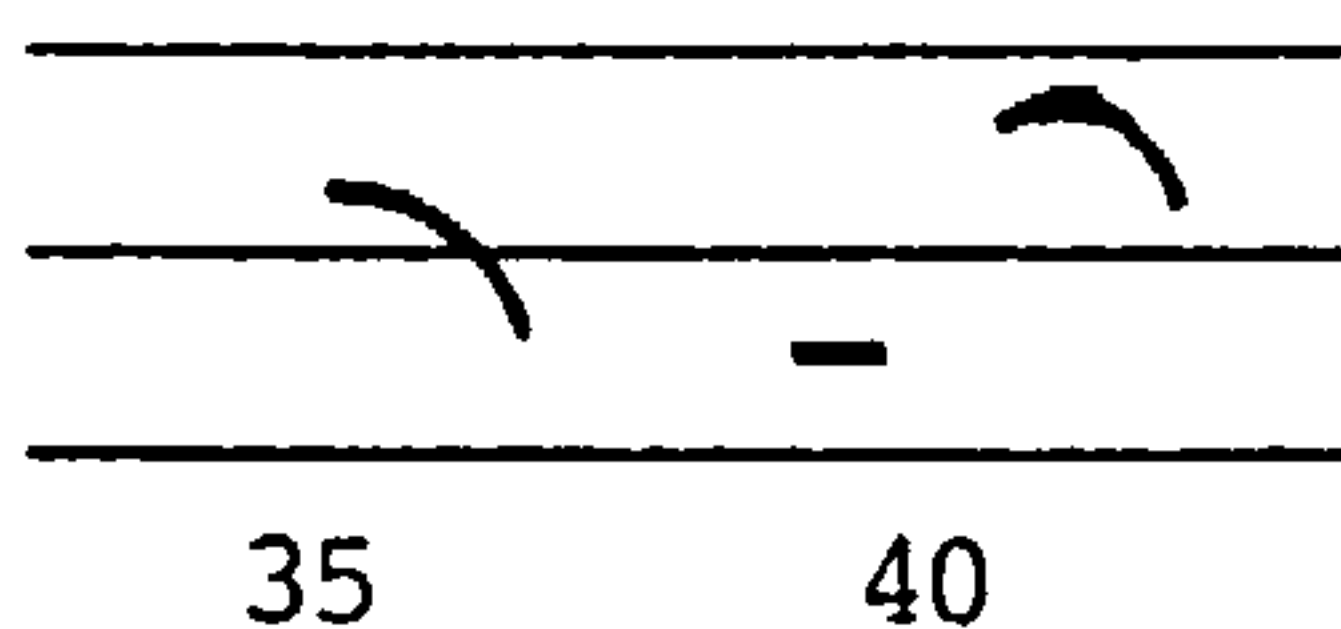
[6.163] + em draw a black five +
240-220 200 210-250 200



[6.164] + draw a square a red square +
200 240-200-225 250 200



[6.165] + there's a two +
250-210 350-250



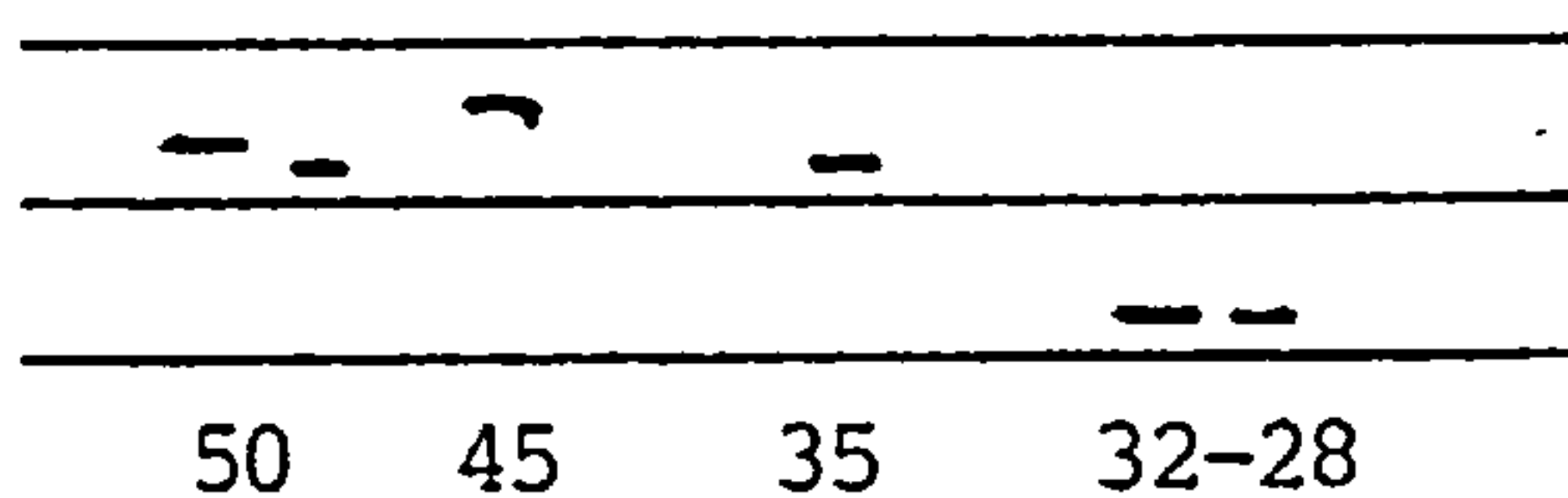
In each of these examples, the E-expression is, as predicted, more prominent than the I-expression. Within the E-expression, in [6.162]

and [6.163], and indeed in [6.156], it is worth noting that it is the p-expression which attracts highest pitch. (More accurately, among the stressed syllables, it is the p-expression which attracts highest pitch. Raised pitch on unstressed syllables is not perceived as phonologically prominent (cf. Brown et al., 1980)). It would be a mistake to interpret such prominence as marking only the p-element in these cases. More accurately, the p-expression should be treated as containing the focused syllable within a 'domain of focus' which is the whole E-expression constituent. In some of the examples discussed later in this section, it is obvious that the e-element is, phonologically, the centre of the domain of focus. I have included these observations as, in effect, a brief counter to the assumption that, in any NP-type constituent, the head nominal necessarily attracts phonological prominence. It clearly does not. Moreover, arguments which promote semantic and even lexical constraints as the basis of the phonological realisation of an attributive adjective-nominal construction - such as Chafe's (1972 : 46) argument that the adjective in "a big cadillac" has low pitch and amplitude because "cadillacs" are regarded as inherently "big" - tend to underestimate the functional options available to speakers, in different contexts, through the use of phonological prominence. There is nothing inherently "red" about the number "five", but on one occasion of their combination in the data under investigation, "red" is relatively low in pitch and "five" relatively high (cf. extract [6.174]). There are complex reasons, both semantic and pragmatic, why one element rather than another in the same constituent receives greatest prominence. Some of these reasons were discussed in chapter 3, and a brief consideration of one relevant factor

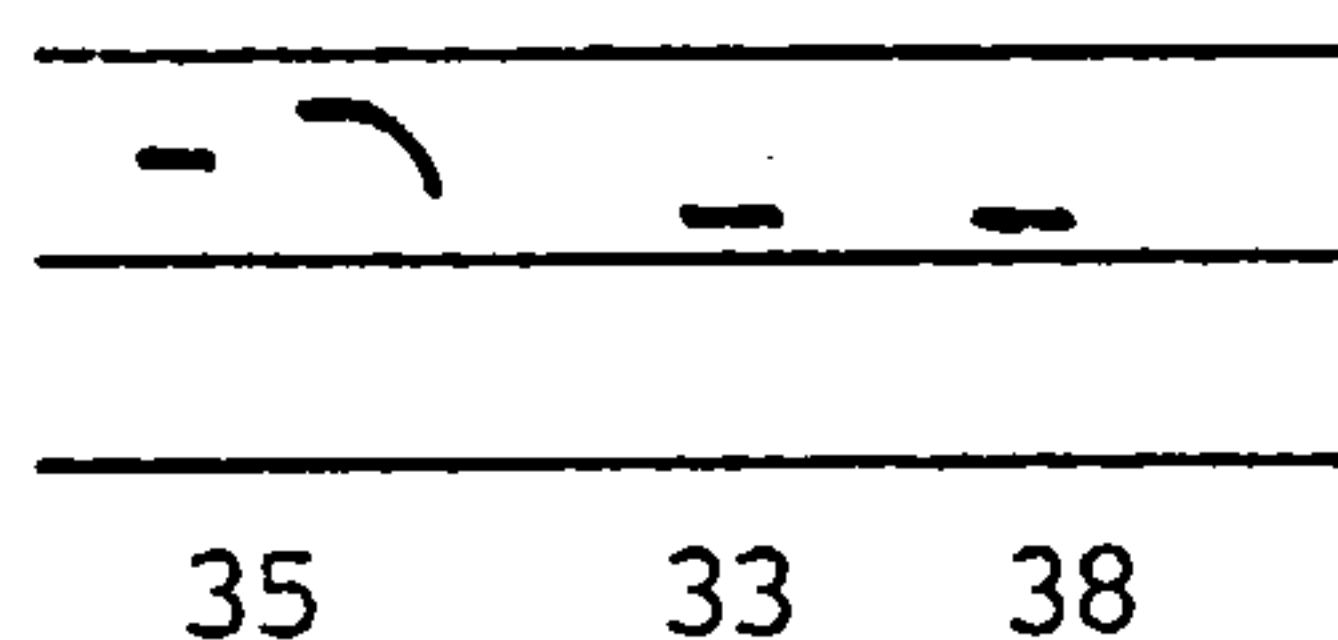
(i.e. 'contrast') pertaining to the issue in this particular type of discourse will be discussed later in this section. For the moment, it is sufficient to note that, in the partial paradigm unit, the E^n constituent is phonologically prominent.¹⁷

In the other type of partial paradigm unit (R E), it is the R-expression which receives phonological prominence, as illustrated in extracts [6.166] - [6.170].

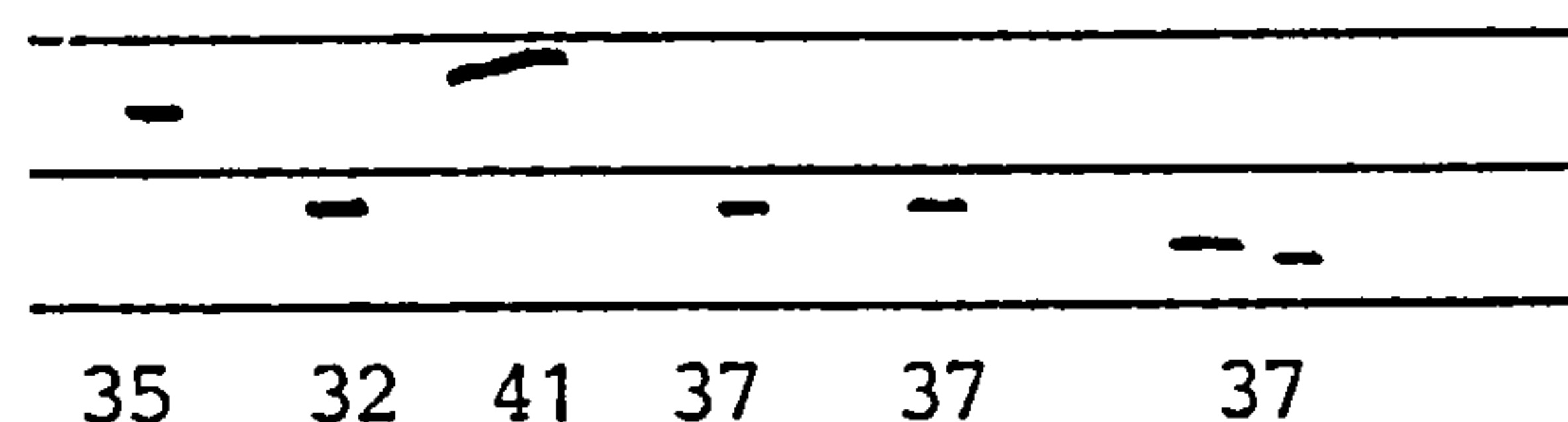
[6.166] + underneath the triangle +
250 280 240 190



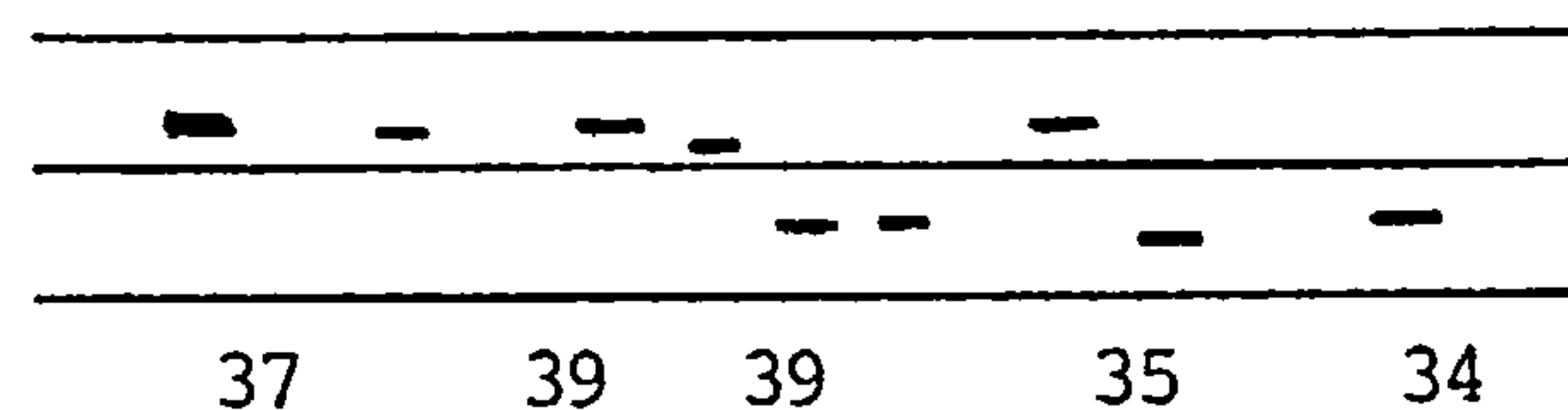
[6.167] + above the line +
300-250 240 240



[6.168] + at the top of the triangle +
275 225 275-310 225 225 200



[6.169] + half a centimeter above it +
250-230 240-220 240-200 220



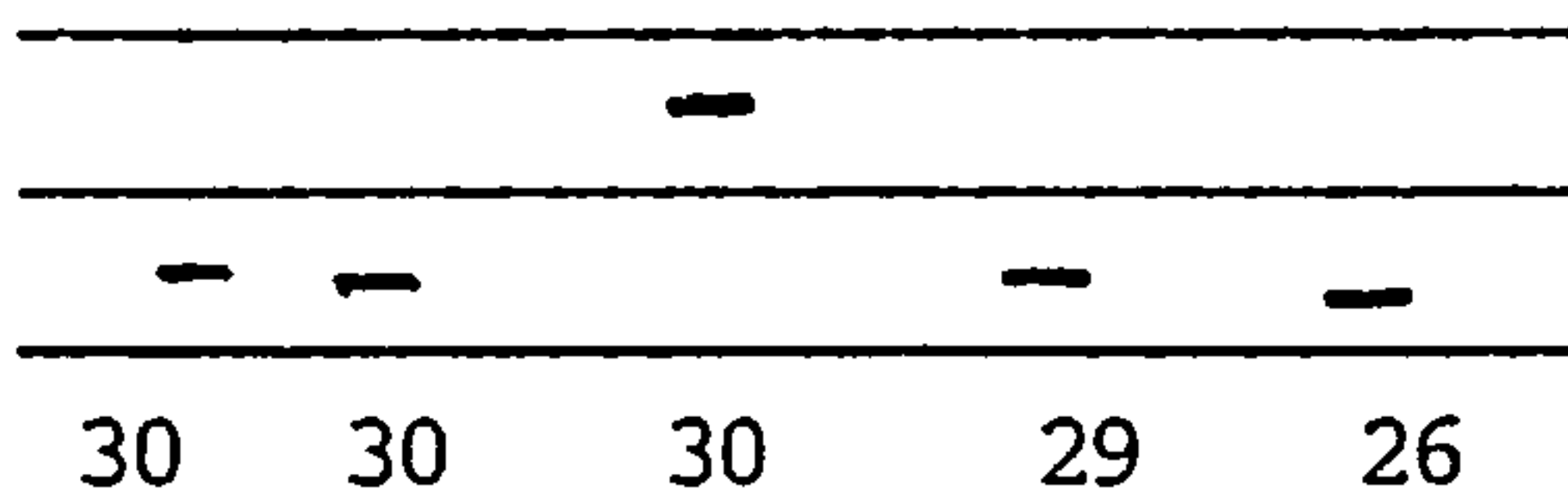
[6.170] + about the same size as the black five +
 200 210-190 190-210 180 200 200-180 190-200

--	-	\	/	_	-	\	-
35	33		33	30	30	32	29

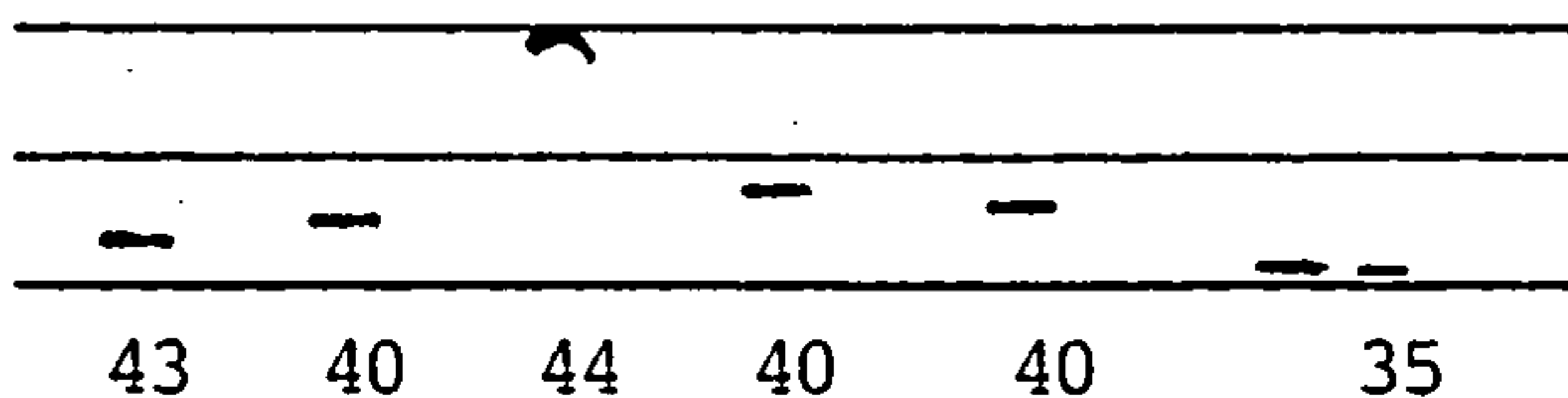
In [6.166] - [6.168], the pitch of the R-elements is obviously higher than that of the E-elements. Worth noting is the greater intensity used on "line" in [6.167], which, in fact, coincides with some lengthening of the vowel. Such a combination of phonetic features results in "line" (as well as "above") being perceived as prominent in this unit. Any explanation of why the speaker produced extra amplitude and duration on the type of element more often phonetically attenuated would have to be speculative and based on local, contextual factors at that particular point in the discourse. (It does, for example, occur before an extended pause.) However, to attempt such explanations would involve a lengthy assessment of the multi-functionality of phonological prominence in spoken discourse and would, in a sense, confuse the issues being discussed here. No attempt is being made to claim that phonological prominence necessarily accompanies the expression of, for example, R- and E^n -elements and is necessarily absent from the utterance of I- and E^{n-21} -elements. The claim is that, ceteris paribus, in the combinations $R \widehat{E}^{n-21}$ and $I \widehat{E}^n$, the R- and E^n -elements are regularly more prominent than the other two.

The only other partial paradigm unit-type proposed was of the form : R(E). Extracts [6.171] and [6.172] are two examples.

