LANGUAGE FROM A DYNAMIC PERSPECTIVE: MODELS IN GENERAL AND GRAMMAR IN PARTICULAR

by

LOUISE JANE RAVELLI

Thesis submitted for the degree of
Doctor of Philosophy

School of English Language and Literature
Faculty of Arts
University of Birmingham
July 1991

SYNOPSIS

This thesis explores what it means to take a dynamic perspective on language, in the sense of describing language as it unfolds, or as if it were unfolding. It builds the framework of a model which enables language to be described from this perspective, and applies the proposals to the description of grammar. It is a major point of the thesis that the nature of the perspective used in the model should be independent of the data to which it is applied; thus, while grammar is the least tractable area for a dynamically oriented description, it is felt that successful application of the principles to this area should confirm the importance and independence of perspective in terms of modelling.

The thesis begins with an overview of the ways in which 'dynamic' can be used in relation to linguistic studies. The focus is identified as the unfolding of a linguistic event, and we are particularly concerned with how this perspective has been approached within the systemic functional school of linguistics. It is argued that previous systemic approaches have not fully grasped the independence of perspective in relation to modelling.

In order to capture a fully dynamic perspective on language, the thesis elaborates its central features (an unfolding, progressive view of active, probabilistic choice). Ways in which such features have previously been implemented are examined, and a model is developed to integrate these features in a linguistic description. The model incorporates three metaphors to facilitate this - the metaphors of *paths*, *stacks* and *contextual frame*. The model is then applied to an analysis of grammar, in terms of grammatical units and metafunctional considerations.

It is demonstrated that a change in perspective affects what it is that we say, and can say, about language. It has implications for function as seen from this point of view, and for the way in which context is described. While entirely based on systemic functional theory, the grammatical analysis as seen from a different perspective is radical and novel. Issues of unit boundaries, the role of particular grammatical items, and the role of the metafunctions, are all brought into question.

to my parents, Nancy and Dolf,

for their love, faith and encouragement

ACKNOWLEDGEMENTS

I would like to express my most sincere thanks and appreciation to Dr Michael Hoey for his generous, stimulating and constantly encouraging supervision of this thesis. Its theoretical content does not overtly reflect his contribution, but has been greatly influenced by his critical guidance and the endless well of ideas which he was so willing to share. The mere fact that this thesis has been completed at all is a reflection of his commitment and enthusiasm as supervisor, as he never lost faith in me or my abilities, even when my own faith would all too easily waver.

I would like to extend my gratitude to Professor John Sinclair for his continued encouragement and interest in my work, and for seemingly being always available to give advice or feedback, despite a very heavy schedule. I owe an enormous debt both to him and to the many members of the English department who have given me their advice and assistance. Special thanks to Geoff Barnbrook for extremely generous and patient help with word-processing and work-space problems, my fellow doctoral students for their support and input, and my valiant proofreaders.

Also, thanks to the many people at the 16th and 17th International Systemic Congresses, the 1st mini-congress at Nottingham, and the 1st Australian Systemic Workshop at Deakin, who were kind enough to comment on my work. I am particularly grateful to Professor Michael Halliday and Professor František Daneš for their detailed responses, and to John Bateman and Michael O'Donnell for their correspondence.

Regrettably, the thesis is not without errors and inadequacies. These are entirely my own responsibility and in no way reflect on the generous and stimulating contributions of the above named and unnamed people.

Finally, I would like to acknowledge two practical debts, without which the thesis would neither have started nor finished. Firstly, the Association of Commonwealth Universities, with the assistance of the British Council, for the award of the Commonwealth Scholarship and Fellowship Plan which I held from October 1987 to December 1990. And secondly, the family and friends, close by and far away, who stuck by me through thick and thin.

CONTENTS

PART I TOWARDS THE GENERAL SHAPE OF A DYNAMICALLY ORIENTED MODEL

1 Introduction 1

1.1 Aims 1
1.2 Language as a dynamic phenomenon 2
1.3 Motivation for the study 4
1.4 Language and Text 8
1.5 Grammar and Modelling 14
1.6 Overview of the thesis 17

2 Antecedents to the study 19

2.1 Introduction 19
2.2 The theoretical input: Martin's contribution 20
2.3 An application of a dynamic perspective: Ventola's contribution 32
2.4 Towards an understanding of perspective 46

3 The characteristics of a dynamic perspective 54

3.1 General characterization 54
3.2 The progressive characteristic 55
3.2.1 Retrospective and prospective positions 57
3.2.2 Expected and actual choices 61
3.2.3 Paradigmatic and syntagmatic choices 63
3.2.4 Constituency and dependency 67
3.2.5 A flexible definition of choice 68
3.3 The active characteristic 69
3.3.1 The components of an active view 70
3.3.2 Real and fossilised choice 75
3.4 The probabilistic characteristic 77
3.4.1 Simultaneous analyses 80
3.5 Representing the characteristics of a dynamic perspective 82
3.6 Generation versus parsing 85
3.7 A comparison with Ventola and Steele's list of features 86

4 Models of unfolding choice 90

4.1 Introduction 90
4.2 Dynamic system networks 92
4.3 Synoptic limitations of modelling with a network 103
4.4 Alternative representations: Flowcharts 110
4.4.1 Augmented Transition Networks 116
4.4.2 Systemic flowcharts 124
4.5 Limitations of these models 128

5 Modelling a dynamic perspective 132

5.1 Modelling the progressive unfolding of choice: *paths* 132
5.1.1 The basic model 132
5.1.2 Further defining the path: *path steps* 137
5.1.3 Finer classification of the path steps 142
5.1.4 Important features of the paths 145
5.1.5 Simultaneous path analyses: *path sets* 153
5.1.6 *Shadow* and *latent* potential 158
5.1.7 Further definition of *current* and *next* 163
5.1.8 Summary of path section 165
5.2 Modelling a probabilistic view of choice: *stacks* 165
5.2.1 Origins of the stack model 166
5.2.2 The stack model as used here 168
5.2.3 The meaning of selections from the stack 172
5.2.4 Applying the stack 178
5.2.5 Summary of stack section 184
5.3 Activating the view of choice: *frame* 185
5.3.1 Modelling context 186
5.3.1.1 Register theory 187
5.3.1.2 Context space theory 193
5.3.1.3 The dynamic system 196
5.3.1.4 Frame analysis 198
5.3.1.5 Context change potential 204
5.3.2 Unified proposals for an active view of context 206
5.3.3 Elaborating the active view of choice 224
5.4 Comparison with standard systemic modelling 228
5.4.1 Comparison with Martin's definitions 233

PART 2 A SPECIFIC APPLICATION TO GRAMMAR

6 Grammar from a dynamic perspective: (I) The components of grammar 240

6.1 Introduction 240
6.2 Elaborating the notion of grammar 241
6.2.1 The relationship of lexis to grammar 253
6.3 Why grammar? 255
6.4 A dynamically oriented analysis of grammatical units 258
6.4.1 The text to be analysed 258
6.4.2 Situating the analysis 259
6.4.3 The basic unit analysis 262
6.4.4 Problems of transcription and orthography: fused items 273
6.4.5 Elaborations of the analysis: simultaneous paths 274
6.4.5.1 Discontinuous analyses 278
6.4.5.2 Secondary analyses 281
6.4.6 Issues for the analysis: resetting 285
6.4.6.1 Clause boundaries 287
6.4.6.2 The analysis of and 290
6.4.6.3 Analysing of 292
6.4.6.4 Other prepositions 297
6.4.6.5 Connectors 301
6.4.6.6 Verbal groups 303
6.4.7 Working through an example 307
6.5 Brief summary of the chapter 314

7 Grammar from a dynamic perspective: (II) Metafunctions 317

7.1 Introduction 317
7.2 Metafunctions and grammar 318
7.3 Intra-clausal analysis of textual meaning: Theme 329
7.3.1 Issues in the theme analysis: variable extent of step 334
7.3.1.1 Multiple Themes 337
7.3.2 Summary of Theme section 337
7.4 Intra-clausal analysis of interpersonal meaning: Mood 337
7.4.1 Other aspects of Mood analysis: discontinuity 354
7.4.1.1 Interrogatives 355
7.4.1.2 Imperatives 357
7.4.1.3 Tag questions 358
7.4.2 The Residue 359
7.4.3 Modality and attitudinal lexis 359
7.4.4 Mood and the analysis of multiple Themes 363
7.4.5 Questioning the analysis of Mood 369
7.5 Intra-clausal analysis of ideational meaning 374
7.5.1 Difficulties in adapting the synoptic analysis 375
7.5.2 Beginning the ideational analysis 376
7.5.3 Formulating ideational expectations 383
7.5.4 Other structures and circumstantial elements 388
7.5.5 A further level of detail 391
7.6 Simultaneous unfolding of the metafunctions 394
7.7 Towards an inter-clausal analysis of metafunctions 402
7.7.1 Textual meaning 403
7.7.2 Interpersonal meaning 408
7.7.3 Ideational meaning 411
7.7.4 Simultaneous unfolding of metafunctional paths 415
7.8 Brief summary of the chapter 416

8 Conclusions 418

8.1 Overview of the thesis 418
8.2 Implications of the study: theoretical implications 421
8.2.1 Descriptive implications 425
8.3 Limitations of the research 428
8.4 Future research 435

APPENDIX 439

REFERENCES 476

LIST OF FIGURES

1.1 Tri-stratal organisation of language 9

2.1 Hjelmslev's view of *process* and *text* 21

2.2 Martin's view of process and text 22

2.3 Partial representation of Martin's service encounter network 36

3.1 Structure from a synoptic perspective 64

3.2 Structure from a dynamic perspective 66

3.3 Major characteristics of a dynamic perspective 84

4.1 Bateman's synoptic and dynamic potential 94

4.2 O'Donnell's move network 97

4.3 O'Donnell's exchange context 98

4.4 A simple system network 104

4.5 Extract of Ventola's Flowchart 111

4.6 O'Donnell's behavioural ATN 117

4.7 Recursive Transition Network 120

4.8 A systemic flowchart for moves in exchanges 126

5.1 A path flowing through a text 135

5.2 Basic path steps 140

5.3 Finer classification of the basic path steps 145

5.4 Different paths opening up 155

5.5 Simultaneous path analysis 156

5.6 Shadow and latent potential 162

5.7 A standard stack with push/pop mechanism 167

5.8 Unordered cluster of options at a path point 169

5.9 A basic stack, ordered from most to least likely 171

5.10 Different ongoing possibilities according to selection from current stack 172

5.11 Maintaining and disrupting expectations 174

5.12 Interaction of different stacks (i) 181

Interaction of different stacks (ii) 182

5.13 O'Donnell's formulation of context-text dialectic 196

5.14 Emmott's unfolding character construct 203

5.15 Ballmer's context change potential 205

5.16 Context and text unfolding simultaneously 207

5.17 Contextual expectations activating text expectations 210

5.18 Ongoing expectations given mediation by context 212

5.19 Initial context-text relations 219

5.20 An active view of text 227

5.21 Path model simultaneous with system 229

5.22 Different nominal group paths 232

5.23 Martin's cross-classification of dynamic with synoptic 234

5.24 Modification of Martin's matrix 235

6.1 Minimal bracketing 242

6.2 Fragment of a system network 250

7.1 Simultaneous unfolding of the metafunctions 400

CHAPTER ONE

INTRODUCTION

1.1 Aims

It is possible to analyse language in many different ways, and for many different purposes. An analysis depends both on what one considers language to be, and on what one might need an analysis for. It also depends on the way in which one chooses to look at language: with a broad or narrow focus, for example, or with a particular theoretical bias. This thesis explores one way of looking at language, namely from a dynamic perspective. A dynamic perspective is complementary to other ways of looking at language, and has always been an available option. But it has tended to remain in the background of linguistic studies, and so its theoretical and practical implications have not yet been fully explored. In this thesis, we consider what this perspective means for language study, how it can be described and modelled, and what its implications are for what it is we say, and are able to say, about language. The exploration is concerned primarily with the language of contemporary English, and within that, with reference to one specific aspect of the language, namely grammar. However, the principles of the claims to be made should be applicable to languages other than English, and to areas other than grammar.

1.2 Language as a dynamic phenomenon

While there is a choice relating to the perspective one adopts in analysing language, there is also a prior choice relating to what one means by *language*. In other words, the perspective one adopts can be applied to different understandings of the concept *language*. Following de Saussure's (1915/1987) distinction between *diachronic* and *synchronic* linguistics, language can be seen to be a system developing over time, or it can be observed as a system at a given moment. Further to this, language can be seen to be developing *phylogenetically*, for a community as a whole, or *ontogenetically*, in an individual. Halliday (1989) draws on these distinctions to conclude that there are at least three different ways in which language can be seen to be dynamic.

Firstly, language as a phylogenetic system can be seen to be dynamic, as a language is never stable and fixed, but something which grows and develops over time. The documentation of the history of a language, or the reconstruction of a language's origins, have of course been the focus of much linguistic study, and continue to remain an important area of research. Changes may occur in the sounds of the system, perhaps in response to cross-cultural influences, or - in post-Industrial societies - the standardising effect of improved transportation and mass media. Or it may be the grammar and vocabulary which changes, in response to developments in the meaning potential of the system. Most changes tend to be gradual, perceptible only over generations; but some changes may be sudden, as with rapid adjustments in vocabulary occurring in response to the introduction of new technology.

Secondly, the development of language in an individual can be seen to be dynamic, because a child is not able to speak its mother tongue when it is

born, but develops this ability as it grows and matures and is integrated into a speech community. The child gradually develops a personal language system which enables it to become part of the general language system of the community. In this sense, language is dynamic, evolving ontogenetically from the earliest proto-linguistic efforts at communication to a mature adult system.

Thirdly, the language of any given moment, as it is spoken by a member or members of a community, can be viewed dynamically. This is because the abstract resources of the linguistic system are deployed to suit the exigencies of the moment, and to produce an actual instance of language. In other words, without necessarily being concerned with the historical development of a language, or its evolution in any one individual, it is possible to consider language as it unfolds in the context of use as being dynamic. It is this third sense which is central to this thesis: that instances of language may be considered to be dynamic.

Yet, none of these examples of language as a dynamic phenomenon necessarily has to be treated in a dynamic way: on the contrary, while the phenomena may be dynamic, they tend to be studied as if they were static. This tendency is not so marked for studies of child language, because the documentation of each stage of a child's personal language history lends itself to a predominantly dynamic orientation. But the history of a language, for example, is more naturally studied in retrospect: linguists look back over time and seek evidence for earlier forms of the language. Further, language in use is typically studied as a static object: the text as a whole is examined for whatever it is the linguist wishes to say about its structure, meaning and so on.

All of these areas could, however, be viewed from a dynamic perspective. An historian of the language can, instead of just documenting a prior stage of the language, consider how it provided a foundation for later stages, and examine the conditions which prompted the change. Or, on the basis of evidence as to how or why systems change, future trends for the development of a language can be posited. Similarly, any text can be viewed as or as if it is unfolding in time: instead of being privileged to the whole text and therefore knowing what the outcome is and how the parts fit into the whole, the linguist must look forward from a given point in the text and posit what might come next, what sort of larger unit might be being built. This latter possibility is the focus of the thesis: it is taken as given that language in use can be considered to be a dynamic phenomenon; what we explore is how this phenomenon can be treated in a dynamic way.

1.3 Motivation for the study

The thesis has been developed in direct response to contemporary work in one particular school of linguistics: the *Systemic Functional* school (see, for example, Halliday 1985a, Berry 1975, Butler 1985). Within this school, attention has recently been focussed on certain linguistic phenomena which have not hitherto been studied in depth, and which have revealed weaknesses and limitations in available linguistic descriptions and methods of analysis. These phenomena include the study of generic structure (the stages which are typically negotiated in a particular text type), the analysis of clause complexes (how individual clauses are built up to form larger units) and the analysis of turn-taking in conversation. These are all inherently 'dynamic' phenomena: they can be seen to unfold in time and to be dependent on the

nature of the current environment. The development of a conversation, for instance, cannot be predicted in advance, but is dependent on the individual contributions of each speaker. However, the models available to explore these phenomena were not designed to deal with dynamic phenomena, and so much recent work has focussed on extending the theory and providing new ways of modelling, in order to be able to describe and explain these 'new' areas of study.

Yet as is argued in Chapter Two, the tendency of these explorations has been to focus on the dynamic nature of the data, rather than on the nature of the perspective being applied to that data. While these studies recognise that existing models are not adequate for the required purposes, their tendency to miss the independent nature of the perspective has limited the possible advances which can be made in these relatively new areas. The thesis therefore focusses on the independent nature of a dynamic perspective and aims to more fully explicate its nature and implications.

It is not by any means the case that the systemic school is the only one to broach the problems which are relevant to this thesis, nor even that these problems have their provenance in contemporary linguistics. On the contrary, some of these issues have been the concern of linguists throughout history (see for example, Birch 1989), and other schools of linguistics, both related and unrelated to systemics, broach similar problems. For instance, many of the issues to be discussed in the thesis are relevant to developments in a school closely related to systemics, the Birmingham school (see for instance, Sinclair 1983, 1985, 1991; Hazadiah forthcoming), and developments in other areas, such as computational linguistics, are also relevant (see for instance, Reichman 1985). These parallel studies provide critical enrichment

to the thesis, but they are not the original stimulus to which the thesis responds.

It is interesting to consider why the so-called dynamic phenomena should be receiving particular attention just now. In terms of the historical development of linguistics, the latter half of the twentieth century has seen a new focus on the study of spoken texts, competing with the otherwise dominant focus on the study of written texts. Research into sound, through phonetics and phonology, and the transcription of languages without their own written culture, has long been an important feature of linguistics. But the spoken text itself - a casual conversation between friends, for instance - has not always been considered a valid object of study. Halliday (1985b:vii) observes that: "Partly because of its association with the sources of authority and power - but partly also because it is nearer the surface of our consciousness - writing tends to steal the linguistic limelight." Furthermore, most forms of writing, such as documents, books, journals and so on, exist as objects which can be examined again and again. Spoken language is by its nature ephemeral, and thus much more difficult to study.

The advent of technology such as the tape recorder enables spoken language to be 'captured', and so has enabled such texts to be studied more easily. This has obviously contributed to the growth of interest in such texts. But the legacy of the written hegemony is that most theories of language are theories of written language: spoken texts cannot always be successfully evaluated using the same tools. Indeed, spoken language is often interpreted as being 'aberrant, hesitant, full of mistakes', in comparison to the 'highly structured' and 'informative' nature of written texts (Halliday 1985b:76ff).

Yet evidently, successful and less successful communication occurs in both mediums; it therefore cannot be the case that spoken language is so aberrant, or written language so perfect. Nevertheless the two do tend to be reserved for different purposes, and while clearly deriving from the same general language system, they are different in many respects. Attempts to study a spoken text as if it were a written one inevitably distort many of its particular characteristics.

What, then, characterizes the difference between written and spoken language? First, it should be noted that the difference between these two mediums is not always clear-cut: some texts share features of both, as may happen when a person is deemed to be 'talking like a book', when a speech is extensively planned in advance, or when a book uses many rhetorical questions as a structuring device. Here, when we speak of written and spoken language, we are referring to the canonical end-points on the general cline: to academic text books, for instance, and casual conversation.

The essential differences between the two modes arise from differences in the nature of their production and presentation. While both are produced as ongoing processes, only spoken language is presented in that way; written language is (typically) subject to editing, and is presented as a finished product. Thus speech is characterized as a process, and writing as a product. This dichotomy between process and product results in a variety of organisational differences between them. Most importantly, the clauses of a spoken text are built up in a highly complex way; clause upon clause, with diversions, digressions, back-tracking and so on. The clauses of written language, on the other hand, are organised much more simply, usually by juxtaposition. The complexity associated with written language is found in its lexis, which tends to be highly dense, while in spoken language, this is

much more simple (see Halliday 1985b). Our intention is not to elaborate these aspects further, but to highlight that the media are different. The theories of language which have arisen in conjunction with the written text are much more suited to the description of products than of processes, and interest in the spoken medium as process highlights this discrepancy. Now that a new and different set of data is available for linguists to deal with, models must be developed to enable the phenomena of this medium to be interpreted in their own right, and not as a degenerate form of another medium. Efforts are therefore being made to redress an imbalance, in terms of both what is being examined, and how it is being examined.

1.4 Language and Text

Another important relationship which needs to be raised here is that of *language*[1] and *text*: this dichotomy compares language as a system (*language*), with language as an instance (*text*). These terms need further explication.

In systemic functional linguistics, the notion of 'language as a system' has a specific and technical meaning. It is a basic assumption of the theory that language is functional: it is a meaningful activity in the context of a society or culture and in the context of a particular situation within that culture. Meaning is conveyed (between members, or speakers, of the culture) by the patterns of language. Without recognizable patterns, language would have no meaning or purpose. Linguistic patterns are separated into different types according to different orders of abstraction. These abstractions are represented as different layers or *strata* making up the level of language:

there are three layers, and these are *semantics*, *lexicogrammar* and *phonology*, as represented below:

Fig. 1.1 Tri-stratal organisation of language

Lexicogrammar is the strata with which we are primarily concerned in this thesis; as its hybrid names suggests, it encompasses patterns of both lexis and grammar. When the term *grammar* is used, it should be taken as an abbreviation of the fuller form. While the other two strata are alluded to in the course of the thesis, they are not discussed in detail, and so need to be briefly described here in order to place grammar in relation to them.

The semantic stratum represents the meaning potential of the language: it is what a speaker 'can mean' (cf Halliday 1978:39). As Matthiessen (1989:3) notes, it is "the gateway to the linguistic system", acting as an interface between systems that lie outside language and the lexicogrammar. As will be discussed in Chapter Seven, this stratum is seen to be organized into three particular types of semantic patterns, or *metafunctions*.

The phonological stratum is where patterns of sound are seen to reside, not only the basic phonological units, or *phonemes*, but the grouping of sounds into larger, syllabic structures, and the patterns of intonation and rhythm. For written language, this stratum may be referred to as *graphology*, and henceforward, reference to phonology should be taken to encompass graphology as well.

The lexicogrammatical stratum lies between semantics and phonology. Halliday (1985a: xxxiv-xxxv) describes it as "the central processing unit of a language, where meanings are accepted from different functional inputs and spliced together to form integrated outputs, or wordings." In other words, grammar is responsible for organizing meanings, and it is this organization or structure which is in turn expressed through the phonological stratum.

There is therefore a relationship between the three strata so that each stratum is expressed by or expresses another. This relationship is termed *realization*; meanings (choices from the semantics) are realized by abstract wordings (choices from the lexicogrammar), which are in turn realized by soundings (choices from the phonological stratum).

While there is only one stratum called *semantics*, it should be noted that meaningful options exist in each of the three strata. Options in each stratum are organised in terms of paradigmatic systems: meaning therefore derives from selecting among a range of alternatives. A selection in meaning, a selection from a system, is expressed through a particular structural output.

Partly because meaning is seen to filter through all the strata, and partly because there are currently no structural descriptions for Halliday's stratum of semantics, some systemicists replace semantics with the stratum of *discourse*. Martin (1985, 1985b) for example, posits systems of discourse in the uppermost stratum: the systems of conjunction, continuity, conversational structure, reference and lexical cohesion, all of which create dependency structures in text (cf Ventola 1987:59). However we do not engage with this stratal debate in the context of this thesis. The issues involved are clearly important, as the description of the uppermost stratum determines what it is

that the lexicogrammar is seen to be realizing, but nevertheless the complexities of the stratal debate would divert us from our focus on grammar, and so further discussions are based on Halliday's tri-stratal model. Nor does the thesis engage with more radical departures from the basic stratal model, such as Hoey's (1991) proposals, where the strata of discourse, grammar, and phonology are proposed, mediated by an *interlevel* of text between discourse and grammar, and an *interlevel* of lexis between grammar and phonology.

For our purposes, the feature to note about the tri-stratal model is that language is a system of meaningful choices. Also, the stratal organization explains how it is that people can mean more than one thing at once: the stratum of grammar co-ordinates and conflates multiple selections from the higher stratum of semantics, and expresses them as a single, but multi-valent, structure. Without the lexicogrammar, the language system would be one of a simple meaning-expression relationship, where every 'sign' meant only one thing (as is the case in the early stages of a child's language; cf Halliday 1975). The three strata making up the resources of language are referred to as the *plane* of language. Language as a system therefore refers to the resources which enable meaningful linguistic patterns to be expressed. However, it must be noted that language itself does not occur in a vacuum: it is part of a larger contextual and cultural whole, and discussions of language should always be considered against this broader background.

When the resources of language are put to use, a *text* arises; this is the second term which we need to define. A number of different definitions exist for *text*; in this thesis, it is used in a general way, to mean an instance of language in use (as defined by Halliday and Hasan 1976).

Hjelmslev (1943/1969) and Martin (1985) also see text as an instantiation of the system, but equate text with *process*; this equation tends to become confusing, so the thesis reserves the term *process* for the general meaning of an action or event. Some of the other definitions of *text* should be noted. Sinclair (1991), for instance, equates *text* with *sentence*, and Hoey (1991) sees text as an *interlevel* between grammar and discourse. The thesis does not engage with these alternatives or the debates which engendered them.

The association between spoken and written language, and process and product, appears at first sight to be paralleled by the dichotomy between language and text. It is certainly attractive to equate 'language as system' with notions of state or product, and hence with written language, and to equate 'language as instance' with notions of process in general, and hence with spoken language. After all, it is easier to abstract the system from the evidence of written language, and easier to see the process in operation in spoken language. Further, the nature of written language can be metaphorically equated with that of a product, and spoken language with that of a process. If pushed to its limits, the implication of this would be that the dynamic perspective is confined to being a description of real-time aspects of spoken texts, and to have no relevance to the theory of the system as a whole. But the equation is false: the one system (language) results in both written and spoken texts, and both written and spoken texts are 'processes', or instantiations of the system. Where, then, is the place of the dynamic perspective?

The dynamic perspective is needed to understand the relationship between language and text. As Halliday observes (1985c:10): "to describe language without accounting for text is sterile; to describe text without relating it to language is vacuous." There should be a dialectic between language and

text: a system has no reason for existing other than to be used, and each use of the system will affect our understanding of it. The previous bias of linguistic theory, with its emphasis on product views of written text, and hence a tendency to focus on system, makes it difficult to capture the relationship between text and language. Current theories enable us to demonstrate that a text is an instance or output of the system, but can not so easily show the influence of the instance on the whole. As Halliday continues (1985c:10): "The major problem perhaps is that of interpreting the text as process, and the system as evolution ...; in other words, of representing both the system and its instantiation in dynamic as well as in synoptic terms." (The 'synoptic terms' here refer to the ways of thinking with which we are familiar, developed in conjunction with the product view.) Put another way, to fully understand the relationship between language and text, a dynamic perspective is essential. Its application to instances of language, both written and spoken, will enable the relationship between language and text to be more fully elaborated.

Yet it will require a considerable shift in thinking in order to appreciate a dynamic perspective - to be able to think of text as something active, rather than as something static. Koch (1985) notes that in general scientific theory, there is a strong bias to *state*, or product, rather than to *process*. In the world as a whole, it is not only objects and places, but events, happenings, thoughts and feelings which tend to be thought of (and encoded) as things. This way of thinking is a type of restrictive practice: while it may be insightful in its own terms, it prevents other possibilities from being seen or understood (cf Bordieu 1977). Most interestingly, an attempt to break away from this restrictive practice seems to be occurring in contemporary science, with the surge of interest in *chaos theory* (see for

example, Prigogene and Stengers 1985, and Gleick 1988). Developed primarily in the domain of physics, chaos theory is also concerned with the description of processes, particularly those of systems with recognizable but unpredictable patterns of behaviour, such as following the trajectory of a carrot dropped into a food processor, or predicting the weather. Scientific theory is already able to describe the state of a carrot before and after being in the food processor, and it can describe the state of yesterday's weather and usually forecast the probable state of tomorrow's weather, as well as being able to describe the climate in general. But the processes which effect these states are more elusive. Chaos theory is not drawn on to inform the arguments which will be put forward in this thesis, as it deals with physical phenomena, and it would be misleading to draw too many parallels with the social phenomenon of language. But it is worth noting that the need to account for processes and to break away from a dominant way of thinking has been felt in areas other than linguistics.

1.5 Grammar and Modelling

It is not the case that a dynamic perspective is seen to supersede more typical approaches to language. On the contrary, it is entirely based on such approaches, but provides an additional, complementary understanding of language which should bring new insights to description and theory. However, it will be seen that the required change in thinking results in serious questioning of the orthodox theory, and in the potential for radical linguistic descriptions. The proposals in the thesis are, indeed, highly challenging, and probably controversial. It may therefore seem curious to apply a dynamic perspective to the domain of grammar, one of the areas of

language study to be most comprehensively studied, and one which would not appear in any way to be a 'dynamic' phenomenon.

The reason for choosing the domain of grammar to illustrate a dynamic perspective is primarily that it is the least obvious area for such an application. It is a major aim of the thesis to develop a model incorporating a dynamic perspective, but linguistic methods and procedures are so heavily tied to non-dynamic perspectives, that it is easy to fall prey to the restrictive practices of old. If a dynamic perspective can be maintained in an area where such an application is not immediately obvious, the description will be forced to be as rigorous and consistent as possible. Further, it is a premise of the thesis that the nature of the perspective should be independent of the nature of the data, and therefore it should be immaterial whether grammar is inherently 'dynamic' or not. Thus, if a dynamic perspective can be successfully applied to grammar, this aspect of our case will be supported. A successful application to grammar should be highly productive for dynamically oriented explorations in other domains of language.

There is, however, a further reason for exploring grammar from a dynamic perspective. It is anticipated that a different perspective will bring its own insights to the study of language, and this should be as true for grammar as for any other area. This does not necessarily mean that new 'discoveries' will be made, but that it should further our understanding of the nature of grammar, and in particular, of the way grammar operates in text. The thesis therefore has a dual aim, to explore the nature of a dynamic perspective in general, and to explore the implications of the perspective more specifically in relation to grammar.

At this point it may be helpful to clarify a little the sense in which 'modelling' is used in this thesis. As soon as it is suggested that a dynamic perspective should be adopted, the question arises as to whether the aim is to model a speaker's intentions or a hearer's process of understanding. Neither of these is in fact the aim of the thesis in terms of modelling. Firstly, it should be stated unequivocally that we do not account for the psychological aspects of production or reception; the account is a linguistic one, the choices to be described are linguistic choices. Secondly, while description must necessarily acknowledge that there are some differences between the (linguistic) position of the producer/encoder and that of the receiver/decoder, the thesis tries wherever possible to remain neutral with regard to these two positions. As the presentation of the arguments in the thesis is typically from the point of view of an analyst, the emphasis naturally falls on the position of the receiver, but the producer's perspective is always as relevant.

But more importantly, the issue of speaker/hearer perspective is a secondary one in terms of modelling, as it centres on the use to which the model is put. The primary question is what the model represents. A model of language should provide a theoretical framework which enables the linguistic system to be described and understood, in terms of what motivates the system, what the relevant components of the system are, what constitutes an instance of the system, and so on. These aims are most likely to be met if the model is *generative*, that is, not just a list or collection of observed linguistic forms, but something which can itself be used productively to generate forms of the language, and to determine whether these are indeed part of the system or not. The model provided by systemic functional linguistics is such a model, and it is adopted here. But the question is, how does a dynamic

perspective affect such a model? It will be seen that the incorporation of a dynamic perspective does indeed interfere with the conceptualisation of the basic model. It requires a higher potential for variation to be built in to the model, and so leads to a broader interpretation of what would be an acceptable instance of the system. Further, it accounts for variation in degree of occurrence, and thus some uses of the system are seen to occur so frequently that they achieve the status of cliché or fossil, while others occur so infrequently that their categorisation as part of the system must be queried. The incorporation of a dynamic perspective thus leads to a reassessment of both system and instance, or language and text. Its role is therefore a difficult one, both drawing from and questioning a received model.

1.6 Overview of the thesis

The first part of the thesis explores the general nature of a model incorporating a dynamic perspective. Chapter Two focusses on the independence of perspective from data, using as a springboard the systemic work which originally stimulated the thesis. It is argued that the independence of perspective is critical to the further exploration of a dynamic perspective. Chapter Three elaborates the characteristics and features which distinguish a dynamic perspective, describing what it is that differentiates this perspective from others. In Chapter Four, available linguistic models which have taken up some or all of these features are examined and compared for their suitability as dynamically oriented models. While many of these are highly successful, there is one feature which is not captured, and so Chapter Five proposes an alternative model. This model is developed in schematic

terms, outlining the necessary components of a dynamically oriented model and the way these components should be seen to interact.

The second part of the thesis applies this model to the analysis of grammar. Firstly, in Chapter Six, a dynamic perspective is applied to the analysis of grammatical units in a sample text. In Chapter Seven, metafunctional aspects of grammar are considered, and finally, conclusions about the model in general and the specific analysis of grammar are presented in Chapter Eight.

It is not the case that either a fully working, dynamically oriented model, or a comprehensive revision of the grammar of English, is presented. Rather, the intention is to clarify what it means to take a dynamic perspective on language, to explore the necessary infrastructure, central issues and possible difficulties of a model with such an orientation, and to demonstrate how a grammatical analysis would proceed from this perspective. Halliday (1985c:10) observes that "Dynamic models of semiotic systems are not yet very well developed, and this is one of the problems that theorists of language now have to solve." This thesis does not claim to present the solution to this problem, but to provide the basis for finding that solution.

Endnotes

1 (Section 1.4): Throughout the thesis, *italic type* is used to introduce technical terms, and to highlight their technical status in further uses if necessary. Bold type is used to indicate emphasis.

CHAPTER TWO

ANTECEDENTS TO THE STUDY

2.1 Introduction

As noted in Chapter One, recent research in the systemic school has highlighted the importance of a dynamic approach to language, and has made a significant contribution to the delineation of both its theory and practice. This chapter focusses on two major works which have been fundamental to these developments. The first is that of Martin 1985, and the second that of Ventola 1987. Martin explains the central issues of a dynamic approach, identifying its basic parameters, and elaborating its significance for language study. Ventola's work exemplifies the application of a dynamic approach to language (specifically, generic structure), exploring its implications for modelling. However a problem is identified within both these works, which reveals a lack of clarity in the definition and understanding of a dynamic perspective. This problem is elaborated below, and becomes the focus of the thesis.

The confusion identified in the work of Martin and Ventola is reflected in other research from the systemic school. This research is referred to in the final section of this chapter, where we also consider why dynamic approaches have aroused so much interest in systemic linguistics.

2.2 The theoretical input: Martin's contribution

An early formulation of the systemic approach to dynamically oriented studies came in 1985, with Martin's article "Process and Text: Two Aspects of Human Semiosis". This article elaborates the concepts which are critical to an understanding of a dynamic perspective. These concepts include the comparison of *dynamic* with *synoptic*(1), the distinction of *process* and *product*, and the cross-classifying dichotomies of *actual/potential* and *active/static*. Martin's article primarily focusses on the role of these concepts in relation to genre, but mention is also made of register and to a lesser extent, of discourse. In this article can be found the foundation of many of the ideas permeating the systemic school's current concern with a dynamic perspective. Here also is the formulation of perspective with which this thesis takes issue.

Hjelmslev's (1943/1969) distinction between *system* and *process* suggested the important variables forming the basis of Martin's paper. Martin notes (p248) that: "Hjelmslev refers to a semiotic's meaning potential as *system*, and the realization of this potential as *process*. But when focussing on one of these semiotic systems, language, he uses the corresponding terms *language* and *text*." This cross-classification is presented in diagrammatic form below:

	semiotics in general	language in particular
potential	*system*	*language*
realization of potential	*process*	*text*

Fig. 2.1 Hjelmslev's view of *process* and *text* (abstracted from Martin 1985:248)

Thus as Martin observes, Hjelmslev's term for an actual instance of a semiotic in general is more 'dynamic' than his term for an actual instance of language - *process* seems to connote something more active than does *text*. Martin wonders then (p248): "Is there a sense in which linguistic manifestations are products rather than processes while the realization of other semiotics is action rather than a thing?" Whether or not this was the intended implication of Hjelmslev's terms, Martin concludes (ib.id) that "there is a sense in which process and text do reflect rather different perspectives on the actual and its relation to potential."

What Martin does is to take the Hjelmslevian terms of *process* and *text* and equate them with the more familiar terms of *process* and *product*. He then explores these concepts in relation to studies of language and other semiotic systems. His main interest is the study of genre, and here there is a direct link with the work of Ventola, as discussed in the next section. Martin puts forward a tentative network and associated realization rules to try and capture some of the similarities and differences between various genres; this is called a *genre agnation network*. (Note that in this chapter, terms with technical significance in systemics are taken for granted. They are explained more fully in Chapters Four and Six.) However as with Ventola, he notes that the system network is unable to capture sequence satisfactorily, particularly the sequence of structural elements in genre which can be highly variable.

Ventola's flowchart model is drawn upon to solve this problem, and the relation of the network to the flowchart leads Martin to reconsider the process/product dichotomy.

Martin argues (p259) that "it is necessary to elaborate the terminology so that the opposition in question is interpreted from the point of view of system/language as well as that of process/text." He produces a figure where "potential and actual are taken as cross-classifying the active and static perspectives. Potential as seen from the static perspective is termed a *synoptic system*; viewed actively it is termed a *dynamic system*. Actual, when viewed statically will be termed *text*; when viewed dynamically it will be referred to as *process*. Thus synoptic systems generate texts; dynamic systems generate process." (p258) This figure is reproduced here.

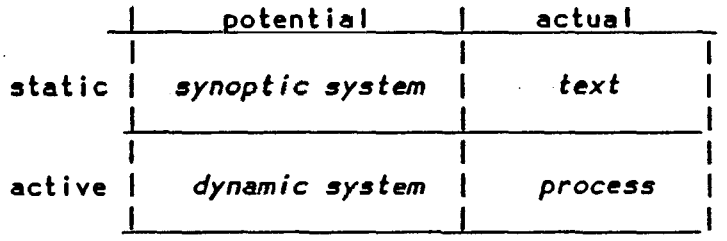


Fig. 2.2 Martin's view of *process* and *text* (Martin 1985:259)

The cross-classification of potential as a dynamic and synoptic system enables Martin to retain the implications of Hjelmslev's differentiation of system and language. Martin argues that, for genre, the synoptic systems provide an 'objective' view, in the sense of being able to take an overview 'after the fact', that is, as a product. In contrast, the dynamic systems provide a 'subjective' view, 'in the process of manifestation', that is, as a process. He argues that both are necessary as one moves "from potential to actual in the process of realization". In this movement, "the dynamic system

somehow disappears: it is etic, enabling, lurking between the lines as it were rather than emic, enabled, and manifest in the final result..." In other words, "each of these radically different systems turns out to amount to the same thing..." (p259)

Thus Martin clearly establishes the difference and the link between the synoptic and dynamic approaches: one relates to a static view, and the other to an active view, but both must be seen to be interacting. To illustrate this interaction, he gives the example of a game of bridge, where the various possible moves relate to its synoptic potential, while the sequence of actual moves relate to its dynamic potential. "The synoptic potential underlying the bidding will be familiar to most readers. But what is not so readily accessible is the dynamic potential which has generated just this bidding sequence. ... In order to teach a computer to play bridge this dynamic potential would have to be formalized." (p259-260) In other words, our global understanding of the game gives a sense of the types of possible moves - a sense of the synoptic potential of the game as a static product. But in playing an actual game, only particular moves are appropriate at particular moments - and for this we need a sense of the game's dynamic potential, as an active process.

Through Martin's work, therefore, we come to an understanding of the nature of a dynamic approach: it deals with an active view of potential, whereas a synoptic approach deals with a static view of potential. He observes (p272) that: "linguists come to discourse equipped with synoptic generative models, not dynamic ones." So a different model will be needed for this different way of looking at language. Further, he highlights the importance and difficulty of using an appropriate model to capture the

dynamic approach, concluding his article with a warning as to the complexities of working towards such a model (p273):

> For one thing, linguists have next to no experience in dealing with dynamic systems. It is not clear how such a formalism can be constrained. It is not clear what the best heuristic strategies will be for investigating dynamic systems. And it is not clear how linguists will distribute the responsibilities of heuristics and theory as far as dynamic systems are concerned: what for example will count as evidence in an argument about the structure of a dynamic system. Finally the way in which synoptic and dynamic systems interact, synchronically in a derivation, ontogenetically in language learning, and diachronically and phylogenatically in language change is not at all understood.

However, Martin's appraisal of the synoptic/dynamic distinction is not without problems. He has made a valid and useful observation that every instance of language (the 'actual') is both product and process (or in his terms, text and process). In relation to the actual, the difference between product and process is clearly a matter of perspective: while a given instance may foreground either the product or process nature, any instance can be viewed in either way. Thus, a spoken text is clearly process-like in nature, but may be treated as either a product or a process, and the reverse is true for a written text. This aspect of Martin's case is clear and convincing. The problem arises in Martin's evaluation of potential. His argument is that the static and active perspectives give rise to two different kinds of potential: a synoptic system and a dynamic system. While he acknowledges that both must be seen to 'symbiotically interact' in order to produce the actual, his position is somewhat asymmetric with the arguments raised in relation to the actual, and more seriously, it is theoretically untenable.

Firstly, his evaluation of potential is not symmetric with his evaluation of the actual - this is not in itself particularly serious, but suggests that there may be a problem in his argumentation. For potential,

each type of system, synoptic or dynamic, is reserved for the account of different types of features in the actual. Thus, a dynamic approach is reserved for what are deemed to be 'dynamic' features, such as the variable sequencing of generic structures, or turn-taking in conversation. These features can be readily seen to, so to speak, move the text forward. A synoptic approach is reserved for the features which have typically been the focus of linguistic descriptions of the past: the components of a linguistic unit (possible stages of a genre, possible moves in a conversation, possible constituents of a grammatical unit) and how they relate to each other. Thus synoptic systems are seen to generate 'synoptic features', while dynamic systems generate 'dynamic features'. To put it crudely, the synoptic system results in text in the sense of 'what we end up with' (product) and the dynamic system results in text in the sense of 'how we get there' (process). But as Martin himself argued, the product/process distinction in relation to actual is one of perspective, and it is somewhat inconsistent to then argue that there are two different types of potential producing separate features of the one actual text.

Despite this apparent asymmetry in his argument, Martin's position remains attractive, as it seems to explain why the 'new' areas of exploration (genre, conversation and so on), are problematic for available descriptions. Following his argumentation, it can be seen that the currently available, synoptically oriented systems can only explain the product aspects of text, and new systems, new explanations of potential, are needed to account for the new, process perspective on text. But as attractive as this explanation may appear, it is not theoretically plausible. This is because the two different types of potential suggest that there are two different types of choice in question, resulting in the synoptic and dynamic 'features' described above.

However, the question we need to consider is whether potential can be seen to consist of two different types of choice. If we return to Martin's example of bridge, the implication of this would be that the decision as to what move to play is different in kind to the decision as to when to play a particular move. But these issues are indivisible: the moves available to a player (Martin's synoptic potential) depend entirely on the current state of play, a 'dynamic' factor; and what can happen at the current state of play (Martin's dynamic potential) depends on what sort of moves are possible, a 'synoptic' factor. Either of these so-called potentials can be foregrounded: a player in an actual game is likely to focus on the 'dynamic' moves of the game, whereas someone writing about the game is likely to focus on the synoptic classification of different possible moves. The game of bridge has only one system, one potential, but different aspects of this potential can be highlighted; just as an instance of bridge, a particular game, can be viewed as an active process, or as a static product. Thus, as for the description of the actual, potential varies according to perspective. It is this insight which is lost in Martin's presentation.

The consequence of this loss is that the nature of the perspective (synoptic or dynamic) is seen to be dependent on the nature of the data being examined (product or process). So a dynamic perspective becomes reserved for data where process aspects are foregrounded, such as conversations, while a synoptic perspective is reserved for the areas with which it has always been associated, where the product aspects dominate, as in the grammar of written texts. Martin's original insight, that actual is both text and process, and that it therefore requires two interacting perspectives, is obscured. By failing to appreciate the independence of perspective in relation to potential, the nature of the perspective is equated with the nature of the

data. In short, the dynamic perspective is seen to be relevant to spoken texts, and the synoptic perspective relevant to written texts. This makes it impossible to apply both perspectives to the one instance of data, as the data is pre-judged on the basis of its mode as to which perspective is most relevant.

Further support for the case that there is a limited understanding of perspective is found if Martin's argument on lexicogrammar is examined. Martin suggests that a dynamic perspective is not an appropriate way to look at grammar, and this is supported by Plum (1988:53) when he says: "There seems to be little need for the distinction argued for by Martin at the level of lexicogrammar since variation in (actualised) sequence, at least in English, is typically evidence of some systemic choice, for example word order signifies a distinction between declarative and polar interrogative." Therefore, while variability in a grammatical structure is evidence of a systemic (that is, synoptic) choice, variability which can't be accounted for systemically "may well be said to be due to a 'performance error' in some sense, say self-interruption and subsequent 'non-completion' of a clause." (Plum 1988:53) In other words, grammar is well accounted for given available descriptions; it is not a particularly 'dynamic' phenomenon in itself, and when 'dynamic' features, such as self-interruption, do occur in grammar, these can be dismissed as being unimportant. But this argument is also theoretically untenable. Firstly, it implies that any grammatical structure which is not 'well formed' according to the current description of potential is not the result of a choice - that it is not functional. Apart from being a slightly arrogant assumption, it is an odd one for a systemicist to make, given that all linguistic choices are considered to be functional in origin. It appears more likely that the 'mistake' is due to the inability of the

description to account for such potential as an integral part of the grammar. Describing potential as two separate components, even if interacting, forces one aspect of actualised grammar to be deemed to be aberrant.

Further, if Plum's arguments about grammar are extended to areas which are more inherently 'dynamic', such as turn-taking, the implication is that there can be no systemic choice here, either. All such 'dynamic' features would have to be seen as accidental outputs, with no system of potential behind them at all. This clearly is not what Martin would intend to argue for at all. The 'new' areas of turn-taking and so on, while not being well described by current synoptic systems, are evidently not the result of random or accidental choice.

Given Martin's classification of potential as either synoptic or dynamic, the conclusions in relation to grammar are understandable. But again it is evidence that the nature of the perspective is too closely associated with the nature of the data. In this case, it is not so much the mode (spoken/written) which is in question, but the linguistic level of the description (grammar, discourse, genre, and so on). That is, a certain perspective is associated only with a certain level of description. Again, this makes it impossible to freely associate different perspectives with different descriptions. This contradicts Martin's own original position, that all data needs to be examined from both perspectives.

If, however, Martin's conclusions about perspective in relation to the actual are also applied to potential, then these problems can be avoided. It results in a position which is consistent with the arguments for actual instances of language, namely that there is only 'one' system of potential for language, but that this potential may be viewed in different ways. A

different perspective will foreground some aspects of potential rather than others, just as is the case for the actual. The problem for linguists is that potential has typically been treated in a static, synoptic way; now that a new perspective is emerging for actual instances of language, a similar perspective is needed on the system of potential. It will be seen as the thesis progresses that a different perspective on potential does affect the notion of available potential to a certain degree - various notions of function have to be re-examined, for example - but this is comparable to the situation with actual text. In other words, two perspectives give the impression that two different 'things' are being dealt with (viz, a product or a process), but both are needed in order to understand the potential and the actual in a holistic sense.

We argue therefore that perspective is applicable to potential, as well as being independent of the nature of the data. It may seem rather trivial to insist that perspective be applied in this way - after all, Martin does cross-classify potential with an active/static perspective. But, apart from the fact that active/static in Martin's diagram could be replaced by dynamic/synoptic (and in Chapter Three, we argue that the active/static dimension is only one characteristic feature of the synoptic/dynamic perspective), the consequences of retaining two types of potential, as we have seen, are rather negative.

A further consequence of obscuring the independence of perspective is that those aspects of text which can already be accounted for, such as uncomplicated sequencing, are ascribed to known models, and those aspects which are just beginning to be examined, such as more complicated sequencing, are ascribed to new, so-called dynamic models. Thus it is only necessary to call on the dynamic approach when the current model falls down. The dynamic

approach therefore acquires the status of a 'gap-filler'. This metaphor is pervasive throughout the work which adopts Martin's position, and can be found in his own work. For example, when discussing a description of *conversational structure* based on a system network (a synoptic model), he notes (p272): "A good deal of conversational structure can be predicted from this approach. There remain however a number of conversational gambits open to interlocutors which are not netted in. For these, a dynamic tactic pattern of some kind will have to be worked out." (emphasis added) Martin's description of the dynamic approach as "enabling, lurking between the lines as it were" suggests that it is subordinate to the synoptic approach. Cowling, Perrett and Thwaite (1987) quite rightly raise an objection to this statement: if the dynamic system is 'invisible', not manifested, how can it be studied? Rather, we suggest that the dynamic view disappears once we look back on the text and treat it as a product. In other words, if dynamic aspects of a text are to be understood, a dynamic perspective on both the text and the system of potential behind it must be maintained.

Parallel to the 'gap-filler' metaphor is the notion that the dynamic perspective acts to 'repair' problems in an unfolding text. Martin says (p265) that: "although it was suggested earlier that dynamic systems are invisible, disappearing as text is formed, they may in fact appear to repair a process which is breaking down... in a sense it is only when something goes wrong that process can be distinguished from text." The things 'going wrong' to which Martin refers are features such as interruptions, explanations, and repetitions in conversational structure. But again, this conclusion arises because the perspective is not seen to be independent: it is being confused with the nature of the data. Rather than having a process 'breaking down', at which point the dynamic approach comes in 'to repair', it is more a case

of a certain type of (inherently dynamic) data appearing which cannot be accounted for given the current synoptic descriptions. Thus, a new type of model is grafted on to the currently available one, to explain the new type of data. Yet it is improbable that some features are dynamic and others synoptic, and that two different models must be counter-balanced in order to find the right 'fit' for the data in hand.

The failure to recognise the independence of perspective as it applies to potential means that Martin's insights regarding the dual process/product nature of text are lost: the result is the assumption that there are two 'types' of data which require separate 'types' of models in order to be explained. If, on the other hand, the independence of perspective in relation to potential is recognised, then it can be remembered that actual language may be seen to be either product or process. While some instances of language appear to be more synoptic or dynamic than others because of the nature of their mode, and while some levels of description appear to be more synoptic or dynamic than others because of their inherent organization, any type of text can be viewed in either way. This means that there can be only one system behind the text, one potential, although current developments in relation to data highlight the need to apply the new perspective to potential as well.

When a dynamic perspective is applied in conjunction with a synoptic perspective, text will be more fully understood from both the product and process perspectives. To clarify this distinction of perspective in relation to actual instances of language, the terms *text* and *process* in Martin's matrix (Figure 2.2) will be replaced with the terms *text as product* and *text as process*, as Ventola does. This emphasises the fact that it is the perspective which changes, not the text. The dichotomy of synoptic/dynamic is

therefore seen to be a matter of perspective (subsuming the active/static dimension), cross-classified with potential and actual. The way in which a dynamic perspective on potential can be described is the subject of the remainder of the thesis.

2.3 An application of a dynamic perspective: Ventola's contribution

Simultaneous with Martin's exposition of dynamic and synoptic concepts, Ventola (1984a, 1984b, 1987) exploits this distinction to facilitate the exploration of a particular semiotic, that of genre. Her work, presented most comprehensively in *The Structure of Social Interaction: A Systemic Approach to the Semiotics of Service Encounters* (1987), not only contributes to a deeper understanding of genre, but provides the first detailed attempt within systemics to apply the synoptic/dynamic distinction, and to explore the implications of this distinction for modelling. Here, we discuss the way in which her interest in the modelling of genre led to the need to incorporate the synoptic/dynamic distinction, and how her conclusions relate to the concerns of this thesis.

Ventola's focus is the description of the genre of service encounters. A service encounter "is a semiotic unit where two (or more) participants are involved in a *social process* of giving and receiving service." (Ventola 1984b:124) In particular, she explores the stages which characterise a particular genre, or its *schematic structure*, and the lexicogrammatical realisation of these stages.

The service encounter texts which Ventola describes are exchanges of goods or information in shops, post offices and travel agencies. The texts

are all transactions of some sort, and so are similar in many ways. But they are also substantially different in terms of the stages which the participants negotiate in order to achieve their goals, or as Ventola puts it, in the way they 'unfold'. Ventola is thus faced with the inherent problem of genre studies: how to describe the generic stages of such texts, so that their similarities are captured, but the differences allowed? For instance, an encounter in a travel agency could normally be expected to contain a 'booking' element, where a client books a trip or a holiday through the agent. On another occasion, a client in a travel agency may make enquiries about a holiday, but no booking - the client may not like the available options, or may just have been seeking information. Intuitively, both such encounters appear to be functionally and generically the 'same', but their actual generic elements differ substantially (one encounter has a booking element, the other does not), and so it is difficult to capture their similarity in generic terms.

Of the available models which Ventola examines in order to resolve this problem, two in particular are felt to be useful and are reviewed in depth. The main criterion which they meet is the ability to resolve the problem just described, of capturing the similarities and differences of genre in text. When identifying genre, the critical factor is to identify the different stages of the text, as determined by the features of the context of situation (cf Ventola 1987:43). For a service encounter, an appropriate stage might be 'purchase', whereas this would not be an appropriate stage for other genres, such as an interview or a lecture. The stages are functional elements. Apart from the stages themselves, it is important to be able to capture the similarities and differences in the *sequence* of the stages: the 'greeting' stage of a service encounter, for instance, does not necessarily have to be

the first stage to be realized (cf Ventola 1987:70-71). Thus each genre has a particular potential: various possible stages occurring in a certain, possibly variable, sequence. Hasan (1984) calls this *Generic Structure Potential* (GSP). Texts which have a similar context of situation - or contextual configuration - will share some generic elements. Similarities between GSPs accounts for genre agnateness.

The first model which Ventola explores is Hasan's linear model of GSP (see for example, Hasan 1984, Halliday and Hasan 1985). The model provides a linear representation of the order of generic elements - such as GREETING, SALE REQUEST, SALE or FINIS for a service encounter text[2]. In this representation, some elements are considered to be obligatory for that genre, and hence genre defining, and others optional (thus SALE or PURCHASE would be obligatory in a service encounter, but GREETING would be optional). Some variation in the ordering is possible, for instance by allowing repetition of elements. To take an invented example, let us say that a service encounter may consist of the above four elements, namely GREETING, SALE REQUEST, SALE and FINIS. A GSP may represent the structuring of these elements as follows:

(GREETING) ^ SALE REQUEST← ^ SALE←^ (FINIS)

The parentheses indicate optionality, the circumflex fixed order, and the left-pointing arrow indicates possible repetition of the element to which it is attached. Thus according to this (invented) GSP, the service encounter must minimally have one SALE REQUEST and one SALE, as these are obligatory; it may also have all four elements, may have some combination of the obligatory and optional elements, and may have more than one SALE REQUEST and SALE (see the fuller example in Ventola 1987:44). Through these conventions, a GSP "not only states the typical canonical order of the generic elements,

but also the typical variations of that order." (Ventola, ib.id) Thus, Hasan's linear model is attractive for Ventola's purposes.

However Ventola raises an objection to the inclusion of obligatory and optional elements. For Hasan, a determinant of genre is the context of situation, and the obligatory elements defining the genre are determined by the context. A consequence of this is that two texts may be generated by ostensibly the same context of situation, but if one does not contain the appropriate obligatory elements, it will be described as being of a different genre to the text which does have the obligatory elements. Following these criteria, the example cited above of the two encounters in the travel agency - one with a booking element and one without - would be classed as different genres. Ventola argues (1987:52ff) that this results in a restrictive view of genre, one which does not overcome the inherent problem of genre studies. The linear representation of GSP is therefore too limited for Ventola's purposes.

In order to overcome this limitation, Ventola turns to Martin's (1985) proposal for the description of genre. As mentioned above in section 2.2, he proposes a network representation of genre; Martin emphasises that his proposals are tentative and untested, but as the formalism of the network is basic to the systemic approach, Ventola is able to evaluate the principle of using a genre network. In her evaluation, Ventola (1987:63) observes that, like the linear GSP representation, the network captures variation of elements. Part of Martin's network is reproduced below:

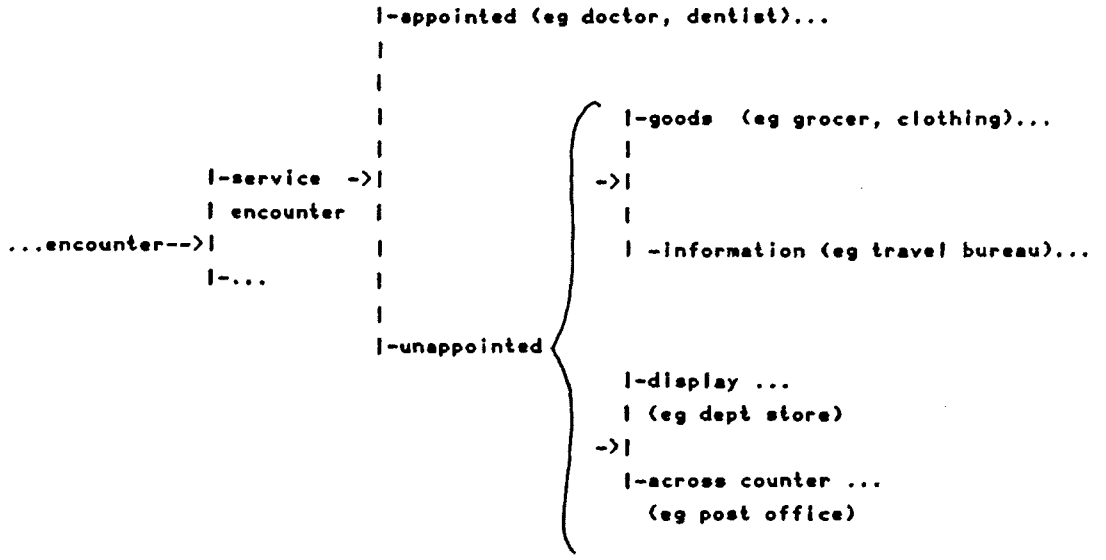


Fig. 2.3 Partial representation of Martin's service encounter network (Martin 1985:253)

The network representation is able to model both the *system* and *structure* of genres (although Martin only includes the system in the above figure). That is, a network outlines the systemic choices available to a speaker in the generation of a genre (for instance, *service encounter* or *other*; if *service encounter* then either *appointed* or *unappointed*, and so on), as well as the structural elements which realize these features (for instance, if *unappointed*, then there will be an element of +SERVICE BID in the genre; the symbol '+' means 'insert this feature in the output').

As the proposed network incorporates a *scale of delicacy* (which is common to all networks), it is able to show how related genres may be simultaneously both the same and different. Delicacy increases as one moves from left to right through the systems of the network, and is the term used to indicate the increasing specificity of choices. Thus at one level of delicacy (in reference to the diagram above), genres dealing with goods are different to those dealing with information. But at a level of lesser delicacy, both can be seen to be instances of unappointed service encounters,

and therefore in some ways they are the same. The second advantage of the network model, also a result of the incorporation of the scale of delicacy, is that even the shortest texts can be classified (although it would not be possible to classify them at a more delicate level); so, if a Travel Agency text has no BOOKING element, the text can still be accounted for, as it would still reflect the features *service encounter, unappointed, information.* Hasan's model was unable to capture this, and so Ventola finds Martin's network model to be a preferable representation.

Yet for Ventola, Martin's model is also problematic. First, there is a problem regarding the selection of features and their corresponding realization: as each feature has an associated realization, the realization must be present in the text in order for one to say that the associated feature has been selected. For instance, in the above network, the realization of 'encounter' is '+GREETING, + GOODBYE'. That is, every text which can be classed as an encounter has the elements GREETING and GOODBYE, and every text with these elements can be classed as an encounter. But Ventola notes (1987:65) that in naturally occurring data, neither the GREETING nor the GOODBYE element may be present, and yet the text still seems classifiable as an encounter. Thus, the realization rules of the network are similar to Hasan's obligatory elements: "the selection of a feature from the network is realized by a particular generic structure element. But ... not all elements need appear in the actual text, although the features seem to have been selected. For example, not all texts which deal with goods require the realization of the element PAY." (Ventola 1987:66)

A second problem with the network proposal is that it does not specify sequence, "that is, what the possible acceptable sequences of the social process in question are in a particular culture." (Ventola 1987:65) For

instance, Martin's network shows that an encounter dealing with goods is realized by the elements +PAY, +GOODS HANDOVER, but does not specify if one should come before the other. Ventola observes that the sequence of elements may vary between cultures: in the Soviet Union, for instance, goods are paid for before they are handed over, whereas in Australia, the situation is the reverse. In other words, the way in which the genre unfolds can vary across cultures, as well as within cultures, and within one type of text. But the network as a representation cannot capture this phenomenon.

Thus the network model is not completely satisfactory either. What both Hasan's and Martin's models fail to capture is the fluidity of genre classification and description resulting from its status as a social process. Ventola points out (1987:66) that a social process is "negotiated by interactants from element to element" - "the realization of every generic element ... has to be agreed upon." When genre is considered as a social process, every element contributing to that process should be accounted for, whether the same element is repeated (perhaps with two sale requests for instance), whether an element which is usually typical of that process is skipped (such as the greeting), or whether an atypical element is included (perhaps a switch into a brief discussion of the weather while in the middle of a service encounter). Ventola's point is that, as genre is a social process, and as naturally occurring data exhibits the type of variation just described, a model claiming to describe genre should describe this aspect also. While the linear GSP and the network capture, with varying degrees of success, some of the canonical features of generic staging, and some of the agnateness of different genres, they do not capture the other aspects which Ventola argues for.

Ventola lays the blame for this failure squarely on the synoptic view of text adopted by both models. Let us focus on Ventola's criticisms of the network, given that for her purposes, the genre network is more successful than the GSP model. She notes (1987:66) that the network offers "a view of service encounter texts as static, synoptic products, where customers go shopping and buy goods. PAY is seen as a typical part of the social process in question. The synoptic representation does not capture the fact that at various points of the social process the interactants can opt out from a typical stage of the social process or complete the activity in an alternative way." The network is synoptic because, in Ventola's words, it represents the generation of structure as an *explosion*: "Such an 'explosion' can be exemplified by considering the realization of a clause on the lexicogrammatical stratum. The relevant choices from the system networks of TRANSITIVITY, MOOD and THEME are selected simultaneously. The selections 'explode' into one linear structure, a clause. In the same way the selections in the genre network are expected to explode into a linear structure where one element follows another in a predictable sequence. But this view of the unfolding of generic structures is too rigid."

Thus, to account for genre as a social process, Ventola requires a representation which is non-explosive, which accounts for the unfolding of a text, but which is still able to capture the agnateness of genres. Both the product and process views need to be captured, and this requires "setting up both synoptic and dynamic representations for genres" (Ventola 1987:67).

The need, therefore, for a less static, less rigid view of text leads Ventola to propose a *flowchart* formalism for the modelling of structural elements of genre. The flowchart is explained more fully in Chapter Four, but essentially it shows the points and procedures for two participants to

negotiate an actual example of a service encounter text. The flowchart is more suited to Ventola's purposes because it is able to handle the complex sequencing found in her data - participants may choose to skip forward or back to other elements; recursion is allowed; there are no 'obligatory' elements and most importantly, it "takes the interactants' viewpoint of continuously having to make decisions about the development and the direction of the social process." (Ventola 1984b:158) Thus the flowchart should provide a more satisfactory account of genre as a social process.

It is Ventola's concern with accounting for genre as a social process which leads her to propose this new way of representing generic stages. The alternative means of representation account for genre as a product. They are able to make general statements about the genre as a whole, but are not appropriate for representing the unfolding of an individual text - the process by which the actual text is negotiated stage by stage between the participants. It is not the case that the different approaches are dealing with different data, but that the same data - the same type of service encounters - are viewed differently, either actively, in a dynamic way, or statically, in a synoptic way.

In coming to understand the significance of the synoptic and dynamic viewpoints as it relates to modelling and the treatment of data, Ventola draws on Martin's cross-classification of *static* and *active* with *potential* and *actual*, as described in the preceding section. She observes (1987:67; cf 1984b:154): "A genre network represents a synoptic system, a state potential, which generates in the realization actual, but static texts, i.e. texts which are viewed as finished products. ... A flowchart ... represents a dynamic system, an active potential, which generates in the realization actual and active texts, i.e. texts which are viewed as ongoing processes." In other

words, the network is a synoptic model, and is most suited to treating data as a product, whereas the flowchart, as will be demonstrated in Chapter Four, is a dynamic model, and most suited to treating data as a process. There is a reason why one type of model is more suited to one view of data. Data, when taken as a product, presents choice as conventionalised or 'fossilised': the choices are static. Synoptic models are able to generate such choices: the potential of the linguistic system, the possible choices which can be made, are also represented statically. When the data is taken as a process, the choices are seen to be made actively in response to the conditions of the moment (conditions of surrounding grammar or context of situation for instance). A dynamic model which incorporates a more interactive view of context and in which choice is made according to exigencies of the moment presents a more active view of choice, and so is more suited to an active view of the data.

Significantly, Ventola insists that both synoptically and dynamically oriented models are necessary to account for the generic aspects of her data. She argues (1984b:124) that "texts can be looked at not only as finished products, whose relationship to other similar types of texts can be stated as system choices in the genre agnation network, but also as processes, whose unique unfoldings as text structures manifest themselves through the tactic pattern of a flowchart for service encounters."

It is also interesting to note that Ventola seems well aware that the dynamic/synoptic dichotomy applies to the *perspective* one takes on data, and not to the nature of the data itself. The quotation just cited above is clear evidence of this: it is the way one looks that is important. Further, in the cross-classification of actual/potential and static/active, she replaces Martin's terms of *text* and *process* with ***text as a product*** and ***text***

as a process (1987:67). This eliminates any potential confusion, and gives rise to a slightly modified version of Martin's matrix, in the way that we also suggested in the preceding section. She does, however, retain the terminology of synoptic and dynamic systems for the cross-classification of potential, suggesting that she, too, sees potential not as one system viewed from different perspectives, but as two different types of interacting models.

This highlights a potential problem which does in fact ultimately lead to a loss of understanding of perspective in Ventola's work. A positive aspect of her work is that it begins with a clear statement of the role of perspective in relation to data. For instance, at one point, Ventola acknowledges that different insights can be drawn from the same data, according to the perspective applied. In discussing the generic elements of a text (1987:227), she observes that the elements can be seen as "realizations of selections of certain features in the genre network describing options involved in service encounters". This is a synoptic view. Alternatively, the elements can be seen as part of "the unfolding of interaction in service encounters", with for instance, the potential for any one element to be reiterated should the participant choose to do so. This is a dynamic view. Synoptically, the element is evidence of a feature selection; dynamically, it is evidence of the way a participant negotiates the unfolding of the text. Thus different insights are drawn from the same data, and hence the synoptic/dynamic perspective can be seen to clearly apply to the data.

Unfortunately a negative aspect of Ventola's work is that this initially clear insight is not extended to the cross-classification of potential. Her study of generic structure includes a comprehensive account of the discourse systems which realize generic structure, and while this is an impressive

example of text analysis, close examination reveals a blurring of the distinction of perspective as it applies to actual (data) and potential. At the level of discourse, Ventola analyses her texts for *conversational structure, lexical cohesion, reference, conjunction* and *boundary marking.* The aim is to discover the linguistic manifestations of the generic structuring discussed in the first section of Ventola's 1987 book (for example, different patterns of lexical cohesion may be exploited at different generic stages; changes in such patterns are evidence of change in generic stage). However in the discussion of the discourse systems which project the generic organization of the texts, confusion arises in the application of the concepts of synoptic and dynamic to data and model.

In exploring these discourse systems, Ventola begins to describe some of them as synoptic, and others as dynamic. For example, she speaks (1987:237) of "those slots and moves which are generated synoptically and those which are generated dynamically". This results in discussion of *dynamic systems*, such as (in conversational structure) *suspending, aborting* and *elucidating*, as opposed to *synoptic systems*, which generate the more typical components of conversational structure.

As noted in the discussion of Martin, there is a sense in which some features are more readily described as dynamic and others as synoptic: a *suspending* move, for instance, quite obviously alters the flow of the conversation, and hence is easily called a 'dynamic' feature. But this does not justify the description of *synoptic/dynamic* being applied to the feature: as Ventola herself so effectively argued, it is the perspective on the data which varies, not the nature of the data itself. It seems that Ventola is following the same tendency as identified in Martin: instead of maximising the insights of the new perspective, the tendency is to use 'synoptic

systems' to capture the unproblematic aspects of the data which could already be accounted for (when the product view of text was dominant theoretically), and 'dynamic systems' to capture those aspects which have only come into focus since this data has been of interest (that is, since the process view of text has become theoretically plausible). This trend becomes quite pronounced when Ventola discusses speech functions which support or challenge the ongoing conversation; she notes (1987:91) that speech functions are only recognized in relation to the expected/supporting functions, and that this leads:

> ... to the typical, unmarked, synoptic completion of an exchange. This is to say that only the expected/supporting distinction is built into the system which generates exchanges. The discretionary/challenging functions only step in when 'trouble' in the unfolding of an exchange occurs, for example the proposition is not acceptable to the hearer, has not been heard, etc. Structurally these functions are not predictable, but are used when the predictable structure 'goes off the track'. Such dynamic functions are thus called for to further guide the unfolding of the exchange ... The benefit of this solution is that the system of speech functions is a basic system catering for the 'typical'. Rejections, contradictions, refusals and disclaimers can then more generally be described to carry a dynamic function of a challenge...

To cite a further example, Ventola speaks (1987:175,184) of the 'dynamic realization of interaction'. This implies the existence of a synoptic realization. That is, a synoptic view of generic structure in service encounters would represent the sequential ordering of the elements SERVICE and PAY as 'SERVICE followed by PAY'. Ventola however shows that in real texts the two elements may be mixed, rather than in sequential order. She calls this realization 'dynamic' and argues that "Such principles may tamper with our synoptic views of sequential organization of exchange or of generic structure elements." But rather than two types of realization (synoptic and dynamic), we argue that one realization of generic structure (SERVICE followed by PAY) conforms with our 'average' view of text: it exemplifies the

type of data that has typically been modelled from a synoptic, product perspective. The other realization (where the elements are mixed) does not conform to a synoptic explanation, and so available models are not adequate. It is not the case that there is one principle 'tampering' with a synoptic view, but that there are two possible points of view. The attempt to label the features as dynamic or synoptic loses the earlier insight of the role of perspective.

Again, perspective is restrictively tied to a particular level of description or a particular mode. It would be more desirable to explore the dynamic perspective in its own right, applicable to any mode or linguistic level. Also, as was observed in the case of Martin, the so-called 'dynamic' features are seen to be filling gaps in the explanation of the text, where the synoptic perspective ceases to explain what is happening. Apart from the metaphor of 'tampering' cited above, the metaphor of 'interference' also emerges in Ventola's work. For instance she says (1987:113) that "dynamic moves interfere with the construction of the move complex", as when challenges split the realization of the exchange (p114). Yet it is counter-intuitive that one part of the data is 'interfering' with the realization of the whole - it is more likely that one way of looking at the data is unable to account for all the relevant features. Further, when it is said (p118) that "each exchange appears to be so unique because of the intervening of dynamic systems in the synoptic patterns of exchanges" or (p119) that "dynamic systems frequently intervene in the development of a nuclear exchange", this seems to be doing nothing more than recognising that the synoptic perspective is unable to account for all aspects of the data. While this was the original motivation for the study, such argumentation would appear to reduce the value of Ventola's observations: as long as the dynamic

approach is seen to be a gap-filler, it is unlikely that the potential for new insights will be maximised.

Ventola's attempt to mix the two approaches is both justifiable and sensible, but the way they are mixed gives rise to the unfortunate impression that it is only the nature of the features of text which is important, and that this determines the nature of the model which should be applied to the data. The understanding being obscured is that two perspectives on the same data will give two sets of insights, but to carry through these insights, the one system of potential must also be seen from the two perspectives.

These criticisms of Ventola's study should not be seen to negate her contribution to the understanding of a dynamic perspective, particularly in relation to developing a dynamically oriented model (as discussed further in Chapter Four). However, the criticisms are indicative of the misunderstandings which can arise when a dynamic approach is seen to be dependent on, rather than independent of, the nature of the data.

2.4 Towards an understanding of perspective

The concerns of Ventola and Martin as related to dynamic issues are echoed in many other studies emerging from the systemic school. For instance, Eggins (1987) is interested in explaining how a casual conversation, like a dinner party conversation, is able to both keep going and keep making sense. To account for this, she needs a dynamic model which can explain the collaborative, ongoing process of creating text, and show how it is that speakers negotiate topics. Similarly, Perrett, Thwaite and Cowling (1987) find that they need a dynamic model to account for the variability of

possible moves in an exchange; O'Donnell (1986, 1991) explores the same area. At the level of lexicogrammar, Plum (1988) explores how clauses combine into clause complexes in spoken text, and finds that the available synoptic models (for example, Halliday's 1985a description of the clause complex) do not account for all the facts in naturally occurring conversation. In a related but more diachronically oriented study, Nesbitt and Plum (1988; also discussed in Nesbitt 1987 and Nesbitt, Plum and Cowling 1987) use a dynamic model of the clause complex to account for change in the linguistic system as a whole. This is motivated by Lemke's studies (1987, 1989) which argue that language is a dynamic open system, that is, a system in constant interaction with its environment, and hence continually subject to change.(3)

All these studies attempt to provide more satisfactory explanations of the functioning of naturally occurring spoken data, and they all find that dynamically oriented models are necessary to achieve this. This surge of interest in spoken data is an understandable development given the recent history of linguistics, with the relatively late valorisation of the spoken text. However it is interesting to consider if there might be another reason for this concentration of interest within the systemic school, and the nature of the systemic model of language is perhaps the source of this explanation.