[6.171] + to the right hand side +
 200 200 260 200 190



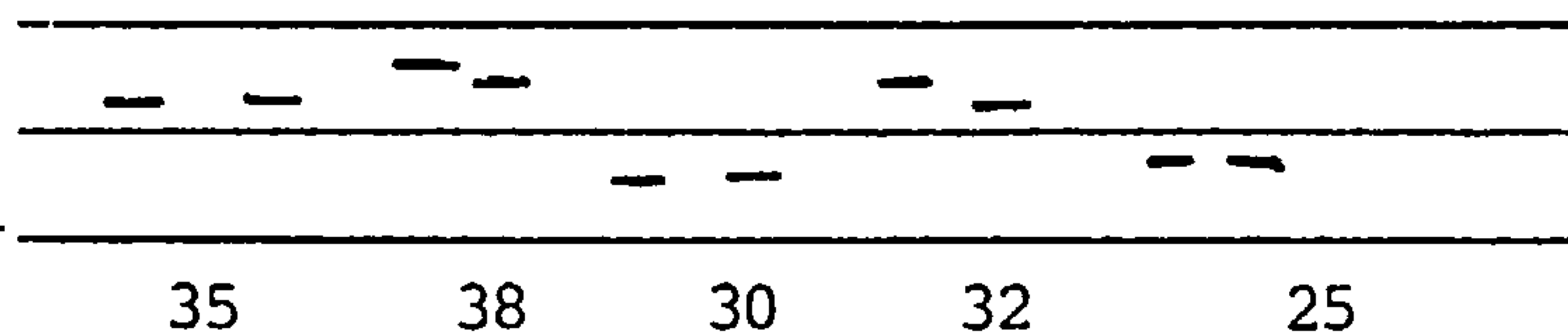
[6.172] + in the top left hand corner +
 190 200 300 220 210 180



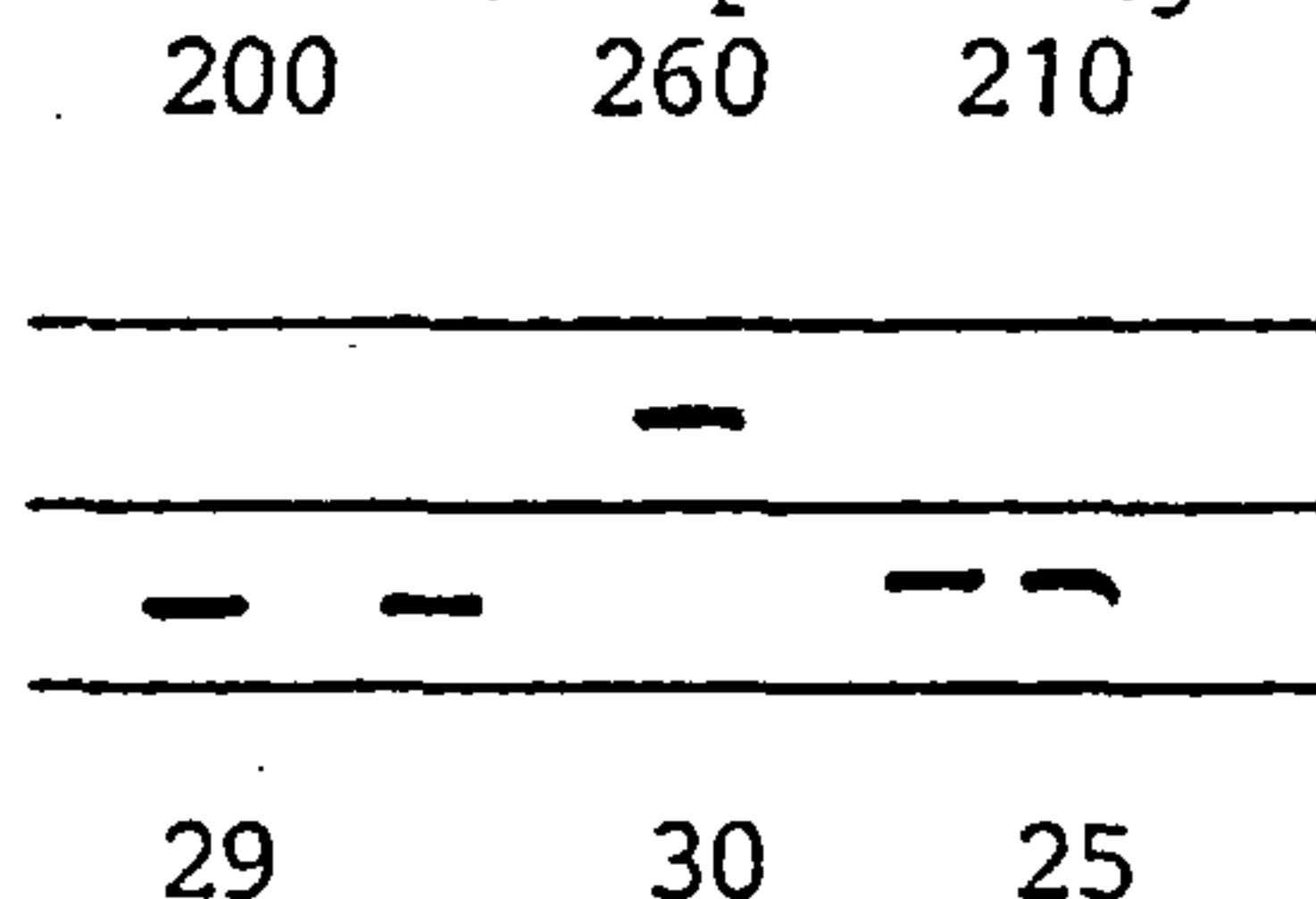
In both these examples, it is a p_1 -element which is the most prominent syllable in the constituent. In the case of p -expressions specifying location, a reasonable explanation for their attracting prominence can be put forward. All the p_1 -expressions are in potential contrast with others from a very limited set. In fact, in examples [6.171] and [6.172], one could say there exists an implicit contrast between the p_1 -elements expressed and its binary opposite (i.e. right - left; top - bottom). The phonological marking of items in contrast has been widely noted¹⁸ and the notion of implicit contrast discussed in chapter 3.

When p_1 -expressions are placed in explicit contrast, they do, in fact, have raised pitch, as illustrated in [6.173].

[6.173] + there's a two + in the corner of the bottom triangle
 240 275-250 210 260 240 220



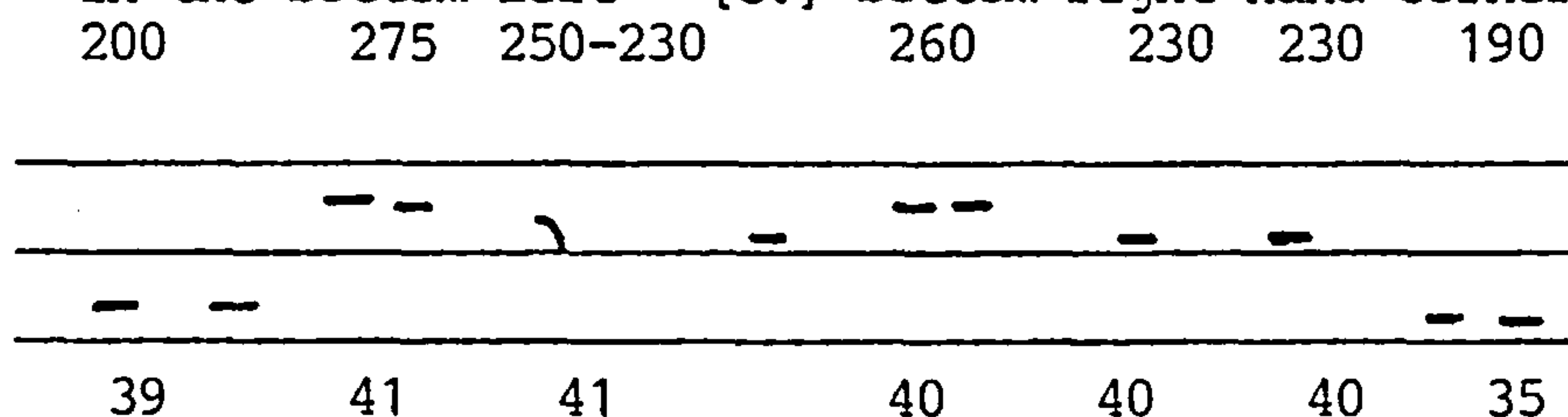
+ and there's a two + in the top triangle



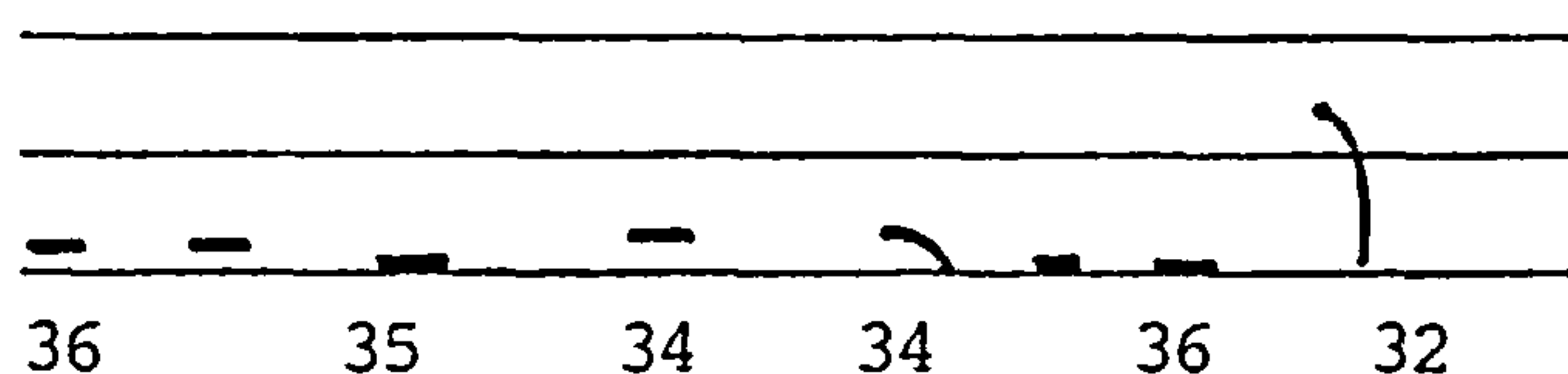
It may be, then, that the phonological prominence of not only p_1 -expressions, but also of the other p-expressions noted earlier, is a product of the speaker's marking implicit contrast (e.g. black (not red); straight (not curved) etc.). I will not pursue this aspect of phonological prominence beyond noting its potential function in marking (implicit) binary opposition with regard to some p-expressions. To extend the discussion, for example, to make the claim that the prominence of "two" in "there's a two" is derived from the speaker's intention to mean "two (and not any other number, letter, word or object)" would not only be a difficult task, but quite outside the scope of the present investigation.

The intonation pattern of paradigm information units, as exemplified in [6.174] and [6.175], is quite regular. The R- and E^n -expressions are prominent, the I- and E^{n-1} -constituent less so.

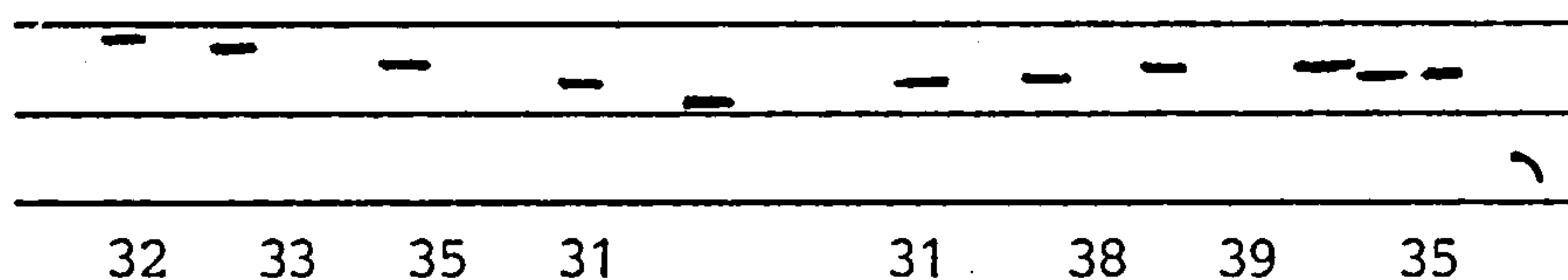
[6.174] + in the bottom left - [e:] bottom right hand corner



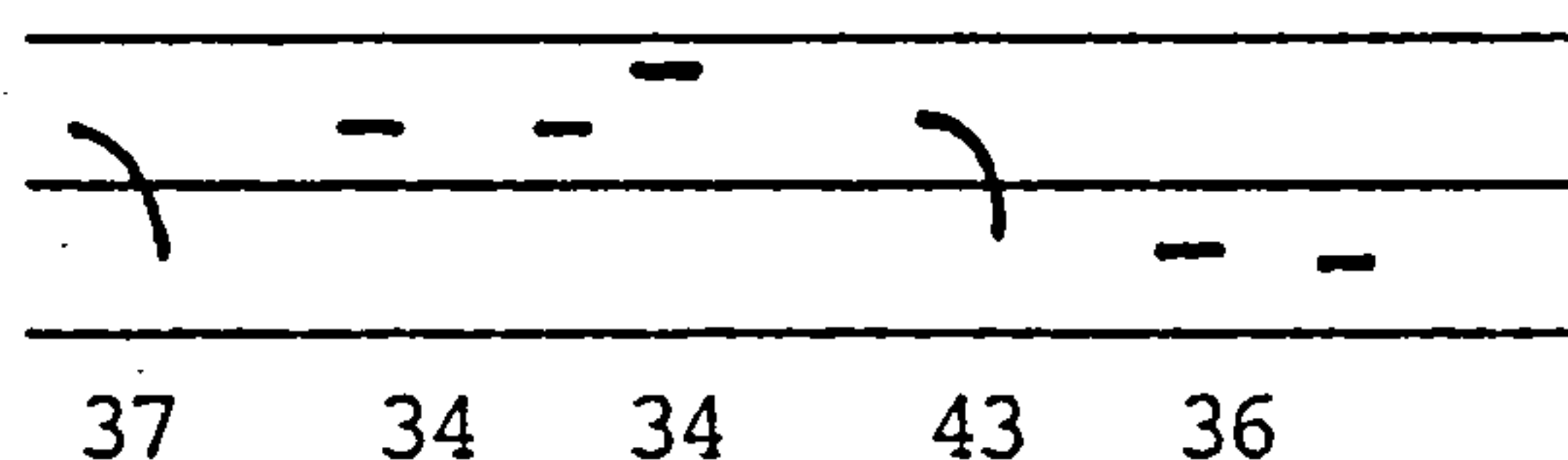
of the black square draw a red five +



[6.175] + halfway down the page draw a red horizontal
 300 290 270 240 230 240 260 260 250 200

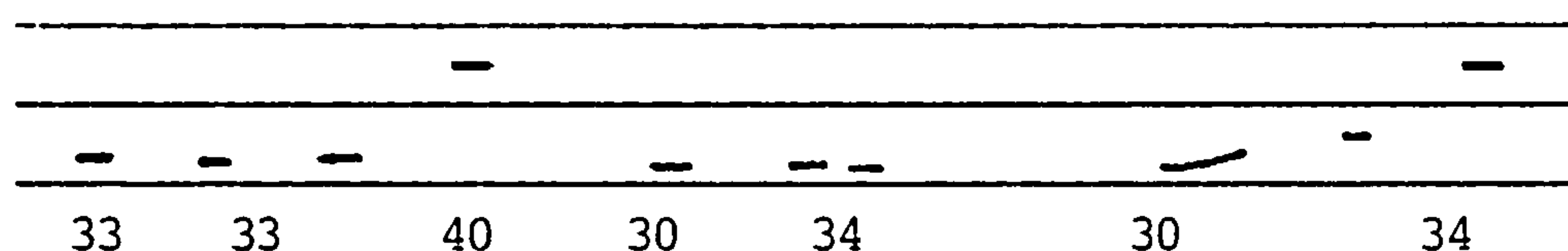


line of about two inches +
 250-210 250 250-290 260-220 220

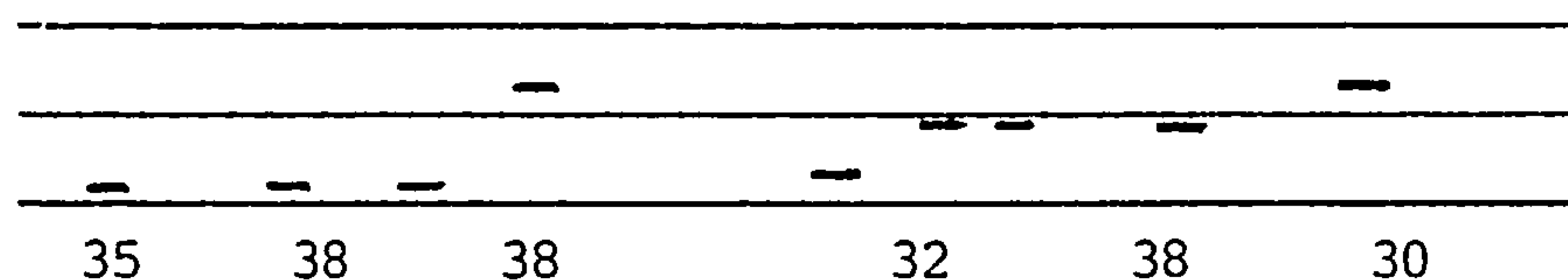


In the reduced paradigm units, such as [6.176] and [6.177], the same two 'peaks' are present on the R- and Eⁿ-expressions.

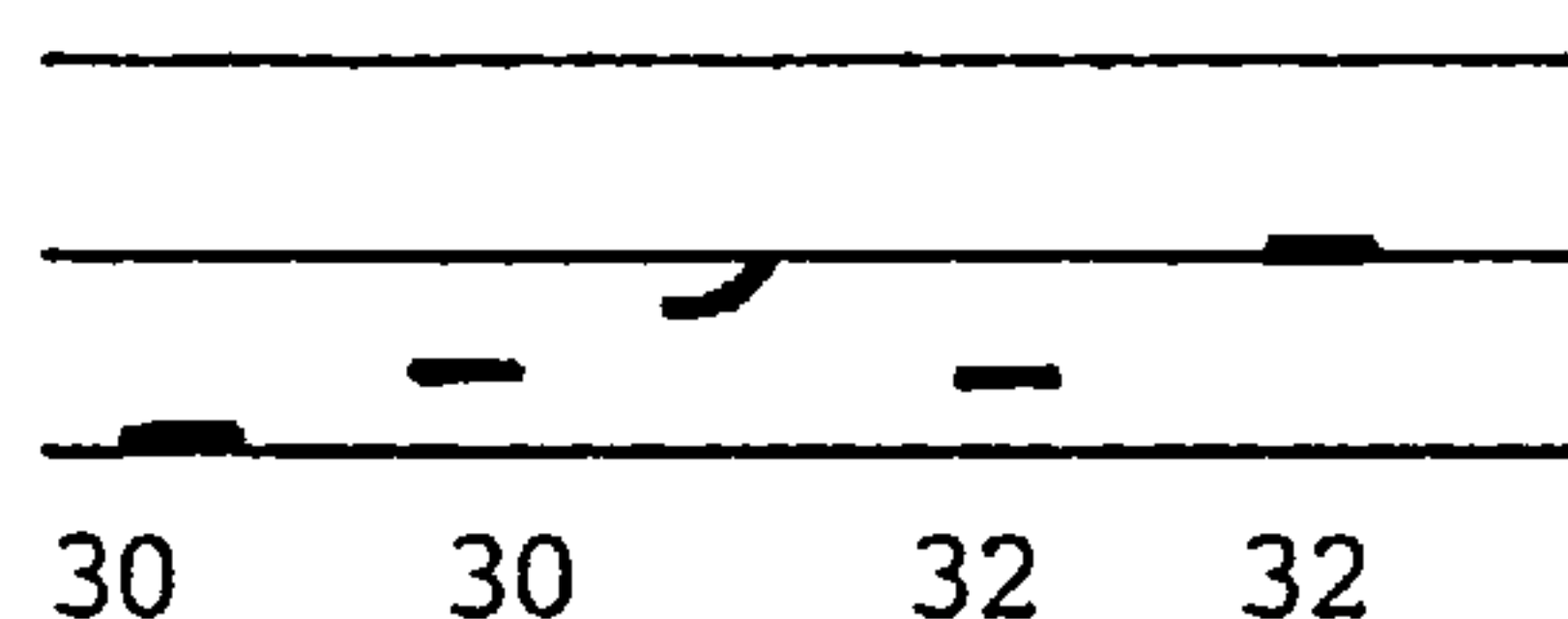
[6.176] + and in the right hand corner () there's a two +
 190 190 250 190 190 190-200 250



[6.177] + and in the left - the bottom left hand ()
 190 190 240 200 225 225 240

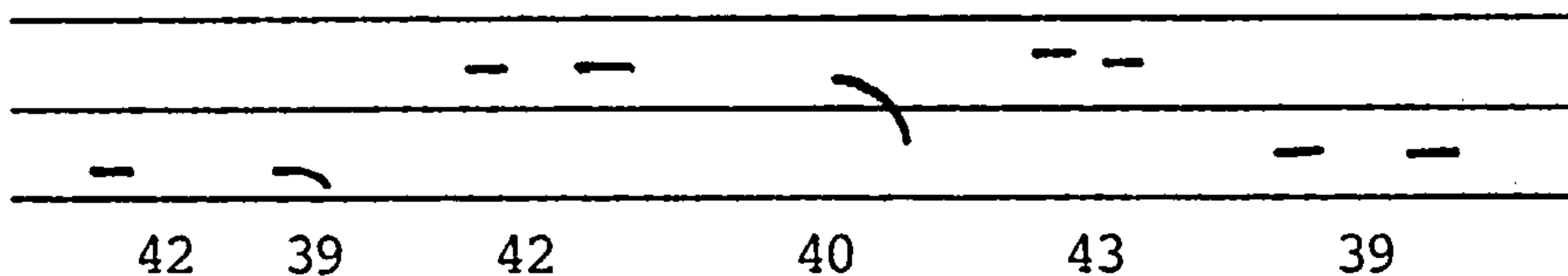


draw a small red two +
 175 200-230 200 230

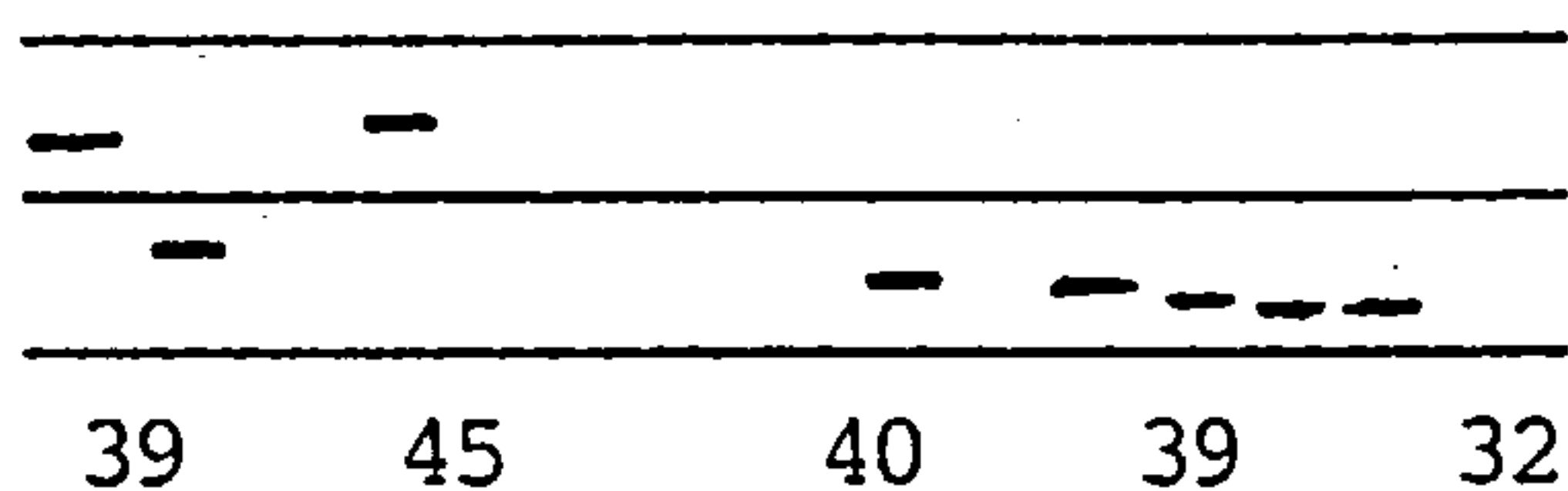


In the extended paradigm unit [6.178], there are three 'peaks'.

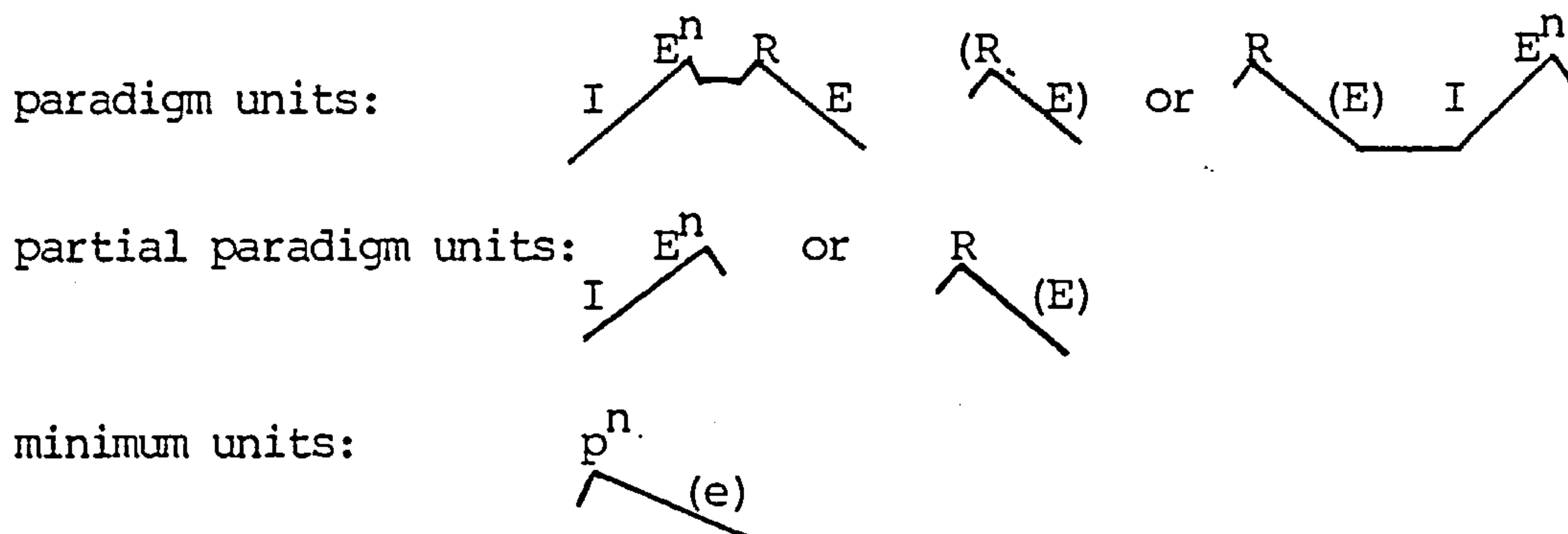
[6.178] + and draw a straight line across the circle
 190 190-170 250 240-200 260-250 200



underneath the diameter +
 240-210 250 200 200-190



The points made in this section can be summarised in the form of abstract (pitch-based) intonation 'shapes' of information units in this type of spoken discourse.



6.15 Notes

1. The occasion of personal reference arises from a misunderstanding of an instruction:

A: Is that not in the triangle then ?

B: No

A: well it is in my drawing

B: well it shouldn't be

The use of the personal reference here coincides with what might be viewed as a challenge to the authority of the one giving the information. For the instructee to appeal to what is in his drawing as in any sense what should be in both drawings is doomed to failure. The authority of B is made explicit in the final line. Since the personal reference involved here has no relevance for the discussion of I-expressions, I will say no more about this example.

2. The intention is to treat 'new' and 'non-new' as objectively as possible. As objective, formal categories in the analysis, they are available for testing in any claims made about the discourse structure. In this way, some of the vagueness surrounding notions such as 'old', 'given', 'presupposed', 'new', 'asserted', 'focus' etc., as discussed in chapter 5, can be avoided.
3. These formulae are simply designed to capture the rules speakers appear to operate with. As with other logical forms of inference, it is the relationship between the antecedent and the consequent that is being captured, not the factual truth of the relationship between a particular antecedent and a particular consequent.

4. The relevant parts of the interchange are as follows:

"draw a right angle triangle ..."

"is it an equilateral triangle ..."

"yes"

Even introducing a modality operator to reduce the power of the formula, as for example, $\Diamond(\text{right-angled } (t) \rightarrow \text{equilateral } (t))$, the proposition remains factually false. This is not, however, intended to represent factually false beliefs in the minds of the speakers. It is simply an attempt to capture what was said.

If the speakers were using 'equilateral' in the sense of 'approximately equally long sides', then the inference rule is to be read with 'equilateral' having that sense.

5. The sequencing found here corresponds, not surprisingly, to the semantic set account of adjectival order to be found in Quirk et al. (1972 : 267).

6. Lest this be considered a 'wastebasket' category, I would like to point out that, although each of these p-expressions only collocates with specific e-expressions, they have in common the property of defining the "form" their respective entities must take. Since it is the form, rather than the colour or the size, which distinguishes, for example, what "type" of triangle (e.g. 'right-angled') is being discussed, I have treated these p-expressions as 'type-defining' (p_t).

7. No significance other than 'having a single element' and 'having more than one element' is implied in the use of the terms 'simple' and 'complex' respectively. The etymology of a 'simple' R-expression such as "above" (a - be - ufan), as well as evidence from other languages (e.g. 'au dessus de'), suggests that any semantic representation of such forms would be no 'simpler' than

that required for forms described as complex in this analysis.

8. Whenever a complex R-expression defines a locational relationship between two entities which are actually realised as E-expressions, it ends with the preposition "of", which could possibly be treated as another r-expression. As such, it would be a relator of one non-new E-expression to another, and so essentially different from other r-expressions discussed. There are two reasons why the "of" which appears in [6.65], for example, will be left unanalysed in this account. Firstly, it is frequently cliticised, either enclitic to the preceding or proclitic to the succeeding syllable, becoming simply [²f₁] in the type of informal speech simplification described in Brown (1977 : chapter 4). Secondly, and more significantly, unlike any other r-expressions, it cannot be placed in contrast with other members of the r-expression paradigm. In other words, it is not an element in the speaker's message which indicates choice, unlike, say, 'in' as opposed to 'on' or 'beside' or 'above' etc.. It can best be described as a 'dummy r-expression', lacking in semantic content. As such, it is incapable of having any information content.
9. It is, of course, possible to extend the analysis of the "r" elements in R-expressions, in terms of location and direction, by using self-explanatory symbols of the following sort:
 $e \leftarrow$ ('to'), $e \rightarrow$ ('from'), and $e \uparrow$ ('above') etc.. Since such an undertaking would complicate the notational analysis without providing any greater insight into the information structure of utterances, no extended subclassification of r-expressions will be made.

10. An interesting interpretive problem arises in this extract. How does the hearer know that the non-realised E-expression in the second line is "the square" and not "the page" ? There are basically no semantic or even pragmatic reasons why one is more likely than the other. In [6.84], the interpretation of "it" could be pragmatically determined by the fact that, if "the page" has been provided for writing or drawing on, an instruction to write something "above the page" would be an extremely improbable request. While this type of pragmatic interpretation of anaphora has an obvious appeal - and is supported by arguments in Morgan (1979), Partee (1978) and Yule (1979) - I think there exists an alternative, structural basis for the 'correct' interpretation of the potentially ambiguous null-anaphor in extract [6.85]. I will discuss this issue at greater length in chapter 7.
11. In [6.88], the E-expression 'the right angle' has to be considered as an unanalysed whole. As it is used here, 'right' is not a p-expression. In other words, the negation is not considered to be of the form, 'in the X angle, not the Y angle', but rather, 'in X, not Y'.
12. The superscript notation, introduced in section 6.6, is included in these extracts, partly to illustrate the relative point in a discourse at which these units occur and partly to lend support to the distinction already proposed between 'new' and 'non-new' E-expressions as formalised in E^n and $E^{n \geq 1}$ respectively. Extracts [6.111] and [6.118] are a good illustration of why E^{n-1} would be an inaccurate representation of 'non-new' E-expressions. Since the distinction required at this point in the analysis is simply between 'new' and 'non-new' E-expressions, I will mark the

'new' (E^n) and leave the 'non-new' unmarked. Thus, any E-expression which features in the descriptions of the internal structure of information units in this section is to be understood as E^{n-1} .

13. The notion of 'colligation' intended here is a simple extension of the Firthian term for one formal category entering into a syntagmatic relationship with another (cf. Firth (1957)).
14. There has been a tendency to equate Halliday's 'new' information component with a single (clause-final) lexical item. In his summary of the features of the information unit, Halliday writes: "In the unmarked case the new is, or includes, the final lexical item" (1967 : 211). The caveat introduced by "or includes" must be interpreted in the light of his fuller explication of the notion "domain of focus", which he describes as "not the tonic component as such but, in general, the highest rank constituent within which the syllable that is tonic is the last accented syllable" (1967 : 207). I will regard phonological prominence as the assignment of a structural function to a constituent in the information unit, recognising, following Halliday, that such a constituent may be, on occasion, a single lexical item. Grimes (1975 : 287) has argued for a similar interpretation. (In my analysis, of course, there can be more than one such constituent per information unit.)
15. All measurements were made with a pitch computer, Type PC 1400, and an Intensity Meter (both manufactured by F-J Electronics APS, Copenhagen), linked to a (Siemens, Type M-34T) Mingograph printout.

16. A third phonetic parameter, duration, is mentioned by Halliday (1967 : 203), but, as with his passing mention of the influence of rhythm (1967 : 208) on information structure, is not discussed in any detail. This is not wholly surprising. There are several problems involved in using duration, or even 'perceived length' as a parameter. The immediate problem is - duration of what? Is it the duration of the unit, of the constituent, of the word, or the duration of each of these relative to the others that is important? There are no ready answers to questions of this sort. Moreover, how does one measure whether a syllable, for example, is longer or shorter than normal in a spontaneous speech situation? Some preliminary measurements of lexical items were made, but it quickly became clear that, without a full spectrographic analysis, any judgements on the length of items would be unreliable. Given the volume of data being investigated, full spectrographic analysis would have been an undertaking of monumental proportions. Thus, unfortunately, apart from the occasional observation that, for instance, a vowel appears to have been lengthened (as perceived by the analyst), no attempt has been made to use duration as a parameter in this investigation.
17. Implicit in any discussion of the function of phonological prominence is the concept 'prominent relative to environment'. What must be remembered is that while a constituent (e.g. an E-expression) may be prominent relative to other constituents in an information unit, a single element (e.g. an e-expression) in the constituent may correspondingly be prominent relative to the other elements in the same constituent.

18. A phonological characterisation of what is often termed 'contrastive stress' seems to be promoted by Postal (1972), Jackendoff (1972) and Chafe (1976). However, arguments for a semantic basis of contrast are also found, most persuasively in Bolinger (1961) and Schmerling (1976). For Halliday (1967), contrast is a type of 'new' and has therefore a functional basis. A detailed consideration of these issues was presented in chapter 3.

Chapter 7The Controlled Data :The Realisation of New and Non-New Elements

7.1 The Internal Structure of New Entity Referring Expressions

In section 6.13, the claim was made that speakers structure their messages into information clusters containing a core e-element. This core e-element is, of course, part of a 'new' E-expression. It will have become obvious from many of the extracts presented and from the optionality involved in the basic characterisation of new E-expressions (cf. section 6.3) that there is no uniform way in which p-elements are attached to a particular e-element. I shall, in this section, investigate the different structures of new E-expressions and attempt to show how these structures are used by the speaker to control the rate of information transfer.

The concept of differential rates of information transfer in spoken discourse has been discussed by Grimes (1975), who makes the following observation : "the speaker, in addition to having to decide on the content of what he is talking about and how it is to be organised, decides also how much of it he thinks his hearer can take in at one time" (Grimes, 1975 : 274). It has also been noted by others working in discourse analysis (e.g. Brown, 1978; Givon, 1979; Ochs, 1979) that one of the major differences between spoken and written discourse is in the way new information is 'loosely packaged' (in a series of small chunks) in the spoken mode, and more 'tightly packaged' (in larger chunks) in the written mode. In the type of spoken discourse presently being investigated, there is, as we shall see, a general pattern of small amounts of information at a time.¹

It is, of course, quite possible for a speaker, when introducing a new entity into the domain of discourse to say, for example, "Draw a small, black, right-angled triangle". However, such a descriptive

expression, with three p^n -elements within an NP containing the e^n -element, never occurs in the data being investigated. The ways in which e^n -elements and their accompanying p^n -elements are actually organised by speakers in this type of discourse are illustrated in Table 7.1. The frequencies with which the different forms occur are expressed as percentages of all occurrences of E^n -expressions in the environments $I _ R E^{n-1}$ and $R E^{n-1} I _$. The three major categories presented are :-

- (A) the introduction of an e^n -element with no accompanying p^n -elements;
- (B) the introduction of an e^n -element with accompanying p^n -elements within the same information unit;
- (C) an e^n -element and associated p^n -elements introduced in separate information units.

As shown in Part A of Table 7.1, the proportion of new E -expressions containing no p -elements (12.5%) is relatively small. Of course, a hearer in this exercise must always have some means of knowing certain properties of a new entity. He must, for example, be able to ascertain the colour (p_c). I have already commented (section 6.6) on the way speakers treat the colour property of a series of entities as 'understood', if no change of colour is required. An illustration of this process is presented in the following extract [7.1].

[7.1] black pen +

there's a circle in the middle ++

and draw a diameter across it ++

.....a line ++

.....a line ++

and then the red pen +

	Features	Structures	Examples	%	%	
A	<u>No pⁿ-element</u>	e	'ON'	2.5	12.5	
		{a}	'a line'	10.0		
B	<u>pⁿ-element within same information unit</u>					
		one p-element	{a} p e	'a red five'	24.5	29.5
		two p-elements	{a} p p e	'a small red two'	5.0	
		p-element follows	{a} (p) e p	'a line (-) an inch long'	16.0	18.5
		p-element precedes	{a} (p) e Rp	'a black square - bigger than ...'	2.5	
		repeated e-element	p {a} (p) e	'in black a circle'	7.5	7.5
C	<u>pⁿ-element in separate information unit</u>	{a} (p) e {a} p e	'a red line - a horizontal line'	5.0	5.0	
		p-element follows	{a} (p) e + p	'a red square + about an inch'	11.0	14.5
		p-element precedes	{a} (p) e + Rp	'a black square + about twice the size.....'	3.5	
repeated e-element	p + {a} (p) e	'black pen + a circle'	7.5	7.5		
		{a} (p) e + {a} p e	'a black triangle + a right-angled triangle'	5.0	5.0	

Table 7.1

Each of the entities in these separate information clusters has the p_c "black", but the e-element is not accompanied each time by the p-element. Another simple, situational explanation for the non-appearance of p_c -elements is that a speaker generally knows which pen his hearer is holding.

No such explanation is possible for the success with which the instruction "draw a line", with no properties specified, manages to produce from the hearer a 'horizontal' line. That there may be some properties of entities which speakers consistently assume (e.g. the 'thickness' of a line) will obviously have some bearing on any discussion of the nature of "information".² One outcome of such an observation is that we must avoid making any claim that, in uttering "a line" in this discourse context, the speaker is conveying less information than one who utters "a horizontal line". The claim could only be expressed in terms of a difference in the amount of explicit information being conveyed. However, since the present concern is with the structure of information explicitly conveyed, I will simply note that, although it is not frequent, the introduction of new entities without explicitly specified properties is a feature of this limited type of spoken discourse.

Much more common is the introduction of a new entity with one p-element. The single most popular new E-expression structure (24.5%) is of the form - {a} p e. Forms with single p-elements represent a good proportion of the other structural types used. Clearly, then, speakers do not generally specify all possible aspects of the new entities they introduce into the discourse. A common principle seems to be for the speaker to provide a basic specification, operating at the minimum level with regard to Grice's quantity maxim ("Make your

contribution as informative as is required" (Grice, 1975 : 45)) on the understanding that the hearer will ask for fuller specification if he needs it. This latter process can be illustrated in extract [7.2], where the 'drawer' elicits the properties of this new entity.

- [7.2] X : in the middle of the page draw a horizontal line
 Y : right across the whole page ?
 X : no - just a short one
 Y : just a short one - any particular colour ?
 X : black
 Y : black + right

Speakers, then, do not always provide complete specifications of the new entities they introduce into the discourse. However, the main interest in this section is not whether p-elements are or are not included in new E-expressions, but how, if they are expressed, the speaker structures his E-expressions to incorporate each of the 'new' elements. While Table 7.1 provides a frequency-based account of the actual structures and some examples, a clearer idea of the types of structures employed may be obtained if the forms, abstracted from parts B and C of Table 7.1, are presented as a set of variations for a single constructed example, as in [7.3]. It should be noted that the content of [7.3a - d] is constant and only the packaging - in the sense of Chafe (1976 : 28) - varies.

- [7.3] a. draw a (short) red line
 b. draw a (short) line in red
 c. draw in red a (short) line
 d. draw a (short) line (+) a red line

There is a temptation to treat the most common form [7.3a] as the unmarked structure and the others [7.3 b - d] as, in some sense, marked.³ However, the descriptive terms 'marked-unmarked' suggest a binary option in the way speakers structure what they have to say. I would prefer to treat the structures in [7.3 a - d] not as representative of a choice between two alternatives, but as choices relating to doing something to a greater or lesser degree. This 'something' is, in effect, the organisation of the elements in the new E-expression in such a way that the amount of new information is packaged in a loose or tight way. Thus, the process of structuring new E-expressions as represented in [7.3 a - d] may be best described in terms of the speaker's 'packaging' the elements in his message. At one end of the scale, there is the placing of p-elements individually in minimum information units (cf. section 6.12), as in [7.4], preceding the e-element, or much more frequently, as in [7.5], following the e-element. This can be described as 'loose packaging'.

[7.4] + in black + ON

[7.5] draw a line + about two inches +

At the other end of the scale, there is what might be called 'tight packaging', whereby a number of p-elements are 'packed' into a complex NP as attributive adjectives. One might propose, following Ochs (1979), that such 'tight packaging' is more commonly a feature of written discourse.⁴

In the type of spoken discourse being discussed, the phenomenon of very tight packaging is relatively infrequent, as can be seen from Table 7.1, where the occurrence of more than one p-element in attributive

position is of low frequency (5.0%). Extracts [7.6] - [7.8] provide some exemplification with two p-elements. There are no examples in the data of three p-elements occurring attributively.

[7.6] draw a small vertical line

[7.7] draw a red horizontal line

[7.8] draw a black right-angled triangle

Intermediate between these two extremes are other types of 'packaging'. As exemplified in extract [7.3b] and shown in Table 7.1 as the second most common basic form of new E-expression, speakers can place a p-element after the e-element. They do not typically assign the postposed p-element to a separate information unit, although, as shown already and as illustrated in [7.5] above, such temporally (i.e. via a long pause) assisted loose packaging is possible. Much more common is the occurrence of a p-element following the e-element within the same information unit, as in extracts [7.9] and [7.10]. There is occasionally, as in [7.11], a short pause between the e- and the p-element, though it is not a regular feature.

[7.9] there's a number five written in red

[7.10] write OUT in capitals

[7.11] draw a horizontal line - an inch

This separation of the e- and p-elements most often involves p_s-elements, as in [7.11]. Thus, it is not surprising to find the small proportion of R_p-expressions (already described in section 6.5) being used in this way. Extract [7.12] is one such example where the

p_s -element of a new e-element is expressed in relation to the p_s of a non-new element. In this case, the p_s of the new E-expression ('a red five') is in a different, subsequent, information unit.

[7.12] draw a red five + about the same size as the black five

The preposing of a p-element, exemplified by [7.3c] and shown in Table 7.1 as less frequent (7.5%) than the postposed type [7.3b], inevitably involves a p_c -element. In extracts [7.13] and [7.14], the p_c -element, although preposed with regard to the e-element, is still within the same information unit.

[7.13] draw in red another triangle

[7.14] there's written in black the word OUT

The least frequent (5%) type of packaging is that exemplified by [7.3d], where the actual e-element is repeated. Extracts [7.15] and [7.16] are examples where each p-element is introduced separately in attributive position with the e-element being repeated.

[7.15] draw a straight line - a diagonal line

[7.16] begin a red line horizontal line

In extracts [7.17] and [7.18], the e-element appears first with no specification and then is repeated with a p-element thereafter.

[7.17] draw a square - a red square

[7.18] there's a two - a black two

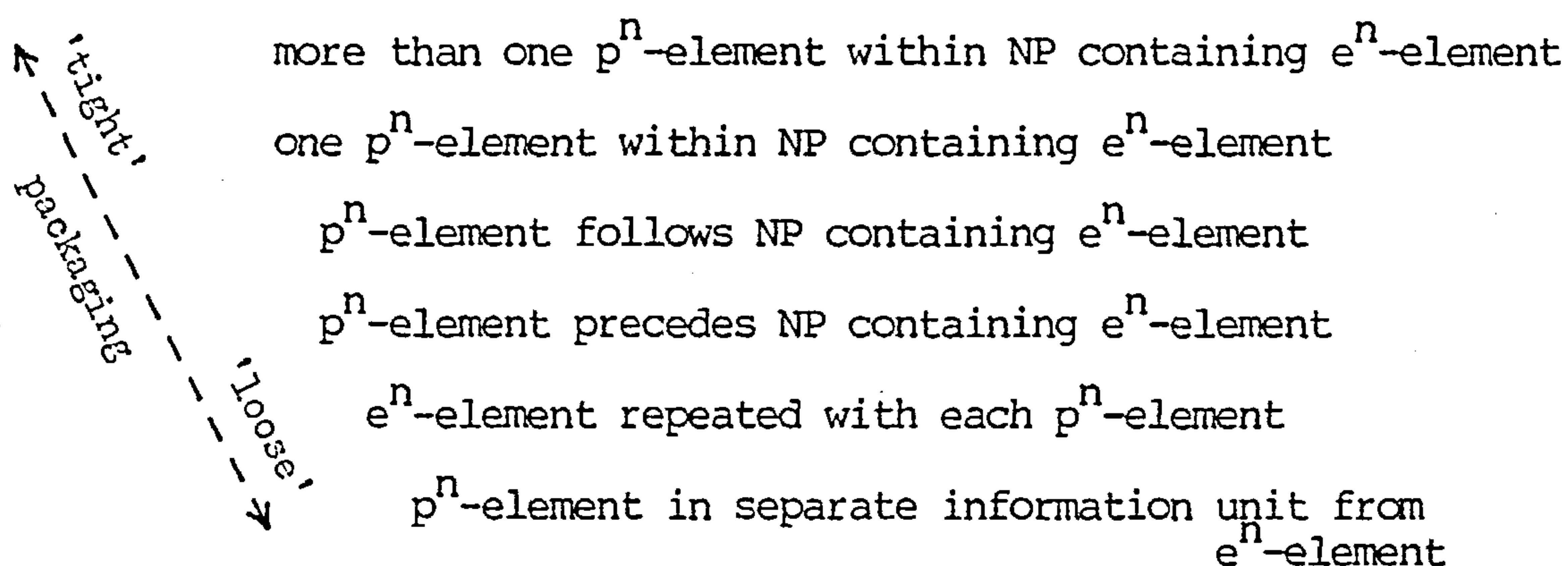
In this type of 'e-repeated' structure, there can be a long pause, as in [7.19], between the two expressions.