Systemic theory is a theory of paradigmatic choice; the choices are linguistic features organised in a series of interlocking paradigms - a *system network.* (These have been referred to informally in the course of this chapter and are more fully discussed in Chapters Three, Four and Six). As we argue in later chapters, the systemic model represents structure, which is manifested on the syntagmatic axis, as a consequence of paradigmatic choice. However, the type of data which is now the subject of so much interest typically highlights the syntagmatic dimension. There is a sense in

which conversation, clause complexes, the generic unfolding of a text and so on, all have a certain structural 'life' of their own in terms of an unfolding process. This clearly makes it difficult for a paradigmatically conceived model, in which syntagm is primarily a consequential feature, to adequately account for the type of exploration which is now being pursued. This is no different from the point already made about 'old' and 'new' ways of modelling: that a new focus on data reveals inadequacies in available models. But it is interesting to note that the systemic approach itself incorporates a modelling bias which is highly relevant to the issue of developing a dynamic perspective; the systemic model is not well suited to describing process, and the new perspective therefore provides a challenge for the model.

Significantly, the problem identified in the work of Martin and Ventola, in relation to the understanding of perspective, becomes more pronounced in other systemic works. It is not the case that the linguists cited above are unaware of the importance of perspective. However, the influence of synoptic modelling means that it is difficult to maintain a consistently dynamic approach - all too often, old ways of seeing and looking take over. For example, Bateman (1989), whose work is discussed further in Chapter Four, is interested in a particular 'dynamic feature' of language, *dependency organisation* (a feature found in clause complexing, for example, which accounts for how progressive dependencies can arise between linguistic units). However, given what has been discussed in this chapter, the fact that he focusses on 'a' dynamic feature is an indication that he is not necessarily adopting a dynamic perspective. The solution he proposes for the modelling of this feature is essentially an interaction between two system networks, one accounting for synoptic aspects of choice relating to clause

complexes, one relating to dynamic aspects of clause complexes (that is, their organisation in dependency terms). But as Ventola argued, and as will be further demonstrated in Chapter Four, a system network itself provides a synoptic representation of choice, not a dynamic one. It can of course be used to model linguistic features which might be deemed to be 'dynamic', but then it is a synoptic perspective on that feature which is modelled, not a dynamic one. While Bateman's work represents an important contribution to an area which is difficult to model given available systemic resources, it does not in fact contribute to an understanding of a dynamic perspective.

It is interesting to reflect on what might have motivated Bateman to consider a *dynamic system network* as a representational possibility. Martin's 1985 work of course included the classification of potential as *synoptic system* or *dynamic system.* There is no evidence in Martin's paper to suggest that he conceptualised the latter as a dynamic system *network* (and indeed Plum 1988:53 notes a personal comment from Martin to the effect that he had in mind an alternative representation to a network when he used the term *dynamic system*). Nor is there such a suggestion in Ventola's work. Yet the term *system* has such a strong technical association in systemic linguistics that it is difficult not to make the connection. Had Martin used a more neutral term, such as *model* or *representation*, the synoptic character of the system network might have been more easily appreciated, and the search for a more dynamic representation more vigorously pursued. Apart from Bateman, Fine (1989, 1991) and O'Donnell (1986, 1991) also explore dynamic systems. The issue is discussed further in Chapter Four, but is highlighted here as an example of the ease with which a familiar perspective can dominate attempts to explore a new perspective.

If the relevance of perspective to potential is not recognised, then the dynamic approach acquires a secondary type of status. At best, it is seen to function as a gap-filler when the synoptic model fails to account for the data. This is the case in Bateman's work, where the *dynamic system* is only called upon to account for isolated features of the data. At worst, it is seen as something which tampers with the synoptic point of view. The perspective therefore becomes strongly associated with particular linguistic features which typically arise in particular modes. This ensures the relegation of a dynamic perspective to a secondary role.

Further, if *dynamic* and *synoptic* are equated with particular types of data, and not appreciated as a perspective at all, then the potential for understanding the function of linguistic features in terms of both perspectives is entirely lost. One intention of the thesis is to demonstrate that a consistent position with regard to perspective enables all types of data (whether 'inherently' synoptic or dynamic) to be illuminated from both points of view. This means that a dynamic perspective is as relevant to the written mode as to the spoken. Such a position may appear to be surprising, but is consistent with the argument that the dynamic/synoptic dichotomy is one of perspective. Sinclair (1985:17) recognises the relevance of a dynamic perspective to both modes: "Despite the different circumstances of spoken and written language and the different realizations of linguistic categories, the view of a dynamic model is to see them as essentially similar." While spoken texts are inherently process-like in their nature and organisation, they can be - and typically have been - treated from a synoptic, product point of view. Similarly, written text, while inherently product-like, could be treated from a dynamic point of view, although, in the systemic school at

least, this possibility is virtually excluded by the limited conception of perspective.

Previously in linguistic studies, process-type data was not even considered, and the models developed in conjunction with product-type data are now not able to deal with a process perspective. However, the ideal is not to develop two separate systems accounting for two types of data, but to recognise that the perspective is independent of the data, and hence, that two complementary approaches to the data are required. Synoptic and dynamic perspectives need to be interwoven, and both should be applied simultaneously to data, to achieve a full understanding of text. This thesis will demonstrate that a dynamic perspective can be applied to a product-like aspect of language, namely grammar, and this application demonstrates that a different perspective brings its own insights to the data. These are complementary to the more familiar synoptic insights, but add a significant dimension to our understanding of grammar. This serves to emphasise the importance of an independent perspective.

In an ironic contrast to the first problem noted above, there is a tendency for the synoptic approach to be equated with everything that is staid and unrevealing in analysis, and the dynamic approach with everything that is new and interesting. However, it is not the case that one perspective is 'better' or 'worse' than the other, or that one should dominate in a description of language. It is natural that previously unexplored areas of analysis should arouse great interest, but this should not be extended to an evaluation of perspective: both perspectives are necessary. Current synoptic models, such as systemic functional linguistics, already provide a sound foundation for the study of language; it would be foolish to abandon this in order to apply a new perspective. The insights gained from a synoptic

perspective need to be reinterpreted in the light of, and complemented by, a dynamic point of view. In turn, the development of a different perspective will alter our conception of text and language as a whole.

As a result of these arguments, the thesis avoids mention of *dynamics*, which implies a restricted understanding of perspective in relation to data, or actual, and it also avoids *dynamic system*, which implies a restricted understanding of perspective in relation to potential. It is the nature of the *perspective* which is at issue, and the thesis continues on the premise that the nature of the perspective is independent of the nature of the data being examined, and of the nature of the potential behind that data. Therefore a dynamic perspective should be applicable to texts of any mode, and to any level of linguistic description. This exploration should bring a new balance to linguistic studies, in contrast to previous studies where all language was conceived of as synoptic and represented as such. By focussing on a dynamic perspective, there is a greater chance of achieving an ultimate balance of perspective, where language can be understood from both points of view. In the next chapter, we begin to work towards this by exploring what it is that characterizes a dynamic perspective.

Endnotes

1 (Section 2.2): Martin's use of the term *synoptic* derives from Bordieu 1977. It is explained further in Chapter Three.

2 (Section 2.3): The use of capitals here reflects Ventola's layout.

3 (Section 2.4): Related to the systemic school, Firbas' work on *communicative dynamism* (see for example, Firbas 1991) appears, at least by its title, to be relevant to the concerns of the

thesis. However, while the aspect of language he discusses - identifying the element of the sentence which is most responsible for carrying the text forward - is an issue relevant to the concerns of a dynamic perspective, it is treated in a dominantly synoptic way, and so is not drawn on further in the thesis.

CHAPTER THREE

THE CHARACTERISTICS OF A DYNAMIC PERSPECTIVE

3.1 General characterization

Having established in Chapter Two that the thesis is concerned with a dynamic perspective on language, this chapter examines what it is that characterizes such a perspective - what it means to look at language in this way.

It is useful to begin this characterization by considering the meaning of *dynamic* in other contexts. In the *Oxford English Dictionary* (1989) and the *Cobuild Dictionary* (Sinclair 1987), for example, something that is dynamic is equated with something that is active or energetic, which has force or produces motion, and that is in action or operation, rather than being part of potential. These are the concepts which are relevant to a dynamic perspective on language: a dynamic perspective takes an active view, treating the language as, or as if it were, 'alive', something moving, progressing, changing in response to its environment; rather than as something static, complete and incapable of further change. It will be remembered from Chapter One that these characteristics are relevant to several senses of language: in terms of change over time for a given language, in terms of development of language within an individual, and in terms of the unfolding of an actual text of a given language in a given context. It is the last which is of relevance to the thesis.

Yet not all of the general dictionary definitions are appropriate for our purposes. One of the definitions given in the *Cobuild Dictionary*, that

dynamic is "a force that produces change", is indicative of the dichotomy discussed in Chapter Two. Such a definition applies, in the context of this thesis, to the nature of the data: a dynamic feature in this sense would be one which clearly alters the course the text is taking. While this study does not ignore such features, their classification as dynamic or otherwise is an issue separate from the one of perspective. A perspective should be seen to apply both to the view of data itself, and to the view of the system of potential behind that data. As the systemic functional school sees the potential as a system of *choice*, the adoption of a different perspective means that choice will be considered in a different way. The remainder of this chapter outlines what we consider to be the three central characteristics of a dynamic perspective - those of being *progressive*, *active* and *probabilistic*, and explores these as they relate to the concept of choice. The discussion of these characteristics is used as the basis for a schematic model demonstrating the way in which a dynamic perspective can be seen to operate in text, and the characteristics as put forward here are compared with another classification provided by Ventola.

3.2 The progressive characteristic

One way of coming to understand the nature of a dynamic perspective is to consider what it is not. In his 1985 article, Martin contrasts the dynamic perspective with a synoptic one, but the nature of a synoptic perspective has so far been assumed in the thesis. Martin derives the term from Bordieu (1977), who in a socio-anthropological study considers the way practice can affect the processes of observation and description. He argues that the way in which events are observed and described is at least partly, if not

predominantly, determined by the way in which they are typically observed and described. He notes (pp4-5) in particular the observer's practice of *totalising apprehension*, that is, the ability of the observer to stand 'outside' an event and overview it as a whole. It is this which is equated with the term *synoptic*. This type of observation is typically applied to many instances of the same event, so that the perception of the event as a whole is 'totalised'. He gives the example (p98ff) of a calendar for an agrarian society, which shows the change of seasons and the type of agricultural practices associated with each season. He notes that a synoptic calendar would represent the events of many years, and totalise the annual variations of season or the minor variations in practice between different parts of the agricultural community. On the other hand, a calendar for a single year would present a much more individual picture, and would probably look quite different to the synoptic calendar.

The key elements of Bordieu's description for our purposes are that a synoptic view is one which stands outside of, and totalises, the object in question. Essentially, it is a global perspective, one which enables the object to be seen and understood as a static whole. Further, from the global vantage point, it is quite easy to see the similarities between individual events, and hence to totalise them under the umbrella of one description. In contrast, a dynamic perspective is non-global: it cannot stand outside the object in question and see it in its entirety. It therefore does not totalise, but considers individual instances.

In relation to language and text, the non-global characteristic of a dynamic perspective means that a text cannot in fact be viewed as an object; it is not possible to 'see' all the choices that have been made in the text. Rather, the choices must be observed moment by moment, in a progressive

fashion, as they unfold; the aim is to explain what might come next, considering the available options in light of what has already been chosen. This understanding enables us to adopt a more positive term for the non-global characteristic, namely that of being *progressive*. Text and language viewed in this manner are viewed as if they were unfolding; as the end cannot be seen, it is necessary to start from the beginning and build an explanation or description progressively. It is important to note that such a perspective can be applied irrespective of the mode of the data. It is obviously pertinent to the description of the spoken mode, which is inherently process-like in nature, but it is also possible to describe a written text in a progressive fashion as if it were unfolding, even though a written text clearly exists as an 'object'. When applied to a written text, it means that the description unfolds without taking advantage of knowing the end-point of the text.

The dynamic perspective at any one moment applies to an individual text, that is, a particular instance of the system. In contrast, the global point of view enables the text to be treated as a static object, and tends to be applied to 'text' in its collective sense. The active/static dichotomy is elaborated in the next section, but here we note a further implication of the progressive/global dichotomy in relation to the incorporation of time into the model.

3.2.1 Retrospective and prospective positions

A global, synoptic perspective operates *hors du temps*, or 'outside' of time; the flow of time does not impinge upon a point of view which stands outside or above text. On the other hand, a progressive, dynamic perspective

necessarily looks forward from its starting position, and so seems to demand the incorporation of a time dimension. Yet while a dynamic perspective does have implications for time, this does not necessarily mean that a dynamically oriented model must account for the unfolding of real time. Firstly, it is not the aim of the thesis to imitate the process of producing a text, so real time considerations are not important; and secondly, what the dynamic perspective demands is not that real time must be accounted for, but that the points at which options become available, as a text unfolds, must be accounted for.

A further complication to the issue of time is that there is a strong association between the nature of the perspective and certain positions in relation to time. While the dimension of time is irrelevant to a global perspective, an analyst can - in a trivial sense - choose to go forward or back in the text. A global perspective tends to encourage a *retrospective* position, one which looks back on the components of the object in question. On the other hand, a progressive perspective tends to encourage a prospective position in relation to time, one which looks forward from a given point to what might be coming next. Retrospection is also possible within this perspective, as once a position part-way through a text is reached, it is possible to look back retrospectively over what has already been produced. But nevertheless, the tendency to associate a global perspective with a retrospective position and a progressive perspective with a prospective position is strong.

In this thesis, the ability to maintain a prospective position will be an important part of the dynamically oriented model to be developed. This does not mean that a dynamically oriented model cannot entail a retrospective position, but for several reasons, we prefer to maintain a dominantly

prospective position wherever possible. Firstly, the strong association between a retrospective position and a synoptic perspective means that the inclusion of the former will encourage the tendency to think in terms of the latter. By avoiding a retrospective position, a dynamic perspective is more likely to be explored in its own terms. Secondly, while it is clearly an option for language users to 'go back' in a text and either retrospectively adjust what they have said or written, or clarify what they have heard or read, not all these processes need in fact to be explained in retrospective terms. An alternative, although less immediately obvious, option is to explain such a process in prospective terms, by bringing forward any previous, actualised text to the current position.

An example of how text can be 'brought forward' is found in Emmott 1989, where it is argued that pronominal referents in narrative are not interpreted anaphorically, by going back in the text to find the appropriate referent, but by bringing forward a frame of reference with the text, so that at any stage in the narrative, the appropriate characters are *primed*, or in ready focus. Emmott's position suggests that within a dynamic perspective, a wholly prospective view is possible, and that it is an option whether to adopt such an approach, or to include some retrospective analysis, going back in the text once some of it has been seen. Hunston (1989:131) confirms that interpretation may be either prospective or retrospective. She discusses the example of a writer producing the sentence <u>There are three reasons why this happens,</u> noting that this can be interpreted retrospectively as a constraint on the writer to produce these three reasons, or prospectively as a guide to the writer as to what might come next in the text; it opens up a particular range of potential.

A third reason for maintaining a dominantly prospective position is that it greatly influences our ability to explain the significance of options as they unfold in a text. This potential is observed by Bordieu (1977:4ff) who argues that an act "receives its meaning ... from the response it triggers off" (emphasis added). When a gift, for example, is offered by one person to another, the meaning of the exchange depends on the way in which it is received; if the gift is refused, an exchange cannot be seen to have taken place. A similar situation is observed by Willis (1987), who in discussing the analysis of linguistic exchanges, argues that each move in an exchange has a range of potential, and that the response to that move will take up one aspect of that potential. For both Bordieu and Willis, it is still possible to apply a retrospective interpretation, namely that the option taken up at the next position (the next act in the exchange of gifts, or the turn of the next speaker in the linguistic exchange) will retrospectively classify the preceding option. But if a prospective position is maintained, it becomes possible to recognise the multi-valent potential of a current option, and to explain even an unlikely next option in terms of the potential it takes up from the preceding option. In other words, whenever a gift is offered, it may always be refused. The refusal does not necessarily have to reclassify the intended meaning of the gift. The notion that the meaning of an item comes from the response it triggers off is a very important one, and as this tends to be obscured by the retrospective position, but highlighted by the prospective position, the prospective point of view will be maintained wherever possible as we develop a dynamically oriented model. This should serve to emphasise the difference between a dynamic and a synoptic perspective.

3.2.2 Expected and actual choices

The prospective nature of a dynamic perspective means that, as only the text which has so far unfolded can be seen, the explanation or description of the text must be based on that partial view. But more importantly, the explanation/description relates to what might come next, that is, the *expectations* set up by the text at that particular point for what might follow. Sinclair (1991:8) observes that: "a major central function of language is that it constantly prospects ahead. It cannot determine in most cases what actually will happen, especially not in spoken interaction, but it does mean that whatever does happen has a value that is already established by the discourse at that point."(1) Prospecting ahead means setting up hypotheses on the basis of a current point as to what might happen next. The prospecting function is readily recognised for the receiver's point of view. For instance Reichman (1985:29), in developing a computational model of discourse, notes that: "An important part of discourse processing ... is the predictions listeners make about the probable surface forms in a speaker's utterances." Similarly, Stucky et.al (1990:272), in an evaluation of Stanley Fish's work in relation to performance stylistics, note that the temporal flow of reading leads to the 'projection' of meanings. "In other words, the reader moves through a text in a sequence and responds to the text one word at a time. The reader's response is thus based not upon the entirety of the text, but on the text as experienced up to that point." These observations are valid and insightful, but the prospective function, setting up expectations as the text unfolds, is not limited to the receiver's point of view. As Sinclair's comment suggests, it is as relevant to the producer's position, as the producer can use the text up to now to 'set the scene' for

what is about to come, and as a basis for deciding what to say next and how to say it.

The quotation from Sinclair also suggests that there is a difference between *prospecting* and *determining* what can come next. This is why, in relation to a dynamic perspective, the term *expectation* is preferred to that of *prediction*. That is, a dynamic perspective does not aim to predict the exact next option following a current option, but to explain the potential that opens up as a text unfolds. Prediction in a narrow sense is not a necessary feature of a dynamic perspective, and is not aimed at in this thesis. Prediction in its narrow sense is explored by Tadros (1985:6), who defines it as "a commitment at one point in the text to the occurrence of another subsequent linguistic event." While such signals of commitment are certainly relevant to a dynamic approach, they are only one aspect of it, and so we use the term *expectation* in a more general way, referring simply to what is expected to happen as a text unfolds. Sometimes this expectation will be so strong that it will have the status of a prediction, but this is not essential. A similar concept is captured by Sinclair's (1985) use of the term *prospection*, by Hunston's (1989) use of the same term, and by Tadros' (1985) use of the term *anticipation*. However, the term *expectation* is preferred here.

Yet, as Tsui (1986) observes, there is a difference between the *expected* choices and the *actual* choices in an unfolding text. When a prospective view is applied to text, choices must be considered as the text unfolds; a dynamically oriented model needs to hypothesize what can come next in the text. But this means that in order to continue to move forward with the unfolding text, the perspective must also move forward. That is, it must be able to accommodate the *actual* choices which are encountered. In attempting

to classify utterances in conversation, Tsui argues (p13) that there is a confusion between "potential function and actual function", that is, between "what actually occurs after a particular utterance, or a particular speech act, and what is expected to occur. A sequencing rule which states that a question (prospects) an answer does not mean that a question will invariably be followed by an answer. But rather, what actually occurs will be interpreted in the light of what is expected to occur." (Original emphasis; cf Willis 1987 and Berry 1987)

This means that an important characteristic of a dynamic perspective is not just that it posits expectations about what is to come next, but that it is able to compare those expectations with what actually occurs. As a text unfolds, the current choice will set up expectations as to what may follow; the actual choice at the next point will take up one of these expectations, and in turn, set a new scene for the next choice. Expectations or hypotheses are posited anew, and so on as the text progresses. The progressive view of choice enables the text to be seen as unfolding, and is thus a central characteristic of a dynamic perspective.

3.2.3 Paradigmatic and syntagmatic choices

The preceding discussion of expected and actual choices clearly shows that, as a text unfolds, a dynamic perspective posits a range of hypotheses which are narrowed down by the next actual choice, which in turn provides an environment for a further range of hypotheses, narrowed down by the next actual choice, and so on. As Fawcett *et al* (1988:122) note: "The identifying characteristic of a 'dynamic' model is that it generates structures as one works one's way through it." This means that as a text unfolds, the part of

the text which has already been generated provides the basis for what might be generated next. Relations among elements *in praesentia*, that is, along the syntagmatic axis, are therefore extremely important. But in a systemic model, it is the paradigmatic axis which is primary: choices among elements *in absentia* provide the resource for making meaning, and structure is on the whole a consequential feature following from paradigmatic choices. For example, the choice in English between an interrogative or declarative clause will determine the word order of the clause: whether the Finite precedes or follows the Subject. The choice pertains to the unit as a whole, the clause, and the consequence of the systemic choice is a particular structure for the clause. The paradigmatic choice therefore acts as a type of umbrella for the unit in question, opening out to give a particular structure for that unit. This is represented in Figure 3.1 below.

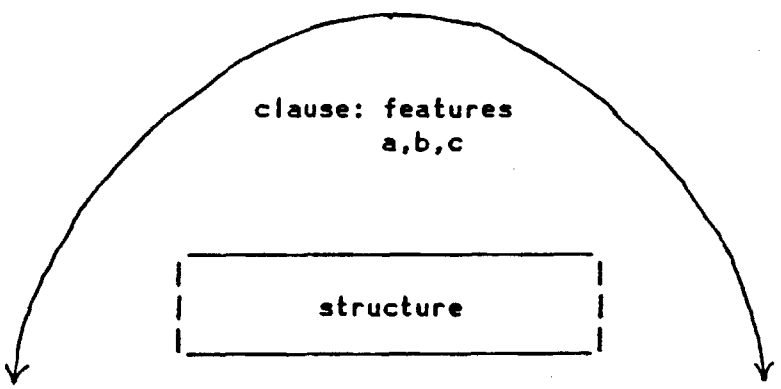


Fig. 3.1 Structure from a synoptic perspective

In this figure, the features are paradigmatic options pertaining to the clause; their selection (between, say, *active* or *passive*, *declarative* or *interrogative*, and so on) determines the nature of the structure, or syntagm,

for that clause. The principles of this explanation apply to other *ranks* in grammar, such as *group* and *word* (see further discussion in Chapter Six), and to other linguistic levels. So from this point of view, a description of a service encounter in generic terms would show the features of the encounter being selected first (such as *appointed/unappointed*, *goods/information*, and so on), and the selection of the features would determine the generic structure of the encounter - whether it has a *booking* element or a *pay* element, and so on.

But a dynamic perspective challenges this explanation of the relationship between paradigm and syntagm. Because of the progressive nature of the dynamic perspective, the structure - whether of a clause element or a particular genre - is only revealed as the text unfolds. The paradigmatic choices pertaining to the whole structure cannot be described, because the whole structure cannot be seen.

Yet it would be most unsatisfactory if the synoptic interpretation of paradigm and syntagm had to be entirely abandoned to facilitate what is, after all, supposed to be a change of perspective. The systemic model, while synoptically formulated, provides a plausible and useful theory of language. If the contribution of the paradigmatic axis to this theory was rejected, it would be difficult to explain how it is that people mean, as meaning is seen to derive from paradigmatic contrast: something is meaningful as much for what it isn't, as for what it is.

As will be seen throughout the thesis, the dynamic perspective does not reject the synoptic formulation of paradigm/syntagm, but interprets it in a different way. Rather than exploring paradigmatic relations as realized by syntagmatic structures, the structures are examined as a reflection of

paradigmatic options. That is, the structural result of one choice is observed, and on the basis of some knowledge of the language system, this is used to try and explain what choices, to be realized in what structures, might come next. For example, if the element *goods handover* has just been realized in a service encounter, there would be a strong expectation for a *pay* element to follow. Thus each element of the unfolding structure gives rise to expectations for the element's probable role or function in paradigmatic terms, and this forms the basis for suggesting what part of the structure, reflecting what aspect of paradigmatic choice, is likely to be next. Syntagm and paradigm are therefore seen to unfold together, and paradigms of options open up as the text unfolds. Hence, rather than an umbrella opening out once to give the structure of the unit in question, the umbrella opens and closes sideways, so to speak, as represented in Figure 3.2 below.

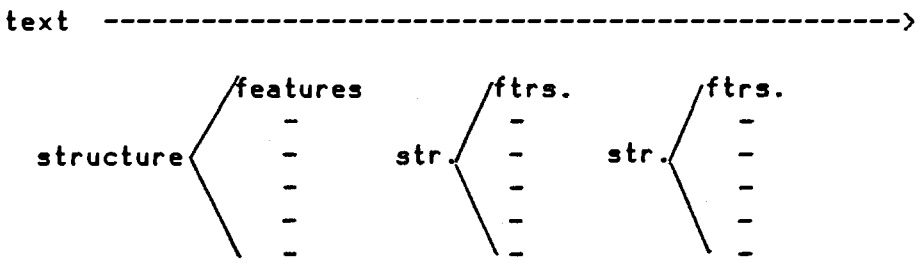


Fig. 3.2 Structure from a dynamic perspective

The account of choice from a dynamic perspective is therefore instigated by the syntagmatic axis: actual choices in the text are taken as evidence for the availability of possible paradigmatic features. The dynamic perspective reveals the points at which, in an unfolding text, options become available, and the kinds of decisions which have to be made in order to proceed from that point. In other words, paradigms become available as the text unfolds.

The synoptic account of paradigmatic choice is essential to inform the dynamic perspective: the system behind the text must be understood in order to be able to hypothesize the role of a given current element. But it is also the case that the dynamic perspective itself adds to the understanding of *function*. The dynamic perspective shows that paradigms become available as the text unfolds; that is, it becomes meaningful to move forward in one way rather than another. It was noted above that the expected options have to be compared with the actual, and the choice of the actual becomes significant when it is a selection from a paradigm. When a dynamic perspective is adopted, the syntagmatic axis is no longer entirely secondary to the paradigmatic axis, but has its own role to play in the organization of linguistic choice.

3.2.4 Constituency and dependency

The discussion of paradigmatic and syntagmatic relations reveals that our understanding of *choice* must be modified if a dynamic perspective is adopted. Given the role of the syntagmatic axis as described above, relations of interdependency between choices, rather than relations of constituency within a choice, are highlighted. Thus the way in which the current position sets up or limits the possibilities for what is coming next is of interest. This contrasts with the synoptic perspective, where constituent relations are highlighted, and interdependency, while still present, is backgrounded as a consequence of the structural output of the choices. 'Interdependency' is here used in a general sense, referring to the implications of a current choice for future choices. It is not meant to

evoke the technical sense of *dependency* (see for example, Butler 1985:105 in relation to the work of Hudson).

However, the focus on interdependency should not be taken to indicate that constituent relations are ignored from a dynamic perspective, nor that relations of interdependency have no part to play in a synoptic approach. Rather, as with the paradigmatic and syntagmatic axes, each perspective interprets the relationship differently. As a dynamic point of view examines the data prospectively, it has to rely on taking each constituent as it comes and considering how it might relate to other constituents in a larger whole. A dynamic perspective therefore speculates on the whole that might be being reflected by the part in view, and thus progressive interdependencies are highlighted as the text unfolds. On the other hand, the global nature of a synoptic perspective enables the whole unit to be seen in terms of its componential elements.

3.2.5 A flexible definition of choice

Another consequence of looking at choice in a dynamic way is that a flexible definition of what actually constitutes a choice must be maintained. From a progressive, unfolding point of view, any part of actualised structure may have a role to play at a variety of ranks and levels, and the expectations posited from such a point can relate to any or all of these. For example, in an unfolding text, a current word will be assumed to be part of a group and of a clause, and so expectations will be posited in relation to the structure of these elements. But as the text continues to unfold, the group or clause of which that word is a part will eventually be seen, and different expectations will be posited from that point. Brazil (1983:52)

makes a similar observation, that a linear view of language raises the problem of defining the size or extent of the unit in question. This issue will be discussed further as the thesis progresses, but is noted here as one of the consequences of adopting a dynamic point of view. From a synoptic perspective the issue does not arise, as the global overview of the text enables the whole unit to be seen, and so for the analyst, it is only a question of deciding which components to focus on.

3.3 The active characteristic

The above discussion of the progressive nature of the dynamic perspective has argued that the text is viewed in an unfolding, moment-by-moment fashion, and that this has implications for the way potential is described from this point of view. But such a perspective can only be applied to *actual* text, and more importantly, to an *active* view of actual text. A synoptic perspective can also be used to describe and explain actual texts, but it treats the text as a static object, and so an active view is not relevant. A text seen from a synoptic perspective is treated as a whole, complete, finished object. As with most objects, one can - so to speak - pick it up, look it over, see the whole object at once, and if necessary, dissect it. But a dynamic perspective has only a partial view of the text in question, and as the text is viewed as an unfolding process - a means of producing an object, but something which is not yet finished - the text must be described and explained as something growing and changing, continually responsive to its environment. From a dynamic perspective, the text must be treated as something *active*.

Treating a text as active requires the potential behind the text to also be treated actively; at issue are the options which open up in a given text, in a given context. At a particular point in an unfolding text, it is certainly not the case that the entire (synoptic) potential of the linguistic system is relevant; only a portion of that potential is viable. The actually available options depend on both the nature of the text leading up to the current point - the text that has already been seen - and on the context within which the text as a whole occurs.

However, a systemic model as currently formulated illustrates a synoptic, static view of potential: linguistic potential is described for all possible instances of a given unit in a given language - the key representational device of the theory, a *network*, presents the options relevant to a particular unit, such as a *clause*, and is able to answer a question such as: 'What are all the possible clause types in English?' This type of description aims to account for the overall potential of the system. It is able to generate actual, but static, instances of the system, that is, instances which are not necessarily part of a particular unfolding text. Yet it is an important part of the systemic model that it aims to provide a contextually motivated description (see further discussion below, and in Chapters Five and Six), and a dynamic perspective is able to capitalise on this.

3.3.1 The components of an active view

Let us briefly consider what it is that facilitates an active view of potential. First of all, while an active view of potential has been opposed to a synoptic, static one, it must still draw on a synoptic understanding of

potential in order to have some foundation on which to base expectations. It would not be possible to suggest the available options at a given point unless the language being dealt with is known, that is, unless the system of the language is understood. As the system represents the static potential of language, it is from this that we begin to draw our expectations for any given text. If presented with a partial text from an unknown language, it would not be possible to suggest how that text might develop, because the relevant options and meaning potential of that language would not be known.

While the general, static potential captured by a synoptic perspective is critical to the operation of a dynamic perspective, it should also be noted that a dynamic perspective provides the basis for an understanding of a synoptic system. This is because it is from experience of actual text that abstractions are made about the system as a whole, and each encounter with a text subtly changes the system as a whole (cf Halliday 1989, 1991). Thus the flow of information between the perspectives is bidirectional, and the two perspectives on text are complementary.

Given a dynamic perspective, the general, synoptic potential is subject to *conditioning factors*; it is this which makes the view active and which narrows the options available at any given point. One feature which contributes to an active view of text is *experience of the system in operation*. Rather than just being aware of the options which occur in the (static) system, it is important to be aware of the patterns of typical choice in the system as a whole, that is, to know which options in the system have a strong likelihood of co-occurrence. One of the clearest instances of this phenomenon is the case of *collocations*, where there is a strong mutual expectancy between two or more lexical items (cf Firth 1968:181). Nesbitt and Plum (1988) discuss a less obvious example of mutual expectation, in this

case between different lexicogrammatical systems. They demonstrate that the different options in the clause systems of *taxis* and *logical semantic relations* do not combine with equal probability for all combinations, but that some combinations have stronger mutual expectations than others. Thus in an unfolding view of text, one particular element may lead to the expectation for another particular element to occur in the immediate vicinity, and this influences the expectations formulated from a dynamic perspective.

Knowledge of and experience with the system is not, however, sufficient to produce an active view of potential. It is critical that potential, to be active, is embedded within a particular context. Language does not occur in a vacuum, but within a *context of situation*, and it is this which motivates selections from the system. In any given context, it is not the case that all the resources of the language will be relevant: the context determines which linguistic resources are appropriate. In the systemic model, this relationship between context and text is encapsulated by the notion of *register* (see, for instance, Halliday 1978 or Halliday and Hasan 1985, and compare with further discussion in Chapter Five). The components of the context of situation determine the range of meanings, or *register*, from which selections in text will be made. These components are the *Field*, *Tenor* and *Mode* of discourse, which can be briefly described as encompassing what activities, events or processes are relevant to the text (is it about quantum mechanics or hairdressing, for example), what the relevant role relationships in the text are (is a person talking as teacher to student, or as daughter to mother, for instance) and the way in which the text is produced (is it a face to face conversation, a letter, an academic treatise?). The actual text produced will reflect these three components. From a dynamic perspective, the context of the text therefore activates certain parts of the linguistic

system, and this affects the expectations which are posited as the text unfolds.

Register theory is not by any means the prerogative of a dynamic perspective, as it has long been an important feature of the systemic model. A contextualised view of language is equally critical to a synoptic understanding of language. It should, however, be noted that the dynamic perspective requires a slightly different use of contextual information than is currently formulated from a synoptic point of view. The most significant difference is that, from a synoptic perspective, contextual information tends to be stated once, as a blanket-type statement applicable to an entire text. The tendency is to describe 'the' register of a text, either using the features in the text to infer the context of situation, or using the components of the context of situation to imply the features of the text. Yet from a dynamic perspective, context itself must be viewed as active, as something which may shift or change in response to selections in the unfolding text. The way in which this is accomplished is described in Chapter Five; at this stage of the thesis it is only important to note that a contextualised view of text activates parts of the linguistic system, and so influences expectations from a dynamic perspective.

It is interesting to note that activation of part of the linguistic potential of a system can also be described as deactivation of other aspects of potential. That is, by focussing on one range of meanings, another range is simultaneously backgrounded. Throughout this thesis, it should be remembered that references to 'an opening up of potential' are also references to a 'narrowing' of potential. Lemke (1989:15-16) highlights the de-activation aspect of contextual features, arguing that a *textplan*, derived from context, "specifies certain typological parameters of the text-to-be-

produced. It is that narrowing which begins to make textproduction tractable; only some paths can be followed" (original emphasis). In other words, given a contextualised view, only parts of the system are likely to be drawn on in the production of a text in that context. It is the theory of context which highlights those aspects of potential which have been opened up, but this simultaneously backgrounds a large part of the overall system.

Yet experience of the system and an account of context are not the only factors contributing to an active view of text. It is of course essential to account for the history of the text as it unfolds: the choices available in the middle of a text, for example, are not the same as those available at the beginning. Each choice made in the development of the text has the potential to influence choices later in the text. As Lemke says (1989:6), we need to know "how the selections up to now condition the probabilities for selections now." (original emphasis) For instance, if a text signals a particular attitude in relation to something mentioned in the text, say bloodthirsty in relation to troops, it would be expected that a subsequent mention of troops (by the same speaker) would embody the same attitude.

The previous history of the text is one area in which the choice between perspectives has significant consequences for the shape of the model to be developed. If the text is to be viewed progressively, then the history of the text needs to be carried forward, so to speak, with the ongoing development of the text. On the other hand, if a global position is allowed, then the history of the text is already available to be referred back to when necessary.

It should be seen from this discussion that an active view of text draws on a variety of different, interacting components: it is not only based on an

understanding of the synoptic system, but is conditioned by experience of that system, by context, and by the unfolding text itself. A framework for incorporating these components is proposed in Chapter Five.

3.3.2 Real and fossilised choice

A consequence of taking an active view of text is that the choices seen from this perspective are actual choices, in contrast to the static, fossilized choices which arise from a synoptic perspective. Brazil observes (1985, 1990) that the view of language as object enables choices to be decontextualised; such choices are thus quite different from *existentially valid* choices, that is, "that set of possibilities that a speaker can regard as actually available in a given situation" (1985:41). McCarthy (1987, 1988) draws on Brazil's argument to demonstrate the difference between decontextualised and existentially valid lexical relations. For instance, lexical items which can be regarded as synonyms when decontextualised may, in the context of a particular text, be seen to be in an antonymic relation, as in don't flog your goods; sell them, where flog and sell are contrasted. It is just this difference between active and static choice which prompted Ventola's (1987) study of genre, as discussed in the preceding chapter, as she had observed that the generic elements in actual texts showed evidence of mixing, skipping, sidetracking and backtracking, whereas the conventional, static view of genre represented generic choices in smooth, sequential patterns.

The desire to capture a less fossilised view of choice (although not necessarily to model a dynamic perspective) can also be seen in the study of lexis put forward by *Cobuild* (cf Sinclair 1987). Cobuild uses a large,

computer-held corpus of English as evidence for statements about lexis as it is actually used in contemporary English. The existence of such studies is evidence that the difference between 'real' and 'fossilised' choice is one of which researchers are acutely aware, and the exploration of a dynamic perspective can contribute to this, by elaborating the operation of an active view of choice.

In summary, a dynamic perspective must incorporate an active characterization of potential: it requires an understanding of the possible in terms of the potential of the system at a given point, and of the likely, in terms of the factors conditioning that potential in a given text. The appropriate question to ask is 'what (systemic) choices are relevant at this point, in this text?'

The concept of active potential is not original to this thesis. As noted in the previous chapter, Martin (1985) explored the difference between active and static potential. Also, in a discussion of intonation, in the context of studying written and spoken language, Halliday (1985b:59ff) observes that speakers of a language do indeed draw on context of situation and the unfolding of the text itself to posit expectations about the language to come. He notes that while it is difficult to pinpoint the beginning of, for instance, a conversation, we can accept the notion of a starting point, which is:

> ...the context of situation: the features of field, tenor and mode which determine the kinds of meanings that will be exchanged.
>
> From the moment that there is an environment ... a member of the culture can make predictions about the language that will follow, with a better-than-chance probability of being right. There are expectations from the start: set phrases lining up to be produced, and parts of the linguistic system primed ready for access.

> Once conversation starts, a new element is added: each new step defines the environment afresh. The meaning of whatever is said is 'with respect' to what has gone before. (Halliday 1985b:59)

Thus many of the concepts relevant to an active view of potential are already formulated within the context of the systemic model. But to develop a dynamic perspective on language, the components themselves must be interpreted in dynamic terms, and it is necessary to demonstrate how a fully active view of text affects the resulting linguistic analysis.

3.4 The probabilistic characteristic

In the discussion of the progressive and active characteristics of a dynamic perspective, another characteristic has been assumed, namely that a dynamic perspective is essentially *probabilistic* in nature. As a dynamic perspective takes a progressive view of text, the options which open up from a given point are invariably options, that is, multiple in nature. It is only rarely that the next actual choice can be predicted with absolute certainty. But more importantly than just positing multiple expectations, the active view also means that these expectations are weighted in terms of relative likelihood; some options will be more likely to occur than others. A probabilistic evaluation of choice is therefore an integral part of a dynamic perspective.

This position regarding probabilities is not universally shared. O'Donnell, for example, disputes the relevance of a probabilistic approach, arguing that "While language is essentially probabilistic, statements about language need not be. We can state categorically what can come next (e.g. either a or b or c) without attaching any probability weightings to these

choices. These are categoric statements." (personal communication) Certainly, from a dynamic perspective, the options that open up as the text progresses can simply be listed, or as O'Donnell puts it, stated categorically. Yet this would be unsatisfactory for several reasons.

Firstly, it is most certainly not the case that everything that is possible as a text progresses is also equally likely. Evidence for this can be found in cases of 'surprise' in text, where something possible, but unlikely, is selected. If the statements about what can come next are made categorically, it would be difficult to capture such an interesting feature.

Secondly, and as Koch (1985:285) suggests, the incorporation of probabilities adds to the interpretation of the value, or meaning, of moving forward in one way rather than another. For instance, if the next actual option is the one which is most expected, this has less meaning than selection of a less expected option (cf Shannon and Weaver's 1949 theory of information, and Shannon 1951). Categoric statements would give a much more restricted understanding of the functional nature of the dynamic perspective.

Finally, there are arguments to suggest that variability should be incorporated as an intrinsic part of any language model. Halliday, for example (1987:5), says that "it is simply not the case that if we knew everything there was to know then we could predict every instance. In other words, variability is not a limitation of the observer, it is a feature of the system." The incorporation of categoric statements encourages the attempt to 'predict exactly', an aim which was explicitly rejected in the discussion above of the progressive characteristic. On the other hand, the incorporation of probabilistic statements not only discourages this tendency, it goes hand in hand with a search for the conditioning factors which give

rise to the probabilistic statements. As a text unfolds, the conditions of the moment determine the expectations for one option rather than another at that point; the probabilistic weighting of a choice at a particular point in a text could be quite different to its overall weighting in the system as a whole. For example, Nesbitt and Plum (1988) demonstrate how it is that contextual features influence the probabilistic weighting of systemic options, arguing that it is necessary to examine not just the available choices in language, but also the patterns of typical choice.

It might be expected that to account for probabilistic statements, a formal theory of probability would be required (see for example, Sankoff 1978, Suppes 1970, Smith 1973). However this is not necessarily the case. In fact, a search for exact, numerical probabilities could be quite misleading, as such a search assumes a totalising, global view of the data in question. At issue is a question of relative probabilities, that is, an understanding of what is more likely to occur in a particular instance and what is less likely to occur in a particular instance. For this, it is necessary to know the range of options which are possible, and the conditioning factors which impinge on those options. From the conjunction of these, it should be possible to make relative probabilistic statements (see the proposal in Chapter Five).

It was noted above that a consequence of the probabilistic view is that it facilitates a plausible explanation of features such as surprise or markedness in text. This can be related to a comment by Bee (1974:135), who observes that it is useful to examine points of dysfunction as well as of harmony, in order to try and understand the processes of change from a dynamic perspective. Notions of marked and unmarked choices can also be equated with notions of *typical* and *untypical* choices. Berry (1982:39) notes

that "the rules specify what is typical, thereby providing a basis for explanation of our recognition, interpretation and evaluation of the untypical." Tsui (1986) relates this comment to the concerns of a dynamic perspective, equating *expected* with *typical* and *actual* with *untypical*. This equation reflects the situation where expectations relate to what is most likely to occur in that context, while an actual choice may in fact take up an unlikely option. While Tsui's equation is insightful, it is also possible for the actual choice to be the most expected one, that is, to be the typical choice for that context. This means that the probabilistic ordering does not apply between the expected and actual options, but to the expectations themselves. The actual option to be selected will come from this range of potential, and may be one which was highly or only marginally expected in the context. Again, this emphasises the meaning attached to the selection of one option rather than another: when a dynamic perspective is adopted, the actual can be seen to negotiate with potential. A dynamic perspective therefore highlights a hitherto unexplained aspect of meaning potential.

3.4.1 Simultaneous analyses

A probabilistic component, in conjunction with other aspects of a dynamic perspective, has another interesting consequence for the description of language from this point of view. In the discussion above of a flexible definition of the unit, it was noted that the extent of the unit in question is not necessarily fixed, so multiple possibilities have to be held open at the same time. Similarly, while a next actual option selects from the potential established by the preceding choice, it may frequently be the case that the next option could be interpreted as taking up more than one

expectation posited by the preceding choice. That is, the unfolding of the text cannot always be described definitively, but quite often has to allow that different possible interpretations of the unfolding could be viable. The incorporation of a probabilistic component adds to this tendency, as it provides for a range of possible items. This may seem to invite the spectre of unconstrained analysis, as each element potentially gives rise to a multitude of expectations. Yet the main point of the dynamic perspective is that it makes this problem tractable: a dynamic analysis does not necessarily consider every option which is structurally or grammatically viable, but only those which are active in the context of the unfolding text.

Simultaneous analyses arise under two circumstances. In the first place, if the nature of the current choice is not entirely clear, this will set up different paths of possibility at the next point. So if the current choice might be classified as option x or option y, option x will lead off to one set of possibilities at the next point, and option y to another. The second case of simultaneous analyses arises when a next choice could be interpreted as taking up the current path in several ways. So it may be clear that the (previous) current option x has been taken up, rather than y, but the next option could still be taking up that path in a variety of ways.

The advantage of allowing simultaneous analyses is that it enables options to be analysed progressively as the text unfolds. If a current option is explained as setting up a range of potential, that is, as having multiple roles to play, it is not necessary or important to definitively 'classify' such an option; the multiple paths will be followed until a point at which it is clear that only one is still viable. Occasionally, it will not be possible

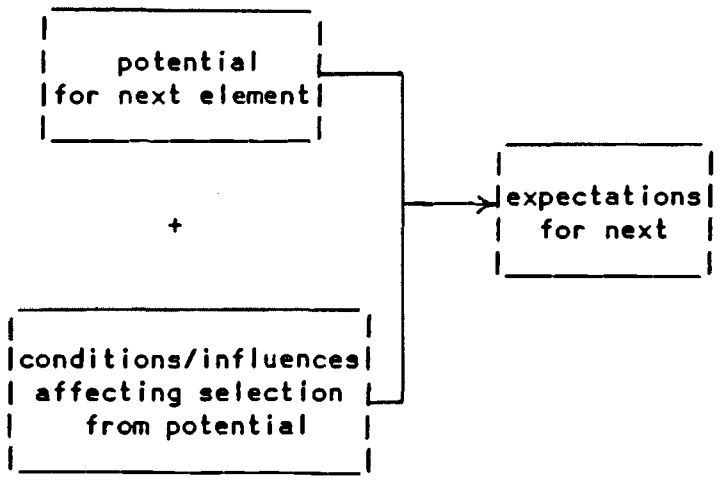
to resolve the simultaneity, in which case the multiple options are followed through for the duration of the path.

In conjunction with the probabilistic account of choice, a further advantage of allowing simultaneous analyses is that it explains how a next actual option may create an effect of markedness. Markedness occurs when a next actual option is an unlikely one, taking up an expectation which has a low likelihood, but which is still possible. Again, it is not necessary to retrospectively return to the preceding option and reclassify it in the light of an unexpected, later choice. As noted before in relation to prospection and retrospection, it is not essential for a dynamic perspective to have a purely prospective explanation of unfolding text; but in this case the focus on the prospective view results in a plausible explanation of a particular phenomenon, without the need for a cumbersome feature such as retrospection.

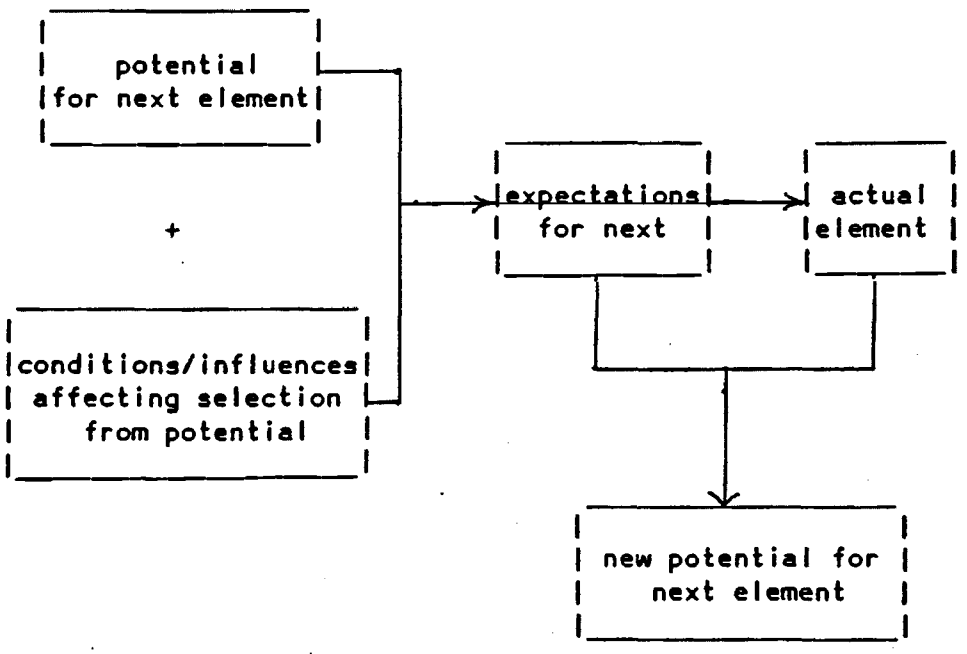
3.5 Representing the characteristics of a dynamic perspective

A dynamic perspective on text and language clearly draws on a variety of components in order to proceed. It is useful to represent them here in a schematic form, to illustrate the way in which they interact. Only the major details of the above discussions are included in the diagram.

Firstly, expectations for a next point are influenced by the generalised, synoptic potential for the next element, and by the conditioning factors (experience of the system, context, history of the text) which are relevant at that point. These factors are represented below:



Secondly, once the expectations are put forward, they are compared with the next actual choice. The comparison of these two components, gives rise to a new set of generalised potential for the next element, as follows:



Again, the relevant conditioning factors are considered in conjunction with the new potential, giving rise to another set of expectations for the (new) next choice, and so on. These additional elements are presented below:

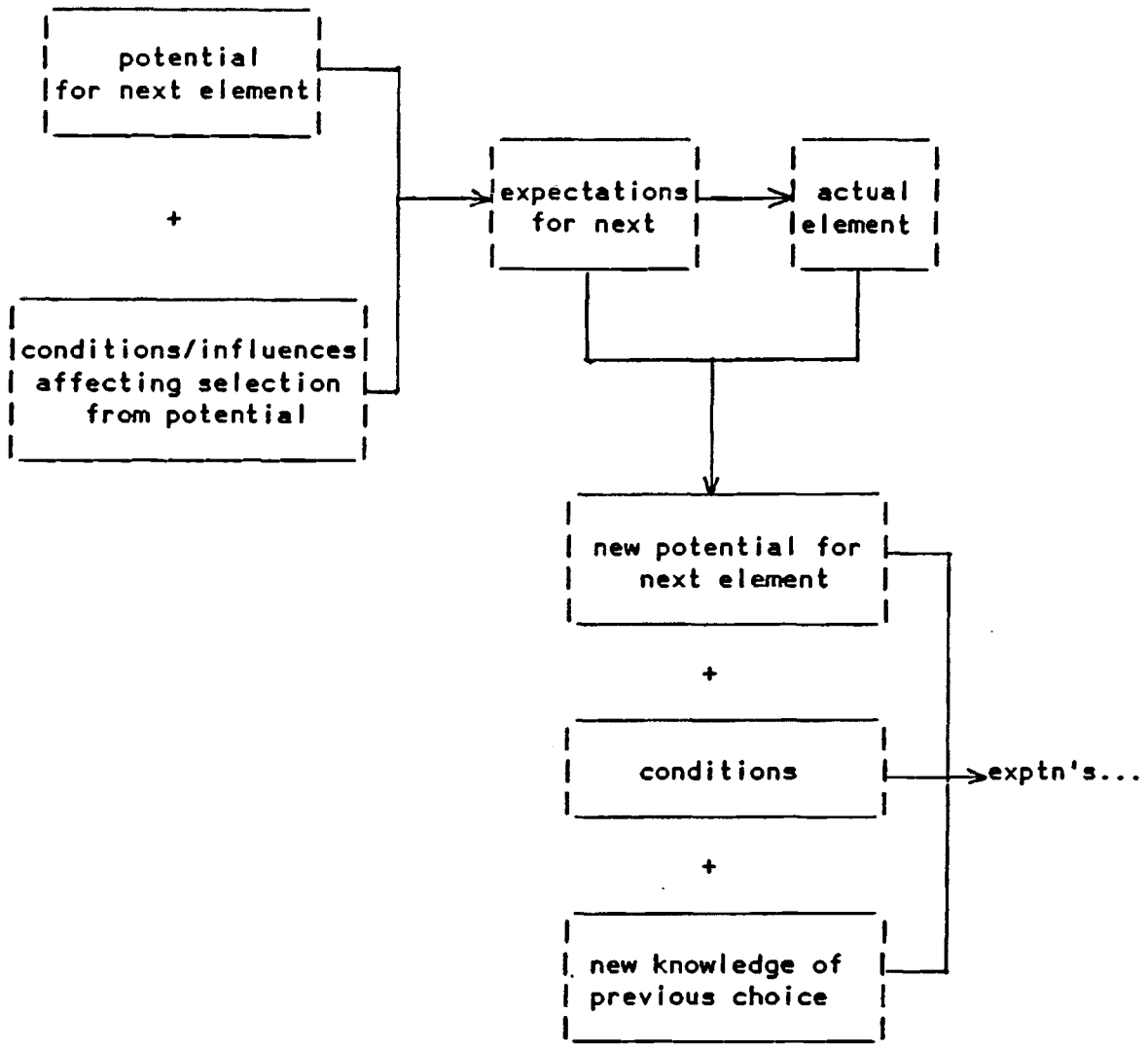


Fig. 3.3 Major characteristics of a dynamic perspective

This figure does not represent many of the details alluded to in the discussions of this chapter; for instance, it does not specify what constitutes an active view (the conditioning factors), explain the effect of comparing expected and actual choices, or account for the way in which multiple possibilities can be held open. It does, however, represent a useful

summary of the central characteristics of a dynamic perspective, and provides a framework for examining more detailed aspects of modelling. Most importantly, this type of framework is applicable to a variety of linguistic levels - choices pertaining to grammar, discourse, genre and so on. It is not restricted to a particular level of description or to a particular type of mode.

3.6 Generation versus parsing

It is important to clarify whether the preceding model is intended to be one for generation or parsing, or both. Generation and parsing represent an opposition in linguistic modelling which is reflected by a variety of other terms. We represent some of these terms below:

generation	-	parsing
producer	-	receiver
encoder	-	decoder
speaker, writer	-	hearer, reader
produce	-	analyse, interpret

The dynamically oriented model proposed in this thesis relates most easily to the group of terms on the right hand side above. The model clearly focusses on questions like 'what's going on in this text?', and so, parallels such notions as analysing, interpreting and so on. The fact that the model includes a component which compares expected options with the next actual option is further evidence that the model must be on the 'interpretation' side. It must, after all, be receiving something that is being produced, to be able to make such a comparison.

However, neither this component nor any other precludes the model from also being appropriate to the left hand group of terms, that is, to the 'generation' side. This is because the model explains the ways in which a speaker can choose to develop a text. Further, it accounts for the effect of the producer developing a text in one way rather than another. The model does not account for all aspects of generation; as we have suggested above, it needs to operate in conjunction with a synoptic perspective, that is, with a synoptic understanding of the system at its base. But it does have interesting implications for generation, and as the thesis develops, we will try to illustrate the points being made from a producer's and receiver's point of view.

3.7 A comparison with Ventola and Steele's list of features

Any attempt to list a finite set of requirements or features characterizing a theoretical approach is bound to be open to revision, clarification, extension or contraction. While no claim is made that the above discussion is definitive, the features described there are considered to be central to understanding what a dynamic perspective means. Another attempt to characterize the requirements of a dynamic approach is presented by Ventola and Steele (1983), who are interested in elaborating the requirements of a dynamic representation of casual conversation. They summarize the requirements as follows:

(1) It should allow for 'skipping': variation in the sequence of elements.
(2) It should provide for recursion, both 'linear recursion' (iteration) and embedding.
(3) It should accommodate optional elements, and uncertainty of boundaries between elements.
(4) It should bring in both verbal and non-verbal realizations.
(5) It should show clearly the interactional nature of dialogue: that it is a text with shared construction.

In addition, the dynamic representation should also link up with a synoptic one showing the system behind the text (e.g. system networks).

Ventola and Steele 1983:25-26

The way in which this list is expressed makes it appear significantly different to the concerns discussed above. The specific focus on casual conversation leads to the incorporation of particular components (points 4 and 5) which have not been dealt with in the preceding discussions. However, we concur that they are desirable features to include in a general model of a dynamic approach, as casual conversation is one of the possible mode variations of language, and the model should be able to account for its particular nature. Their other major points, points (1)-(3), reflect the consequences of taking a dynamic approach to language, all relating to the different interpretation of choice that is required from such a perspective. Point (3) relates closely to the discussion of the flexible definition of the unit, arising from a progressive, unfolding view of the text. Point (1) is a consequence of an active view of text: the sequence of elements will vary according to the features of the particular text in question, and cannot be stated once, synoptically and explosively, for all possible combinations of elements. Point (2) was not raised in our discussion, but refers to the possibility of one option being selected more than once; again, this is dependent on an active view of text. Interestingly, Ventola and Steele do not consider probabilistic weightings as part of the dynamic representation.

Their additional point, that the model should link up with a synoptic representation, was captured in the discussion of an active view of potential.

Thus while Ventola and Steele capture many of the implications of a dynamic perspective, they do not make explicit what it is that characterizes a dynamic perspective, nor what it is that differentiates such a perspective from a synoptic approach. If a dynamic representation is to be explored, it is essential to understand what it means to take a dynamic perspective on language. The preceding discussion has tried to accomplish this; the characteristics of a dynamic perspective and their consequences are summarized as follows:

> From a dynamic perspective, language is considered to be active. Therefore, such a perspective adopts a non-global view, observing language as it unfolds, or as if it were unfolding. The view is dominantly prospective, looking forward from a given position at what might come next. Actual text, in context, is examined. Potential must also be treated actively, that is, by drawing on an understanding of the system and on experience of the system in operation, and most importantly, by considering the options in light of the context of the text, and in light of the preceding history of the text. As a result of this view, the model proceeds progressively, non-explosively, with a dominantly syntagmatic environment for choice, and with relations of interdependency between choices being highlighted. Choices must be weighted probabilistically, and the appropriate unit of choice must be flexible, with the model allowing for potentially simultaneous analyses if necessary.

When the above requirements are taken into account, certain expectations about the nature of the description in light of a dynamic perspective emerge. Essentially, the description should be progressive, contextually based and probabilistically weighted. It should be able to account for actual choice in the data, and show the conditions under which an unlikely choice may be

made. The following chapter explores existing models which aim to account for some of these features.

Endnotes

1 (Section 3.2.2): It must be acknowledged that the discussions in this chapter have been greatly influenced by Sinclair's work (especially 1983, 1985, 1988a and 1991). We have not, however, taken up all his suggestions. In particular, we have not explored his recommendations for the study of planes of discourse (cf Sinclair 1983).

CHAPTER FOUR

MODELS OF UNFOLDING CHOICE

4.1 Introduction

The preceding chapters have argued for a particular way of looking at language, and this argument has been presented as a question of general approach or attitude towards language. But a perspective on language is not just a question of attitude; the perspective one takes has potentially far-reaching implications for the way language is modelled. Let us explain further what is meant by 'modelling' in the context of this thesis.

In his 1961 paper, *Categories of the Theory of Grammar*, Halliday describes language theory as something which 'accounts for how language works'. A theory consists in the first instance of a scheme of interrelated categories set up to account for the data, the data being observed language events, or text. In the second instance, it consists of a set of scales of abstraction to relate the categories to the data and to each other. In this way, the theory should account for why language is the way it is - for how it works. The term *model* is frequently equated with this sense of theory: a model of language is a theory of how language works. We suggest that when *model* is used in this general way, it also encompasses a second observation made by Halliday, that of linguistic *description*. Description consists in relating the text to the categories of the theory.

But *model* can be used in a more immediate sense, as a way of making the theory and description comprehensible and replicable, a means of showing how the nuts and bolts of the theory, so to speak, are put together. The nature

of a model in this sense is entirely dependent on the theory from which it is derived, but it nevertheless has an existence as a device or apparatus which is conceptually separate from the theory.

A change in perspective most immediately demands a change in the model, in the narrow sense just described. In other words, a different perspective may assume the same theoretical categories, and the same linguistic description as that presented from another perspective, but the apparatus or model must be altered to accommodate the new perspective.

The definition of model is raised here because the thesis is concerned to develop a dynamic model of language. Yet it does not aim to develop a new theory of language. Inevitably, however, as a model is derived from theory and description, any challenge to it is necessarily a challenge to both, and as the thesis develops it will be seen that a change in perspective does demand some changes to the overall model. For the concerns of this chapter in particular, though, the focus is that of model in the sense of device or apparatus; the theory is not in question.

In Chapter Two, it was noted that the main systemic mechanism for describing language, the system network, is unsuitable for a dynamically oriented model. It should be clear from preceding comments that if a different perspective is to be achieved within the systemic model, alternative proposals will be necessary. This chapter considers existing representational devices which appear to be dynamically oriented, and evaluates whether they do indeed meet the requirements for modelling a dynamic perspective. These devices or models are examined in relation to only one characteristic of a dynamic perspective, namely the ability to model the progressive unfolding of choice. The examination begins here because, if

this aspect of the perspective cannot be captured by the model, it is impossible to bring in the complementary aspects relating to active and probabilistic choice.

The first models examined below are those which use the network as the basis of a dynamically oriented model. While these proposals do contain some useful insights for various aspects of dynamic modelling, they do not meet the requirements established in this thesis. In particular, they are limited by the fact that a network is inherently synoptic in nature, and the reasons for this are elaborated in section 4.3 below. Following this, alternative representations are examined, these being the *flowchart* as proposed by Ventola; a related but non-systemic model, the *augmented transition network*, and an extension of Ventola's model, the *systemic flowchart*. Each of these three proposals is found to present useful and attractive approaches to the modelling of a progressive view of choice. However, these models share one particular drawback in their representation of choice which means that they are not entirely suitable for the purposes outlined here, and this drawback is elaborated during the course of the chapter.

4.2 Dynamic system networks

As was described in Chapter Three, a dynamic perspective cannot take a global view of data, and so one of the main characteristics of modelling from this point of view is that the description must unfold in conjunction with an unfolding text. Choice must be described in a non-explosive, progressive way. While it will be seen in section 4.3 that a network is not appropriate for this task, several attempts have been made to overcome the synoptic restrictions of the system network, and two of these are considered here for

their potential to model an unfolding view of choice. The explorations of Bateman (1989) and O'Donnell (1986 and 1990) are both developed within a systemic functional framework, and share the common factor of trying to exploit the possibility of transferring control between different systems in order to capture an unfolding view of choice.

Bateman's work is motivated by an interest in explaining how recursively available options can be modelled for computational purposes. In a systemic model, recursive options are those where "a system uses one of its output features as one of its entry conditions." (Bateman 1989:265) That is, a particular selection from a given system leads back into the same system so that another choice can be made. Recursive options or systems are needed to capture *dependency* organization, which Bateman notes (p263) is "one distinctive area of grammatical regularity that has been placed along the dynamic dimension." Dependency organization "attempts to capture a different kind of linguistic patterning to that found in constituency-oriented treatments." (p264) It is typically found in complex structures, such as clause complexes, where a sequence of interrelated clauses are built up to form a complex structure, but "without resorting to structural embedding." (p265) One unit follows another, rather than one unit being a part of another.

Bateman argues that the typical means of representing a recursive option in the systemic model - a loop from one option in a system back to the entry condition of that system - is not adequate for computational purposes. This is because the meaning of such a selection is not explicit: the device enables arbitrarily long structures to be built, but does not explain what it means to choose a complex rather than a simple structure. He suggests (p281) that "it is crucial that the dynamic dimension be as representationally constrained and theoretically-motivated as is the synoptic account of system

networks." In order to meet this requirement, he proposes (ib.id) that "we should constrain what can appear in the dynamic description along the same lines as the synoptic description: i.e., as a network of possibilities." However, he adds that the dynamic possibilities "are to have particular dynamic consequences." What Bateman does is to separate the synoptic and dynamic aspects of description, reserving the synoptic network for choices relating to constituency organization, with a link from those systems to 'dynamic' networks which relate to dependency organization. This is represented below in Figure 4.1.

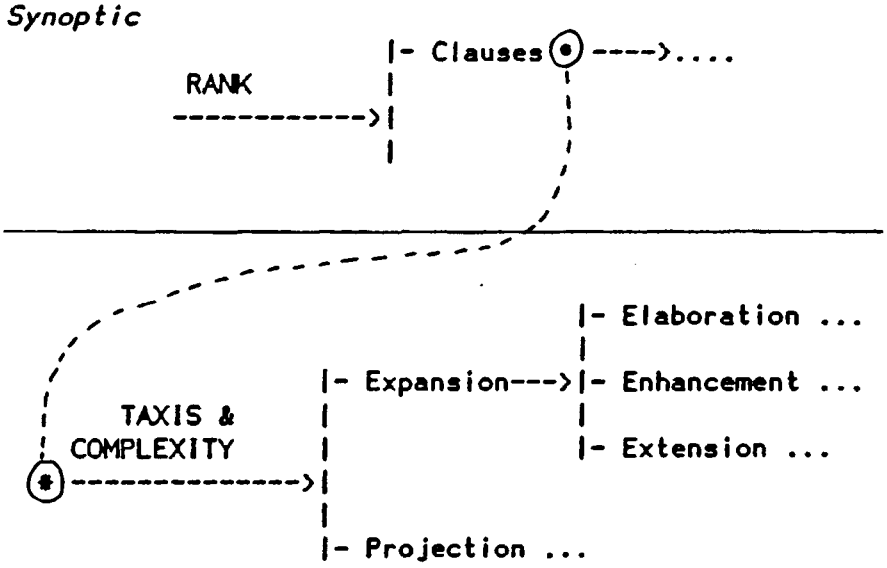


Fig. 4.1 Bateman's synoptic and dynamic potential

(Bateman 1989:282)

What this figure means is that every time a selection is made in the *clause* system, the potential is available for a simultaneous selection to be made in a system relating to the taxis and complexity of the clauses (that is, whether clauses are joined hypotactically or paratactically, and with what type of semantic link between them; cf Halliday 1985a, Chapter 7). The

potential needs to be activated by a positive response to a question such as 'Are there grounds for complexing?' Once activated or entered, the dynamic network determines the nature of the relationship between the clauses in the complex being constructed. The nature of the choices made in the 'dynamic' network constrain the choices made in the synoptic network, determining the types of relations which may hold between clauses in a complex (p283). In other words, the dynamic network constrains what may follow, and it is this which provides an unfolding view of choice.

Yet Bateman's model has several limitations. Firstly, the way in which Bateman separates the two aspects of description seems to make the dynamic dimension secondary to the synoptic dimension, and even Bateman himself acknowledges (p281) that the synoptic and dynamic are: "two fundamental dimensions of linguistic theorizing which are both importantly distinct, each adding their own kind of organizational resource, and yet inextricably linked." Hence it seems theoretically unsatisfactory to represent one as subservient to another.

A second flaw in Bateman's model is that while one network is labelled as being 'dynamic', the real dynamic force of his model is in the interaction between the two systems. The synoptic system says that a complex structure may be chosen if desired (by using the asterix to signal the link with the dynamic system), and it enumerates the types of constraints which will hold between interdependent clauses if a complex is chosen (through co-selection of features made in the synoptic system). The dynamic system elucidates the types of relations which can hold between the clauses in the complex. But the motivation for joining two units together in a complex structure is not formulated in Bateman's model (other than saying 'a positive response is required to a question such as 'are there grounds for complexing?'). While

Bateman cannot be criticised for not fully elucidating the nature of this mechanism, it highlights the fact that he has not actually achieved a dynamic perspective in his model. The dynamism is buried in the interaction between two synoptically formulated systems: while one system may be said to have 'dynamic consequences' (as it creates dependency structures), neither system presents a dynamic perspective on choice.

As will be argued in the next section, a dynamic perspective cannot be represented with a network, and by extension, it seems highly unlikely that it could be represented by interaction between two networks accounting for different aspects of the data. Thus while Bateman's proposals seem to give some grasp of an unfolding view of choice - because the synoptic system provides a context for the 'dynamic' selections - the proposals ultimately do not enable a dynamic perspective on choice to be achieved.

The model proposed by O'Donnell (1986, 1990) is motivated by trying to account for three phenomena which are difficult to capture in synoptic models: *phase* (the repeated availability of certain options); *suspension* (suspending the syntagmatic structure of one unit while another intervenes, and taking up the suspended structure after the completion of the intervening one) and *linear recursion* (as with Bateman). He discusses these phenomena in relation to the *exchange*, a rank in discourse (cf Sinclair and Coulthard 1975, Berry 1981), and proposes a two-part model to account for the dynamic aspects of his data. The first part of the model consists of two strata, "a level of *exchange context*, representing the various points of the exchange structure, and a level of *move potential*, representing the dynamic potentials available at these points." (O'Donnell 1990:9) The second part of the model is the explanation of how these two strata interrelate.

O'Donnell proposes the stratum of *move potential*, and this represents the generalized behaviour potential open to speakers when interactively producing an exchange. The move network is presented below.

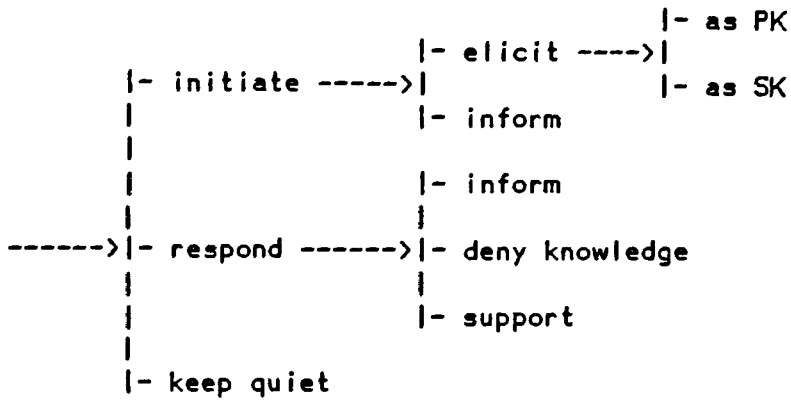


Fig. 4.2 O'Donnell's move network (O'Donnell 1990:9)

This network represents "all moves which can be performed" (op.cit p9): for instance, when participating in an exchange, a speaker can either initiate, respond, or keep quiet. If initiating, this may be done by either eliciting a response from the other speaker (and if so, either as *primary knower*, PK, or as *secondary knower*, SK), or by informing the other speaker of something. Similarly, various types of response are possible. It is important to note that this network is for *moves* in an exchange, not for *features* of an exchange. A more typical, synoptically oriented network would entail features pertaining to the exchange as a whole, such as 'negotiated exchange' or otherwise. In O'Donnell's model, "different types of exchanges are produced, but only as a consequence of the sequence of individual moves selected by the participants."

The second stratum, the level of *exchange context*, is proposed to account for how speakers choose appropriately from all these options open to

them, and it shows the variables constraining the moves which can be made by a speaker. The variables relate to Halliday's metafunctional components (explained further in Chapter Seven), and are *propositional negotiation*, relating to *ideational* considerations; *speaker role*, relating to *interpersonal* considerations, and *speaker turn*, relating to *textual* considerations. The options in the exchange context are presented below in Figure 4.3

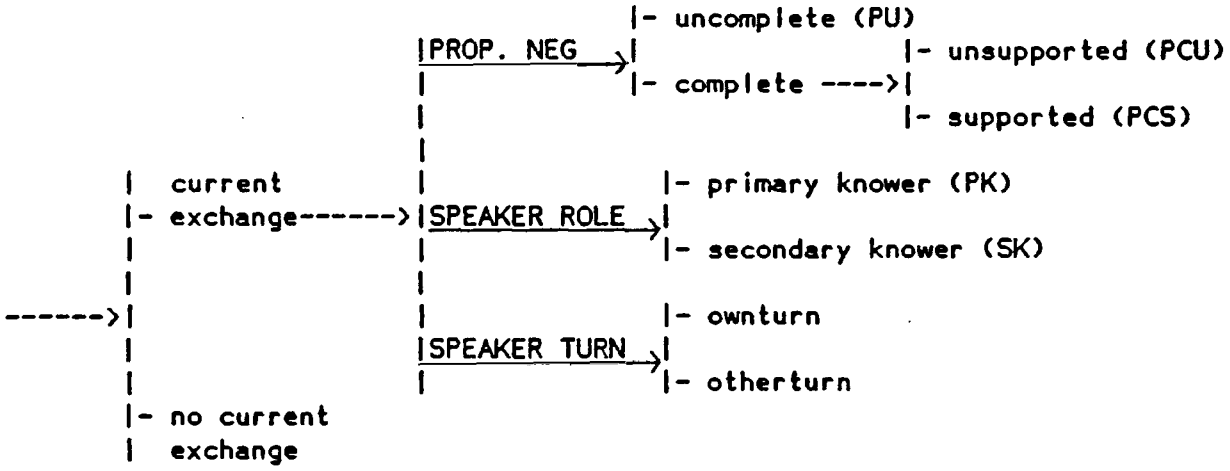


Fig. 4.3 O'Donnell's *exchange context* (O'Donnell 1990:10)

Selections from this network result in an *exchange state*. For example, an exchange state might consist of the selections supported/primary knower/ownturn, and this represents a different state to, say, the selections uncomplete/primary knower/otherturn, and so on. O'Donnell claims that these contextual variables are 'dynamic': "they change during the unfolding of the social process." (p11) That is, for each exchange, new contextual variables are selected from the exchange context. Therefore, according to the context of the current exchange, the moves available to a speaker will be restricted. For example, the choice of *speaker role* in the exchange context will restrict

(or perhaps more correctly, activate) the corresponding choice in the move network.

The next part of O'Donnell's model explains how selections from the exchange context are motivated, that is, how selections from the move network *modify* the exchange context, the exchange context in turn *activating* options in the move network. This is achieved by making the contextual effects of each move option explicit, by introducing a new type of realization statement. For every selection in the move network, a realization statement is attached which modifies the context. For instance, if a speaker selects the options initiate/inform from the move network, the effect of this on context is to assign the speaker the *primary knower* role, and the listener the *secondary knower* role. This particular contextual configuration then restricts the next round of options which can be made from the move network. Thus a cyclical relationship is established, with context activating behaviour, and behaviour modifying context. This seems to be a very appropriate way to deal with a dynamic perspective: each choice (in this case, from the move network), depends on the preceding choices made, which have established or affected the context for the next choice.

O'Donnell extends his model to deal with the linguistic features which first motivated his work. Phasally available options are accounted for by introducing an activation rule which can be applied at any point in the exchange. So, for the possibility of *aborting* an exchange, the selection of current exchange in the exchange context activates the move options of either initiate or keep quiet, thus allowing a participant to keep quiet, or abort, in any part of the exchange. This rule is simply introduced into O'Donnell's model, and does not lead to the complications arising in synoptic accounts of such phenomena (as a result of having to allow an option to occur at every

selection point in the model), and so it can be said that the model does allow phenomena to be phasally available.

For the phenomenon of recursion, O'Donnell says (p15) that "recursion can occur whenever it is possible for a series of actions to reinstate a previous contextual state, thus allowing the same action choices to be made again." He therefore modifies the networks and rules of the model so that a particular selection from the move network is able to activate the contextual selection which motivated that move selection in the first place (and O'Donnell exemplifies this for contradictory statements).

The third phenomenon which O'Donnell claims to account for is that of *suspension.* This is dealt with by adding another component to the model, "a way of remembering suspended exchange contexts until they are required again." This is achieved by using *push-down stacks* (as discussed in section 4.4.1 below in relation to Augmented Transition Networks). When an exchange is suspended (interrupted by another exchange), the exchange which is suspended is pushed on top of a *stack* of exchange contexts, and the suspending exchange is pushed on top of that, thus becoming the new, current exchange, and pushing the original exchange down. Any subsequent interruption gets pushed on to the top of the stack, and when a suspending exchange is finished, it is *popped* off the top of the stack, allowing the original exchange to become current again. Thus different exchange contexts can exist at the same time, and the network options and context activation rules are modified to allow *pushes* and *pops.*

Therefore O'Donnell's model would appear to be highly successful as a dynamically oriented formalism. He has modified the system network in such a way that it appears to be able to model unfolding choices. The first

modification was in terms of what the network represents: O'Donnell has produced a network not for features of an exchange as a whole, but for potential moves in an exchange. This change alone avoids the global, umbrella-like nature of the standard network. Secondly, he has modified the notion of realization, so that the realization of one move can be seen to affect the context for the realization of the next move. In particular, this explanation of the context-text relationship from an unfolding point of view is insightful and useful, and will be drawn on further in the following chapter.

But on the whole, O'Donnell's suggestions are difficult to generalise to other areas. Even within his account of the exchange, additional rules and formalisms are required to account for the special cases he focusses on (phase, recursion and suspension). It would be difficult to achieve a comparable elaborateness of explanation in other areas of linguistic description, where the range of options might be broader than is the case for moves in an exchange, and where the relationship to context is less clearly delimited than is the case when speakers are taking turns to produce the exchange. Further, the model is designed to account for generation, what speakers can do (choose to initiate, to take on the role of primary or secondary knower, and so on), and while O'Donnell cannot be criticised for not dealing with an area he has not aimed to deal with, his proposals would require considerable modification in order to be appropriate for analysis as well.

It is interesting to consider why O'Donnell's proposals are so attractive, and yet quite difficult to make use of in other areas. We suggest that this is because the role of the dynamic perspective in his model is limited. While he has clearly shown the way in which each move in the

unfolding text affects the potential options for the next move in the exchange, there is nothing to explain the motivation for selecting one move rather than another. For example, a speaker can choose to respond to a preceding option by informing, denying, supporting or contradicting. The selection of the option depends partly on the current exchange context, for example if the context is Proposition Completed but Unsupported; Speaker's Ownturn, then the options to support or contradict are open. But there is nothing in the model to motivate the choice between these. Clearly, the network represents a meaning distinction between these: supporting and contradicting do not mean the same thing. Yet this meaning derives from a synoptic perspective. From a dynamic point of view, at least in the way it is represented in O'Donnell's model, there is no meaning difference between supporting and contradicting. What the model needs to show is how these differ as seen from a dynamic perspective. While O'Donnell shows that the choices available as the text unfolds depend on the preceding choices made, there is no explanation as to why the text would unfold in one way rather than another. When a speaker chooses a particular move, they are choosing a way of relating to the preceding move; the effect of this is interpreted as *support*, *contradict* and so on, but the observation of this effect does not account for its selection.

In conclusion then, in terms of accounting for the observed ways in which turns may be passed between speakers, O'Donnell provides a model which goes a considerable way towards accounting for the dynamic unfolding of those choices. But an aspect of the explanation is missing, an aspect which accounts for what it means to move forward in one way rather another. As a result, phenomena not already accounted for by O'Donnell's model have to be incorporated through additional rules or formalisms. On the other hand, a

model which also accounted for the meaning of moves in relation to each other would be able to explain additional phenomena in terms of the principles of meaning, and a way of accomplishing this is explained in Chapter Five. But a further flaw in O'Donnell's model is his use of system networks. While he does not actually claim that his networks are 'dynamic', as does Bateman, we will see in the next section that they are inherently synoptic, and therefore difficult to use as the basis of a dynamically oriented description.

4.3 Synoptic limitations of modelling with a network

The models examined above use system networks as part of their dynamically oriented representations, but it was noted in Chapter Two that Ventola described the system network as being 'explosive' in its representation of choice, and thus, inherently synoptic. If this is the case, then the system network is not appropriate for a dynamic perspective. In this section, we explore the synoptic limitations of the network as a modelling device.

It is certainly true that a system network can be read or used in either a dynamic or a synoptic way. In *An Introduction To Functional Grammar*, Halliday defines the term *system* and describes different ways of reading the system:

> A system network is a theory of language as choice. It represents a language, or any part of a language, as a resource for making meaning by choosing. Each choice point in the network specifies (1) an environment, consisting of choices already made, and (2) a set of possibilities of which one is (to be) chosen; (1) and (2) together constitute a 'system' in this technical sense. This can be read either synoptically or dynamically: either 'if feature *a* (and *b*...) is present, then either *x* or *y* (or *z*...) is present', or 'if you have chosen feature *a* (and *b*...), then go on to choose either *x* or *y* (or *z*...)'. (Halliday 1985a:xxvii)

Yet the fact that the information presented in a network can be read dynamically, that is, as if it were unfolding, does not mean that the information itself arises from a dynamic perspective. The choices accounted for in a network remain inherently synoptic: they are the product of a product point of view. The reason for this is explained as follows.

In a network, choices from a system have structural consequences: the options in the system are *features*, and each feature has an associated realization, that is, the linguistic reflex of choosing that feature from that system. Let us say that the environment of the system is a choice p (itself a feature chosen from some preceding system), and that the features of the system are x, y, and z, with x being the environment for a further system of choices, l, m, n. This is represented in Figure 4.4 below.

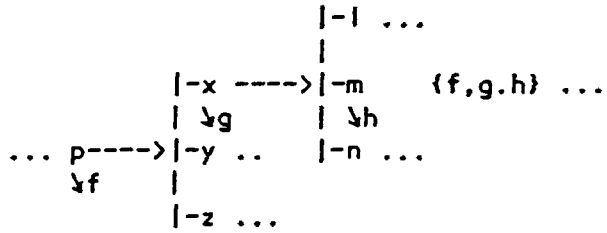


Fig. 4.4 A simple system network

Moving through the network from left to right is a move in *delicacy*, that is, the choices become more and more delicate or precise in their specification. This means that the options *x*, *y*, and *z* are at one level of delicacy 'the same', although at a more delicate level, they can be seen to be different. (For instance, grammatically speaking, the examples the road and a hazardous business are at one level the same, as they are both instances of nominal groups. On the other hand, in a more delicate

description of the components of the group, they can be seen to differ in grammatical detail.) Each feature in a system has an associated realization: the linguistic manifestation or *exponent* of that feature. The realization of a feature may be in terms of an actual linguistic element, or may affect the ordering of elements, show one feature as being simultaneous with another, or as subclassified in a particular way, and so on (cf Halliday and Martin 1981:10ff)

An output is generated from the network by tracing a path through the network from left to right, making a selection from each system and collecting all the associated realization statements for that path; this enables a structure to be produced. The diagram above represents that the entry condition p has the realization f; when the entry condition is selected, it leads to the system containing the features x, y and z. The feature x is selected, which is realized by g. In turn, x leads to the system containing the features l, m and n. The feature m is chosen, and its realization is h. The pass through this part of the system has produced a *selection expression*, {f.g.h}, containing the realization statements of the selected features.

While it may take time for someone to actually read through a network, the intention is that the selections are made simultaneously, and thus they have no real-time implications for generation. For the synoptic/dynamic dichotomy, the critical factor is that all the selections relevant to one structure are made simultaneously, collected together, and then realized to produce one structural output. Thus as Ventola described, the process of generation is 'explosive': the description of the choices is, so to speak, like the umbrella referred to in Chapter Three, the choices opening or exploding out to produce the output. For example, if choices are being made

for a nominal group, the selection of *nominal group* in the larger system network will be realized by the feature 'insert a Head', that is, every nominal group will have a Head. Features of the nominal group may include whether or not the group will be modified, and if so, whether that will be by pre- and/or post- Modification. If, say, pre-Modification is chosen, this will lead to further choices as to the type of pre-Modification. For instance features may be chosen which result in the *description* and *classification* of the nominal group, and which indicate whether the group can be identified or not. Further, the types of identifiers, describers and classifiers must also be selected. These realizations, as well as the realization relating to the Head of the group, will be collected together in the selection expression at the end of the pass through the network. The eventual output structure might be something like the senior medical officer. While this is one nominal group, that is, one structure, many steps have been taken to reach this point. The output therefore represents a collection or bundle of structural features: not every feature is necessarily manifested by an actual lexical item, but they are nevertheless reflected in the structure in terms of word order, sub-classification, and so on.

The choices in a network are choices *in absentia*: a network represents potential for meaning. A choice is meaningful against the background of all the other choices which could have been made in that environment. However, being a representation of potential, it is necessary for those choices to be actualised in some way, and this is achieved through the realization statements, representing the linguistic reflex of a paradigmatic selection. Thus while network choices are organized *paradigmatically*, they are manifested *syntagmatically*, and through the syntagm, the choices can be seen *in praesentia*. The notions of system and paradigm are primary in the way

choice is explained; structure and syntagm are fully predictable or derivable from the paradigmatic choices. It is interesting to note that it is the primacy of the paradigm which sets the systemic approach apart from many other linguistic approaches. Halliday (1985a:xxviii) observes that the fundamental opposition in grammars "is between those that are primarily syntagmatic in orientation ... and those that are primarily paradigmatic ... The former interpret a language as a list of structures ... the latter interpret a language as a network of relations, with structures coming in as the realization of those relationships" and that the systemic model: "is a 'choice' grammar not a 'chain' grammar (paradigmatic not syntagmatic in its conceptual organization)" (pxix). Halliday and Martin (1981:19) point out that the 'axis of chain' is not by any means ignored in the theory, but confirm that the axis of choice is considered to be primary in explaining linguistic patterns.

Yet the understanding of paradigm and syntagm, as formulated in a systemic model, is itself derived from or dependent on a synoptic perspective. In analysis, the unit under consideration must be viewed globally, as a whole, before it can be described paradigmatically, that is, before it can be compared with other similar units. In generation, a syntagm only results when all the relevant paradigmatic options have been selected, exploding out to give a structure. Thus the structure is the result of options pertaining to the unit as a whole, and a global perspective on the unit is an integral feature of this approach.

This is why the system network is inherently oriented to a synoptic perspective. Descriptions are based on a global overview of the unit, and are generated explosively. As Daneš notes (personal communication): "The notion of making *options* within the systemic grammar cannot be understood as

an actual process during the production of a text." Clearly, a different view, based on a non-global, unfolding perspective, will have to make use of the system network in a different way, because units will be revealed progressively, and will not be able to be viewed globally. It is not possible, in generation, for a dynamic perspective to pass through a whole network, collect the relevant features and then explode them into a structure; nor in analysis can a whole unit be examined for all its paradigmatic features. Thus the dichotomy arises between static and active potential. The system network presents language as a system of potential - what might be said, in the language as a whole. But this potential is necessarily static, because what is true for the system, which is understood to be operative for all occasions, is not necessarily true for an instance, that is, the options which would be selected on a given occasion in a given set of circumstances. Opposed to the view of language presented by the system network is the possibility of accounting for language as something actual, an instance of language in use, where language must be seen as something active, with choices being made in response to the exigencies of the moment. Such an account should not of course be so far removed from the description of static linguistic potential that the two cannot be related, but nevertheless, they will be different.

As the system network is inherently synoptic in nature, the term *dynamic system* is a misnomer. Logically, such a concept cannot be possible. Its origin has already been observed in the work of Martin and Ventola (as discussed in Chapter Two), but it was noted there that its use was probably not intended to be technical. It is, however, used technically in other systemic work, as in the work of Bateman and O'Donnell discussed above, and also in the work of Fine (1989, 1991). In each case, the term is used for

systems accounting for data which are easily interpreted as being dynamic in nature: clause complex relations for Bateman, systems of exchange structure for O'Donnell, and of turn-taking between speakers for Fine. While so-called 'dynamic' features may be being captured, or while selections from such networks may have consequences for these areas of 'dynamics', it is nevertheless the case that the modelling device in question, the network, remains synoptic. Thus even if the data being described is dynamically oriented, the resulting description is not. While these various attempts at modelling may successfully represent dynamic-type data that is difficult to capture with a synoptic model (as in the case of Ventola's description of genre), and while this in itself is to be valued as an advance in the systemic model as a whole, the descriptions based on system networks cannot get to grips with the nature of a dynamically oriented model: the forces at work in a dynamic perspective remain obscured.

Significantly, in all the work which does adopt the 'dynamic system', the dynamic and synoptic aspects of the description are unequally weighted, with the 'dynamic systems' being used to fill in the gaps left by the synoptic model. The explorations of both O'Donnell and Bateman, for instance, are specifically developed in response to 'gaps' left by the synoptic model (viz, the difficulties of modelling recursive choices), and their solutions aim to fill in those gaps. Thus *dynamic* and *synoptic* are not complementary perspectives, but competing formalisms for different aspects of their data. While 'dynamic systems' are oriented to dynamic-type data, they represent the result of a product perspective. It is this which is restricting.

The main modelling device in systemic functional linguistics is thus not suited to the perspective put forward in this thesis. Alternative proposals are examined in the following section.

4.4 Alternative representations: Flowcharts

As the system network is unsuited to the modelling of a progressive view of choice, other formalisms or ways of modelling are needed. One of the most significant attempts to extend the systemic model into new domains is that of Ventola's (1987) development of *flowcharts*. The flowcharts were designed to function as a non-explosive representation of possible generic stages in service encounter texts, and they present an appealing way of capturing the progressive, ongoing nature of choice from a dynamic perspective. They represent speakers co-operatively negotiating the generic structure of a text, with ongoing options for the development of the text being dependent on the previously selected options ('previous' here being in the sense of the preceding, actual option, not the less delicate, systemic, option). The view of the text is non-global: at the beginning of the text, the entire structure is not known, but depends on the particular options selected by the speakers as the text unfolds. As Ventola notes (op.cit p77):

> What is being done and said often depends on what decisions and assignments the other participant has just taken immediately before. This is the way texts unfold dynamically as a process.

The flowchart, instead of describing all the systemically potential options for generic stages, lays out a variety of paths which might be followed by speakers in interactively producing a text. Thus choice is non-explosive, with the ultimate structure of the finished text being achieved incrementally, each actual choice being the environment for the next choice. Let us examine the mechanics of the flowchart to illustrate how this works. An extract of Ventola's flowchart is presented below in Figure 4.5, and then the mechanics of the chart are explained.

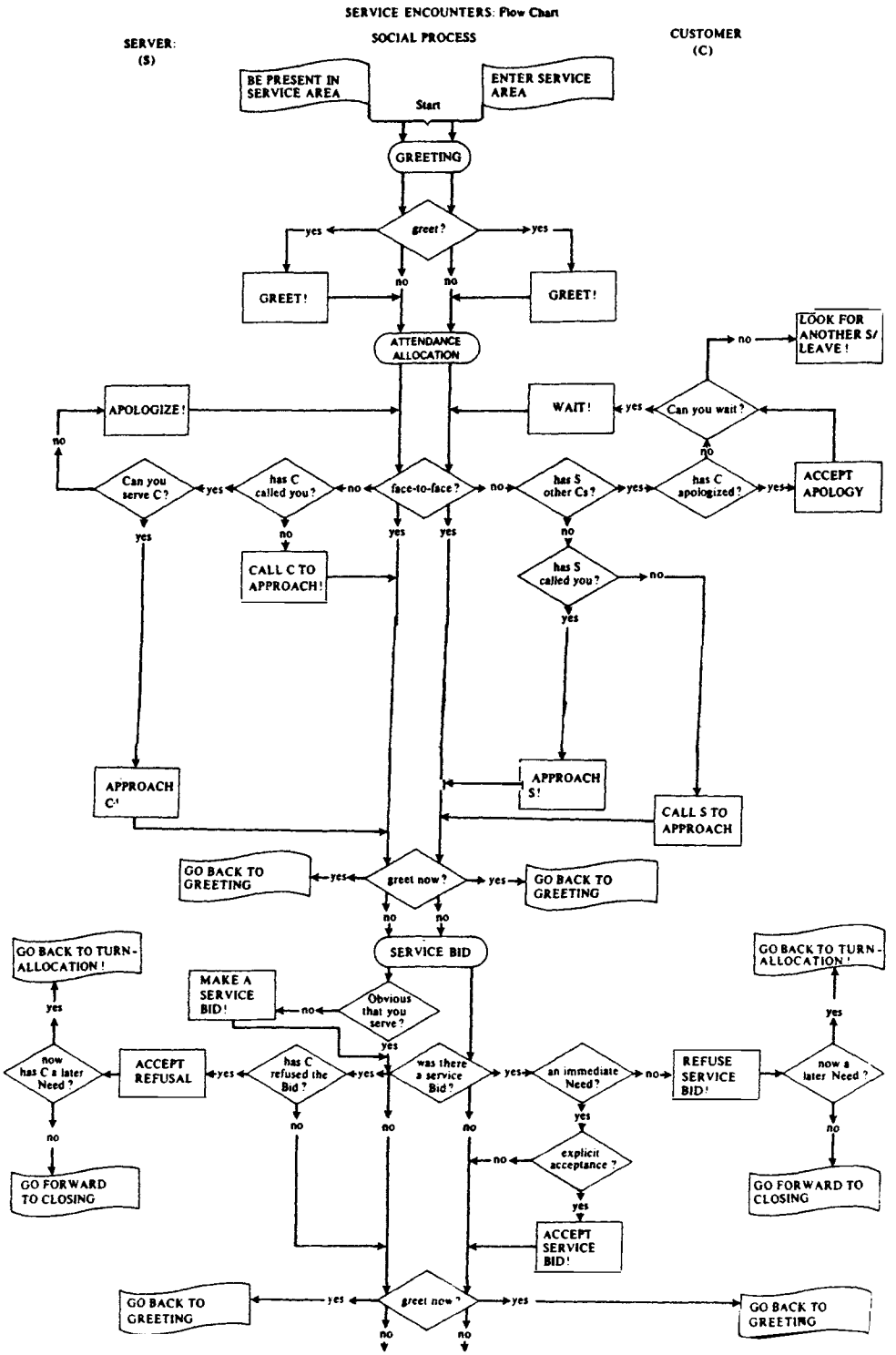
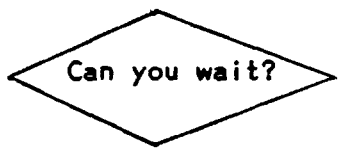


Fig. 4.5 Extract of Ventola's Flowchart (1987:70-71)

Ventola (1987:67ff) explains the instructions or 'tactics' of the flowchart as follows. First, the flowchart represents a social process created co-operatively by two participants, namely a Server (S) and a Customer (C) (although she notes that there may be more than one participant fulfilling either of these roles). The social process is represented by the two lines descending the page. Elements are symbolised by oblong circles with appropriate labels, for instance:

This symbolises that the participants are about to negotiate the greeting element of the service encounter. Both S and C have roles to play in the realization of each element. Diamonds symbolise decisions about action which the participants have to take. For instance:



This symbolises a decision for C, and C can decide either yes or no in response to the question. The yes path means that C waits for S to attend, and the no path means that C either leaves or looks for another S. The appropriate action (waiting, leaving, looking for another S) is encapsulated as 'work to be done', and is represented by squares. For instance:

instructs C to wait until S can serve.

Each element (that is, the stages signified by oblong circles, such as GREETING, ATTENDANCE ALLOCATION, SERVICE BID) is realized when the 'work to be done' boxes are completed. Thus in the extract above, the element ATTENDANCE ALLOCATION can be realized in various ways: S may either *apologize* to C for not being able to serve C immediately, or may call C to approach, or may approach C. On the other hand, C may wait for S, may accept S's apology, may approach S, or may call S to approach. The realization to be chosen evidently depends on the interactive status of the process, hence C can only accept S's apology if S has in fact apologised.

The wavy squares on the flowchart do not realize elements, but indicate flowchart directions, for instance:

This symbol is found in the ATTENDANCE ALLOCATION element, and instructs the participants to return to the GREETING element.

Thus, within any given element - any stage of the genre in question - different decisions or options are open for the further development of the text. The decisions made by one participant affect the options open to the next participant. In this way, the flowchart shows the interdependency of choices as the text unfolds. For instance, while the option for S to

apologise to C is a potential realization of the ATTENDANCE ALLOCATION element, it is only actually available as an option in any given text if S and C are not face-to-face, if C has called S, and if S is unable to serve C.

Ventola's own assessment of the flowchart (1987:77) is that it handles non-canonical sequencing of generic elements, as the wavy squares allow skipping forward or back between the elements, and similarly, that it is able to handle recursion of elements. The flowchart accounts for interaction and co-operation between the participants, and deals with both linguistic and non-linguistic options. It negates the need to define obligatory elements of the generic structure. These were all requirements which Ventola felt were important to meet, in order to overcome the synoptic limitations of the network as a representational device.

In terms of modelling a dynamic perspective, the flowchart successfully captures the ongoing, progressive nature of choice, but it is not without limitation. Most significantly, even though Ventola is able to account for a great deal of generic variety in actual texts, the flowcharts still provide a dynamically oriented view of synoptically acquired information. They reproduce the mechanisms by which actual texts have been created, but do not in themselves provide a mechanism for producing novel texts, or texts with creative 'surprises' in them. In other words, potential is represented statically. This perhaps needs explanation.

It was argued in Chapter Two that a dynamic perspective has to be applied to potential as well as to actual choices; that is, potential has to be viewed progressively. Ventola's flowchart goes some way towards meeting this requirement, as different aspects of the potential open up according to the current state of the text. But on the whole the view of choice is still

global and static. For example, Ventola shows that the sequence of elements of any given text does not necessarily follow the canonical order of elements as would be described from a synoptic perspective. This feature is partly captured by allowing some elements to be *skipped*; for instance, if the goods in a service encounter are free, then the *Pay* element may be skipped. This is accomplished by a flowchart instruction in the *Resolution* element which says, if the goods are free, 'Go forward to *Goods Handover*' (Ventola 1987:74). Of course, it is the element in the model which is skipped; Ventola would not argue that an actual text consisting of a *Resolution* element followed by a *Closing* had some sort of gap. It is the ability to move around within the model which is important for Ventola's purposes; in a synoptic system network for instance, such 'movement' is confined to movement in delicacy, and so certain options become virtually obligatory. Yet in Ventola's representation, it is still necessary to predetermine all the points for potential skipping; a text which demonstrated skipping from a point not anticipated by Ventola could therefore not be accounted for. While it is a natural strategy in synoptic models to adjust the model in light of evidence from data, a dynamic model, supposedly unfolding in conjunction with a text, should have a means of accounting for novel situations. While we would not wish to argue that any choice can follow any choice, as this is likely to result in nonsense, it is certainly the case that texts can vary in ways which are difficult to predict, but which do not result in nonsense. The inability of the flowchart to deal with this is a cause for serious criticism, and is dealt with at length in section 4.5 below.

Other limitations are less serious, but nevertheless affect the understanding of choice presented in the model. For instance, the options are always limited to a binary yes/no choice, and have a strong behavioural

orientation (as is most clearly evident in the decision diamonds, which contain decisions such as Greet?, face-to-face?, has C called you?, and so on). To assess the real usefulness of the flowchart, it is necessary to consider whether the formalism can be extended to other areas of language. It is possible to envisage the behavioural-type options being appropriate for other descriptions: in an account of turn-taking for instance, decision diamonds relating to politeness could determine whether one speaker lets a turn pass or takes it up. Or, at the lexicogrammatical level, an option relating to politeness may affect the inclusion or exclusion of an item like please. In other words, it is feasible to postulate that the decision diamonds representing behavioural options in the generic structure flowchart, could be equated with decisions relating to *features*, rather than *behavioural options*, at other levels. But it is doubtful whether many linguistic features at other levels of description could be accounted for in this way. Further, the binary and polar aspects of the choice will inevitably be limiting, as they do not allow for multiple options or probabilistic weighting of options.

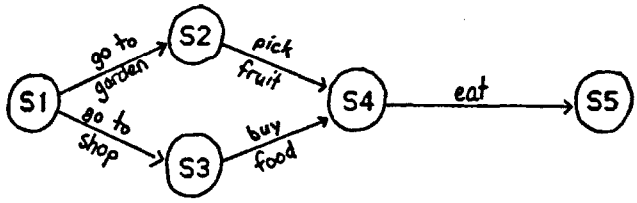
While the flowchart marks a significant break away from the synoptic restrictions of the network, it only goes part-way towards the goal of modelling a progressive view of choice. Other alternatives are presented below.

4.4.1 Augmented Transition Networks

An alternative means of representing choice as unfolding is found in *Augmented Transition Networks (ATNs)*, as developed by Woods (1970) and as explained in some detail by Bates (1978). The essence of an ATN is that it

represents movement from one *state* to another: Bates (1978:192) notes that a basic transition network "is a directed graph with labelled states and labelled arcs, a distinguished start state, and a set of distinguished final states." In a grammar, for instance, a *state* might be a constituent such as a *Noun Phrase* (NP), from which movement might be to another state in the grammar, say a *Verb Phrase* (VP). Movement between states is accomplished by *arcs*: an arc is the step which has to be achieved in order to reach the next state. Arcs are labelled to indicate the type of input which is necessary to reach the next state.

While ATNs have been developed for grammar, O'Donnell provides an illustration of how they work by using the ATN formalism to represent *behavioural* options. His example is presented below in Figure 4.6.



Interpretation: S1 : hungry/no food/at home
S2 : hungry/no food/in garden
S3 : hungry/no food/at shop
S4 : hungry/have food
S5 : not hungry

Fig. 4.6 O'Donnell's behavioural ATN (O'Donnell 1986:31)

Here, as in all ATNs, states are represented by circles around the name of the state, and arcs are the lines between the states, labelled with the nature of the transition required to reach the next state. In this figure, the start state, labelled S1, represents the behavioural situation hungry/no food/at home, and has two outgoing arcs. Depending on whether the arc go to garden or go to shop is followed, the states S2 or S3 may be reached, and so

on until state S5, the state of no longer being hungry, is achieved, from which there are no more outgoing arcs. Thus ATNs represent an ongoing flow of choice, with states being the *environment* of a choice, and arcs being the choices which are possible from that point. The arcs leaving any one state constitute the *potential* at that point.

The development of ATNs for grammar began with a representation of simple finite state grammars by *Basic Transition Networks.* Chomsky (1957) explores a finite state grammar as a possible representation for English. He defines it (Chomsky 1957:20) as follows: "In producing a sentence, the speaker begins in the initial state, produces the first word of the sentence, thereby switching into a second state which limits the choice of the second word, etc. Each state through which he passes represents the grammatical restrictions that limit the choice of the next word at this point in the utterance." But Chomsky argues that English is not limited to a finite number of states: on the basis of the most simple and elementary processes of sentence construction, speakers can "produce and understand new utterances" (op.cit p23). Such a grammar therefore fails to capture various processes of sentence formation. On the other hand, if allowed to run infinitely, finite state grammars could produce infinitely many sentences, but not all of these would be English sentences: "If a grammar of this type produces all English sentences, it will produce many non-sentences as well. If it produces only English sentences, we can be sure that there will be an infinite number of true sentences, false sentences, reasonable questions, etc., which it simply will not produce." (Chomsky 1957:24)

Chomsky suggests (ib.id) that a more complex notion of structure needs to be allowed, and there are two aspects to this complexity. Firstly, it is necessary to capture a non-finite sequence of elements, and Woods (1970)

achieves this with a *recursive* transition network, as discussed below. Secondly, it is necessary to allow for more complex processes of sentence formation, to allow both for such factors as agreement between parts of sentences which may or may not be adjacent, and for the systematic relationship between related sentence forms, such as a declarative sentence and its corresponding question form. For this, Chomsky distinguished *surface* from *deep* structure, and proposed *transformations* to account for the structural relations; he rejected the principle of the Basic Transition Network. Woods, while accepting Chomsky's argument that the Basic Transition Network did not represent a sufficiently complex notion of structure, proposed a way of *augmenting* the transition network, rather than abandoning it in favour of transformations.

Woods' first extension was to make the transition network *recursive*. This entailed a device which enabled a complex constituent structure to be accounted for without complicating the main transition network. When the main network has to traverse an arc which has a complex structure of its own, control is passed (or *pushed*) from the main network to a related but separate network (rather like calling a sub-routine into play). This is achieved by leaving the main transition and moving to another related network. Figure 4.7 below illustrates how this is done.

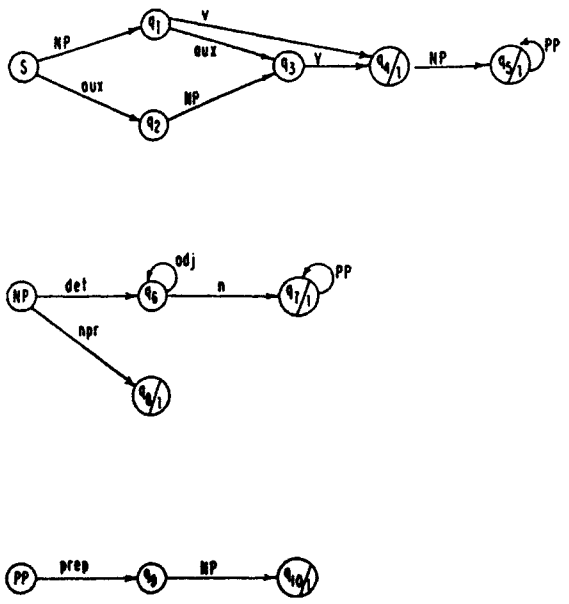


Fig. 4.7 Recursive Transition Network (Woods 1970:592)

In this figure, S is the start state, and q4, q5, q7, q8 and q10 are the final states. (The sub-numbers in the figure are not relevant to the current discussion.) The transitions in this network differ from the basic transition network in that they are *recursive*: this means that the labels on the arcs (such as NP in the above figure) can themselves be the name of a state in another part of the network. Thus in this figure, any transition which requires an NP as input will *push* control in the network to the NP state. When a final state is encountered in this part of the network (viz, states q8 or q7 in the above figure), control will return (or *pop*) to the main network, back to the point at which it left. In this figure, such use of the recursive transition network enables either a proper noun or a noun phrase to be accounted for. Bates (1978:192) notes that: "When such a recursive arc is encountered, the current computation is pushed onto a stack and a new process

is begun to look for the desired constituent. When a final state in this lower level is reached, the stack is popped and the suspended computation is continued." Without the device of the recursive network, it is only possible to account for a given *word* in the input, say a particular noun; with the device, a complex structure, such as a noun phrase, can be accounted for.

It should be noted that the term *recursion* in this model accounts for what would be called *rank-based constituency* in a systemic functional model. Recursion as used in systemics, that is, in the sense of allowing one choice to apply iteratively, is achieved in the transition network through an arc which loops back to the state from which it left. This can be seen in the above figure, at state g6 in the NP network, where more than one adjective can be achieved in the NP by traversing the adjective arc more than once.

Woods' second extension to the basic transition network was to *augment* the model by adding *conditions* to the arcs, thus producing an *Augmented Transition Network* (ATN). These conditions enable much more complex features of English sentences to be captured, and they are achieved by "adding to each arc of the transition network an arbitrary condition which must be satisfied in order for the arc to be followed, and a set of structure building actions to be executed if the arc is followed." (Woods 1970:592) Thus, "each arc is provided with a test and a sequence of actions." (Bates 1978:196) While the tests and actions are oriented to the practice of transformational grammar (for instance, actions may move fragments of the sentence tree-structure around so that the surface and deep structures are different), the principles involved, of incorporating specific conditions with associated actions, are extendable to other theories of grammar and other domains of description. (Reichman 1985, for instance, uses context-sensitive conditions, and O'Donnell 1986 incorporates behaviourally-oriented conditions.) The results

of the implemented actions are kept in *registers* (the results being partial structures), and these can be called on at later states in the network, facilitating complex interactions between different parts of a structure.

An ATN is usually used to recognize (or *parse*) a given input, although in principle it is neutral as to parsing and generation. Its obvious application to the recognition of sentences can be demonstrated with reference to the recursive transition network above in Figure 4.7. If, for instance, the network is presented with some input, say a noun phrase, the old dog, an attempt is made to recognize if this is a valid part of the grammar represented by the network. In this case, the old dog can be successfully parsed, because from the start state, it is possible to reach the next state, q1, by traversing an NP arc. A traversal of this arc *pushes* to the NP state, where it is possible to work through the arcs and states of that sub-network, parsing a determiner, an adjective and a noun. When this is done, control returns to the main network, and the NP arc has been successfully traversed, that is, the input can be accepted. On the other hand, an input such as dogs bite could not be parsed by the fragment of grammar presented above, at least not wholly, because the grammar above is not formulated to accept a noun-verb structure. A more comprehensive model would of course be able to account for such a relatively basic structure, but the example does serve to illustrate that the transition network can only recognise input which has already been anticipated by the model.

Alternatively, the ATN can be used generatively, to produce possible states from that network. In such a case, the ATN begins in the start state, and works through the network following different arcs and states, until an output is achieved. However, Bates (1978:235) notes that the sentences

produced from an ATN grammar "will produce random sentences since it is in no way guided by intentions or concepts."

The significance of the ATN for the modelling of choice is that, rather like the flowchart, it shows that the next possible choice is dependent on the choices that have been previously made. In O'Donnell's simple behavioural illustration of a transition network, for instance, the state S2 is only possible after the option go to garden has been traversed from state S1. Thus choice is modelled progressively, as something which unfolds, rather than as something which explodes. ATNs therefore seem to be a very promising formalism for the implementation of a dynamic perspective on modelling. Even though they have been developed within a theory of language (transformational generative) which is different from that adopted in the thesis, there is ample evidence that the principles of the ATN are easily transferrable to other descriptions. Apart from the work of O'Donnell and Reichman as already cited, Bates argues that they can be used to represent case grammar, and notes that Leal 1975 explores their potential as a notation scheme for Tagmemics. The key to utilising an ATN in a different domain is to change the definition of what constitutes a state and what constitutes valid traversals between states.

The partial model presented above has been the simplest possible, for illustrative purposes, but it should be emphasised that ATNs are able to account for quite complex unfolding choices: a path or trace can be followed through an ATN, and different choices on different passes through the model enable different structures to be accounted for. While notationally different to flowcharts, the two formalisms are very similar, and the general idea of representing a *path* of choices is very attractive in both. Geoff Barnbrook (personal communication) has, however, drawn attention to an interesting

point of difference between them, that the ATN formulates the path as a series of states connected by activities (transitions and conditions), while the flowchart formulates the path as a series of activities (work to be done and so on) connected by transitions.

The ATN does, however, have one particular limitation as a potential model for the progressive unfolding of choice: like the flowchart, all possible sequences of choices must be captured in the model, and it is not possible to account for structures which have not been anticipated in the formulation of the model. It is interesting to consider the representation of *skipping* as evidence of this. O'Donnell (1986:40) argues that ATNs permit skipping, but Ventola (1989:142) argues that the representation of skipping is unclear. The reason for this discrepancy is that the ATN actually lays out the different possible paths, rather than including instructions which jump forward or back between parts of the model, as is the case for the flowchart. In Reichman's ATN of discourse context (1985:98), for instance, it is possible to reach some states either directly or indirectly. Thus the same phenomenon of a non-canonical structure is accounted for, although it is less immediately apparent than in the flowchart. But most importantly, while the flowchart and ATN achieve this representation in different ways, they both enumerate all the points where non-canonical structures can occur. The reason why this is a limitation on the progressive modelling of choice is explained in section 4.4 below.

4.4.2 Systemic flowcharts

A formalism which falls somewhere between the flowchart/ATN unfolding view of choice, and the 'dynamic system' representation of options, is that

of the *systemic flowchart* as presented by Fawcett *et al* (1988). The systemic flowchart aims to retain the advantage of the flowchart, namely the progressive unfolding of choice, but to supplement its inadequate representation of actually available choices. To achieve this, they produce a dynamic model of discourse structure which integrates flowchart and network representations, resulting in a model which both "generates structures as one works one's way through it" (p122) and which accounts for the paradigmatic options available to the speaker as the text unfolds. This is accomplished by using flowchart relationships "to link up many small *system networks* of the type familiar in systemic linguistics" (p122). Hence by following the flowchart, it is possible to generate the syntagmatic relations in the text as the text unfolds, and the systems represent the paradigmatic relations of choice. In this way, paradigms become available as the text unfolds, and this is highly desirable in a dynamic representation. Significantly, the flowchart is not merely grafted on to what is basically still a synoptic representation. Instead, the flowchart subsumes the network relations, to the point where Fawcett *et al* suggest (p122) that this may entirely replace synoptic models. They emphasise (p123) that:

> the overall systemic flowchart is not a 'system network incorporating flowchart lines'. Rather, it is a complex flowchart which contains many relatively small system networks at those points where, in a conventional flowchart, one would expect to find a diamond containing a question. Both the diamond boxes and systems provide *choices*. The difference is that system networks provide for much more complex sets of choices - and, typically, they are choices between alternative meanings in a semiotic system.

Fawcett *et al* illustrate a simplified systemic flowchart for moves in exchanges, as a way of introducing their model. This is reproduced below in Figure 4.8, and then explained.

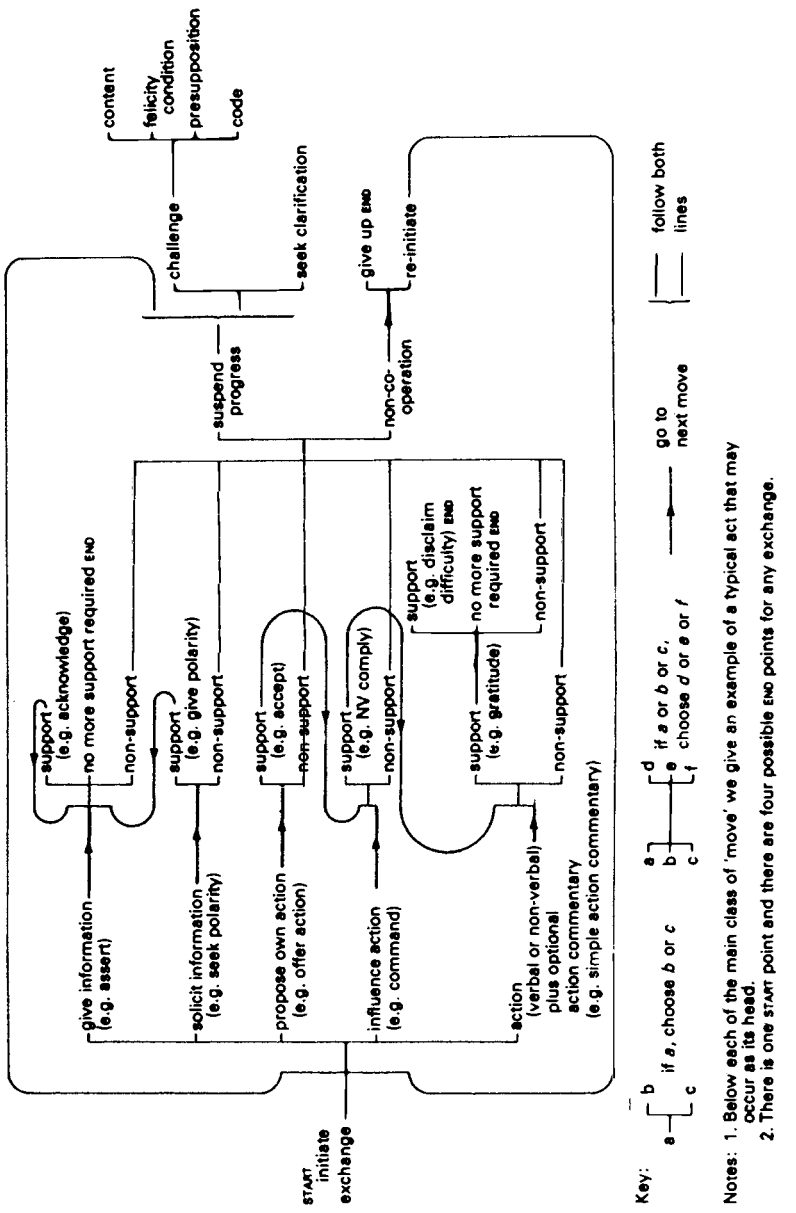


Fig. 4.8 A systemic flowchart for moves in exchanges (Fawcett *et al* 1988:125)

This representation is for an exchange between speakers. The first speaker, at the point of initiating the exchange, has various possible options (whether to give information, solicit information and so on), and these options are represented with conventional systemic notation. The option selected, however, has ramifications for the next speaker's response. The first speaker's turn passes to the second, and this is represented by a thick line. The options available to the second speaker depend on which option was selected by the first: for instance, the options support and non-support are available to the second speaker whatever the first selection, but the nature of the support is dependent on the first selection. Thus, if the first speaker initiates the exchange by giving information, it is appropriate to support by acknowledging this (as in That's the cathedral over there. - Oh.) However, if the first speaker requested information, it would be appropriate to support by giving polarity (as in Is that the cathedral over there? - Yes.). In this way, it is possible to relate paradigmatic options to their place in a syntagm, and to model the interdependency of choices.

In the fuller discourse grammar, realization rules are also included. These usually consist of an instruction to insert a label from the network at the element of structure at which one is operating (thus a realization of the option influence action may be command, advise or threaten). What Fawcett *et al* overcome then, is the binary, dominantly behavioural view of choice as represented in Ventola's formulation of the flowchart. Simultaneously, they also overcome the explosive characteristic of a network representation. The paradigms on offer in the systemic flowchart are not the same as those formulated from a synoptic perspective: only the acts relevant to a particular move in a given exchange, for instance, are organized paradigmatically. The value of their model lies in demonstrating that

paradigms can be represented as opening up at a given point in the unfolding of the text.

In terms of modelling the unfolding of choice, one arguable drawback of the systemic flowchart is that it loses the visual clarity of Ventola's formulation. There, the view of choice as unfolding is quite clearly presented. Yet in the systemic flowchart, this is only achieved by a careful reading of the model; at first sight, it looks very similar to a synoptically formulated network. A more serious criticism is dealt with below.

4.5 Limitations of these models

The flowchart, ATN and systemic flowchart discussed above present attractive and useful ways of modelling an unfolding or progressive view of choice. Although each is different, they share a particular view of choice which is modelled by some type of path unfolding between different parts of the relevant description: say, different potential orderings of stages of a generic structure, or different sequences of grammatical components, or different possible structures of an exchange. What they all succeed in showing is how the selection of one option at one point affects the possible routes which can be taken from that point. In this respect, they overcome the global view of choice necessitated by a synoptic perspective. The value of this work is that the paths are modelled from the point of view of explaining the way in which choices unfold in a linear, non-global fashion.

As was suggested above, however, these models are not without limitation in their representation of a dynamic perspective. From a dynamic perspective, the point at issue regarding unfolding choice is how one choice sets up the

potential for the next. To explain this, part of the task is to observe what tends to happen in language, that is, what choices tend to follow each other, and then to model these sequences of choices. So in accounting for genre, one would observe different sequences of generic structure and build a model accordingly. This is a necessarily synoptic aspect of the description - one must observe or experience language in order to be able to describe it. But in the models presented above, there seems to be no means of describing what it means to take one path or route rather than another. The paths may lead in different directions (for instance in the flowchart, to different types of 'work to be done', or in the systemic flowchart, to different types of 'support' following a particular initiating move), but this says nothing more than the fact that different steps follow different steps. But an equally important part of explaining an unfolding view of choice is to give some value or purpose to the nature of the movement between the choices. Otherwise, the relevant paths or routes constitute nothing more than observed transitions between various parts of the data: there is no meaning attached to the path itself. This is what is needed for a dynamic perspective. To model the progressive unfolding of choice, it is necessary to give some purpose or value to that unfolding. This value constitutes something more than just the consequence or outcome of following one path rather than another: the path itself must have significance, as well as leading to the next point.

If a model cannot give a functional purpose to the nature of transitions between choices, it will be necessarily limited in its representation of a dynamic perspective. In particular, any new or additional structure in the relevant description has to be added in an ad-hoc fashion, simply extending the relevant model to incorporate the new description. Consider for example

the situation of one of the above models analysing an input text. If in this process the model comes across a part of structure which was not already accounted for in the model, there would be no means of explaining how that structure might fit in to the text which has already been seen, nor how the new part of the structure might affect ongoing choices. This not only makes it impossible, in analysis, to account for novel choices, but suggests that in generation a producer would never use the available resources in a novel way. On the other hand, a model which gave some value to the nature of the transition itself would have some means of explaining the new structure: this is because it would try to explain how the new choice contributes to the unfolding meaning potential of the text. We could make a comparison with the explanation of a journey in a car. In the types of model so far examined, a map is provided for the journey. The journey of a car which leaves the routes described on the map cannot be further described; the map ceases to be useful and the car must be presumed to have crashed. But a description of a journey which includes not only the known routes, but also ways for creating or using an uncharted route, would be able to account for a car taking a minor side road, or even driving on the sidewalk or across the fields. It does not have to be assumed that the car has crashed.

In other words, the potential routes in the models examined here are necessarily finite in number, and limited to the routes which have been observed in actual data. Such models therefore present a static view of potential. The way in which that potential is used as a text unfolds is dynamically oriented, as potential is seen to unfold progressively, but the overall potential of the linguistic resources described by these models is synoptically conceived: the meaning captured in the model continues to be meaning as understood from a synoptic perspective. No meaning or function is

attributed to the dynamic perspective, and so, while texts might be seen to unfold, the significance of this cannot be explained.

Of course it is not the case that the patterns which exist for any one aspect of description are infinite in the sense of being random. If that were so, it would not be possible to distinguish one genre from another, or one exchange from another, and so on. But as noted, new structures and novel use of familiar structures do arise, and a model which attempts to account for an actually unfolding text must be able to allow a moment by moment reformulation of the meaning potential of the text. If the model exists *in toto* before the text description begins, it necessarily presents a static view of potential, even if the way of moving through that model is dynamic. Without the possibility of momentary reformulation, which arises when the nature of the unfolding itself is interpreted dynamically, a model can only account for existing structures. These may be much more complicated than structures accounted for by a synoptic model, but a dynamic perspective is something more than just a sophisticated account of complex structures.

Therefore in these otherwise appealing models, a critical factor in the representation of unfolding choice is missing. It is impossible to achieve a fully dynamic perspective with such models, because that perspective has no real role to play. In the next chapter, a representation is developed which gives such a functional value to the dynamic unfolding of choice.

CHAPTER FIVE

MODELLING A DYNAMIC PERSPECTIVE

5.1 Modelling the progressive unfolding of choice: *paths*

In the preceding chapter, it became clear that even models which appear to incorporate a dynamic perspective may fail to give a functional interpretation to the progressive unfolding of choice. This aspect is essential if a dynamically oriented model is to be more than a sophisticated representation of synoptically-acquired information. This chapter broaches the problem of modelling the progressive unfolding of choice while simultaneously giving a functional value to that unfolding. A very simple metaphor is proposed to achieve this. The metaphor, that of using a *path* as the basis of the model, is introduced and then examined in more detail. The chapter goes on to incorporate other features of a dynamic perspective into the basic framework, namely the ability to model a *probabilistic* and *active* view of choice.

5.1.1 The basic model

In order to provide the desired foundation for a dynamically oriented model, it seems that the most useful concept to take up from the work examined in the preceding chapter is some version of an unfolding path, although such a concept will have to be modified to incorporate a functional interpretation of choice from a dynamic perspective. This conclusion arises from the two important inferences drawn from the preceding exploration of

dynamically oriented models. Firstly, all the most successful formalisms - the flowchart, ATN, and systemic flowchart - employ some notion of a *path* being followed through a model in order to represent the dynamic unfolding of a choice. Secondly, they all also fail to give any functional value to choice from a dynamic perspective. (The flowchart and systemic flowchart are of course developed within the context of a functional model, but the nature of choice from the dynamic perspective is not interpreted functionally.)

The idea of a path is a very general, metaphorical way of conceptualising the progressive unfolding of choice. To make use of this idea in a dynamically oriented model, it is necessary to formalise its essential components. The first part of this task is to provide some mechanism for keeping track of the choices as they unfold, so that the path can be seen to have some shape, that is, to be a path rather than a random collection of choices. The work of Bateman (1989) suggests a useful device which enables this aspect of the path to be explained. A dynamic perspective means that options become available as a text unfolds: wherever the text is now provides the environment for what may follow. But as the text unfolds, the relevant environment will shift. Thus, the environment has to be monitored. Bateman uses the terms *current* and *next* to keep track of the relevant environment. That is, wherever the text is now is the *current* environment, and this sets up the potential for choices at the *next* point in the text.

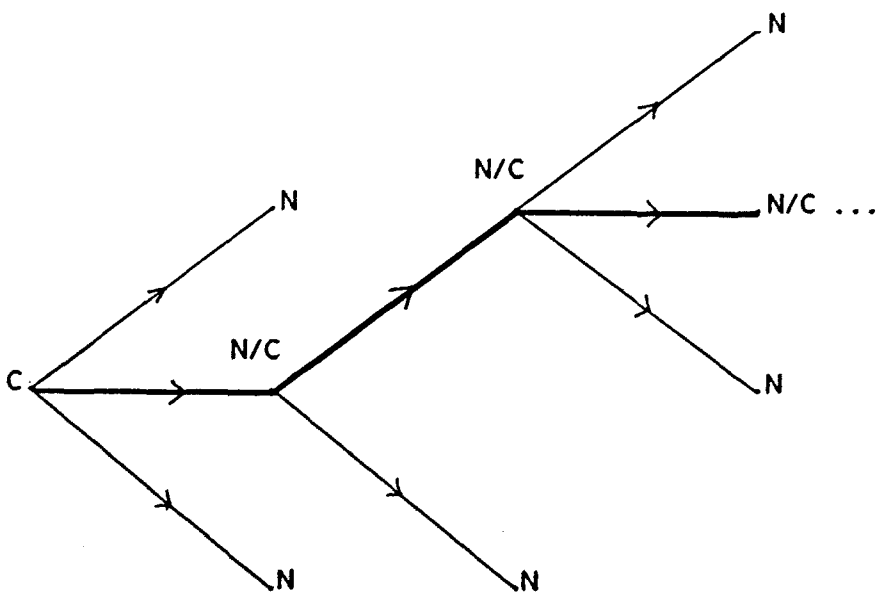
CURRENT ------> NEXT

As Bateman demonstrates, however, a continuous flow is established between the choices so that each next choice becomes a current choice as the text continues to unfold.

CURRENT ------> NEXT/CURRENT ------> NEXT/....

This enables movement from 'here' to 'there', from 'current' to 'next' to be monitored. The *current* environment consists of a choice made in the context of preceding choices (although it should be noted that the first actual choice in a text is a different case; cf Lemke 1989, and the discussion of context in section 5.3). It is assumed that from each current environment, a variety of options opens up; in other words, expectations are posited for the choices which might follow. Thus, the *next* environment consists of multiple expectations: when a selection is made, it in turn becomes the environment for following choices. In this way, the potential available at the next point depends on which option was selected from the current point.

Given this ongoing movement of choice, a *path* of development, of potential, can be seen to flow through a text, opening up and closing down as the text progresses. An illustration of such a path is presented below in Figure 5.1. This figure represents different choices (potential paths) opening up from each current point; the thick line represents the path which is actually taken up; the other paths are left behind as the text unfolds.



Key: C = current
N = next
N/C = potential at next point becomes current choice

Fig. 5.1 A path flowing through a text

From this diagram it can be seen that, figuratively speaking, paths may open up or close down, shift and change direction. The idea of potential opening up as a text unfolds is well established in the models examined in Chapter Four. Particularly in the flowcharts, ATNs, and the systemic flowchart, each step in the unfolding path leads to a new set of choices. From those models, it can be inferred that paths have their own particular type of movement: they not only *unfold* in conjunction with the text, but may shift and change as the text develops.

It might at first sight be tempting to compare such paths with a path being traced through a system network: Bateman (1989:274) says that a system network can be interpreted as if it were a flowchart, "walking through" the network, "following connections and making choices". But the comparison is

valid in name only: the actual nature of these two types of path is very different. In a system network, the type of path Bateman refers to does indeed take a particular direction, and various options are available along the course of that path. But essentially, such a path must be followed from the initial selection to a final realization statement, and as the environment of choice is defined paradigmatically, there is no possibility of tracing the flow between the current and next environments for choices in an actually unfolding text.

A general example which illustrates a path opening up and closing down in an unfolding text is the following clause, noted during a University seminar:

this can be seen in larger texts such as, well, larger texts

In this example, there is an unfolding clause which sets up an expectation, through such as, for a path of exemplification to follow, a path which will illustrate types of larger texts, perhaps novels or dissertations. The next element in this path, well, keeps this path of expectation open, but while it might just be delaying the exemplification, it could also be a warning that the projected path is about to be closed down. The following element, larger texts, in conjunction with a falling tone, effectively closes down the path related to exemplification: it fulfils our expectations regarding clause structure, by providing an 'example' for the projection set up by such as. But it does not actually illustrate a type of larger text, and so it signals that this aspect of the expectation will not be fulfilled. The speaker could have gone on to say, for instance, larger texts like novels, but the next clause uttered by the speaker opens up a different path altogether.

It should be noted that in Bateman's proposal, *current* and *next* have a technical role to play in the modelling of recursive systems. He introduces them as logical micro-functions, associated with the selection of a feature within a recursive system: when a feature is selected, it has a particular consequence for the current and the next selection. In this way, it is possible to keep track of the development of a *univariate* structure(1). Bateman himself ultimately rejects this proposal because of its unsuitability for computational modelling; however, for the purposes of this thesis, the basic concept is particularly useful. From here on then, the terms are not used in the technical sense in which they were established by Bateman, but are broadened in scope to be used as labels for the unfolding of choice. (Later it will be seen that their precise definition depends on the nature of the description to which the general model is applied.)

5.1.2 Further defining the path: *path steps*

The second task involved in formulating a progressive view of choice is to give a functional interpretation to the nature of the movement in the unfolding path. What needs to be done is to determine the nature of the potential flowing through the text, that is, the ways in which paths can develop. The current and next environments are the transition points on the paths, and these are defined according to the description to which the model is applied. For example, an application to the description of genre will mean that *current* and *next* are defined as generic stages; in discourse, it could mean that each turn in a conversation is considered for the potential it opens up for a following turn, and in grammar, a grammatical unit could be taken as the current choice, and other grammatical units as the potential

next choice. But for the purposes of developing a general model, an abstract notion of the way in which these path points may relate to each other is required. The relevant question is what sort of path development is possible? Or, in what ways can the current, actual choice set up expectations for the next choice?

Some insight into this question can be found in the work of Sinclair (1988a). Sinclair takes one state of a text, say, a given clause, looks at the next state, say, the next clause, and tries to *infer* what could have motivated the changes between the two. For instance, if the second clause introduces a new Subject, the *inference* is that the speaker is going to speak about something else. On the other hand, if the second clause maintains the same Subject as the first, no such inference can be drawn. Sinclair argues that a model of inference is needed in order to integrate questions of stylistics with grammar, and while the role of *inference* will not be considered further here (but see Tognini-Bonelli, forthcoming), his observation recognizes the functional potential of choices related in syntagmatic succession. In other words, two points on an unfolding path may be observed and the nature of the relation between them interpreted, but because the relation may vary according to the nature of the second point, a potential to mean arises between these syntagmatically related points.

Sinclair's view can be correlated with a dynamic perspective: any current point will set up different possible ways of relating to the next point; but, as only one of these multiple options will be taken up at the next point, this leads us to the understanding that it is meaningful to move forward in a text in one way rather than another. This variable forward movement is meaningful because it represents a selection from a paradigm: it is possible to move forward from a given point in different ways; these

options form a paradigm from which a selection is made, and the paradigm arises from a place in the syntagm.

The concept of functional potential can be related to the unfolding path established in the preceding section, so that a path can be seen to have functional development. The way in which the *points* on a path - the current and next environments - are related can be defined in terms of different types of *steps* between those path points. That is, from each path point, a variety of *steps* open up, creating the possibility of different ways of developing the path. The steps constitute a transition between the path points, and it is these which need to be given a functional value within the dynamic perspective.

There are two general functional roles underlying all possible path steps. The first is that of keeping an established path open, and the second is that of leaving a path behind. These path steps are here termed *sustain* and *close*. A path can be said to be open once the first choice in a text is made (again, the nature of that choice being dependent on the chosen description). This means that the potential for further development of the text is available. The first choice characterizes the chosen path, and if another choice is made, this constitutes a *step* in the path, either sustaining or closing it. If a path is sustained, the option to sustain or close continues to be available. Figure 5.2 below illustrates these most general types of path steps. The term *open* represents the initial choice in the path, and the terms *sustain* and *close* represent possible path steps from that initial point. The lines represent a transition to be made between successive environments in a text, that is, between current and next points.

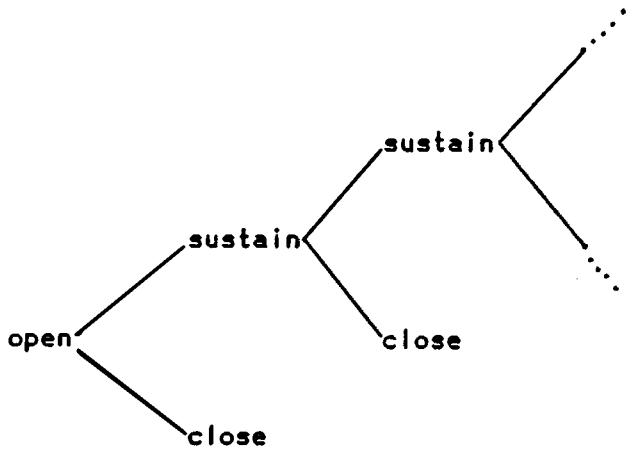


Fig. 5.2 Basic path steps

These path steps may be applied to a variety of linguistic descriptions. Let us consider an example where a description of the *exchange* is in question (the exchange being a rank of discourse as proposed by Sinclair and Coulthard 1975, where the way in which speakers take turns is described). In an exchange, an initiating move which seeks information may be responded to supportively by the next speaker by, for example, giving an answer, or non-supportively by, for instance, keeping silent or initiating another exchange. (These options are as described by Fawcett *et.al* 1988:125; similar options in Sinclair and Coulthard 1975 include terms such as *open*, which would be confusing in the present context.) In path terms, the initiating move *opens* a particular path, and sets up a variety of possible options for the next speaker, one of which will be taken up. If the supportive response is taken up, this keeps the path of the exchange *open*, and succeeds in *sustaining* it. If the non-supportive response is taken up, this effectively *closes* the potential for further development of that exchange.

It should be indicated that a *close* option, if selected, not only closes the current path, but simultaneously *opens* a new path: it is the opening of a

new path which signals that the previous path has been left behind. This happens in all cases except those where the closure is achieved by silence. Silence may indicate that the current path will not be further developed, but it does not indicate the nature of the next path.

While different path steps are possible, it is also the case that for most descriptions, each path step may be accomplished in more than one way. For example, in the exchange, a closing step can be achieved by either keeping silent or by initiating another exchange. So, a range of options may succeed in effecting a particular type of path step, and the way in which one choice is made from this multiplicity of options at each path point is described below, in section 5.2 on *stacks*. It is important, however, to note here that two definitions of function arise in this model, as a result of the fact that one path step can be effected in more than one way. From a dynamic perspective, the path step is a functional transition between choice points, so *sustain* and *close* are functional in this, syntagmatic, sense. But the options which effect these path steps have a functional value in a synoptic model of linguistic potential: thus *keep silent* and *reinitiate*, while both effecting a close step in a dynamically oriented description of the exchange, have a paradigmatic value defined from a synoptic perspective.

In order to distinguish these two types of function in further discussion, we will call the definition of function arising from a dynamic perspective *syntagmatic* function, and the definition of function arising from a synoptic perspective *paradigmatic* function. This distinction has the advantage of highlighting the meaning potential which arises when a dynamic perspective is adopted, but it is extremely important to note that both axes play a role in both perspectives. From the dynamic perspective, paradigms of meaning potential open up just as they do from a synoptic perspective, the

difference being that the paradigms arise at places in syntagmatic structure. From the synoptic perspective, the syntagmatic axis is also accounted for, but in a way which is consequential upon the choices made on the paradigmatic axis. Therefore, while the terms *syntagmatic function* and *paradigmatic function* are used to distinguish meaning potential from the different perspectives, they should not be taken to indicate that only one axis is relevant to either perspective.

5.1.3 Finer classification of the path steps

The preceding section has established the principle that a *path step* can be seen to operate between a current and a next choice, and that paths can be developed in different ways. This is a simple way of describing the progressive unfolding of choice in a functionally motivated way. The description can be expanded by differentiating further types of path steps(2).

Both the sustaining and closing steps may be further classified in at least two ways. A path can be sustained by allowing it to *continue* along the lines established by the preceding part of the path. In essence, a continue step means that the next choice repeats the functional potential (in the *paradigmatic* sense) of the preceding choice. So in a continue step, the nature of the relation between the current and next choice is that the units at each path point would play the same role in a synoptic description. In other words, when one point on the path is followed by another which has the same paradigmatic potential as defined in a synoptic description, the step between the two is interpreted as a *sustain: continue*.

The continue step itself may be further classified. A continuation might be achieved by explicitly joining together two choices with a marker of concatenation, as in tanks and guns, where tanks sets up a path about this nominal group, and guns continues this path, concatenating an element with the same role as the preceding choice. This type of continue step is called *concatenate*. Alternatively, the continuation may be achieved by juxtaposing two elements with the same (paradigmatic) functional potential, as in small, pretty flowers, where small sets up a nominal group path, and plays the role of describing the Head in some way, and pretty plays the same role, continuing to describe the nominal group in question. This type of continue step is termed *add*. The nature of the continue transition is that the second choice adds something to the unfolding path, but does so in such a way that it repeats the functional potential of the preceding step, either through concatenation or addition. In general terms, the continue step keeps the path unfolding along the lines established by the preceding choice.

Another way in which a path can be sustained is by adding an element which keeps the path open, but which also *changes* the general direction of the path in some way. In this case, the next choice clearly belongs to the unfolding path, but plays a functional role different to that of the preceding one. To take an example from grammar, consider the nominal group two army tanks. In this group, two sets up a nominal group path, and tells us something about the nominal group, describing the number of the group; army sustains the nominal group, but changes it by classifying the group, and tanks also sustains the path, but changes it again by defining the Head of the group. In comparison with a continue step, a *change* step means that each point in the path has a different role to play in relation to that path.

The option to close a path can also be achieved in more than one way. First, closure can be accomplished by *completing* the current path, that is, by adding an element which fulfils the expectations set up by the path up to that point. For instance, the path set up by the nominal group cited above, two army tanks, could be sustained by continuing the group, perhaps concatenating another Head, or by changing it with a post-Modifying element. As it is a nominal group path that is in question, the path is potentially complete once tanks is reached, because tanks can function as Head. This means that the next element following tanks could successfully close the group, by moving out of the nominal group path and into a different type of group, say, a verbal group, as in two army tanks were ... . The step into were constitutes a completion because the expectations for the basic nominal group structure have been satisfied. (Simultaneously, the step into were *opens* a verbal group path; a post-Modifying element would not succeed in closing the nominal group, because it is part of that same nominal group path, and so does not open any new path.)[3]

On the other hand, a path can be closed without the essential expectations being fulfilled, and a step such as this is termed an *abandon*. For instance, if the above example had been two army were ..., the step into were still succeeds in closing the nominal group path, but in this case, the expectations set up by two army have not been fully satisfied, as the appropriate conditions for a nominal group have not been fulfilled.

These path steps are illustrated below. In this figure, the square brackets indicate finer distinctions of the basic path steps. A *sustaining* step can be accomplished either by *continuing* or by *changing* the open path (and if continued, either by *concatenating* or *adding* an element of the same

functional potential); a *closing* step can be achieved either by *completing* or by *abandoning* the established path.

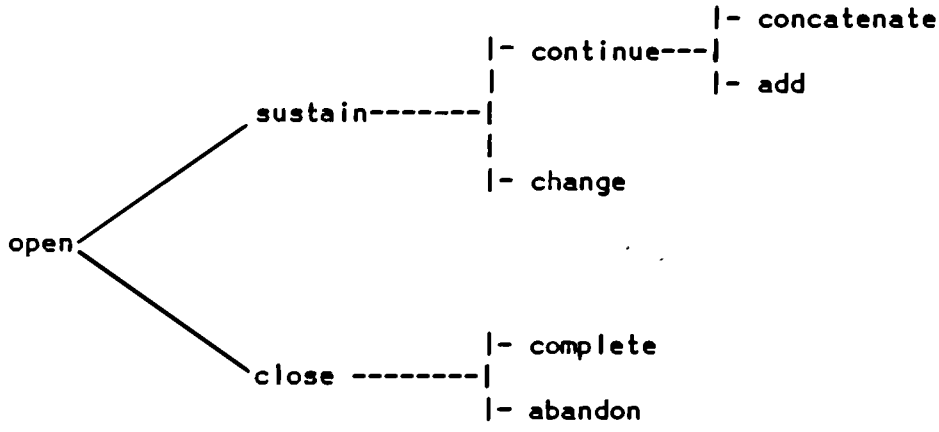


Fig. 5.3 Finer classification of the basic path steps

These choices are based on the premise that it is meaningful to move forward in one way rather than another, and they illustrate the *function* of a dynamic perspective. That is, the nature of the step between the current and next environment in an unfolding path has a function attributed to it. This enables the unfolding of a text to be explained in functional terms: in contrast to the paths presented in flowcharts, ATNs and systemic flowcharts, the path presented here is not just a way of showing complex syntagmatic relations, but one which presents a dynamic perspective on choice. The transitions between choice points, as well as the choice points themselves, have a functional value attached.

5.1.4 Important features of the paths

One feature of the path model which needs to be discussed further is the interplay of the two views of function, and the two types of choice arising

from it. As noted, each current choice can be seen to set up different possible path transitions to the next point. For example, if in an unfolding nominal group, the elements the first have already been chosen, the options available from this point can be determined from a synoptic knowledge of nominal groups: the first could stand on its own as a nominal group, as first can function as Head, and so the group could end there. Also, if first is Head, the group could be extended by adding a post-Modifier, as in the first in the class. Alternatively, first may not be the Head, in which case other nominal group pre-Modifiers might follow, followed by a Head, or there may be a Head without further pre-Modifiers. Each of these possibilities at the next point constitutes a different type of path step between the two points: a *change* or *complete* and so on, and it is the nature of these steps which is interpreted dynamically; this is the dynamic view of function. But the range of possibilities at the next point arises from a synoptic knowledge of the unit in question (that nominal groups must have a Head, may have a pre-Modifier or a post-Modifier and so on); this is the synoptic view of function.

A dynamic perspective therefore encompasses two different types of choice. The first is in the nature of the path step itself: whether from a given current point the options to *continue, change, close* are taken up. This aspect of choice is a way of functionally interpreting the syntagmatic relations between successive units. The second type of choice concerns the way in which a particular path step is accomplished: for instance, there may, in the description in question, be more than one way of effecting a *change* step, or more than one way of *completing* a path. This second aspect of choice is informed by our synoptic knowledge of linguistic potential, and is a way of functionally interpreting the paradigmatic possibilities at a given

point. In this way, each next path point represents a multiplicity of options, relating both to the type of path step which is in question, and to the way in which any one path step may be achieved.

Given these two interrelated views of function, the question arises whether one is accorded greater priority than the other or not. While the positions of the producer and the receiver are somewhat different in relation to this question, it is not the case that one view of function is theoretically more important than another: the separate notions of function interact in such a way that it is impossible to give one type priority.

Before considering the points of view of the producer and receiver, let us briefly examine the position of the analyst. The analyst's position with regard to an unfolding text is most easily related to that of the receiver, and as we explain below, the receiver does accord a certain priority to one of the views of function. Nevertheless, for the analyst, the two views of function are necessarily treated simultaneously: the nature of the transition between choice points and the nature of the options selected at the choice points must operate in conjunction with each other. This is because, given a certain current option, particular path steps will require particular manifestations at the next point, or put the other way, particular manifestations at the next point result in particular path steps being effected between the two choice points. It is impossible to separate the two facets of this relationship.

For the producer of a text, it would certainly be the case that the path steps are secondary in relation to choices at path points if the process of generation was understood to be explosive. But while explosive generation may be a convenient way of modelling for an analyst, there is little evidence

to suggest that speakers do indeed produce entirely 'explosively'. To do so would mean that all the features of a particular unit are chosen before the unit is actually expressed: this situation therefore entails the assumption that the speaker has a clear idea of the extent of the main unit in a text.

Let us consider the case for explosive generation in relation to grammar. The highest rank in grammar is that of the clause complex, but clause complexes can be both long and deep (that is, many clauses joined together, with many layers between them; cf Halliday 1985a:Chapter 7), and while it is assumed that speakers have certain intentions at the start of a clause complex, there is no suggestion that the speaker has planned all the clauses and all their interrelations before beginning to express them. The case for explosive generation at this rank is therefore weak, and we are not aware of any linguist who would argue for it. For the choices relating to an individual clause, the case for explosive generation is stronger, but still not convincing. It would certainly be counter-intuitive to suggest that a speaker proceeds without prior intentions, that is, without having any idea what it is that he or she wishes to say. But there is ample evidence that in an unfolding text, speakers may diverge from the planned path, taking up a path which is later judged to be unsatisfactory, or perhaps finding themselves in a branch of a path which has lead them into semantic or structural difficulties, from which they need to extract themselves. We saw an instance of this in the example at the beginning of the chapter, where the speaker was unable to find a satisfactory type of 'larger text' to illustrate her point, and de Smedt and Kempen (1987) provide further examples. Such evidence supports the case that generation need not be entirely explosive.

The case for explosive generation is also weak at the rank of group. Consider, for instance, a nominal group, where it is possible to extend an

unfolding nominal group by adding further Epithets, by making the Head a complex Head, or by tacking post-Modifying elements onto other post-Modifying elements (as in This is the cat that chased the rat that ...), and so on. The possibility of a speaker extending these structures, on the spur of the moment, so to speak, works against the potential for entirely explosive generation. If generation could be explained explosively, then the understanding of function arising from a dynamic perspective would indeed be meaningless, but generation is certainly not wholly, and possibly not even partially, explosive; thus a synoptic perspective has great difficulty accounting for the types of situations just described.

Yet, it is the case that from the producer's point of view, secondary weight is accorded to function arising from a dynamic perspective, that is, to the nature of the path steps. This is because semantic intentions are generally understood to be prior to the actualisation of any choice, so the intentions precede the unfolding path; in other words, the speaker will have some idea of which features to select in relation to the unit about to be produced. But this does not mean that function arising from the dynamic perspective is less important - it is in fact an essential component in modelling speaker production of a dynamically unfolding text. For example, having commenced a certain path in order to realize a particular meaning, the speaker might find him/herself obligated (structurally) to complete the path; or a selection at one path point might open up path possibilities which the speaker had not previously considered, allowing the text to take an unanticipated direction. Further, in producing a text, a speaker typically self-monitors what is being produced, therefore simultaneously playing the role of receiver, with a receiver's perspective on the unfolding text. For the producer, then, a certain priority is accorded to the choices at path

points, over the path steps themselves. But it is not by any means the case that, in an unfolding text, the role of the latter is obviated.