[7.19] a black triangle + a right-angle triangle

This form also allows the speaker to express properties negatively, as in [7.20].

[7.20] draw a square - not a massive square

The different structures of new E-expressions described here can be presented as a cline with poles of 'loose' packaging and 'tight' packaging.



I have tried in the preceding discussion to describe the different structural forms which new E-expressions can take, in terms of the speaker's packaging of the elements in those expressions. As far as I know, such an attempt to investigate aspects of the linguistic realisation of reference to 'new' entities in a discourse domain has not been made before. It is, admittedly, a limited description. It does, however, make clear that, given a principled means of identifying new referential objects in the domain of discourse, the various forms (together with their internal structure) used by speakers to refer to such objects are accessible to linguistic investigation.

7.2 The Form of Non-New Entity Referring Expressions

In the discussion of non-new E-expressions in section 6.3, the realisation forms were simply presented as a list. No attempt was made to suggest that the environments in which, for example, "the red line" occurred were any different from those in which "the line", or "it", or even non-realizations (\emptyset) were to be found. I will now discuss the distribution of these forms according to some fairly precisely defined criteria relating to discourse environment.

In the description of the structure of information in this type of discourse, the most common formulae are the two types of paradigm information unit, either occurring as a single information unit or as a combination of two partial paradigm information units. The formulae are $+ R E (+) I E^n +$ and $+ I E^n (+) R E +$. In both structures there are two E-expressions, one used to refer to 'new' entities (E^n), and one for 'non-new' (E). The 'new' E-expression has subsequently been defined as the E-expression with the highest n, at that point in the discourse. The 'non-new' E-expression is correspondingly defined as either $n-1$ or $n->1$. I would like to capture this distinction between types of non-new E-expressions by introducing two terms which, although not generally to be found in discussions of information structure, seem to describe quite well the status of different entities in the domain of discourse at any one point in the discourse.

7.3 'Current' and 'Displaced' Non-New Entities⁵

At any point in the type of discourse being investigated, there is one current non-new entity and other displaced non-new entities.

The current non-new entity is the most recent 'new' entity to have been established in the discourse and, in this analysis, must have the notation E^{n-1} . Displaced non-new entities are, at any point, those which have been established previously in the discourse and so have the notation E^{n-1} .

The discourse under investigation has already been described as a process of introducing a series of entities and specifying the properties and locations of those entities. Each new entity is located relative to an already existing entity. As each new entity is introduced, the speaker would be justified in assuming, under normal circumstances and in a fairly prosaic way, that, among the already existing entities, the most recently specified non-new entity is the one which his hearer is 'currently' thinking about. The current entity, then, is the last new entity to have been introduced, or, in other words, the most recent referential constant established in the domain of discourse. When the new entity is fully specified, it becomes the current non-new entity, displacing the previous current non-new entity. There is, then, a process whereby an entity is introduced as 'new' (E^n), is consequently referred to as the current 'non-new' (E^{n-1}) when the next 'new' entity is introduced, and becomes the displaced 'non-new' entity (E^{n-1}) when a further 'new' entity is introduced.

This process can be made clearer in the analysis [7.21a] of extract [7.21].

[7.21] in the middle of the page draw a black triangle ++
 underneath the triangle + draw a red line about two inches ++
 and at the right hand side of this line write ON in black ++

[7.21a]		(n)	(n-1)	(n->1)
		'new'	'current'	'displaced'
(i)	R E ⁰ I E ¹	E ¹	E ⁰	
(ii)	R E ¹ I E ²	E ²	E ¹	E ⁰
(iii)	R E ² I E ³	E ³	E ²	E ¹ /E ⁰

With a formal distinction established between the two types of 'non-new' E-expressions and also the environments in which they occur explicitly delimited, it is possible to check through the data for the realisation forms used in each case. The results of this survey are set out in Table 7.2, in which the frequency of occurrence of different forms used to refer to current and displaced entities is presented as a percentage of all forms used to refer to current and displaced entities respectively.

Table 7.2

<u>Types of 'non-new'</u>	current (n-1)	displaced (n->1)
<u>Environments</u>	+ R E ⁿ⁻¹ (+) I E ⁿ + + I E ⁿ (+) R E ⁿ⁻¹ +	+ R E ^{n->1} (+) I E ⁿ + + I E ⁿ (+) R E ^{n->1} +
<u>Realisations</u>		
'the e'	20%	20%
'this e'	3%	0%
'that e'	6%	3%
'the p e'	7%	69%
(Total : Lexicalisations)	36%	92%
∅	28%	8%
'it'	30%	0%
'that'	6%	0%
(Total : Non-lexicalisations)	64%	8%

The most 'neutral' form of non-new entity reference apparently involves a repetition of the e-element (i.e. the nominal) with the definite article in expressions like 'the line' or 'the square'. It is used equally for both current and displaced entity reference. I think such a finding is generally in line with Chafe's proposal (1976 : 39) that 'definiteness' is an aspect of language use essentially independent of the relationship 'new - non-new' which exists in discourse. A singular definite noun phrase is consistently used for any referent which is considered by the speaker to be 'identifiable' by the hearer. Such identifiability need not, of course, arise from mention in the immediately preceding discourse. Limited domains of discourse do, however, provide one situation in which entities become, albeit transiently, uniquely identifiable. In the discourse under investigation, once an entity has been fully specified, it is treated as identifiable and can be referred to as "the e", whether recently specified (current) or less recently so (displaced).

Although deictics with e-elements, involving 'this' and 'that', are used more often for current entities, they are relatively infrequent in this type of discourse.⁶

By far the most common means of displaced entity reference, as shown in Table 7.2, involves the use of expressions containing a p-element, such as 'the black square', or 'the diagonal line'. The number of current entity referring expressions containing a p-element is very small by comparison. One discourse-specific reason for this additional specification of displaced entities has to do with the fact that, in many cases, there is more than one 'line' or 'square' in the domain. In such circumstances, an element of implicit contrast -

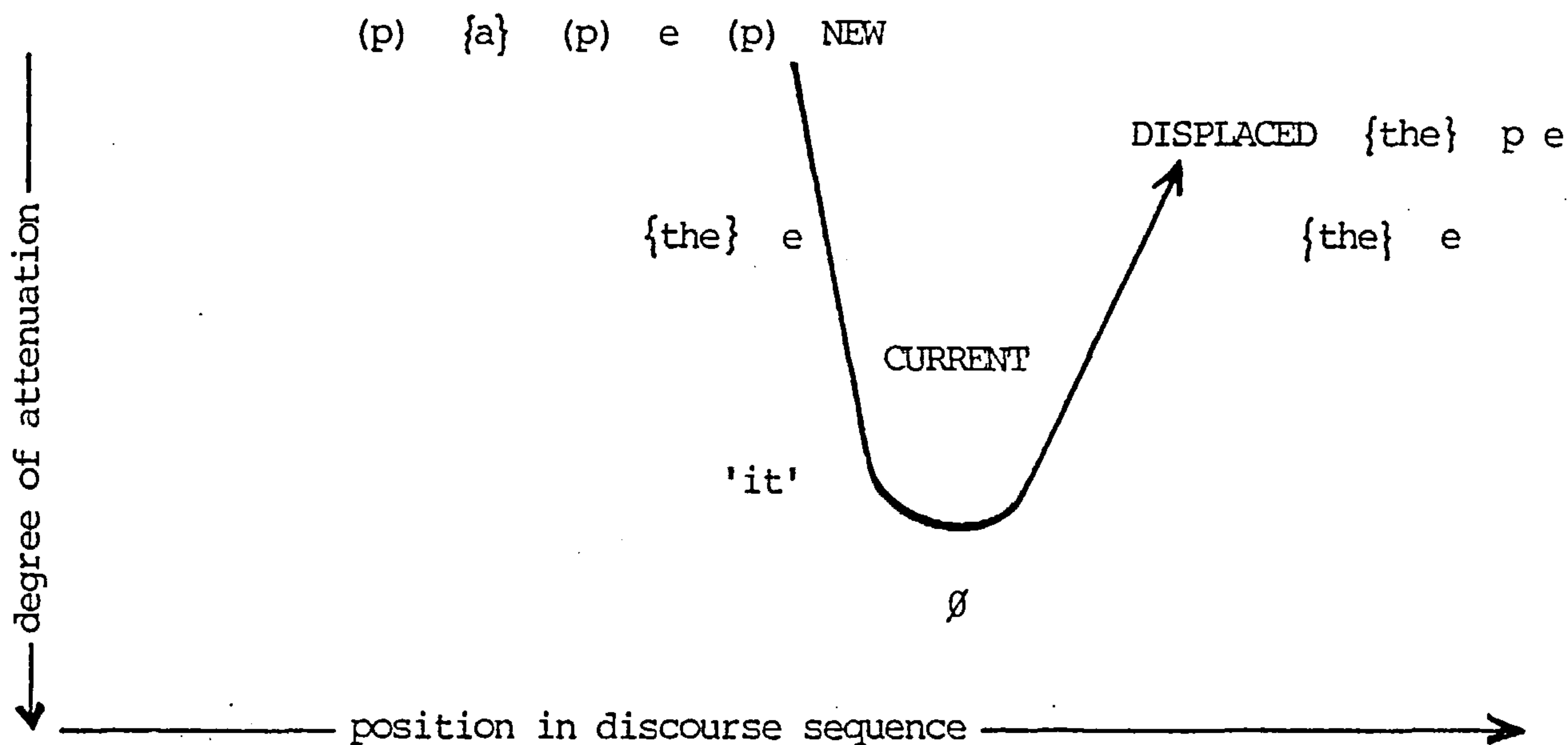
'the black square' (not the red square) - is clearly involved in the use of the p-element. However, in many situations where there is no alternatively specified entity of the same basic type, displaced entity reference features a p-expression. Any explanation of why such full descriptions are used by speakers for displaced entities would be speculative and inevitably lead to an attempt to comment, perhaps quite erroneously, on the type of expectations speakers have regarding their hearers' memories. In lieu of an 'explanation', I will simply point out that the more general difference between displaced and current entity reference is indicated by the percentages reflecting the greater use of repeated lexical items in the displaced type.

Clearly, the use of the more 'attenuated' forms (e.g. "it", \emptyset) is much more frequent for current entities. Such a finding demonstrates the looseness of some discussions of 'given' information which normally cover all instances of what are described here as non-new E-expressions. Chafe's claim (1976 : 31) that 'given' items will be generally attenuated is, then, somewhat misleading. In the sense that expressions used to refer to non-new (or 'given') entities in the discourse never contain all the previously expressed properties of those entities, then certainly non-new E-expressions are, to that extent, attenuated. What Table 7.2 shows, I believe, is that there are degrees of attenuation. This is attributable, in part, to the distinction I have proposed between current and displaced non-new entities in a discourse.

Taking into account the interaction between both 'degrees of attenuation' and 'position in discourse sequence', it is possible to represent the relationship between the three categories, 'new', 'current', and 'displaced' in the form of a graph, as in [7.22] below. Notice that

the effect of 'displacement' in the discourse produces forms which tend towards the full expressions associated with the introduction of 'new' entities. This may be because the greater the displacement, the greater the need there is for the entity to be 're-introduced' in a non-attenuated form. A distinction between the reference of 'new' and 'displaced' full forms would still be marked, of course, by the use of different articles.

[7.22]



7.4 The Interpretation of Non-New Entity Referring Expressions

Based on the frequency with which non-realised and 'it' - realised E-expressions are used for the current entity (and the corresponding infrequency of their use for displaced entities), a proposal can be made that a simple interpretive strategy seems to be available to hearers in this type of discourse.

If, at any point, there is 'it' or no E-expression following an R-expression, interpret 'it' or \emptyset as an instance of current entity reference

Such a strategy accounts for the ease with which successful reference is achieved in many situations in the discourse where potential ambiguity lurks, as, for example, in extract [7.23].

[7.23] about the middle of the page you've got a black square + about two inches ++ and in the bottom right hand corner (?) you've got a red five ++

Using the " \emptyset = current entity" strategy, the hearer understands that it is in the corner of the 'square' (E^1) and not of the 'page' (E^0) that he is required to put 'a red five' (E^2).

It is worth noting that, if such an interpretive strategy provides a reasonable account of the facts in this case, then it has to be considered a feature of the pragmatics of discourse structure, and not of the more widely discussed pragmatics of 'knowledge of the world'. For, 'knowledge of the world' provides for 'corners' in both pages and squares and could not, by itself, lead to successful reference in this case.

I have attempted to present an argument against one kind of pragmatic explanation for successful reference here in order to raise a point in connection with a frequent assumption made in discussions of natural language pragmatics. For Wilson (1975) and Gazdar (1979), among many others, the pragmatic interpretation of sentences (or what Gazdar oddly calls "possible utterances" (1979 : 4)) takes place in

situations of actual ambiguity. Sentences have to be ambiguous in order for a pragmatic interpretation to be activated. (The most obvious examples for such writers, including Lewis (1972) and Montague (1970), are indexical expressions which are considered to be multiply ambiguous in referential terms.) In the pragmatics of natural language discourse, I wish to claim, no such ambiguity need exist. Pragmatic rules of interpretation, such as the one presented above, predispose the hearer to successfully identify the referent intended, and not even to consider other referents whether they are potentially correct referents or not.⁷ Very little actual ambiguity is encountered by hearers of utterances, despite the massive potential for ambiguity which such utterances, considered as sentences, do appear to have in many formal accounts of natural language.

Thus, instead of attempting to describe the various alternative interpretations available for an utterance, a more pertinent undertaking within pragmatic investigation would be to account for a hearer's choice of a single correct interpretation and his disregard for any other possible interpretations. One minor outcome of such an undertaking is the interpretive rule based on current-entity-reference presented earlier.

However, if the interpretive rule presented earlier is generally used, what happens on those few occasions (8% - cf. Table 7.2) where operating the rule should result in a misunderstanding? In extract [7.24], the speaker has, in two situations of displaced-entity-reference, not provided any E-expressions to which the R-expression can relate.

[7.24] C : ++ in the left hand corner - bottom left hand corner

() draw a red number two +
_{E3} _{E5}

D : of the triangle
_{?E3}

C : $\tilde{\Lambda}h\tilde{\Lambda}$ ++

from the other corner () draw in red another triangle +
_{E3} _{E6}

In extract [7.24], D's question is evidence that he is not sure of the non-new entity location in which he has to draw the 'new' entity (E⁵). On what basis does he suggest "the triangle", which, at this point, is not the current non-new entity? Is there, in fact, another interpretive rule based on a different procedure used by speakers to relate 'new' entities to 'non-new'? If there is a second interpretive rule, it must also account for the success with which C's second contribution in [7.24] is interpreted. Once again the zero-realised E-expression is an instance of displaced entity reference. Similarly, in the last part of F's description in [7.25], it is a displaced, and not the current non-new entity, to which the 'new' is related.

[7.25] F : ++ in the middle - about the middle of the page +
_{E0}

you've got a black square
_{E1}

about two inches + two inches square ++

and then in the bottom right hand corner ()
_{E1}

you've got a red five ++
_{E2}

G : right

F : now + on the left hand side (E^1) +
 you've got a red square +
 E^3
 about one inch square +

Note that in [7.24] and [7.25], the speaker relates more than one 'new' entity to the same 'non-new' entity. In [7.24], both "a red number two" (E^5) and "another triangle" (E^6) are related to "the triangle" (E^3). In [7.25], both "a red five" (E^2) and "a red square" (E^3) are related to "the black square" (E^1).

I suggest that in both these cases an alternative interpretive rule is at work. Although this rule is not commonly activated in this type of discourse, it is similar to a rule of text-structure proposed for the description of written discourse by Daneš (1974).⁸ Daneš, of course, did not use these same terms, but I think he was also essentially describing the operation of some kind of 'discourse-topic-priority' rule. I think, in the particular discourse type being investigated, the rule is even more specifically definable as a 'speaker's-topic' rule.⁹

In this type of discourse, the speaker may take one entity as the basis of the whole orientation of his description, or an extended part thereof. He may treat the task as being about describing a drawing with 'a triangle' as the principal object in it, and he consequently relates everything else in the drawing to that triangle. The triangle, in that case, is his topic, what he is talking about, and a whole series of entities may be related to it, as in the following (abstracted) structure:

$$R E^2 I E^3$$

$$R E^2 I E^4$$

$$R E^2 I E^5$$

In such a structure, if one E-expression is non-realised, it is clearly intended that E^2 , the speaker's topic-entity, should be interpreted as the correct referent. The rule needed to state this has to be expressed in exactly the same way as the current-entity interpretive rule :

If, at any point, there is 'it' or no E-expression following an R-expression, interpret 'it' or \emptyset as an instance of speaker's-topic-entity reference

The decision to interpret \emptyset as current-entity or as speaker's topic-entity has to be based, not on the environment of the utterance containing \emptyset , but on the hearer's assessment of the larger discourse strategy employed by the speaker. In the type of discourse being analysed, speakers do not generally have single topic-entities, but rather shift from one entity to the next, making the current-entity interpretive rule more appropriate. When a speaker does use the topic-entity procedure, it occasionally results in a question from the hearer (cf. extract [7.24]), but hearers very quickly adapt to the speaker's orientation and operate the second interpretive rule.

Finally, as evidence of the operation of the speaker's topic rule, I shall illustrate briefly how the orientation of the two participants can differ, resulting effectively in two different speaker's topics in the one discourse, yet no confusion. In the following extract, both H and K must be operating with an interpretive rule akin to the speaker's topic-entity rule as each copes with the other's use of "it".

[7.26] H : it's a right angle triangle + the bottom line of the right-angle triangle is in the centre of the page +

K : where is the right angle ? Is it on

H : the right angle is on the right + and it's about +
I'll have to tell you the length of it + it's eh two +
inches long +

K : two inches long + is it an equilateral triangle ?

Speaker H is intent on specifying the properties of "the bottom line", while speaker K is concerned to get the details of the "triangle" correct. Each speaker uses "it" to refer to his topic-entity and each recognises the other's orientation. The concept of speaker's topic-entity reference is, then, one way of providing an account of how the use of anaphoric proforms (with their potential for multiple reference), even across referential boundaries, presents few problems for participants in a discourse.

How speakers decide whether an instance of "it", or a non-realised E-expression, should be interpreted as the current entity or the speaker's topic entity, cannot be based on discourse-internal features alone. Admittedly, there are circumstances in which the 'new' information (e.g. "two inches long" in [7.26]) provides a pragmatic basis for choosing the correct referent for the 'non-new' "it" (e.g. "line" versus "angle"), on the grounds that lines have length and angles don't. Such clearly disambiguating predicates are not always available, however. Nor is there necessarily any actual ambiguity encountered by the hearer. The two interpretive strategies proposed provide a

basis for successful reference in this type of spoken discourse. Although current entity reference is more common here - and hence creates a 'preferred' interpretive strategy - it is probable that, in other discourse types, speaker's topic entity reference would be more frequent, and correspondingly given interpretive preference. Exemplification of this point is provided in chapter 8, extracts [8.22] and [8.23].

7.5 Notes

1. The organisation of the message will naturally reflect both the speaker's selection of elements and the ordering of those elements. Note that these two processes can present the speaker with problems quite independent of any attempt to make his message 'recipient-designed'. Thus, although there is a suggestion in this section that speakers try to organise their messages for the benefit of the hearer, one should not forget that some of the linguistic structures being described may result from the processing problems generally encountered in selecting and ordering what to say, regardless of the hearer's special requirement in an exercise.
2. Of some relevance in this matter is the work of Rosch (1975) and Rosch and Mervis (1975) on the nature of 'prototypic' members of categories. If, for example, the prototype 'line' has certain properties, then the speaker may quite reasonably assume he need not mention them.
3. I think the notion of structural markedness is best reserved for those situations - as described by Firbas (1964), Halliday (1967) and Grimes (1975) - where a structure exhibits marked theme. In such situations, the formal criterion and the functional import of theme - "what comes first in the clause" (Halliday, 1967 : 212) and "what is being talked about, the point of departure for the clause as a message" (1967 : 212) - provide a basis for the discussion of what, in syntactic treatments (e.g. Ross, 1967), are described as 'movement rules'. That is, given a widely

recognised unmarked sentential form which is treated as the basic structure in the grammar, any variation on that form can be described as 'marked'. The equivalent of such 'marked' forms in this type of discourse would possibly be examples such as [7.1], where a p-element has been placed in theme position. In the case of [7.1], the p-element does indeed have the property ascribed to marked thematic elements in that "if they occur as a separate information unit, their domain extends over the whole of the next following information unit" (Halliday, 1967 : 219).

There is, however, no comparable basis for proposing in an analysis which is intended as a description of utterance forms as opposed to sentence forms that [7.3a] is, in any way, more basic than [7.3b - d]. Nor would it be appropriate to claim that the (a) form really is much more frequent. If the percentage frequencies for the (b) form, for example, (p-elements following e-elements) in parts B and C of Table 7.1 are added, the total is not significantly less than that for the (a) form in part B. Consequently, no appeal will be made to the notion of 'structural markedness' in discussing the structures of [7.3 a - d].

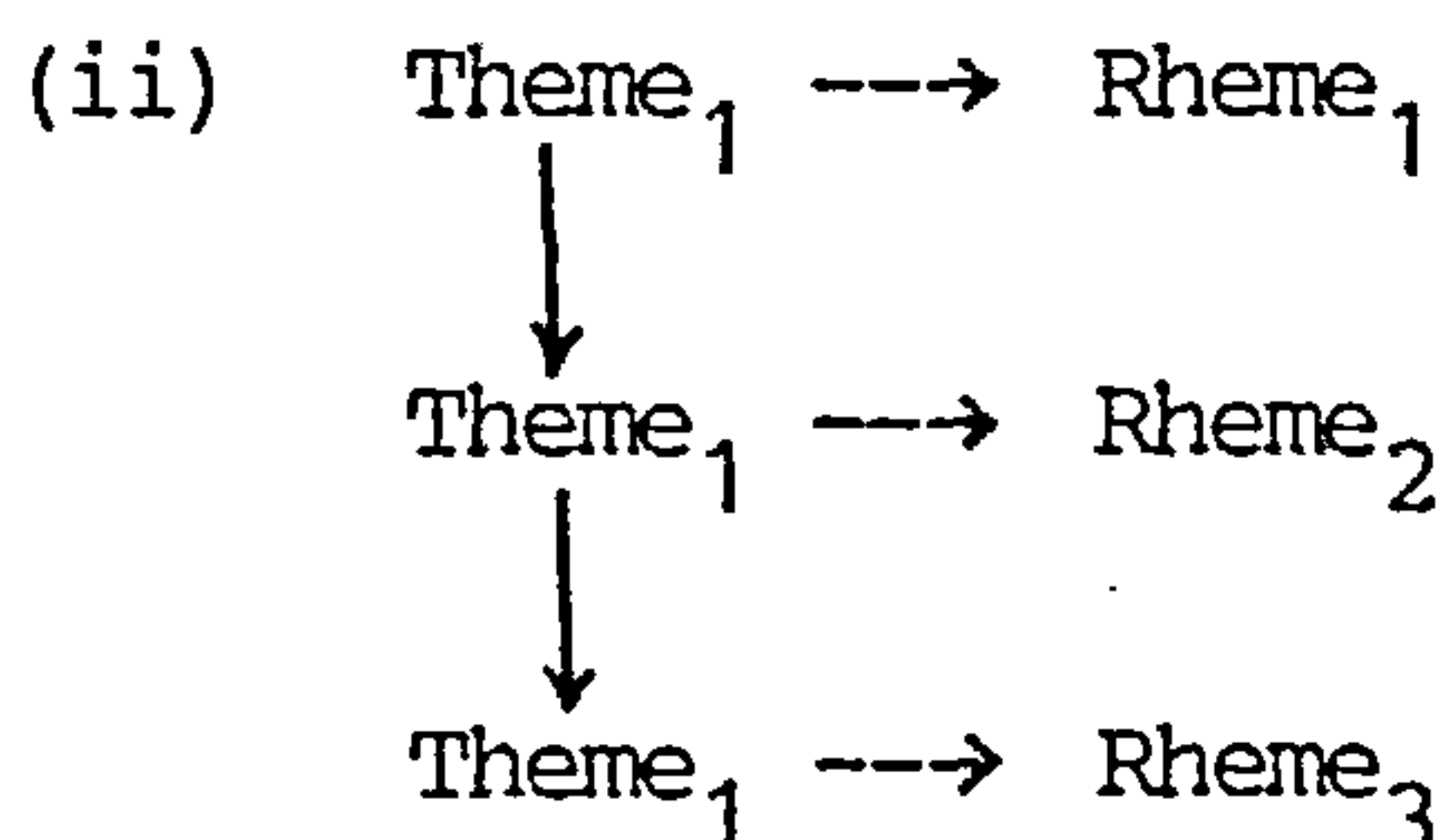
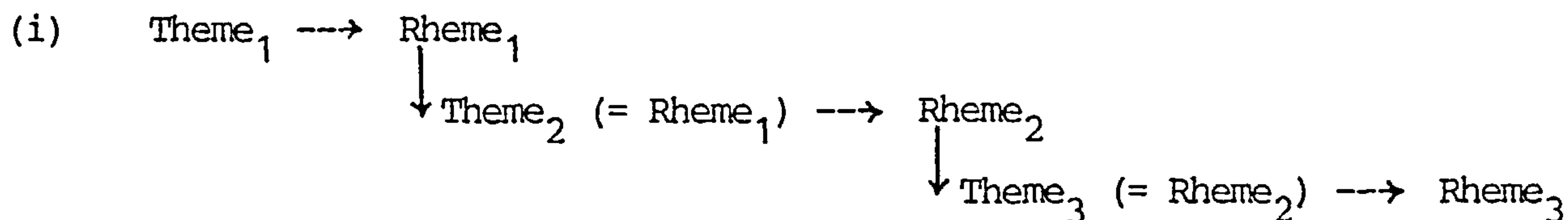
4. Although I have chosen to describe the process as 'packaging', I remain aware of the unsuitability of the metaphor involved. What is needed is some term which would have stronger associations with the notion of the 'flow' of speech, but descriptions such as 'thin' or 'slow' flow strike me as equally unsuitable. In using the terms 'loose' and 'tight' packaging, however, I wish

To avoid any implication that one type has priority over the other. If a position has to be taken, it would, on the basis of the pattern of development from child to adult language and the historical precedence of spoken over written language, involve a claim that there is a general process of development from 'looser' to 'tighter' forms. There are, however, many complicating factors to be considered. For the moment, it is intended that 'packaging' (although somewhat unsatisfactory) be considered a neutral term for describing the way in which speakers organise the elements they wish to include in their messages.

5. The terms 'current' and 'displaced' were suggested by Scriven in a discussion of Chafe's concept of "foregrounded", defined as "assumed to be in the hearer's consciousness" (Chafe, 1972 : 50). What Scriven, as I understand his brief remarks, wished to point out was the transitory status in spoken discourse of elements Chafe described as "foregrounded". The 'current' referent, "assumed to be in the hearer's consciousness", should be distinguished from 'displaced' or previous referents in the discourse. Displacement, in this view, takes place at referential boundaries. Scriven's remarks can be found at the end of Chafe (1972 : 68)..
6. It is difficult to discuss the significance of the uses of deictics from such a small sample. Generally, the examples found in this discourse tend to support the proposal by Linde (1979) that the use of a deictic is determined by the speaker's

"focus of attention". Formalising a notion such as 'focus of attention' is not really possible in an analysis dealing with information structure at this level, and essentially requires investigation in terms of 'topic framework' or 'speaker's topic'.

7. A very similarly worded conclusion is to be found in Anderson et al. (1977), derived from their account of strongly preferred interpretations of potentially ambiguous texts. Their explanation in terms of a reader's 'schema' with which he approaches a piece of text is not incompatible with the preferred interpretive 'set' with which hearers are considered to approach their task in the present analysis.
8. Daneš (1974 : 118) analyses written scientific discourse from the point of view of 'thematic progression', using the Praguean concepts of 'theme' and 'rheme'. The formal properties subsumed under these terms make them particularly inappropriate for the description of the data investigated here. However, the structural relationships which Daneš proposes do mirror to a certain degree the two interpretive rules I am proposing. Daneš presents the following two basic structures :



The first form is similar to my rule based on current entity reference and the second is structurally similar to my speaker's topic rule.

9. The notion of 'topic' in spoken discourse was discussed in some detail in chapter 4. As is apparent in the discussion of a speaker's orientation in his descriptive task, the use of "topic" here is intended to capture the fact that, if the speaker relates all his 'new' information to a single 'non-new' referent, then that 'non-new' referent is, in one sense, what he's talking about. (Further discussion of this issue and exemplification from conversational discourse will be presented in chapter 8.)

Chapter 8 Conversational Data :
The Interpretation of Elements
in the Information Structure

Chapter 8

In chapter 5, the advantages of an analysis based on controlled data were outlined. Chapters 6 and 7 represent the development of such an analysis and provide examples of the type of insight to be gained into the information structure of one type of spoken discourse.

The analysis of casual conversational discourse, however, cannot be undertaken on the basis of comparable controls on the domain, situation and purpose of the discourse. Many of the features which are 'known' about the controlled spoken data have to be 'reconstructed' for uncontrolled conversational data. This is particularly true in the case of discourse referents. In the controlled data analysis, the identification of 'non-new' referents in the domain of discourse was a relatively simple procedure. The identification of 'non-new' or 'given' referents in conversational data, however, appears to require much more interpretive 'work'. In order to develop this point, I will consider the various factors which must be involved in 'working out' the interpretation of non-new or given reference in casual conversational discourse.

8.1 Interpreting Speakers' Givens

In the analysis of the controlled data, it was suggested that the expression of 'non-new' or 'given' information was always in an attenuated form. In its broadest sense, the term 'attenuated' is intended to capture the fact that the linguistic expression of given reference, for example, is not only uttered with low pitch, but also

does not incorporate all those predicates which were attached to the intended referent when it was introduced as 'new'. As an illustration from the data of the preceding chapters, extract [8.1] presents the actual attenuated form used (i.e. the anaphoric pronominal "it") and [8.1a] contains a constructed example of what a less attenuated version might look like.

[8.1] draw a line in the middle of the page + about two inches +
and above it write ON +

[8.1a] and above the two inch line which you've just drawn in the middle of the page write ON

Version [8.1a] is still an incomplete representation of all information potentially assumed in the use of "it" in extract [8.1]. There are, for example, additional details such as "draw with the black pen which you are holding" and "the page which is in front of you" and so on. The list of elements in the predicate set would ultimately include sub-sets containing details of the sort found in lexical entries and in characterisations of the prototypic 'line', for example. (That is, unless otherwise stated, lines in geometric drawings are invariably 'straight' and not 'curved'.)

However, attempting to build the complete predicate set potentially assumed when an attenuated expression is used, would be not only an endless, but also an irrelevant task. What is surely of interest is not a characterisation of all predicates assumed, but of those few salient predicates which are minimally required for successful interpretation to take place. If the predicate set can be viewed as hierarchically organised, then the analyst is interested in those predicates which,

8.2 Antecedents and Predicates

When investigating examples of the use of attenuated forms in conversational speech, it is initially quite plausible to view the correct interpretation of a pronominal such as "it" in extract [8.2] as a process of replacing "it" with "my hair", as in [8.2a].

[8.2] I've just had my hair curled and it looks windblown all the time

[8.2a] My hair looks windblown all the time

Such a view is also commonly expressed in terms of the pronominal 'referring back' to its antecedent nominal (cf. Carpenter & Just, 1977 : 236), or in terms of the pronominal 'substituting' for the antecedent (cf. Tyler, 1978 : 336). This general view has been characterised as the 'pronominal surrogate hypothesis' by McKay & Fulkerson (1979). They demonstrate, in a limited way, that it is simply not the case that "the nature of an antecedent completely determines the interpretation of a pronoun" (1979 : 661). I will provide additional evidence against such a view.

The notion of 'substitution' is a basic aspect of the treatment of anaphora as a cohesive tie in text structure. In the cohesion approach (cf. Halliday & Hasan, 1976), there is a pronounced tendency to treat anaphoric pronominals as 'words' which substitute for other 'words' in the text. This approach is extremely misleading and would fail to account for the successful interpretation of anaphoric pronominals as they are generally used in conversational speech. In specific terms, I will argue that, in extract [8.2], "it" does not substitute for "my hair" and that [8.2a] is not a correct representation of the second conjunct in [8.2].

The view of anaphoric pronominals as 'referring back' to their antecedent nominals - as found in Halliday and Hasan (1976) - has been criticised by Morgan (1979). Using the following example,

Wash and core six cooking apples.

Put them in a fireproof dish.

(Halliday & Hasan, 1976 : 2)

Morgan (1979 : 109) argues that it is not the anaphoric function of "them" which gives cohesion to the two sentences. Rather, it is the assumption on a hearer/reader's part that the two sentences are coherent which results in the interpretation that "them" and "six cooking apples" involve the same entities. While I share Morgan's perspective on the general interpretive processes involved - taking a 'coherence' over a 'cohesion' view of anaphora - I think that another significant point regarding the relationship between the antecedent "six cooking apples" and the anaphor "them" has been missed. The reason "them" can not possibly 'refer back' to "six cooking apples" is because those two expressions are used for different (or distinguishable) entities. The nominal expression has as its referents - six (pristine) cooking apples; the pronominal has - six cooking apples which have been washed and cored. When any 'change of state' predicate is attached to a nominal expression, subsequent pronominals must be interpreted in terms of that predicate. (Support for this view comes from the experimental work of Garvey et al. (1975) and Caramazza et al. (1977) who demonstrate that verbs of 'implicit causality' have a significant effect on the selection of antecedents for pronominals.) This is a powerful argument for the coherence view of anaphoric function and against any view based on the substitution principle implicit in the cohesion approach.

In [8.3], it is surely not the bus alone which goes to the Royal Botanic Gardens, but the bus with the speaker in it. In [8.4], the "it" which is taped up is not the "suitcase", but the "suitcase in its burst state". In [8.5], the substitution of the nominal "French" would produce nonsense. What is required is a fairly extended set of predicates such as - "the French spoken by the friend of mine who had been to Switzerland for several years". Extract [8.6] provides a good example of how predicates accumulate so that each mention of "he" has a potentially different predicate set and the final "he" has an interpretation which includes "the American sitting next to me on the flight back who got plastered and who fell asleep". Note that this view of the interpretation of the final "he" is not compatible with Chastain's (1975) proposal that "each term in an anaphoric chain has the same descriptive content as well as the same reference as the others" (1975 : 232). Chastain does, however, admit that there are discourses "in which the descriptive content of the anaphorically connected singular terms accumulates over time" (1975 : 232). The point I wish to make is that casual conversational discourse is indeed generally such a discourse type and that the representations proposed for the italicized pronominals in [8.3] - [8.6] are the basis of successful interpretation. Comparable representations for discourse anaphors in a more formal analysis have been suggested by Webber (1978).

These representations may seem to make the information assumed to be carried by a pronominal unnecessarily complex. There is evidence, however, that speakers' use of pronominals is indeed influenced by the predicates attached to antecedent nominals. Extract [8.7] is presented as one example.

[8.7] there's two different ladies go up to the whist and both
 have a wig and they're most natural

The correct interpretation of "they" depends on the hearer's understanding that there are two wigs and not one, as the nominal antecedent "a wig" by itself would suggest.²

In extract [8.8], there is a similar problem, with a singular nominal antecedent and plural anaphoric pronominal.

[8.8] even an apprentice can make over twenty pound a week
 and they don't get much tax from that

By itself, the expression "an apprentice" might be interpreted as introducing a particular individual into the discourse. However, when interpreted in the context of the predicate "can make over twenty pound a week", it has to be taken, not as a particular individual, but as any individual from a set of individuals to whom the lexical expression "apprentice" can be applied. The choice of subsequent pronominal (e.g. "he" or "they") then simply reflects the speaker's perspective on whether he is considering a typical individual or a set of such individuals. The speaker of [8.8] chooses the latter. The important point to note in this example is not the switch from singular to plural form as such, but the way in which the predicate allows the hearer to interpret the antecedent, though grammatically singular, as evoking a set which can be expressed subsequently by a grammatically plural anaphor.

Extracts [8.7] and [8.8] provided examples of indefinite singular nominal antecedents with definite plural pronominal anaphors. The importance of the predicate attached to each antecedent nominal for

the interpretation of the anaphor was emphasised. In extract [8.9], there is another example of singular antecedent - plural anaphor, but in this case, there is nothing in the expressed or explicit predicate which accounts for the change in grammatical number.

[8.9] (The speaker, in her fifties, is talking about holiday travel and, in particular, the cost of taking a car on a ferry)

My cousin has a small car +

and it costs them twenty-three single

I would like to suggest that the source of the plural in "them" is an unexpressed implicit predicate attached to the definite antecedent "my cousin". The exact nature of this predicate is impossible to ascertain, since ultimately only the speaker knows what she assumed on this occasion of speaking, but a reasonable guess would supply something like - 'has a wife' or 'has a family'. The reference of "them" is, on that interpretation, the mentioned cousin plus his wife or the members of his family. What is being proposed is quite obviously based on an inference that, in a discussion about travelling on holiday, the cousin of a speaker in her fifties may reasonably be assumed to have some kin and to take them on holiday with him.³ In this respect, the actual, expressed predicate, "has a small car" contributes to an orientation towards "my cousin" which probably includes others travelling in the car with him on holiday and paying for the ferry etc..

Whether this particular characterisation of the implicit predicate can be justified or not is of less importance in the present discussion than the establishment of two basic points regarding implicit

predicates. Firstly, there are normally implicit predicates associated with pronominals in discourse. Second, an interpretation or an analysis may, on some occasions, have to reconstruct some relevant implicit predicate(s).

How are the relevant implicit predicates at a given point in the discourse identified? There is, after all, a potentially large set of implicit predicates which a speaker may have for a referent introduced as "my cousin". The predicate set proposed in [8.1b] derived its elements and its hierarchical ordering simply from the preceding discourse. In a tightly controlled and limited domain of discourse, the top elements in such a predicate set can be presented with some confidence. In discussing a similar issue regarding the set of referents in formal contextual domains, McCawley (1979) initially suggests that "additions to the contextual domain are added at the top of the hierarchy as a new first level" (1979 : 385). Although McCawley recognises that "it is up to the speaker to determine which items are to be more prominent" (1979 : 386), he nevertheless restricts his consideration to the analysis of constructed - and thereby highly controlled - discourse fragments which have no 'speakers'. In such 'data', the characterisation of hierarchically ordered sets existing in the discourse domain appears quite feasible.

In an analysis of spontaneous conversational discourse, however, the source of elements in the predicate set, and their ordering, must depend on a large variety of factors including, not only the preceding discourse, but also the topic of discourse, the situation, and many aspects relating to the hearer(s). Constructing such a set might seem to involve preparing an open-ended list. However, the major aim of

characterising a predicate set is not, of course, the construction of such a list, but the identification of the salient predicates, that is, the topmost elements in the set, at any point in the discourse. The identification involved will inevitably be 'post hoc', always taking a hearer's perspective and attempting to interpret utterances rather than trying to anticipate the processes which lead a speaker to treat one predicate and not others as salient.

8.3 'New' Predicates

I have proposed that the interpretation of pronominally-realised non-new information may depend on a recognition by the hearer of implicit salient predicates. The examples discussed so far have been mainly of a form described as "syntactically controlled" (cf. Hankamer & Sag, 1977). I think the argument for implicit predicates is stronger when examples of "pragmatically controlled" anaphors are considered, (cf. Yule, 1979).

I shall also present an argument, supported by examples from conversational discourse, that the interpretation of 'non-new' information - as realised pronominally - depends, at least partially, on the listener constructing an interpretation of what the 'new' information can most likely be predicated to. In other words, although the speaker may structure the information in his message in such a way that there is some 'non-new' or 'given' element to which some 'new' element is attached - intending to provide a 'non-new' → 'new' interpretive procedure - the hearer may have to reverse that procedure.

That is, at any point in the discourse, the hearer may have to interpret the speaker's "given" on the basis of the "new" information being introduced ('non-new' ← 'new').

To illustrate both these points, extract [8.10] is presented.

[8.10] (talking about the First World War)

I used to go about with a chap + I don't know +
 whether he's still alive now or not + but + there was
 nine ten eleven in the family altogether + two girls +
 and nine boys + and she lost eight sons one after the
 other +

There is no linguistic expression which could be treated as the direct antecedent for "she" in [8.10]. Any analysis which attempts to account for why the speaker can treat this referent as 'non-new' would have to be based on speaker-assumptions. If one of those assumptions is presented in terms of an implicit predicate, based on an inference that talking about a 'family' involves the existence of the 'mother' of that family, then the speaker does not have to explicitly introduce the 'mother'. Notice, however, that there could be many other referents 'activated' by the mention of 'a chap' and his 'family', but, for this speaker on this occasion, the salient predicate of 'family' specifically involves the 'mother'.

Taking the hearer's point of view, one could, of course, propose that he has, in such circumstances, exactly the same salient implicit predicate at the top of his current hierarchy of predicates attaching to 'family' and so the interpretation of "she" poses no problems. If, as seems not unreasonable, he does not have the same salient predicate,

he must reconstruct the speaker's intended referent in some other way. An explicit clue is present in the predicate "lost eight sons" attached to "she". Notice that, if the hearer does identify the intended referent on the basis of the predicated 'new' information, he too is using an inference that both 'being female' and 'losing eight sons' are predicates that can pragmatically only attach to a 'mother'.

No attempt is being made to suggest that the hearer's interpretation of the reference of 'she' in extract [8.10] must necessarily follow one or the other of these two procedures. I have simply tried to describe some of the complexities involved in the analysis of this type of pronominal when it is used to realise 'non-new' or 'given' information in conversational speech.

One further aspect of extract [8.10] should be noted. If it was of primary importance in the message being conveyed by the speaker that the hearer should 'identify' the referent of 'she' - if, for example, this referent was what the speaker was principally talking about - then he seems to make no effort to "Be perspicuous", borrowing the expression Grice (1975) proposed as the principle underlying his conversational maxim of 'manner'. If, however, the speaker is mainly concerned with communicating information about the number of people who died in the First World War, then it is the information "lost eight sons", predicated of some individual or other, that is of primary importance. Consequently, the 'identity' of this individual is not of any real significance. This latter view involves a much broader consideration of how speakers structure their messages over extended stretches of discourse and how that structuring influences the

organisation of information units with their 'new' and 'non-new' elements. Extract [8.10] may, in terms of the larger structure of the discourse, represent a series of steps in the 'staging' process with which the speaker establishes his personal credentials for being able to assert that, in fact, a lot of men died in the First World War. Those personal credentials involve knowing someone from whose family eight sons were lost, but the 'identity' (or indeed any informative details) of those individuals does not have to be established beyond the fact that they existed and the speaker knew (or knew of) them. Thus, the pronominal 'she' may be intended as a referring expression with a minimal predicate set simply because the speaker is using 'she' as one of the elements which takes him from the assertion of a personal connection to the assertion of the predicate exemplifying his point that a lot of men died in the First World War. The pronominal 'she', then, is not only an instance of 'non-new' information at the level of the information unit, it is also an example of subsidiary information in the larger scheme of the 'speaker's topic'.

Some further observations on the influence of 'speaker's topic' and structuring considerations such as 'staging' on the information structure of conversational discourse will be presented in 8.5.

While remaining aware of the influence of larger structural considerations in the speaker's organisation of his discourse contributions, I shall concentrate here on demonstrating, at the utterance level, some of the complexities involved in the interpretation of pro-nominals which appear to carry 'non-new' information. I have argued (cf. section 7.4) that in the controlled data, there are fairly

simple interpretive rules which lead to the successful interpretation of pro-nominal reference. I have also attempted to show that, in spontaneous conversational speech, the correct interpretation of pronominal reference may depend on the hearer's identification, not of the reference of antecedent nominals as in the controlled data, but of implicit salient predicates. I have also suggested that some 'non-new' referents may be identifiable only in terms of the 'new' predicates attached to them. I think these points indicate that there is a variable amount of interpretive 'work' required of the hearer in different types of discourse. Having attempted in section 7.3 to show that this 'work' can be minimal, I shall now provide some illustration of situations in conversational speech where the successful interpretation of pro-nominals appears to require much more 'work' on the hearer's part.

Consider the following 'fragments' in terms of the (underlined) pronominals being interpretable solely on the basis of antecedent nominals.

[8.11a] + one of our main jobs in the Botanic is writing on
the flora of Turkey + they

[8.12a] + we could say of Caithness that they

[8.13a] + the last time he was here they got antlers + and
em + he was writing he heard that this was the time
they

[8.14a] I have a cousin who's very deaf + and she can't hear
Jessie + because Jessie speaks too loudly + you
see she

[8.15a] + Oh I was on the bus and + he

Each of the underlined forms in [8.11a] - [8.15a] has the properties identified earlier as correlating with the expression of 'non-new' information. They are 'attenuated' forms, that is, pronominals uttered low in the pitch range. They should be, according to Clark & Clark (1977 : 95), the 'given' elements in the 'given-new' strategy and "serve as an address directing the listener to where 'new' information should be stored". (Haviland & Clark, 1974 : 520).