In contrast, for the receiver of a text, primary weight is accorded to the path steps, and secondary weight to the choices at path points. The receiver of a text uses the current choices to set up hypotheses about what is to come next, and interprets the next actual choice in light of these. The actual choices are understood against the background of what the receiver expects the text to be meaning at that point. Hoey (1983) argues a similar case for the reader making sense of a written text. The role of the dynamic perspective is reinforced by the fact that receivers are occasionally 'wrong-footed' and have trouble 'fitting in' the current (path point) choice to their cumulative understanding of the text.

Note that both here and in the example above of the speaker, it is accounting for what producers and receivers do which is important: accounting for the workings of their minds is not an issue in this thesis. Further, the path model is used as a route into understanding the structure and meaning of an unfolding text: to say that the two views of function embodied in it - the path steps and choices at path points - may be primary or secondary according to the role of the language user does not mean that one is more or less important than the other in theoretical terms.

Given the predominance of the synoptic perspective in linguistic modelling, it would be natural to interpret the dynamic perspective as secondary, being at best an interpretation strategy to understand relations between choices which have been predetermined, that is, which already 'exist'. But the dynamic perspective adds to the understanding of the meaning potential of an unfolding text: it is not just the case that certain

choices must follow others at sequential points. Rather, there is an option to choose what will come next in an unfolding text; the choice relates to the way to develop that text, and is not necessarily predetermined by a synoptic understanding of meaning potential.

As a result of this understanding of function from a dynamic perspective, several important points arise in relation to the paths unfolding in a text. Firstly, the analyst, who must perforce play a role akin to that of a hearer, cannot determine the boundaries of a unit until that boundary has actually been passed. This also means that the nature of the chosen path step cannot be determined until the next choice is actualised. Let us return to the nominal group, the first ... . In this example, first may well be the end of the nominal group in question, but from a dynamic, unfolding point of view, this cannot be known by the hearer or by the analyst until the next element is reached. So, if the path step of *closing* is possible after first, it is necessary to wait for the following choice to be actualised before being able to determine whether that path was indeed taken up or not. If the next choice begins a new path, or if only silence follows, then the preceding path has indeed been closed. Thus the way in which boundaries are determined from a dynamic perspective contrasts markedly with the determination of boundaries from a synoptic perspective.

Willis (1987:41) confirms this position, observing for the case of discourse that we "can only describe the discourse as it unfolds and according to how it unfolds." That is, whatever the expectations, description must wait for a further choice to be actualised. As each current choice sets up different possible path steps, a speaker may choose to take any one of these (and the motivating factors behind such a choice are discussed below), and from the hearer's point of view, it will be possible to

hypothesise the possible path steps from that point, but it will not be possible to determine the actual step until the next choice is reached. Interestingly, the same situation arises in non-linguistic domains; Bordieu (1977:9), for example, discusses the exchange of gifts, and observes that "uncertainty remains as to the outcome of the interaction as long as the sequence has not been completed."

The second major implication of the dynamic perspective on function is that it distinguishes the type of path presented here from that of the flowchart, ATN and systemic flowchart. There, different potentials for ongoing development do depend on the current choice, but no value is given to the process of choosing from among these alternatives. That is, no meaning is ascribed to the choice to move forward in one way rather than another, and the 'meaning' of the selection derives only from being able to compare it, synoptically, with other possibilities at the same point. As a result of this restricted view of potential, the relevant models must be described and built in advance of the text, so to speak: they exist *in toto*, because all the (synoptically) possible means of developing the text have to be accounted for. However, given the notion that a path may have its own dynamic function, and given what is known about synoptic potential, it is possible to build the path in conjunction with an unfolding text. The nature of the unfolding path from a dynamic perspective is therefore text-dependent. So at any point in the unfolding description, it is possible to pose questions such as 'what would constitute a *continue* from this point? a *change*? a *close*?' And, 'How might the text develop from here?' Or alternatively, 'how does this option relate to the preceding one?' and 'How has it contributed to the unfolding text?' It is not necessary, or even possible, to propose one complete path for a whole text before an actual text is examined; rather, the

description grows with the text. This enables a comparison to be made between the expectations for what might happen at the next point and the next actual selection.

By now a third important point about the paths should be clear. The path notion must apply to a description which has a structure consisting minimally of two *ranks* (rank being the scale of abstraction accounting for the hierarchical arrangement of linguistic units, such as *clause-group-word* in English; cf Halliday 1961). Steps between units are interpreted in terms of their role in the next highest rank. For instance, steps between *words* are interpreted in light of their role in a *group*; steps between *groups* are interpreted in light of their role in a *clause*. Or, in discourse, steps between *moves* are interpreted in light of their role in an *exchange*, and so on. Once the highest rank in any description is reached, it is necessary to move up a level of description in order to be able to interpret the highest rank. For example, to interpret steps between clause complexes in grammar, it would be necessary to consider the role of those clause complexes in *text*.

5.1.5 Simultaneous path analyses: *path sets*

The above explanation of the basic path model has assumed that while a range of options may be available at the next point, only one of these is selected to become the new current environment. But given the dynamically unfolding nature of this model, it is often not possible to determine exactly which option has been selected. This is because an actual linguistic realization may fulfil more than one functional role, in either the syntagmatic or paradigmatic sense. It is therefore necessary to postulate *simultaneous analyses*: two or more paths unfolding at the same time to

account for the same stretch of text. In Chapter Three, it was argued that without the benefit of hindsight available from a synoptic perspective, a dynamically oriented model must allow for multiple analyses. The necessity for simultaneous paths is most obvious from the receiver's or analyst's point of view, but it is also necessary in modelling speaker production. It was noted in the preceding section that while speakers undoubtedly have some specific intentions as to the text they are creating, it is not necessarily the case that all their intentions are formulated prior to the unfolding of the text. A certain underspecification of choice allows for the fact that any current choice may set up multiple paths, and this enables various aspects of text-production to be explained.

The main principle of the path model is of course that multiple options - or *path steps* - open up from any given current point, but the case of simultaneous analyses is different again. A current point will set up the possibility for different types of *sustaining* or *closing* steps to follow, but if the current choice itself can play multiple roles, then different *sets* of path steps can be seen to open up from that point. Consider for example a nominal group such as the telephone. If this is produced or received as part of a dynamically unfolding text, it is possible that telephone could be functioning as the Head of the nominal group, or as a Classifying element with a Head to come. That is, at this stage in the unfolding text, telephone could be playing more than one role. If telephone is functioning as Head, the options for the next position would be to post-Modify the group (as in the telephone in the living room), or move on to another group (as in the telephone is broken). If, on the other hand, telephone is not functioning as Head, then the options at the next point would allow a Head (as in the telephone account), or other pre-Modifiers, such as further classifying

elements to follow, and only after this would it be possible to consider post-Modifiers or other groups. Thus, simultaneous paths need to be considered. This is illustrated below in Figure 5.4, where different paths are seen to open up from the telephone.

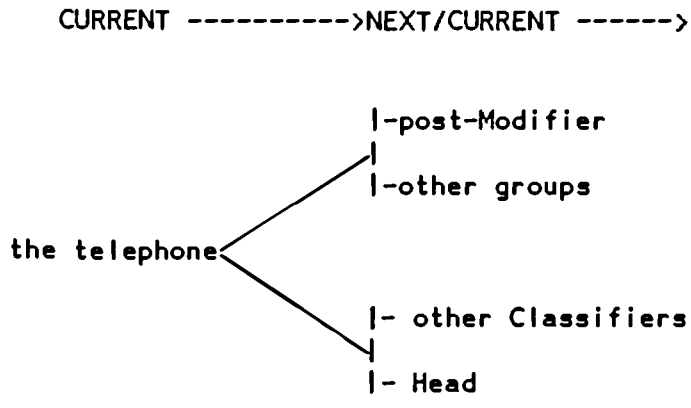


Fig. 5.4 Different paths opening up

The fact that such an example would occur in a broader context will mean that the relevant path is usually obvious: it may, for instance, be clear that it is a telephone account at issue. This does not, however, negate the principle that the current state can set up different paths of expectation. When different groups of paths open up from the same current point, they are termed *path sets*, each *path set* containing multiple *path steps*, that is, the options to continue, change, complete or abandon a current path.

As for the path steps themselves, the principle of simultaneous analyses can only operate in a rank-based model: simultaneous analyses arise when an option at one rank has the potential to play more than one functional role in the next highest rank. Thus, in the example given above, telephone is a member of a particular class of *word*, namely noun, and may fulfil the role of either Classifier or Head in the next highest rank, that of the *group*. A

simultaneous analysis is provided simply by positing potential path development for each functional role of the unit in question, as illustrated in Figure 5.5 below.

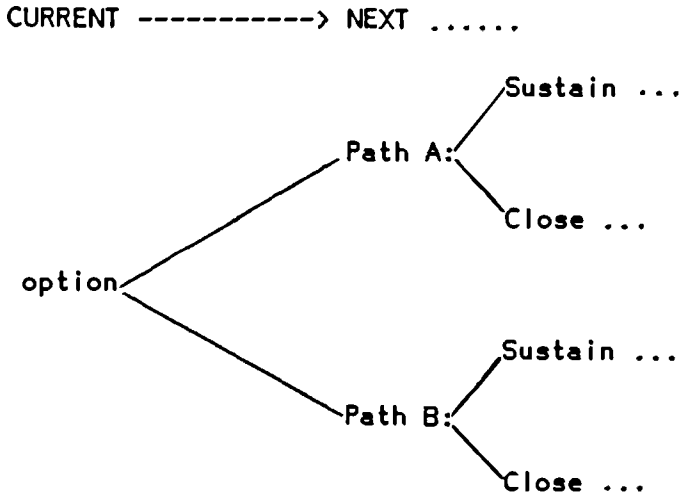


Fig. 5.5 Simultaneous path analysis

In this figure, two *path sets*, Paths A and B, open up from the current option, each path set having its own path steps contained within it. These are the expectations arising from the multiple functional possibilities of the current option. Of course, it is also the case that the choice actually made at the next point may set up more than one path set, and it may seem that allowing for simultaneous analyses invites the spectre of endless, ever-expanding paths. This is not, however, the case. Given a current choice, expectations are posited for the next choice, but once that choice is actualised, expectations are reformulated in light of that new choice. So the analysis proceeds little by little, and paths are built up accordingly. The fact that one current choice sets up multiple possibilities does not mean that each potential path must be followed through to the end of the text. Rather, each next actual choice is used as evidence that one of the paths

posited in the previous environment has been taken up; the remaining paths are left behind.

If a current choice gives rise to multiple path sets, this means that the (paradigmatic) function of the current choice cannot be definitely determined. This does not mean that its functional classification is non-existent, rather that it is provisional. By taking up one of the paths posited from the preceding choice, the next actual choice could be argued to result in retrospectively determining the way in which the preceding choice is classified. For instance, if the above example of a telephone is followed by book, then this could be said to retrospectively determine that telephone functions as a Classifier in that nominal group. However, the idea of retrospective determination poses problems for the path model. If retrospective classification were to be included, it would be necessary to find a way of leaving the path at the actual choice, returning to the previous choice and giving it a definite classification, and then going forward again to the current, actual choice to posit further paths. This seems both awkward and unnecessary. An alternative way of relating the preceding choice to the current one is not to return retrospectively to earlier options, but to simply continue on the path which the actual choice takes up, considering the options from there, and leaving the other paths behind. The advantage of this is that it is not only less awkward than having to shift back and forth in the path, but it allows the *latent potential* of earlier choices to be retained. Latent potential is discussed further in the next section.

Dealing with simultaneous analyses in this way means that classification of current choices will often have to be delayed until the next actual choice is seen. This parallels the identification of path steps, which also has to

wait for the next actual choice. It may be the case that two or more path sets can be followed simultaneously; that is, that some choices can continue to be interpreted in more than one way. This would constitute an *ambiguity* in the text. The multiple path sets should be retained until there is a choice in the text to clearly resolve such an ambiguity; if necessary, the multiple paths can be retained for the duration of the text. Some analysts may find this a strange approach to take, but following Sinclair (1990), it is argued here that if the text itself does not resolve the ambiguity, there is no reason why the analysis should be required to do so. For instance, in the following joke, no fruit flies like a banana, the success of the joke depends on the multiple functional roles of fruit and of flies. Fruit may function as either Head or Classifier in a nominal group, leading to the expectation that if it is Head, another element of the clause might follow, or if Classifier, a Head will follow. The next choice, flies, also has multiple possible roles: as the Process in the clause (the main verb in a verbal group), or as plural Head of a nominal group. Thus flies can take up either path set up by fruit. The next phrase, like a banana, can also take up either path, leading to the interpretation in the first case that 'there is no fruit which flies quite like a banana' and in the second case to the interpretation that 'there isn't any fruit fly which likes bananas'. The success of the joke depends on both path sets being followed through to the end.

5.1.6 *Shadow* and *latent* potential

The path model presented here gives rise to two closely related but nevertheless distinct concepts of the *shadow* and the *latent potential* of path

steps or of choices at path points. These concepts enable certain aspects of meaning from a dynamic perspective to be explained as a text unfolds, without the need to retrospectively interpret previous choices.

The notion of a *shadow* refers to the influence of a current choice on the interpretation of a next choice; the current choice refers most typically to choices at path points, but may also refer to a stretch of a path, that is, a sequence of path steps between path points. This concept is based on the hypothesis that a next choice will be interpreted in light of the expectations set up by the preceding choice. For example, if the current path is a nominal group and has reached the point of a very ... the expectations following this are that (i) the path will be sustained, most probably by a *change* step, adding an Epithet to the group and that (ii) if an Epithet is added, that it will be gradable, because very modifies gradable adjectives. If the next actual choice is not a typically gradable adjective, it will nevertheless be interpreted as being gradable, because of the shadow of expectation cast by very. For example, while wooden is not usually gradable (something either is or isn't wooden), the group a very wooden... (man/face/expression) causes no problems of comprehension. (It would also be possible for very to be repeated, but this only defers the expectations regarding the Epithet.)

This example illustrates the relevance of the shadow to both path points and path steps: the expectations following very relate both to the obligation to sustain the current path, that is, the nominal group, and to the obligation to effect the path step in a particular way, by adding a certain type of descriptive element. Sinclair (personal communication) refers to this phenomenon as providing a *frame* of interpretation, but as this term is used in another sense later in this chapter, the term *shadow* is preferred.

While this explanation is presented from the receiver's point of view, it is as relevant to the perspective of the producer, as the producer can make use of the shadow notion to produce examples such as the one just cited.

On the other hand, *latent potential* arises when one linguistic realization at a path point manifests more than one potential functional role, as in the case of a verbal item which could be playing the role of either auxiliary or main verb. It is the latent potential of a choice which gives rise to simultaneous paths. Even when there is little doubt which aspect of the potential is in use, the unactivated potential can affect the interpretation of ongoing choices, or can be taken up at a later stage in the path.

Thus the notions of shadow and latent potential can interact. The implications of the latent potential of a current choice for a next choice arise because the unused potential of the current choice casts a shadow forward onto the next. Consider another nominal group example to illustrate this. If a current nominal group is the two ..., something in the text may lead to a strong expectation that this nominal group will be sustained, by the addition of a Head, for instance, as in the two things. However, if the next choice does not sustain but closes the group (by shifting into a different group, as in the two are ...), then the latent potential for two to be Head enables this example to be interpreted without difficulty. Further, the shadow cast by the unused remainder of the latent potential, its potential to be a Classifier, means that two is understood to be a referent for two 'things'.

It can be somewhat problematic to differentiate the effects of shadow and of latent potential, as the two are similar concepts seen from different

angles. A shadow is the potential, latent or actual, cast forward from a particular point to another point, affecting the interpretation of the latter. Latent potential refers to the multiple functional possibilities of a choice and is used to explain how multiple possibilities may arise at a next point or how a (perhaps unexpected) current choice can be interpreted as the text unfolds. In the example of two above, these concepts enable the example to be explained as it unfolds, without it being necessary to 'go back' in the text and re-analyse two.

Further, both concepts apply to *paths* as well as to points on paths. Simultaneous analyses arise because of multiple possibilities at a particular point, and as the example of the 'banana' joke in the previous section illustrated, simultaneous paths can be carried through to the conclusion of a (in this case, short) text. In that example, two paths operated in conjunction, one being latent throughout, with the shadow of one constantly affecting the interpretation of the other. Hence, the complex play on meaning which constitutes the joke.

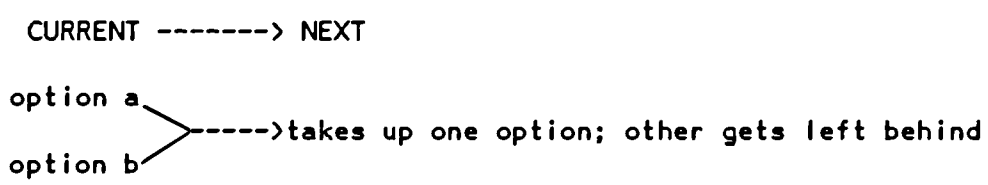
It should be noted that individual readers will vary as to which path takes the latent role for them, or that one path may not be perceived immediately (and so it takes longer to 'get' the joke), or even that one latent path may not be perceived at all (and so the joke falls flat). However, this does not negate the fact that the latent paths are still part of the meaning potential of that text; the fact that they are not perceived by an individual reader is a sign of that reader's linguistic limitations.

In order to clarify the way in which the shadow and latent potential interact, the different possibilities are illustrated below. For each

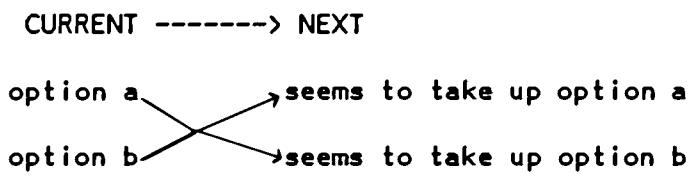
situation, the effect(s) of the option at the current point for the option(s) at the next point are captured.

(i) Shadow:

(ii) Latent potential:



(iii) Latent potential = simultaneous paths:



(iv) Shadow + Latent potential:

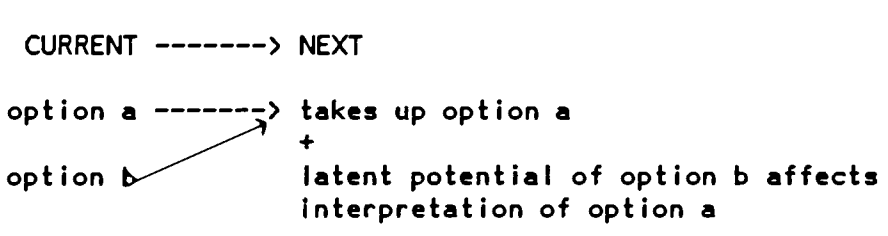


Fig. 5.6 *Shadow* and *Latent* Potential

5.1.7 Further definition of *current* and *next*

The labels *current* and *next* have so far been defined only as the environment of an option in a text, but it is important to extend this definition. Firstly, it should be noted that the labels do not have to apply to the same type of unit or level of description: thus a current choice may set up expectations for choices at a different rank or level in the relevant description. Consider the case of simultaneous paths following on from a nominal group such as the telephone. Following telephone, it would be possible to posit expectations for other elements within the nominal group (adding a Head or a post-Modifier, for example), as well as for other elements of the clause, that is, other types of group. Thus the definition of *current* and *next* should be flexible, as argued in Chapter Three.

Secondly, it should be noted that *next* does not have to mean *next in sequence*. It most frequently does refer to the immediately next item, and in the chapters relating more specifically to grammar this will be the dominant case, but it is also possible for a current option to set up expectations for an option at some future point in a text. For instance, a nominal referent may be expressed by lexical items carrying different attitudes, while still expressing the same referent, as in freedom fighter *versus* terrorist. If in a dynamically unfolding text such an attitudinal lexical item appears, this could be said to set up the expectation that future instances of the same referent will be expressed with a similar attitude. Between the current and next instance of that lexical item, however, there may be a great deal of intervening text. This is one example of how *next* does not have to mean *next in sequence*.

The first aspect of this extended definition of *current* and *next* does not have to be formally captured in the model, as long as it is understood that the model operates on a rank-based description and that the definition of the units operating in either environment can be flexible.

It is rather more important for the path model to capture the second aspect of the extended *current/next* definition in a formal way, that of allowing *next* to be something other than *next in sequence*. This is because the model as it has so far been presented virtually forces a 'next in sequence' interpretation, and this reduces its effectiveness in dynamic terms. In an unfolding text, a current choice must of necessity be related to the next choice in sequence, so this aspect of the model should be retained. But a current choice may also set up expectations for future choices, and it is this aspect which needs to be built into the basic model. This can be achieved by noting the expectations set up for future choices in a type of 'history box', adjacent to but separate from the unfolding path. The details of this are presented below in section 5.3, where it is related to other issues informing an active view of choice, but the basic principles of operation are as follows. A current choice which may have ramifications for future choices will give rise to an entry in the box; the entry will be tagged for the type of unit to which it will be relevant at a future point in the text. This box needs to be carried forward with the unfolding text, and accessed when the relevant unit is in question. Thus, expectations at that future point can be informed by the details in the box. For example, an instance of attitudinal lexis, as mentioned above, would set up an expectation for further instances of the same referent to embody the same attitude. When a subsequent instance of the referent arises, the 'history

box' would be accessed to inform expectations about the attitude expressed through lexis at that point.

5.1.8 Summary of path section

In this section, we have established a path model to account for the progressive unfolding of choice. This model not only shows the options which become available as a text unfolds, but gives a functional value to those options. Different types of path steps have been presented, as well as path sets, and we have discussed some of the implications of this model for notions of choice within a systemic framework.

5.2 Modelling a probabilistic view of choice: *stacks*

The preceding section has established that the options arising in a dynamically unfolding text can be usefully modelled as a *path* of choices. It has not, however, indicated how one selection can be made from among a multiplicity of possibilities, pertaining both to the path steps themselves and to the linguistic manifestations at path points. This section proposes an addition to the path model which enables the selection of choices to be explained: it proposes the formalism of *stacks*, based on a probabilistic weighting attached to multiple choices.

Most importantly, this part of the model is based on the premise that a probabilistic account of choice is an essential feature of a dynamic perspective. In Chapter Three, it was noted that a progressive, prospective view of text observes the text as it unfolds, or as if it were unfolding, and

so is required to make probabilistic statements about the current state of the text. While this is most obviously important for the receiver of a text, as he/she will only be able to anticipate the path the producer is likely to be taking, it is also important for the producer, who is not obligated to take up the most probable path in a text, but who can exploit unlikely paths for his/her own purposes. In the absence of a global perspective, the final state of a text is not known, and so the expectations formulated as the text unfolds can only be hypotheses as to what may happen.

Additionally, as discussed in Chapter Three, probabilistic accounts may take various forms. One potential form of variation relates to whether the probabilistic account aims at fine statistical differentiation of possibilities or general differentiation only, in terms of relative degrees of likelihood. Fine statistical differentiation, however, assumes that many texts can be collected and compared, and so requires a synoptic perspective. Hence, for a dynamically oriented model, the aim is to explain probabilities in terms of broad differentiation of variables.

5.2.1 Origins of the stack model

The notion of the stack, as presented below, derives from the development of a device of this name in computational work. Its standard use in computation is explained here, but later it will be seen that in this thesis, it is used somewhat differently from its computational antecedent.

A stack is "temporary storage for data ... where items are added and retrieved from the same end of the list" (Collin 1988:204). While a computational task is in operation, part of that task can be temporarily

pushed onto a stack and retrieved from the stack at a later stage in the main task. The use of stacks in relation to linguistic modelling is exemplified by work on ATNs (for example, Woods 1970, Bates 1978, Reichman 1985) and by O'Donnell's (1986, 1990) work on dynamic modelling of the exchange (1986, 1990) or Matthiessen's (1991) use of it in relation to the modelling of Thematic progression in a text.

A clear visual representation of a stack can be achieved by representing it as a pile of layers built on top of each other, as illustrated in Figure 5.7 below. During the main part of a computational routine, a task can be pushed onto a stack; further 'pushes' build up the layers of the stack. The task at the top of the stack, which is the most recent entry to the stack, can be *popped* off the stack at a later stage in the main routine, bringing that sub-routine (that is, what was on the stack) into play. This both returns the task to the main computational routine and allows tasks further down the stack to come closer to the top. This is represented in Figure 5.7.

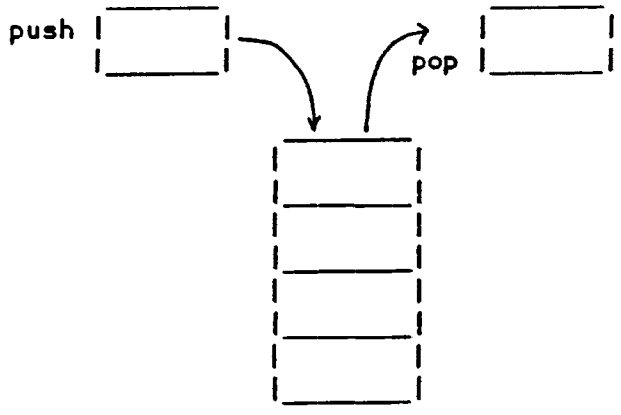


Fig. 5.7 A standard stack with a push/pop mechanism

5.2.2 The stack model as used here

The work on computation presents the possibility of stacking options according to a particular principle; in the work mentioned above, the options are tasks to be done and the principle of stacking is the chronological order in which those tasks will be undertaken. The most recent task put onto the stack pushes the others down, and it has to be popped off before the tasks lower down the stack can be reached; in other words, the stack operates on the principle of "last in, first out" (cf Matthiessen 1991).

The concept of *stacks* developed here, while based on the above-cited work, is quite different. Only the notion that options can be stacked according to some principle is retained: in the stacks developed here, the components of the stacks are no longer tasks but potential choices in a dynamically unfolding text (relating either to path steps or to points on paths), and the principle of stacking is no longer that of chronological entry to the stack but of likelihood of selection from the stack. These modifications are explained below.

As a text unfolds, different possibilities open up and close down, and this has been modelled with *paths* which give a functional value to this development. Each current choice is part of a path (either new or ongoing) and sets up various expectations for what might follow at the next choice point. There are two types of expectations relating to the development of an ongoing path. Firstly, the expectations relate to the path steps themselves, whether the path will be *continued* or *changed* and so on. Secondly, the expectations relate to the way in which any type of path step might be achieved; there may, for instance, be several ways of *continuing* from a current point. The notion of *stacks* is needed to explain how a selection is

made from this variety of options, and to capture the effect of choosing one option rather than another.

The options opening up at a given point can first be described as an unordered *cluster*; this simply means that all the expectations at that point are collected together and are undifferentiated in terms of any type of weighting. A cluster can be used to describe both types of expectations just mentioned, that is, all the path steps which are possible from a given point as well as all the ways of effecting an individual path step. Figure 5.8 below illustrates a cluster of options relating to the various ways of effecting one path step. In the following diagram, the relevant path step is *change*, and the unordered options, x, y, and z are possible ways of changing the path in question.

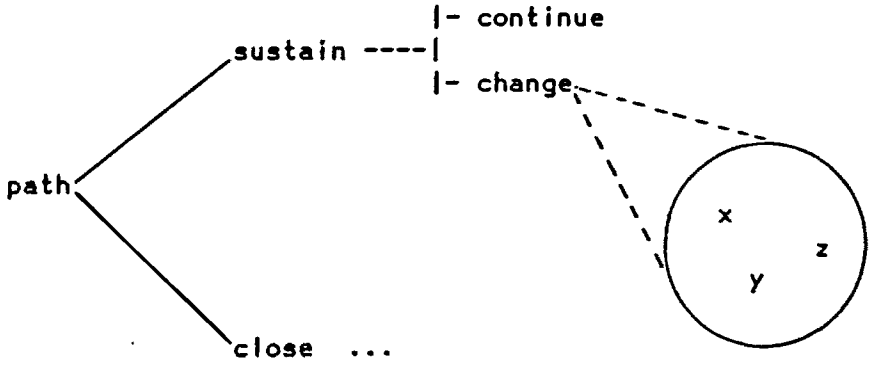


Fig. 5.8 Unordered cluster of options at a path point

A cluster assumes that there is nothing to suggest that one option would be more or less likely to be selected than another. Of course in an actually unfolding text, such a situation would be rare, if not impossible. This is because the types of conditioning factors described in Chapter Three - the effects of context, influence of earlier choices and previous experience of

the system of language - are always part of an unfolding text, and so influence expectations and possibilities at any given point.

The stack enables the principle of weighting of expectations to be added to the path model; a stack orders the options in a cluster at a next point from most to least likely, the weighting of the options being dependent on the given conditioning factors (whose interaction with the text is described in the next section). The stack should not differentiate every possible option in terms of likelihood of expectation; rather, options are grouped according to broad scales of more or less likely. A stack will have at least these two components, although in general, the stack operates more effectively with three broad layers: a top layer of most likely options, where the expectations are high; a bottom layer of least likely options, where the expectations are particularly low; and a middle layer of options, where the expectations are not heavily weighted in one direction or the other. (The top layer may well have its own internal layering, with one choice having a particularly strong expectation attached.) Each layer contains at least one option, and frequently contains more than one. Once the options have been ordered, this constitutes the expectations for the next environment. The ordering of a stack is illustrated below in Figure 5.9. In effect, the options at the top of the stack are those which are actually expected; the implication of putting some options at lower layers of the stack is that such options may occur in the next environment, but are not expected to occur. Thus, a stack effectively combines the first two components of the schema presented in Chapter Three (section 3.5), where general potential is combined with conditioning factors to produce the expected options.

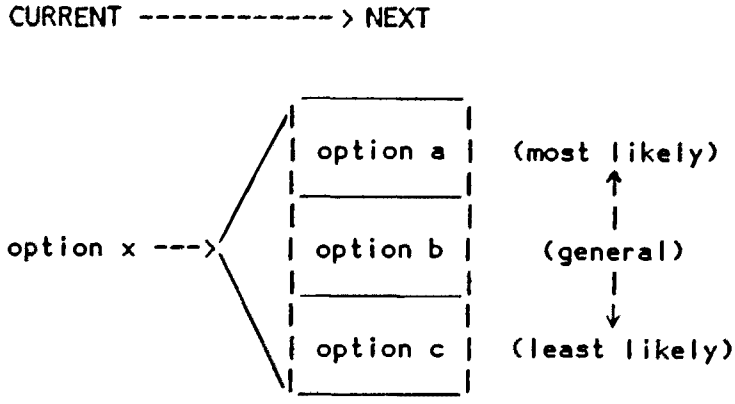


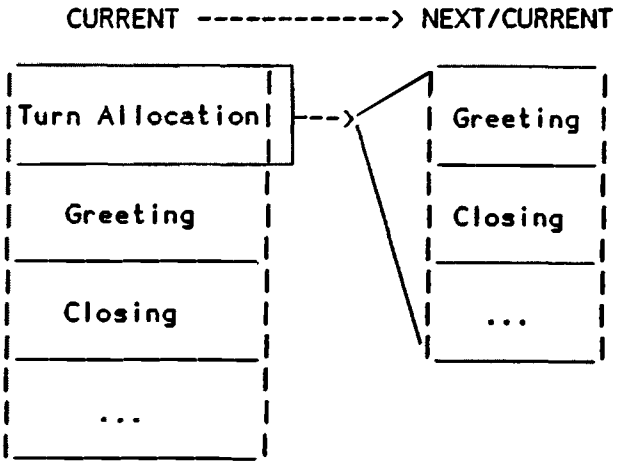
Fig. 5.9 A basic stack, ordered from most to least likely

Once a selection is made from a stack, this becomes the 'new' current choice, and from there, the possibilities for the ('new') next option are considered afresh. Thus at each next choice point, the available options will vary according to the nature of the current state. This can be illustrated with an example from the generic stages of a service encounter. If the current choice is, say, Service Bid, then at the next point the options might be Turn Allocation, Greeting or Closing (cf Ventola 1987:70-71). If Turn Allocation is selected from this stack, then Greeting is still possible at the next point; but if Greeting is selected at the current point, then it will not reappear as a subsequent possibility. So the formulation of the stacks at the next point depends on preceding selections. These two situations are presented below in Figure 5.10.

Two points should be noted about this stack. Firstly, this example does not attempt to explain how the weighting was arrived at in the stack; rather, it illustrates how different selections affect ongoing possibilities in the text. Secondly, the top-most option in the stack should not be read as a 'column heading'; it is an option of the same order as all the other options

in the stack, varying only in the weight it has been accorded in terms of expectations.

(i)



But: (ii)

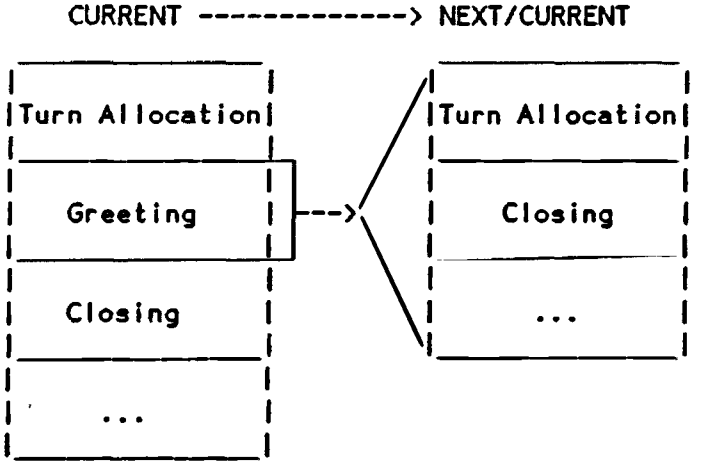


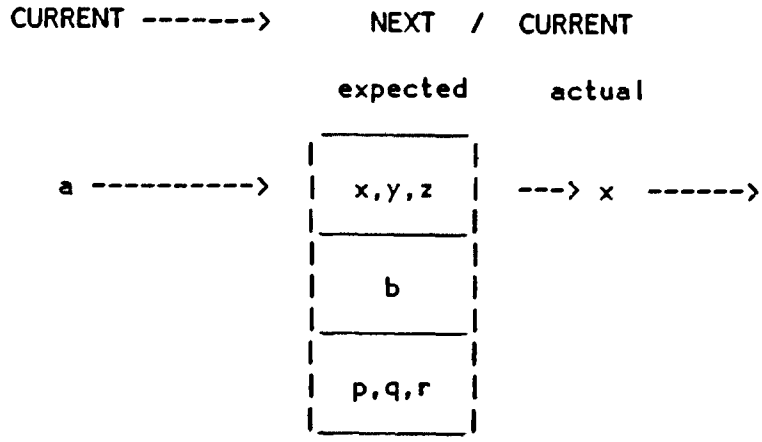
Fig. 5.10 Different ongoing possibilities according to selection from current stack

5.2.3 The meaning of selections from the stack

One of the most important reasons for positing a stack is to account for the effect of comparing the expected options with the actual option chosen as

the text unfolds. The comparison of expected with actual options was posited as an integral characteristic of a dynamically oriented model in Chapter Three, and it is assumed that the next actual option does not necessarily have to be the same as the expected option. The formulation of a stack implies that while all the options represented in the stack are possible options, some are more likely to be selected than others. This gives rise to two broad possibilities for further development of the text. The first type of development is one which maintains the status quo of the unfolding text, fitting in with the weighting of expectations posited in the stack at the preceding/current choice. The status quo is maintained when the most likely option from the current stack - the option at the top of the stack - is selected as the next actual option. So, in representational terms, the option can be seen to slip easily off the top of the stack. The second possible type of development is that which does not accord with the posited expectations, thus causing some type of marked effect in the ongoing flow of the text. This happens when the next actual option is one other than the most expected, thus it has to be dragged up, so to speak, from lower down the stack. The reweighting of the stack required to achieve this creates a bump in the status quo of the text. These two situations are represented below, the first being the status-quo type of development, the second the more marked type of development.

(i) Status quo



(ii) Markedness

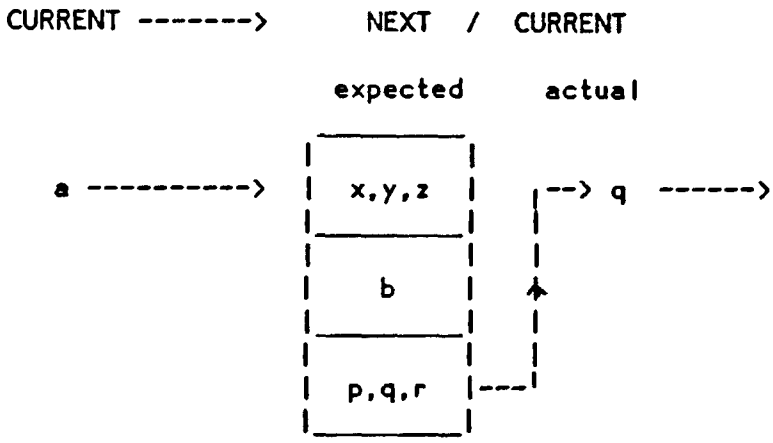


Fig. 5.11 Maintaining and disrupting expectations

The ability to compare the expected and actual choices in this way enables two interesting features to be explained. Firstly, and as indicated in the diagram, it accounts for effects of 'surprise' or markedness in a text, where an unusual, but nevertheless possible, choice is selected. A marked option is one which is chosen from lower down the stack; it is still part of the general potential for the next point, but as it is not the most immediately obvious option at that point, it stands out, so to speak, as something special. The assumption that the expected and actual choices may be different may seem to suggest a uniquely receiver-oriented position, but

again it should be emphasised that the producer's point of view is equally relevant. The terminology should not be taken to suggest that a next actual option which is not the most likely is, for the producer, unexpected *per se*, but rather, that the producer's actual choice subverts the expectations set up by his/her own text for that point. This may be accidental or motivated (in order to create a joke, for instance, to surprise, or to be novel). The important thing to note is that the producer can exploit the difference between the expected and actual choices.

The second advantage of comparing expected with actual options is that this enables some light to be shed on the difficult issue of acceptability judgements. Linguists are often required to judge whether a certain piece of text is *acceptable* or not, that is, whether it is 'correct', 'appropriate', 'a possible string in the language', and so on. The acceptability of most examples can usually be agreed upon, but for some examples there is argument as to whether one linguist's judgement is valid or not, and these debates seem almost impossible to resolve. An alternative to such introspection is to make use of corpus-based evidence (cf Sinclair 1986), but even then difficulties may arise (for instance, examples which occur only infrequently can be argued to be accidents, and not systematic options in the language). The problem is relevant to both synoptic and dynamic approaches to language, yet the dynamic perspective seems to suggest why it is quite easy to make unequivocable statements of acceptability for some instances of language, but almost impossible to make such statements for others. Judgements of acceptability tend to be made regarding decontextualised examples; in order to make sense of decontextualised examples, the analyst imagines a stack for 'language', that is, a synoptic stack encompassing all our experience of the system of language. But the complicating fact is that stacks are actually

ordered for the text of the moment, so it is necessary to re-contextualise difficult examples in order to understand them. The simple cases are those which follow well-travelled paths in language as a whole, so when decontextualised, it is not difficult to invent a context to explain them. The awkward cases are those for which the context is unusual and so, when the example is decontextualised, it becomes difficult to imagine how such an example could have been constructed.

However, as noted, the issue of acceptability may arise even within a dynamically oriented model. This is because the stack principle allows for the selection of options which are possible but unlikely, and so the acceptability of options from the lower layers of a stack may well be disputed between different language users. On the other hand, options from the top of a stack will tend to be undisputed.

Using the stack to compare expected and actual options should enable interesting developments in a text to be monitored. For instance, the selection of an unlikely choice has a knock-on effect for expectations at later choice points. This is because the first instance of an unexpected option will be highly marked, but if a similar set of expectations arises later in the text, and the same option is selected, it will be less marked than the first occurrence of that choice, and so on as the text unfolds. Another feature to note is that, just as the nature of the selected option affects ongoing possibilities (as illustrated in Figure 5.10), so too the probability attached to the selected option will affect the probability weightings attached to choices in subsequent stacks. In other words, the selected option can affect not only the nature of the expectations at the next point but also the relative weighting given to those expectations.

Moreover, the selection of marked options has different positive and negative effects for both producer and receiver. If the producer exploits unlikely choices, this could be interpreted positively, as evidence of the producer's creativity, or negatively, for example as evidence of the producer's desire to obscure an obvious path of meaning, or even as evidence of his/her inability to manipulate the obvious options. Similarly, effects of surprise, from the receiver's point of view, may be positive, opening up new vistas of interpretation for the receiver, or negative, creating too much 'hard work' in understanding what might be obscure steps in the path.

The ongoing chains of probabilities and the different types of effects which may be produced will not be studied further in this thesis, but the principles on which they are based are an important part of a dynamically oriented model. It is essential to capture the probabilistic nature of ongoing expectations as well as the effect of comparing the expected with actual options.

At this point, it is useful to compare the stack as posited here with its antecedent in computation. There are at least three significant points of difference. Firstly, the *push/pop* mechanism is not used to create the stacks developed here: instead, a stack arises whenever a cluster of options is subject to weighting by conditioning factors. Secondly, the components of the stack are not tasks but different possible ways of developing a text in a given environment, and the ordering of these options does not depend on the 'last in/first out' principle, but on the relative likelihood of the options. If similar stacks of options arise at different places during the unfolding of a text, the relative likelihood of the options will alter in response to the exigencies of the moment. The third point of difference is that the

layers in the stacks presented here may be subject to reweighting: the next actual option does not have to be taken from the top of the stack.

5.2.4 Applying the stack

Stacks can be applied to *path sets*, *paths* and *points on paths*. Every step from a current to a next choice opens up at least one path set. If there is more than one possible path set, then the sets may be stacked in relation to each other. Further, for each path set, the possible path steps (continue, change and so on) may be stacked in relation to each other. Finally, the possible manifestations of each path point, their 'content', so to speak, may be stacked in relation to each other. Let us take each of these cases in turn.

Firstly, if one current choice leads to multiple *path sets*, the choice of which path set to follow can be stacked. If, for example, the current choice is a dog, then dog could be functioning as either Classifier or as Head in the unfolding nominal group. The former possibility leads to a path set which then includes the possibility of sustaining the nominal group with the addition of a Head. The latter possibility leads to a path set in which the group can only be sustained through post-Modification, or concatenation of a different Head. The conditioning factors (as described in the next section) should indicate which possibility is more likely, and the cluster of choices - in this case a relatively small cluster - can be weighted in a stack.

Secondly, in relation to *paths*, stacks apply when the current choice opens up a path, as the path contains, by definition, a cluster of possible

ways of proceeding (by *continuing, changing, completing,* and so on). For instance, if the current choice is the, this opens up a nominal group path in which the options to proceed would include *continue:add* (possibly with further pre-Modifiers), *change* (with, for example, a Head of the nominal group), or *abandon* (by, say, moving into another group). But it is most important to note that the definition of what constitutes each type of step (*continue, change ...*) is dependent on the level of delicacy at which the analysis is operating. For example, if the current step is light and the next step is green, this may be taken as a continue step, because both add further information to a nominal group, or it may be taken as a change step, because green adds a different type of information to the group. At one degree of delicacy these options can be seen to be the same, at another, they can be seen to be different.

Thirdly, the stacks apply to points on paths, whenever one of the path options - to continue, to close and so on - could be effected in more than one way. If we again consider the current choice the..., it would be possible to sustain the unfolding nominal group path with a variety of pre-Modifiers (Numeratives, Epithets, Classifiers). At this particular point in the path, quite a large stack of options is possible.

The interaction of these different stacks can be represented in an abstract way. Consider the following example. Let us say that there is a current choice, C, which leads to two path sets, X and Y. Each path *set* consists of the different path *steps* (continue, change and so on). Further, let us say that there are several possible ways of manifesting each path point relating to a particular step, these options being represented by lower case letters. Further, let us say that for some reason in the text in which this example occurs, path set Y is expected to be more likely to occur than

path set X. And let us say that if path set Y occurs, the option to *change* is most likely to occur, followed by *complete*, with *continue* being least likely. Let us further say that if path set X occurs, the option to *change* is most likely, with the options to *continue* or *close* being less likely to occur, but undifferentiated in terms of likelihood between themselves. Finally, let us say that for every type of path step in each set, the manifestations at the path point are also ordered in terms of likelihood. This scenario can be represented in the following diagram. It should be noted that the figure does not account for the influence of delicacy on the definition of the path step.

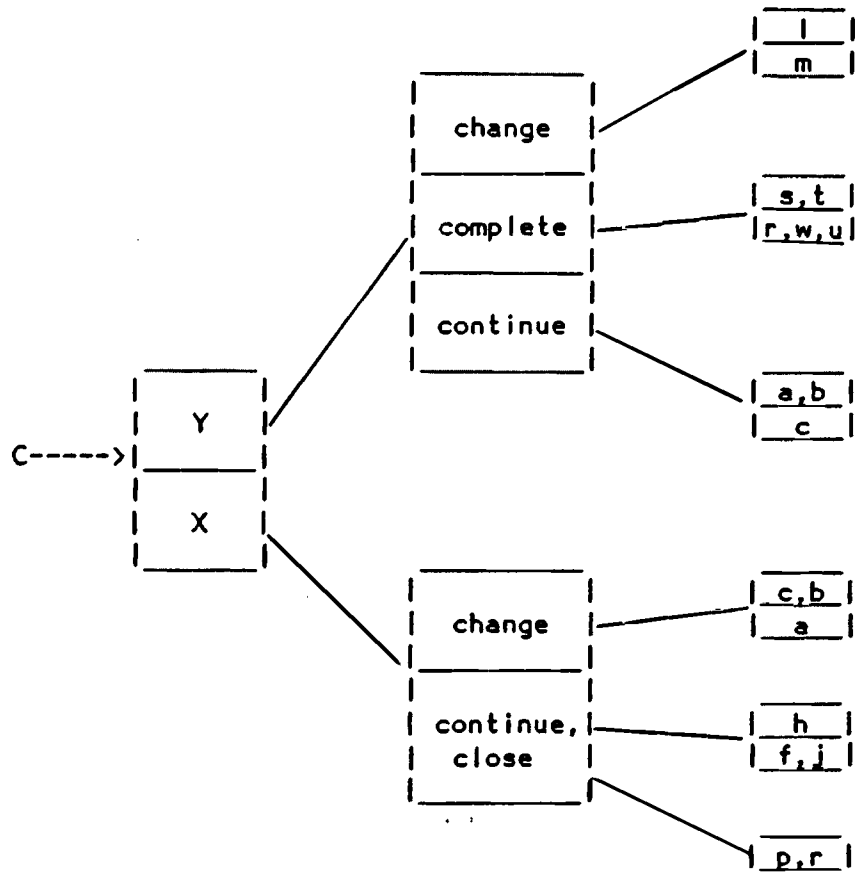


Fig. 5.12 (i) Interaction of different stacks

KEY:
- C = current choice
- ---> = step from current to next
- ___ (between stacks) = finer classifications
- ____ (within a stack) = options differentiated in terms of likelihood (more likely above, less likely below)
- , (within a stack) = options undifferentiated in terms of likelihood

Alternatively, the same situation can be represented with all the stacks compressed into one block, viz:

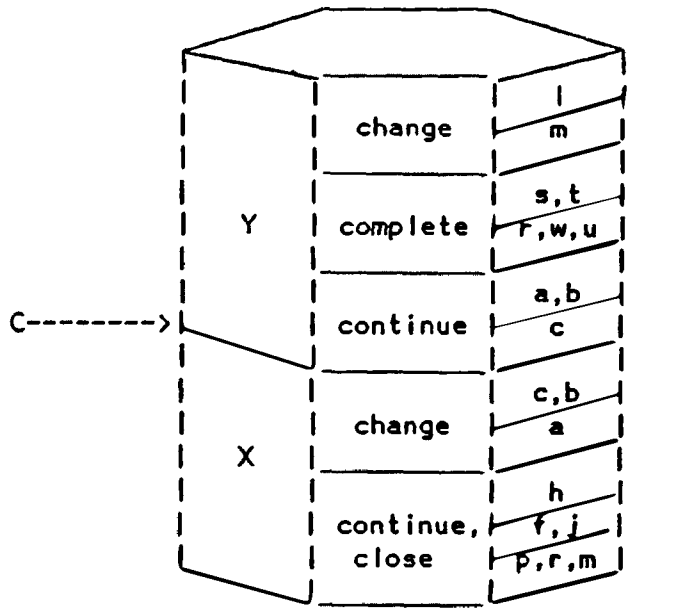


Fig. 5.12 (ii) Interaction of different stacks

Key: as for preceding figure

The above abstract representations of stacking possibilities can again be exemplified with the nominal group a dog. Following dog, two path sets arise according to whether dog is Classifier or Head. Let us say that path set Y represents the possibility of dog being Head, and path set X the possibility of dog being Classifier. Following Y, the most likely path step (in this particular text), is to change (for example, by adding a Post-Modifier); the next most likely option is to complete (for instance, by moving into a different group) and the least likely option is to continue (for instance, by concatenating another Head). Each of these types of path steps can be effected in different ways. For the other path set, the most likely step is to change (for instance, by adding a Head), and the next most likely step is to either continue (for instance, by adding another

Classifier) or to close (for instance, by abandoning the group; complete is impossible here: a move into a verbal group would force the interpretation that path set Y is being followed).

Interestingly, a common feature in the application of paths is illustrated by this example. If path set X is taken up, some of the structural options relating to path set Y will eventually be relevant to path set X. This is because path set Y represents the options after a Head in the nominal group; as dog in path set X is Classifier, a Head will eventually follow, and then the options of path set Y may come into play. Of course, if X is followed rather than Y, the so-called 'deferred' options will not be exactly the same as those which would have been possible had Y been followed. The reason for this is that the nature of the Heads between the two path sets will be different (that is, if dog is Classifier, it is highly unlikely that the nominal group will be Headed by dog, which would have been the case in path set Y). Nevertheless, the path steps following the Head (to continue with a complex Head, change with a post-Modifier and so on) will still be relevant.

Clearly, if stacks are possible for path sets, paths, and points on paths, there are many options to be considered. For the analyst, it is necessary to postulate a procedure for working through these possibilities, but it is not suggested that either a producer or a receiver necessarily posits and evaluates all these possibilities. The multiple options are presented in order to show how the unlikely situations, where it is necessary to draw on the latent potential of either path sets, path steps or path points, may be both allowed and explained.

For the analyst, there are two possible ways of working through the multiple stacks. The most typical way is to consider the options in the order in which they have been presented above; that is, if any current choice sets up multiple path sets, these should be explored first. Then, the stacking of possible path steps should be considered, and finally, the stacks operating at path points. The alternative is to draw on any conditioning factor in the text which suggests a strong likelihood of a particular choice being taken up: this should then override the postulation of any more general expectations. For instance, if something in the text leads us to expect trainer following a dog, then the lexically-specific choice of trainer can be postulated immediately, rather than, say, considering the likelihood of options such as a dog with a limp or simply a dog. This latter strategy can only be used, however, when something in the text facilitates the more precise expectation; otherwise, the most general expectations should be postulated first.

5.2.5 Summary of stack section

In this section, a way of ordering the options which arise from a dynamic perspective has been presented. The stack has been applied to path sets, steps, and points on paths, and we have explained how selections of differently weighted options from a stack may affect the meaning of the unfolding text.

5.3 Activating the view of choice: *frame*

The model developed so far in this chapter contains two components to capture the dynamic perspective, *paths* and *stacks*. The paths enable a functional explanation to be given to the unfolding of choices in a text, and the stacks explain selection of one choice from among many possibilities. One further component needs to be added to this model, an element which accounts for an active view of choice, and which therefore provides the motivation for the weighting of options in the stacks.

Chapter Three established that an active view of choice is an essential characteristic of a dynamic perspective: this is because the text is treated as an actual, unfolding entity, and so considerations of the moment are brought to bear on any text explanation. In formulating expectations, a properly understood active view accounts not only for the general linguistic potential at that point (of whatever level of description is in question) but also for the influence of conditioning factors. Thus, a knowledge of general potential will give the broadest possible outline of all the options that could be taken up from a given point in an unfolding text, but conditioning factors will ensure that only some of these are seen to be viable under the particular circumstances in question. Consider, for instance, the nominal group examples which were explored in the preceding section. At a particular point in a particular text, the potential for a noun to be functioning as Head or as Classifier in an unfolding nominal group may well not be a practical issue, as the exigencies of the text at that point may make it obvious which case is at stake. It is still necessary to bear in mind the full potential of any choice, in order to facilitate explanations of unusual

paths of development, but an activated view ensures that the likely means of proceeding from a given point will be constrained in a motivated way.

This section proposes a broad framework for providing an active view of choice. The components of an active view were introduced in Chapter Three, and are the *context of situation* of the text in question, the *previous history* of the text, and *previous experience* of the system of language. The presence of these features ensure that the expectations posited in a text are both viable and likely, rather than being just structural possibilities of the system. For example, in an interactive text taking place between friends, it would be highly unlikely to find linguistic choices reflecting a high degree of formality, as this would be contextually inappropriate. Or, if a lexical choice in the early stages of a text indicates some attitude on the part of the speaker, this would set up the expectation for a similar attitude to be reflected in related lexical choices later in the same text. Further, knowledge of choices which tend to co-occur in a language may influence expectations in text. As noted in Chapter Three, all of these components are equally relevant to a synoptic view of text, but they need to be reinterpreted for use from a dynamic perspective. Models which attempt to capture some aspects of this are examined below.

5.3.1 Modelling context

It is one of the great challenges to linguistic theory to provide a useful, insightful and tractable account of context which illuminates our understanding of language. To do justice to the available, competing accounts of context, or to their historical development, would require a treatise in its own right, and we do not aim to do that here. Instead, as the general

background of the thesis is systemic, we focus on an explanation of context from the point of view of systemic theory; however, as the aim of the thesis is to develop a dynamically oriented model, we also draw on several other accounts of context which are particularly useful for a dynamically oriented model.

It may be remembered that, as described in Chapter Three, Ventola and Steele (1983) argue for the inclusion of non-verbal realizations in a dynamic representation of conversation. O'Donnell (1990) reiterates this requirement in terms of the inclusion of behavioural options. Non-verbal or behavioural options (such as nodding instead of saying yes) are not specifically mentioned in the following discussions of potential. This should not, however, be taken to infer that they are excluded.

5.3.1.1 Register Theory

In systemic functional linguistics, the key component in an account of context is the *context of situation,* which determines the *register* or range of meaning potential for a text. Important early work on register theory was undertaken by Reid (1956), Halliday *et al* (1964) and Ure (1971), and the theory is crystallized in Halliday (1978) and Halliday and Hasan (1985). Here, we note the most central aspects of register theory.

A register is defined as "the semantic variety of which a text may be regarded as an instance" or "the meaning potential that is accessible in a given social context" (Halliday 1978:110, 111). This means that, given a particular context of situation, particular aspects of meaning potential will be in focus. Significantly, register theory attempts to account for those

features of situation which are relevant, that is, those features which give rise to linguistic repercussions in the text. The criterion of relevance is very important in providing a tractable account of context: every text occurs in some sort of physical, material situation, but not every feature of the physical situation necessarily has an impact on the nature of the text. For instance, the choices made in a text may be influenced by the fact that two friends are talking to each other face to face in a room, but the decoration of the room itself will not necessarily be relevant to their conversation. As Halliday (1978:122) puts it:

> The context of situation of any text is an instance of a generalized social context or situation type. The situation type is not an inventory of ongoing sights and sounds but a semiotic structure; it is the ecological matrix that is constitutive of the text.

The relevant features of situation, or sociosemantic variables, are therefore abstract in nature. They fall into three broad components: these are the *field* of the text, its *mode* and its *tenor*. The field of the text refers to the nature of the social activity in which the text is taking place: is it politics that motivates the text, or sports, or a job interview? The mode refers to the channel of communication adopted to express the text: is the communication taking place face to face, in written form, to a large crowd? The tenor refers to the role relationship between the participants and their relative status: are the participants equals or is there an imbalance of power between them; are they friends or strangers; is one taking on the role of expert? All these factors combine to produce a context of situation which sets up a particular *register* of meaning potential for the text in question. For instance, a teacher talking to students about geography will produce a different text from that which would occur in a lesson about the history of art, although some features of these two text

types - particularly the features relating to mode and tenor - will be the same. Or, if the teacher is not giving a lesson on geography but writing a book about it, the text will be different again, although the field will be the same, and the tenor similar. Or, if that same person is trying to explain something about geography to a friend, the language used will be different to that used in his/her role as teacher to student, even though the same topic is under discussion, and even though some aspects of the role relationship will be the same (viz, expert to learner).

It is not the case that every text has to have a unique register description: the specificity of the description can vary, and in a more general description, the components of the relevant situation types will overlap - as the above examples illustrate. Thus the generalized situation sets up a semantic type or range of meaning potential of which any one text is an instance. But, as Halliday (1978:111) notes: "speakers have no difficulty in recognizing the semantic options and combinations of options that are 'at risk' under particular environmental conditions."

Register can easily be misinterpreted as a focus on lexical differences, but all linguistic choices are affected by the context of situation. There is a systematic relationship between the components of situation - field, mode and tenor - and particular types of meaning in the linguistic system. Specifically:

> ...*field* relates to "the *ideational* component, representing the 'content' function of language, the speaker as observer; *tenor* to the *interpersonal* component, representing the 'participation' function of language, the speaker as intruder; and *mode* to the *textual* component, representing the 'relevance' function of language, without which the other two do not become actualized.
> (Halliday 1978:123)

Each of these meaning types in turn has a systematic relationship with lexicogrammatical choices so that, for instance, ideational meanings tend to be expressed by the system of *Transitivity* (process and participant types), interpersonal meanings by the systems of *Mood* and *Modality*, and textual meanings by the systems of *Theme* and *Information*. (These lexicogrammatical systems are explained further in Chapter Seven.) In this way, a particular configuration of situational variables gives rise to a register or range of meaning potential which is expressed by particular lexicogrammatical forms. Alternatively, the form of any text can be taken as an instance of a particular meaning type arising in a certain situation type. Thus, the relationship of context to text is bi-directional: given a particular contextual description, certain features of a text arising in that situation can be predicted, but also, given a particular text - out of context - it is possible to determine the type of situation which would have given rise to that text.

The above is only a very brief account of register and its role in explaining the relationship between context and text, but the important point to note is that it provides a motivated, systematic and tractable account of this relationship. In an actual situation, expectations can be posited as to the nature of any text arising in that situation, and given an actual text, hypotheses can be posited as to the nature of the determining situation. While register theory has been developed in conjunction with a synoptic, global perspective on text, it is equally important for a dynamically oriented model. Register theory cannot, however, be used in a dynamically oriented model without some modification, because the dialectic between context and text needs to be further elaborated in order to account for potential changes in situation or text as the text unfolds. While a

particular situation gives rise to a particular register, an unfolding text may actualise choices which alter the conception of the register and situation in some way, and this possibility must be allowed for in a dynamically oriented model. In other words, context itself must be seen to be active, as is the text.

While the relationship between context and text is formulated bi-directionally in register theory, so that a situation can be seen as giving rise to a text and a text can be seen to have arisen from a situation, it is not formulated in such a way that the influence of the unfolding text can be seen on the ongoing understanding of situation. Register tends to be applied in a blanket fashion to account for the distinctive situational features of a text: it is applied globally, synoptically, to text.

Two particular attempts have been made to overcome this limitation of register theory. Martin (1985b) and Hasan (1981) both argue that contextually motivated selections are not static throughout a single text, but are subject to variation during the course of the text. As Plum (1988:37) notes:

> It seems generally accepted that the choices made among the categories of field, tenor, and mode cannot be assumed to be static in a single text, i.e. that once they are made, they hold good for the entire text. Instead, they are assumed to vary systematically in line with the purpose to be achieved in the text, local purposes being a reflection of some global purpose, and thus subordinate to it.

The 'purposes' of which Plum speaks here are the generic stages of a text, in accordance with Martin's position that register variables will be influenced by the relevant generic stage of a text (so, for example, in a service encounter, the options arising from *field* will vary according to whether the generic element in question is *service bid* or *pay*). Hasan (1981:110) offers a different explanation, suggesting that: "context can be

seen as the major determinant of the defining characteristics of text genres" (emphasis added). She also argues (1981:110) that the context of situation "can be used to predict the structural potential for texts belonging to specific genres." The differing explanations as to the cause of ongoing variation between text and context (genre as a connotative semiotic in Martin's case; context as a determinant of genre in Hasan's) are a matter of considerable debate and not something with which we can engage in this thesis. For our purposes, the point to note is that some ongoing text/register variation can be accounted for in an unfolding text. But even if this is the case, the problem of adequately formulating the bi-directional relationship remains.

Harris (1988) underlines this problem when she demonstrates that the context of situation of some genres (such as courtroom discourse) cannot be adequately described with a blanket statement of context at the start of the description. This is because the relevant contextual features change according to the highly structured interaction of the participants in these types of texts. For instance, a courtroom official may be in a superior position to a defendant, therefore obliging the defendant to defer to the official, but the same official may be in an inferior position to the judge, therefore requiring the official to defer to the judge. Thus while a blanket description of the Tenor of such a text might be glossed as Tenor: formal, this would miss the subtle variations in role relationships between different participant constellations; further, even register variation allowed for by the approaches mentioned above would miss these subtle variations, as within any generic stage of the courtroom discourse, different participant interactions may arise (that is, the official and defendant, and official and

judge, may have to interact within the one generic element). (For a further description of courtroom discourse, see Mead 1985.)

The bi-directional relationship of text to context is an important principle of register theory, and goes back at least to Hjelmslev's (1943) elucidation of the dialectic relationship between system and process (as discussed in Chapter Two). However it is not formulated sufficiently explicitly to enable context to be seen as active and unfolding, in the way that text is so seen, given a dynamic perspective. Text arises in a certain situation, but the situation unfolds simultaneously with the text, and to describe an unfolding text as active also necessitates an active account of context. The following models aim for an active account of context.

5.3.1.2 Context space theory

A model which aims to provide a computational model of the active, ongoing process of discourse generation and interpretation is that of Reichman's (1985) *context space theory*. In particular, Reichman wishes to account for the ebb and flow of interactive conversation, with all the suspensions, resumptions, topic shifts and reference phenomena that interactive conversation entails (1985:17). The overall model consists of *context spaces*, accounting for discourse structure, integrated with a grammar based on ATNs, as introduced in Chapter Four. It is the theory of context space which provides the dynamic component of Reichman's model, because the context spaces are carried forward with an unfolding text, not only activating text choices, but in turn being modified by them.

Reichman hypothesises that a context space is a "fundamental unit of discourse processing" and argues (p24) that:

> a discourse is partitioned into a set of hierarchically related constituents, which are only partly defined by the conversational moves they contain. Discourse participants 'package' pieces of discourse into these separate units and selectively bring these units in and out of the foreground of attention in the generation and interpretation of subsequent utterances. The fundamental unit of discourse processing ... we call a *context space*. The structure of a discourse can be specified by the identification of its context spaces and the relations between them.

For Reichman then, *context* is a linguistic phenomenon; it is what other linguists might call *co-text*. She does not deal with the type of abstract understanding of context which was discussed above, but her work is relevant to our concerns as it demonstrates a bi-directional relationship between the context spaces and the unfolding text.

It is useful to exemplify the definition of a context space given above. One type of context space which Reichman discusses is an *issue* context space, which sets the topic of the discourse: the topic may be developed through support, challenge, discussion of related factors, and so on. Such developments "create new context spaces that are subordinates of the issue context space." (p25) Significantly, a context space is defined partly by the conversational moves it contains (that is, certain conversational moves will be seen to be challenges of an assertion, or supportive of it) and partly by the relation of the current context space to preceding parts of the discourse, that is, preceding context spaces. In other words, the understanding of the context space depends not only on the nature of the current text, but also on its relation to the preceding text. For instance, while a particular conversational move might be challenging, the focus of the challenge may have occurred many moves previously in the conversation, and it is necessary to grasp this relation in order to understand the challenge. Reichman argues that in her model, such 'long distance' relations are accounted for by the relations between context spaces. Further, different

context spaces not only exist in the same text, but can be seen to be foregrounded or backgrounded according to the current state of the text (in Reichman's terms, one context space may be more *influential* than another (p28).

Context spaces are described by a formal structure consisting of various 'slots', each holding different kinds of information. For example, all context spaces have a *goal* slot, "which specifies the conversational move to be fulfilled in developing a space, that is the discourse function the context spaces fill (e.g., support, explanation)". (p32) Also, they have a *method* slot, "specifying the method used to perform the conversational move (e.g., analogy, narrative)". (p32) Context spaces may fill slots for other context spaces, thus building up a hierarchy of context spaces. When modelling discourse, the relevant context for the unfolding discourse "is composed of two context spaces and ... at any given point in conversation succeeding utterances are generated and interpreted in direct relation to these two context spaces." (p53) This is similar to the idea of *current* and *next* established in the first section of this chapter: the current context space relates to the next context space, and an actual conversational move is made in the next environment, in turn becoming the new current environment.

Most importantly for our purposes, the relationship between Reichman's context and text is formed dialectically: "Our discourse grammar thus must characterize how the taking of particular options constrains later conversational development." (p62) As just described, the functional role of a conversational move depends on the relevant context space in which the move occurs, but the nature of the move itself will alter the context space, providing a modified environment for the next conversational move. Reichman develops a complex and elaborate model to account for this, but it is

important to note that: "the system does not have access to all of the information necessary to process discourse ... The context space system does discourse processing via calls to abstract procedures that specify sets of semantic or logical constraints that surface linguistic forms have to fulfil in order to maintain certain conversational roles at given points in the conversation." (p196) The efficiency of the working model is thus more apparent than real, and while Reichman accounts for some aspects of the dialectic relationship between context and text, we need a more general model oriented to context in the abstract sense.

5.3.1.3 The dynamic system

While Chapter Four refuted the validity of a 'dynamic system', some aspects of O'Donnell's work in relation to this have important ramifications for context. O'Donnell (1986, 1990) specifically addresses the problem of demonstrating how it is that context is modified by actual choices in text, thus facing the difficulties of accounting for the text - context dialectic. O'Donnell argues that context activates potential (in this case, behaviour potential), and that potential in turn modifies context. This is represented schematically as follows:

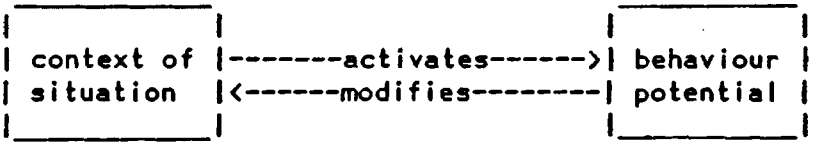


Fig. 5.13 O'Donnell's formulation of context-text dialectic

(O'Donnell 1986:42; 1990:12)

O'Donnell models both the context and the behaviour potential in terms of systemic networks, and uses realizational rules to demonstrate their interrelationship. For instance, in modelling an exchange between speakers, part of the relevant context may be the (systemically formulated) option as to whether any current turn in an exchange is pre-initiation (that is, those times when the participants are between exchanges) or post-initiation (that is, when the exchange is underway). Both pre- and post-initiation have associated realization rules which *activate* a certain component of the network relating to behaviour potential. For instance, pre-initiation activates a system in the behaviour potential containing the options initiate or keep quiet. In this way, context can be seen to activate behaviour potential. But in an unfolding text, each actualised choice (in this case, a selection from the behaviour potential) sets up a new environment for the following choice: it *modifies* the context. O'Donnell captures this by adding a realization rule which changes the relevant selection in the context network: this realization rule is in addition to those which have a structural output. So if the option to initiate is selected from the behaviour potential, this not only has a structural output, but feeds back into the understanding of context, modifying it. O'Donnell (1986:49) argues that "by adding context-changing rules we augment the model from one where participants act within their environment to one where they interact with their environment." (original emphasis)

Thus O'Donnell enables context to be formulated "as an object of continuous existence" (op.cit p48) which is partially modified by each successive selection from the behaviour potential. He demonstrates that the relationship between behaviour potentials at two successive points of time is not 'direct', "Rather, it is a relationship mediated by situation - behaviour

changes the situation which then activates a different behaviour potential." (op.cit p47, original emphasis). In other words, each choice made as a text unfolds modifies the context in some way, and this provides a new contextual environment for the next part of the unfolding text.

Despite our reservations about dynamic networks, O'Donnell does provide a means of formulating the interrelationship between context and text, and this is a valuable addition to systemic thinking on context. In terms of developing a dynamically oriented model, it is essential to account for the dialectic between context and text. It is a premise of the dynamic perspective that as a text unfolds, early choices in the text influence and modify the understanding of context which in turn affects expectations for later choices in the text. But it is unlikely that O'Donnell's proposals will be very practical for our purposes here: his work is very specifically oriented to modelling the exchange, and would be difficult to generalise to other areas. While only the basic details of his proposals have been presented here, they are in fact highly complex, and as Ventola (1989:152) observes, O'Donnell's representation "suffers from extreme elaborateness". Hence, while he has established an important principle in theoretical modelling by demonstrating one way of accounting for the text/context dialectic, it would be difficult to incorporate those proposals into the more general model being developed here.

5.3.1.4 Frame analysis

Emmott (1989) presents another way of providing an ongoing, active account of context which also activates features in text and which is in turn modified by those activated features. She aims to provide a comprehensive

model of participant reference in narrative, in order to explain how it is that a reader can interpret which characters are relevant to a story at any given time, and how the appropriate referent for a pronominal form can be found. Her contextual concerns are more specifically focussed than is the case here, as she deals with only one text type, long narratives (typically novels) and with one aspect of those texts, namely the way the participants in those novels are referred to. Nevertheless, the principles she establishes for modelling context are insightful and effective, and should be easily generalised to other areas.

The main device which Emmott proposes is that of the *frame*. It should be noted that this term has many uses in linguistics; Emmott acknowledges that her use of the term is closest to Goffman's (1975), and that it should be distinguished from *schemata* as used by Minsky (1977), for instance, and from *scripts* as used by Schank and Abelson (1977). The difference between Emmott's frames and schemata and scripts is that the latter are "stores of the general knowledge that we bring to a text, not the contextual constructs we build from it." (Emmott 1989:97) In contrast, Emmott's notion of frame is "a text-derived construct", "a mental store which records contextual information" (Emmott 1989:80). We suggest here that Emmott's use of the term is very similar to Hasan's (1981) concept of a *frame of relevance*, which we draw on in section 5.3.2.

Emmott's frames are constructed from various signals in the text, and are carried along with the text (by the reader). When a character is introduced in a text, he or she is *bound* into a frame, and may later be *bound out* again (by, for example, Mr X came into the room or Mr X left). Binding is "a relation between character and fictional context", and a set of binding

relationships constitutes a frame (Emmott 1989:86,87). Any one text may have multiple frames.

However, when reading a text, a reader needs to *monitor* the current context, that is, to be aware of which frame is currently relevant. This is achieved by *priming* a frame. Primed context represents "the context which is currently 'the reader's context'" (p87), that is, where the reader currently is in terms of the unfolding text. Emmott (p88) summarises these concepts as follows:

> When a frame is primed all of the characters in the location are primed and the location itself is primed too. Priming means that the reader is actively monitoring a particular frame. Bound characters and locations may be primed or unprimed depending on whether the reader is currently following their actions.

The frames are carried forward with the text and enable the reader to monitor the relevant action; Emmott argues (p95) that this is an essential part of a reader's ability to understand a text:

> a character's use of a deictic such as <u>here</u> will not always be immediately preceded by a mention of the place either in the character's own speech or in the main narrative. Even if there has been a recent full mention, use of a deictic does not necessarily require us to search for it. If we are to understand the text properly we need constantly to monitor where <u>here</u> is. A reader who cannot keep track of the current location cannot really be said to understand exactly what is going on.

The concept of frames is elaborated in considerable detail in Emmott's thesis, and is demonstrated with many real narrative examples. Here, we focus on those aspects of her proposals which are immediately relevant to our purposes. Firstly, while Emmott is proposing the frame as a mental construct consisting only of characters from fictional narratives, she has demonstrated the principle by which a feature of actual text feeds into our understanding of context. For example, if the narrative says <u>Jane came in and joined the</u>

others; she was late again, Jane is bound in to the current frame, and so joins the others. This frame continues to apply with the mention of she, and while the others are not overtly referred to when she is mentioned, they are assumed to remain part of the current frame (and so the reader does not wonder who the others are if the next sentence reads the others hated her being late). Emmott's proposals would obviously have to be extended to account for aspects of text other than participant reference, but this task should be feasible, and is explored below in section 5.3.2.

A second important feature of the frame analysis is that frames can be *modified*: "Frame modification involves an alteration being made but the rest of the frame remaining the same" (Emmott 1989:103). For example, a character can be bound in or out without necessarily affecting the presence of the other characters in the frame. Emmott notes that frame modification can only be achieved through an actual linguistic expression, such as Mr X left. Again, it will not necessarily be simple to modify Emmott's proposals, but the principle that the 'same' context can be modified or elaborated as a text unfolds is an important one, and one which it would be desirable to include in the model being developed here.