I think it should be clear that in none of the above extracts is there a situation in which "listeners can be confident that the given information conveys information they can identify uniquely" (Clark & Clark, 1977 : 92). Rather, there is, on each occasion, more than one 'address' potentially available. Moreover, those addresses have to be proposed, not on the basis of antecedent expressions used for 'unique' identification, but on the basis of implicit salient predicates attaching to antecedent expressions. In [8.11a], given that the reference of "they" does not depend on any part of the discourse preceding the extract presented (and it does not), then there are, in fact, a number of possible intended referents. How does the hearer decide which referent(s) the speaker had in mind? He can, of course, have something like "people in Turkey" among his possible antecedents, based on a possible implicit salient predicate (derived from a reasonable inference that countries have people) which he can attempt to match with the 'new' predicate attached to "they". If the 'new' predicate is, in fact, something like "are really unusual flowers", then that particular antecedent has to be abandoned in favour of another. If, however, the new predicate is, as it turns out to be in extract [8.11], a good 'fit' for that possible antecedent, then, perhaps, all other possibles can be abandoned.

[8.11] + one of our main jobs in the Botanic is writing on the flora of Turkey + they don't have the scientists to do it +

What I have attempted to illustrate, using extract [8.11], is that, if claims about the interpretive processing of information are made on the basis of the 'non-new \longrightarrow new' structure, then that processing must be characterised as being, on occasion, more complex than simply reading off elements in a linear sequence. My claim is that hearers, in order to interpret speakers' non-new information, may need to do so in terms of both the antecedent information and the 'new' information predicated of the 'non-new'.

In some types of discourse this interpretive process may be quite straight-forward because there is a very clear antecedent-anaphor relation available. In such circumstances the predicated 'new' always confirms this interpretation. Most casual conversational discourse, I wish to claim, involves less straight-forward interpretive processes.

Extract [8.12] provides an example, comparable to [8.11], of an implicit salient predicate of the form "has people in it" attaching to the name of a place ("Caithness") and the 'new' predicate containing properties applicable to "people in Caithness", so an interpretation of "they" - not unambiguously possible in [8.12a] - can be arrived at.

[8.12] + we could say of Caithness that they are lazy speakers +

Extract [8.13] is intended to illustrate the inappropriateness of an interpretive strategy which simply searches for grammatically acceptable (i.e. in this case, 'plural') antecedent expressions as the basis for the interpretation of 'non-new' information, pronominally realised.

[8.13] + the last time he was here they got antlers + and em +
 he was writing he heard that this was the time they cast +

In this instance, the mention of "antlers" allows the speaker to operate with an implicit salient predicate, possibly of the form "which come from deer" and consequently to refer to "deer" as non-new information. The predicate "cast" makes the reference to "deer" quite clear.

In extract [8.14], there are two possible antecedents for "she". If the "new" predicate was "hates loud speakers", then the "cousin" would be chosen. As it happens, it is in fact "Jessie" about whom the 'new' property is predicated. However, I would maintain that there is nothing in [8.14a] alone which would guarantee a correct interpretation in this case. The 'non-new' has to be (partially) interpreted in terms of the 'new'.

[8.14] I have a cousin who's very deaf + and she can't hear
 Jessie + because Jessie speaks too loudly + you see
she shouts at her +

Extract [8.15] is presented in an extended form because not only does the interpretation of "he" have to derive from processes similar to those described for the pro-nominals in [8.11] - [8.14], but so too must the interpretation of "them" (underlined).

[8.15] + oh I was on the bus and + he didn't stop at the
 right stop + and he was away up and so he had to sit
 at the terminus for a few minutes ++ he didn't know
 where Fintry Drive was + and I was expecting them + you
 know + to start talking about the football +

With an implicit predicate such as "has a driver" attached to "the bus" and the 'new' predicate "didn't stop at the right stop" as confirmation, the hearer can arrive at a reasonable interpretation for "he". There is rather more difficulty, however, with "them". One can propose other implicit predicates deriving from the mention of "the bus", of course. They could be of the form - "has a driver and a conductor" or "has a driver and passengers", either of which would fit an interpretation of "them" - which also has to accommodate the 'new' information - "start talking about the football". I suspect the indeterminacy which the analyst encounters in attempting to identify the intended referents of "them" in [8.15] may equally have been experienced by the hearer in this discourse situation.

If the analyst goes on to devise possible grounds (e.g. buses in Glasgow don't have conductors therefore "them" must involve passengers etc.) for the most likely interpretation of "them", is he in danger of investing much more interpretive 'work' than the actual hearer in this situation? If he does 'over-interpret', then his characterisation of how hearers interpret the 'non-new' - 'new' structure of information in discourse could, in fact, be a serious misrepresentation. It is, in effect, quite possible that the hearer recognised that the point of this contribution is that the speaker had expected people in general to be "talking about the football" and "them" is simply a subset of "people in general". The identity of this sub-set, in any precise terms, is unimportant. If identification of some sort was required, of course, then the speaker could provide it (in answer to the possible, but rather unlikely question - 'who did you say you expected to start talking about the football?'). In other words, the structure of the speaker's contribution may be determined by the fact that, for him,

"them" is not only 'non-new' information, it is information which is of little import in the larger scheme of his 'topic'.

8.4 The Good Fit Principle

While there is clearly a need for an investigation into the status of anaphoric pronominals within the topic structure of contributions to conversational discourse (a brief consideration is presented in 8.5], it may be sufficient, at the present time, to summarise the observations made here in terms of a "good fit" principle, as presented in Figure 8.1. Such a representation suggests that there is more involved in the interpretation of a pronominally-realised 'given' or 'non-new' element in information structure than is generally assumed in discussions of anaphoric pronominals as 'substitutes' for antecedent nominals.

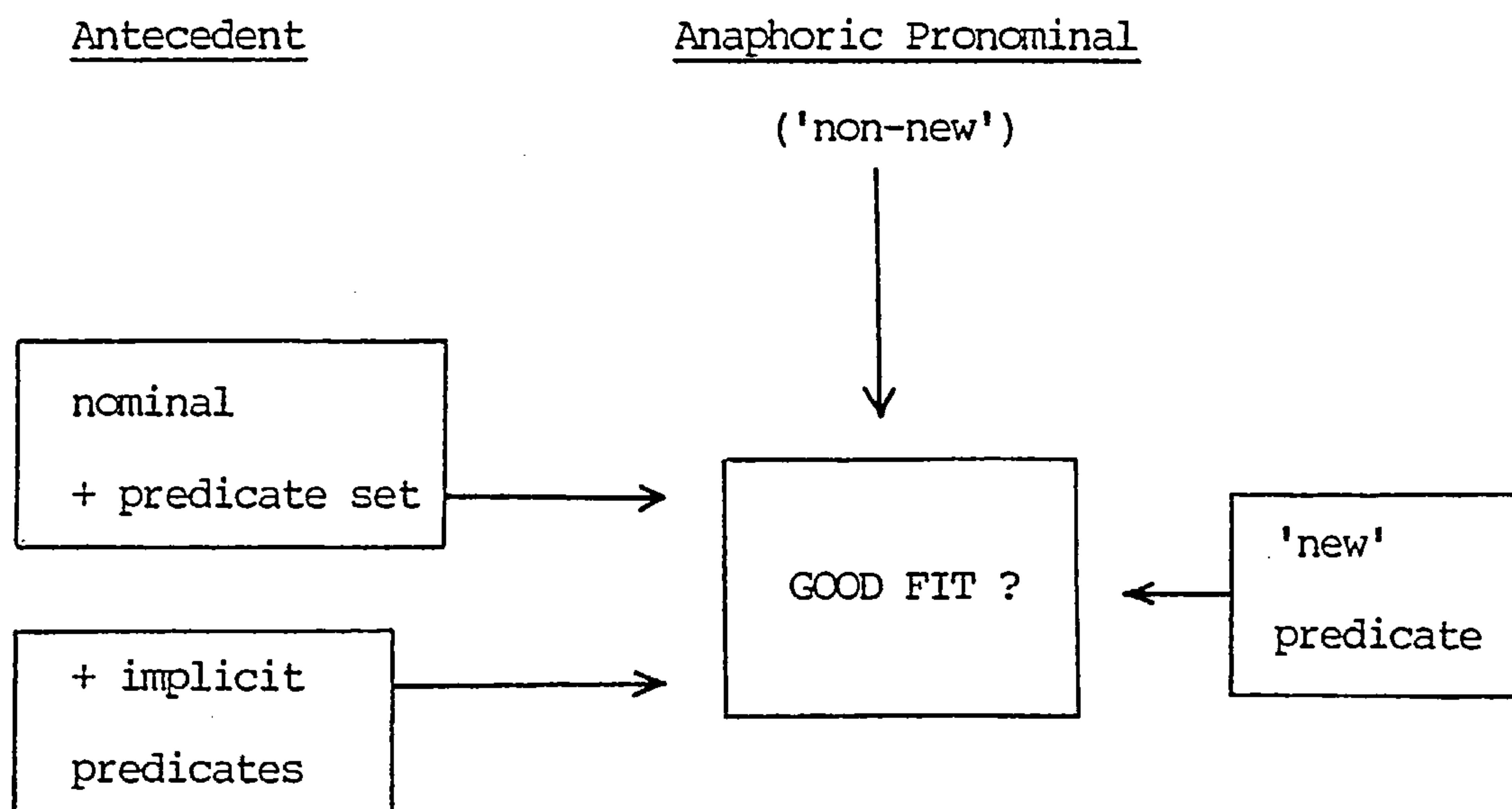


Figure 8.1

While the diagram in Figure 8.1 is not intended as a processing model, it does suggest a hypothesis about the interpretation of anaphoric pronominals which could be tested via psycholinguistic 'processing' experiments. That is, if a hearer has to use all elements in the "good fit" criterion to arrive at an interpretation of a pronominal in discourse, he should take longer to understand the utterance than on those occasions when the overt antecedent-nominal/anaphoric-pronominal relation is less dependent on such reconstruction processes. Such testing is clearly a matter for future research.⁴

8.5 Postscript : The Influence of Topic-Structure

In the investigation of the interpretation of 'non-new' elements in extracts from conversational speech (section 8.3), it was suggested that the meaning or reference of a pronominal, for example, may remain indeterminate simply because it is of limited relevance in the larger scheme of the speaker's topic. I shall now develop this point further, in the first instance considering the larger discourse context, extract [8.16], in which one previously discussed extract [8.11] occurred. (The pronominal in question is underlined.)

[8.16] (The preceding discussion has been concerned with the nervousness people experience when they have to read aloud)

A : on occasion we do a bit of proof reading along there + and we're all sort of called on to do that from time to time +

B : and what does that involve

A : well + one of our main jobs in the Botanic is writing on the flora of Turkey + they haven't got the scientists to do it + so we sort of supply the scientists for that ++ well when + you've got all the scientific work written up + we all sort of check through it and one - one reads and the others +

B : oh I see you read aloud

- A : ^h^ that's right + and then you switch back and
 forward like this +
- B : and that doesn't bother you
- A : it does actually + (laughter) I'm terrible at
 it (laughter) but I don't know +
- B : even when it's something you're interested in
- A : well it makes it a bit easier to read certainly + but
 + just because you're reading to somebody else you
 feel a bit uneasy somehow ++
- C : I think it comes from + having to stand up and
 read in school + I know that's why I don't like
 reading aloud cause we always had to stand up +
 and read a passage + and you were told whether you'd
 read it well + (laughter)

The general 'topic' of all the contributions cited here is to do with 'reading aloud', and the difficulty or unease experienced in that activity. In speaker A's second contribution, he might have said that he has to read aloud the scientific reports he and his colleagues write. He chooses, however, to provide some background information on the motivation for both the writing and subsequent reading of those scientific reports. This background information is, necessarily, structured into 'new' and 'non-new' elements at the information unit level. Hence the 'non-new' they in extract [8.11] discussed earlier.

[8.18] oh everything they do in Edinburgh + they do it far
too slowly +

[8.19] well I saw a demolition order there actually + a few
months ago + they said they were going to demolish
some of the flats + which is a pity ++ I don't know
what they're going to do with Edinburgh though + as long
as they don't do what they did with Glasgow +

[8.20] (looking at an old photograph)

Is this part of the collection they're trying to save then ?

In each of these extracts, "they" is used to designate an anonymous group-agent. The identity of the group or its members is not a relevant issue. A similar type of indeterminacy of reference is involved in another pronominal used as the non-new element - the use of "you", as in speaker A's utterance, "when you've got all the scientific work written up", in extract [8.16]. An analysis of this so-called generic 'you' is presented in Yule (1980).

One natural outcome of the use of pronominals with indeterminate reference is the occurrence in conversational speech of an apparent switching from one set of referents to another through the use of different pronominals, without the implication of separate referential sets. In extract [8.21], I think the topic of the contribution can be loosely expressed as "the situation of the average working class man in the Southside of Edinburgh in the 1920s". Each of the 'new' predicates attached to the 'non-new' pronominals serves to elaborate on this topic. The reference of those pronominals, despite their different forms - 'we', 'they', 'you' - is relatively constant if

considered as a set (of pragmatically determined cardinality), each member of which is satisfied by the properties of the topic member and implicit predicates deriving from that member. (This latter point is designed to bring the family of the "average working class man" within the referential range of "we", "they" and "you".)

[8.21] the average working class man + the wages
 were very small + the rents would run from anything
 from about five shillings to + seven shillings which
 was about all they could've possibly afforded in these
 days + we just had to live + so it didn't matter
 how many of family you had + if it was two rooms well +
 devil take the hindmost ++ and you couldn't get out of
 your environment you see you just had to suffer it and
 make the most of it + and they all survived that was
 the great thing ++

Thus, although the discussion of pronominally-realised non-new information in the controlled data was concerned mainly with the processes of identifying specific referents, the points made there regarding the 'non-new' element apparently apply most consistently to the type of spoken discourse which has a definite goal. That is, the purpose of a discourse has an obvious influence on the function of elements in its information structure. In casual conversational speech, it is the nature of the relationship of such elements to the topic which influences their function. In extract [8.16], the reference of "they" is clearly not of major significance in the speaker's contribution to the topic. There are, however, occasions in conversational speech where a particular individual or individuals

may become the 'topic' and the function of pronominals may be clearly related to maintaining reference.

For example, it would have been quite possible for one of the other speakers in [8.16] to ask speaker A to elaborate on this indeterminate group "they" with the possible result that "they" would, in turn, become the topic of a subsequent stretch of discourse. Indeed, the use of pronominals in the maintenance of a topic of a discourse is not uncommon. In the discussion of the controlled data, it was shown (cf. chapter 7.4) that two speakers could have two different 'topic' referents for which they both consistently used the pronominal "it". In extract [8.22], a single topic referent, once established, is referred to as "he" throughout an extended series of speaker-turns. Notice that, for both speakers, reference to the 'topic-entity' can be maintained even when the non-new element is zero-realised.

- [8.22] K : do you have any brothers or sisters
 F : one brother Alan + he's twenty-one
 K : is he at school or university
 F : no he works as a telecommunications engineer
 K : () in Edinburgh
 F : no () in London
 K : () in London + has he worked anywhere else or
 did he go straight from Edinburgh to London
 F : he went straight from Edinburgh to London and then
he went down to Brighton for a while and now he's
 back in London

In extract [8.22], the non-new elements (both pronominally-realised and zero-realised) have as their referent the same topic-entity for both speakers.

In extract [8.23], speaker R begins and ends a long contribution by mentioning "snow at Hogmanay" which is clearly related to the topic-initiating question^{of} speaker P in the first line. However, speaker R not only answers the question regarding "snow during the holidays", but provides additional information about the occasion on which "we had snow".⁶ This additional information is organised around a particular individual's ("a Greek friend of ours") reaction to the "snow". Consequently, the structure of several of speaker R's utterances has 'new' information relating to this particular individual attached to the pronominally-realised non-new element ("he").

- [8.23] P : did you have any snow + during the holidays
 R : a wee bit + just a wee bit
 P : how long did it last
 R : ah well it didn't lie really + there was some
 actually on + at Hogmanay because we had some
 friends + a Greek friend of ours was visiting us
 and when he left the house + just after Hogmanay +
 you know he had been away about fifteen minutes then
he rang the doorbell again + he said - its snowing
 its snowing + he was really excited you know + and
 we couldn't see anything it was just wet you know +
 but he had been standing sort of looking at the sky
 and he could see snow you know sort of if you looked
 at it you know + you could see although it wasn't

lying + and he was really excited about it 'cause
 snow's quite a novelty to him + so we had snow at
 Hogmanay ++

For speaker R, "A Greek friend of ours" clearly becomes a "speaker's topic entity" for most of her contribution. This individual is only introduced within the context of 'snow at Hogmanay' which continues to be part of speaker R's topic. It may be that in order to capture this relation of "part of speaker's topic", a further notion of 'sub-topic', or more precisely, 'speaker's sub-topic entity' has to be proposed in the analysis. The description of such categories, however, is outside the scope of the present investigation. It is sufficient to note that in extract [8.23], the interpretation of the non-new element ("he") in many of the information units depends on a recognition that, for this speaker, there is some type of 'topic entity'. (In order to provide a full characterisation of a 'topic entity' in a fragment of discourse, appeal would have to be made to the extended predicate set analysis of discourse referents already proposed in section 8.1.)

I have attempted, in this brief investigation, to illustrate the influence of organisational principles existing in fragments of spoken discourse above the level of the information unit. If the study of information structure in terms of 'new' and 'non-new' elements involves only the study of relationships within information units or across pairs of information units, then the function of pronominally-realised elements in discourse may be misrepresented. If, as I have attempted to show, the function of a pronominally-realised element can be determined by its relationship to the discourse topic or the speaker's topic, then a consideration of 'topic-structure'

must be part of a full characterisation of information structure in discourse. Thus, the natural direction for further research developing from this investigation would involve an examination of topic structure in spoken discourse.

8.6 Notes

1. Contributing to the 'predicate-carrying' interpretations in these examples is the influence of the conjunctions used. Although I don't think the proposed interpretations depend on the occurrence of "and", in [8.2] and [8.3] for example, they are certainly reinforced by the use of the conjunction.
2. There are, of course, two antecedent predicates as well as two wigs involved in extract [8.7] : "the wig which one of the ladies who goes up to the whist has, and the wig which the other lady who goes up to the whist has".
3. This type of inferred predicate appears, at first glance, to have a much more arbitrary basis than those inferred predicates proposed in section 6.3 as attaching to 'circle' and 'triangle' etc.. Given certain contextual details, however, the inference is probably equally justified in both circumstances. In a drawing exercise, the fact that a circle has a diameter is more likely to be of significance than in other circumstances in which circles might be under consideration (describing the pattern on a piece of material, for example). Thus, in the context of extract [8.9], the particular inference proposed may be a reasonable one.
4. I am not suggesting that recent experimental work such as Clark (1977, 1978), Garrod & Sanford (1977), Sanford & Garrod (1978), Sanford (1980), or Schustack & Anderson (1979) be repeated in the spoken mode. For one thing, there are more aspects to the

'Good Fit' consideration than any of these researchers have investigated. Moreover, I am not at all sure that there is a dependable relationship between the comprehension of elements in constructed sentence pairs encountered in the laboratory and the comprehension of parts of utterances in natural conversation. I suggest that some attempt should be made, in the psycholinguistic investigation of natural language phenomena, to work with data in a closer approximation to its natural language context of use.

5. Agentless passive forms could presumably have fulfilled the same function as these structures with indeterminate 'they', as, for example, in this version of [8.18] - "oh, everything done in Edinburgh is done far too slowly". It may be, however, that in casual conversational speech, the use of the passive is much less frequent than in planned or 'rehearsed' spoken discourse and written discourse. A similar suggestion, based on diachronic evidence, has been made by Givon (1979b : 85).
6. Note that the way this speaker answers the question about "snow during the holidays" is very much in line with what Clark & Marshall (1978) proposed as the 'event' basis of 'reference diaries'. That is, the question is answered in terms of a particular event which appears to have a diary-type entry in memory.

Chapter 9 Conclusions and Future Research

9.1 Conclusions

9.1.i The results of the investigation into intonational correlates of information structuring, chapters 2 - 4, make it clear that no discrete discourse function - intonational form relationships can be stated in the form of 'rules'. What is clear is that there are identifiable 'regularities' in the intonational features used by speakers to indicate the function of parts of their messages. Moreover, it is only by taking a pragmatic view of the intended function of parts of the speaker's message that these regularities can be identified. The regularities found are not predictable on either syntactic or semantic criteria. By combining the pragmatic treatment of the structure of speakers' messages with insights gained from a recent study of formal aspects of the intonational system (Currie, 1979b), it has been possible to suggest a new approach to the treatment of intonation in conversational speech (cf. Currie & Yule, forthcoming). In this paper, we propose a model of intonation which is not sentence-based (contra Liberman, 1979), not tied to attitudinal factors (contra O'Connor & Arnold, 1973) and not 'tonic-based' (contra Halliday, 1970; Crystal, 1969), but which takes a basic auditory distinction between prominent and non-prominent syllables and accounts for the distinction at the utterance level in terms of utterance-context and speaker-purpose in that context. This is broadly in line with the proposals of Brown et al. (1980). A recent attempt to perform a similar breakaway from the unreal constraints of studying the intonation of 'sentences' (Brazil, Coulthard & Johns, 1980) has concentrated on interactive processes and worked with essentially sociolinguistic/interpersonal categories. The conclusion of this thesis with regard to intonation in discourse is that it clearly plays a role in the marking of elements in the information-transfer process and must be

taken into account in considering spoken discourse as a form of transaction.

Although I have concentrated on the use of intonation in the information structure of discourse utterances (in a sense, at a micro-level), I suggested in chapter 4 that intonational cues are used by speakers (at a macro-level) in connection with the topic-structure of the discourse. I will consider the possibility of extending the analysis of intonation and topic-structure in section 9.2. The most general conclusion of this research concerning intonation is that, because the formal realisations of intonational cues are multifunctional, they are only a partial and, considered alone, an unreliable guide to the identification of the function of elements in the information structure of spoken discourse.

9.1.ii The most general conclusion from the research on the controlled data is that it has been shown to be possible to apply a set of functionally-defined categories in a comprehensive structural description of one type of spoken discourse. By combining the functional categories with a traditional distribution analysis, it is also possible to create paradigms which include forms that would have to be kept separate in traditional grammatical paradigms. The intuitive justification for such functional paradigms is that, regardless of the variation in form, the expressions included together perform comparable roles in conveying the speaker's intended message. If it is possible to produce a comprehensive linguistic analysis of one type of spoken discourse via categories derived from constraints on the speaker's knowledge and purposes, then it should be possible to perform

similar analyses on different types of spoken discourse, elicited under comparable controls.

Specific conclusions from research on the controlled data include the viability of using pause phenomena to define 'units' and also 'clusters' of information. This supports the recently published findings of Chafe (1979; 1980) in his analysis of the 'pear tree' stories, without necessarily agreeing with his claims about the nature of 'consciousness'. The argument of Currie (1979b; 1980) for the possibility of a multiple-tonic tone group, and consequently for an information unit with more than one 'new' element is also given support by this investigation. Recent proposals by Givon (1979b) and Ochs (1979) which describe the general 'loosely packaged' aspect of (unplanned) spoken discourse are supported by the investigation in chapter 7 into how the properties of 'new' entities are not 'packed' together in the way associated with written texts.

9.1.iii It has been shown, in chapter 7, that some of the general assumptions in the literature (see list in chapter 2) about the realisation forms used for subsequent reference need to be reconsidered. The circumstances in which subsequent reference is carried by pronominal and zero anaphora are different, regularly, from those in which relexicalisations take place. The division of 'given' or 'non-new' into 'current' and 'displaced' (section 7.3) is an attempt to provide categories for the discussion of those different circumstances.

Looking at the pronominal realisation of 'given' elements in conversational discourse (chapter 8) provided an opportunity to argue against some longstanding beliefs that anaphoric pronominals 'substitute

for' antecedent nominals. While the notion that anaphors 'carry', and are interpreted in terms of, their predicates has also been suggested recently by Webber (1978), I think this thesis proposal that some 'given' anaphoric expressions can only be interpreted in context via the 'new' predicate is worth noting and clearly a matter for further investigation. Also deserving further study is the influence of topic-structure on the way elements in the information structure are interpreted. As suggested in section 8.2, it may be that, as linguists, we devote too much of our analysis to each 'word' in the discourse record and fail to remember that, as language-users, we pay more attention to understanding the speaker's intended message and often miss hearing many of the 'words' so carefully transcribed in the discourse record. Further research, some of which is suggested in section 9.2, is clearly needed into the way language-users, in natural conversational contexts, actually process the information they receive. In other words, I believe it is still necessary to test the types of claims I have made, in a theoretical vein, about the information structure of spoken discourse.

9.1.iv The exercise and the analytic categories described in chapters 5 - 7 have already been put to use in two other pieces of research. In an attempt to discover whether there were sex-based differences in the language used to give instructions, van der Meulen (1980) adopted the drawing exercise to elicit controlled spoken discourse from male and female postgraduates. In a current research project, sponsored by the Scottish Education Department (Project H/140/12 : 'Competence in Spoken English'), the drawing exercise and the categories of description developed are being used in an attempt to

find regular linguistic differences in the performances of speakers who are noticeably concerned to take the hearer's state of knowledge into account as against those who are less concerned to do so. Of additional interest in this research are the principles involved in establishing and maintaining reference which were described in detail in chapter 7.

Taking a more general view, the research reported in this thesis would be useful for linguists seeking some fairly straightforward methodological principles which can have practical application in the analysis of the spoken discourse of both native and non-native students of English. The analysis presented provides some insight into the regularities found in the spoken discourse of native English speaking university undergraduates which should allow comparisons to be made with the performance in a similar task of whatever groups the linguist is especially interested in. The particular features of information structure described - the basic elements of information content; the combination of those elements into information units and criteria for identifying such units; the combination of information units into larger units; the realisation forms, both phonological and lexical, of reference to 'new' and 'non-new' entities in the discourse domain, and some interpretive strategies employed in the successful identification of referents - provide the analyst with clear insights into many of the processes which can only be guessed at in uncontrolled conversational discourse. The additional problems of interpreting reference in spontaneous conversational discourse are set out in a step-by-step consideration of the types of factors involved in chapter 8.

I have already suggested, at the end of chapter 8, a hypothesis which psycholinguists might find worth testing. Similar testing might interestingly be applied to discover whether the 'current/displaced' distinction I propose in chapter 7 has an effect on understanding time. The formal version of the analysis presented in section 6.8 might be of interest to those working in the computer modelling of natural language. There is no principled reason why the tasks described could not be carried out by a computer given a translation into machine language of the formalisms provided. Such a 'proof' for the adequacy of the analysis could be looked upon as a proposal for future research arising out of this study. I would like to suggest some other directions in which an extension of this research might go.

9.2 Continuing the Research

Throughout this thesis, I have generally restricted my analysis of information structure to the level of the information unit. I have, however, repeatedly indicated that there are larger structural processes at work in extended spoken discourse which have some influence on the realisation of elements within information units and on the relations holding between sequences of such units. The most natural direction which further research would take, then, would be concerned with an investigation of those 'larger structural processes', in particular, with topic-structure.

I proposed a distinction between sentential topics and speakers' topics in chapter 4 which could be further developed by attempting to

provide some principled means of identifying topical features within conversational contributions. This might be achieved by developing some form of 'topic-framework' which could initially be characterised in terms of activated features of context. That is, by making explicit, in the analysis, those specific aspects of the context and domain of the conversation - time, place, speaker-hearer relationships, entities referred to, etc. - which one speaker activates or makes salient in the process of his contribution, it should be possible to identify the elements the next speaker connects with in his following contribution. In this way, it may be possible to provide some formal basis for the discussion of the Gricean (1975) notion of the 'relevance' of contributions to a discourse. More important, perhaps, it could provide a basis for deciding what would count as more, as against less, 'relevant' in a conversational exchange.

Another, ad hoc, notion of 'sub-units' within speakers' topics was briefly appealed to in the course of this thesis. While some formal means of identifying the boundaries and internal features by which we intuitively recognise subordinate 'chunks' within a larger contribution would also have to be sought, a more general concern of a 'structural' investigation of discourse would be the way speakers organise their contributions to include such subordinate chunks. It was suggested, in chapter 8, that speakers often 'set the stage' for their specifically 'topical' contribution by establishing their credentials for being able to assert certain facts. The effect of this 'staging' (Grimes, 1975 : 323) is that some complex structuring has to take place, as the speaker speaks, in order that the supplementary detail does not become the dominant part of the message and that the hearer is not misled into thinking a change of topic has been initiated.

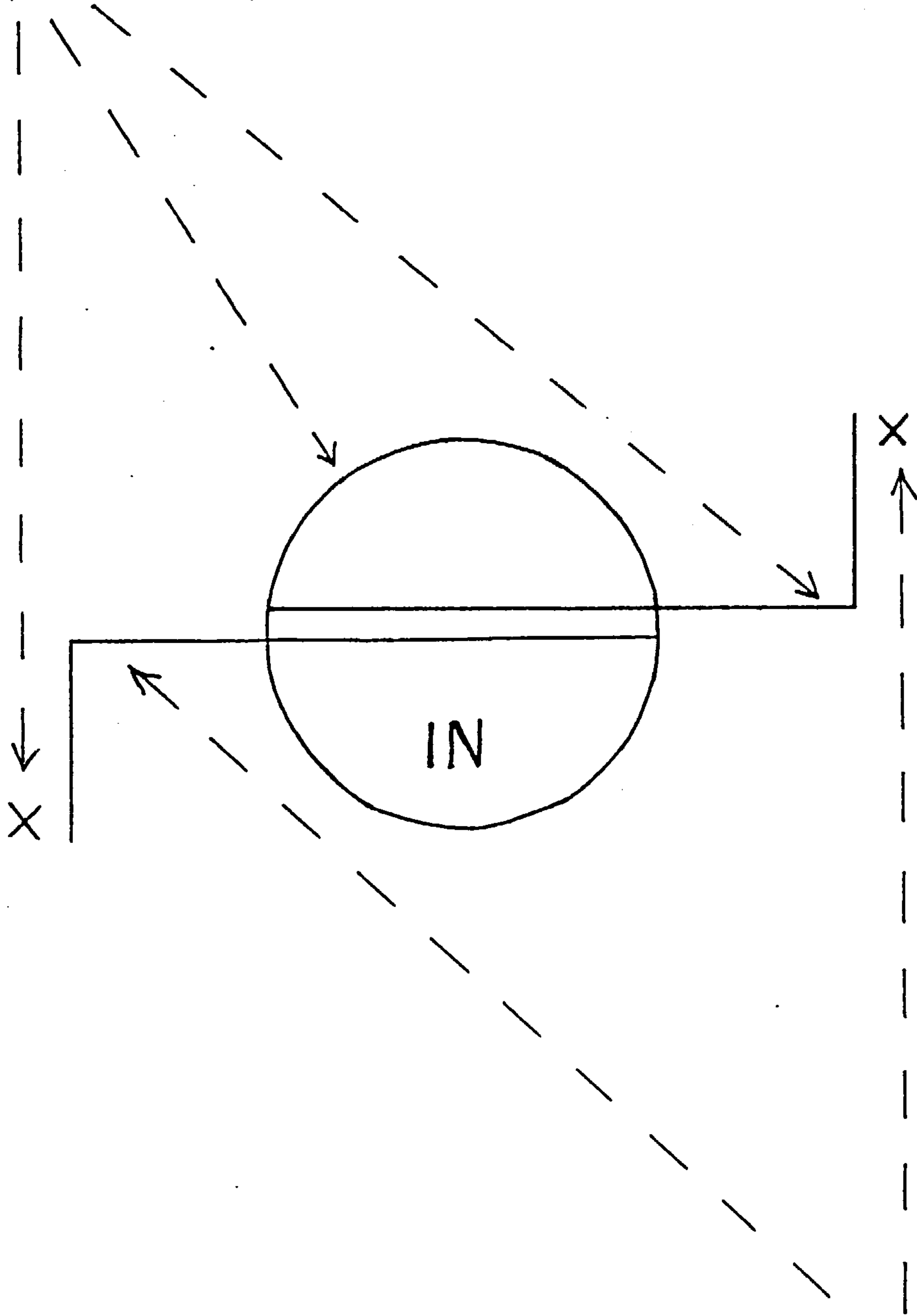
Such macro-structuring clearly will have an influence on the micro-structuring of the minimal units of information investigated in this thesis. One effect noted in chapter 8 was the apparent non-specificity of referents treated as 'given' within scene-setting parts of a contribution.

The investigation of topic-structure, then, is one direction in which the research could continue. The comparison of information structure across different types of spoken discourse (e.g. lectures, scripted talks) and a comparison between spoken and written versions of the drawing exercise are other possibilities. Regardless of the specific direction in which the research continues, it will remain within the spirit characterised as pragmatic in the introduction to this thesis. I hope that if this thesis can be said to have demonstrated one general principle, it is that working from speakers' purposes or intentions in communicating to the formal means employed to realise those intentions is a viable and illuminating methodology within linguistics.

Appendix 1 Drawings Used (Controlled Data Elicitation)

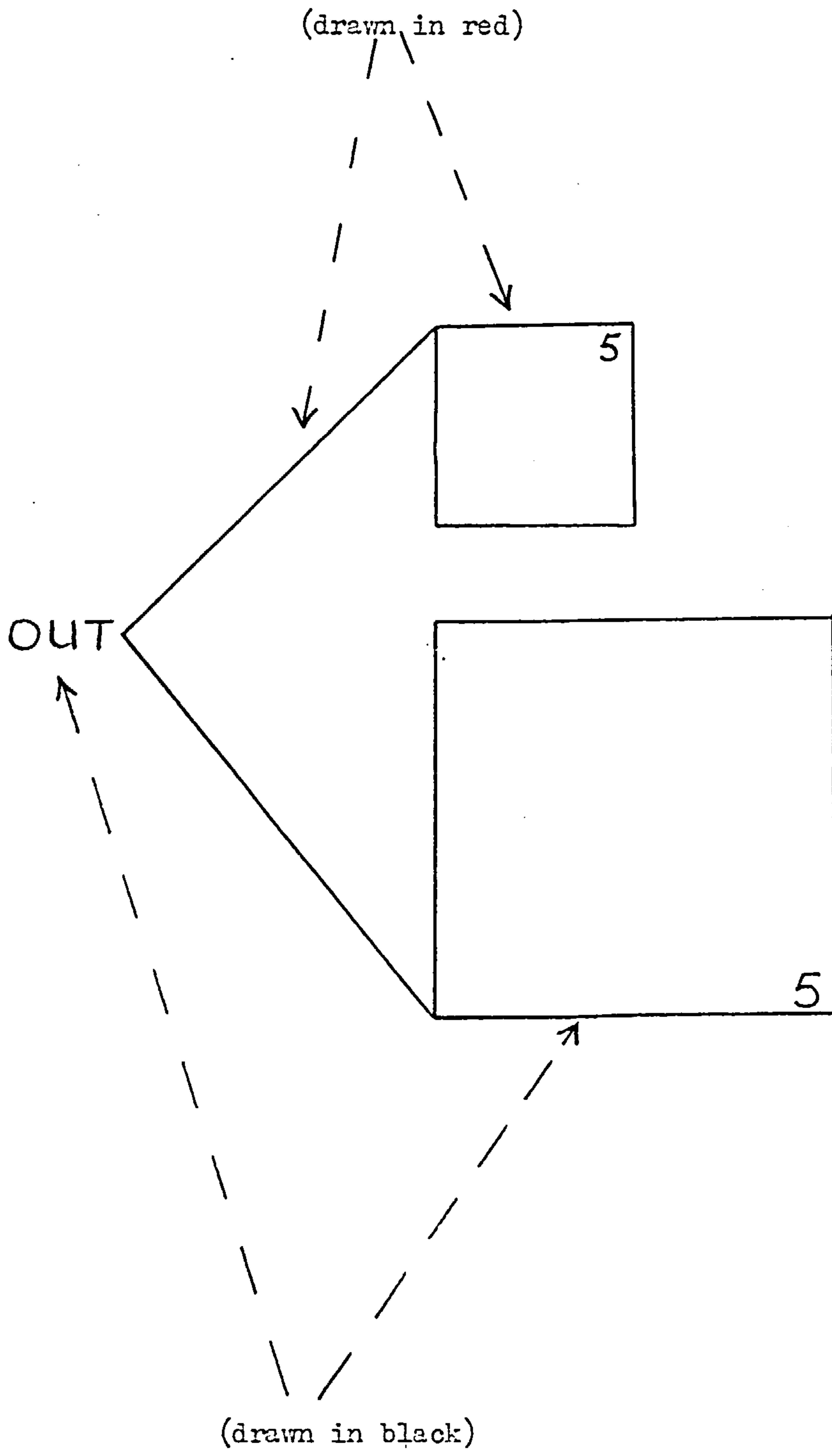
Appendix 1 : Drawing A

(drawn in black)

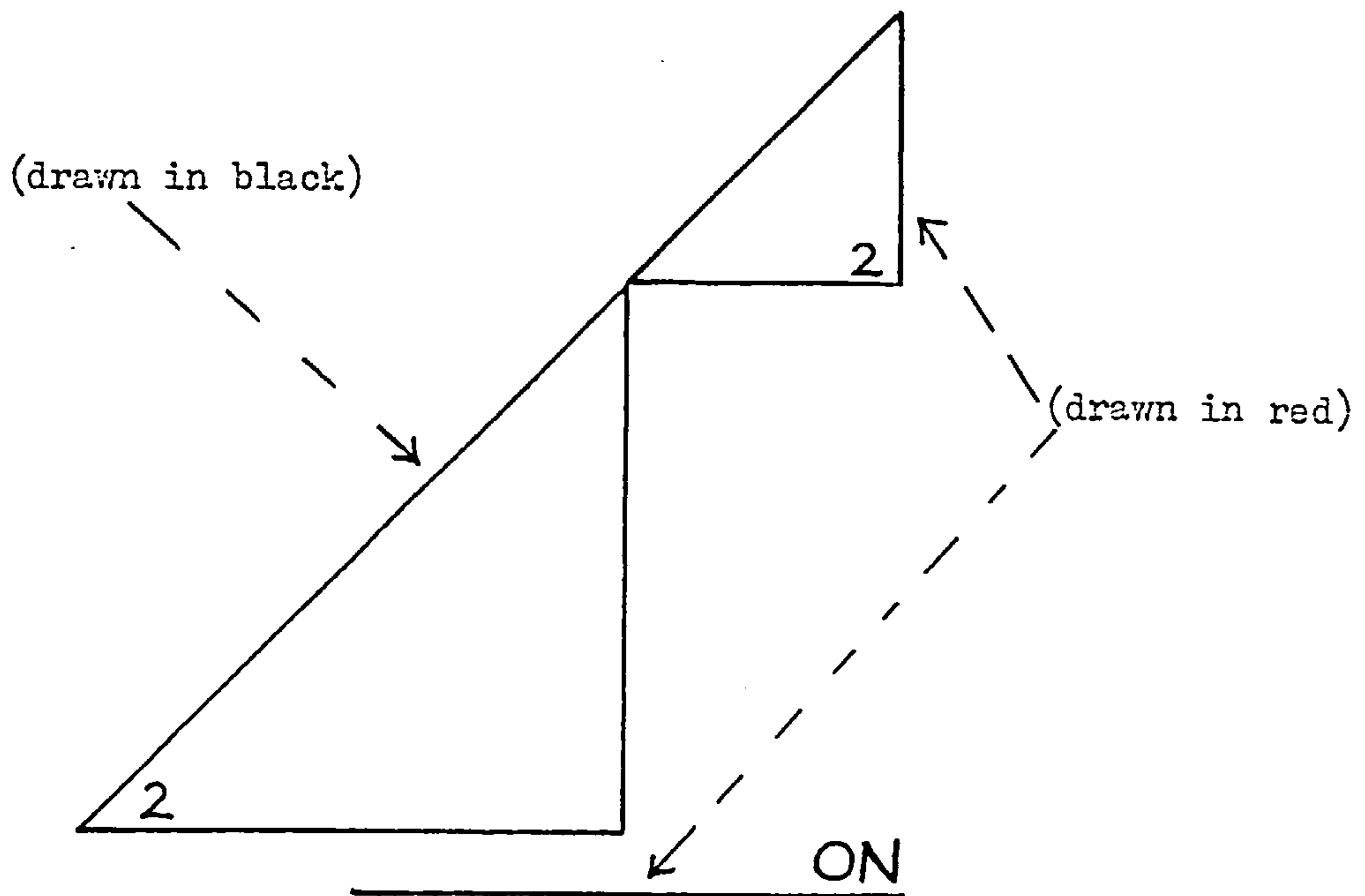


(drawn in red)

Appendix 1 : Drawing B



Appendix 1 : Drawing C



Appendix 2 Extended Extracts from the Controlled Data

A2.1

S: well + in the middle draw + a black triangle +
with the right angle at the bottom right + + and
in the left the bottom left hand + draw a small red
two +

Y: inside the triangle?

S: yes + underneath the triangle + with the + black
corner about the middle + draw a red line + about
an inch either side of the black corner + and at the
end + the right hand side + of this line write the
word ON just above the line + + at the top of the
triangle + in the right hand side there's a a red
triangle with its point joining on to the black so
it is one big long line + the red and the black +

Y: triangle?

S: yes the two + eh + the corner + is on the right of
the big black triangle + a right angle triangle like
the black one + but red + and in the right hand
corner there's a two + a black two + that's it

Y: mm + + it's a bit wrong

* * * * *

A2.2

C: in the + top left hand corner + draw a square + a red square + red square + equal sided + quite small side quite a small square + and in the top left right hand corner + of that square + draw a black five + small black five + then from the top left hand corner of the little red square in red pen + draw a straight line + eh + a diagonal line + downwards + + and write O-U-T in black + felt pen + at the end of that line + + then another diagonal + go sloping the other way + + to the + bottom left hand corner this time of a black + square a bigger square than the first square +

H: [e:]

C: oh dear + + and in the bottom left eh bottom right hand corner of the black square draw a red five + about the same size as the black five + and I hope you have sorry but I hope the black box is underneath the red box + oh + I should have described that to begin with I'm useless + well that's it + +

* * * * *

A2.3

K: there's a black circle in the middle of the page + it's a fairly big circle + about an inch in radius

B: radius or diameter?

K: radius + + right there is + one of the diameters is

in black and it's right through the middle
horizontally + + and you carry that on outside
the circle for about an inch +

B: in which direction? both directions?

K: no + em + right to your right

B: my right

K: $\Lambda h \Lambda$ + + and then vertically + for another
inch + at right angles to it +

B: up or down?

K: upwards + + now there's a red line that goes +
em maybe about an eighth of an inch + underneath
the black line + of the circle + you start at the
edge of the circle and work to your left +

B: to my left +

K: $\Lambda h \Lambda$ + + and then again another inch +

B: so that's on the opposite side?

K: $\Lambda h \Lambda$ + + and down for another inch + + right?

B: $\hat{\Lambda} h \hat{\Lambda}$

K: now just to the + left of the bottom of that line
you've just drawn + there's a black X + a black
cross + + and just to the right of the top of the
black line is a red cross +

B: hmm very pretty

K: and that's it

B: that's it

* * * * *

A2.4

- G: right + in the middle of the page draw a horizontal line
- J: right across the whole page?
- G: no just a short one
- J: just a short one any particular colour?
- G: black
- J: black + right one hori- oop can't get the lid off + I can't get the lid off + + I can't honestly + does it have to be black? + + oh it unscrews + one horizontal black line coming up
- G: now on the + em right hand side of it draw a small vertical line + you go up from the end of it +
- J: ^h^
- G: just a small a very short one
- J: actually touching the horizontal line?
- G: yes kind of joined on to it
- J: just a very short one + one short line
- G: and to the right of that put a + a red cross
- J: a red cross + unscrewed it this time + touching it?
- G: no just to the right of it + just not quite + at the top + + okay + now + about + come from the right hand side + about three quarters of the way no a quarter of the way along + of the black horizontal line + start a red one + so it's the same length as the black one but only of course it goes further towards the left cause it started + further in from the right + okay?

- J: nuh + well + you mean + right I'll say it + on the horizontal line + about a quarter of the way along from the right hand side of the black line
- G: yes
- J: I draw a red line the same length as the entire black line
- G: yes but
- J: on top of it?
- G: no underneath + just underneath a fraction underneath but it means + I don't kind of + it goes further along to the left but the same length
- J: yes
- G: you know what I mean + and do the same with a vertical one going down + as you did with the black one +
- J: oh + on the left hand side draw one down the way
- G: yes
- J: so it's like a bed (laughter)
- G: well
- J: and do you want a black cross?
- G: a black cross + to the left + of that + where you've get the red one
- J: yes now one black cross coming up
- G: now + at the +
- J: don't let me see it
- G: no no
- J: I can't see it but I thought you were going to drop it down

- G: at the edge of the red line and the black line +
you know where they start not where the lines
joining on + draw a circle the circumference
touching the + edges of the red and the black
- J: you'll have to say that again
- G: draw a circle + the +
- J: where?
- G: kind of + the lines in the middle through the
middle right +
- J: what line through the middle?
- G: the two + the black and the red + they're kind
of in the middle of it right?
- J: in the middle of what?
- G: the circle + right you're going to draw + and its
circumference touches the end of the black line +
and the end of the red line + + right
- J: just let me
- G: you know where you started the red line + the bit
where there's not the bit going down + okay +
- J: you're talking + where I started the red line +
the first + horizontal red line I drew
- G: yes
- J: right I'm there + with my black pen
- G: now + put your black pen + on there + and draw a
circle
- J: and the other half of the circle has got to touch

the end of the black line

G: $\Lambda h \Lambda$ + the other side of it + the circumference
is well its diameter is the length of the + the
equal bit + the bit where the + red and the black
+ are parallel +

J: aye that's -

G: that's the that's the + diameter

J: right how much above and below?