A third important feature of frames is the fact that readers can *switch* between frames. This happens when "the reader leaves one frame and starts monitoring another frame" (p111). The components of the frames themselves are not necessarily modified, as "the alteration is due to the reader's change of perspective rather than to a change in the grouping of the characters." In narrative, frame switch tends to be accomplished when the text indicates a change in *location*, as different groups of characters tend to have been bound in and out in different places, or when the text indicates a change in *time*, such as a shift to the past or the future. (cf Emmott

1989:114) Further, when frames are switched, "we leave the frame we have switched from intact"; "It stays as a memory store." (p117) Thus, in Harris's courtroom example mentioned above in the section on register, the relationship between the official and the defendant might form one frame, and the relationship between the official and the judge another. When the official is talking to the defendant, the relationship between the official and the judge is not necessarily affected.

A further point to note about frame switch is that when a switch occurs, the frame which is left behind is *stored*; if it is to come back into play later in the text, it must be *re-primed*. This does not mean that the process of binding characters in has to be repeated, but the text does need to indicate that a stored frame is back in focus (by, for instance, mentioning a character, time or place which is distinctive to the stored frame). Emmott says (p126): "When a stored frame is re-primed we do not need to mention each element of the frame again. If we mention one element then the others, being bound to it, can be re-primed automatically."

The significance of the frame-switch proposals are twofold: firstly, they indicate that different frames may occur in the one text - for narrative this means different clusters of characters; secondly, they indicate that it is the text which signals, through various devices, which frame is in focus. So, if there is one frame with characters X,Y,Z and one frame with characters P,Q,R, mention of R will prime P and Q, but not X or Y or Z. In relation to our concern here with context, it should be possible to extend these proposals to demonstrate that an unfolding text can both build different components of the overall context and indicate which component of the context is in question at any point in the unfolding of the text.

Emmott provides a clear and convincing explanation of how the text constructs and modifies contextual frames as the text itself unfolds, and how different frames may co-exist in and be manipulated by the one text. It is useful to replicate one of her diagrams to give some visual anchor to her proposals. In the following figure, the text (a narrative) is represented as unfolding from left to right. Simultaneously, a *character construct* (another feature of Emmott's proposals, explaining the details built up by the text about any one character) unfolds with the text, but this construct shifts in and out of focus, according to whether the character is part of a primed or unprimed frame.

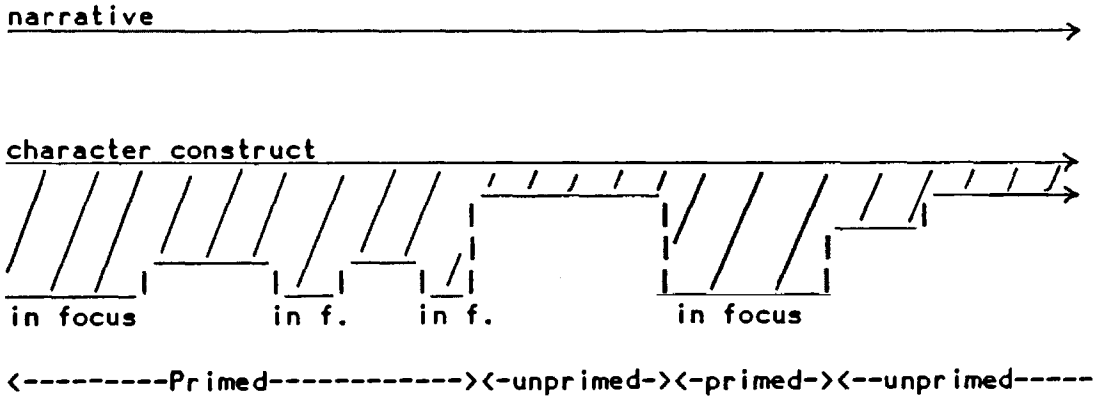


Fig. 5.14 Emmott's unfolding character construct

(Emmott 1989:174)

In this figure, *character construct* could easily be replaced by the *frames* which we have been discussing. Further, it is not difficult to imagine how different frames could be shown to interact in the course of an unfolding text: the frames could be represented in parallel, with different ones being in focus at different points in the unfolding text. In a three-dimensional representation, Emmott's frames could be envisaged as shapes

rising out of and sinking back in to a larger background shape, like icebergs rising out of the sea and sinking back again. The sea is the place where the icebergs are found, and their overt presence adds another dimension to our picture of the sea; when the icebergs are below surface, their covert presence is still part of the overall picture, even if they are not in view at a given moment.

5.3.1.5 Context change potential

It is worth noting that Ballmer's (1981a, 1981b) work on interrelating text and context was an important influence on Emmott. Ballmer is concerned with providing a dynamic account of language, and for him, an essential component of this is the text-context interaction. He argues (1981b:171) that:

> A notion of meaning in a dynamic framework accounts for the effect the utterance of a linguistic entity has in any given context (world, situation, etc.).

In Ballmer's view, linguistic expressions (such as sentences, texts) are considered to be "instruments (or organs) to influence and change the context." (1981b:169) He captures this relationship in the following graph.

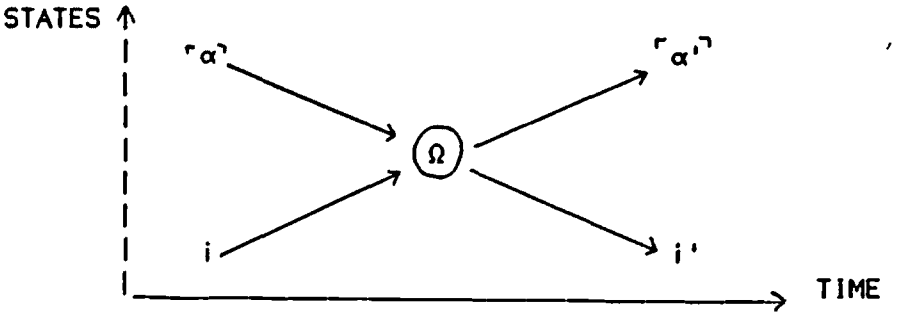


Fig. 5.15 Ballmer's *context change potential*

(Ballmer 1981b:169)

The explanation of this graph is as follows: " Ω characterizes the interaction potential of the whole language in that it assigns to every expression ⌜α⌝ used in context *i* a (possibly) transformed expression ⌜α'⌝ in the new context *i'* effected by the use of ⌜α⌝ in *i*. Ω is, so to speak, the context change potential of the whole language under consideration" (Ballmer 1981b:170)

The graph is appealing as, through the context change potential, the initial state of context and text can be shown both to interact and to produce a changed state of context and text. On the other hand, the components of text and context, and exactly how the interaction might take place, are left unspecified. These aspects are essentially the ones which we address in the following section.

5.3.2 Unified proposals for an active view of context

An active view of choice from a dynamic perspective requires a linguistically relevant model of context which is responsive to the changes in an unfolding text. The above examination of possible models of context suggests that a unification of register theory and frame analysis would be the most likely to meet these requirements. In addition, we are aiming to develop a model of context comparable in generality to the models of paths and stacks presented in the previous sections of this chapter.

The contextual model needs to show how the path choices in text are made active by being in a context of situation. First, it must be noted that given a dynamic perspective on text, the context of situation and the text are seen to unfold together, in response to each other (as captured by O'Donnell in his *activation/modification* model): choices in text are able to modify the context, so context cannot be described as an immutable whole. This relationship is captured below in Figure 5.15, where context and text are represented as separate components which unfold simultaneously; the arrows between the components represent the activation/modification relationship (which is elaborated below).

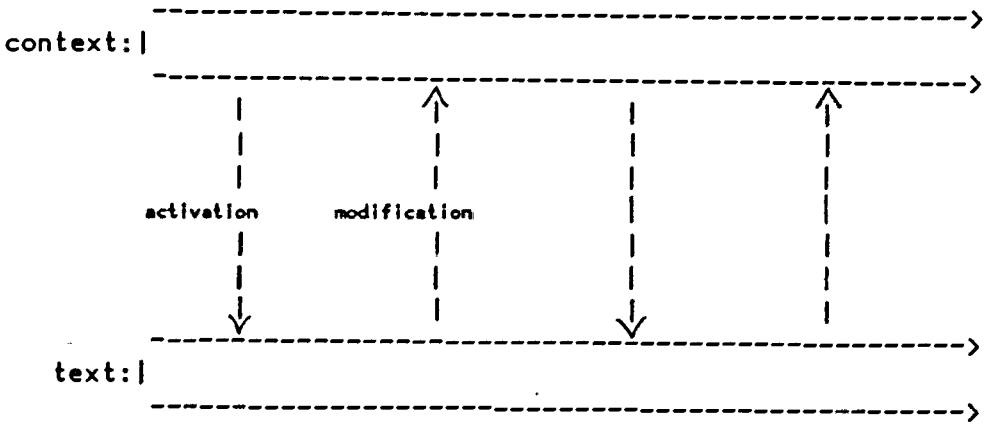


Fig. 5.16 Context and text unfolding simultaneously

The arrows in this diagram suggest that while context and text unfold together, context is somehow 'prior' to text. We need to substantiate this claim. The issue is considered by Hasan (1981:114) who asks: "whether text and context evolve together or whether some perception of (contextual) relevancies must precede text construction in real time." It is of course the case that a physical context of situation exists 'prior' to a text, in that a given situation (like walking into a party, taking up a microphone before a large crowd, tuning in to a favourite television programme, taking a book off a library shelf) provides a broad range of expectations (for both producers and receivers) as to what sort of text is about to take place. This relationship may be described in terms of bringing general knowledge of situation types to bear on linguistic interaction (cf scripts and schema theory, as in Schank and Abelson 1977), but Halliday's register theory provides an explanation which is linguistically motivated, in that context is interpreted in terms of its semiotically relevant components, which give rise to the meaning potential of the text. The implication is that until the text begins to be produced, it is not possible to know the relevant context, as it is the text which reveals the semiotically relevant features of the

situation. This suggests that context and text begin to unfold simultaneously.

Nevertheless, it is also the case that the physical situation provides a dormant source of potential contextual 'relevancies'; as Hasan (1981:115) observes, situational environments can be interpreted conventionally. In other words, even before a text is actually produced, the contextual setting establishes expectations as to the choices which are likely to be relevant in that text. In this sense, context can be seen to precede text; as Hasan (1981:115) notes: "the maker of the text must proceed from some notion of his frame of relevance." Register theory elaborates which features of situation influence which aspects of linguistic meaning potential. Specifically, and as noted earlier, the situational component of *field* tends to affect choices in *ideational* meanings; *tenor* influences *interpersonal* meanings, and *mode* influences *textual* meanings; there are some cross-over influences between these variables, but the basic relationships are as described. Hence before a text is even begun, there are strong (albeit broad) expectations as to the choices to be made in that text.

Expectations in text have already been modelled in the preceding section in terms of clusters and stacks, and a theory of context enables the weighting of the stacks to be explained. But context itself must be formulated probabilistically, because situations do not determine the text to be produced, but provide a range of meaning potential which the text exploits. Again, Hasan's work is pertinent to this: "each contextual configuration is indicative of a range of possible behaviours; ...it does not detail what each particular choice must be" (Hasan 1981:113, emphasis added). For example, if someone calls a friend on the phone to have a chat, it is to be expected that they would talk to each other as friends, that is,

informally and as equals. However, if one of these friends is annoyed with the other for some reason, their 'chat' could have a much more formal and distant character than would normally be the case. This example illustrates that, firstly, the contextual variables provide a range of expectations as to the nature of the text to be produced, and that secondly, it is the actual text choices which indicate which point from that range of contextual expectations has been made semiotically relevant. Figure 5.17 illustrates the case of context providing a range of expectations as to the relevant semiotic components, simultaneously activating an associated range of expectations in the meaning potential of the text. The expectations are stacked for each of the components of situation (field, mode and tenor) and activate a corresponding stack of expectations in the text (in terms of ideational, interpersonal and textual meaning). The components of the stacks (indicated by lower case letters) are not significant, but are included to show that firstly, a variety of options may apply in each layer of the stack, and secondly, that a certain range of expectations in context activates a certain range of options in text.

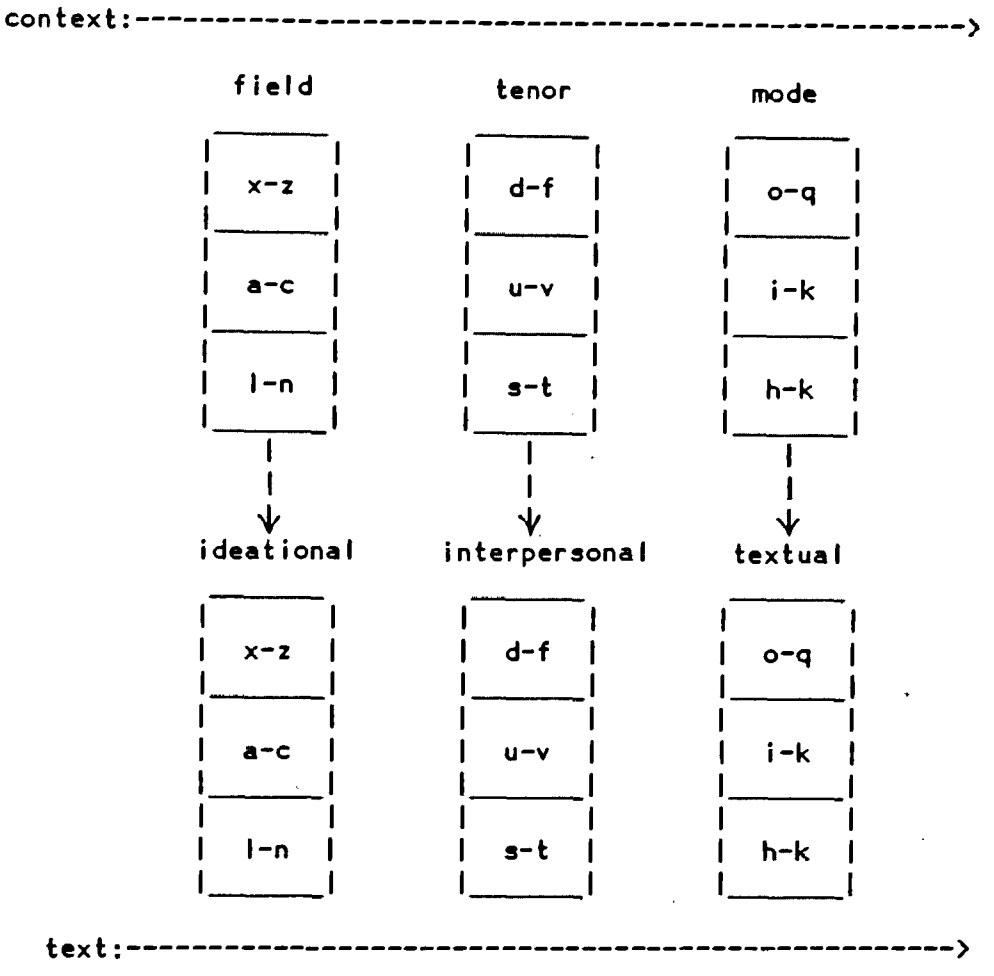


Fig. 5.17 Contextual expectations activating text expectations

Yet the expectations in text are exactly that, expectations, and a first actual choice in text is needed to indicate the selection that is made from that range. As noted in the explanation of stacks (section 5.2), the actual choice may be the same as the most expected one - that is, from the top of the stack - or may be a more unlikely, but still possible choice - that is, from lower down the stack. If the actual text choice is the most expected one, then the status quo of the context remains; if it is a less likely choice, then the contextual stack needs to be reweighted to reflect this. In this way, the context for the next actual choice is *modified*, and a new set of contextual expectations is posited for the next choice in text.

Once an actual text choice has been made, the context can be said to be *framed*: that is, the broad expectations about the relevant situational components have been made semiotically relevant. The more precise context specification in turn activates a more precise range of potential for the next choice in text; the next text choice in turn feeding back into the frame, and so on, as the text unfolds. The expectations between a current and next text choice are mediated by the frame of context, and there is thus a constant cycle of influence between context and text, with context activating text, and text modifying context. This relationship is captured in general terms by the arrows between context and text in Figure 5.16 above; more specifically, Figure 5.18 below takes the case of mode expectations for a next choice in text. The mode expectations are as presented in stack (a); these activate a range of options in the textual stack, stack (x). The actual choice from stack (x) is not, however, the most expected; this causes the mode stack to be reweighted accordingly, and this reweighted stack activates a new stack of expectations for the next text choice.

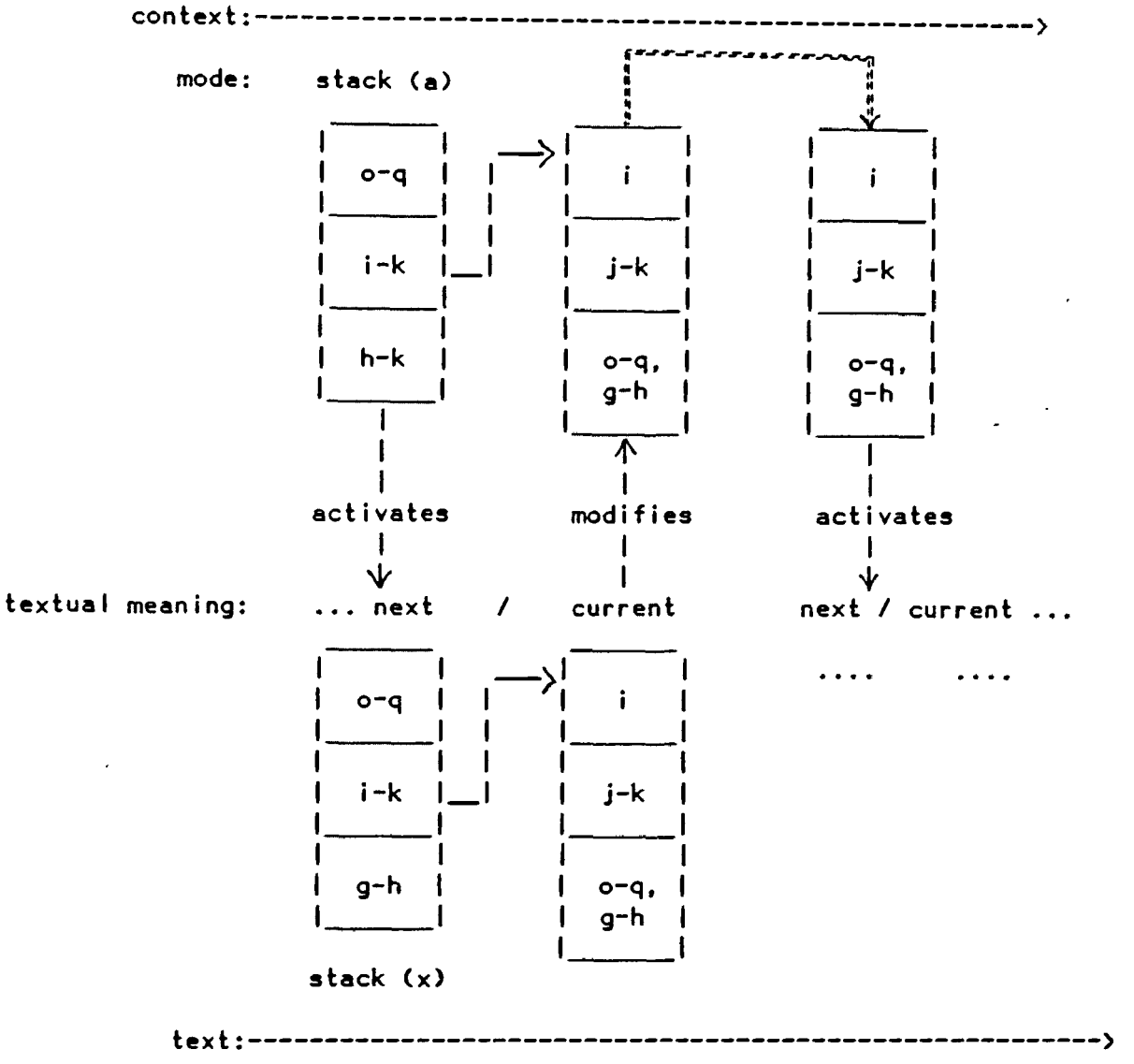


Fig. 5.18 Ongoing expectations given mediation by context
Note: = frame brought forward to expectations at next point in text

The terms *register* and *frame* are very similar, but do need to be distinguished. A frame is an *activated* register specification which is carried along with an unfolding text, and subject to modification by it. Descriptions of register may be formulated in either general or specific terms, but a frame is always a more specific instance of relevant situational variables (although it still relates to a range of meaning potential). We note here some further characteristics of frames.

A frame is *bound in* by a choice in text: each text choice will reflect some aspect of metafunctional meaning, and this binds in the related situational component. Further choices in text may reflect the same broadly defined situational component, and it is possible for a text to have only one frame. Multiple frames occur in a text, if later choices in the text cannot be related to the same situational component(s) which activated earlier text choices. For instance, the field component will provide broad expectations as to the probable participants and processes in the text, and early lexical choices will bind in an actual field frame. However, if later lexical choices in the same text come from a clearly unrelated lexical set, then another field frame must be bound in. (But it should be noted that this does not necessarily account for cases of lexical metaphor. Another point to note is that the other situational components may remain constant, or all three components may change simultaneously. Thus both the situation as a whole and its separate components may be said to framed.) If one choice might belong to more than one frame, then simultaneous frame sets have to be posited in the context until the ambiguity is clarified by later choices. (As with simultaneous path sets in text, they can be carried for the duration of a text.)

When a single text has more than one frame, one of them is *primed* whenever an associated text choice is activated. So, the simplest case of text-context interaction occurs when the initial, general expectations are refined as the text progresses. A more complex case would be where one variable is subject to clear-cut changes, as in the case of field shifts in a news broadcast, where the broadcast discusses each news item in turn. The most complex cases would be those where different paths for one or more variables co-exist in the text, with these being primed in and out. Where

there are reasonably clear cut differences between multiple paths of one situational component, these can be called different path sets. That is, there will be two or more distinct field, tenor or mode components in one text. Different path sets are established when a next choice does not pick up any paths prospected by the previous choice; it thus closes the previous path set and opens a new one. The relevant path set is primed whenever a text choice is selected from that path set; meanwhile the other path sets are unprimed, but still present, that is, still bound in to the overall context. This means that the unprimed set is available to be reprimed later in the text, whenever a text choice is made from that set.

Occasionally, it is possible to *bind out* an aspect of context by indicating that it is no longer available to be primed. In a committee meeting, for instance, different topics on the agenda are dealt with in sequence; once an item has been dealt with (the issue has been discussed, resolved, put off until the next meeting, and so on), the next item is available for discussion, resolution, and so on. Shifts between items on the agenda are signalled by such phrases as Let's move on to ..., which indicate that one component of field is being bound out and another being bound in. It is possible for an aspect of context which has been bound out to be bound in again at a later stage, in the case of field, for instance, with something like could we just go back to the previous item for a moment?. But such an overt marker of binding in is usually essential to enable that component to be reprimed. If the overt marker was not present, text choices from an unbound context would be considered to be decidedly odd. It should be emphasised that all the components of situation can be bound in and out in this way; a television news broadcast, for example, may draw on a variety of modes (using prepared notes, live interviews, edited film and so on), or

participants in a committee meeting may overtly acknowledge a shift in tenor (for example, by saying at the beginning of the meeting, let's get the formalities out of the way).

While a path set is primed, it is open to the normal potential of path development (continuing, changing...) The other paths remain in abeyance and cannot be further developed until reprimed. Thus in cases like Harris's (1988) courtroom discourse, where the tenor can change according to which of the multiple participants in the courtroom are talking to each other, the shift in tenor will be signalled by indicating the participant being addressed (the indication may be verbal, for example by naming, or non-verbal, for example by directing the question). Hostilities developed in one path set, say between Judge and Defendant, do not necessarily affect the tenor of other relations in the courtroom. The path sets develop separately.

When the path model was introduced, it was noted that the boundaries of a particular path step can only be recognised once that boundary is passed. So, a path can only be recognised as closed when a new path is opened. Similarly in the case of context paths, shifts between different path sets are recognised when a next choice cannot be explained or understood as coming from the primed path set; it must therefore signal a switch into another path set. Of course, not all situations provide the potential for such radical shifts to occur: in a news broadcast, for instance, it is part of the general expectations that radical shifts in field will occur. A radical shift in a different situation, say an academic lecture, would need a different explanation.

The frames of a producer and a receiver of the same text do not have to be identical. Individuals, because of their different experience and

assessment of language, may posit different ranges of expectations given the same situational variables ('prior' to the text, that is); further, once a text is underway, they may differ in the weighting of frames and text choices. Thus, a text choice reflecting an interpersonal meaning may be interpreted by one person as being rude, but by another as being acceptable. The person who interpreted it as being rude will have different expectations for the ongoing tenor of the text from the person who found it unobjectionable.

As already noted, the frame and the text can be viewed as configurational wholes or in terms of their semiotic components: thus *frame* may refer to the cluster of field, mode and tenor variables comprising one register, or to these components individually.

Given that the relations between text and context can be formulated in terms of the path and stack models, this relationship can be seen to occur at two different levels or degrees of focus. The initial expectations regarding context are posited as a cluster or stack, and activate a related cluster or stack of possible choices in text. The path of an unfolding text may be developed in two ways. First, the option which is actually taken up from the text stack will have further text options (and associated context modifications) dependent upon it; that is, there will be related expectations and each next choice will continue to modify the ongoing expectations from that point.

The second type of text-context development depends on the original expectations still being part of the potential of the text, even if one of these options has already been selected and developed in some way. For example, in a news broadcast, we expect different current affairs to be reported (news about a war, about local politics, about the economy and so

on): these would form the initial context and stack options; each current affair item, however, will be developed in some way, so that once the headline indicates which option is at issue, we expect to hear more details about that particular event. The path development of a particular news item is closed by moving into another: the next news item, however, is an option from the original stack; for example, moving on from an item about a forthcoming election to an item about interest rates. Thus again, these two potential types of development demonstrate an interplay between the configurational and componential views of context and text.

In terms of providing an active view of choice, as the paths unfold in text, each current choice sets up a relation with the next choice: the general linguistic potential provides the basis for expectations at the next point, but the current frame, activated by the current text choice, is referred to for anything it can contribute to the nature of those expectations or their relative weighting. Therefore in an unfolding nominal group such as the four ..., general linguistic potential would tell us that the group could be sustained with a Head, but the current frame will indicate which field is primed, and so only certain manifestations of *Head* will be actively available at that point. The next actual choice becomes the new current choice, but simultaneously modifies the current frame, and so both general linguistic potential and the conditioning factor of context are referred to again to provide expectations at the next point.

Let us illustrate these proposals with reference to a particular situation, a news broadcast on television. A viewer switching on the television to catch the evening news will have strong expectations as to the nature of the text about to take place. The field will be an aspect, or rather aspects, of current affairs: someone who is up to date with recent

events will have more specific ideas as to which events are likely to be discussed, although there is of course always the potential for a 'new' or 'fresh' event to be included. Thus the field component contains within it a broad range of expectations, some very general, some possibly quite specific. Similarly, while the news broadcast may be on television, there is still a potential for variety in mode, as the news broadcast could consist of prepared introductions to news items, live interviews, pre-recorded reports, and so on. And again, variety may arise in relation to tenor, as there may be different participant relations expressed during one broadcast, for instance between the broadcaster and TV audience, broadcaster and interviewee, reporter and audience, and so on. Yet while no situational component is fixed and entirely predictable, there are certainly some things which would be quite unexpected in a news broadcast. For instance, if the broadcaster began to address the audience about his/her personal feelings, this would transgress expectations for field (as it is not normally included in 'current affairs') and for tenor (as there should be a more formal, impersonal distance between broadcaster and audience).

For the case of field expectations, let us say that, rather than having an unordered cluster, we have an idea of which news item is likely to be given a prominent position, and so can weight the expectations accordingly. Each option in the field stack activates a particular grouping of participant and process types in the lexicogrammar, specifically a selection from the transitivity system, which expresses ideational meanings. When, for instance, the Gulf war was part of the potential Field in British news broadcasts, this set up a related set of Transitivity expectations, including, for instance, participants like Saddam, America, hostages, bombs, tanks or processes like attack, retreat, defend and so on. Prior to the

actualisation of the text, however, it was not necessarily possible to say which aspect of this general Ideational potential would be taken up by the text. This initial context-text relation is presented below in Figure 5.19 with one layer from the stack of field expectations activating a cluster of related options in terms of ideational meanings (the other field options would of course also activate related stacks, and the same context-text relationship would be demonstrated by the other situational components).

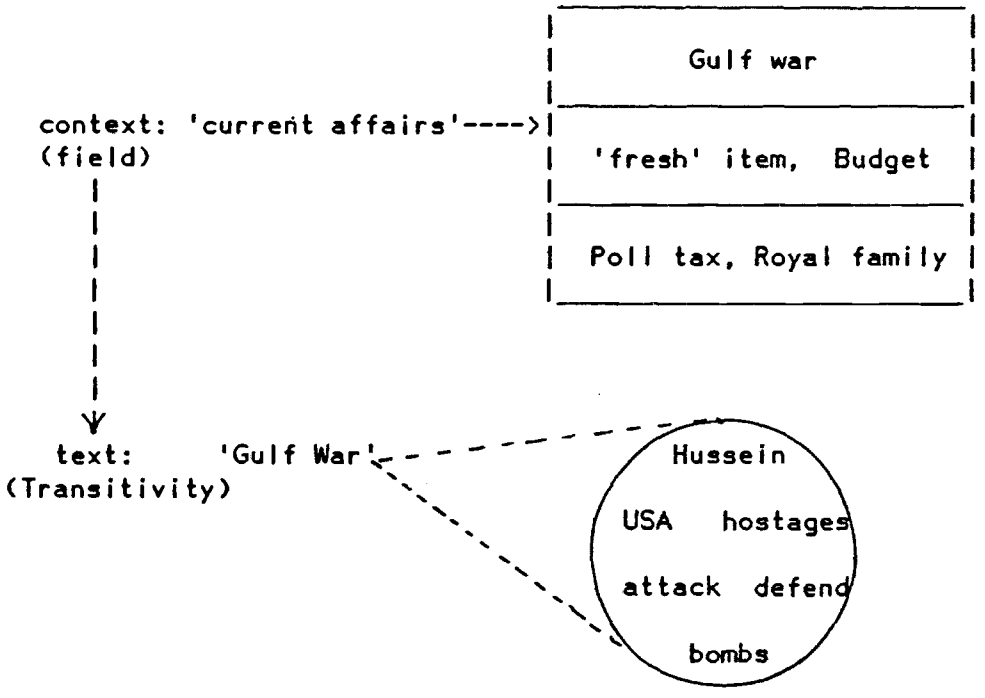


Fig. 5.19 Initial context-text relations

This figure represents the pre-text relationship between context and text. Now let us say that the first news item is introduced by the following headline: A bomb exploded at no.10 Downing Street today ... This is the actual text choice, and indicates that the 'fresh' item has been selected from the context stack: that is, the text choice frames the field in question. During times of peace, it would be expected that the potential for

a 'fresh' news item would always be at the top of the initial contextual expectations; however during a time of war, news about the war is dominant. Therefore if a non-war item appears first in the broadcast, this causes the context stack to be reweighted, and marks the item in question as something important enough to take precedence over the war news.

The news headline just mentioned establishes that a bomb has exploded: the headline gives the nature of the event (a bomb exploding), its location (no.10 Downing Street) and the time (today). These text choices both reflect the field component which activated this selection, and specify some of its details (terrorist attack). This gives us further expectations for the associated transitivity cluster in the text: the participants might be the IRA, police, the Prime Minister, passers by; the processes might be plant (a bomb), take cover, be injured and so on. The next actual choice in the text will indicate which of these expectations come to the fore; for instance, the news reader might say The Prime Minister was with the Cabinet at the time. This narrows the field range of expectations further; next, we can expect either further details as to whether they were injured or not (and if so, details of the severity of the injuries, where they were treated and so on), or a shift into other details of the general event (for example, who perpetrated it, whether any passers by were hurt).

Once this particular news item is dealt with, we expect the text to move onto another news item. The expectations for the next news item will be formulated from the remaining options from the initial stack: that is, we would now expect, for example, the 'ongoing war' to be dealt with. Thus as noted above, context and text interrelate at two different degrees of focus: first, a broad focus on the relevant layer from the initial stack (for example, will the news item be 'fresh' or the 'ongoing war') and second, a

narrow focus on the internal development of any one layer (for example, if the field is 'fresh: bomb', will the next selections be about the victims of the bomb, the perpetrators, police reaction, and so on.) Of course, some texts may have only one primed field, tenor and mode, but many will have this duality of focus within one or more of their situational components.

The pre-text relations are different to all the other text-context relations, as in the pre-text situation, both context and text expectations are extremely general, and possibly unordered. The first actual text choice indicates which aspect of meaning potential is in focus, and ongoing choices further narrow the range of relevant expectations. The difference between first and later choices in the text confirms Lemke's (1989) description of this relationship, and echoes Bolinger's (1952) formulation of *linear modification*: the initially broad range of potential becomes more precisely defined as the text unfolds.

It is important to differentiate the case of re-weighting expectations in light of more precise choices, from the case of a new path of field, tenor or mode being taken up. In the news broadcast example, there are likely to be several news items discussed in the one programme, so there will be quite radical shifts in field, while the tenor and mode will remain reasonably constant. The separate news items can each be seen as a new and different field path in the text (albeit still all examples of the same general type, 'current affairs'), and any changes in tenor and mode as gradations on a cline. Both types of change in a text are undoubtedly different extremes on one cline of register variation, but for practical purposes, it is useful to conceive of the two types of movement as separate processes: one, a movement between different paths, and the other, movement within an existing path. Consider the tenor path in a televised interview between an interviewer and a

politician. The interview may begin with both participants being polite and co-operative. However, the interviewer may cause offence by posing a question to which the interviewee does not wish to respond, and the latter may show that offence has been taken. If the interviewer continues to pursue this hostile avenue, the tenor may continue to develop along more and more hostile lines, until by the end, the participants are quite impolite and uncooperative. Thus, between the beginning and the end of the text, the tenor will have shifted radically, although the change itself may have been achieved gradually.

It is reasonable to assume that if there is a radical shift in contextual paths between a current and next choice, then this will be clearly signalled: in the news, for example, such shifts are signalled by the headline, pause between items, change in tone of voice, and change in visual backdrops. It is not difficult to find examples where paths are purposefully separated. For instance, on an actual radio news broadcast, the main news item concerned a bus crash involving British passengers on a French motorway. This item was discussed, then the newsreader said: In a separate motorway accident in France, a British woman and her daughter were killed ... Given the close parallels between these two items in terms of the nature of the event (a motorway crash) and the location (France), it would easily have been possible for listeners to assume that the second news item was in fact part of the first. The producer of the text pre-empted this possibility by lexically specifying that it was a separate accident. In this way, the previous field path was bound out, and a new path bound in.

This view of context developing as different, interacting path sets closely parallels the development of *Phasal Analysis* (Gregory *passim*, Stillar 1991, Young 1986). Phasal analysis seeks to explain how multiple contextual

factors interact dynamically in a text, and it is able to demonstrate complex contextual development in a text. However, the analysis is not undertaken from a dynamic perspective, as defined here, and does not seek to explain how a feature of current context can set up or close down possibilities for later features of context. Rather, it takes a global view of a finished text and explores its contextual development from that perspective. Thus while complementary to the work presented here, phasal analysis does not seek to achieve the same perspective.

The model of context-text interaction developed here does not deal with all the complexities of this inter-relationship, nor does it formulate that relationship as specifically as, say, O'Donnell or Reichman. It does, however, provide the basis for an active view of choice in text, and explains the fundamental way in which context activates text, and text modifies context. The very general formulation of the dialectic between context and text is necessary if we are to begin making sense of this intricate relationship, but there is nothing in its general formulation to preclude its being adapted to a more specific expression of the relationship; for instance, the activation/modification arrows in Figure 5.16 could be expressed by O'Donnell's modified realization rules, if this were so desired.

The *frame* model of context enables a description of register potential to be carried forward with an unfolding text. The frame potential is established by the components of situation, which activate related meaning potentials in language. An actual text choice pinpoints a place within this general range, and the components of the frame have the potential to be sustained (continued, changed) or closed (completed, abandoned). These steps are achieved by text choices which either fit or modify the current frame potential.

It should be noted that just as the reweighting of stacks in text is interpreted in a special way, as 'surprise' for example, so too are shifts in context stacks. For instance, in the news broadcast, matters of war tend to override all other news items, so if a fresh, non-war item comes first, it must be interpreted as being highly significant. Or, to take another example, if an item which occurred late in the previous day's news is first to be discussed on today's news, then it must be assumed that some new development has made this item important.

5.3.3 Elaborating the active view of choice

Considerations of context are not the only factor to contribute to an active view of choice: as discussed in Chapter Three, both the *previous history of the text* and *experience of the system* are important conditioning factors.

The *previous history of the text* here means something more than just the steps taken to get to the current point of the text, which necessarily condition the ongoing options from that point. It also refers to particular selections in text which do not necessarily constrain the immediate development of the text, but which may influence the available options at some later stage in the text. This may be exemplified by choices relating to the expression of attitude, to tense, to particular grammatical patterns, and so on. If, at a later stage in the text, expectations arise for a similar choice (for instance, one which expresses an attitude, relates to tense, or follows an earlier grammatical pattern) the previous history is referred to in order to weight the expectations relating to that choice.

The effect of the previous history of the text can be captured if the concept of the *frame* is broadened to encompass the modifying effect of such potentially influential choices. This means that those types of choices which might be taken up again later should be added to the overall frame of the text, and carried forward with it. Later in the text, the positing of expectations in relation to a particular choice will prime the relevant frame. The primed frame is then referred to in order to determine if any choice has been made in an earlier instance of that frame which will contribute to the weighting of expectations at this point.

While the previous history of the text is part of the ongoing frame of the text, the relationship between history and text is somewhat different from the relationship between context and text. Choices in text must first be actualised before the history can be said to be underway, whereas general expectations for context exist, to a certain extent, prior to the text. Further, the relationship between history and text is more intermittent than the constantly dialectic relationship between context and text; thus when the frame is represented below, in Figure 5.20, the arrows between history and text are less frequent than is the case for context.

The final conditioning factor, prior experience of the system, affects available options by indicating which potential ongoing paths in the current text are frequently travelled in the system as a whole. This will contribute to the weighting of options at the next point in the text. For instance, if at a particular point in a service encounter, we know that option Y is hardly ever taken up (even though it is a possible option at that point), then it will be low on our stack of expectations. On the other hand, if option X is nearly always taken up, then this will be high on the stack. We can illustrate experience of the system through the case of collocations. For

example, if the current option is a black ..., the options at the next point will consist of (a) the general potential at that point (that is, what path steps are possible), (b) the primed context (so, if a Head is to follow, what things are already active in the field component of the context), and (c) experience of the system.

Experience of the system therefore influences expectations in a way that is similar to the frame of both context and history. However, it is somewhat different in kind. Part of the expectations brought to every text will be experience of all previous texts, but this is more like bringing experience of previous texts and frames to bear on the current text. It is therefore useful to represent experience of the system as a separate component in relation to the text, although it is still important to represent the relationship between text and experience of the system dialectically. The options at any next point in the text are activated (partially) by experience of the system, but every choice in text in turn modifies this component, adding further details to it. In this way, it is possible to capture the relationship which Halliday (1989) discusses, whereby every text is an instance of the system, but in turn modifies that system. It is extremely important to allow for this mediation between text and experience of the system. Otherwise, there would be an eventual loss of meaning potential in the system as a whole, because the constant influence of experience of the system on text would add more and more weight to the expectation for particular options, until the expectations attained the status of an absolute prediction. For example, if a collocation is used again and again, there will be a strong expectation for it, and the expected co-occurrence of the lexical items may eventually become so strong that the two together acquire the status of a single unit. On the other hand, if novel collocations are

allowed to occur and to feed back into our understanding of the system, the system is, so to speak, revivified.

The elaborated definition of an active view of choice is presented in Figure 5.20 below, where it is now seen to consist of paths of context, previous history of the text, and experience of the system.

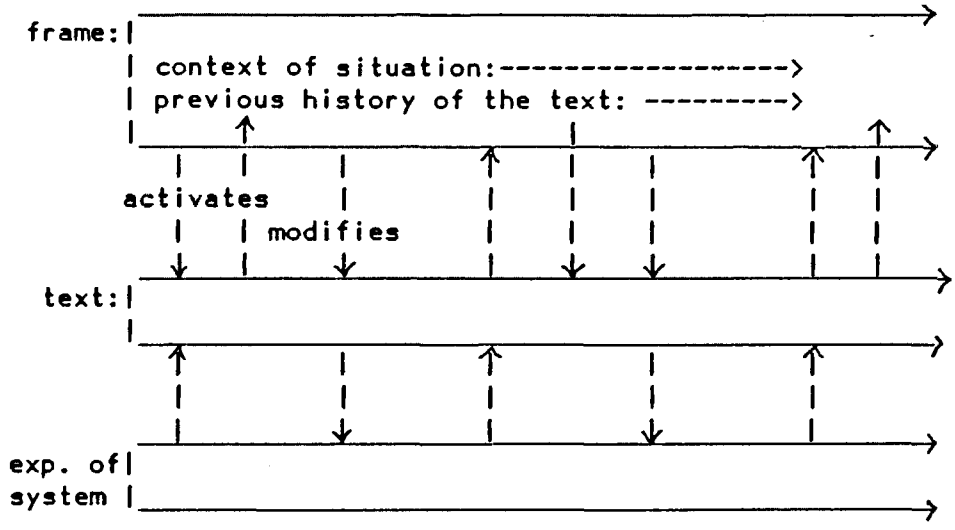


Fig. 5.20 An active view of text

This figure represents the conditioning factors relevant to a text at any current point; combined with the possibilities allowed by general potential, the frame - encompassing both the context of situation and the previous history of the text - and experience of the system combine to determine the choices which are actively available and likely at the next point in the text.

5.4 Comparison with standard systemic modelling

The model as proposed here, with its components of paths, stacks, and frames, needs to be compared with the basic systemic model from which it derives. The proposals regarding stacks and frames are novel for the systemic approach, but should be complementary to existing theories of probabilistic choice and contextualised text. However the proposals regarding the paths present quite a different view of choice from that which is represented in a typical systemic model.(4)

Firstly, previous work exploring the dynamic perspective has invariably observed a particular representational difference between the synoptic and dynamic perspectives. The difference is that synoptic representations tend to foreground multivariate representations, or constituency structures, and dynamic representations foreground univariate, or dependency structures (cf the discussion of Bateman's work in Chapter Four, and the first endnote below). But a most interesting implication of the path model proposed here is that it seems to give a univariate (dependency) value to otherwise multivariate (constituent) units. This is because the current and next path points are a type of univariate unit, and the path steps between them are a way of modelling their relative unfolding. Yet each path point is manifested by a choice which has a multivariate value in the synoptic system. The dynamic perspective therefore seems to exploit both types of structures in a way not foreseen in other systemic work. This relationship between the multivariate and univariate representations is expressed tentatively here, as further research is needed to assess its viability.

Secondly, in comparing the path model as proposed here with standard systemic modelling, we have claimed that the two models should be

complementary, but have not yet argued for this position. It is tantalising to consider whether the path model could in fact be represented as a system simultaneous with other parts of a standard system network. O'Donnell (1990) points out the advantages of having a consistent method of representation when trying to model the two perspectives, and it is worthwhile considering this possibility here.

If the path model is to be applied as a system simultaneous with other systems, then this would mean that every time a unit, say a nominal group, is selected as an entry condition in a network, then a path system is selected too. So an entry condition would have not one but two systems dependent upon it, represented as follows:

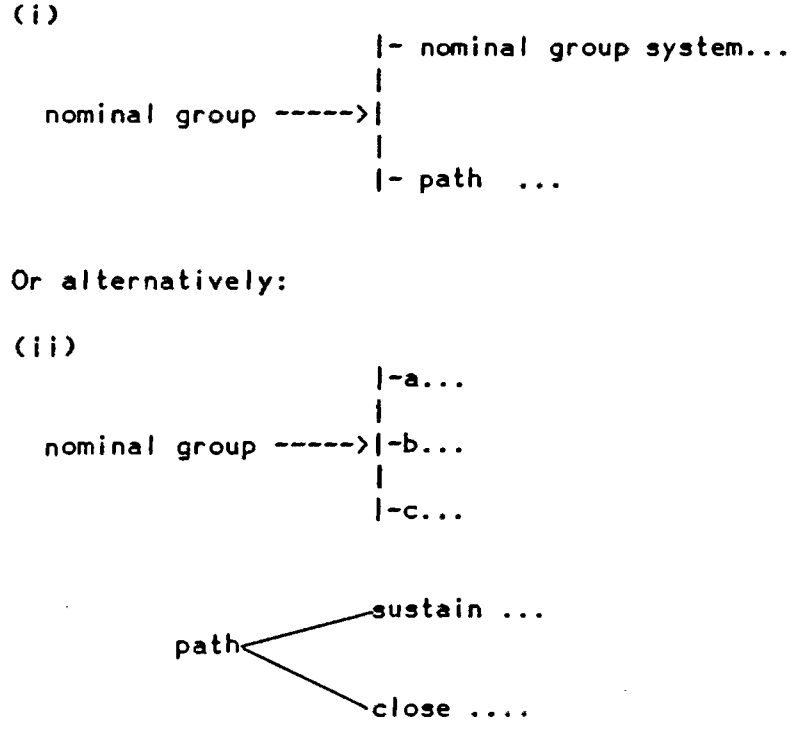


Fig. 5.21 Path model simultaneous with system

An immediate objection to this possibility is the observation in section 5.1 (and in endnote 2 below) that path steps are not parallel to an increase in delicacy in a system network, but simply finer degrees of classification. The path steps do not in themselves constitute a network. Even so, it would still be possible to consider applying the path options simultaneously with a system. The two could operate together if a feature from a system was selected simultaneously with an option from the path possibilities; the realization of the feature selection would have to combine with the path selection and be output through a *gate* (a realization device in a standard network which allows options from different systems to be combined), resulting in a particular structural output.

This scenario may appear to be feasible at first sight, but there are in fact insurmountable problems. The two methods of representation are fundamentally incompatible. For instance, in order to assess the possible path steps from a given current point, it is essential to know what that current point is. If, say, the path step *continue* is to apply, and the current choice is a Head in a nominal group, then continue will be manifested by concatenation of another Head; if, however, the current choice is a post-Modifier, a continue step will be manifested by another post-Modifier, and so on. But in a standard network, all the features relevant to one unit are supposedly selected and collected together in one realization expression before a structure is realized; that is, all the choices are made and the structure is generated explosively, and so it is not possible to consider potential from a position which is only part-way through an unfolding unit.

Numerous other infelicities can be cited. For example, entry to the nominal group system entails a realization expression + Head: this means that every time the nominal group system is entered, a Head is added to the

selection expression for that group. This is equivalent to saying that every nominal group must have a Head. However given a dynamic perspective, a nominal group can be recognised before the Head is reached (thus a very ... is clearly part, if not all, of a nominal group), and it can also be *abandoned* before the Head is reached. This would mean that if abandon is selected from the path options, then some feature selected from the nominal group network would have to be annulled in some way. Not only would such deletion of a feature be difficult to accomplish (as the network does not allow for such transformation-like rules), it would be difficult to know which feature to annul, if all the features relevant to one unit are supposed to be selected simultaneously.

Despite the incompatibility of the two representations, it is still a fundamental characteristic of the dynamic perspective on language that it both draws on and feeds back into a synoptic perspective on language. It is therefore essential to elaborate how the dynamic perspective draws on the synoptic potential, that is, how the paths can make use of the potential captured in a system network. This can be achieved if, when applying a dynamic perspective, the synoptic network is 'frozen' so to speak, so that the dynamically oriented analysis can draw on the network without being obliged to traverse a whole system. In a dynamically oriented analysis we need to consider what path steps might be possible from a particular current point, and the current point has to be identified in terms of its probable paradigmatic potential (the current point may, for example, have the potential to be functioning as a pre-Modifier). This locates it in terms of the system network. Thus from the network, it can be determined what would constitute the different path steps from that point; for instance, a continue step would repeat the network feature selected by the current point; a change

would be accomplished by selecting from a simultaneous system; a complete would be achieved by moving into a different, unrelated system, and an abandon would be inexplicable in terms of the activated system. The dynamically oriented model therefore draws on the information contained within available networks, but formulates the information in a different way. We exemplify below the different path potentials for a nominal group according to the nature of the current choice. The first nominal group begins with pretty; the second begins with dogs.

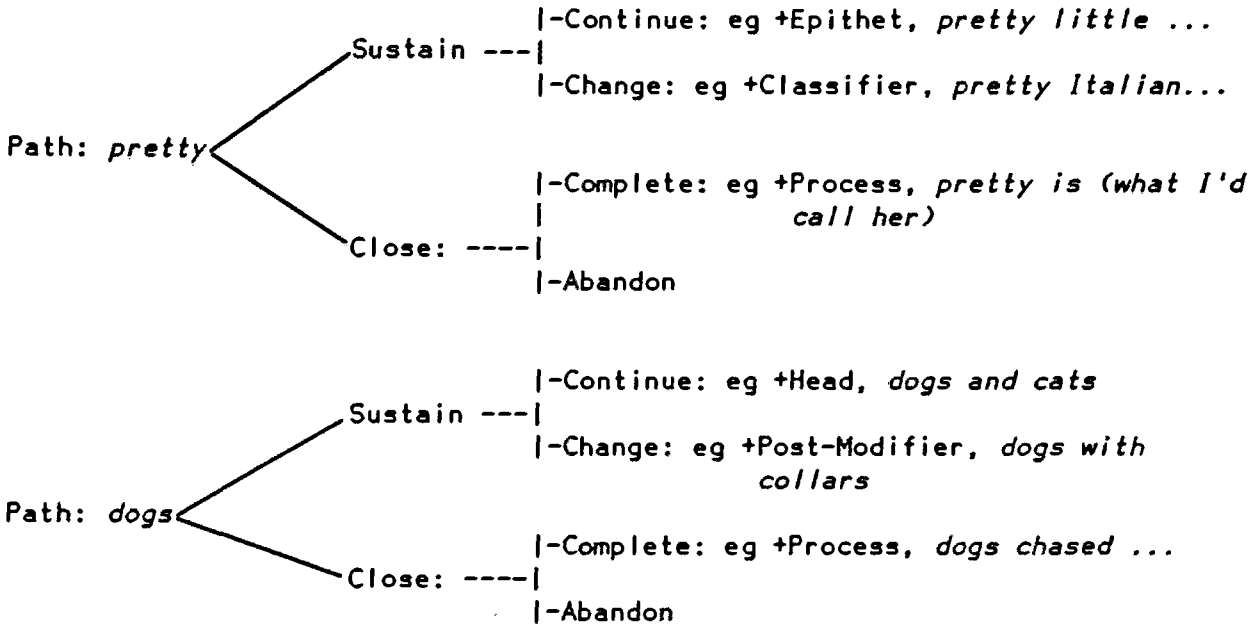


Fig. 5.22 Different nominal group paths

As can be seen from the above figure, the types of options available vary markedly according to the status of the current choice. Paradigms of choice are activated as the text unfolds, and so vary according to the current status of the text. The synoptic representation is needed to inform a dynamic perspective, but the actual nature of the paradigms within a dynamic perspective are syntagmatically defined.

One advantage of freezing the network for use in the proposed way is that the dynamic representation can then exploit the information in the network as necessary. For example, if the current choice from a dynamic perspective is a particular lexical item, this will be found in the synoptic representation at the most delicate end of the network. But in order to determine the path steps from that lexical item, the lexical item can be followed back through the synoptic network to discover its paradigmatic role (whether, say, it is a noun), and such information will inform the dynamic representation as to what options are open from that lexical item.

It is also necessary to demonstrate the way in which selections in actual texts affect the understanding of the (synoptic) system. The proposals of Nesbitt and Plum (1988) suggest a way forward here, as they demonstrate the way in which quantitative changes in the system (repeatedly co-selecting certain features, for instance) may eventually have qualitative effects on the system (leading to a different set of options being represented).

We have tried to indicate here some of the implications of integrating the path and network representations. Evidently, it would be necessary to formulate rules of interpretation and heuristic principles to achieve this. Such a task would not by any means be simple, and will not be attempted in this thesis, but it should be a feasible goal for future research.

5.4.1 Comparison with Martin's definitions

Given that Martin's (1985) definition of synoptic/dynamic stimulated much of the current systemic interest in a dynamic perspective on language,

it is useful to compare his definitions with those developed here. As discussed in Chapter Two, Martin cross-classified 'potential' and 'actual' with 'static' and 'active' to produce the following matrix:

	potential	actual
static	*synoptic system*	*text*
active	*dynamic system*	*process*

Fig. 2.2/5.23 Martin's cross-classification of dynamic and synoptic (Martin 1985:259)

Criticisms of Martin's position were raised in Chapter Two, in particular with regard to the improbable nature of a 'dynamic' system, and the difficulty of differentiating 'text' from 'process'. In this thesis, the variables of potential and actual are not disputed, but they are cross-classified with synoptic and dynamic as perspectives, or ways of looking at, both potential and actual. Thus Martin's dichotomy of static and active is seen as characterising the synoptic and dynamic perspectives respectively (although these perspectives are defined by other characteristics as well). Actual, depending on the perspective, results in a view of 'text as product' or of 'text as process'. Further, potential, if viewed synoptically, needs to be captured by a global representation (such as a system network);and, if viewed dynamically, needs to be represented by an unfolding model (such as the path model proposed here). Martin's matrix is therefore modified in the following way:

	potential	actual
synoptic (static)	*global formulation*	*text as product*
dynamic (active)	*unfolding formulation*	*text as process*

Fig. 5.24 Modification of Martin's matrix

This matrix may not at first sight appear to be significantly different from Martin's original proposal (especially if a generous - that is, non-technical - interpretation is taken of his 'dynamic system'), but there are several critical differences. Firstly, the modified matrix clarifies the point that text is simultaneously product and process, and that the perspective applied to text will highlight one of these aspects rather than the other. Secondly, it emphasises that 'dynamic' and 'synoptic' are indeed matters of perspective, and not features intrinsic to a text: it is not the case that two different types of data are in question. Thirdly, and most importantly, it emphasises the fact that perspective must be seen to apply to potential as well; in particular, a dynamic view of potential cannot be represented in a global fashion, but must be formulated momentarily, in an unfolding way. It is the same system of potential in question, but just as for the view of text, different aspects of that potential are highlighted. Indeed, we have demonstrated that the dynamic perspective brings to the fore an aspect of potential which is obscured from the synoptic point of view, namely, potential arising from the syntagmatic axis. In Martin's matrix, a dynamic system may well be sensitive to choices made in preceding contexts (as the dynamically oriented models examined in Chapter Four aimed to be), and so appear to account for some aspects of the syntagmatic axis. But such models still need to be laid out in advance, so to speak, and cannot be

represented as unfolding. This means that they miss the full impact of a dynamic perspective on potential. In the modified matrix, a dynamic perspective on potential means that the unfolding text is seen to have a different functional potential from that of a synoptic perspective. As text needs to be considered as both process and product, this ensures that the one system of language is in operation, but seen from two complementary points of view.

This chapter has presented the components of the paths, stacks and the frame to model language from a dynamic perspective. The proposals enable both text and the system of potential behind the text to be viewed dynamically. We now turn to a more specific exploration of grammar in order to illustrate these proposals.

Endnotes

1 (Section 5.1.1): A univariate structure is one of the two basic types of language structure argued for by Halliday (1965), and it is a structure "involving only one variable". For example, a clause complex is a structure consisting of two or more clauses, the clause being the structural variable in the complex. The other basic structure-type is the *multivariate* structure, which is a structure "involving more than one variable". A clause, for instance, may be seen to exist as a string of words, but its structure depends on relations such as 'Subject', 'Predicator', 'Complement'. These are distinct variables in the structure of the clause: "Each multivariate structure is a configuration of relations involving a determinate set of distinct elements." While Bateman's proposal aims specifically to monitor the unfolding of univariate structures, we use his proposal to also monitor the unfolding of multivariate structures. See the related discussion in section 5.4.

2 (Section 5.1.3): The finer classification of path steps should be differentiated from an increase in delicacy in a system network. Conceptually the two are very similar, but formally, an increase in delicacy adds further features to a given unit; here, the finer distinctions are different ways of talking about the same thing, that is, the same type of path step, without adding further 'features' to it.

3 (Section 5.1.3): It is interesting to compare our definition of *complete* with Sinclair's (1985:16) suggestion for identifying the boundaries of a unit in discourse. He notes that discourse must be purposeful, "It must be heading somewhere", and so a directional description of discourse should be continued "until a point is reached where the verbal activity performs in its totality some action that lies outside language." Our definition is more linguistically bound than this, although the two positions are not incompatible if 'expectations' in our definition is replaced by 'purpose' in Sinclair's.

4 (Section 5.4): It is also important to acknowledge that different aspects of the proposals put forward here are dealt with in various models, some of which were introduced in Chapter Four. As no single alternative model incorporates the range of features argued for here, and as none is based on the type of dynamic perspective we have argued for, we do not explore these alternatives in depth, but mention them for future reference. Further, these models tend to aim at automatic modelling of language, whereas our proposals have been formulated more generally.

In particular, the ATN model has several devices which are relevant to the features argued for here. For instance, in an ATN it is possible to make tentative decisions regarding the structure of the unit being parsed, and then "to change one's mind later in the sentence without backtracking" (Woods 1970:602). This relates to our requirement for simultaneous analyses. Further, ATNs can account for probabilistic aspects of choice, as the arcs of an ATN can be weighted "to indicate either how likely the arc is to be taken from that state or how much information is likely to be gained from taking that arc" (Bates 1978:221).

Another model which has several useful formalisms is Rumelhart *et al's* (1986) model of *parallel distributed processing*, which was developed to account for certain aspects of cognition. In particular, they offer some insight into the modelling of learning, which is relevant to our account of the dialectic between experience of the system and choices in an unfolding text. Useful insight into experience of the system, although not from a dynamic perspective, is found in the work of Sinclair (*passim*), whose large scale, corpus-based work provides interesting linguistic evidence of a kind different to that acquired through introspection or small-scale data studies. Similarly, the work of Gross (*passim*) on a lexicon-grammar of French provides an interesting way of obtaining evidence about experience of the system.

The requirement in our model for many different components acting together (frame, text, experience of system), as well as for a flexible definition of the unit, can be related to research on *incremental* sentence production and parsing. De Smedt and Kempen (1987), for instance, develop a model which shows different modules (conceptual, lexico-syntactic, articulatory and so on) interacting to produce a sentence.

Finally, the *Penman* system, a computational model of a systemic grammar (cf Mann 1983) contains a mechanism which is relevant to the interaction argued for between choices in an unfolding text and the corresponding contextual frame. This mechanism is the *chooser* or choice-expert. At each choice point in a system, a question is asked of the grammar's environment to inform the choice about to be made, which enables interaction between the choices and their environment to be captured. (See, for example, Matthiessen 1987.)

Additional: A note on Markovian processes

It is interesting to consider whether the model proposed in this chapter represents a Markovian or stochastic process, where the current environment provides all the necessary information for moving on to the next environment. Without question, what happens earlier in the text affects what may happen later in the text, but there is considerable room for debate as to whether this constitutes a stochastic or Markovian process or not. The way in which the

movement between current and next choices has been described would seem to fit in well with Markovian processes. Yet the introduction of a component of previous history would seem to negate this.

This apparent contradiction arises because the previous history is carried forward with the unfolding text (in the way that Emmott's frames are carried forward); hence, while it is not necessary to 'go back' in the text for any reason, the previous text is somehow present at the current point. This is the position implicit in Sinclair's (1991) model of *encapsulation*, where the current sentence embodies all that is relevant to interpret the text, both encapsulating the previous text/sentence and prospecting the next text/sentence. In Sinclair's model, the previous text appears to lose its importance, because it is encapsulated by the current text. But it remains true that the current text was arrived at by following a particular unfolding path; a different path would have led to a different point from which to proceed.

To describe the dynamic unfolding of a text as Markovian would seem to place too much emphasis on the movement from current to next, ignoring the fact that any 'current' choice is but one link in an ongoing chain, in which different choices would have led to different 'current' points. Yet it still needs to be emphasised that the model proposed here is significantly different from those which preserve, rather than carry forward, the previous history of the text. In the model presented here, the previous history is not available to be returned to, but must be carried forward as part of the relevant detail informing the current choice.

CHAPTER SIX

GRAMMAR FROM A DYNAMIC PERSPECTIVE:

(I) THE COMPONENTS OF GRAMMAR

6.1 Introduction

Up to this point, the focus of the thesis has been a broad one on general issues of modelling language from a dynamic perspective. The components of the proposed model were formulated to be applicable to various levels of linguistic description, and illustrative examples included generic structure, the exchange in discourse, grammar and lexis. In this and the following chapter, the focus shifts to grammar in particular, and the general suggestions from the first part of the thesis for a dynamic perspective on language are applied to the grammatical analysis of a text.

This chapter begins by defining grammar in theoretical terms, describing its place and role in systemic theory. This is a synoptic view of grammar, and is necessary in order to enable a comparison with and an understanding of the dynamic view. Following this, we justify the application of a dynamic perspective to grammar, arguing why this is a valid area of study. The chapter then moves on to an analysis of grammar from a dynamic perspective, focussing on the analysis of grammatical units. Metafunctional aspects of grammar are considered in Chapter Seven.

6.2 Elaborating the notion of grammar

Before beginning a dynamic analysis of grammar, we need to explain the theory of grammar with which we are working: how the systemic functional school begins a grammatical description, what the key components are, how structures and forms are analysed. The following discussion is based on Halliday 1985a:19ff, Halliday 1961 and Halliday 1976a; other references are noted where relevant.

Initially, a grammatical description needs to be able to identify the components, the basic building blocks, of the language in question. Consider a sentence such as the following:

the troops attacked the protesters

Merely marking this example as a sentence is already a partial description: a person who did not speak English would not be able to isolate this as a meaningful unit in an ongoing flow of speech. However, speakers of English would be able to produce and understand a sentence such as this: they recognise it as being potentially part of their overall linguistic system. Speakers also recognise that the sentence itself is made up of parts: orthographically, this can be made evident by an initial capital letter and final full-stop, and by spaces between words. But describing a sentence as a list of words is not particularly revealing; the question is then, how to define the basic structure of the sentence?

There are at least two ways in which this problem can be approached. Structures can be divided according to a principle of either *maximal* or *minimal* bracketing. Maximal bracketing is exactly what its name implies: it means "imposing the maximum amount of structure" (Halliday 1985a:22), and is

known in linguistics as *Immediate Constituent Analysis.* Minimal bracketing, on the other hand, only makes divisions where they are seen to be needed, the need deriving from some other principle, namely a functional one. If these two types of bracketing are represented as 'trees' with branches and nodes, the maximal approach results in a tree with many nodes, and few branches for each node (carried to its extreme, a maximum of two branches). The minimal approach results in a tree with few nodes, and relatively many branches to each node. This means that in each case, the nodes and branches of the trees are making different statements about structure. In the maximal approach, the branches indicate constituent structure, and the notion of constituency carries much of the analytical load. In the minimal approach, less information is given about the constituent structure, and so the nodes and branches need to be interpreted in order to gain structural information. The following figure represents a minimal bracketing of the sample sentence:

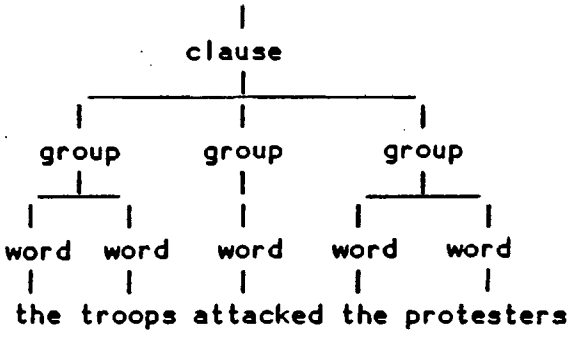


Fig. 6.1 Minimal bracketing

This figure tells us that there is one clause (or sentence), consisting of three groups, two of which consist of two words, and the other of one word. A systemic grammar adopts a minimal approach to bracketing, but this type of bracketing does not give much information about the structure of the clause: many clauses might consist of the same components (three groups, one

clause...), without necessarily being seen to have the same structure. For this reason, the nodes and branches in the minimal bracketing approach need to be interpreted.

Before going on to explore the nature of this interpretation, let us first of all consider the components themselves a little more. From the above figure, it can be seen that the components of the grammatical structure are *units* which are organized on a scale. A unit is defined by Halliday (1961) as the grammatical category which carries stretches of patterns, these 'stretches' being defined according to the language in question. In English, the relevant units are *morpheme, word, group, phrase, clause* and *clause complex* (clause and clause complex are parallel to simple and complex sentences in more traditional terminology). These units are arranged in relation to each other on a scale of 'small to big' or 'low to high', this scale being called the *rank scale*. Its implication is that units lower down the scale 'make up' the units higher up the scale, or put the other way, that units higher on the scale have lower ranked units as their components. The above example, for instance, is one clause, but consists of three groups (the troops, attacked and the protesters), each of which in turn consists of individual words. Had the example been the troops attacked small groups of protesters, the clause structure would be the same as the first example (consisting of three groups), but the examples would differ in structural terms at the rank of group (the protesters/small groups of protesters).

In undertaking a systemic analysis of grammar, an important point to note about the rank scale is the principle whereby a unit may have another unit of the same or higher rank as one of its components. This is called the principle of downward *rank shift*, and accounts for how two apparently separate units are treated as one. For example, in a nominal group such as

the streets in the city there are two nominal groups (the streets, the city), but the second is part of a prepositional phrase (in the city) which is *post-Modifying* the first nominal group. The prepositional phrase and the nominal group internal to it are said to be rank-shifted, because they are functioning as part of the first nominal group. Similarly, in a nominal group such as the man who ran away, there is an element from the rank of clause, who ran away, functioning to post-Modify the nominal group, the man. It is useful to compare this example with the man ran away; this latter example is a complete clause; it contains a process, ran, which is called a *ranking* process, as it is part of the structure of the clause. On the other hand, in the former example, the process is not ranking, as it is part of the structure of the group. The man who ran away would be part of the structure of a clause, as in the man who ran away was my friend. Because the man who ran away plays a role in the structure of a clause, it is identified as a group, even though it contains within it elements of a rank-shifted clause.

It was noted above in the discussion of maximal and minimal bracketing that, in a minimal bracketing approach, the nodes and labels of the structural tree have to be interpreted. A clue to the way in which the units on the rank scale are interpreted is provided by the phenomenon of rankshift, and the need to differentiate between, say, a ranking and a non-ranking process. The interpretation is a functional one: what we interpret is the role being played by a unit in the next highest unit. Interpretation consists in labelling the nodes and branches of the tree, in order to indicate the structural role of the elements in the larger whole.

As we saw for the case of rankshift, the function of any unit is with respect to the unit next above; so, for instance, we need to determine whether a group is playing a role as a group (and so functioning with respect

to the clause), or as part of a group (and so functioning with respect to the group). But the notion of function is more extensive than this; every unit is able to function in a variety of ways. For example, a clause functions to tell us which part of the message is its departure point, to tell us whether information is being presented or requested, to tell us whether the action of the clause is extended to a second participant, and so on. At group rank, a nominal group may function to tell us what sort of thing is in question, and to give us more information about that thing, modifying or describing it in different ways. A verbal group tells us what sort of event is involved, as well as indicating such features as the time of the event, and so on. At every rank, different options open up in relation to the units of that rank; these options form a *paradigm* of potential: a range of alternatives representing all the different types of clauses, groups and so on, which are possible in a language.

Breaking down the units on the rank scale according to the role(s) they are able to play gives rise to *classes* of units. A class is "that grouping of members of a given unit which is defined by operation in the structure of the unit next above" (Halliday 1961/1976:64). Further, this grouping represents "a set of items that are alike in some respect" (Halliday 1985a:30). For example, only a verbal group can function as a process at a clause rank. All elements identified as a certain class will be alike in some respect, although this 'likeness' may differ in degree. A description of class can be made more *delicate* to account for differences within a class, or *sub-classes*. For instance, at the rank of word, there may be different types of noun (common, proper, mass ...), which are differentiated at a level which is more delicate than just 'noun'. Similarly, there may be different types of nominal group, having, say, pre-Modification (the old soldiers), or

post-Modification (protesters with flags), or both (the young people in the sguare). At a level of lesser delicacy, these groups are all described as nominal groups, but at a level of greater delicacy, they will be seen to differ.

However, the different classes of units and the different roles they can play are not necessarily co-extensive. The class label is a way of describing the unit in question as a type of dictionary entry (the troops, for instance, is always a nominal group in class terms). On the other hand, the functional label is a way of interpreting the item in question in terms of a given instance (the troops, for example, takes on different roles in the following clauses: the troops attacked the protesters; the protesters attacked the troops). It is certainly true that there is a close association between function and class, but "the same class may have more than one function, (and) so also the same function may be performed by more than one class." (Halliday 1985a:29)

There are, therefore, two ways of describing the options which open up in relation to the units on the rank scale, both according to their class and their function. It should be noted that it is a convention in systemic theory that class names are written entirely in lower case (determiner, noun, nominal group), and functional names are written with an initial capital (Deictic, Head, Subject...).

At this point, it is necessary to say a little more about function. If we compare our original example, the troops attacked the protesters, with the protesters attacked the troops, it can be seen that the classes of unit in these two examples are exactly the same, but that their meaning, and their grammatical structure, is quite different. The difference lies in the role

being played by the elements of each structure. For instance, in the first example, the troops is taking on the role of Actor (the participant undertaking the action), whereas in the latter example, the troops takes on the role of Goal (the participant to which the process is extended). Again, both examples have the same bracketing in structural terms, but the branches of the structural tree are interpreted differently.

The functional roles are defined by the *structure* of the unit in question: a structure "is a set of relations, and the elements of structure are the values defined by these relations" (Halliday 1981a:29). For example, one of the options relevant to the clause is whether or not it is *indicative*; if indicative, this is expressed by the inclusion of an element *Subject* in the structure of the clause. The Subject element is expressed by a nominal group, and its functional role is recognised in relation to the other elements of the clause (such as Finite, Predicator). Structure is therefore a configuration of functional elements, such as Subject-Finite-Predicator; 'Subject' is not a structure on its own, but is an element of structure. Structure "refers to abstract grammatical relations on the syntagmatic axis", that is, to the relations among the parts of a linguistic unit (the groups making up a clause, and so on), (Halliday 1981a:29). The link between structure and class is that class is the set of items which takes on, or *realizes*, the values defined by the structural relations. We saw above in the troops/protesters examples that a change in the linear sequence of the classes reflected a structural change, but linear sequence and structural ordering do not have to be in a one-to-one relation. For example, a clause may have the feature *indicative*, which is realized by the presence of the elements Subject and Finite. Their relative sequential or linear order is immaterial; it is their presence which realizes the feature in question

(however, their relative order is relevant to a more delicate set of features, namely whether an indicative clause is declarative or interrogative; in the former case, the Subject precedes the Finite; in the latter, the Subject follows the Finite). When the linear sequence of structural variables needs to be specified, the elements are separated by the sign ^. For example, Subject^Finite means that the Finite element follows the Subject. On the other hand, if it is only the structural order that needs to be specified, without reference to linear sequence, the elements are separated by the sign *. For example, Subject*Finite means that the elements may appear in either linear order. (Other linear sequences are possible, where one element may be enclosed by another, but we do not refer further to these; cf Halliday 1981a:30).

A further point to note when describing grammatical units is that most are multi-functional in nature: a clause such as the troops attacked the protesters exhibits not just one structure, but many. For instance, it has the structure Actor^Process^Goal, and also the structure Theme^Rheme (Theme: the troops; Rheme: attacked the protesters; see Chapter Seven for further explanation of these options). The multi-functional nature of constituents means that multiple features have been selected in relation to the one unit. For example, in the protesters were attacked by the troops, the Actor^Process^Goal structure is the same as in our earlier example (its linear sequence may be different, but the same elements are taking on the same functional roles). However, the thematic structure is different, with the protesters now taking on the role of Theme, and with the clause now having a passive rather than an active form, which relates to its structure in terms of Mood (again see further discussion in Chapter Seven). A comparison of these examples illustrates that different features are selected

in relation to the one unit, the clause in this case, and that each feature has a structural consequence for the clause.

In the systemic model, it is the category of *system* which brings together the aspects of the grammatical description so far discussed. A system derives from the breaking down of *classes* in terms of *delicacy*, and formalizes the options which open up at places on the *rank scale*. It accounts for the selection of one option rather than another - in other words, it describes the paradigmatic potential available at that point. We have observed that options open up for each unit on the rank scale (clause, group, ...): selecting one option rather than another means that a certain class of that unit has been selected (for example, nominal group or verbal group). The options available to be selected are *features* of the unit in question, such as whether a clause will be indicative, or whether a nominal group will be modified. These features are arranged as a *system* of alternatives, and systems are related to each other in a *system network*, by the principle of delicacy. The rank scale provides a way in to the network; the environment of the system, or its *entry condition*, is a unit on the rank scale. If the entry condition is satisfied, then the options x or y or z, for example, may be available, or the options x or y and b or c, and so on. (The different possible organizations of a system are outlined in Halliday 1976a:15) Examples of systems were given in Chapter Two (section 2.3) and Chapter Four (section 4.2). We present below a fragment of a system network for the purpose of illustrating the above points.

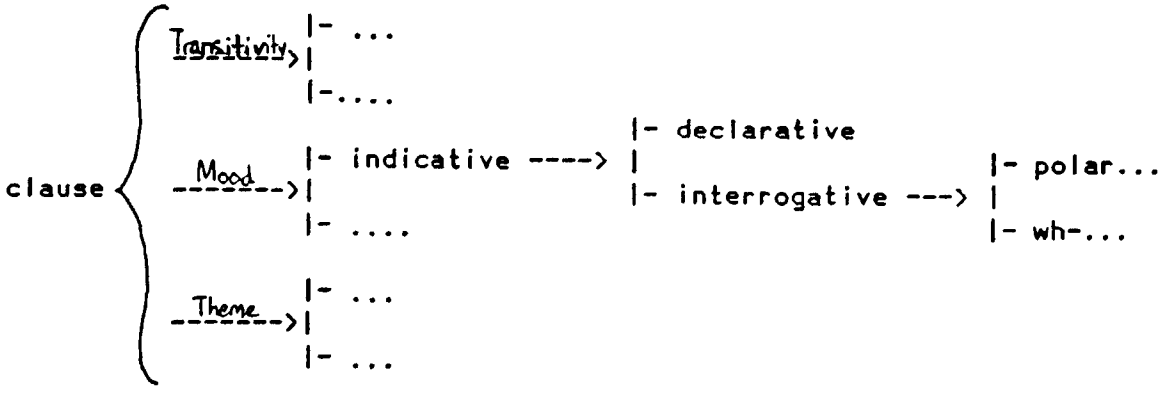


Fig. 6.2 Fragment of a system network

In this network, options open up in relation to the clause; selections are to be made simultaneously from three systems, *Transitivity*, *Mood* and *Theme*. The feature indicative may be chosen from the system of Mood; if this feature is selected, further, more delicate, options are available, the features declarative and interrogative. If interrogative is chosen, an even more delicate option is available as to the type of interrogative: polar (yes/no: are you going away?) or wh- interrogative (why are you going away?). Features are selected while moving through the network from left to right, from least to greatest delicacy, so the availability of the feature declarative is dependent on the prior selection of the feature indicative.

In a system network, each feature has a structural consequence; as noted earlier, selection of the feature indicative results in the presence of the elements Subject and Finite in the output structure. The structural consequence is captured as a *realization rule*, accounting for the presence, linear sequence, conflation and so on of structural elements. In other words, realization accounts for the linguistic manifestation of a feature. As each feature is selected on a move or a pass through the network, the associated realization rule is noted and gathered together in a *selection expression*, which brings together all the features which have been selected in relation

to a particular *unit*. When all the features and their associated realizations have been selected, an output may be generated, representing a multi-functional, structural output for the unit in question.

However, because the units of grammar are related by the scale of rank, features selected in a unit higher up the rank scale open up selections lower down the rank scale. For example, the feature *indicative* in relation to the clause is realized by the structural elements *Subject and Finite*; but these elements are in turn realized by a nominal group and a verbal group respectively. This means that the systemic options relevant to these groups are therefore available (for the nominal group, for instance, whether it will be modified or not), in turn resulting in a structure for the group in question. And selections for the group will in turn have repercussions for selections at the rank of word. In this way, a system-structure cycle can be seen to be established between systemic options and structural realizations between the units of grammar.

The grammatical categories of unit, structure, class and system, together with the scales of rank, delicacy and realization (or *exponence* in early outlines of the theory) form the basis of a grammatical description from a systemic functional point of view. For this and the following chapter, it is not essential to be familiar with the details of writing system networks, or the details of all the currently available systemic descriptions of English. What is most important is to understand the way in which units are related hierarchically on the rank scale, and to understand that the choices relevant to a systemic description are functional in nature. It would be useful at this stage to summarise the units which are referred to most frequently in the remainder of this chapter, and to briefly describe their major structural potential. The following discussion is based on

Halliday (1985a), which should be referred to for further details. In the remainder of the thesis, we focus on the ranks of group and clause. Firstly, in terms of the unit *clause*, we need to be able to identify the functional elements of:

> *Participant*: typically realized by a *nominal group*, for example I; a city that isn't at work; the distance.
> *Process*: realized by a verbal group, for example is; spoke; have seen.
> *Circumstance*: typically realized by a prepositional phrase, for example: in the distance; with gunfire.

The realizations of these elements (nominal group realizing Participant, and so on), in turn need to be identified in terms of their own functional structure. In principal, we focus on:

> (a) *nominal group*: with basic structure of optional pre-Modifiers, obligatory Head, and optional post-Modifiers. Each of these elements can be described in more delicate structural terms. For instance, pre-Modifiers include *Deictics* (typically realized by determiners, demonstratives and pronouns, for example the, that, my); *Numeratives* (realized by numerals, for example one, third, few); *Epithets* (realized by adjectives, for example pretty, horrible); *Classifiers* (typically realized by adjectives or nouns, for example public [transport], commercial [vehicles]). The Head of a nominal group is more delicately described as a *Thing*, and is realized by pronouns, names, or nouns (for example, I; cranes; air). The post-Modifier is more delicately described as a Qualifier, and is realized by embedded (that is, rankshifted) groups or clauses, for example [the main road] leading to Tiananmen Square; [the people] they said they had seen.
>
> (b) *verbal group*: with basic structure of *Finite* (realized by modals or auxiliaries, for example, may, did), plus *Event* (realized by a lexical verb, for example smoking, fired), with optional auxiliaries (realized by auxiliary verbs, for example have, be; though forms of the verbs be and have may be lexical verbs in their own right, as in Today is Sunday).
>
> (c) adverbial group: typically realized by an adverb, for example defiantly.
>
> (d) prepositional phrase: with the structure of a minor clause, that is, with a minor Predicator (realized by a preposition) and Complement (realized by a nominal group); for example in the distance; along the main road; at most of the intersections.

These are examples of the types of units which are identified from a dynamic point of view in the remainder of the chapter. Functional matters are considered only in terms of the roles of elements in higher-ranked units, that is, what the role of a word might be in relation to a group, or the role of a group in relation to a clause. Metafunctional considerations are explored in the following chapter, and the terms relevant to the metafunctional aspect of grammar are introduced there.

6.2.1 The relationship of lexis to grammar

In the preceding discussion of the basic grammatical model, only grammar itself was discussed, but there is another aspect to this linguistic stratum, and that is *lexis*. Lexis contributes to the organization and conveyance of meaning, so the stratum in question is more correctly referred to as *lexicogrammar*. But the existence of two different names for patterns within the same stratum suggests that two different types of phenomena are in question, and indeed, there is considerable dispute as to whether patterns of lexis and grammar are of the same or of a different order.

The Hallidayan model proposes that lexis and grammar are patterns of the same order, with lexis being the 'most delicate' choice in grammar. That is, at an entry point to a network, choices will relate to broad functional roles; as the network increases in delicacy (moving right in the network), the choices become more and more precisely defined in their functional role, until the choice is that of a unique lexical item. Salat (1985) provides a convincing demonstration of this pattern, showing that a closely related set of lexical items (concerned with synonyms of help, aid, assistance ...) could

be differentiated with a system network, that is, with each item having a unique role to play in the system.

On the other hand, there is considerable evidence that lexical and grammatical patterns are of a different kind. The clearest example of this is the case of *collocations*, colloquially known as 'the company words keep'. Collocation occurs when one particular lexical item sets up a strong expectation for another to occur in close proximity: for instance, that a cup of tea will be strong, as opposed to, say, powerful. Collocation accounts for the fact that some items co-occur for no obviously good reason, other than that just happens to be an established pattern in the language. Many linguists (for example, Hoey 1991) use evidence such as this to argue the case that lexis is different in kind to grammar.

It is very difficult to resolve this dispute. Most of the arguments for either case can be resolved from the other point of view. For instance, the unique patterning used by Halliday and Salat to justify fine (lexicogrammatical) network distinctions is also used by linguists such as Gross (*passim*) to justify a theory in which lexis is the organizing factor, each lexical item being seen to enter into a unique set of grammatical relations. Alternatively, the argument that collocations provide evidence for the separate nature of lexis and grammar is rebuffed by Firth's theory of *colligation*, where grammatical patterns are also seen to co-occur for no obviously good reason, confirming the argument that the two are patterns of the same kind. The subject is one which merits (and indeed, which is receiving) a great deal of attention in its own right; here only the barest bones of the debate have been hinted at. But the point of contention is relevant to the further development of this thesis. As will be seen in this and the following chapter, a dynamic perspective first draws on actual

lexical choices to begin formulating expectations as to what might come as the text continues to unfold. Lexical choices are thus a key to what might be happening functionally in the text, but significantly, it is not just the lexical item which provides the key, but the grammatical class and probable function of that element.

Either the hypothesis that lexis is most delicate grammar or the hypothesis that the two are separate could hold from this point of view. For the first hypothesis, the implication would be that lexical choices are the end point of a realizational chain, and thus, are a key to what might be happening at a less delicate point and so to what options might be related to the less delicate choices. For the second hypothesis, the implication would be that lexical patterning (including, for instance, collocations) drives other kinds of patterning, forcing stacks to be reweighted, for instance. The thesis does not in any way resolve this debate, but it does bring the debate into focus, and so the issues have been acknowledged here.

6.3 Why grammar?

The application of a dynamic perspective to grammar, particularly grammar within the clause, is not by any means an obvious thing to do. Indeed, the validity of such an approach has been explicitly rejected, for example by Martin (1985) and O'Donnell (1986, 1990). They have argued that a dynamic perspective on grammar is both psychologically implausible and theoretically untenable, on the basis that it seems to be highly unlikely that speakers generate grammatical units as they unfold, and so theoretically unsatisfactory to explain their meaning potential in this way.

Counter-arguments to these objections have already been presented. Not only have we argued that an explosive account of generation is unable to account for certain aspects of the production and reception of grammar, we have also argued that a dynamic perspective should be independent of the nature of the description to which it is applied. We certainly concur with the position that the inherent nature of grammar is not particularly dynamic: it lends itself to constructional, multivariate, constituent relations, whereas the dynamic perspective lends itself to the modelling of non-constructional, univariate, dependency relations. But nevertheless, perspective is independent, and the ability to apply a particular perspective to an intractable domain should further our understanding of the perspective. Moreover, as argued in Chapter Five, a different perspective foregrounds aspects of the description which may have been hitherto obscured, and so a dynamic perspective on grammar should bring some new insights to this area.(1)

An analogy may help make it clear why the proposed approach to grammar will be useful, despite its apparent unsuitability. When, as analysts, we examine a speaker's choices, the choices can be overviewed all at once or can be followed as if the choices are leading on to each other in a dynamic fashion. This is a choice of perspective, and either perspective is valid. When looking back over a speaker's choices, it is easy to assume that they were all made globally and purposefully, but a dynamic perspective cannot make such an assumption. If, for instance, we were describing a car journey and not a grammatical unit, the description could be made after the journey is completed, or as the journey is being undertaken. Given the former approach, the endpoint of the journey is known, and the overviewer can try to make sense of how the driver got there: why some routes were chosen rather

than others, and so on. Given the latter approach, the overviewer can try to work out where the driver is going: whether there is any motivation behind the choices made at different road junctures, and what the implications of the choices might be for the ongoing journey. From this point of view, the overviewer would assume that the driver is making use both of a map of the road (some knowledge of the direction and grade of the roads and so on), and of a view of the road (the ability to see a traffic accident up ahead, for instance, which could result in the driver changing route).

The way in which the driver plans (or does not plan) the journey is irrelevant to the way it is overviewed. Whether viewed after it is finished, or as it is undertaken, the driver might carefully plan every stage of the journey in advance, might set off with a destination in mind and a general idea of the probable route, or might just get in a car and take off, with no plan in mind. The decisions made at each road juncture will be guided partly by the degree of pre-planning, and partly by the current state of the road. Significantly, the global overview of the journey assumes that the destination was arrived at by design; it probably does not attempt to account for why one choice led on to another, and would find it difficult to account for any deviations from the known, mapped routes. On the other hand, the progressive overview takes greater account of the conditions en route: the factors affecting the decisions taken en route are accounted for, and it is possible to still follow the journey even if it leaves the known map of the road.

6.4 A dynamically oriented analysis of grammatical units

In this section, we focus on an analysis of grammatical units which applies the notion of paths as developed in Chapter Five. The other aspects of the Chapter Five model, the stacks and activated view of context, will not be worked through, although these factors should be considered to be working 'in the background'. Section 6.4.2 below briefly illustrates how the various components of the Chapter Five model would operate in relation to grammatical units; but on the whole, it is felt more important to focus on the way in which the path analysis works, as this is at the heart of a dynamically oriented perspective.

6.4.1 The text to be analysed

The grammatical analysis developed in this chapter is applied to one text only. The data set is therefore highly restricted, but the intention is to use the text for illustrative purposes, and it is analysed repeatedly with regard to different aspects of the description.

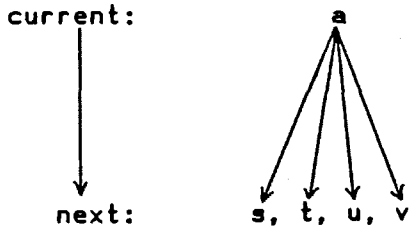
The text is presented in the appendix; it is a transcript of an extract from an evening news broadcast on BBC Radio 4, 5-6-89. The text is produced by a reporter, Kate Adie, who is reporting on events in China relating to the Tiananmen Square Massacre. Her text is introduced by a news reader/anchor, who says that Adie is 'on the line' from her hotel in Beijing. The anchor then says 'Kate Adie, what can you see from where you stand?' Adie then responds, and the text consists of Adie's report, which is closed by the news anchor, who says 'Kate Adie, thank you'. There is no evidence in the text of editing, and while Adie is speaking 'live' on the phone to the news anchor,

there does not appear to be any great pressure of time (as might have been the case if she had been in Tiananmen Square reporting the massacre as it took place). She may or may not have prepared notes to remind her of what she wants to say, but the text does not have any features of extensive pre-planning.

6.4.2 Situating the analysis

Before proceeding to the unit analysis, we give a brief exposition of how the model as a whole from Chapter Five would apply to considerations of grammar, in order to illustrate how the components of the model interact.

Firstly, in terms of path analysis, each current choice opens a path which can be sustained or closed in a variety of ways. Thus from our knowledge of the general, synoptic potential of the linguistic system, at any current point we should be able to posit a variety of options for the next point. For example:



However, not all these options will be equally viable in a given context, as from a dynamic perspective, the choices are active. The factors conditioning the overall potential, in order to produce an active potential, are features of the context of situation (such as field, mode and tenor), previous choices in the text (once the text is underway) and experience of the grammatical system. These provide the *frame* of the text, which is

carried forward with the text and modified as the text develops. For example, the opening line of the text begins with I have a view ..., and while this is potentially complete as a clause structure, our experience of the grammatical system leads us to expect that this structure will be extended, to tell us the object of the view, or where the view is from. The context of the text suggests how these components would be realized: Adie is in a hotel, and she will be looking out over some part of Beijing, perhaps as a particular event is taking place, or where some event occurred earlier.

Expectations therefore depend both on the general, grammatical potential from that point, and on the conditioning factors relevant at that point. The availability of conditioning factors enables the expectations at the next point to be stacked according to likelihood. Thus in the above example, while it is grammatically possible to have a view of virtually anything, in context some of these options are considerably less likely than others.

From a current point, a weighted expectation is posited for the next choice, and an actual selection is made. This may accord with the status quo of the posited stack, or may upset it. A next actual option which was not particularly likely given the current frame will create an effect of surprise or markedness. Note that while this formulation may seem to account only for the receiver's point of view, it is equally relevant to the producer. A producer may set up expectations in an unfolding path and then deliberately or accidentally subvert them.

Given a next actual choice, a new current environment is produced, from which expectations can again be posited for the next choice, as just described. However, the expectations will now be different to those posited for the preceding current choice, as the actual text choice will have

modified the current frame of the text. For example, while the initial context provides only a general outline of the field (in this case, that the field will be related to the Tiananmen Square Massacre), the reporter's initial field selections (namely I as participant, seeing a particular view, of the city) modify the field frame, so that participants and processes associated with these initial selections are expected to be most likely to occur at the next point.

Let us give a few brief examples of how the ongoing frame influences available choices in the text. In line 18 of the text, I spoke to a man at the hospital a new ideational element is introduced (a man at the hospital). In the frame, then, this would activate a new set of related potential. Line 20 begins the senior medical..., and in grammatical terms, the nominal group can be expected to be sustained. However, as senior is usually used to describe people, we would expect a term relating to a person, and further, as the field of medicine is activated (by both hospital in the earlier line and medical here), we can expect an item such as officer, doctor, registrar, surgeon. Thus because the context is active, the range of expectations is considerably more precise than would be the case for a decontextualised example.

An interesting example of slightly subverted expectations is found in the speaker's reference to Armoured Personnel Vehicles (line 25). At the time of this event, the more common term was Armoured Personnel Carriers, frequently abbreviated in written media reports to APCs. The speaker has made a selection which is not the most expected in the given context, but which is still an appropriate member of the stack of options at that point. It would

not cause an effect of great markedness for the receiver, because of the lexical similarity between carrier and vehicle.

The ongoing frame can also influence the way in which text choices are interpreted. For example, the pronoun they is used several times throughout the text, but has different referents on different occasions. In line 13, for instance, it refers to food stalls and markets, while in line 16, it refers to protesters. Interestingly, between these two lines, the notion of the ongoing frame has been changed, from being concerned with aspects of the city, to being concerned with a particular location (Tiananmen Square) and an event there (protesters gathering). Thus in each case, they is interpreted by drawing on a different set of activated participants. (It is this type of reference which Emmott's (1989) frame theory was originally developed to account for.)

These are just some of the ways in which the model as a whole can be seen to be contributing to production and understanding of the unfolding text. It would indeed be worthwhile to pursue this in more detail, but at this stage it is felt more important to proceed with a more general analysis. We therefore move on to a consideration of grammar within the clause.

6.4.3 The basic unit analysis

The analysis which is presented here focusses on an application of the path metaphor developed in Chapter Five. This metaphor applies to the ongoing flow of choices between the current and next environments, and to apply a dynamic perspective to grammar, it is necessary to determine the nature of these environments. Consider the following examples:

CURRENT

I ...

I have ...

I have a ...

I have a view ....

At each of these points, that is, following I, I have, I have a and I have a view, different paths of potential open up. Therefore, for the purposes of a dynamic grammar, it is necessary to decide just which points are relevant for a grammatical analysis. In principal, any part of the text can form the relevant environment for the analysis. If written, this could be every letter, part of a word, a word, a group, a paragraph, the whole text. If spoken, it could be any part of the phonic substance. Yet in practice, and because the focus is on grammar, it is most useful to focus on the grammatical categories which were introduced earlier in the chapter. The first grammatical category which could be being selected is that of the *unit*: any unit may be the focus of the current or next choice from a dynamic perspective. Thus, we may take a current word and consider the next possible word. Or we may take a current group, and consider the next group, and so on. It is not necessary for the current and next choices to be of the same rank: if the current word is the, for instance, we may have expectations about the *group* to follow, namely the rest of the nominal group. Any unit on the rank scale, from a morpheme to a clause complex, can inform expectations about what is to follow. Yet for grammar, the most fruitful path to follow is the development of the group. This is because the group has a central role in the rank scale: it is made up of words, and is itself the component of clauses. Occasionally, in the analysis which follows, use will be made of morphemes and clause complexes, but on the whole, the strategy here is to

focus on group and clause development, using the word as a window (in the computational sense) by which to move forward.

The notion of current and next choice can also be applied to the grammatical category of *structure*. For instance, if the current environment is this, we can identify its status as a unit on the rank scale as a word, possibly fulfilling a one-word group, or being part of a larger group (as in this army). However, we only know that it can be part of a larger group, because we know it has the potential to fulfil the structural role of *modifying* the Head of a nominal group.

To maximise a consideration of structure, however, it is necessary to draw on another grammatical category, that of *class*, to help outline the potential at the next choice. For instance, if we again take the current word as this, the potential of the nominal group is in question, and we might expect the role of Epithet to be taken up next in the group, in which case we would expect members of the class of *adjective* to fulfil this role; or, we might expect the role of Head to be taken up next, in which case we would expect a member of the class of *noun* to fulfil this role.

The final grammatical category which can take on the role of current and next choice is that of *system*. As systems operate at each rank, we know that, given a word such as this, the potential of the nominal group opens up simultaneously with the potential of the clause. Thus we can expect either further options in the nominal group, or further options in the clause. The current environment can therefore provide two sources of information for moving ahead. Firstly, information about the structural potential of the unit in question may be used: in other words, if the current choice is part of a group, what other parts of that group might follow? And secondly,

information about the functional role of the unit in other units may be used. For instance, if the current choice is part of a group, what other units might that group be a part of?

This section now deconstructs an analysis of path steps between units of grammar so that the reader is able to work through the analysis and observe how it was arrived at. A complete path analysis of the text is included in the appendix; here, only illustrations and examples are presented.

A quick glance at the appendix will reveal an analysis which appears to be entirely retrospective, static and synoptic. This, however, is a feature born of the necessity of presentation. The analysis itself is formulated from a dynamic perspective: the text is analysed as if it were unfolding. But the nature of the written mode is such that the results of the analysis must be presented statically, in a way which can be viewed globally and retrospectively. Thus it should always be remembered that, while presented synoptically, the analysis is arrived at dynamically, and so needs to be worked through as if it were unfolding.

Further, it will be evident in several cases that multiple analyses could be argued for, depending on the criteria used to define the path steps. The important thing is not that the analysis is deemed to be 'correct' in all cases, but that the reasons for analysing a step in one way rather than another can be retrieved.

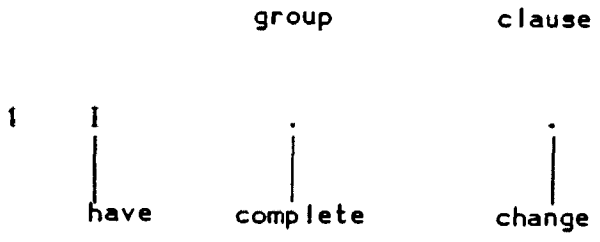
The analysis is presented down the page with each word of the text on a separate line; to the left is the relevant line number from the text, to the right are columns for path analysis at group and clause ranks (word rank is dealt with at the end of this section).

The first word in the text *opens* a path at group and clause ranks, but is not analysed as a path step, because it is not a step as such. All subsequent choices are path steps. The first word in the text is the *current* choice and from here, a variety of paths could be followed. However, the next actual choice - the next word in the text - will pick up only one of these possible paths. This choice in turn becomes the new current environment, providing expectations for further path development from that point.

It is important to note that in this presentation, only the results of the analysis are included; that is, only the classification of the actual step is presented; the expectations set up from the current position are not presented. So from a given current point, a full analysis would posit the full range of grammatical expectations for the next point, and draw on conditioning factors to stack these in terms of relative likelihood; the expected choices would then be compared with the next actual choice, and so on. But in this presentation, the current choice is seen and then, the next actual choice is immediately considered, and the step between the two is interpreted in path terms. This means that the analysis is biased to the receiver's point of view, as it does not present the stage of positing and weighting expectations. As always, however, while a receiver's bias will be apparent, the analysis should be just as relevant to the producer's point of view.

The classification of the path step between a current and a next choice is presented level with the next actual choice. This is in order to emphasise the fact that the nature of a path step cannot be determined until

the next actual choice is reached. The following extract illustrates these points.



In the first line of the text, the first word is I, which opens paths at group and clause ranks, but which is not analysed as a path step. The next actual choice is have; this signals that the group path opened by I is complete (as there has been a shift from a nominal to a verbal group, and thus the nominal group cannot be further developed) and that the clause path has changed (because have adds to the clause opened by I).

It must be emphasised as strongly as possible that the classification of the path step relates to the role of the current choice in relation to the path up to that point. So in the example above, *complete* is a label which describes the role of have in relation to the unfolding grammatical path. As it is a *complete*, this simultaneously tells us that another path is *open* (viz, a verbal group path), but does not on its own tell us whether have 'is' the verbal group: the rest of this path needs to be seen before that can be determined, as have might be functioning as an auxiliary or a main verb. In this respect, the dynamically oriented analysis is quite different from standard grammatical analyses, where boundaries are defined from a global viewpoint. Of course the dynamic analysis still relies on standard synoptic classifications of groups, and the way to retrieve this information from the analysis is mentioned below. At this stage, the point to note is that the

label at a next point describes what is happening in path terms up to that point.

The path steps will be represented by abbreviations, as follows:

continue:	CO
continue:concatenate	C:C
continue:add	C:A
change	CH
complete	CP
abandon	AB

In addition, a new classification will be introduced; this will be discussed below, but its label is:

reset	RS

Let us work through some basic examples from the text to see how the path analysis applies.

		group	clause
1	I	.	.
		|	|
	have	CP	CH
		|	|
	a	CP	CH
		|	|
	view	CH	CO

At group rank in this example, have completes the nominal group path opened by I, and itself opens a verbal group path; the next step, a, completes the verbal group path, opening another nominal group path. This nominal group is sustained by the next choice, view, which adds further functional information to this group, thus changing it. At clause rank, have

changes the clause path opened by I, as it represents a different clause element contributing to the one overall structure; the next choice, a, signals another change, opening as it does another participant path in the clause as a whole. View contributes to this participant path; it thus continues this part of the clause. While analysed as a *continue* step (CO), it is not differentiated for the *concatenating* (C:C) or *adding* (C:A) roles, because it is not actually adding anything to our knowledge of the elements of this clause, but signalling that this element, a participant, is just being further developed. Of course the step between a and view is still functional, but this is brought out at group rank.

Let us now consider another example.

		group	clause
11	there	CP	CP
		|	|
	are	CP	CH
		|	|
	no	CP	CH
		|	|
	commercial	CH	CO
		|	|
	vehicles	CH	CO

In this example, there is a step in relation to a choice from the preceding clause; it is analysed as a complete at both ranks, as it opens both a new group and a new clause. The step into are is a complete at group rank and a change at clause rank, marking a shift from a nominal to a verbal group and from a participant to a process respectively. The next step, no, is another complete at group rank and change at clause rank, opening another nominal and participant path. Both commercial and vehicles change the nominal group path, and continue the clause path. It should be pointed out that, while the above example might appear to be 'ended', this is again an artefact

of the presentation: the clause could go on from here, perhaps with the addition of a circumstantial element (as in there are no commercial vehicles today). Once again, the next choice has to be seen before the boundary of a unit at either rank can be determined.

A feature of this analysis is that certain steps at one rank have particular relations with steps at other ranks. A continue or change step at group rank, for example, constitutes a continue step at clause rank, while a complete at group rank may be either a change or complete at clause rank. It should also be evident from the presentation of the analysis that information regarding structure, class and system has to be retrieved or inferred from the analysis. The fact that the first word of the text, I opens a nominal group path is not actually presented as part of the analysis; it is assumed that the reader will be able to retrieve this. If the analysis were to be made automatic, such information would have to be included through, for example, automatic tagging of the input for word-class.

While using the unit of word as the basis for moving forward in the path analysis, we do not actually apply a path analysis to this rank. A dynamic perspective is, however, relevant to this unit. It can account for the way in which morpheme boundaries may be exploited by a producer to 'play for time' or create novel effects, or used by the receiver to begin positing expectations as to what is about to come (as in it's in - aah - improbable or abso-bloody-lutely; cf Yule 1985:56). Further, a dynamic perspective at this rank can be used to account for the production and reception of lexical items consisting of more than one word, as in human being. Following human, it is possible to posit expectations relating not to the further development of the opened group or clause, but to the potential further development of human as a word. We would analyse being as a continue step at word rank, following

human; these two items together would become the springboard for the next choice.

A multi-item word such as human being is an example of a choice which appears as a type of 'slab' at word rank; other such slab choices include proper names, titles and headings. When an item is encountered which might be part of such a slab choice, the analysis should be suspended to pose the question 'Could another component follow automatically?' If the next actual component fulfils this expectation, the question is repeated; if not, the analysis reverts to the possibility of path development.

A similar strategy would operate for idioms and collocations, although considerable further work would be needed to account for these, as there are complicating factors. For instance, one may, as an analyst, be part-way through a structure before realising its idiomatic status. And collocations are not necessarily identified linearly: the node of the collocation may be to the right of the collocates. Nor are idioms or collocations necessarily fixed: they may be subject to some variation in their lexical or grammatical structure. It is important for a dynamically oriented analysis to account for these phenomena: they are a common feature of English, and the fact that such choices can occur as 'slabs' would obviously upset the word-by-word progression of the analysis we have put forward, the implication being that otherwise operative choice points between different current and next choices are 'frozen'. We have not, however, explored these issues, although we have some initial suggestions as to how they could be incorporated.

Firstly, idioms and collocations need to be recognised: one has to be familiar with such features of a language in order to understand them, and this should be included as part of the experience of the system. In an

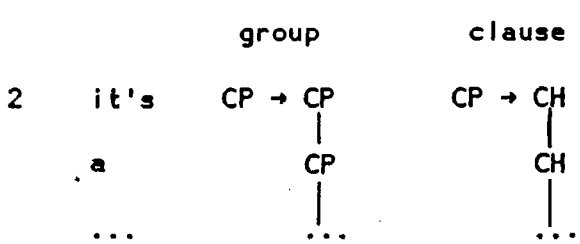
automated system, this would be achieved with recourse to a store of idioms or collocations. Secondly, variation in these structures needs to be allowed for. In the following example, China ... was therefore a major thorn in the Russian side (taken from a newspaper article), the basic idiomatic structure of x was a thorn in y's side has been exploited to accommodate participants relevant to the text in hand (China, Russia), and to allow an extra descriptive element (major). If idioms are to be described as fossilised paths, representing a single choice, the phenomenon of variation within a so-called fixed phrase needs to be explained.

Variation in idioms can be described with recourse to the concept of *latent potential*. As the idiom unfolds, and it becomes more and more clear that a path is bound to follow a certain direction, it must be remembered that there is a latent potential for all the apparently frozen choice points to be reactivated. Therefore the idiom needs to be analysed at two levels, a type of 'master' level for the basic structure of the idiom, and a 'sub' level permitting variation at particular points. The nature of the expected variations can be of different types. For instance, there are elements like China and Russia in the above example which are text-specific. Also, there are elements which arise from the latent grammatical potential of the basic idiom. In the above example, a thorn is a basic part of the idiom. But this is a nominal group, which has the potential to be described, and so, a major thorn is acceptable. While it may not be possible to predict the degree to which the idiom is fossilised, or frozen, it is possible to explain how the idiom may vary.

The analysis put forward in this chapter would be considerably enriched if idioms and collocations were incorporated in the course of future research. Here we have only acknowledged the area in question.(2)

6.4.4 Problems of transcription and orthography: fused items

One particular problem for the dynamic analysis presented here, and one which is not resolved in the context of this thesis, is that of *fused* items. This refers to items such as isn't, it's, they're, where two grammatically separate units have been fused together as one. They are difficult to analyse according to the current principles. If expressed separately, the same items would be analysed as individual steps; for instance the step from it to is would be a complete at group rank, and a change at clause rank. Their phonological fusion, however, suggests that the producer sees them more as one unit, and they are certainly received as one unit. While the problem is not solved, it is acknowledged in notational terms, by analysing these units as separate steps, but with the step between them presented on the same line, instead of on the line below, and linked by a right-facing arrow. For example:



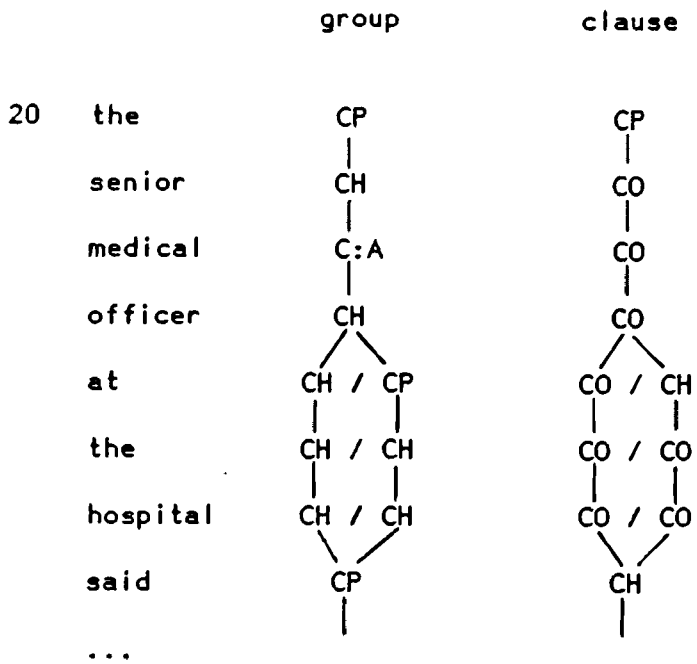
The clause here opens with it's, which is analysed as two separate steps on the same line at both group and clause ranks. The analysis continues to be read down the page following on from the second step.

Any transcription of a spoken text which aimed for a phonologically accurate rendition of the text would uncover numerous similar problems, as when syllables are elided, when homonyms occur (for example, there - they're - their) and so on. This might appear to make the steps between grammatical units indefensible, as many such steps could be 'swallowed up' in the speed of spoken delivery. But what we have been arguing for are the principles by which a dynamically oriented analysis can be seen to get off the ground; we do not suggest that this analysis is definitive. To solve these problems, it would be necessary to broaden the dynamic analysis to encompass an interplay of analyses between different levels. In the case of homonyms for instance, simultaneous paths would have to be left open at the phonological level, until the grammar resolved the issue. Such broadening of the analysis would enable many other factors to be accounted for, such as the influence of orthography on the development of an unfolding path in a written text.

6.4.5 Elaborations of the analysis: simultaneous paths

Strictly speaking, it would be desirable in the example from line 11, there are no commercial vehicles, for the analysis to recognise that no might be beginning a path such as no, let me start again, that is, abandoning the initial path. At the point of no itself, it could be playing either role, and while the presentation of the analysis allows the rest of this clause to be seen (and thus decreases the likelihood of 'seeing' an alternative analysis), it should be remembered that when working through an example in a dynamic way, one does not actually have access to such information. Thus on some occasions, it is necessary to allow for multiple possibilities, or

simultaneous analyses. A simultaneous analysis is captured with a slash (/) between the alternatives, as represented in the following example.



This example again follows on from another part of the text, and the first the signals a completion of both the preceding group and clause. The nominal group opened by the is sustained by senior, medical and officer. However, the role of the preposition at is difficult to determine, as it could be either sustaining the nominal group (functioning as post-Modifier) or closing it (thus functioning as a separate group with its own role to play in the clause, viz Adjunct or Circumstance). Thus, a simultaneous analysis must be posed, for both ranks, as symbolised by the alternatives above.

As with the more basic analysis, each simultaneous path is read down the page, so at group rank, the left-hand path begins with *change*, indicating that at is seen to open a preposition group which is part of the nominal group; the step into the next choice, the is therefore also a change, because while being part of a nominal, it is in this case sustaining the preposition group just opened. The following choice, hospital, is again a change, this

time a change within the nominal group. For the right hand side of the group path, the preposition is analysed as a *complete*, signalling that the nominal group path has been closed and a new, preposition group path opened. The next choice, the is a *change*, as it is again seen to be part of the preposition group path. At clause rank, the left side of the analysis relates to the left side of the group analysis; that is, as at was treated as part of the nominal group, it does not affect the structure of the clause, and so is analysed as a *continue*. The right hand side, however, reflects the separate group status accorded to at at group level, and so marks a *change* at clause rank. Note that with this particular example of simultaneous paths, the simultaneity is resolved by the step to said, as it marks an unambiguous shift in the group and clause paths, whatever the status of at the hospital.

The analysis of the preposition in this particular example is as it happens unsatisfactory, and alternative analyses will be discussed at length in 6.4.6.4 below. But this does not affect the point being made here. The purpose of the illustration is to exemplify the way in which such simultaneity is captured. It should be clearly evident to the reader that on the basis of the grammar alone, many simultaneous analyses might open up in one text, as many options in the context of a particular unfolding path are capable of being interpreted in multiple ways. This happens as a result of the stack principle raised in Chapter Five: a current choice sets up a variety of expectations for the next point, relating both to the type of step involved and the way in which the step is effected. It may not always be possible to determine exactly the role of a next option, thus necessitating a simultaneous analysis. However, in the analysis of this text, as presented in the appendix, not every potentially simultaneous analysis is represented;

multiple paths are only posited when there is a clear and strong case for doing so.

There are two reasons for excluding the presentation of some simultaneous analyses. First, an individual analyst may simply not 'see' the same potentiality for path development as another analyst, and thus may miss the possibility of a simultaneous path. For example, line 33 begins: they're moving in ..., and moving in might well be being used in the sense of they're moving in to their flat today, or in the sense of moving about in a particular place, as in they're moving in the streets, or in the sense of bringing something to a particular place, as in they're moving in buses. Not every analyst might pick up all these potentialities, and thus some simultaneous analyses can be missed by accident. The second reason for excluding simultaneous analyses is not one of accident but one of design; as Chapter Five explained, the latent potential of any particular step can often be drawn upon to explain unusual choices, but this does not mean that the latent potential of every option has to be explicated on all occasions. It would be counter-intuitive to suggest that every case of simultaneity is consciously created by the producer and appropriately interpreted by the receiver. Thus simultaneous analyses are posited conservatively - only when they seem to be obvious to this analyst; which means of course that some which are obvious to other analysts will be missed.

A further point to note is that when paths are unfolding simultaneously, there will usually be a point at which a next choice can be seen to pick up only one of the simultaneous paths, thus leaving the other behind. When one of the paths is dropped, this is symbolised by x taking the place of a path step classification at the next choice. It is most interesting to observe that the simultaneity can usually be resolved, and in future research it

would be worthwhile to study the conditions under which a simultaneous path can be definitively dropped, as well as the conditions under which the simultaneity cannot be resolved.

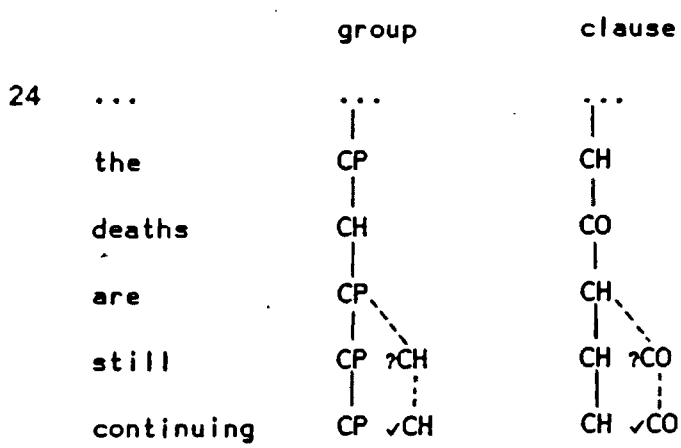
6.4.5.1 Discontinuous analyses

Another elaboration of the basic analysis is the case of *discontinuous* or *deferred* analyses, where the path expectations set up at a current point may not be picked up at the immediately next path point, but at some point later in the text. For instance, in line 24, and the injuries and the deaths are still continuing, a synoptic vantage point enables us to clearly see the relationship between are and continuing. However, given the analysis as presented so far, the step from are to the adverbial group still would be a *complete*, as would the step from still into continuing, represented as follows:

		group	clause
24	...	...	...
		|	|
	the	CP	CH
		|	|
	deaths	CH	CO
		|	|
	are	CP	CH
		|	|
	still	CP	CH
		|	|
	continuing	CP	CH

The implication of this analysis is that there are two verbal groups separated by an adverbial group, each with separate roles to play in the clause - an analysis which is clearly unsatisfactory. A dynamically oriented analysis is, however, able to overcome this grammatical problem by

recognising the latent potential of is to be both an auxiliary or a main verb. This latent potential is of course a feature of the model as a whole as described in Chapter Five, but the nature of the presentation as so far developed in this chapter does not focus on expectations, and so does not depict such latent potential. If the latent potential is depicted, then two path sets can be seen to arise at points like are, and both sets of expectations are in fact carried over to the next choice. The next choice will pick up one of these paths, but instead of just showing the 'result' of the choice, as has been the case up to now, the other path set can be kept 'in reserve', and carried forward with the unfolding path, in case the latent path needs to be activated at a later point. In the following presentation of the example, the reserve or latent path is in fact activated when continuing is reached. This is captured as follows:



In this representation, the dotted line represents a latent path; the question mark symbolises that the (new) current choice is considered for its relevance to this latent path; if it is deemed not to be relevant, the latent path is carried over to the next choice, and so on. The latent path is activated with continuing, and the activation is signalled with a tick. The advantage of this is that it shows that continuing has a relationship both with the immediately preceding item, and with an earlier item. It also shows

that both the 'apparent' main path and the latent path have to be recognised in order to understand the path development for that line as a whole[3]. It should be noted that the question mark is not necessarily the most appropriate symbol here; it in fact couples two operations, an interrogation ('is this step relevant to the current path?') and a negative response. A cross, representing the negative response, might therefore be a more appropriate symbol. The cross, however, is used elsewhere to signal that a path is not taken up, and so the question mark is retained here. Another point to note is that the above analysis posits still as being part of the verbal group; this analysis is discussed further in section 6.4.6.6.

Unfortunately, the way in which this phenomenon is represented is not ideal, as the latent path will only be drawn in when we 'know', again from the synoptic vantage point, that it will in fact be picked up. As with the potentiality for simultaneous paths, it would be visually chaotic to represent each potential instance of a deferred path. Problems of presentation do not, however, invalidate the principle: the latent potential of one choice is being deferred or carried over several subsequent choices, until it is either activated, or definitively dropped.

Interestingly, if the representation were to capture all potentially latent paths, then it would be necessary to specify the point at which we can be certain that the potential for that latent path has been closed down. For the analysis of groups and clauses, the upper limit for keeping a latent path open would have to be the clause boundary, and certainly the likelihood for the latent path to be activated will tend to diminish as the clause progresses.

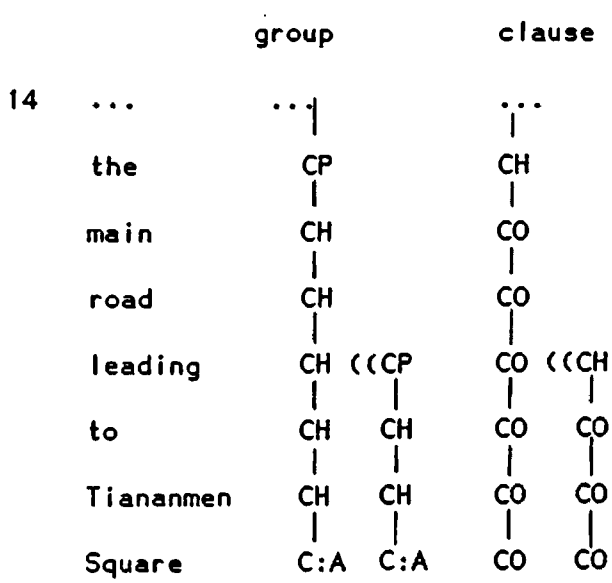
It is also interesting to note at this point that the strategy for discontinuous analyses enables a curious feature of one line of the text to be explained. Line 31 is and there've been huge columns of black smoke. In context, there is a feeling that something is 'missing' from this line; that is, there is a strong expectation for the clause to be sustained, and for a main verb to be included. This expectation arises because of the latent potential of been to be either an auxiliary or a main verb. The potential for it to be an auxiliary sets up a discontinuous path in which each next step is queried for whether it might be the main verb. When a main verb does not materialise in the remainder of the clause, there is a sense of unsatisfied expectations. As a result of the latent grammatical path, the clause has a latent sense of having been abandoned, although strictly speaking, with the shift into the next clause, it is in fact complete.

6.4.5.2 Secondary analyses

Another way in which the basic linear sequence of the presentation is modified is by *secondary* analyses. These provide a dynamic account of the phenomenon known from a synoptic point of view as *rankshifted* or *embedded* units. For instance in line 13, there is a nominal group the main road leading to Tiananmen Sguare, in which the post-Modifier - leading to Tiananmen Sguare - is a rankshifted verbal group (as seen synoptically, of course). Following the criteria as so far presented, the step from road to leading should be analysed as a *complete* at group rank, as it is a step from a nominal to a verbal group. But that ignores the fact that it is part of the potential of a nominal group to be sustained in this manner, and further, previous completing steps at group rank have been simultaneously analysed as

change steps at clause rank, which in this case would be most unsatisfactory. These problems are overcome if such steps are allowed to open a *secondary* analysis, that is, the one step has two effects on the unfolding path. First of all, the step is analysed in terms of the influence of the path up to that point. So, as road is part of a nominal group path, the next step is interpreted as part of the potential of the nominal group to be sustained in this way, resulting in a *change* in the group and a *continue* in the clause. But secondly, the same step is analysed as if the more global environment were not present. So as road is a nominal and leading a verbal element, the step is also analysed as a *complete* at group rank and a *change* at clause rank.

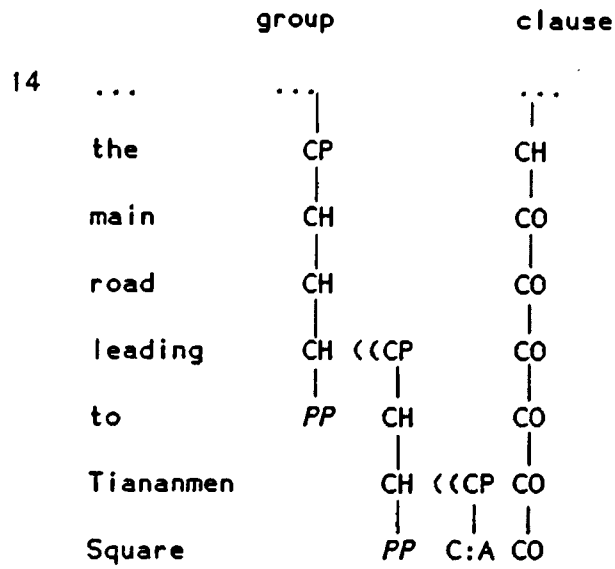
This is not the same as a *simultaneous* path, where what are seen to be unfolding at the same time are alternatives; nor is it the same as a *deferred* or *discontinuous* path, where a step may be picked up later in the path; it is a different case again, showing that one step has multiple, rather than alternative, effects (as just described above). The secondary path is captured by a double, left-facing bracket, as follows:



At the step from road to leading, the bracket symbol should be read as indicating that that step has two effects; the primary one on the left, which continues to be read down the column, and the secondary one on the right, which is also read down the column, in conjunction with the primary path. In this example, the secondary analysis shows that at group rank, there is still only one nominal group (as represented by the left side), but that its structure is not as straightforward as other nominal groups, as evidenced by the path opening up to the right of the primary analysis. At clause rank, it shows that there is one element of clause structure, but that part of that element has the latent potential to be an element of clause structure in its own right, except that in this case it is overshadowed by the primary path.

While the secondary analysis occurs at both group and clause ranks, we do not, in the appendix, illustrate the secondary path at clause rank. This enables us to highlight the simplicity of these structures at clause rank, although it should be remembered as a general rule that a secondary path at group rank does have a corresponding reflex at clause rank. Further, the primary path is typically not further analysed, but represented by the symbol *PP*, to indicate that the primary path is continuing to unfold. This is because the primary path is less revealing in structural terms than the secondary path, and the abbreviated analysis of the primary path helps focus attention on the secondary path. This should not, however, be taken to indicate that the primary path is any less important to the overall structure of the unfolding path.

It should be noted that in the above example, an additional secondary analysis opens up at the step from leading to to. Therefore in the appendix, the above example is represented in the following way:



The opening of secondary analyses enables a difficult grammatical phenomenon to be captured elegantly and simply. This is the option which producers have to extend a primary structure further and further by opening up more and more secondary analyses, as in this is the cat that bit the rat that .... Such structures are not uncommon (for an example, see line 30 in the appendix), seem to be produced with ease, and do not seem to cause great problems of understanding for receivers. Yet when analysed synoptically, it is necessary to analyse such structures as being one main structure with an extremely complex internal nominal group structure. The dynamic analysis proposed above may seem to be parallel to this: there is one primary structure which may be developed in more complex ways by secondary structures. But in fact, as this analysis unfolds, the 'primary' structure is only primary for the convenience of the analyst. For both the producer and the receiver, the structure from which processing is taking place is the most recent layer; thus what the analyst treats as secondary in fact functions like a primary path for the producer and receiver. The initial primary path is, so to speak, forgotten as the text continues to unfold. As

a result of this, the degree of processing required for these structures is not as complex as it might appear from the synoptic point of view.

6.4.6 Issues for the analysis: resetting

One feature arising from the nature of the spoken text which poses an interesting problem for the dynamic analysis is the phenomenon of *resetting*. This occurs when a path is apparently abandoned, but actually reopened from its starting point, in order to allow for some alteration in its unfolding. For example in line 17, the speaker says those the troops fired at them. This line begins with a nominal group, those, but the next step is one which opens another nominal group. The step between those and the could be interpreted in three ways: those may be the Head of a nominal group with what follows as a rankshifted Qualifier, as in those the troops fired at were...; those may be a fronted participant, as in those the troops fired at (but these the troops left alone), or it may be a resetting of the nominal group path; that is, the speaker has started one nominal group, in which those would be a pre-Modifier, but has reset this nominal group and used another pre-Modifier, the to start the nominal group again. It cannot really be argued that the nominal group has been abandoned, because those has the - at least latent - potential to be a nominal group in its own right (that is, Head), and so the shadow cast by this latent potential would ensure that any next step other than one interpreted as sustaining the nominal group will be interpreted as completing the group.

Thus a step which *resets* rather than *abandons* is one which leaves the opened path, while opening a path which fulfils the same expectations set up by the first step. An abandon leaves a path without fulfilling the desired

expectations. However, the reset path must be kept in reserve as a deferred path option (as with discontinuous analyses), because it will not be until some way through the unfolding clause that one analysis rather than the other can be determined.

Resetting may also occur in the process of producing a written text, but would be lost to the receivers of such a text through the process of editing. However, it can be seen to occur in written texts if the analysis is extended up to the discoursal level. For instance, novels which present alternative endings to the one story can be seen to be an example of resetting, as in *The French Lieutenant's Woman* by John Fowles.

Resetting has not, however, been added to the range of path steps presented in Chapter Five (Figure 5.3). It could be included as a further subcategory of the *close* options, as it fulfils the role of the other close options of simultaneously opening another path. The differentiating factor is that it re-opens a path which has already been commenced. However, there seem to be subcategories of resetting itself, including cases of repetition, apposition and coordination, and these require further study before being added to the range of path steps argued for in Chapter Five. It is presented in the appendix by the symbol RS, with the classification of the step being reset (that is, the preceding step) placed to its right in brackets. For example, RS (+CH) shows that a change step has been reset.

This presentation of the dynamically oriented analysis should enable the reader to follow the unit analysis as presented in the appendix. Certain stretches of grammar pose difficulties of analysis which need to be argued for, and these are discussed in the next section.

6.4.6.1 Clause boundaries

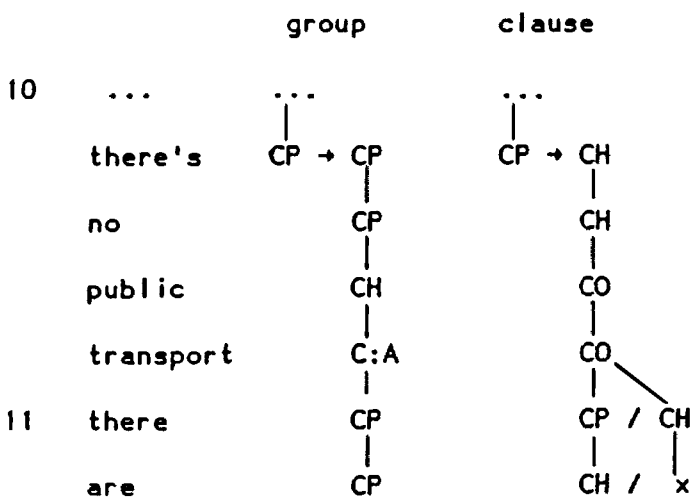
Given the importance of the clause to the analysis, we need to be able to determine the steps which indicate a boundary between clauses; that is, which complete a preceding clause and open a new one. In the presentation of the analysis in the appendix, the issue is somewhat pre-empted by the fact that, in transcribing the text, the clauses have been delimited with the benefit of a synoptic vantage point, and also with the added influence of intonation informing the transcription. But the grammatical analysis still needs to treat the clauses as if they were unfolding; so as with other aspects of the grammar, the boundaries of a unit cannot be known until the boundary is passed. For the clause, this means that simultaneous analyses will often have to be posed, as a step might be sustaining a current clause, or completing it and opening a new one.

The key to determining whether a step is sustaining or completing a clause is found at group rank. When there is a completing step at group rank, this usually results in a change step at clause rank, as when, for instance, there is a step between a nominal and a verbal group, indicating a change in the clause structure. However, when an unfolding path has met the minimal criteria for a clause, that is, when it could as it stands be understood as a clause, a step into a next group might be sustaining that clause, or might be closing it and opening a new one. In other words, some complete steps at group rank may be analysed as a change or a complete step at clause rank, the latter case indicating that a clause boundary has been passed.

For example, consider lines 2 and 3: it's a city that isn't at work, none of the factory chimneys are smoking. The path up to and including work fulfils the conditions for a complete clause; from here, the clause could be

sustained (with, for instance, further modification of work or with a step into another group functioning as Adjunct or Circumstance in the clause), or could be closed by moving into another clause. The step into none signals a complete at group rank, and as it is difficult to see how it could be sustaining the clause path, it is interpreted as completing the clause path up to that point and opening a new clause path.

Sometimes a simultaneous analysis needs to be allowed, as the step into the next group may be interpreted as either sustaining or completing the current clause. In lines 10 and 11, there's no public transport, there are no commercial vehicles, the step into the second there might well be interpreted as an Adjunct to the preceding clause (there's no public transport there) or as a completing step opening a new clause. Thus both a change and complete are posited at clause rank. However, the next actual step, into are, signals that the path is that of a new clause, so the alternative analysis gets dropped. This is represented as follows:



In this example, the first step is a fused one, firstly indicating a complete of both the preceding group and clause, and secondly indicating a complete at group rank and a change at clause rank. When there is reached,

this is analysed as a complete at group rank, but either a complete or a change at clause rank. However, the following step, into <u>are,</u> can only be seen to be picking up one of these paths, and so the other is dropped (as indicated by <u>x</u>). As noted previously, simultaneous analyses will be posited conservatively, so it is not the case that every potential clause boundary will be seen to be ambiguous. (In fact in this example, it would be possible to argue that the right-hand side of the simultaneous clause analysis can be carried forward, with <u>are</u> beginning a new clause with an interrogative structure. But such a possibility would be extremely low on a stack of expectations for several reasons. First, the preceding few clauses have all repeated a pattern of clause structure beginning with <u>there are...</u>; second, there have been no interrogatives up to this point in the text, and there would be little expectation for any to occur at all (given that this is a news reporter reporting an event to television viewers); thirdly, in an actually unfolding text, intonational information would also be drawn upon, and this would support the analysis provided above. For these reasons, the very slim possibility of <u>are</u> beginning an interrogative clause is not represented.)

Strictly speaking, a simultaneous analysis at clause rank should be provided every time a prepositional or nominal group arises at a point where the clause could be seen to be complete as it stands, as such an element could just as easily be an Adjunct or Circumstance beginning a new clause, as adding something to a current clause. The following lines are all examples where such a simultaneous analysis should be provided:

5. there's one in front of me in the distance

19. they have received fifty casualties this morning

33. they're moving in buses as new barricades at most of the intersections

However, in the appendix, the simultaneous analyses are not actually represented. This is because, while the analysis does not claim to draw on intonational information, the transcription has been undeniably influenced by such factors, and so has somewhat pre-determined the division of clause boundaries. It would therefore be artificial to represent numerous simultaneous analyses when, in an actually unfolding text, they would be very low on a stack of expectations. It is certainly necessary to recognise the latent potential of such structures to begin, rather than end, clauses, but as this potential could be formulated as a type of general rule, it would be misleading and unnecessarily complicated to represent analyses which would not seriously be considered in actuality.

6.4.6.2 The analysis of and

The coordinator and poses an interesting problem for the dynamically oriented analysis, as it may coordinate a variety of grammatical units. When it is encountered in a dynamically unfolding text, it is difficult to determine exactly what stretch of the grammar will be coordinated. However, what can be said without doubt is that and always signals that a path is about to be sustained, without necessarily indicating how the sustaining step will be achieved. So if the path up to the current point is as in line 12,

most of the shops are shut except for some essential food stalls and ..., a variety of units could be coordinated from this point, for example:

- and most of the offices are closed (coordination of whole clause)
- and except for some medical facilities (coordination of an element of the clause)
- and some essential food markets (coordination of whole nominal group)
- and meat markets (coordination of part of nominal group)
- and markets (coordination of Head of nominal group).

The last possibility is in fact the one which was taken up in the text; the full example is most of the shops are shut, except for some essential food stalls and markets.

The special status of and is captured in the presentation of the analysis by always analysing it as a *continue* step, but one which is undifferentiated in terms of concatenate or add. Further, it is placed in brackets, in order to show that and signals that the current path is to be sustained, without necessarily giving details as to how this will be achieved. It is the step following and which indicates the unit of grammar to be coordinated: in this example, at group rank, markets is a *continue:concatenate* step following on from stalls, indicating that the nominal group has been sustained with the addition of another Head.

What the analysis cannot determine is whether all of the path leading up to the first Head is also applicable to the second Head, that is, whether markets should be understood as essential food markets or whether it might be a different type of market in question. It is not possible for a grammatical analysis to ever resolve this question. It may be the case that the text itself resolves any such ambiguity (the path could be sustained following

markets by, for instance, that sell medical supplies, indicating that the pre-Modifier to stalls does not apply to markets). If the ambiguity is not resolved, this merely suggests that it is unimportant, at least to the producer. (In an interactively produced text, such under-specification can of course be queried by the receiver, with a question like did you mean food markets or meat markets?.)

In summary then, from a dynamic point of view, and signals that a current path is about to be sustained, but it is the step following and which indicates how this is to be done. The step following and is therefore analysed in relation to the step preceding and. For example, line 14 is down below to the right of me is one, is the main road leading to Tiananmen Square, and .... Following this, the next step is there, functioning as a complete at group rank, and also a complete at clause rank, indicating a clause boundary.

6.4.6.3 Analysing of

It should be clear by now that each step in an unfolding path influences the analysis of the next step, or put the other way, that every current step is analysed in terms of the step/s leading up to it. In the case of some grammatical units, particularly prepositions, this leads to a certain difficulty in assigning an appropriate analysis, because they could be interpreted in more than one way in relation to the preceding step. Further, the way in which a step into a preposition is analysed will also affect the interpretation of the step following the preposition. Among the prepositions, of is the most difficult to analyse, so before discussing the other prepositions, we will compare alternative analyses of of. At the end of this

comparison, it will be seen that we do not, in fact, treat of as a true preposition.

Consider an example from line 31, and there've been huge columns of black smoke. Following the logic of the analysis as so far presented, the most likely way to analyse of would be as a *change* at group rank and a *continue* at clause rank, as follows:

		group	clause
	...	...	...
		|	|
31	huge	CP	CH
		|	|
	columns	CH	CO
		|	|
	of	CH	CO
		|	|
	black	CH	CO
		|	|
	smoke	CH	CO

The justification for this analysis is that it is clearly part of the potential of a nominal group to be post-Modified by a prepositional phrase, and so the step into of sustains the group, and changes it by adding different functional information. At clause rank, it does not add a different element, but continues the developing element. This analysis seems reasonably satisfactory, but there is one crucial element at fault in this argumentation. While it is not disputed that it is our synoptic experience of language which tells us the potential range of nominal group structures, the formulation that 'a nominal group may be post-Modified' defines the structure of the group in a synoptically oriented way, that is, it relies on a global view of the whole group, in order to ascribe one part of it to a post-Modifying function. Such a formulation is clearly not in accord with the spirit of this study.

Let us consider the alternatives to this analysis. Firstly, it is possible to argue that of could be a complete step at group rank, as it marks a shift from a nominal group to a prepositional phrase, and steps between different groups have usually been analysed as complete. But this analysis is unsatisfactory for several reasons. In the first place, it suggests that there is a parallel *change* step at clause rank (because most complete steps at group rank relate to change steps at clause rank), and it is difficult to argue in this case that of black smoke is an independent element in the structure of the clause. In the second place, the same principle would have to be applied to the next step, into black, analysing it as a complete at both group and clause ranks. Again this does not seem to be appropriate. Hence while this alternative may be initially attractive, its implications are unsatisfactory.

A second alternative analysis of of is to analyse it as a change step at group rank, but one which opens up a secondary analysis, with of being secondarily a completing step. (And the parallel step at clause rank would be a primary continue, and secondary change.) The advantage of this analysis would be that it parallels the secondary analysis opened up by 'embedded' verbal groups (as discussed in section 6.4.5.2 regarding secondary analyses), and it effectively merges the suggestions in the two proposals above. This analysis is therefore valid and appropriate; however, there is an even more attractive solution.

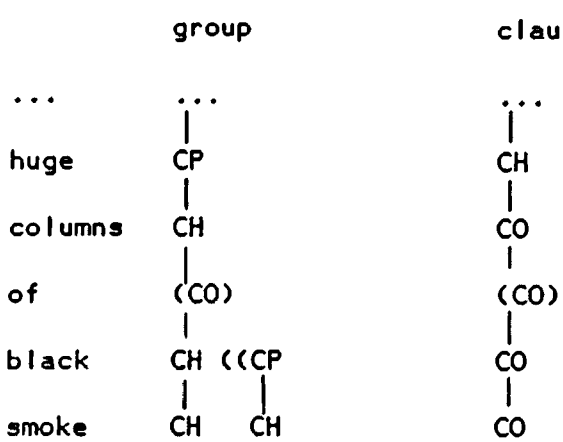
A third alternative is to analyse of in a way which parallels the analysis of and, that is, as an element which signals a sustaining step, but without necessarily indicating the nature of the modification. Specifically, it can be analysed as a continue step (CO), again placed in brackets to indicate its special status. This analysis implies that it is part of the

potential of a nominal group to be followed by another nominal group, but connected by a preposition to show their interdependency. This formulation is more dynamically oriented than that used in the original analysis above, and so is more appropriate for the concerns of the thesis as a whole.

Following this analysis of <u>of,</u> the next step (into the next nominal group) would be analysed as a complete at group rank and a change at clause rank. This accords with the analysis of <u>and,</u> because the item following the continuing step is analysed in relation to the item preceding that step (and a step from one nominal group into another nominal group is a complete step, closing the development of the preceding one and opening another). However, to reflect the interdependence of the two groups, we can draw on the device suggested for the second alternative analysis above, and argue that the step following <u>of</u> opens a *secondary* path analysis. This enables the analysis to reflect the fact that the group following <u>of</u> does not have an independent status, but is intimately tied to the preceding path.

The advantage of this analysis is that it captures the shift between the different groups, while also showing that they are related. At clause rank, the step into <u>of</u> is also analysed as a continue in brackets, and the next step is analysed in relation to the step preceding <u>of.</u> As for other secondary analyses, the secondary path at clause rank is not shown. Let us return to the example cited above from line 31:

31



Now, following the new analysis, of is seen to sustain the nominal group, but without indicating how that will be achieved. The next step is analysed in relation to the step preceding of, that is, as a primary change at group rank (because the nominal group is being sustained) but a secondary complete (because another nominal group has been added). At clause rank, the whole group is seen to be continued.

Clearly, this is quite a radical analysis to put forward, but it does seem to capture what of achieves from a dynamic point of view. Up to this point, the criteria for evaluating analyses have been implicit, but it is worth making them explicit here. There are really only two criteria for evaluating competing analyses. The first criterion is to consider how the current step relates to the path up to this point: how does it move the path forward, if at all? The second criterion is to consider how the expectations set up by the current path affect the interpretation of the next step. Thus, for the analysis of of, it is seen to sustain the current path in a peculiar way (that is, without actually indicating the details of how the path is to be sustained), and the following step is interpreted as being, so to speak, subservient to the path up to that point. While this analysis may appear to be radical, it provides interesting support for Sinclair's (1989, 1991)

position regarding of, where he argues that of is not a preposition at all, but a member of a unique word class.

Note that for both and and of, the steps following the bracketed continue analysis must be interpreted as being of a different status to steps following non-bracketed steps. The difference between the analysis of and and of is that the steps following and do not open a secondary path.

It may seem to be a weakness of the dynamic analysis that many alternatives can be argued for, and that no answer is immediately obvious. But this is in fact one of its strengths, namely that it highlights 'grey' areas of the grammar and insists that their resolution be explored from different angles; it is not quite so easy to fudge the issue of boundaries or the relation of one element to another as is it when the whole of a unit can be seen.

6.4.6.4 Other prepositions

The other prepositions in the sample text tend to have semantic roles which are much more clearly defined than is the case for of. This suggests that the favoured analysis for of, as a bracketed continue step, would be inappropriate for other prepositions, and indeed it seems that they can be satisfactorily analysed as a *complete* at group rank and a *change* at clause rank. So in line 26, they're firing into the air, the following analysis is adopted:

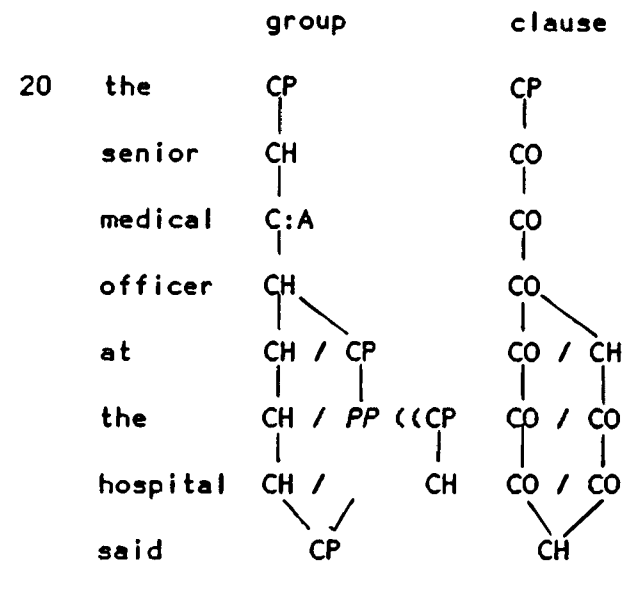
		group	clause
26	they're	CP → CP	CP → CH
	firing	CH	CO
	into	CP	CH
	the	CH	CO
	air	CH	CO

It should be noted that some preposition phrases are also analysed with a simultaneous *change* possibility at group rank and *continue* possibility at clause rank. The above analysis clearly marks the prepositional phrase as a separate component of the clause, which seems to be appropriate. The only infelicity is in the analysis of the next step, the opening of the nominal group, which is analysed as a change at group rank and continue at clause rank. This analysis captures the fact that it is part of the potential of a prepositional phrase to contain a nominal group, but it fails to capture the internal structure of the preposition phrase. However, following the analysis developed for <u>of</u> and for secondary paths in general, the nominal group can here be seen to open a secondary path in relation to the primary path for the preposition phrase. That is, the above example should be represented as follows:

		group	clause
26	they're	CP → CP	CP → CH
	firing	CH	CO
	into	CP	CH
	the	CH ((CP	CO
	air	CH CH	CO

As with other secondary paths, the parallel analysis at clause rank is omitted, and the unfolding primary path at group rank can be abbreviated with *PP*. This analysis reveals interesting similarities and differences between of and other prepositions. The nature of the step represented by both of and other prepositions is different, the former being analysed at group rank as a bracketed continue and the latter as a complete. This means that in terms of an unfolding path, they each tell us something different about the path up to that point and the expectations to follow. But in either case, the steps which follow open primary and secondary paths, indicating that both of and other prepositions have a similar impact on the structure of the unfolding path.

It should also be noted that the step into a prepositional phrase may be ambiguous in terms of the role that group is playing at clause level. We saw an example of this in section 6.4.5 above, regarding line 20, the senior medical officer at the hospital said .... In this line, it is difficult to determine whether at the hospital is an independent element of clause structure or a continuation of the nominal group. It is the role of the group at clause rank which is ambiguous, and, following the analysis just presented for prepositions, the line is analysed as follows:



In other words, at is seen to either sustain the group being developed (thus continuing the element at clause rank), or to be an independent group (both opening a secondary analysis at the next step in group rank and changing the clause structure). As with the analysis for and, where it was not possible to determine the extent of the path relevant to the coordinated unit, it is not possible here for the grammatical analysis to resolve the ambiguity arising from these prepositional phrases. Furthermore, it is suggested here that it is not important to resolve the ambiguity (cf Sinclair 1990). First of all, ambiguity ceases to be an issue once said is reached, as this changes (at clause rank) either of the simultaneous paths. This suggests that the difference in interpretation between the two clause paths is not in fact very important for the clause as a whole. And secondly, if the clause status of the prepositional phrase was important to distinguish, the producer could clarify the situation by either fronting the prepositional phrase or placing it immediately after the verb (at the hospital, the senior medical officer said ...; the senior medical officer said at the hospital ...). Of course for a receiver, the ambiguity might be important, but it

could only be queried in an interactively produced text. Otherwise, the alternatives simply remain unresolved.

6.4.6.5 Connectors

The analysis of of and other prepositions made a general distinction between the semantic emptiness of the former and semantic specificity of the latter. In the case of elements which serve a linking or coordinating function in the clause, a similar situation seems to arise. Some connectors seem to function just as signals that a connection is about to take place, and the next step must be seen in order to understand what is being connected. Others seem to incorporate the nature of the connection within themselves. Consider, for instance, the case of that, which can serve at least three grammatical functions. First, it can act as a determiner in a nominal group, as in that man; this is a possibility that would have to be allowed every time a nominal group was viable in the current path. Secondly, it can act as a linking item between clauses, as in I said that it was OK; this type of use would be analysed as a bracketed continue step, and the following step would be analysed in relation to the group or clause path preceding that. This analysis is comparable to the analysis of and, and very similar to the analysis of of. Note that this use can be omitted without affecting the clause structure. Finally, that has a use which falls somewhere between its nominal function and a prepositional role, as in it's a city that isn't at work, where that sustains the preceding nominal group but is an integral part of the clause structure which follows. This use is analysed as a change step at group rank, opening a secondary path at the next

step, and a continue step at clause rank. It is therefore comparable to the other prepositions.

Similarly, which has multiple roles to play in terms of connecting elements. It may act as a connector between clauses, in which case it plays a Subject type role in the second clause. In this case it is analysed as a complete at group and clause ranks. Which may also connect components within a group, and in this case it is analysed as for the latter use of that, as a change step at group rank, opening a secondary path at the next step. It should be noted, however, that as a clause unfolds, it is not always possible to determine which use is in question; indeed in line 32 of the text, there is an unusual use of that, where the local force of the dynamic unfolding of the clause overrides the global structure of the clause. This is discussed following the analysis of line 32 in the appendix.

A third case of connectors includes items such as because, which seem to function as a clear and definite step between groups, and which are therefore analysed as a complete at group rank and, usually, a complete at clause rank. However, a simultaneous analysis (analysing the step as a change at clause rank) should be allowed to recognise the potential for coordination of groups as well as clauses (as in line 36 of the text, where because could be introducing a prepositional phrase sustaining the current clause or completing it and opening a new clause).

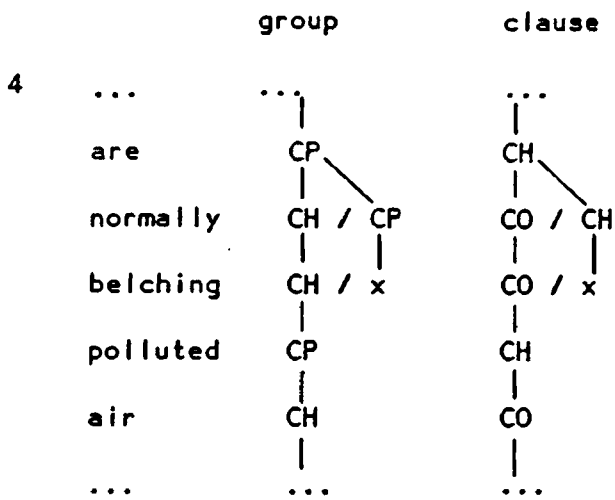
Another type of element worth discussing in detail is that of certain highly mobile clause Adjuncts, such as however. If such elements can in principle occur in a variety of places within one clause, a dynamically oriented analysis needs to both allow this, and explain the impact of such steps on an unfolding path. This can be done by simply acknowledging, as

with the structure of nominal groups, the structural places at which they can occur, but with the added corollary that the further the clause progresses, the lower the general likelihood of such an Adjunct appearing. Their impact on the path can be explained by allowing a discontinuous analysis to be posited: if a current element sets up the expectation that it will be sustained by the next step, but the next step is an Adjunct, the expectations for the sustaining step can be deferred, while the analysis of the Adjunct itself is a complete in relation to the unfolding path (cf the analysis of line 1 in section 6.4.7 below, where there is an example across probably ...). Of course, the mobile nature of such Adjuncts means that they can also occur at the end or beginning of clauses, and this would lead to a simultaneous analysis wherever a potentially complete clause is followed by such an item.