G: well the two lines are vaguely in the middle so
it's + quite a bit + well about +

J: oh hell never mind I'll just draw it like this +
too bad if it's wrong + well you're rubbishing
(laughter)

G: have you done that?

J: yes

G: and now + underneath the red line + inside the circle

J: $\Lambda h \Lambda$

G: write IN + in black

J: in capital letters?

G: yes + +

J: IN + right

G: okay that's it

J: that's it? the whole thing + finished? do I get
to look at the diagram to see if I've drawn it
right + didn't take very long did it

* * * * *

A2.5

X: black pen + there's a circle in the middle + +
and draw a diameter across it + and then extend it
for + an inch and a bit + + out em to the right +
and then + right angles + a line straight upwards +

Q: oh

X: and then the red pen + + and draw + a straight
line across the circle underneath the diameter +
and out to the left + about the same distance as
the one to the right + and then there's a line +
at right angles + downwards + there's a red letter
X at the top of the black line + letters I and N
underneath the red + line + in black + + in the
circle + black letter X beside + to the left of
the red line + at the bottom + that's it +

Q: is that nothing like it?

* * * * *

A2.6

I: halfway down the page draw a red horizontal line
of about two inches + + on [e:] + the right
hand side just above the line + in black write ON
++

L: ON?

- I: above the line + + draw a black triangle + em +
 a right angle triangle + starting to the left of
 the red line + about + half a centimeter above it
 + will I say it again?
- L: $\hat{\Lambda}h\hat{\Lambda}$
- I: em right + go up half a centimeter from the red
 line + and about an inch to the + left of it +
 and start that's the apex of it well a corner
- L: about halfway along it?
- I: no no + the other way from the red line + so that
 the triangle sticks out to the left hand side of
 the red of the red line +
- L: but above the red line
- I: uhu + about half a centimeter above it + and the +
 the right angled part of the triangle should be
 halfway along the red line + + the height of the
 triangle is about two inches + + in the + left
 hand corner + the bottom left hand corner + draw
 a red number two +
- L: of the triangle?
- I: $\Lambda h \Lambda$ + + from the other corner + draw in red
 another triangle which is + smaller than the
 black one + and the + the base of it is perp-
 is parallel to the red+ line + +
- L: is it right angled?
- I: $\Lambda h \Lambda$ + and the right angle is + directly above +

the end of the red line +

L: what about the ON?

I: what about it?

L: is that not in the triangle then?

I: No

L: well it is in my drawing +

I: well it shouldn't be

L: does this triangle + this red one come from the +
right angled bit is it joined on to that?

I: No no no no the hypotenuse of the black triangle
+ and is at the red triangle is a the hypotenuse
of the red triangle + is a continuation of the
hypotenuse of the black triangle + (laughter) +

L: I've did it wrong then

I: start again + turn it over + quick + +

L: right

I: okay + in the centre of the page + not against
the side in the middle + draw a black right
angled triangle + base line about two inches +
and height about two inches as well +

L: and is the right angle + at the right hand side?

I: at the right hand side

L: and the hypotenuse is

I: $\Lambda h \Lambda$ + and in the left hand corner + draw a red
number two + right + halfway along the base +
and about half a centimeter down + begin a red
line horizontal line +

L: in which direction?

I: to the right +

L: for about two inches

I: along to the + to the right angle and then +
the same distance again + + now at the end of
the right line + of the red line + just a
fraction above it write in black the word ON + +
right + did I tell you to draw a red number two?

L: $\Delta h \Delta$

I: and then from + the top of the height of the
triangle + draw a red + line + parallel to the
red line you've just drawn + and ending at the
same place + and that's the base of another triangle
and the height of which is the same + and then

L: same as the black triangle height?

I: no + the same as the base of the red one + and
then join the hypotenuse + which should be as +
the same line as the black one + a continuation +
and draw a black number two at the right angle +

L: in the first triangle was the red number two +
in the left hand corner ?

I: $\Delta h \Delta$ + + that's right + + good

* * * * *

A2.7

- V: right + in the middle about the middle of the page + you've got a black square + about two inches + + two inches square + + and then the bottom right hand corner + you've got a red five + +
- M: right
- V: now + on the left hand side + you go up to the top of the + vertical line +
- M: $\Lambda h \Lambda$
- V: and you go ^{up}_^ about a centimeter + you leave it blank + you've got a space of about a centimeter
- M: $\Lambda h \Lambda$
- V: and then you've got a red square + about one inch square
- M: yes to which which direction?
- V: towards the right + goes about halfway along +
- M: towards the right + and is that two inches?
- V: an inch square
- M: an inch square + well
- V: and in the top + right hand corner you've got a black five +
- M: top right hand corner five + right
- V: now you go back to your big square with the red pen + take it from the bottom + left hand corner +
- M: $\Lambda h \Lambda$

V: and you go + about + forty-five degree angle + up
to

M: up up

V: towards the left + up to the level + of the two
inches + you've got to be level with the top +
of your black square

M: right right

V: and then you go from that spot + to the top
left hand corner of the red square +

M: to the top left hand corner?

V: top left hand corner

M: right

V: so it's almost a triangle with a gap in the middle

M: yeah

V: and at the point of that + point of your +
triangle at the left hand side + you write in
black OUT

M: the very top?

V: no the point

M: oh the point

V: of the triangle + write OUT + in black +

M: black + + oh made it + well almost

V: near enough

* * * * *

A2.8

- O: okay + it's a + right angle triangle + [e:]
in the centre the bottom line of the right angle
triangle + is in the centre of the page
- F: $\Lambda h \Lambda$ + where is the right angle? is it on
- O: the right angle's on the right
- F: on the right + right +
- O: and it's about + oh I'll have to tell you the
length of it + it's [e:] + + two inches long
- F: two inches long hah well + is it an equilateral
triangle?
- O: yes
- F: each side the same length + start again + two
inches long + okay
- O: right now + on the bottom lines + but not on the
right angle at the + on the left hand side + it's
is a red two
- F: a red two + underneath the line?
- O: no + it's in the angle
- F: in the angle + $\Lambda h \Lambda$
- O: right now + [e:] + come down about + a
centimeter + yeah + from the from the base line +
it's it starts in the centre + of the bottom line
+ and it's + about + it must be two inches as well
I think + yeah
- F: $\hat{\Lambda} h \hat{\Lambda}$
- O: it's in red
- F: in red + from the middle of the bottom line

- O: no no it's + come down a centimeter +
- F: right
- O: right + then draw it horizontally along +
- F: I see yes + okay
- O: right and at the end of that line + on the right hand side there's + ON in red in black letters
sorry
- F: underneath it or above it?
- O: above it + in black
- F: in black
- O: we're no finished yet + there's a small red triangle at the top + angle + so at the top angle draw a line + so that it forms a right angle + and go towards the right
- F: $\hat{\Lambda}h\lambda$ how long ?
- O: [e:] one inch
- F: one inch so that's about half of it
- O: yeah + go up to the top + and an inch along +
- F: up to the top and an inch along?
- O: so it's the top of the top of the triangle right?
- F: right the top angle of the triangle
- O: the top angle of the triangle right one inch along + to the right + then one inch up
- F: and one inch down
- O: no + along you've gone along one inch +
- F: right
- O: right now go up + another inch + draw a line + it's an inch long

F: okay + right

O: then you join the two together

F: right + that's what I meant

O: that should be a continuation of your black line +
and in the right angle there + there's a black two

F: in the right angle + okay

O: that's it

F: that's it + + how about that ?

O: that's it

* * * * *

Appendix 3 Extended Extracts from the Conversational Data

A3.1 (10 JH)

- J: and then there was the Adams Streets + West and East Adam Street + which are now occupied by University buildings + and the Roxburghs of course + and then there was a small street at the bottom called Ingliston Street + which has been demolished now and that run to a stairway + it led into the drop of Drummond Street
- K: ah yes
- J: and that came and joined up with the Pleasance again + then there was railway houses on the right hand side of the Pleasance near the bottom + run into St. John's Hill + and they were all high + they were all buildings + overpopulated I would say but + when they cleared that area it took about three housing schemes to accomodate them +
- K: that's quite a few
- J: well that Niddrie Mains + Niddrie Mains and Prestonfield + Prestonfield first and Niddrie Mains + they practically they emptied the South Side then you know + because the most of these houses were condemned houses and brought down + through the Cross Causeways and that + they did build up a little there + in Cross Causeway but + most of the other places were just demolished + and now only Arthur Street is being developed a little + and Carnegie + and places like that + 'cause these were really bad areas you know + + it's these narrow streets of course too then there was the old Pleasance clock + the old Deaconess Hospital has been there for years of course +

still remains there + but that's that + open ground across from the the + Deaconess Hospital was + buildings there too you see + that was all cleared and not built on again and gave air to the Hospital I think

K: that was quite a good idea

J: yes + and the old washhouse was there at Simon Square which is known as Simon Square I believe it is still there + then the street beyond that + Davy Street that's been emptied too now ready for dem- demolition

K: yes

J: so it was quite quite a populated area

K: been depopulated

J: ah it was a good thing really because they were very dark houses +

K: very narrow windows and things too

J: very little ventilation + and substandard + everything like that + pretty bad areas these + St. Leonard's as it gradually developed out it got better houses you know + more open space and that too you know + came up to the Dalkeith Road + Adams Street which was in the centre of that area there was + some very very good houses rather old-fashioned but quite good houses + with very big rooms and that + and these were sort of better class people + people with maybe + minor civil servants and things like that you know that had been able to afford + dearer rents and that in these days you know + but the average working class man + the wages were very small + the rents would run from anything from about five shillings to + seven shillings which was about all they could've possibly afforded in these days + we just had to live + so it didn't matter how many of

family you had + if it was two rooms well + devil take the hindmost + + and you couldn't get out of your environment you see you just had to suffer it and make the most of it + and they all survived that was the great thing + +

K: so it can't have been all that unhealthy

J: no no + +

* * * * *

A3.2 (13 TEJ)

E: well I have a friend + quite a well-educated lady she is + she was at Boroughmuir herself + and she came to me one day + and said I never realised that + if I was at Watson's + a school like Watson's + got a grant + gets a grant from the government + and she thought that this was over and above any money + that + was spent on education elsewhere + in other words + she assumed she just assumed that education at Boroughmuir was nothing + you went + I don't know if they do + have any fees + pay no fees at Boroughmuir + they pay some fees at Watson's but the government pay half the fees + why should that be + failing completely to realise that cost + it did cost a little money to educate somebody at Boroughmuir + and it suddenly dawned on her you see that this is the case + well that's part of the attitude you're getting + from people + +

* * * * *

A3.3 (20 AA)

A: I was + I was only [e:] + I was seven when the First World War broke out + I can remember the First World War though + I can remember + soldiers marching up the Canongate you know + of course being a kid and + following the band and + you know thinking it was wonderful and I can remember soldiers coming home + with mud still on them and all that sort of thing + these are things that do stick in your memory +

J: especially at that age

A: oh aye + when you're + and [e:] + as I say we were lucky enough we we never lost any of our own immediate family but I know a lot of families + I used to go about with a chap + I don't know + whether he's still alive now or not + but + there was nine ten eleven in the family altogether + two girls + and nine boys + and she lost eight sons one after the other +

J: eight

A: eight of them + this young boy I used to go with it was all his brothers + older brothers + they were all older brothers

J: all his brothers

A: it was tragic + it was terrible + the first war was really + something + +

* * * * *

A3.4 (22 BS)

- R: you can still see quite a lot of Richmond area + Richmond Street places like that + em + David's Street + areas like that where they were re-housing them in the actual area
- K: to keep the community spirit
- R: yes keep the community which worked and + eventually of course when they started to move out the Inch was bad enough + as they went further away it more or less took the people out of the town + + the shops + another bad thing the shops is non-existent now in the South Side
- K: there's none there
- R: not really + at one time there was quite a hive of shops you know
- K: ^h^
- R: I suppose that's + I suppose that's the same in most + areas + but although I think the South Side though of Edinburgh was + central South side was very bad hit especially South side you know + central well central as the Canongate + back Canongate area which was + quite a lot + em the area is there but they've developed into a different type of house of course now + + I mean the people that were brought up in the Canongate + they couldn't afford the rents that they're charging now in the Canongate you know + which was a bad thing + I think myself + ++

* * * * *

A3.5 (23 CM)

K: Did you ever try a Vodka Gimlet when you were in America?

C: No + I had a Harvey Wallbanger

K: Did you (yes) what's that?

C: You've never had a Harvey Wallbanger + it's vodka galleano and fresh orange juice with lots of crushed ice + blows your head off

K: what's galleano?

C: I think it's an Italian liqueur + comes in a long bottle with a twig in the centre of it +

K: any other fascinating drinks that you tried?

C: Mai Tai + (yeah) that's another one it's a big fruit cocktail with

K: I haven't tried that

C: no + I found that my drink was a great problem with them because at that time I drank whisky and lemonade + and I would go and ask for whisky and lemonade and I would get whisky and lemon + because you have to ask for whisky or scotch and seven-up + you know + I eventually cottoned on to it + but + and they couldn't get over the fact that I didn't like ice in whisky and of course they either gave me ice whether I wanted it or not or they stacked the glass up + right up to the level that you would normally have if you had ice in your drink anyway + and consequently I got ploughed + frequently + and that's that's I + I tended to stick to my drink + + oh apart from once when we went we found em + an Irish bar in San Francisco that was

famous for its Irish coffees + and they had a long bar it was about fifty feet long + with just rows and rows of glasses + ready + and as the girl came up + it was a singles bar + I was being shown the singles bar + as the girl came up to shout her order one of the barmen + there was about twenty of them behind the bar + would rush up and sort of shovel + so many glasses underneath the hot water tap and start doing the rigmarole for + for Irish coffee + it was very good Irish coffee too + +

K: and what is a singles bar actually cause I never saw one + is it just

C: it's exactly what it says it's for single people or + for married men + pretending to be single + to leap in and sort of + you know + rush round one another and -

K: it's quite a good idea

C: it's a good idea er I think it's abused + but er + you know it although they don't seem to a very good er + what's the word reputation + in America singles bars from what I could gather + this this one was nice + it was + very pleasant + of course I was with friends so (yes) it was different atmosphere + +

K: I certainly enjoyed trying all the drinks on the west coast

J: you still enjoy it + she gets her aunts to send her packets + she's drink happy +

C: whisky sour mix + did you -

J: whisky sour + daiquiri -

C: do you like -

K: it was alright

C: my mother's favourite is daiquiri + but I love whisky sour + it's a super -

K: and margarita I love as well + it's beautiful

C: what's that?

K: it's some + it's er tequila and lime + with something else +

C: I don't know it

J: salt + no

K: yes and it's got the rough really rough salt round the edge of the glass and you drink it through the salt + and it's whipped up somehow

C: I've never tasted it

K: it's a Mexican drink + absolutely beautiful + really liked it + +

* * * * *

A3.6 (24 Dmck)

D: I must admit I'm very nervous + that's how I'm a bit tacky reading + it's always just for reading you know + I get like that

J: it happens to lots of people

D: lots of people like that is it

K: yes just about everybody I think + especially if you're in-being recorded or something for the first time + then it's

D: aha I'm sure I must be worse than most am I not

J: no not at all

K: no + there was one chap we had who + paused before about every second word or so + he was really +

D: oh that's great to know because I really +

K: yeah

D: on occasion we do a bit of proof reading along there + and we're all sort of called on to do that from time to time +

K: and what does that involve

D: well + one of our main jobs in the Botanicus is writing on the flora of Turkey + they haven't got the scientists to do it + so we sort of supply the scientists for that + + well when + you've got all the scientific work written up + we all sort of check through it and one- one reads and the others +

K: oh I see you read aloud

D: $\hat{A}h\hat{A}$ that's right + and then you switch back and forward like this +

K: and that doesn't bother you

D: it does actually + (laughter) I'm terrible at it (laughter) but I don't know +

K: even when it's something you're interested in

D: well it makes it a bit easier to read certainly + but + just because you're reading to somebody else you feel a bit uneasy somehow +

J: I think it comes from + having to stand up and read in school + I know that's why I don't like reading aloud 'cause we always had to stand up + and read a passage + and you were told whether you'd read it well + + (laughter) right there in front of everybody + so I don't like reading aloud either + at all +

D: I mean I don't like speaking in public at all either + God I've got my first lecture next month (laughter) + just about going to die off

K: what's it on + the flora of Turkey (laughter)

D: well + plants under the microscope + but fortunately it's not
it's not for any learned body + you know it's just for the
general public + so it's not so bad + + (laughter)

* * * * *

A3.7 (31 JM)

K: how many years did you go to school

J: oh I left when I was + fourteen

K: and what were you after that

J: oh I done odd jobs like + paper boy + chemists shop worked in a
chemist shop + and done two or three others + and I finally
started in the bricklaying + so I served my time as a bricklayer
+ +

K: that's good money

J: nowadays it is but in that when my time was out it wasn't +
it was only three pound nine a week + so

K: my father was a stonemason and he started at home + and they were
paid a halfpenny an hour extra for being lefthanded + +
(laughter) 'cause two blokes could work on the stone at the
same time

J: quite believe it quite believe it

K: quite a good thing

J: oh aye (laughter)

- W: at the school you used to get a + slap with the belt if you + wrote with your left hand
- K: aye he did too + he did
- J: well that's blooming stupid + teachers
- K: but he developed it again for a halfpenny an hour extra +
- J: that's the way that they bribed + [e:] bricklayers too you know + if they were a fast bricklayer aye but fast + well you see the rate of wages then was one and eightpence an hour + and there were no overtime [e:] + no piece work + you got into trouble from the union if there were piece work + and the only way they could get the work done was + with a chap on a corner + this corner + someone else in this corner + they used to give them a halfpenny each + an hour + for to keep the line going up for to get speed up the work + that's what they did + and made their rate one and eightpence halfpenny and the rest of the bricklayers one and eightpence you see + until the war started in nineteen thirty nine you got an extra halfpenny which made it one and eightpence halfpenny
- K: and put the others up to one and nine no
- J: well that's how they done it + an extra halfpenny you see + get more work out of the boys + but + as work got on and on the boys were saying to hell with you and your eight 'n halfpenny we want more than that and they started + agitating for more money +
- K: never stops
- J: but most of the boys being away at the war and they had to give them the more money you see + + that's how it went in these days + +

A3. 8 (33 WMcN)

K: have you noticed a great deal of difference in the buildings and things from when you were young + in the area you were born in +

N: oh yes + well my sister + was married on a fell- a man by the name of McArthur + er they're both now dead many years ago + and the McArthur household was in number thirty-one Buccleuch Place +

K: really

N: along there I think second floor up + there was a big family of them + oh there must have been ten or twelve + and oh I can vividly remember going frequently along there + in the kitchen there was a huge dresser + oh longer than this room is long +

K: really (laughter)

N: a great big wooden dresser + and when anyone went in you see + the hats and coats were all dumped on this dresser + and er of course + being a big family + there were a lot of connections + and the place was just like a paddy's market + and when you came to go ho- away at night + you had to rummage on this dresser to get your hat and coat + (laughter) + and the old man old man McArthur + he was a wee wee chap oh very small and a a beard and he was pretty stooped + a bit of a wag + about eleven o'clock at night they would say to him + come on now granpa + it's time you were getting away to bed + he would settle down in his chair + och I'll just have a wee rest first + (laughter)

K: oh that's good

* * * * *

A3.9 (35 MS)

K: but you'll have seen a lot of changes if you've lived in
Edinburgh

M: Well yes + really + most of them not very nice actually + a
few quite nice ones + actually I was coming down the Grass-
market + today and + it's quite nice just now the Grassmarket
since + it's always had the antique shops but they're looking -
they're sort of + em become a bit nicer and they've got the
fair down there too which is + the Grassmarket fair on the left
hand side + it's an open air market + er not an open air
market it's an indoor market on the left hand side you know
where em +

K: I didn't know that

M: the Beehive +

K: $\hat{\Lambda}h\hat{\Lambda}$

M: just next to it

K: really

M: Yes + and it's certainly - it's nice it's been reasonably
tastefully decorated and it looks quite nice + but er

K: Well I never knew that + I quite like the way they've done the
Mile though + I think it's quite -

M: yes $\hat{\Lambda}h\hat{\Lambda}$ yes

K: the bottom of it anyway

M: it is - it is quite good they've certainly kept within the +
em + + preserved it reasonably well or conserved it but we were
up in Aberdeen this year for a holiday and we were staying right

within the University complex there in Old Aberdeen + and +
 oh some of the buildings there are beautiful really they
 really are nice + but er I was quite impressed with it it's
 the first holiday we've had up there +

K: I was noticing I was down by Queen Street or + the bottom of
 Hanover Street or somewhere + and they've just cleaned up some
 of the buildings down there + and what a difference it makes +

M: yes I know because there are some beautiful buildings

K: oh it was really nice

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A3.10 (55 DS)

DS: the environment I was living in was Berkeley + which is
 purely academic + no it wasn't purely academic it was em +
 it was basically academic I mean most of Berkeley is the
 university + it's like a town + in which the university
 dominates the city + like Cambridge + or Oxford + the
 university is the the hub of the city + and most of the people
 you found there kind of ancillary to the university + + em
 and you also got a lot of wasters there I mean people who
 dropped out of university and can't bear leaving the place +
 em there used to be this place Telegraph Avenue a sort of
 famous avenue in Berkeley + and it goes down to Oakland too +
 as you go down it gets worse and worse and worse even at the
 top where it meets the campus + em there is this place called

The Garden Spot + and there used to be + all these sort of
superannuated hippies used to sit out there + em and sort of
superannuated punks used to sit out there + and look mean and
say Hey man (laughter) + you gotta spare quarter + and
try you know and try and panhandle off you + and it was pretty
miserable because because I used to go in there to get my six-
packs at night + and and I'd sort of walk in there because it
was the cheapest place you could get a six-pack + and also it
was the nearest place to me + em when I was living in Berkeley
and em + I sort of used to walk in I used to get pestered by
people all the time + I mean if you look sort of vaguely +
em sort of cut above a street person + if you you've shaved
that morning you were bound to get bound to get + leeches off +
but I enjoyed it + +

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