6.4.6.6 Verbal groups

A dynamically oriented analysis raises some interesting questions about the path analysis of verbal groups. When the verbal group consists of a main verb with one or more auxiliaries, the analysis is straightforward, but the addition of an adverbial element complicates the issue. We have already seen an unusual analysis of a verbal group in section 6.4.5.1, where discontinuous analyses were discussed. There it was suggested that when an adverbial element such as still intervenes between an auxiliary and main verb, this can be captured with an analysis which defers the expectation for the main verb. The implication of this analysis is that such items are analysed differently when they occur within the framework of a verbal group, than when they occur outside such a framework. Consider line 4, which are normally belching

polluted air ... . As normally here occurs after are, and as we do not yet know if are is an auxiliary or a main verb, a simultaneous analysis is put forward for normally. On the one hand, it could be a change in the verbal group, which means that the expectation for a main verb is yet to be fulfilled; on the other hand, normally could be completing the verbal group, giving are the status of a main verb, and providing us with different expectations for the ongoing development of the clause. This simultaneous analysis is represented below:



This analysis shows that normally opens a simultaneous path, but that one of these paths is dropped at belching. Two features in particular should be noted about this analysis. Firstly, the analysis would be different if normally had occurred either before are or after belching. In either of these cases, normally would be a completing step and would be seen to be 'outside' the verbal group, so to speak, whereas in the analysis above, it is seen to be 'inside', and an integral part of, the verbal group. It may seem strange that the 'same' item would be analysed differently according to its relative position, but this is in fact entirely consistent with a dynamic perspective: the relative position of items influences the unfolding path. If normally did occur before are, the sense would not seem to be greatly affected, although

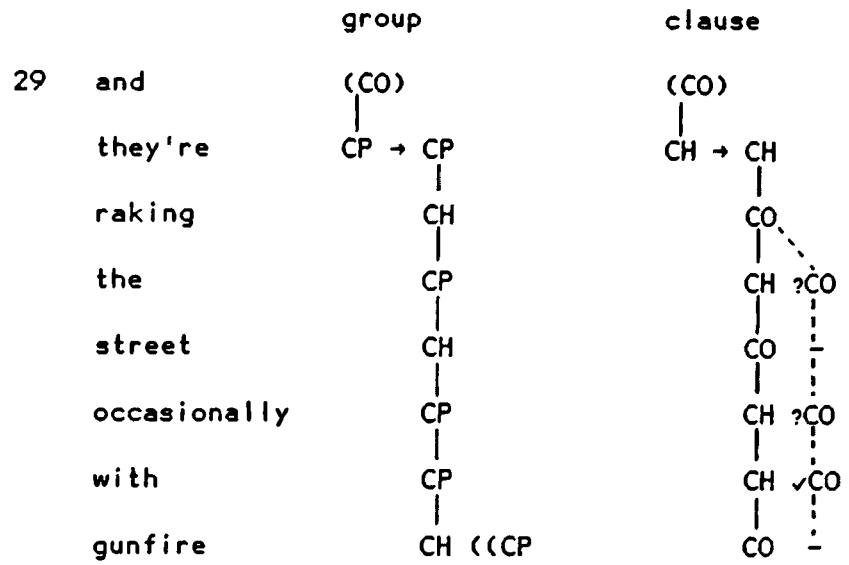
it might be argued that normally could receive more emphasis than it does in its position in the actual example. But interestingly, if normally occurred after belching, a quite different sense would result, which would preclude being followed by polluted air. (That is, which are belching normally would have the sense of either 'this is how they always belch' or 'this is how frequently they belch'.)

The second feature to be noted from the above analysis is that the left hand side of the simultaneous paths in fact subsumes the discontinuous analysis argued for in 6.4.5.1. If the step into normally is seen to be a change from are, this means that a main verb is expected to come, or in other words, that the expectation for the main verb has been deferred. Thus for these types of verbal group structures, there is a representational option: the discontinuous and simultaneous analyses effectively represent the same phenomenon in different ways. In the appendix, the simultaneous analysis has been adopted for the types of examples just discussed, that is, where there is an adverb following an auxiliary, which may or may not be functioning as the main verb.

Another aspect of verbal group structure which needs to be captured is the case of *branched* paths. This occurs when the same auxiliary can be used in relation to more than one main verb, or when one verbal group can be used in relation to more than one Complement. Consider for instance line 29, and they're raking the street occasionally with gunfire. In this example, the addition of with gunfire is crucial to the understanding of raking: without that addition, the sense would be much more literal, as in the case of raking leaves. So it is important that the path analysis should show the relation between these elements.

One way to capture this is by using the discontinuous analysis to show that, following raking, there is a deferred expectation for a particular clausal element to follow. The deferred expectations arise from the theory of stacks and probabilities raised in Chapter Five: given the particular context of this text (a media news report of a particular political event), the most probable sense of raking in this text is its metaphorical one. Thus when a receiver encounters raking, the options at the top of the stack for the next choice will be those which facilitate the metaphorical reading. Anything which does not meet these expectations at the next point will be seen to defer these expectations, until they are either met or cancelled by the rest of the clause structure. While the path analysis as presented here focusses on classifying actual path steps, examples such as this one highlight the fact that the other components of the theory are always in operation.

For this particular example, the discontinuous analysis is presented at clause rank, and the expectation is for an element which *continues* the process element opened by the verbal group: this then shows the intimate relation between raking and with gunfire, as follows:

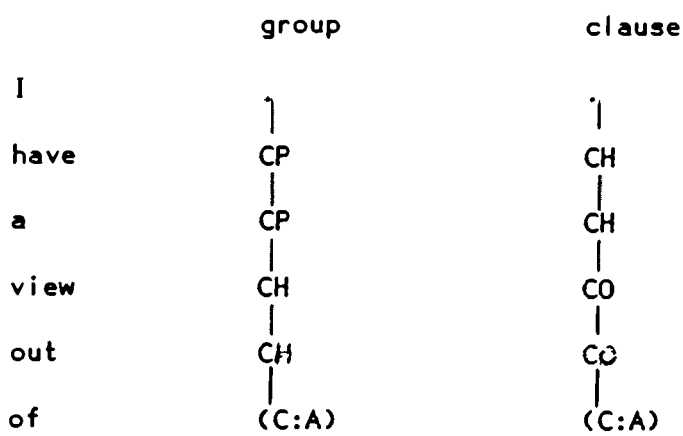


Thus, following raking, each change in the clause path is queried for whether it might also be a continuation of raking (the following parts of these elements are not further analysed, hence the dash symbol). Again of course, this type of analysis depends on the receiver's or analyst's ability to recognise the latent potential; different analysts might posit different deferred paths. But this does not affect the general grammatical principle, that elements such as raking have the latent potential to function on their own or in intimate relation with other elements.

6.4.7 Working through an example

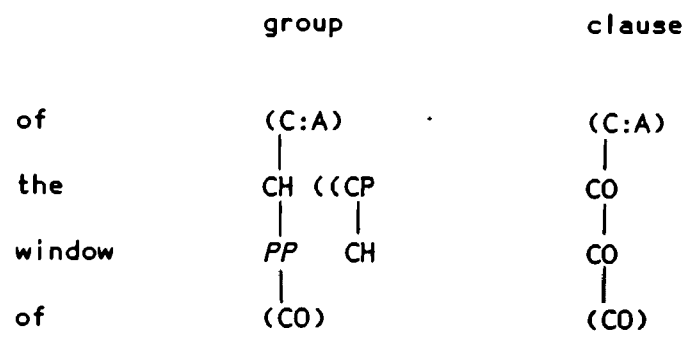
Section 6.4 as a whole shows that there are many details to bear in mind when applying the path analysis. In order to explain how the different aspects of analysis work in conjunction with each other, it is useful at this stage to work through one of the more difficult examples from the appendix. The first line of the text is in fact quite complicated, and illustrates many of the features which have been discussed in this section. The beginning of

the line has already been discussed, and is not in itself particularly problematic. It is as follows:

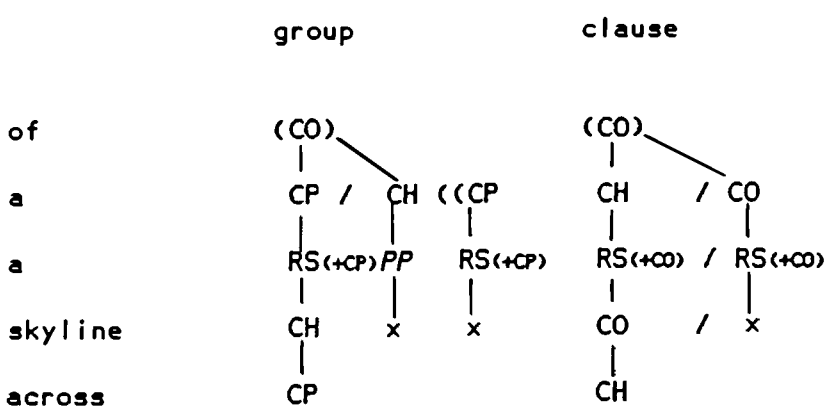


The first word, I opens a path analysis (a nominal group and clause element), but is not a step as such, as it does not follow on from any preceding unit. The step into have completes the nominal group, opening a verbal group, and thus also constitutes a change at clause rank. The next step a completes the just-opened verbal group, and marks another change at clause rank. The nominal group thereby opened is sustained by view and by out. In principle, a simultaneous analysis should be shown here, to capture the possibility that out is completing the preceding nominal group, and hence acting as a change in the clause, but for the purposes of this presentation, we will omit this possibility. Note that the next step, into of, adds a step of a similar type, suggesting that out and of can be seen as a complex preposition.

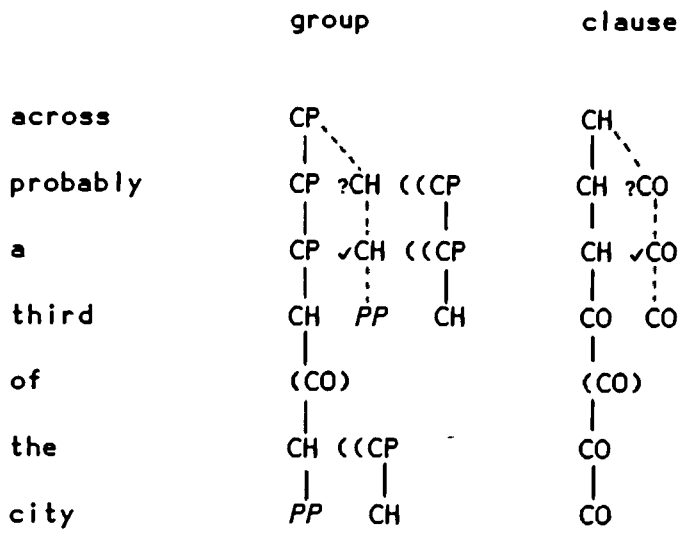
However, both prepositions in general and of in particular open secondary analyses, so the step following of is analysed in two ways, as follows:



Following the first <u>of</u> in the above extract, the primary analysis at group rank represents a change step (as <u>of</u> opens a prepositional phrase, and as <u>the</u> sustains this, but changes it by adding a nominal group), but a complete step at the secondary path (as the beginning of a nominal group marks a complete in relation to a preceding preposition). At clause rank, one element continues to unfold, and so only a primary analysis is shown. Note that at group rank, <u>window</u> is analysed as <u>*PP.*</u> This simply stands for *primary path*, and shows that the primary path continues to unfold, but is not further analysed. It is italicised to highlight its different status from the path steps. The secondary analysis for <u>window</u> is a change step, as it is a change in the potential of the nominal group opened by <u>the.</u> The next step, another <u>of,</u> brings the path back to the primary level only. Again, this will open a primary and secondary path at the next step, but in addition, a simultaneous analysis also opens up, as follows:

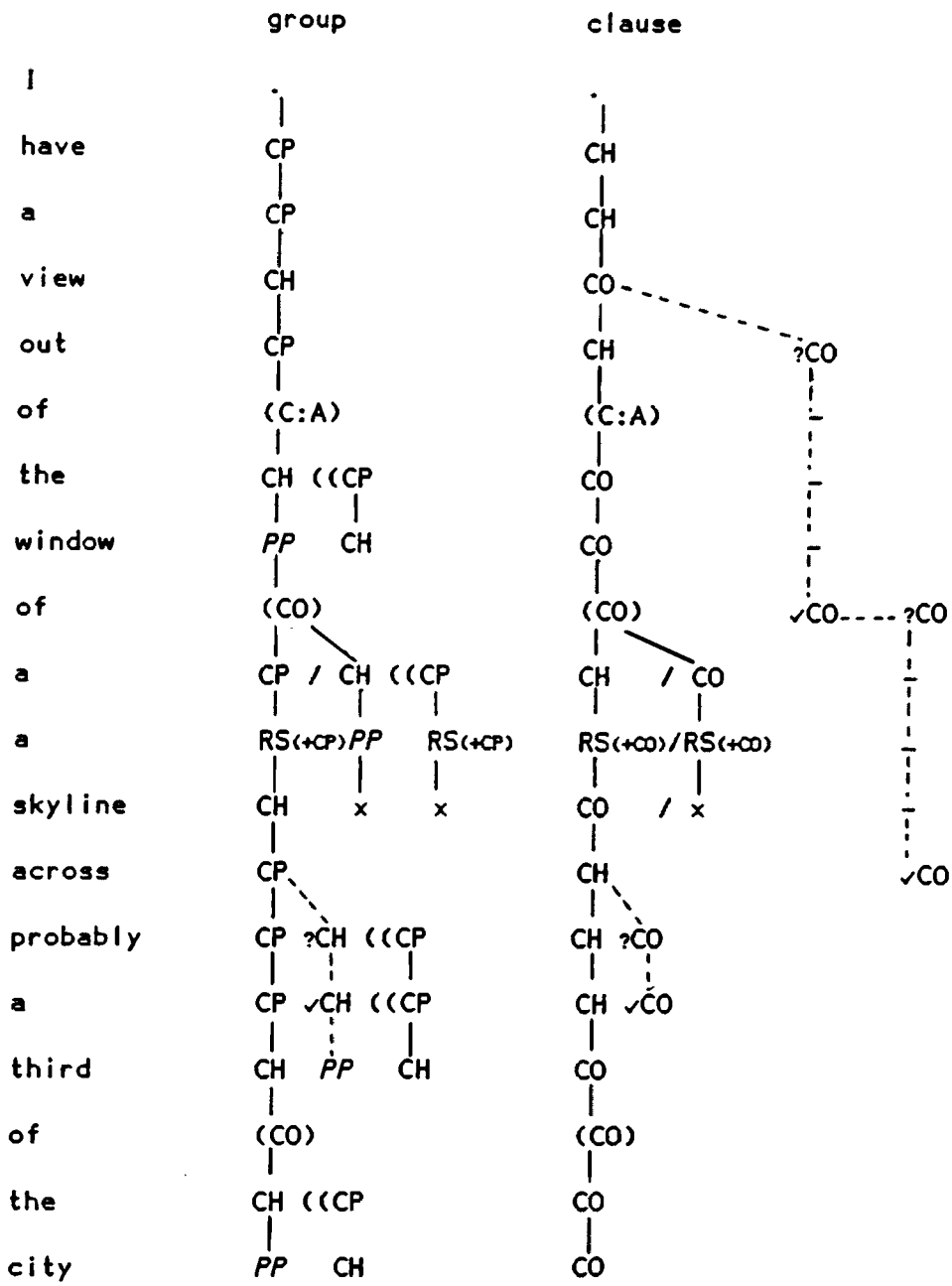


The step into a is firstly analysed as a complete at group rank and a change at clause rank; this allows for the structure of the actual example of a skyline: that is, the of which opened this path is not seen to be coordinating an extension of the nominal group, the window, but a different clause element. On the other hand, the step into a is also analysed as a change at group rank and a continue at clause rank; this allows for a structure which is an extension of the window, as in the window of my room. At the same time, this alternative path is shown to open a secondary path, as in local terms, another nominal group has been opened, which functions as a complete in relation to the preceding one. The speaker in fact repeats a, and this is shown as a reset (with the function of the preceding step added to the reset label, to show that that is the function of the reset step in path terms). The next step, skyline, resolves the simultaneous paths, as it could only be picking up the first analysis; the other possibility is left behind at both group and clause ranks (as marked by x). This nominal group is completed by the next step, across, which opens a prepositional phrase and leads us to expect a nominal group to follow. However, this expectation is not in fact met by the next step, and so a deferred analysis has to be posited, as follows:



The expectations set up by across are deferred by probably, so this step is analysed as a complete in relation to across, but the deferred expectations (for a primary change and secondary complete step at group rank, and a continue at clause rank) are shown to the side. The next step, a is also analysed in relation to the immediately preceding step, that is, as a complete in relation to probably; at the same time, a can be seen to pick up the deferred expectations, and so that potential analysis is marked with a tick. The next step, third, is analysed in three ways at group rank: firstly in relation to the path unfolding from probably, and secondly and thirdly in relation to the deferred expectations (with a primary and a secondary analysis). The first and third paths appear to present the same analysis, although they have in fact been arrived at by different routes. At clause rank, the continuation of the element is shown. The next step into of functions in the same way in relation to all three paths, and so is shown to bring them back to one point. In turn, of opens a primary and secondary analysis at the next step, the, and the step into city completes this example.

However, there is one very interesting feature of this example which has not yet been represented. The nominal group a view sets up an expectation that the group will be sustained through post-Modification, telling us that it is a view of something, from somewhere, or across somewhere. The step following view can be seen to be picking up one of these possibilities (the view is from a particular place), but if the others are represented as deferred expectations, this captures the role of the other clause elements in relation to a view. That is, of a skyline is the object of the view, and across a third of the city is its range. A deferred analysis should be shown at group and clause ranks, but is only presented at clause rank to prevent over-complication of the figure. Each deferred expectation is a deferred continue step, and in turn opens up a further deferred expectation. In other words, while out is a viable step following a view, there is an expectation that another continue step could follow; and when that expectation is met (with of), there is again an expectation that yet another continue step could follow. The whole example is represented as follows:



The discussion of this example has begun to identify some of the limitations of a unit analysis which operates in isolation from other considerations of grammar, namely metafunctional ones. An analysis of steps between units is in fact highly dependent on an analysis of the functional

role(s) being played by those units. These aspects are examined in the following chapter.

6.4.8 Brief summary of the chapter

In this chapter, we have presented a dynamically oriented analysis of grammatical units. The analysis proceeds step by step, and accounts for the impact of units on the unfolding path at different ranks. Interesting implications of this analysis include the way in which boundaries must be defined from this point of view, and the way in which the interrelations between grammatical units, and between lexis and grammar, are brought into question.

Endnotes

1. (Section 6.3) It should be noted that Brazil (1987, 1990), who provides a discoursally-motivated account of intonation, does aim to describe grammar within the clause from the point of view of that clause unfolding in time, and between communicating participants. His approach is therefore dynamically oriented, but the resulting grammar is not fully dynamic in the way outlined here. In particular, the boundaries of grammatical units are defined in the traditional (non-dynamic) way. We have not, therefore, taken full account of his work, but the two approaches should be compared as part of future research.

2. (Section 6.4.3) Blackwell (1987) outlines an interesting foray into the automatic parsing of idioms, as part of the tagging of the LOB corpus. A program, IDIOMTAG, "searches the text for specific sequences of words, or words and tags (but not words alone), whose syntactic role

in combination differs from the syntactic role played by the same words in other contexts." (p111) it assigns different tags to the words in the idiom than would be assigned by the ordinary tagger. It recognises the idioms with recourse to an *idiomlist*. By assigning tags which recognise the idiomatic status of some sequences of words, 'idiosyncratic constructs' (p115) are eliminated from further analysis by the rest of the tagging program. Significantly however, the program cannot deal with variation in the structure of the idiom. The implication of this thesis is that the idiom tagger needs to work on a two-layered structure, one layer representing the basic structure of the idiom, the other, secondary, layer drawing on the latent potential of the non-idiomatic nature of the tag sequence to identify points of permissible variation.

3. (Section 6.4.5.1) The original conception of computational stacks, as discussed in Chapter Four, would be a useful formalism to capture the phenomenon of discontinuous analyses. This is because the push-down mechanism would enable the deferred expectation to be kept on hold, until it can be 'popped' off the stack, and back into play.

Additional: Realization and Instantiation

Halliday (1989:16) differentiates the term *instantiation* from that of *realization* (introduced in section 6.2):

> The first is the relation between the system and the instance; the second is the relation between the strata. If we are talking specifically about language, then the first is the relation between language as system and language as text; the second is that relating semantics, lexicogrammar and phonology.

For a dynamically oriented model, it is important to clarify whether instantiation or realization (or both) is in focus. Accounting for the options in a text as they unfold must be a case of instantiation: the potential of the system is being activated and an instance from the system is being created. But as Halliday notes, every instance feeds back into our understanding of the system. The realization relationship tends to be assumed from a dynamic

perspective; that is, it is assumed that a text is meaningful and is the realization of options from the semantic stratum.

It is interesting to consider the nature of the move from *current* to *next* in terms of the realization/instantiation dichotomy. If the path potential (to sustain, close and so on) is given the status of a semantic option - that is, if from a dynamic perspective it is meaningful to move forward in one way rather than another - then the move from current to next is one of realization. In other words, the next option realizes a semantic feature set up by the current option. On the other hand, if the path potential is not given this status, then the move from current to next is one of instantiation: the next option instantiates the potential of the system to mean at that point.

Which, then, is most relevant to this thesis? We suggest that a dynamic perspective encompasses both, that from a dynamic perspective, both relationships are always in evidence. The move from current to next instantiates systemic options, and realizes stratal ones. For this reason, we have been able to argue both that the unfolding of a text contains its own potential to mean, and that the options in an unfolding text are instances of options from an existing system of meaning potential. From a synoptic perspective, the vectors may be separated and differentiated, but from a dynamic perspective, the two are inseparable facets of the same process.

CHAPTER SEVEN

GRAMMAR FROM A DYNAMIC PERSPECTIVE:

(II) METAFUNCTIONS

7.1 Introduction

The analysis developed in the preceding chapter was an analysis of grammatical *units* - essentially of the classes of groups making up clauses. The unit analysis reveals an interpretation of grammar which is different from that provided by a synoptic perspective, and thus already begins to show what the implications of a dynamic perspective can be. Yet the picture of grammar is far from complete. It is taken as a basic premise of this thesis that language is *functional*, that it exists to serve communicative purposes, and that a satisfactory analysis of language must therefore take this into account. It is not enough to describe the way in which the units of a text might unfold; the *function* of such units must also be described. The analysis has already made some use of functional information - for instance, we saw in the preceding chapter that the step from the to main (in line 25 of the sample text) is interpreted as being a *change* in the nominal group, because it sustains the group, but adds further functional information to it. But such an account of functions has so far been implicit; it is now necessary to explicitly explore the step of applying a dynamic perspective to the functional aspects of grammar.

In this chapter, the functional aspects of Halliday's grammatical theory are explained in a little more detail. The three major strands of his functional hypothesis are then reinterpreted from a dynamic point of view,

firstly as they apply to grammatical analysis within the clause, and secondly as they apply to analysis between clauses. It will be seen as the chapter develops that some aspects of the metafunctional hypothesis need to be reconsidered in light of the dynamic perspective. It should be noted that the following discussion continues to draw examples from the sample text, but that a comprehensive analysis is not presented in the appendix.

7.2 Metafunctions and grammar

While we are most interested in function as it relates to lexico-grammatical choices, the term is interpreted in three ways in Halliday's *functional hypothesis* (cf Halliday, 1985a:xiii and Halliday 1973:*passim*). Firstly, language itself is interpreted functionally; Halliday's theory accounts for "how the language is used. ... Language has evolved to satisfy human needs; and the way it is organized is functional with respect to these needs - it is not arbitrary." (1985a:xiii; original emphasis) Secondly, the fundamental components of meaning in language are functional; this aspect follows from the first, and a trio of *metafunctions* is proposed to account for the major ways in which language is used to create meaning. These metafunctions are discussed below. Finally, the elements of linguistic structures are explained functionally, in terms of their role in the system as a whole, as explained in the preceding chapter.

The first interpretation of function is the starting point for a systemic approach to language: it means that the questions asked of language relate to the social origins and uses of language. The second and third interpretations are only relevant given that initial starting point, but it is the description of these latter two which gives substance to the first. In

other words, to understand the functional nature of language, it is necessary to understand the types of meaning which language expresses, and how language is organized to convey meaning.

The functional nature of linguistic meaning is accounted for in terms of a *metafunctional hypothesis.* The 'meta' component of this term is the key to its nature: rather than trying to list every meaning which might be expressed by language, or every use to which it might be put, meaning potential is described as centring on three major functions. This hypothesis is not put forward as a mere convenience for the description of meaning, but derives from a study of language development in children, where children are seen to develop these metafunctions as a means of participating in the adult linguistic system (cf Halliday 1975; Halliday's metafunctional hypothesis also owes much to the study of meaning and function in the Prague School of Linguistics, cf Halliday 1976b). Halliday hypothesises three metafunctions: the *textual*, *interpersonal*, and *ideational* (the ideational being subdivided into two components, the *logical* and *experiential.*) Each metafunction relates to a different strand or cluster of meaning potential in the linguistic system:

> They are the modes of meaning that are present in every use of language in every social context. A text is a product of all three; it is a polyphonic composition in which different semantic melodies are interwoven, to be realized as integrated lexico-grammatical structures. Each functional component contributes a band of structure to the whole. (Halliday 1978:112)

Halliday (ib.id) defines the metafunctions as follows. The ideational function "represents the speaker's meaning potential as an observer ... It expresses the phenomena of the environment: the things - creatures, objects,

actions, events, qualities, states and relations - of the world and of our own consciousness, including the phenomenon of language itself ..." (p112)

The interpersonal function "represents the speaker's meaning potential as an intruder. It is the participatory function of language ... through which the speaker intrudes himself into the context of situation, both expressing his own attitudes and judgements and seeking to influence the attitudes and behaviour of others. It expresses the role relationships associated with the situation ..." (p112)

Finally, the textual function "represents the speaker's text-forming potential; it is that which makes language relevant. This is the component which provides the texture; that which makes the difference between language that is suspended *in vacuo* and language that is operational in a context of situation. ... (It) has an enabling function with respect to the other two; it is only in combination with textual meanings that ideational and interpersonal meanings are actualized." (p112)

These three components represent the major ways in which speakers of a language can mean; they operate in conjunction to produce text which is functional in a context of a situation and a culture. The metafunctional hypothesis accounts for the second interpretation of function described above, namely the fundamental components of meaning in the linguistic system. The relation of the metafunctions to the third interpretation of function, the elements of the linguistic system, is as follows.

When the available options in the lexicogrammar are examined, it becomes evident that these options cluster into three main groups, or three major sets of systems. These different sets are interrelated as part of one overall system, but the relations between them are weak, whereas the

relations within any one of these sets or clusters is strong. Each of these clusters reflects one of the functional components of the semantic system. In other words, the options opening up for each unit on the rank scale reflect the potential of the system to mean in the three ways described above. The options available in the clause, for instance, reflect the potential for the clause to mean as a representation, as an exchange and as a message. Each of these potentials relates, respectively, to the components of ideational, interpersonal and textual meaning. The ideational component was described as the speaker's potential to mean as an observer, and in the lexicogrammar, this is reflected by options describing the events or processes of the speaker's world, the participants in these events, and any attendant circumstances. Collectively, these options are referred to as the systems of *transitivity* and *ergativity*, which are described further below. The interpersonal component was described as the potential for the speaker to mean as a participant or intruder, and is reflected in the lexicogrammar by options expressing the roles and attitudes adopted by the speaker, and these are referred to collectively as the systems of *mood* and *modality*. Finally, the textual component was described as the speaker's text-forming potential, and it is reflected by options in the lexicogrammar which organize the message being conveyed as a message: these options signal what the speaker considers to be the departure point of the message, and what the speaker considers to be the focal point of the message; options reflecting this function are referred to as *theme* and *information*.

It is the stratal organization of language which accounts for this relationship between systems of grammatical options and the components of meaning: the grammatical choices *realize* semantic options. But choices relevant to the three components are made simultaneously, so that every

clause 'means' in these three ways at the same time. In this chapter, the dynamically oriented analysis will focus on each metafunction in isolation, although their simultaneous interplay is considered at the end of both the intra- and inter-clausal sections.

The reader is referred to Halliday (1985a) for a comprehensive exposition of the grammatical systems pertaining to each of the metafunctions. On the basis of that work, we describe here the fundamental options in the systems which are relevant to the further development of the chapter. These options are derived from a synoptic understanding of the clause, but are used as a starting point for the dynamically oriented description, in order to provide some understanding of the grammatical realization of metafunctional meaning. It should be noted that the features in different grammatical systems, such as the feature *declarative* in the system of *Mood*, have particular structural consequences, relating to the presence, order, sequence or sub-categorisation of structural elements. The relative order of structural elements is indicated by a circumflex (^) between the elements; for example, Finite^Predicator indicates that the Finite is followed by the Predicator. Further, one structural element will play multiple roles at the same time, that is, it will have a function with respect to textual, interpersonal and ideational meaning. In this case, the different roles are said to be *conflated with* each other, this relationship being signalled by a slash (/); for example, Theme/Subject indicates that one clause element plays the roles of both Theme and Subject. This use of the slash should not be confused with the same symbol as used in the path analysis, where it indicates the presence of alternatives. As we have noted earlier in the thesis, functional labels are indicated with an initial capital letter, and class labels by lower case.

The first grammatical system of interest to us is that of Theme/Rheme, which relates to textual meaning, in terms of the function of the clause as a message. In the grammar of a clause, elements function to indicate what the message is about, as realized through this system. The Theme is the departure point of the message; the Rheme is the rest of the message, telling us something about that point of departure.

In a synoptic analysis, Theme in English is most simply realized as the first element of the clause, typically a nominal group, but possibly also an adverbial group or prepositional phrase. Some examples of Theme are presented below, with Theme underlined; the remainder of the clause represents the Rheme.

I spoke to a man
they're firing into the air
along the main road we have seen tanks

There may be multiple Themes in any one clause; when there is more than one Theme, the different thematic elements serve different functional purposes. There is always one Theme which is ideational in nature, as in the above examples. Other Themes may have a textual function (as in well, because, so) or an interpersonal function (as in surely, probably, personally). When a clause has multiple Themes, the typical order of the thematic elements is textual^interpersonal^topical. The Theme as a whole continues up to the first ideational element of the clause; all elements following this form part of the Rheme. (There are some complicating factors in this apparently simple analysis, which are dealt with in section 7.3.1.1.)

Complementary to the system of theme is that of information; whereas theme indicates the departure point of the message, the system of information indicates what part of the message is recoverable (or *Given*), and what part

is not recoverable (or *New*). Information is realized through intonation, rather than grammar, and this aspect of textual meaning is not dealt with in this chapter.

The second grammatical system of interest to us is that of *Mood*, pertaining to the interpersonal metafunction. This is the function whereby language serves as an *exchange* between people, presenting or demanding information, indicating personal attitudes about the information, and so on. According to the Hallidayan analysis (1985a:Chapter 4), the components of the Mood element realize the clause feature *indicative*, and determine whether a clause is presented and received as a declarative or an interrogative, and if interrogative, whether as a yes/no question or as a wh- question. The components of the Mood are the *Subject* and *Finite*, and it is their relative order which determines the basic declarative-interrogative distinction. The Subject is a nominal element; the Finite is the element carrying primary tense or modality in the verbal group. The other elements of the clause form the *Residue*; these are the *Predicator*, *Complement(s)*, and *Adjunct(s)*. Elements of the Residue may occur before the Mood component. A few synoptically analysed examples are presented below to illustrate some of the basic distinctions:

1. The soldiers are shooting the protesters.
   Subject: the soldiers
   Finite: are
   Predicator: shooting
   Complement: the protesters
   Mood: declarative

2. At this very moment, the soldiers are shooting the protesters.
   Adjunct: at this very moment
   Subject: the soldiers
   Finite: are
   Predicator: shooting
   Complement: the protesters
   Mood: declarative

3. Are the soldiers shooting the protesters?
   Finite: are
   Subject: the soldiers
   Predicator: shooting
   Complement: the protesters
   Mood: interrogative (polar)

4. Why are the soldiers shooting the protesters?
   Adjunct/ Wh-: why
   Finite: are
   Subject: the soldiers
   Predicator: shooting
   Complement: the protesters
   Mood: interrogative (wh-)

5. Shoot the protesters!
   Predicator: shoot
   Complement: the protesters
   Mood: imperative

A clause may also have a *tag question* at the end, as in the soldiers are shooting the protesters, are they?, where the tag picks up the Subject of the clause (in this case, they) and the Finite (are).

The Mood component of the clause indicates the way in which the information presented in the clause is exchanged between speakers. However, there is another aspect to interpersonal meaning in the clause, and this concerns the ability of the speaker to indicate his or her attitude about the proposition being exchanged. This aspect of meaning is realized primarily through the systems of *modality* and *modulation*, indicating degrees of probability, usuality, inclination or obligation with respect to the clause. Finite modal operates (such as must), modal Adjuncts (such as probably), passive verb Predicators (as in you're requested to wait) or complex constructions (as in I'm happy to wait) all express aspects of this type of meaning. The speaker's attitude can also be indicated through attitudinal lexis, for example, by using taboo words or ideologically-loaded lexical items (compare, for instance, protesters and freedom fighters). Modality and

attitudinal lexis are referred to in the section on Mood (section 7.4.3) but are not dealt with in depth.

The final area of grammar with which we are concerned is that pertaining to ideational meaning. Here, the systems of transitivity and ergativity realize the potential of the clause to mean as a representation, that is, as an interpretation of 'patterns of experience'. Transitivity "specifies the different types of process that are recognized in the language, and the structures by which they are expressed." (Halliday 1985a:101) 'Process' in this sense refers to the clause as a whole, to the type of event, happening, feeling or state which is being expressed. 'Process' is also one of the basic components constituting the framework by which a process in the larger sense is expressed; the process element is realized by a verbal group, and it is the lexical or main verb which determines the process type (for example, hit in was being hit). The other components of the framework are the participants involved in that process (which are typically realized by nominal groups, but which may also be realized by prepositional phrases), and any circumstances attendant on the process (realized by prepositional phrases). This basic framework is relevant to all types of clause, but Halliday enumerates more specific options in relation to the ideational meaning carried by the clause.

The more specific options depend on the classification of the process. Halliday proposes three central process types, *material*, *mental* and *relational*, with three less central types, the *behavioural*, *verbal* and *existential*. Material processes are processes of action or doing, as in hit or run; they are not, however, confined to concrete actions; the key element is that some entity is understood to be 'doing' something. As with every process type, there are particular types of participant associated with the

material process. The 'doer' of the action is obligatorily present in all material processes, and is called the *Actor*; if the process is extended to another participant, then another participant element functions as the *Goal* of the process.

Mental processes refer to processes of thinking, feeling, and perceiving. They are partly characterised by having one participant, the Senser, which is human-like, in that it is "endowed with consciousness" (Halliday 1985a:108);this is the participant which 'senses'. The other participant, called the Phenomenon, is that which is felt, thought or perceived, and may be either a thing or a fact.

Relational processes are processes of 'being': "the central meaning of clauses of this type is that something is" (Halliday 1985a:112). English has several types of relational processes: intensive (*x* is *a*); circumstantial (*x* is at *a*) and possessive (*x* has *a*). Each of these has two modes: attributive (*a* is an attribute of *x*) and identifying (*a* is the identity of *x*) (Halliday *ib.id*). For the attributive type, the relevant participants are the Carrier and Attribute, as in Sarah is wise (with Sarah as Carrier; wise as Attribute). For the identifying type, the relevant participants are Identified and Identifier, as in Tom is the leader (with Tom as Identified; the leader as Identifier). Further, another pair of participant functions are relevant to the identifying process, those of Token and Value. The Value is glossed by Halliday (1985a:115) as the "meaning, referent, function, status, role" and the Token as the "sign, name form, holder, occupant". These functions map on to those of Identifier and Identified, with either Token or Value able to take on the role of either Identifier or Identified.

We will not consider the other process types nor other participant functions which are possible. Nor will we consider the details which explain the grammatical differences between these process types (for they are distinguished on grammatical, not semantic, grounds). For our purposes, the point of most interest is the fact that English consists of different process types, and that different participant roles are associated with each process type. Further, the roles of Actor, Senser, Carrier and so on have the sense of being the participant which is the 'doer', the other participant having the sense of that which is 'done to' (although strictly speaking, only participants in a material process can be considered to be actually 'doing' things). Cross-cutting the system of transitivity is the system of ergativity, and here, a complementary notion of 'doing' accounts for the way in which the participants relate to each other via the process. While transitivity describes different participant roles according to the process type, ergativity describes participant roles which are general to all processes. Here, one key participant is the Medium, which is the inherent participant in the process, the process's 'reason for being'. In a clause such as The troops shot the protesters, it is the protesters which is the Medium. The other key participant is that of the Agent; this is the participant which is able to instigate the process: in the preceding example, it is the troops who cause the protesters to be shot. Clauses may be analysed in terms of both their transitive and ergative patterns; each represents a different interpretation of the clause as experience.

Apart from the participants and processes, ideational meaning is carried by circumstantial elements. These may indicate such aspects of the process as its Location or Extent in time or space (in 1989, in the Square, for three days), the Manner of the process (with guns, furiously), its Cause (through

carelessness), any Accompaniment (with the police), and so on. In principle, circumstances are not associated with one type of process rather than another, but are general to all types. (In practice, there may be a need for a finer sub-categorisation than this) Circumstances are usually realized by prepositional phrases, although it should be noted that prepositional phrases can also realize a participant function in the clause.

The classification of process type, participant functions and circumstantial elements all represent *experiential* aspects of ideational meaning. However ideational meaning also entails a *logical* component; it is this which accounts for elements occurring together as a complex, for instance, a nominal group complex or clause complex. While the unit analysis of the preceding chapter considered the path points at which elements of the same rank might be concatenated, we do not in this chapter further consider aspects of logical meaning.

7.3 Intra-clausal analysis of textual meaning: Theme

In this and the following sections, we explore how a dynamic perspective applies to metafunctional aspects of grammar. We will begin this exploration with the metafunction which transfers most readily to a dynamic perspective, that of textual meaning. Even here, however, it will be seen that a dynamic perspective brings its own insights to the understanding of the metafunction.

The nature of the synoptically oriented analysis of textual meaning, as captured by Halliday's *thematic* analysis, is such that the key element in identifying the Theme of a clause comes first in that clause. This element will also be the first element in an unfolding path, and so the synoptic

analysis of textual meaning can be readily interpreted from a dynamic perspective. As a clause unfolds, and once the first ideational element of a clause is identified, Theme can be taken to be finished, and Rheme to have commenced. Consider line 1 of the sample text, I have a view.... When I is identified as a nominal group, it can also be identified as a Thematic element, giving rise to the expectation of a step into Rheme. The next word, have, confirms this, as it marks a step into another ideational element (Process following Participant), and so completes the Theme and opens the Rheme.

In terms of the way in which the path analysis would apply to Theme, let us exemplify different path developments. (Note that for the moment, the discussion relates only to Theme within a clause. Thematic development between clauses is a different issue and is discussed in 7.7 below.) The first element of a clause will be part of the Theme; for path development, the issue at stake is whether that Theme will be *sustained* or *closed*. However, unlike other instances of path development, not all the path options apply to all types of Theme. Any thematic path may be *closed*, by moving into elements of Rheme: the presence of one ideational element means that the next ideational element will automatically complete the Theme and open a Rheme path.

However, not all Theme paths can be sustained, and those which can be sustained are sustained in different ways. If the first element is an ideational element (that is, a topical Theme) the path cannot be sustained, because as we have just noted, a subsequent ideational element will be deemed to be part of the Rheme. Given the fact that the dynamic perspective applies to the unfolding elements themselves, it is possible that the ideational element itself may be sustained (for example, by post-modifying a nominal

group), but in path terms, this is not functional for the thematic analysis. It is possible to sustain a Theme path if the first element is not an ideational one: a thematic path opened by a textual Theme (such as so, because) may be changed by a step into an interpersonal or a topical Theme, and a Theme path carried by an interpersonal Theme (such as you see) may be changed by a step into a textual or a topical Theme. Or, a Theme path carried in either way may be continued by repeating the functional potential of the current thematic element; that is, there may be more than one textual or interpersonal Theme. In an example such as so, you see, I ..., the thematic path is opened by so (representing a textual theme) and changed by a step into the interpersonal Theme you see, and changed again by a step into the ideational Theme, I.

For the purposes of presenting a dynamically oriented analysis of Theme, the format is the same as for the unit analysis. So for the step from I to have in the first clause of the sample text, the analysis is presented as follows:

	unit/element:	clause as message:
1	I	open: = Theme
	have	CP: = Rheme

Thus in this example, have *completes* the Theme path opened by I. The heading of the column is no longer a unit on the rank scale (group, clause ...), but an indication of the functional role in question. Because the heading of the path indicates that textual meaning is in question, we know that the opening of a path will constitute a thematic element. As for the unit analysis, the presentation summarises a certain amount of information, which can be retrieved from the analysis. For example, the analysis does not

present the fact that I is an ideational element, or topical Theme; it is assumed that the reader is able to retrieve this. Also as for the unit analysis, it is the results which are presented, rather than the process of positing expectations and comparing them with the next actual choice. Expectations nevertheless apply; for example, once an ideational element has been seen, there is an extremely strong expectation for a completing step, marking a shift into Rheme.

A different example of thematic development is found in line 36 of the text, which begins with because. This opens the Theme path, and the expectation is that the path will be sustained, possibly through continuing the textual role of because (perhaps by adding an element such as in this way), but more probably by changing the role to an interpersonal or ideational one. In fact, the next step constitutes a change, as an ideational element takes up the Theme path. The example begins to unfold as follows:

	unit/element:	clause as message:
36	because	(Theme)
		|
	they	CH

Although it was noted above that an ideational element functioning as topical Theme cannot be sustained, there is at least one case in which this possibility has to be allowed. It is possible for one ideational element to be sustained through concatenation or addition, in which case the multiple elements function together as a complex topical Theme, as in (the invented) example of I, the Frenchman and the American .... A synoptic perspective can of course determine at once that these three elements function as a single unit, but a dynamic perspective encounters the elements as they unfold. While the step between I and the Frenchman will be analysed as sustaining the

Theme path, rather than moving into Rheme, it is not possible to determine through the grammar alone whether the Frenchman is a *concatenating* or *adding* step: that is, whether both elements refer to the same or to different entities. This means that a simultaneous analysis has to posited, to allow for both possibilities. The simultaneity will only be resolved with recourse to factors other than the grammar. The concurrent *frame* may differentiate the alternatives, because it may clarify the relevant participants: if the referent of I is a female, then it is highly unlikely that the Frenchman would be referring to the same referent; alternatively, three participants may have clearly been established in the preceding text. Otherwise, any simultaneity needs to be maintained until some later aspect of the text resolves the ambiguity. Such a simultaneous analysis would be presented as follows:

unit/element:	clause as message:
I	(Theme)
the Frenchman	C:C / C:A
and the American	C:A / C:A

Most of the clauses in the sample text are relatively easy to analyse for their thematic development, as they follow the simple pattern exemplified for line 1 above, with the first element being ideational, and typically followed by an element constituting the beginning of the Rheme. At this point, no further analysis of the Rheme is posited, although for thematic development between clauses, this needs to be done, and of course the elements constituting the Rheme will have roles to play in other functional analyses.

7.3.1 Issues in the Theme analysis: variable extent of step

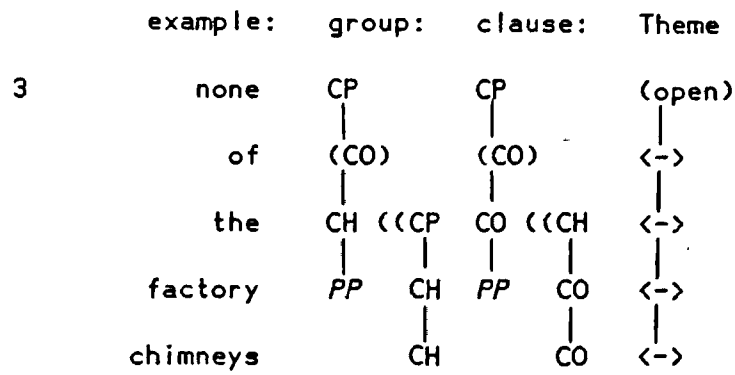
It is not of course the case that all clauses follow the most basic Theme pattern. One variation which needs to be considered occurs when the first element of the clause contains two or more components which could feasibly stand on their own as Theme. Consider for example none of the factory chimneys from line 3: given an unfolding view of the text, none on its own might be temporarily posited as the Theme of the clause. From an understanding of the unit analysis at group level, we know that none could be sustained (by, for instance, post-Modifying the nominal group) or closed (by moving into a different group). For Theme analysis, this means either that none may not yet be a full thematic element, in which case it is not yet time to consider path development for Theme, or that it may well be a full element and hence, path development of Theme would apply. Thus, as for simultaneous analyses, multiple expectations apply here, although this situation is somewhat different from the simultaneous analyses encountered in relation to the unit analysis. In the unit analysis, the simultaneity applies to one rank; it is the nature of the step which can be analysed in more than one way, implying that one unit could be playing more than one role in relation to the path established by the preceding unit. In contrast, in this particular case relating to Theme, it is not a question of whether two interpretations can be posited for the path development, but whether the path can be considered to be developing at all. So if none is the full nominal group, then the role of that group in the development of Theme can be considered; if it is not the full nominal group, then it is not yet time to consider path development of Theme. There is a simultaneity of analyses, but the simultaneity operates in relation to different path sets - one to the

unit analysis at group rank, and one to the metafunctional role of clause elements.

Note that while the extension of the nominal group through post-Modification may seem comparable to concatenation of nominal groups through juxtaposition, as in I, the Frenchman, the two cases are quite different with regard to Theme analysis. With concatenation, there are clearly two nominal groups operating, and whether they refer to one referent (that is, I = a Frenchman) or to two (that is, I + the Frenchman), a type of multiple ideational Theme results (as just discussed). On the other hand, extension of the nominal group through post-Modification does not give rise to two separate nominal groups, and thus does not affect the Theme analysis in the same way.

To return to the thematic analysis of none of the factory chimneys, the unit analysis of none recognises that this could be a complete nominal group or one which could be extended by post-Modification. Therefore the analyst needs to allow both for the possibility that this could be functioning on its own as Theme, and for the possibility that this is only part of the current Theme. For this latter case, the thematic analysis needs to be momentarily *suspended* to allow for the possibility that the nominal group could be extended, and that a larger element could be functioning as Theme. The step from none to of does indeed extend the nominal group and thus indicates that the thematic element is not yet complete. The step is not, therefore, functional in thematic terms: path development as it has been presented here cannot be seen to apply. The step is functional in terms of the unit analysis. So to represent what is happening thematically, a dash is placed between two angled brackets for each equivalent step in the unit analysis, viz: <->. This indicates that while the unit is continuing to develop, the

step is not functional in thematic terms, and so the analysis of Theme is temporarily suspended. At the same time, the unit analysis as presented in the preceding chapter is maintained. The whole example is represented as follows:



After any point which could complete the nominal group, as in chimneys here, there is an expectation either that the path of Theme analysis will be taken up again, that is allowing further development of Theme, or that there will be a shift into Rheme.

Of course the unit analysis for this clause has already been presented, so in the context of this thesis it is 'known' that the group is not just none, but none of the factory chimneys. However, in an actually unfolding text, a dynamically oriented analysis of Theme must operate in conjunction with a unit analysis, as the different types of paths interact with each other, and steps in one type of path help inform decisions and weight expectations in other paths. Thus, as we have illustrated, path steps in one analysis may lead to the temporary suspension of the analysis of another type of path.

7.3.1.1 Multiple Themes

Other clauses which do not readily fit the basic Theme pattern are those in which there is a long sequence of multiple participant or circumstantial elements, making it difficult to accept that Theme ends after the first ideational element. Our discussion of this area is, however, deferred until section 7.4.4, as it is relevant to certain aspects of the Mood analysis.

7.3.2 Summary of Theme section

Our intention here has not been to fully explicate Theme from a dynamic perspective, but to illustrate how such an analysis could begin to be applied. The most important point to note is that a dynamic perspective can, at least for most instances of Theme, be applied quite easily. Given the fronted nature of the Theme analysis, this is not surprising. We have dealt with some complicating factors to the basic Theme analysis, deferring discussion of multiple Themes. We have not attempted to account for several particular problems of Theme, such as how to analyse abandoned Theme paths or account for semantically empty Themes. These must be left aside for future research.

7.4 Intra-clausal analysis of interpersonal meaning: Mood

In attempting to apply a dynamic perspective to the analysis of interpersonal meaning, we explore whether the interpersonal features captured by the systems of mood and modality in a synoptic approach can also be captured in a dynamic one. To begin with, the aim is to reformulate the

available analyses from a dynamic perspective, and it will be seen that the reformulation itself throws into doubt some of the basic assumptions regarding the interpersonal aspects of meaning.

As noted in section 7.2, it is the presence of the elements Subject and Finite which realize the indicative Mood, and the relative order of these elements which determine whether the Mood is declarative or interrogative. If the Subject comes before the Finite, the Mood is declarative; if the Finite element comes first, the Mood is a yes/no, or polar, interrogative. For 'wh-' interrogatives, the Subject comes before the Finite if the wh- element is the Subject, otherwise the Subject comes after the Finite (Halliday 1985a:74).

A dynamic analysis will encounter the elements of Mood as they unfold in the clause, hence if a Finite or wh- element is encountered first, the Mood will most probably be interrogative. If a nominal element is encountered first, then it is highly likely that a declarative is being formed, although in some cases the classification of the Mood as declarative has to be held off until more of the clause has been seen. This occurs when elements of the Residue come first, as in <u>These days, can we afford not to be more vigilant?</u>; when elements which could potentially be vocatives occur, as in <u>John, are you coming?</u>, or when potentially fronted topics, as in <u>soldiers, can they be trusted?</u> appear first. Of course, intonational factors would help inform some of these cases, but the grammar in isolation leaves multiple possibilities open. Interestingly, in the case of some vocatives, the grammar (when operating without the benefit of intonational or orthographic information) has to wait for the element after the Finite before the Mood can

be determined (as in People, are they ever happy?, where the elements people are ... could be forming a declarative).

By far the most commonly exploited Mood option is that of the declarative; interrogatives are in general far less likely to occur, except in particular text types (such as a questionnaire or interview). For most texts then, the situation sets up the expectation that the initial stack for mood options will have the declarative option at the top. It is possible for this ordering to change as the text unfolds; so for instance, the first instance of an interrogative will cause more disruption to the stack than subsequent interrogatives. Further, if an interrogative is preceded by an element which could potentially be Subject in a declarative clause (as in the case of a vocative), the example will be doubly marked, as the speaker will begin the example as if it were a declarative, and then use the interrogative mood. The hearer will initially be led to expect a declarative, which conforms with the most typical case of Mood, but will have to radically shift these expectations when such an interrogative is encountered.

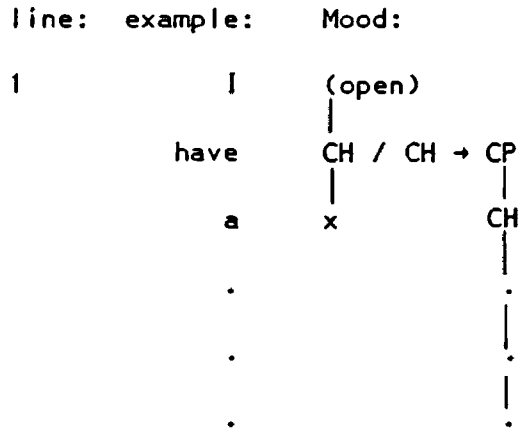
In short, in most cases one aspect of the mood analysis can be determined quite quickly, namely whether the clause is declarative or interrogative. However, the identification of the element taking on the role of Subject in the clause is not so straightforward. For declaratives, it is necessary to identify elements which are potential Subjects, and then to wait for a Finite element to confirm this. So if the first element in a clause is the soldiers, the speaker's most probable next option and the hearer's most probable interpretation will be that a Finite element will follow, and hence, that the current option is Subject, as in the soldiers are ... For interrogatives, as the Finite or wh-element comes first, the most probable option for the speaker and expectation for the hearer is that the next

nominal element will be functioning as Subject, as in are the soldiers ... (Note that in such cases, the nature of the first element may give some more specific expectations for the nature of the Subject to follow. For instance, if the finite expresses number, as in does or do, the Subject will agree in number, and this more precise expectation can be used to help inform the components of the stack.)

In terms of applying the path analysis, every new clause opens a path relating to interpersonal meaning. However, the way in which the unfolding path steps are classified will depend on whether the path is considered to be an *interpersonal* path, or a *mood* path. In the first case, steps between elements of Mood and of Residue would then be *change* steps, as all such steps would be contributing to interpersonal meaning. In the latter case, the same steps would be analysed as *completes*, as the Mood and Residue would be seen as two separate types of paths. It may seem strange that the same step could be analysed differently according to the scope of the path, but it is a feature of the analysis that the classification of steps depends on the nature of the rank or function being considered. The advantage of developing an interpersonal path would be that other aspects of interpersonal meaning - such as the effect of attitudinal lexis - could be brought in to the path. On the other hand, the advantage of focussing on separate Mood/Residue paths is that the resulting analysis will be closer in kind to that developed for Theme, where the step into Rheme was seen to close the Theme path. Here, we will focus on a Mood path, thus analysing the step into Residue as a complete.

Let us illustrate the paths for Mood with some simple examples from the sample text. In the first line, the first element is I. This *opens* a Mood path, and we can expect the next step to be a *change* in the path, shifting to

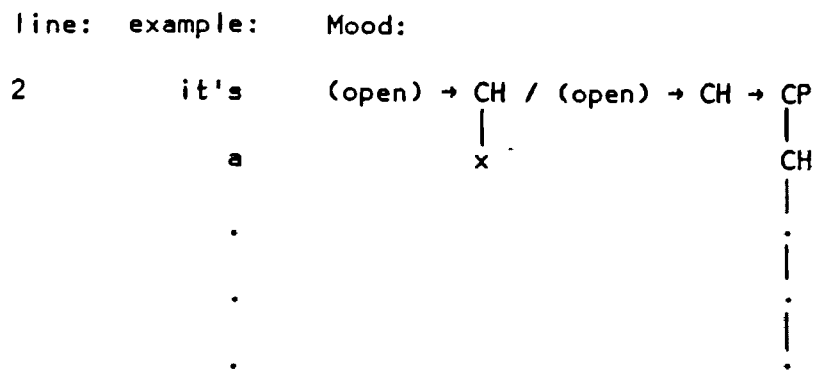
a Finite element. The next element is have, confirming the expectation. Have could be functioning as an auxiliary or main verb. In either case, the implication for Mood is the same (the Finite has been expressed), but there are different implications for the Residue. If have is an auxiliary verb, the step into Residue has not yet been accomplished, and we would expect other verbal group elements to follow. However if it is a main verb, the Finite and Predicator are fused, and so have simultaneously changes the Mood by shifting to the Finite, and completes it by shifting to the Residue; in this case, other clause elements can be expected to follow. The next element in this clause is in fact a, which picks up the path relating to have as a main verb. This is represented below:



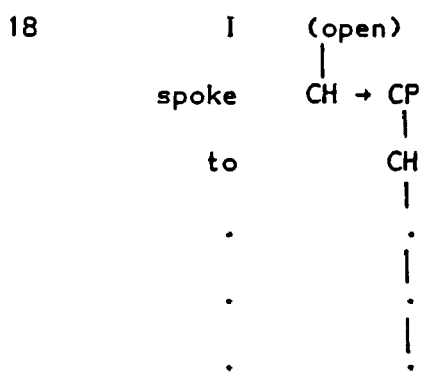
That is, have is analysed simultaneously as a change step only (have in this case being an auxiliary), and as a change step fused with a complete step (have in this case being a main verb, with Finite and Predicator fused). The next element, a, can only be picking up the latter path, and constitutes a change in the Residue path.

For the moment, steps between elements of the Residue (that is, between different groups functioning at clause rank) will continue to be analysed as *change* steps, and will not be further analysed. Many of the clauses in the

text have the same Mood analysis as that presented above. Sometimes, where there is a fused element, three steps of the analysis occur simultaneously. For instance in line 2, it's a city that isn't at work, the fusion of it with the verbal element is results in the following analysis:

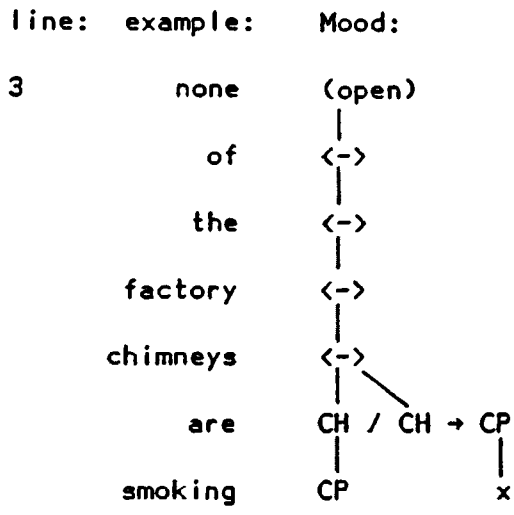


That is, it's both opens the Mood path, and simultaneously either changes it or changes and completes it. The next step picks up the second of these paths. Similarly, when the verbal element itself is a fusion of the Finite and Predicator, a fused analysis applies, as in the following example:



Another instance of the basic analysis occurs in cases where the first element is a complex nominal, as in line 3 with none of the factory chimneys are smoking. The analysis of such complex nominals is the same as that presented in the analysis of Theme. That is, as the Mood analysis unfolds simultaneously with a unit analysis, there is a point after none where the speaker can choose to extend the nominal group, thus delaying further Mood

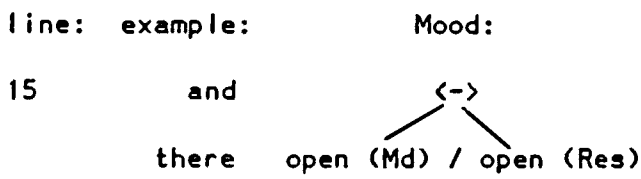
analysis. In this case, such steps are analysed as steps in abeyance for the Mood analysis, signalled by the <-> sign. Alternatively, the speaker could complete the nominal group and shift into other elements, thus sustaining the Mood path, in which case the steps are functional in Mood terms. For the hearer, simultaneous expectations have to be posited to allow for both possibilities, although the presentation of the analysis includes only the results of the analysis, and not the expectations. The analysis for an example such as this appears as follows.



In this example, the Mood path opened by none is kept in abeyance until are, which opens simultaneous paths.

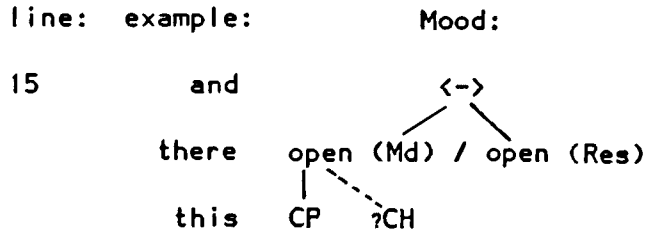
These basic analyses account for most of the examples in the text. Some exceptions remain. First, there are examples which commence with multiple ideational elements, where elements of both the Mood and the Residue may precede the Finite, either because a Residue element intervenes between the Subject and Finite, or because Adjuncts precede the Subject element. In line 15 for example, and there this morning protesters gathered again after dawn, both the elements there and this morning could potentially be either Subject or Adjunct (cf the discussion in section 7.4.4 below). While there would be

a strong expectation that protesters is in fact the Subject, it is not until the process gathered is reached, with its fused Finite and Predicator, that this can be confirmed. The analysis of an example such as this is visually complicated, as multiple simultaneous possibilities have to be allowed. Firstly, and is analysed as a step in abeyance; the next step, into there could be opening either a Mood path (hence there functions as Subject) or a Residue path (hence there functions as Adjunct). This part of the example is represented as follows:

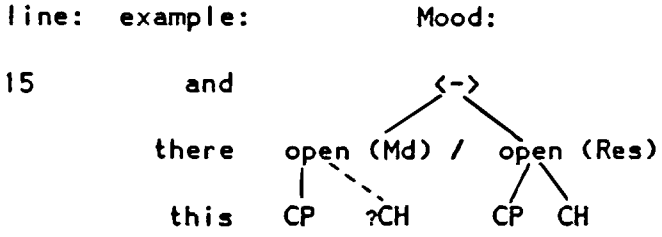


For simplicity's sake, the title of the path is still *Mood*, even though the analysis shows either a Mood or Residue component opening up. Further, while it is not necessary to classify the open step as either Mood (Md) or Residue (Res) - because this information could be retrieved if the analysis was presented just as two simultaneous *open* steps - the classification is included to help clarify what follows.

The next step is this. Given that there may be functioning as Subject (as shown on the left-hand side above), this would have to be analysed as a complete in relation to there, that is, closing the Mood element and opening a Residue element. But the Mood element is not in fact complete, as no Finite has yet been expressed. This means that the expectations for a Finite element have been deferred, with the deferred expectation (a change step) marked by a question to the side. This is represented as follows:



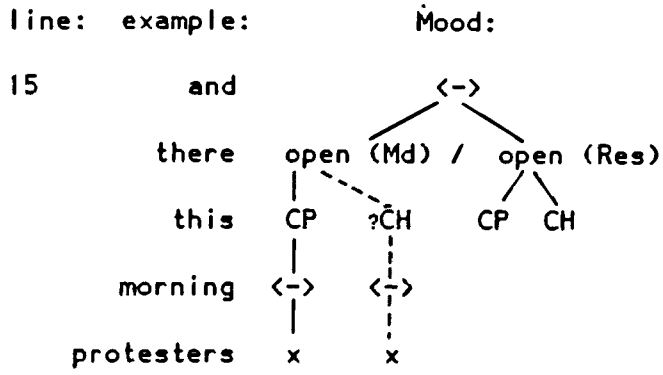
For the right-hand side of the analysis, (with there functioning as Adjunct), the step into this could be analysed in two ways. Either it represents a completing step, showing that a step into the Mood element has been effected (that is, this functions as Subject), or it could represent a change step, showing that a step into another element of Residue has been effected. These analyses are presented as follows:



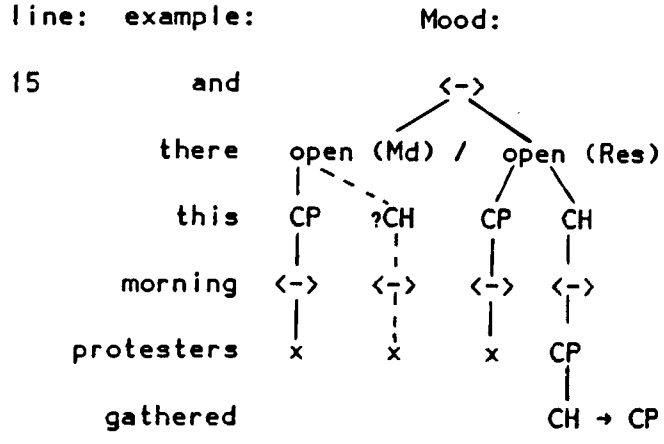
The following step is morning, which is not functional in terms of the path in question, and so is a step in abeyance. However, it should be noted that this morning does affect the stack of expectations for what may follow next, leading to a strongly weighted expectation for a Subject element to follow . Had the example been, for instance, this army, there would be a strong expectation for a step into a Finite element. A further level of detail is needed to capture this aspect of the step; see the related discussion in section 7.5.5 below.

The next step, into protesters, can only be functionally interpreted in relation to one of the simultaneous paths so far developed. In relation to the left-hand analyses, beginning with there as Subject, the deferred expectations for a Finite element need to be dropped once protesters is

reached. There remains a slim possibility that protesters could be yet another element of Residue, with the Subject yet to come, but this possibility is so slight that it is not presented. Thus both the main path and the deferred path following there as Subject are dropped, as follows:



In relation to the right-hand analysis, beginning with there as an element of Residue, the possibility that this morning completed the Residue and thereby opened the Mood component must be discounted once protesters is reached. Protesters in fact picks up the path which allows for both there and this morning to be elements of Residue; it is analysed as completing the Residue path, so opening the Mood component. This is confirmed by the next step, into gathered, which changes the Mood component (as it represents the Finite element) and which also represents a completing step, back into elements of Residue, as the Finite is fused with the Predicator. This part of the analysis is presented below to complete the example:



The slight disruption to the basic Mood path thus gives rise to an array of analytical possibilities, as different elements could be taking on the role of Subject, and as posited analyses have to be revised (or rather, left behind) as the clause continues to unfold. Interestingly, once the Finite is reached (and given that a potential Subject element has been identified, that is, that a declarative structure is unfolding), the Mood analysis ceases to be of interest, as further steps must pertain to the Residue.

However, it is not only the presence of multiple ideational elements which complicates the basic analysis. A second complication occurs in examples where it is not necessarily difficult to pinpoint the shift into a Finite or fused Finite/Predicator element, but where it is difficult to identify exactly what the Subject is, even though potential Subject elements have occurred. If the preceding example had been, for instance, there this morning is the result of the carnage, what would the Subject be? Halliday argues that the Subject can be identified as "that element which is picked up by the pronoun in the tag" (Halliday 1985a:73, as in he did it, didn't he?, with he as Subject). But this does not really help elucidate the Subject of the example just cited (neither isn't it? nor isn't there? seems appropriate). Nor for that matter does it help elucidate the Subject of an actual example from the text, in line 14, down below to the right of me is

the main road leading to Tiananmen Square. Again the tags isn't there? or isn't it? are the most likely candidates, but again neither is quite appropriate. What is more, if any element in this example can be said (from a synoptic vantage point) to be functioning as Subject, it would have to be the element following the Finite, that is, the main road leading to Tiananmen Square. Certainly if the sequence of the ideational elements is reversed, the example becomes unproblematic: the main road leading to Tiananmen Square is down below to the right of me. But this is not what the speaker said; the actual example, according to the synoptic criteria, must be said to be an anomaly. It appears to function as a declarative, but the Subject element cannot be identified according to the standard criterion (the tag question test), and if present, would appear to be in an impossible place given the declarative nature of the clause.

This does not of course mean that such examples pose any problem in communication for either speaker or hearer; on the contrary, such examples are common. But the synoptic analysis does not seem able to capture or explain how such an example functions in interpersonal terms. (Either a synoptic or a dynamic analysis of the textual metafunction explains why the example is as it is: to get the circumstantial element in as Theme, but this still does not account for its Mood structure.) It is suggested here, however, that a dynamically oriented description can capture how it functions interpersonally for speaker and hearer. In the (fabricated) example, there this morning is the result of the carnage, all the elements up to is are momentarily analysed as functioning as either Subject or Adjunct, and further steps in the clause are needed to determine the analysis. But the shift into the verbal group can only be picking up a Subject path, and so what precedes this step takes on the status of Subject, whether it accords with standard

analyses or not. The speaker has chosen to take this step; the multiple potential of the earlier options facilitates this. As discussed in Chapter Five, the latent potential of any choice provides a shadow of interpretation for what follows. For the hearer, the same principles apply; the issue is not whether a 'correct' or 'standard' example has been produced, but whether the example provides the clues to allow the steps to be interpreted functionally.

This explanation does not in fact account for the actual text example, unless the element down below to the right of me is argued to be an example of an attributive Complement which has been fronted (cf Halliday 1985a:79). Yet it seems more obviously to be an Adjunct, and so a part of the Residue. Again, however, the step into the Finite can only be interpreted as indicating either that a Subject element is present, or that an interrogative structure is in question. (If interrogative, the process element is discontinuous; the question is: is the main road leading to Tiananmen Square?) This is a case where the grammar in isolation would result in an incorrect analysis; the intonation of the actual example does not indicate an interrogative, nor does the grammatical trend of the ongoing text with its exclusively declarative structure; nor does the structure of the following line (and there this morning protesters gathered again after dawn), which is difficult to interpret as a response to a question. Given the fact that there is no supporting evidence in the unfolding text for the interrogative possibility, it must be concluded that down below to the right of me fulfils the potential of a Subject element in a declarative clause, even if this is a highly unusual analysis. (It is interesting to compare the example down below to the right of me is the main road leading to Tiananmen Square with the (fabricated) example, down below to the right of me are two roads

leading to Tiananmen Square. Halliday's (synoptic) criteria clearly indicate that the Subject in the latter example is the two roads...; not only is this the element which would be picked up by a tag question (aren't there?), but the verb agrees in number with this element. A comparison with the former example suggests that the Subject element is being pulled two ways: in relation to the first example, it is being identified as the element which is tied to the Finite; in relation to the second example, it is being identified as the element which shapes the verb.)

A third complication to the analysis occurs with conjunctive elements such as that in line 21 or because in line 36. In the Hallidayan analysis, conjunctive Adjuncts are excluded from the Mood-Residue analysis: "they have no function in the clause as exchange." (Halliday 1985a:82) However, given an unfolding view of the clause, the role of such elements has to be considered in relation to interpersonal meaning. At the very least, it will be necessary to suggest an analysis that says such elements hold the Mood analysis in abeyance (which would be signalled by the <-> sign). While we agree with Halliday that such elements do not seem able to alter the interpersonal structure of the clause, they do seem to be playing some role in the interpersonal patterns established between clauses. Momentarily then, we will shift the discussion of Mood from intra-clausal to inter-clausal considerations. Given one clause and one of these connecting elements, it would be very surprising if the Mood of the following clause was different to that of the current one. Thus such elements seem to function like and in the unit analysis, signalling that a path is to be sustained through continuation. This expectation is not always fulfilled for all conjunctive elements; and itself, for instance, seems to allow reversal of a Mood path (as in the protesters came on the scene and what do you think they did?).

Therefore these elements seem to be serving a stacking function for expectations relating to Mood patterns between clauses: given such an element, the most likely option is that the Mood of the preceding clause will be repeated in the next clause; if this does not happen, an effect of surprise or markedness is achieved. This observation is not based on a detailed study of conjunctive elements in text, but is put forward as an hypothesis which would be interesting to explore on a future occasion. In the context of this thesis, the hypothesis justifies the analysis of such elements as a continue step in brackets - that is, (CO) - to capture that Mood is most probably to be continued, although the step is somewhat outside of the Mood analysis proper.

A similar element which also poses a problem for the Mood analysis is well no in line 27. This again has some conjunctive purpose, but also has a much more apparent interpersonal role than other conjunctive elements. It expresses the speaker's doubt about the validity of the proposition she has just made (the full example is they're firing into the air, well no, they're firing against the buildings...). The well no definitely signals that some denial is about to come, but synoptically, we can see that this does not in fact occur in the Mood element itself (as would be the case in well no, are they?) but in the proposition contained in the Residue. Thus, like the conjunctive elements, well no is stacking our expectations for the Mood of the next clause, as well as contributing to expectations about the nature of the proposition. In the analysis as it is currently presented, there is no device to capture the special influence of such an option, so for the meantime, it is also analysed as a bracketed continue step, (CO), although again, such devices merit further attention.

The case of resetting in line 16 (those the troops fired at them) is a further complication to the basic analysis. The analysis would posit those as opening the Mood path, being most probably Subject; it would be possible to posit a simultaneous analysis, allowing for those to be a Complement in the Residue (as in those the people gave to me), but there is no evidence to expect anything other than a straightforward declarative, and this analysis would not have a particularly strong weighting in the stacks. However, the next element, the troops, also seems to be a Subject, and fired does indeed pick up this path. It seems, therefore, that those was opening a Residue path. However the example is not yet complete, and other alternatives are possible: there is the potential for those the troops fired to be a Subject on its own, as a complex nominal group, and there is also the potential for resetting. But we suggest that resetting would not have a particularly strong expectation attached, and indeed, it is not until the step into them that the resetting possibility can be confirmed. At this point, the step could only be picking up the path in which the troops is a resetting of those. In interpersonal terms, the fused Finite/Predicator fired picks up the most recent Subject; the Subject force of those is left behind, so to speak.

A final complication presented by the examples in the sample text is found in line 34, which has no Mood expressed: and defiantly setting fire to them. This follows line 33, they're moving in buses as new barricades at most of the intersections, and synoptically, it can be seen that line 34 elides the Subject and Finite from line 33.

The way such an example is explained from a dynamic perspective is as follows. The and signals that some part of the path in question is to be sustained - it could be concatenating a whole clause or perhaps just one

element of it (as in ...at most of the intersections and all the checkpoints, where the nominal groups within an Adjunct are concatenated). As noted previously, if the concatenation is at clause level, the most probable expectation is that the Mood of the preceding clause will be repeated. The next element is neither a potential Subject nor a potential Finite; it is quite clearly an element of the Residue, being an adverb functioning as Adjunct. But it cannot be picking up any of the Residue of the preceding line, and in combination with the concatenating potential of and, a new clause is understood to be in question. The Residue element sets up an expectation for a Mood to follow, but the next element is again neither Subject nor Finite, but a Predicator. It is just possible that defiantly setting fire to them could be functioning as a complex Subject, but a following Finite and Predicator would be required to sustain this path, and this does not in fact occur. So, a clause must be being concatenated, but without a Mood being expressed: the path is concatenated from the corresponding point in the preceding clause, that is from just before the preceding Predicator (moving). Thus, the part of the path leading up to that Predicator can be understood to apply here too - that is, defiantly is understood to be branching from they're. A general rule could be established that any Mood element can have a second set of Residue elements branching from it; when defiantly is reached, this would set up a deferred expectation for a Mood element to come, as in and defiantly they have been setting fire to them, but when this expectation is not fulfilled, the latent potential of the initial Mood element to have a branched structure must be taken up. This does not mean that the sequence of the branched structures is immaterial: in the above example, the sequence is obviously crucial to the cohesion between

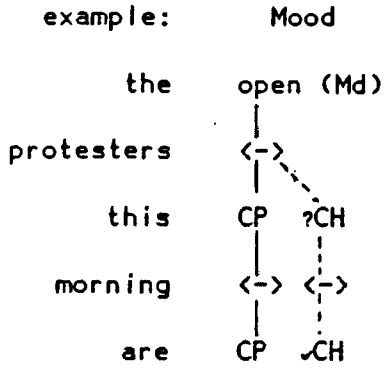
the lines; rather, it means that the branched structures share the noted elements.

7.4.1 Other aspects of Mood analysis: discontinuity

While the preceding discussion has dealt with all the examples from the sample text, the text itself does not raise all the problems that could be encountered in applying a dynamically oriented Mood analysis. It is necessary to consider how interrogatives (both polar and wh- types), imperatives and tag questions would be dealt with, and to explain and illustrate a discontinuous Mood element from a dynamic perspective. To deal with this latter problem first, the discussion of line 15 has already partially dealt with this possibility, although there the discontinuity was part of a simultaneous analysis and not a particularly likely option. The Mood analysis must be able to capture what is happening in an example such as the protesters this morning are ..., where synoptically it can be seen that the Subject (the protesters) and the Finite (are) are separated by a Residue element.

The dynamically oriented analysis would posit the protesters as a Subject opening the Mood path. The step into this morning would close the Mood path and open the Residue path (and so is analysed as a complete step, although this does not mean that the Mood of the clause is 'complete' in the sense of having both Subject and Finite present). Meanwhile, the expectations for the Finite element of the Mood are deferred. The deferred expectations are picked up when the Finite is encountered. (Simultaneous with this analysis, another path would have to be posited to allow for the possibility

that this morning post-Modifies the protesters, the nominal group thus formed acting as Subject.) The discontinuous analysis is represented as follows:



It is also the case that the Residue may be realized discontinuously; in the above example, this morning is only part of the Residue, and other elements are yet to come. A discontinuous Residue can be interpreted from the completing steps leading into and out of the Mood element; that is, if an element is analysed as part of the Residue before the Mood component is reached, a completing step necessarily signals a step into the Mood. A further completing step necessarily indicates a step back into the Residue. However it would be useful to represent the deferred expectations as just described for Mood, to highlight the cases where further Residue elements are not optional, but required for a clause to be potentially complete in interpersonal terms (in the above example, for instance, either a Predicator or a Complement is required to enable the clause to be potentially complete).

7.4.1.1 Interrogatives

From a dynamic perspective, the analysis of polar interrogatives is relatively straightforward. For a polar interrogative, the order of the elements Subject/Finite is reversed, so the step between elements of the Mood

is still a change step, and steps into or out of the Mood are still completing steps. The presence of an interrogative is inferred from the relative order of the Mood elements.

However, the analysis of wh-interrogatives is more complicated. Firstly, when a clause opens with a wh-element, a simultaneous analysis has to be posited, allowing for the clause structure to be that of a wh-interrogative or one beginning with a nominalized clause as first element (as in what he said was ...). This simultaneity will be resolved as the clause continues to unfold; either there will be a step into another clause, confirming the wh-interrogative path, or a step into a Finite element, confirming the nominalized clause path.

For the wh-interrogative itself, it is necessary to determine whether the wh-element is conflated with the Subject element or an element of Residue. Initially, a simultaneous path has to be posited to allow for both possibilities, and further elements of the clause need to be seen before it can be determined which of the paths has been taken up. If the item following the wh-element is a form of do, then the path of the wh-element as Residue has most probably been taken up, as this is typically followed by the Subject element. But on the whole, it is a complex matter to elaborate the different possibilities, and it could be said that within the clause, it is not particularly important (for the receiver) to identify the role of the wh-element. Unless the wh-element is part of a nominalized clause, the receiver knows that a question is being asked. Its importance arises inter-clausally, as it determines the nature of the response required from the receiver. For the producer, he or she again presumably 'knows' the role intended for the wh-element, and the dynamic perspective can illuminate the expectations and path possibilities which arise given one role rather than another. On the

whole, however, we must leave the details of an analysis of wh-interrogatives for future research.

7.4.1.2 Imperatives

Basic forms of the imperative Mood are not difficult to account for from a dynamic perspective, as typically there is no Subject element (as in go away), and so they are clearly distinguished from the indicative Mood. Other forms of the imperative are recognizable by the presence of an initial do as Finite (as in do run along), or an initial let's as Subject (as in let's run away). However there are yet other forms of the imperative which have both Subject and Finite present (as in don't you move), and given that it is the presence of both these elements which realizes the indicative option, it is impossible for the grammar in isolation to disambiguate such structures. Young (1980:73) demonstrates that if spoken, the structures can be differentiated by their different rhythms, or they can be distinguished structurally when in the negative form. If such ambiguity arose in the course of an unfolding text, a simultaneous analysis would have to be posited to allow for both an imperative and an indicative analysis, to be determined by intonational or co-textual factors. (In the sample text from the appendix, for example, there is no reason to expect an imperative at any stage in the reporter's text, so if an imperative was structurally possible at any point, it would be evaluated as being a highly improbable option.)

7.4.1.3 Tag questions

The analysis of tag questions is most interesting from a dynamic perspective. First, it has to be recognized that a tag question is, in principle, an option available at the end of every declarative clause, in the same way that after every potentially complete nominal group (with pre-Modifiers and Head), it is in principle possible to extend the group with post-Modification. When considering the possibility of a tag question, the tag at first appears to 'switch' the Mood of the clause, as in there's no one working, is there?, where the assertion is queried by the tag. But from a dynamic perspective, to say that a tag 'reversed' the Mood of the clause would imply that an analysis has to 'go back' in the clause and re-adjust the Mood analysis. However, this clearly does not happen: the Mood has been established, and the tag must therefore be playing a different role. The declarative Mood in the main part of the clause still stands, but the tag gives the producer the option of including the interrogative potential of Mood within the same clause.

As the tag follows the Residue but has its own Mood structure, the first element of the tag must be completing the preceding Residue and simultaneously opening a Mood path. (Frequently, this secondary analysis would have to be simultaneous with a path allowing for the possibility that the tag could be opening a new clause with an interrogative Mood; however if no Residue elements take up this potential path, it will be dropped in favour of the tag analysis.) But, as the clause will already have a Mood element, this 'new' Mood element must be secondary to the main part of the path. Thus a secondary analysis is posited to represent a potential tag question.

7.4.2 The Residue

To maintain a comparison with available synoptic analyses of interpersonal structure, it might seem desirable to further analyse the Residue, so that every element can be identified as either Predicator, Adjunct or Complement. But for the purposes of informing a dynamic perspective, such an analysis of the Residue would serve little purpose. The main use for such a thorough analysis would be to identify Complement elements which might be picked up as Subject in later clauses. Such information would form part of the ongoing frame of the text, and would be drawn on to activate potential layers in different stacks as the text continues to unfold. Clearly, for an inter-clausal perspective, this would be important, but similar information could be obtained by identifying the active participants in the text, and the components of the Residue do not seem to be contributing greatly to the clause in its function as exchange. It is the Mood element which is critical to this function. Within the clause then, the Residue is not further analysed, and as suggested below in 7.4.4, the relevance and status of this analysis, whether from a synoptic or a dynamic perspective, merits considerable critical attention.

7.4.3 Modality and attitudinal lexis

While we have been focussing on a Mood path rather than an interpersonal path *per se*, it has to be acknowledged that interpersonal meaning is not realized only through the Mood system. The system of modality also contributes, indicating different nuances between the polar options of *yes* or *no* in the Finite element, and expressing the speaker's opinion of the probability, typicality, or obligation of the proposition. Halliday

(1985a:85ff) describes the different options from a synoptic perspective. Aspects of the speaker's opinion can also be expressed through *attitudinal lexis*.

As noted at the beginning of this chapter, modality (and the related system of modulation) is expressed through particular operators, either a Finite modal operator (will, can...), a modal Adjunct (probably, usually...), a passive verb Predicator (you are required to be ...) or complex constructions (I am anxious to ...). However, it is an open question whether modality is a grammatical issue in the strict sense at all. Apart from the modal operators, or auxiliaries, the other means of realizing modality seem to be more strictly lexical phenomena: the degrees of modality they entail are more easily differentiated lexically rather than grammatically. Hence the approach developed in this thesis is well suited to an account of modal operators, but would need to be extended to encompass finer lexical details.

To account for the modal operators from a dynamic perspective, the potential for a modal auxiliary must be considered at any point in an unfolding clause where a process element is structurally possible. The ongoing frame of the text should indicate the likelihood of a modal to occur, and the unit analysis in the preceding chapter has already shown how auxiliary elements are accounted for in the structure of the verbal group.

Yet the dynamic perspective as so far developed in this thesis is able to account for some other aspects of modality. Firstly, it is able to allow for the appearance of modality and attitudinal lexis. This is achieved by simply acknowledging the points in a clause at which such options may be realized, as in explaining the potential structures of a group.

Secondly, it is able to explain the relationship of the modality options to contextual features. It may seem strange to posit a special link between this system and contextual considerations, when all choices do of course affect and are affected by the context associated with the text. But in this case, such options are able to make sharp and significant alterations to interpersonal aspects of the context.

The relationship of these factors with context is accounted for by the frame analysis proposed in Chapter Five. Some initial expectations could be formulated on the basis of the text type predicted from the features of situation. Once the text begins to unfold, actual linguistic choices will clarify how the appropriate stacks are weighted; this in turn weights the stacks in the frame, which influence further expectations in the next part of the text. The remaining choices in the text will either consolidate or modify the relevant component in the frame. Modification will take place on at least two dimensions. Firstly, changes may be either gradual or marked - for instance, the sudden introduction of a taboo word into an otherwise formal text would be highly marked. Secondly, choices which subvert expectations may do so either in relation to the expectations pertaining to the text type, or in relation to the patterns established in the currently unfolding text by its producer.

The key factor to note is that the relevant component in the frame is carried along with the unfolding text; for many other choices in text, each relevant step unfolds in sequence, and so the necessity for carrying the frame forward is not so obvious; but choices in modality and attitudinal lexis are instantiated intermittently, and so it is essential that the frame unfolds in conjunction with the text.

These aspects of interpersonal meaning are necessarily more important for inter-clausal considerations, because of the patterns which may or may not be followed through in a text. A speaker who uses virtually no modality in a text will cause an effect of surprise if, suddenly, a high degree of modality appears. Or the reverse can be true. In this case then, modality and attitudinal lexis would set up paths flowing through the text as a whole: each instance thereof in the text would modify the related part of the frame, and this in turn would influence expectations for interpersonal meanings in the next part of the text.

In the sample text, there are a few examples of these aspects of interpersonal meaning. In the first line the speaker says: I have a view out of the window of a skyline, across probably one third of the city. The probably in this example is difficult to predict: there is little in the path up to across which might set up an expectation for a modal Adjunct. Further, the actual position of probably might be argued to be a little unusual, being perhaps more typical if it occurred before across. In terms of the expectations which probably sets up, it does not seem to alter in any way the expectations which were set up previously by across. The effect of such an option then, is not to alter the trajectory of the path, but to affect the interpretation of the path in whole or part. Following probably, the Mood of the proposition is not altered (the speaker still has this view), but some aspect of its validity is thrown into doubt (the view might in fact be across a half or a quarter of the city). The effect of the option is dispersed over other steps in the path, and such a dispersal effect cannot be captured in the analysis as currently developed; further research is required.

A similar effect is achieved in the text by normally in lines 3-4: none of the factory chimneys are smoking, which are normally belching polluted air

at this time of day. In this case, without the modal Adjunct, we would expect the process to take the form belch. But even in this form, the example would be a little unusual, because the present continuous form of the verb in the first part of the example sets up a strong expectation that a similar pattern will be followed later. It would be difficult to argue that normally could simply be 'left out', as this would result in a quite unusual example: none of the factory chimneys are smoking, which are belching polluted air at this time of day. This example is evidence that, while the presence of this element may not be predictable, it can indeed have an impact on the overall shape of the clause.

There is one clear example of attitudinal lexis in line 34: ...and defiantly setting fire to them (them being buses). Through the use of defiantly, the speaker gives her evaluation of the protesters' action. Certainly in terms of a unit analysis, the adverb sets up a strong expectation for a verb to follow, but in interpersonal terms, the effect again is not so much to alter a path but to affect the interpretation of the path, the remainder of which is interpreted in light of this evaluative adverb.

7.4.4 Mood and the analysis of multiple Themes

We will leave the discussion of Mood for a moment and return to an aspect of the Theme analysis - the analysis of multiple Themes. As noted in the Theme section, clauses may begin with a sequence of participant or circumstantial elements. It seems that the Theme of such clauses cannot be adequately captured if Halliday's (1985a) criteria for the identification of Theme are strictly followed, although as we will see in this section, the

interaction of the different metafunctional analyses casts some light on this problem.

Consider line 15, and there this morning protesters gathered again ... A Hallidayan analysis of Theme would have to conclude that the Theme path closes after there, with this morning opening up the Rheme path. Yet it seems that this morning, and even protesters, are just as much a part of the 'departure point of the message' as is there. Various linguists have observed this problem, for instance Berry (1990) and Matthiessen (1991). Matthiessen suggests that the Theme actually 'trails off', which is why it is difficult to draw a dividing line between Theme and Rheme. Such an interpretation is satisfactory for a synoptic perspective, as one can simply take a global view of the clause and observe that the dividing line is difficult to draw. But for a dynamic perspective, such an explanation fudges the issue. If Theme is 'trailing off', it makes it difficult to explain how the steps between thematic elements are operating, and even more difficult to explain how a shift to a different (Rheme) path is effected.

Significantly, there seems no doubt among linguists that, in such clauses, the process element definitely belongs to Rheme. This clue suggests a solution for a dynamically oriented analysis of Theme.

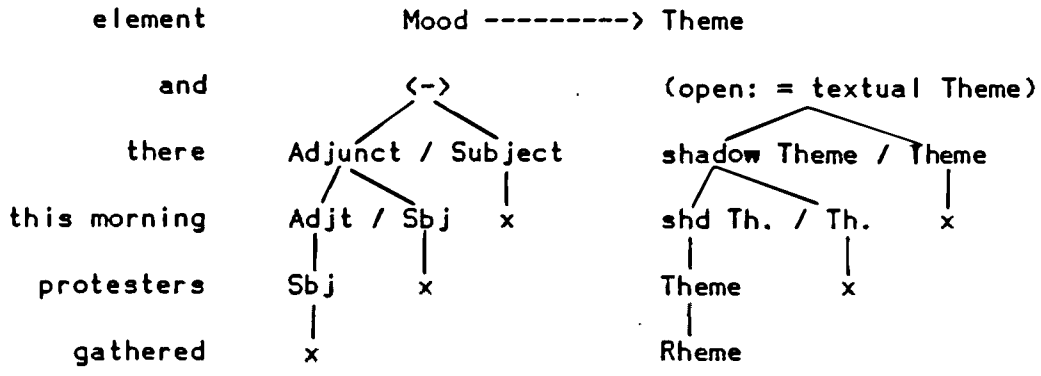
The explanation of thematic development in these cases in fact has two complementary aspects. Firstly, note that the area of doubt concerns fronted circumstances, like there and this morning in the example above, and topical Themes, like protesters, when there is one or more than one of each. An element which typically functions as circumstance also has the potential to be a participant, and so Theme in its own right. For instance in this morning was awful, the basic pattern of Theme analysis can apply with this

morning as Theme and with was marking the beginning of Rheme. Thus such elements have a latent potential to occur on their own before the process or with other elements before the process. But this latent potential is operative not in terms of thematic analysis, but in terms of Mood. That is, the element might be a circumstance functioning as an Adjunct to the clause, in which case other elements will occur before the process, or it might be a participant functioning as the Subject of the clause, in which case the Finite or Finite/Predicator element (realized by a verbal group) is to be expected next. For every clause-initial element which might be either circumstance or participant, these simultaneous expectations will apply. If a similar element follows or if an element which is clearly a participant follows, then this means that the Adjunct path has been taken up in the Mood analysis, and that the Subject path has been deferred. Once a step into a verbal group is effected, this shows that the Subject path has finally been taken up, and so no further simultaneous expectations are required for Mood analysis.

However the simultaneous expectations in Mood analysis affect the Theme analysis. Because of the unmarked association between Subject and Theme (cf Halliday 1985a), even a latent potential for a Subject gives rise to a parallel expectation that the element has a thematic role to play. Thus, each time a simultaneous Adjunct/Subject analysis is posited for a fronted element, this gives that element the effect of a *shadow* Theme. Hence in these cases, the Theme is not in fact 'trailing off', but is being constantly revised as the clause unfolds, until the point at which the clause unequivocally moves into Rheme.

Let us display this analysis to clarify the interrelationship of Theme and Mood. In the following illustration, clause elements are presented on

separate lines; the steps between current and next elements are not analysed as path steps *per se*, but are analysed in terms of their respective roles in developing the Mood and Theme of the clause. The classification of *Theme* and *shadow Theme* means that the current element might be the full topical Theme of the clause, or may be only part of an unfolding Theme; the latter case is called the 'shadow' Theme.



In the Mood analysis, the element and is not functional in Mood terms (cf 7.4); the next element, there, might be an Adjunct or a Subject, but the following element, this morning, picks up the Adjunct potential of the path, and so identifies which of the simultaneous paths is in question. However this morning may itself be either an Adjunct or a Subject, and the next element, protesters again shows that the Adjunct path has been picked up. Thus for both there and this morning, there has been a latent potential for these elements to be functioning as Subject. Protesters can be assigned a Subject role, and the next element gathered confirms this. In Theme terms, the first element, and opens a Theme path, and is a textual Theme. This gives rise to the expectation that the Theme path will be sustained by the addition of interpersonal or ideational Themes. The next element, there, is a topical Theme, and at this point, a Hallidayan analysis would analyse the Theme path as being completed. However other ideational elements may follow, and as the Subject has not yet been definitively analysed, there is still a

sense in which the departure point of the message has not yet been fully elaborated. Thus, a simultaneous thematic analysis is posited for there, allowing it to be a part of a larger Theme path (hence *shadow Theme*) or to be the whole of the Theme path (hence *Theme*). As the element following there is this morning, this shows that the shadow potential of there has been taken up; again, the same type of expectations are posited from this morning, as either shadow Theme or Theme, and the next element, protesters, again takes up the shadow Theme potential of the preceding element. However, because of the strong expectation that protesters is Subject, this suggests that the departure point of the message has been elaborated, and that Theme will be completed here by a step into Rheme. The next element, gathered, confirms this. Thus the expectations for Mood and Theme are inter-related. Before the process element, a potential Adjunct gives rise to a shadow Theme analysis, and so leads to the expectation that a Subject/Theme element is yet to come; a potential Subject activates a full Theme analysis, and so gives rise to expectations for a step into a Finite/Rheme element.

Yet there is one key element missing from this argument, and it forms the second part of the explanation. What is it that enables us to ascribe the process element definitively to the Rheme component, and so to delimit the departure point of the message? The implication of the above analysis is that each of the ideational elements continues to contribute to the 'departure point' of the message, but that once the process is reached, the clause is unequivocally 'under way'. This analysis therefore broadens Halliday's explanation of the departure point of the message, and needs to be justified.

It must be remembered that we are examining textual meaning as it unfolds in a clause. (Matthiessen 1991 also explores a dynamic view of

textual meaning, but only in terms of inter-clausal relations.) Further, it must be understood that a path analysis applies to each of the three metafunctions, and that the different paths unfold in conjunction with each other (just as in the unit analysis, where paths for different ranks unfolded in parallel). In a very general sense, it could be said that every path has to 'get under way': every path will be opened and will be developed in its own terms. When the path analysis for ideational meaning is presented, it will be seen that it is the presence of the process element which marks a critical dividing line in the ideational path between 'little' and 'significant' information: our sense of what the clause is 'about' in ideational terms grows as the clause grows, with the process providing the essential pivot. At the same time, the path analysis for interpersonal meaning gives 'advance warning' of the process, as an element which is likely to be functioning as Subject will be in intimate relation with the process; that is, a Finite or Predicator will be expected to be next. Ideationally, then, there is a sense that the departure point of the clause is not fully elaborated until the process is reached, and it is the interpersonal structure which gives rise to the expectation that the message is off the ground and ready to be elaborated. Textually, everything up to that critical dividing line can be seen to be thematic; once there is an element which is not only thematic but also likely to be functioning as Subject, the ideational information is expected to be increased imminently, and the departure point of the message is therefore fully elaborated.

7.4.5 Questioning the analysis of Mood

Up to this point, the dynamically oriented analysis of Mood has basically taken on board the categories established by Halliday, attempting to reinterpret them from a dynamic perspective, but without necessarily questioning the fundamentals of the theory. Yet the preceding section suggests that the role of the interpersonal metafunction might be reinterpreted in light of a dynamic perspective, and the application of a dynamic perspective to interpersonal meaning, even at this introductory level, does indeed raise some significant questions. These questions will not be answered here, but are put forward for further thought and study. The most serious question to be raised is whether, from a dynamic perspective, the interpersonal analysis is motivated; this question has repercussions for the synoptic analysis of interpersonal meaning also, and hence for the status of this component in the functional theory as a whole.

We suggest that the role of interpersonal meaning in a clause is only partially revealed by a synoptic analysis of Mood, but that further understanding of this element and its function can be achieved through a dynamic perspective. The limitations of the synoptic analysis are revealed by the redundant nature of some of the analytical elements of the Mood analysis, and it is the dynamic perspective which explains why these elements are redundant.

The first question to be raised is whether, given an unfolding view of the clause, the components of the Mood element are necessary. Consider: what do the Subject and Finite elements tell us? Their presence and order is necessary to realize the declarative/interrogative variable, but if a Finite element comes before any potential Subject, that is all the information

necessary to know that the clause, if indicative, is also interrogative. If a potential Subject comes before the Finite, the Finite is only needed to delimit the boundaries of the Subject and confirm that it is indeed the Subject element. Evidently, without either of these elements, it would not be possible to differentiate declaratives and interrogatives, but from a dynamic perspective, this information can be retrieved quickly, and it is not always critical to identify both elements in every clause. Furthermore, the intonation system can sometimes override the grammatical status of the clause, giving the value of an interrogative to an otherwise declarative clause.

A second question relates to the division between Finite and Predicator which is posited in the synoptic analysis. From a dynamic perspective, the relevant factor for the unfolding analysis is not so much the division between Finite and Predicator, but the step from a Subject element into a process; whether the Finite is realized as a separate element, or whether it is fused with the Predicator, is not particularly important. For the dynamic analysis, the only occasion when the separation of the Finite is relevant is when the Finite comes before the Subject. This does not mean that the information carried by the Finite, whether fused or separate, is unimportant, but that for the dynamic analysis, the first priority is to identify the division between a potential Subject element and its related process; it is a secondary question whether the tense or modality of the process is retrieved immediately from an element expressing only these aspects, or inferred from an element which carries other information as well.

The third area of doubt highlighted by the dynamic perspective concerns the elements of the Residue. From a synoptic point of view, the main value in analysing the Residue lies, we suggest, in identifying Complements. As

Complements are elements which might have been Subject but aren't, they illustrate the speaker's manipulation of choice in the (synoptic) system. From a dynamic perspective, the Residue enables us to see that ideational elements which come first in the clause are not necessarily Subject. But apart from this, there appears to be little value in analysing the Residue: it does not add to the interpersonal information of the clause. Of course, modal Adjuncts and particular Predicators (passive verbs or adjectives) do contribute to modality and modulation, but identification of these elements does not have to be dependent on analysing the Residue. Certainly, what is proposed in the Residue is of critical importance to the clause as a whole, but it is suggested here that such information can be dealt with more satisfactorily by the ideational component. For instance, if the clause the soldiers killed the protesters is challenged by no they didn't, they removed the protesters, the latter half of this challenge is not different in mood, but is very different ideationally: the process has become removed, not killed. It is the proposition which is being challenged, and while the proposition is composed of elements of the Residue, the information they contain can be revealed by an ideational analysis.

Finally, the dynamic perspective suggests that the role of the Subject itself needs to be re-evaluated. As the synoptic analysis describes, the Subject is "something by reference to which the proposition can be affirmed or denied." (Halliday 1985a:76) This role is critical to the understanding of the interpersonal meaning of the clause. But from a dynamic perspective, the Subject seems to serve an additional purpose, which is most clearly revealed in cases where Theme and Subject do not conflate, as just discussed in the preceding section. We observed there that a sequence of ideational elements at the beginning of a clause poses difficulties for Theme analysis,

because it is difficult to determine where the Theme ends. There, we suggested that the potential for those elements to be Subject created a 'shadow' Theme, and that the intimate ties of a Subject with the process element led to the expectation of a definite shift into Rheme.

Thus it seems that an additional role of the Subject is to indicate a close and intimate involvement with the process element of the clause: once a potential Subject is encountered, expectations will be held open until the process element is also encountered; at this point, however, the value of the Mood analysis disappears. Thus, in the example there this morning protesters gathered ..., interest in the Mood element is opened by there, re-evaluated with this morning, and again with protesters: by this point, a receiver would have a strong expectation that this is indeed the Subject, and the next element would confirm this. On the other hand, had the example been protesters there this morning are ..., the Subject potential opened by protesters has to be carried over until are. But in both cases, Mood analysis ceases to be relevant once the process is reached.

The Subject therefore indicates a core element of the clause around which a great deal of information hinges. Of course this is exactly what the synoptic analysis says: that the Mood component consists of two elements, Subject and Finite, on which the validity of the proposition rests. But the dynamic analysis reveals that Mood is not only important for identifying the 'resting point' of the proposition, but also for acting as a focussing element in relation to the other metafunctions. The Mood component acts as a hinge between the simultaneously unfolding analyses of Theme and Transitivity; until a potential Subject element is confirmed, the Theme analysis is still relevant, as the message is not yet fully 'off the ground'. But once the Subject element is confirmed, by a step into a process element,

attention shifts to an analysis of Transitivity, as this will reveal what is of interest in the proposition.

This is why the dynamic perspective raises the doubts about the synoptic analysis as described above. When the focussing function of Mood is taken into consideration, it is not always essential to identify both Subject and Finite in an unfolding analysis, or to separate the Finite from the Predicator. It also suggests why it is not important to further analyse the elements of the Residue, as elements following the Mood component are most interesting for their ideational content. Further, it suggests why the role of the Subject needs to be re-evaluated, as it is the potentiality for a Subject which gives advance warning of the process element, and which therefore serves to identify the critical hinge in the clause.

A dynamic perspective therefore implies that it is necessary to investigate the possibility of radically altering the conception of the interaction of the metafunctions. In the analysis of Mood, the Subject is the element that is critically tied to the process, specifically the Finite: this relates both to the departure point of the message (Theme) and to what the message is 'about' (Transitivity). By identifying the Mood element, the critical dividing line between the other functions of the clause can be determined, and the role of the elements ascribed to Residue in a synoptic analysis can be ascribed to Transitivity in a dynamic analysis.

These arguments point to the fact that it would be timely to critically re-examine our understanding and description of the grammatical realization of interpersonal meaning and its relation to the other metafunctions. In this brief analysis of interpersonal meaning from a dynamic perspective, we have tried to apply the perspective in a way which would be complementary to

current synoptic analyses, but the dynamic perspective has revealed some interesting questions in relation to this analysis, which merit considerable further attention. In the course of this discussion, we have added to the thematic analysis proposed earlier, by developing the notion of a shadow Theme.

7.5 Intra-clausal analysis of ideational meaning

On the whole in the thesis we have aimed to develop a dynamically oriented description which is complementary to available synoptic descriptions, but which brings new insights as a result of the change in perspective. In the analysis of textual meaning, a new notion of a 'shadow' Theme was introduced, and for interpersonal meaning, the dynamic perspective raised interesting questions about the role and possible re-evaluation of the Mood analysis. Yet it is in the analysis of ideational meaning that the most radical changes are found: given a dynamic point of view, it is almost impossible to retain the synoptically oriented description of transitivity. In this section, we explain why the synoptic analysis of transitivity cannot be maintained from a dynamic perspective, and explore what it is that can be said about ideational meaning from this point of view. It should be remembered that the following discussion pertains to ideational meaning within a clause; patterns as they arise between clauses are discussed in section 7.7.

7.5.1 Difficulties in adapting the synoptic analysis

The synoptic analysis of ideational meaning, described largely by the system of transitivity (we will leave aside discussion of the related system of ergativity for the moment), requires a global view of the clause in order to be undertaken. The whole clause needs to be seen, in order first of all to be able to identify the process (which is typically not the first element in the clause) and secondly to be able to determine the relations between the participants. This arises partly because the classification of 'process' applies to the clause as a whole: it is not just the process element which is classified as material, mental and so on, but the whole clause configuration, including therefore both a certain process type and its associated participants.

But such a description is clearly difficult to maintain from a dynamic perspective, where the clause elements are seen to unfold sequentially. Consider the following examples:

1. I hit him.
2. I am happy.
3. I saw it.

Each of these clauses represents a different process-participant configuration, the first being a material process with Actor (I) and Goal (him); the second being a relational process with Carrier (I) and Attribute (happy), and the third being a mental process with Senser (I) and Phenomenon (it). Synoptically, it can be seen that I is playing a different functional role in each clause, but a dynamic perspective cannot distinguish these roles from the outset. Given an unfolding clause, I would be the first element to be encountered in each case, and it would be impossible from that information alone to predict the nature of the clause type involved, and hence to provide

a classification of I which is comparable to the synoptic one. The analysis of ideational meaning from a dynamic point of view therefore needs a different approach to that adopted for textual and interpersonal meaning, where the bulk of the respective analyses - Theme and Mood - was simply transferred. Because the synoptic analysis of Transitivity cannot be so transferred, we will, in the following grammatical analysis, not refer to a grammatical system as such, but continue to refer simply to the analysis of ideational meaning.

7.5.2 Beginning the ideational analysis

The approach to the dynamically oriented analysis of ideational meaning begins in the same way as the other analyses: that is, the metafunction is explained and observed as it unfolds in the clause. Two aspects of ideational meaning need to be captured: firstly, it is necessary to account for the nature of the event being represented, in terms of both its participants and processes - whether the clause is about chimneys and smoking, for instance, or troops and shooting. This aspect of ideational meaning is reflected by lexical selections in the clause. Secondly, it is necessary to account for the relationship between the participants and the process, both in the sense of extension (transitivity: one participant 'extending' the process to another) and in the sense of causation (ergativity: one participant being the process's 'reason for being'); as in whether the troops are shooting the protesters, or the protesters shooting the troops. This aspect of ideational meaning is largely a structural one. As a clause unfolds, our information about both these components grows with each clause element that is seen, both indicating the 'content' area and confirming or changing our hypotheses about

how the different components relate to each other. The expectations which are posited as a clause unfolds can therefore be subverted in at least two ways: either by relating elements which are not typically related in the context in question (for example, chimneys and laughing) or by relating elements in an atypical way (for example, the man bit the dog).

The path analysis as so far presented in the thesis enables a very general analysis of ideational meaning to be captured, in terms of identifying participants, processes, and circumstances. The first element of a clause will *open* an ideational path; this path will remain open until the start of a new clause. Steps between clause elements - between participants, processes and circumstances - constitute *changes* in the ideational path. For instance, if the clause begins with a participant, a step into a process sustains the path set up by the participant, but adds further information about the ideational meaning being presented. A *continue* step occurs when one clause role is fulfilled by more than one clause element, say, if there are several circumstances in sequence. Steps in abeyance occur when an element which is potentially complete could be extended, as in none, which could stand on its own as a participant, but which is in the text sustained by of the factory chimneys.

There may be occasions where it is not possible to be certain that one clause has ended and another begun, as when there are multiple circumstantial elements which could be ending one clause and beginning another. In such cases, simultaneous analyses have to be momentarily posited, as was the case for the other analyses. An ideational path will be *abandoned* if a new clause begins without fulfilling the expectations set up by the current clause. For example, a clause beginning with I sets up the potential for I to be involved in some process. If however the example continues with I, well Bob

wanted to know ..., the expectations set up by I are abandoned, to be replaced by expectations set up by Bob.

Yet this application of the path analysis is not illuminating: if steps between elements within the one clause are all analysed as *change*, this is not telling us much more than the basic unit analysis. Interestingly, this situation parallels that found in the synoptic analysis, where Halliday observes that the (synoptic) categories of participant, process and circumstance are "too general to explain very much." (Halliday 1985a:102) Halliday found it necessary to take the analysis one step further and "recognize functions which are more specific than these and which may differ according to the type of process being represented." Similarly, when applying a dynamic perspective, the basic semantic categories are too general to give a sufficient sense of the ideational meaning of a clause; the analysis must therefore be explored in a different way.

The dynamically oriented analysis needs to capture the same types of meanings which are captured in the synoptic analysis, but needs to do this as the clause unfolds. As just noted, it is necessary to account for both the 'content' in the sense of the process type, and the structure, in terms of the way in which the different elements relate to each other. How does an unfolding analysis of these aspects of ideational meaning get underway?

Let us assume for the moment that the clause has a basic participant^process^participant structure; the analysis of circumstances and other clause configurations will be discussed later. The initial participant element opens the ideational path, and gives general expectations as to the nature of the process to come, and to the way in which that participant is likely to be involved with the process, and related to other participants.

Two factors contribute to the expectations pertaining to the process type. Firstly, the lexis of the initial participant, particularly the Head of the nominal group, suggests what process type might be in question. This does not always apply if the participant is human, as people can typically be involved in a broad range of process types. If the lexis indicates the role of a person or people (such as the soldier rather than John), then there may be more precise expectations as to the type of process that participant will be involved in. However if the participant is non-human, the lexical specificity of the participant should enable us to posit even more particular expectations. For example, if the participant is ambulances, we would expect this to be involved in a different range of processes to, say, chimneys. Further, the lexis of the initial participant may eliminate it from being associated with certain processes in particular roles. For example, if an ambulance is to be involved in a mental process, it is highly unlikely (in a literal context) to be involved in the role of Medium/Senser, that is, we would not expect an example such as ambulances thought that .... However, ambulances could be related to this process via a different role relationship, as in ambulances were thought to be ..., where ambulances is in the role of Medium/Phenomenon. Thus, through the lexis of the initial participant, expectations can be set up as to the process types that participant is typically involved in, or to the grammatical changes required to relate that participant to an atypical process.

The ongoing frame of the text is the second factor which contributes to expectations about the process type. The frame will bring forward expectations deriving from previous selections in the text. For example, if the participant in question is the protesters, the participant may have been referred to earlier as being involved in a certain process, and subsequent

references would be expected to be involved in a similar process. Involvement in a completely unrelated process would be marked. Further, it should be noted that when expectations are posited for the process element, deferred expectations are also posited for the participant which will follow the process.

Lexical selections and the development of the frame are inter-linked in the way described in Chapter Five, where it was argued that lexical selections both indicate and further define the Field potential in the contextual frame of the text. The situation giving rise to the text will give some broad expectations about the Field in question (and so, about the relevant participants and processes); once the text begins to unfold, initial lexical selections will indicate the activated portion of the Field, and the expectations associated with that particular portion of the Field will inform further choices in the text.

Similar factors inform expectations regarding the likely role of the first participant in relation to the process: the lexis of the participant may suggest the role it is likely to play, and the ongoing frame may bring forward expectations based on the role played by previous instances of the participant in question. Returning again to the protesters as participant, the preceding text may well have established whether these people are involved passively in the process as victims, or actively as fighters. Once such a pattern is established, the expectation is carried over to further instances, and if the pattern is to be reversed, the change in pattern will most probably be overtly signalled.

As noted before, the role or involvement of the participant entails two aspects, that of extension (relating to transitivity) and that of causation

(relating to ergativity). As also noted earlier, the role of the initial participant in transitive terms cannot be assigned from the outset of the clause; from a dynamic perspective, it cannot be said whether the participant is, say, Actor or Goal. What can be said - what the expectations pertain to - is what sort of process the participant is likely to be involved in (as just described), and whether the participant is taking on what we shall call the '-er' role (Actor rather than Goal, Senser rather than Phenomenon, and so on), and also, whether this role conflates with that of Medium or Agent in an ergative analysis. Yet it should be noted that there is a strong correlation between the roles played by the participants from a transitive and ergative point of view: in all but a material process, for example, the '-er' role conflates with that of Medium. Further, of the other process types, only the mental and relational have the potential for the feature of Agency to be expressed. From a dynamic point of view, it would therefore seem useful to either meld the transitive and ergative analyses, or focus on one rather than the other, in order to obtain a simpler sense of the 'involvement' of the participant in the process. We have already noted that the participant categories of the synoptic transitivity analysis cannot be applied from the outset of the clause; initially, then, an ergative analysis would seem to be most productive. However, once the process is reached, an ergative analysis would seem to lose its informativeness, and here it may be more useful to return to transitive-type expectations. We do not propose to explore these variables further here or to map out their possible combination, but we do suggest that the interrelation of the transitive and ergative roles is an important area for further study.

An interesting example of the way in which ideational expectations may unfold in a clause is provided by Halliday. The example is presented from the receiver's point of view, (in this case, a reader), but a producer-oriented theory is also needed to explain what sets up these expectations. The example is cited below:

> ...it happens not infrequently in reading that, coming to an intensive identifying clause, one unconsciously predicts, on the basis of the Identified element, which way the identification will go. An article on winter sports contained a clause beginning *but the most important piece of equipment is...* This led to an expectation that what followed would be Token, with *the most important piece of equipment* functioning as Value; eg...*is a safety helmet.* Actually the clause was
>
> But the most important piece of equipment is the one you can least afford.
>
> - where the structure is not Value ^ Token but Token ^ Value. This necessitated a rapid reorientation to a different semantic perspective. (Halliday 1985a:118; emphasis added)

This example illustrates one way in which the structure of an unfolding clause can lead to particular expectations, which may or may not be met by the rest of the clause. It also illustrates the fact that expectations sometimes need to be kept open until the element following the participant, in order to understand the ideational path in the clause, even though, on the whole, the process element contributes greatly to the unfolding path. For instance, if the current clause is <u>the chimneys are smoking ...</u>, there would be a very low expectation (in the context of the sample text) for this process to be extended to another participant, as that would produce a different sense (as in <u>smoking cigarettes).</u> But the latent potential is there and a particular second participant could take up that potential. For the purpose of studying the nature of ideational expectations further, it is important to focus on the most economical way of describing exactly what type of expectations unfold from a dynamic point of view. In a synoptic analysis, both the analyses of transitivity and ergativity bring separate and important

understandings to the nature of ideational meaning in a clause. But from the dynamic viewpoint, the synoptic analysis of transitivity is relatively uninformative before the process element is reached, although general expectations can be posited. Once the process is reached, the ideational path is clearly underway, and the second participant will clarify the path even further.

7.5.3 Formulating ideational expectations

The expectations for ideational meaning are formulated in terms of stacks, as for other aspects of a dynamically oriented analysis. In the first instance, there are stacked expectations for the nature of the process type. For example, given a particular participant, the most likely process for it to be involved in might be a material process, with the least likely being a mental process, and others in between. At the same time, there are parallel, stacked expectations for the nature of the involvement of the participant in the process. For example, the first participant may be taking the '-er'/Agent role in a material process, or '-er'/Medium role in a mental process, and so on. There are multiple possibilities for both types of expectation.

The parallel stacks are interrelated in a more complex way than is the case for paths which are merely simultaneous. For ideational meaning, it is not simply a case of alternative path possibilities, but a case of interdependency between process type and the nature of the involvement of the participant in the process. In other words, expectations are formulated in a complex way in the form of 'if this process type, then most probably that type of involvement; if that process type, then that type of involvement'.

There are at least two ways in which these expectations can be described. Either the expectations can be formulated as separate but interacting paths for process type and involvement, or they can be formulated as separate paths, with each path representing a different cluster of process type and involvement. The former approach, by separating the two components, would allow for more generalisations to be captured regarding the way the components interact. The latter approach would require the potential interrelationships to be spelt out for every process type (for example, that the participant in question is either Actor/Medium in a material process, or Goal/Medium in a material process, or...). We therefore suggest that the former approach would be the more fruitful to follow.

The way in which a path unfolds for ideational meaning is as follows. The first element in a clause opens the path and sets up a broad range of expectations for process type and participant involvement, as just described, as well as deferred expectations for other elements following the process. The next step, into the process element, will either confirm these expectations, taking the most likely options from the top of the respective stacks, or it will reweight the expectations, either for process type or for participant involvement, or for both. (Reweighting of both sets of expectations would be the most marked type of path development.) Thus as the path continues to unfold, the tendency is for the expectations firstly to be narrowed, as the range of expectations diminishes, and secondly, in some cases, to be reweighted, with regard to either aspect of ideational meaning. In many cases, the process element will be sufficient to determine the type of path development which is in question; sometimes, however, multiple possibilities will remain, and the step into the next participant element will determine which of these possibilities is taken up. Returning again to

line 15, and there this morning protesters gathered again after dawn, there may be a strong expectation once protesters is reached for the participant to be playing the role of Agent in a material process. Once the process gathered is reached, however, it seems equally possible that the path in which protesters has the potential to be Medium has been taken up. The two potential paths give rise to different expectations for what may follow the process. In the case of the first path (where protesters is Agent), a second participant (such as weapons) would be necessary to bring that path to a point of potential completion. For the second path (where protesters is Medium), no second participant is possible, otherwise the sense of the first path will be understood.

As for the synoptic analysis of ideational meaning, the process element is a significant hinge in the unfolding of the clause. Yet in the dynamic analysis, the process cannot be used to give analytical 'colour' to the pre-process elements. While Halliday (1985a) does provide evidence that the participants in different process types are grammatically distinct (for example, the Senser in a mental process must be one which is at least endowed with human consciousness, and so able to be pronominalised with he/she), there is nevertheless a sense in which the differentiation of Actor/Senser/Sayer and so on is merely consequential upon the analysis of the process type. A dynamic perspective highlights this unsatisfactory aspect of the synoptic analysis. From the dynamic point of view, ideational meaning 'grows' as the clause grows: the narrowing of path expectations is also a building up or development of the ideational picture, so that an initially limited understanding of the ideational picture expands with each additional element of the clause. While we have noted many times previously in the thesis that a producer is unlikely to begin a clause without any idea of

where he or she is going, it is also unlikely that a clause is totally pre-planned. But, because of the constraints of the dynamic unfolding of the clause, the producer's liberty to exploit ideational potential diminishes with each additional element of the clause. Put another way, the impact the producer can have by subverting the expectations established in the clause increases with each additional element of the clause.

It should be noted that the type of expectations referred to here pertain not to the path step itself (because as mentioned earlier, within a clause the step will, in structural terms, always be a change step), but to the way in which the step is interpreted in relation to ideational meaning. This interpretation needs to be retrieved from other information not captured in the presentation of the path analysis. (The same is true for other levels of analysis; for example in the nominal group, a closing step signals the end of the group, but does not in itself indicate the nature of the group to be opened; this information has to be retrieved from the analysis). The unfolding of ideational meaning in a clause is therefore quite different from the unfolding of textual or interpersonal meaning. For the latter metafunctions, the steps themselves indicate the nature of the current path (for example, once a Theme path has been opened, a complete step signals a move into Rheme), but for an ideational analysis, the classification of the steps needs to be elaborated to understand the ideational meaning being conveyed by the unfolding clause.

A further point to note is that the proposed interrelation of stacks for process type and participant involvement entails a strong assumption about grammatical structure. This assumption contributes significantly to the unfolding expectations, influencing the way in which the participant is expected to be involved with the process, and what other participants might

be relevant in that clause. The assumption can be explained as a *structural hypothesis*, based on the fact that most elements can play a variety of roles in a variety of clause types, but that some associations of role and clause type will be more typical for the particular participant in question. For example, as we noted above, we would not expect ambulances to be involved - as Medium/Senser - in a mental process. In other words, there is an assumption that there are certain 'basic' clause patterns, and that a particular participant will be associated with one of these patterns. Thus, when this participant is encountered at the beginning of an unfolding clause, the associated basic clause pattern forms the top layer in the stack of expectations as to the role that participant is playing in the current clause. The participant could be playing other roles, but these will be slightly more marked than for the basic case. It should be noted that any 'basic' pattern will be strongly influenced by contextual factors: different registers will have different basic patterns associated with them (for example, the expectations for grammatical structure would be quite different between a scientific report and a travel brochure). It is not necessarily the case that different expectations would be posited, but that the weighting of expectations would be skewed according to the nature of the register variables.

We do not propose to explore this assumption further in the context of this thesis, but it is put forward as an interesting proposal to be pursued in further study. It is interesting to note that Longacre (1983) posits a theory of basic structures which supports the type of case being argued for here. Similarly, Halliday's theory of grammatical metaphor (1985a: Chapter Ten), while arguing for a different type of 'basic/non-basic' structure (viz: congruent and metaphorical), is further evidence that language can be seen to

consist of some structural patterns which are inherently more basic than others.

7.5.4 Other structures and circumstantial elements

While it was noted above that the discussion was being limited to a simple participant^process^participant structure, this is of course not the only structural pattern which can occur. When multiple elements occur before the process, the element which most significantly affects ideational expectations is not necessarily the first element, but the one which is, or which seems to be (as the clause is unfolding) functioning as Subject (and so also as Theme, in the extended sense argued for in section 7.3.1.1). That is, at every point at which a potential Subject (and hence Theme) is allowed for, the lexical Head of that element will give rise to expectations for an associated process type and participant involvement (in other words, for the basic clause pattern associated with that participant). Other possibilities will be stacked below the most likely options. If, as the clause continues to unfold, it eventuates that it is not the process but another participant which follows, then the expectations will be reformulated on the basis of the new, potential Subject. So to return to line 15 of the text, and there this morning protesters gathered..., it is possible that there could be the topical Theme, and Subject of the clause. The most probable expectation for process type and clause structure is that there would be involved as a participant in a relational process; at the same time, a latent Adjunct path has to be posited, and this path is in fact taken up by the next element, another participant, this morning. Again, expectations are posited for the potential involvement of this participant in a process, and so on until a

process actually takes up the expectations established by a preceding participant. A type of complementarity arises between the expectations for interpersonal and ideational meaning. Before the process, every potential Subject gives rise to multiple ideational expectations, but these expectations are formulated in very general terms. Once the process element is reached, no further analysis of the Mood is undertaken, but the analysis of ideational meaning becomes much more precise.

Up to this point, the analysis of circumstances has not been explored. They do of course contribute to the unfolding ideational meaning of a clause, but do not affect the basic structure in the way that was discussed above (cf Halliday 1985a:144). It has just been seen in the discussion of line 15 that clause initial circumstances may defer the process expectations set up by the participant in the role of Subject; the lexical components of the circumstance add to the unfolding ideational picture in the same way that the lexical components fill out the picture provided by the participants and process (the fact that an event is occurring this morning rather than this afternoon, for example). It can be the case that the lexical details of initial circumstances contribute to the weighting of the stacks in regard to the participant-process relationship: in the context of the unfolding text from which line 15 is drawn, the there refers to Tiananmen Square, and the frame brought forward to this point would have only a few key participants relevant to that location (primarily protesters and troops, possibly also ambulances, officials and so on).

It is certainly the case that the nature of the participant-process configuration can lead to very strong expectations regarding the possibility of circumstances following the process. In the first line of the text, the speaker begins: I have a view.... If the speaker were to complete the clause

at this point and open a new one, this would leave a strong sense of an abandoned clause path. I have a view does not, in fact, 'tell' us anything in ideational terms: either view needs to be post-Modified, to define what sort of view it is, or circumstances need to be added to define this. (The speaker in fact takes up both these options.) But to account for this, it is necessary to explain why the line does not, up to view, carry significant ideational content. It should be remembered that this line responds to the News Announcer's question, Kate Adie, what can you see? There is therefore a strong expectation that Adie will respond by telling us what she can see. When her line opens with I, our most likely expectation is that I will be involved as Senser in a mental process, see. Following the hypothesis of 'basic structures' put forward above, we would also expect this to be expressed congruently. However, the next step, have does not meet the expectation; reweighting is required. Either an incongruent (metaphorical) structure will be used to express the anticipated meaning, or another meaning is being expressed. As there is nothing so far to indicate a different ideational path, it is assumed that a different structure is being used, and expectations are posited on that basis. The step into a view confirms this, have a view being a grammatical metaphor (mental process realized as Thing; see Ravelli 1988) for the congruent process, able to see. However, the participant-process configuration of the congruent expression demands a second participant: the Phenomenon. Without the Phenomenon, a different sense of see is achieved (cf 'I am no longer blind'). By extension, the metaphorical expression of the Process demands a metaphorical expression of the (congruent) Phenomenon, which can be encoded either through post-Modification or through a circumstantial element. Hence the force of the expectations following I have a view ...

7.5.5 A further level of detail

Any analysis of ideational meaning must deal with a level of detail further to that which has so far been discussed. Up to this point, only the general structural elements of the clause have been discussed, and expectations affected by lexis have centred on the lexical Head of nominal groups or the lexical verb of the process. Yet the other components of these elements are equally important to ideational meaning in the clause. It is, for example, critical in this text that the speaker refers to none of the factory chimneys, rather than to, say, factory chimneys, and the speaker herself contrasts the examples of firing into the air as opposed to against the buildings (lines 26-27).

Note that as with the basic grammatical structure of the clause as a whole (as in participant^process^participant), the basic grammatical structure of these groups is uninformative for our purposes. Again, appeal must be made to lexical factors in order to more fully understand the ideational meaning being expressed in the clause. Of course this observation is equally true for a synoptic perspective, but the dynamic perspective seems to highlight the issue: as a path of ideational meaning unfolds, it is important to understand how each component confirms, adds to, or shifts the ongoing expectations. In lines 7-11, for example, each line has the same structural pattern, but is distinguished by the lexical detail. Each line follows the pattern there is/are ..., and what follows exemplifies a facet of the city 'not being at work'. Within each line, there is virtually no ideational meaning expressed until the element following the process: both there and are do of course play structural roles, but are most informative in terms of Theme and Mood analyses; in ideational terms, the 'real' content

comes with the final element (no ordinary traffic, no commercial vehicles and so on).

There are several other examples in which the dynamic perspective highlights the significance of this level of detail. This occurs in the particularly long clauses which are sustained by extensive post-Modification of the final participant or by numerous circumstantial elements. In structural terms, and particularly as these items occur towards the end of the clause, these elements add very little to the ideational analysis. And yet, they greatly add to the overall ideational path which is developed in the clause. Line 30 is perhaps the most extreme example of this:

> I've also seen in the last hour smoke billowing from an area about half a mile from us on the ring road where there were a lot of army lorries which were immobilised two nights ago before the firing the shooting started.

In the presentation of the unit analysis in the appendix, it can be seen that from an area opens a circumstantial element which is in fact continued to the end of the clause, but, as the primary path continues to unfold (as carried by the circumstantial element), a secondary path opens up, which in turn opens up a path which is secondary to it, and so on and so on. A great deal of ideational information is in fact contained in this long circumstance; it can only be accessed if it is recognized that the elements of the secondary paths need to be analysed for their lexical detail.

This discussion of ideational meaning from a dynamic perspective has asserted rather than demonstrated the analysis, and while it was stated at the beginning of the discussion that this would be the most radical of the metafunctional analyses, the analysis has been suggestive rather than comprehensive or replicable. The reason for this is that ideational meaning

pushes a dynamically oriented analysis to its limit: the synoptic description with which we are familiar is so heavily based on a global perspective, that radical changes are necessary to effect the shift in thinking which is required to accommodate a dynamic perspective. This may be thought to be a limitation of the suggested analysis, but it is in fact one of its strengths: the dynamic analysis has not tried to make classifications where none exist. This reflects directly on Halliday's synoptic analysis of transitivity, the implication being that categories such as Actor, Goal, Senser and so on are valid only because of their relationship with the process.

In summary, there are two key factors to be drawn from our initial analysis of ideational meaning from a dynamic perspective. Firstly, it is suggested that the fundamental pattern of initial generality and later particularity in terms of expectations will always be true when ideational meaning is examined from a dynamic perspective. Secondly, the grammatical analysis on its own must be complemented by an analysis of lexical detail, including the lexis of elements in paths which are secondary in terms of a unit analysis. A probable objection to a dynamic analysis of ideational meaning will of course be the argument that it is the clause as a whole which carries ideational meaning (that is, it is the clause as a whole which represents a process, in which all the elements are an integral part). For this reason, it will also be argued that it is entirely appropriate to analyse ideational meaning from a global point of view. We certainly concede that such a global perspective provides a convincing account of the paradigmatic potential of a clause in ideational terms. But as with every other exemplification of a dynamic perspective, the global, synoptic analysis does not enable the process of reception to be accounted for, nor does it provide a convincing account of the way in which novelty or markedness may be

achieved by a producer. Further, the application of a dynamic perspective to ideational meaning encourages a re-evaluation of the relevant categories; in particular, it seems necessary to re-examine the interrelationship of the transitive and ergative descriptions.

7.6 Simultaneous unfolding of the metafunctions

The preceding exploration of a dynamic perspective on metafunctions examined each metafunction in isolation, in order to explain and discuss each in its own terms. However, in an actually unfolding text, all the metafunctions would unfold simultaneously, in the same way that in a synoptic analysis, every metafunction is seen to be reflected in some way by every part of the clause. The different metafunctional paths should not be seen to be competing with each other, but rather to be informing and clarifying each other as the text unfolds. A discussion of some examples from the sample text should illustrate the principles by which this operates.

Line 9 in the text provides a relatively straightforward example: there is no ordinary traffic. The first element in this example is there: the unit analysis shows that this can be a complete nominal group, and suggests that it is highly unlikely that the group would or could be sustained. Thus, in thematic terms, there is definitely at least part of the Theme, being in all probability the whole (topical) Theme, and possibly the first part of an extended Theme as described in 7.3.1.1. It is also quite probably Subject, although another element could take that role (and if that happened, the analysis of theme would be extended to cover that element as well). If there

is the Subject, then this will be interpreted as being 'what the clause is about', and will be the basis for any further ideational expectations.

The next element, is, marks a definite shift to a Finite element (either a Finite on its own, or a Finite fused with the Predicate); simultaneous with indicating the Mood (declarative), the step signals that the Theme for this clause has been completed. Further, it begins to provide more (although not very precise) ideational expectations. It is possible that is could just be an auxiliary, indicating something of the tense of the process, and hence deferring our expectations for the lexical verb. Or, it could be the main verb (and hence a relational process), giving rise to expectations about the next participant. Given the pattern of the clauses preceding this line, the relational process alternative would be strongly favoured, and these preceding patterns would also help inform the expectations, in semantic terms at least, for the next participant (that is, that it will exemplify the fact that the city is not at work). Note that if the analysis was de-contextualised, the combination of there and is would give rise to a very broad range of expectations for the next participant.

The next element is no; significantly, this is no longer of interest to the thematic analysis, and is of little interest to the mood analysis, other than that it confirms that the preceding element was both Finite and Predicator. Most importantly, no adds to the ideational analysis: as it marks a shift into a nominal group, it confirms the analysis of is as a relational process. Also, if the patterns of the preceding lines are indeed being followed, the semantic expectation will be that the remainder of the nominal group will be an aspect of the city 'at work', negated by the determiner. By this stage, expectations can also be posited about the number of the Head of the nominal group: it will be an uncountable, mass noun (for

example, electricity), although there is little to suggest anything further about the Head or about what might intervene. The step into ordinary, while not strongly prospected by the path up to this point, causes no great surprise, and again, adds marginally, but not significantly, to expectations regarding the nature of the Head. It would, perhaps, be a little surprising for this to be followed by something like electricity, a phenomenon which typically is either present or absent. The phenomenon modified by ordinary is more likely to be one which may exist in different types of states, on a cline from typical and ordinary to atypical and unusual, but still recognisably an instance of that state. The last step in this line, traffic, again fits into the relatively broad expectations so far posited, and succeeds in adding to the understanding of ideational meaning in this line. The ideational path could continue to develop if other participants or circumstances are added to the line, but again, the path up to this point does not prospect anything particularly specific in ideational terms.

It is most interesting to compare this example with line 15, which has already been referred to on a number of occasions in this chapter. The line is and there this morning protesters gathered again after dawn. Leaving aside and, which sustains the unit path without necessarily pre-empting the next step, the first element is again there. The same expectations would be posited as above: that it is at least part of an extended Theme , and possibly the whole (topical) Theme, in which case it is conflated with the role of Subject. But it should be noted that in an unfolding perspective on the text as a whole, it would be observed that the line preceding this ends with a specification of place, ...to Tiananmen Square, which would encourage a reading of there as being a circumstance of Location rather than as an 'empty' participant. The next element is this, and the expectations for Mood

have to be significantly reweighted, as the path in which there was a potential Subject cannot have been taken up. This is now more likely to be, or to be part of, the Subject. Another effect of this step is to extend the Theme analysis: the latent potential of the current element, this, to be a Subject (whether or not it turns out to be), forces the Theme analysis to be brought forward to this point. In ideational terms, very little information has been added by this element.

The next unit seen is morning: this sustains the group opened by this, and carries over the expectations for Mood and Theme. However, because it is most likely to be functioning as a circumstance in ideational terms, the expectation for the element to be Subject is lowered (as the element is more likely to be part of the Residue, with Subject yet to come). This will again force the Theme analysis to be brought forward. The following element, protesters, sustains the Theme and Mood paths, but while the unit analysis might allow for this to be sustained (through post-Modification or addition of other participants), there would be a strong expectation here that protesters will be Subject. Simultaneously, because of the Mood expectations, there would be a strong expectation that the Theme is about to be completed, and Rheme opened. Further, protesters adds significantly to the ideational analysis: it is certainly a participant, and expectations as to what sort of processes the protesters will be involved in can be derived from the lexical specificity of the element, its morphology, and the Field component of the ongoing frame. In structural terms, and in conjunction with the Mood expectations, it is highly likely that the process will in fact be the next element to occur. The next element, gathered, represents a fused Finite and Predicator, and so not only defines and completes the Mood (declarative, with

protesters as Subject), but signals that Theme cannot be further developed, and that Rheme has been opened.

Expectations from this point now pertain to ideational meaning only. The earlier elements of this line give some circumstantial information, and we now have the core of the event represented by the clause: protesters gathered. From here, the expectation could be either that this is an intransitive process, with protesters as Medium, and hence no expectation for further participants (although further circumstantial information would be possible), or that it is a transitive process, with protesters as Agent, and hence the expectation for another participant. Either is possible in this context, although the latter is perhaps a little less likely, given that at this stage in the text, the frame has no primed participant which could take up the role of Medium in this clause. The following step in fact takes up the intransitive potential of the process, adding a circumstantial element, again. (The other path is not entirely eliminated by again, but becomes less likely.) The step into again represents an important addition to the ideational path: the event being reported is not a unique occurrence, but part of a series of such events. From here, it would again be possible for further circumstantial information to occur, although nothing in particular encourages this expectation. Another circumstantial element is, in fact, added (after dawn), but this does not add significant detail to the ideational meaning: it is very similar to an earlier circumstance (this morning), and while not being synonymous with it, adds only a shade of detail to the ongoing frame, and so does not greatly influence further expectations.

The discussion of these two examples has indicated some ways in which the context and preceding text contribute to expectations formed as the text unfolds, but most importantly, it has illustrated how the metafunctions

unfold simultaneously within a clause, highlighting the interaction between them. From a dynamic perspective, a fascinating complementarity arises between the metafunctions. When a clause begins to unfold, the metafunction about which most can be said is that of textual meaning: the extent of the Theme may not be known, but it is certain that the Theme has been opened. In terms of interpersonal meaning, a strong hypothesis can usually be posited about the nature of the Mood and the identification of the participant, but further elements must be seen before the hypothesis can be confirmed. The first element will typically give some information about ideational meaning, but not sufficient to posit strong expectations for the rest of the clause. The next critical developmental point for the metafunctions in the clause is the point at which the Mood can be defined. Theme will be carried forward to this point, and the step into a Finite enables the Mood to be identified. For ideational meaning, this signals that the core of the event, the process, either is being or is about to be expressed, and thus this step is a pivotal point in ideational terms. Following this step, however, the analyses of Theme and Mood become uninteresting, and it is in ideational terms that the rest of the clause is evaluated.

The following diagram represents this interaction of the metafunctions; it shows that the analysis of textual meaning, in terms of Theme (we have not accounted for the complementary textual system of *information*), is highly informative at the beginning of the clause, but that it trails off as the clause unfolds. On the other hand, the analysis of ideational meaning is uninformative at the beginning of the clause, but expands as the clause progresses. Like Theme, Mood has its weight at the beginning of the clause, but in the early stages, it is never as informative as Theme, and cuts off abruptly once the Finite is reached. It is therefore presented as a box, the

right-hand edge of it providing a pivotal, cross-cutting point between the other two metafunctions. Further, Mood is embedded in an interpersonal strand of meaning, which we have hitherto not discussed in detail because of its relevance to the domain of lexis, but which is able to filter through the clause at a variety of points.

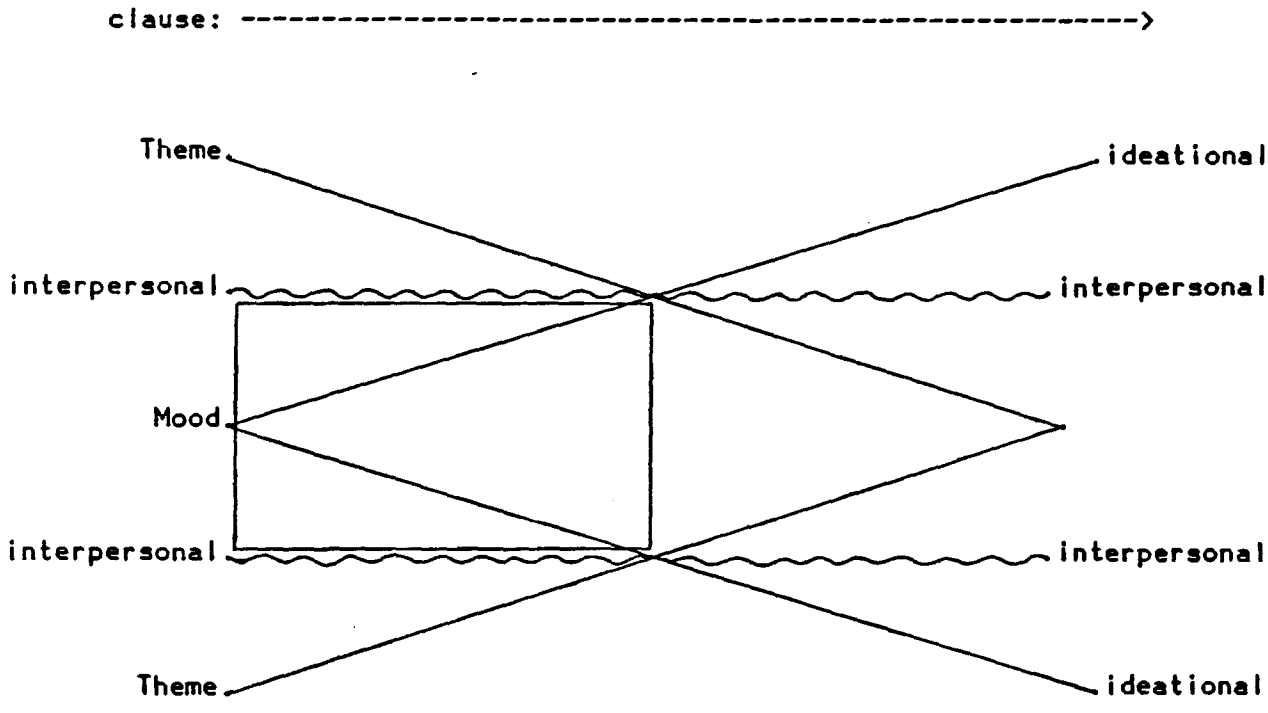
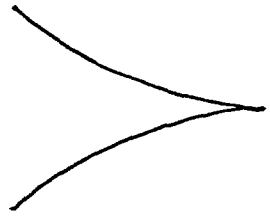


Fig. 7.1 Simultaneous unfolding of metafunctions within a clause

In the figure, there is a mixture of metafunctional labels and names of grammatical systems: *ideational* and *interpersonal* meaning are retained because the grammatical analysis pertaining to the former is a mixture of transitivity and ergativity, and because the latter encompasses several lexicogrammatical systems, predominantly modality but also attitudinal lexis. *Theme* is presented instead of textual meaning, as the latter also encompasses the system of information (as carried by the Given/New structure), which we

have not accounted for. Similarly, *Mood* is presented as a separate component within the interpersonal strand.

The figure is not presented as a truism for all clause types: a clause beginning with a process, for example, would present a different weighting of the metafunctions. However it is presented as a strong, general tendency when the metafunctions are considered from a dynamic perspective. It is interesting to compare this figure with Bolinger's (1952) conception of the sentence as a 'complex semanteme': a pointed structure with hyperbolic flaring sides, viz:



This structure represents the fact that in a progressively developed sentence, "beginning elements have a wider semantic range than elements towards the end." (Bolinger 1952:1117) He goes on to elaborate this position (p1118):

> Before the speaker begins, the possibilities of what he will communicate are practically infinite, or, if his utterance is bound within a discourse, they are at least enormously large. When the first word appears, the possibilities are vastly reduced, but that first word has, in communicative value for the hearer, its fullest possible semantic range. The second word follows, narrowing the range, the third comes to narrow it still further, and finally the end is reached at which point the sentence presumably focusses on an event ...

While our figure is somewhat different to Bolinger's, the two positions are not so far apart: initially, a broad range of expectations and possibilities exist, but they are narrowed or reweighted by further elements.

Bolinger's position is perhaps closest to ours with regard to ideational meaning: while our diagram represents the ideational path as growing as the clause progresses, complementary metaphors are equally appropriate, including Bolinger's of the initially broad range being narrowed down to a finer point. The main point of difference between our diagram and Bolinger's is the more elaborate conception of meaning in the former. This draws on and reinforces Halliday's description of the metafunctions, showing that each has a separate and important role to play in the clause. Also, in our figure, the conjunction of the different metafunctional analyses coincides with the process element, and this parallels the centrality of the process in the synoptic analysis of ideational meaning. However, in our exploration of a dynamically oriented analysis of the metafunctions within a clause, we have demonstrated where and how the metafunctions differ in terms of their contribution to the development of an unfolding clause.

7.7 Towards an inter-clausal analysis of metafunctions

The analysis of metafunctions so far has explored unfolding paths within a clause; the analysis of the paths between clauses is something quite different again. If a text as a whole is to be analysed, it is critical to be able to explain the unfolding path patterns and how they contribute to the text. In the preceding discussion, the effects of an inter-clausal analysis have occasionally been alluded to, and here they are examined more closely.

It will soon become apparent in this brief exposition that the unfolding text as a developing whole must be accounted for to adequately explain the inter-clausal patterns. It is not enough to just take two clauses from the middle of a text and discuss how one sets up expectations for another.

Rather, a frame must be brought forward with the text, accounting for context, the previous history of the text, and experience of the system. This should also be true of the intra-clausal perspective, although such matters were largely ignored there to allow the explanation to get off the ground. As for the intra-clausal analysis, we will begin with an exploration of the path steps for each metafunction in isolation, and then examine the metafunctional paths unfolding simultaneously.

7.7.1 Textual meaning

The analysis of Theme between clauses is far more interesting than that within a clause, as patterns can be perceived over a series of clauses, showing how the text is organising its messages. Daneš (1974), Fries (1981) and Francis (1989) all explore this aspect of Theme in depth. There are a variety of ways in which a thematic path can be developed in a text. For example, the thematic element of one clause can be repeated in the next; an element of the Rheme can be picked up as Theme in a following clause; an aspect of Theme or Rheme can be picked up as Theme in the next clause through a lexical link, and so on.

These developments can be described in path terms. When describing inter-clausal patterns, the extent of a step is the clause. The first clause in a text opens a path of thematic development. The next step will be seen to *continue* the current thematic path if it repeats the Theme of the preceding clause. If the Theme of the next clause can be related to the Theme or Rheme of the preceding clause, then this constitutes a *change* step. A Theme which cannot be related to the Theme or Rheme of the preceding path *completes* that path, and opens a new one. A completing step in thematic

terms must still be part of the general expectations posited by the initial frame, otherwise it will be interpreted as an *abandonment*, making it difficult to interpret that Theme in relation to the text as a whole.

Some examples from the sample text will serve to illustrate the path steps. There are several examples where a preceding Theme is continued, as in lines 7-11, all beginning with there. Most of the thematic development in the text is achieved by change steps, as in line 2, where the thematic it picks up the city from the Rheme of the preceding line. Similarly the Theme of line 20, the senior medical officer at the hospital can be related to elements of Theme and Rheme from the preceding lines. An example of a completing step is found in line 14, with down below to the right of me. This cannot be related to any preceding Theme or Rheme, and so completes the preceding path, and opens a new thematic path.

Clearly, these examples provide only a bare outline of the path steps in this analysis; numerous complexities are possible, but we wish only to indicate how the analysis would apply. But having looked at the sample text in such detail with regard to other analyses, it is interesting to present some comments on the way Theme is developed in the text; these comments are presented from a synoptic viewpoint, but as always, pertain to a dynamically oriented analysis.

In terms of what might set up the thematic potential and expectations in the first place, both the producer of this text (the reporter) and its receivers (people listening to the radio news) know the general background to this text (particular events in China). They will also be aware of the typical patterns and roles of such reports: to give whatever information is available about the event; if none is available, to give any background

information which might be relevant; perhaps to give opinions or assessments about the event. The news anchor introduces the text by relating it to preceding news items about the same event, and noting that a correspondent, Kate Adie, is in the city at that moment. She introduces the reporter, Adie, and says what can you see from where you stand? Thus for this text, potential and expected Themes immediately tend towards the 'background information' type: aspects of the current events, perhaps relating to its location (for instance, Tiananmen Square), its participants (protesters, soldiers, officials), its consequences (for instance, injuries and deaths) or the reporter's observations or opinions on these. These options will be weighted towards the top of the stack of Theme expectations. It would be extremely unlikely for the text to have any Themes relating to other political situations, to events which have nothing to do with current affairs, or to some personal aspect of the reporter's life, for example. While such Themes would not be expected in this context, they could be made relevant through use of particular devices (such as drawing a parallel between the event in question and another otherwise unrelated one), but the need to make them relevant in such a way serves to highlight their unusual nature.

The initial thematic selection chosen by the speaker is I, and this Theme, in combination with the Rheme, modifies our expectations for further thematic development. At this point in our analysis, the weighting of options in the frame centres on I and its associated Rheme: it is most likely that further Themes will be related to these. It would also be possible for the next Theme to open a new and unrelated Theme path, but - apart from the fact that a hearer would make every effort to understand the new Theme in

light of the preceding one - it would be extremely unlikely that such a radical shift would occur just as the text has begun.

As the text continues to unfold, each actual Theme will modify the associated stack of expectations in the frame. While a Theme path can always be completed by an element opening a new Theme, we suggest that such completing steps must always still be taken from the overall frame, otherwise an overt marker of their unusual status must be used, as noted above. In the sample text, it is significant that every completing step, marking a radical shift in Theme, is signalled in an overt way. An examination of the Theme patterns and major shifts in the text will illustrate this.

The Rheme of the first line of the text (the reporter's 'view of the city'), sets up a general resource of potential for subsequent Themes. Following this line, there is a sequence of Themes related to aspects of the city: none of the factory chimneys, none of the cranes, most of the shops, as well as pronominal forms of these, and semantically empty Themes (there), in which case aspects of the city can be found in the Rheme (as in there are no commercial vehicles). Line 14, down below to the right of me... marks a significant break with the preceding patterns; we will see below how it is the nature of the Theme itself which signals this shift. The line is still concerned with the city, but now focusses on the city in terms of its physical layout. Following this line, a new cluster of Theme patterns is found: line 15 is linked to line 14 textually, by and, and through the Rheme of 14 (Tiananmen Square) being picked up in the Theme of 15 (there); however, new elements are also added: this morning and protesters. Protesters and the participant they are associated with, troops, constitute the Themes of the next few clauses.

Another Theme shift occurs in line 18, which again begins with I. While this does not relate to the preceding Themes, we are not surprised in the context of the text as a whole that the reporter has returned to her perspective. The Rheme of this line, relating to a hospital, forms the basis for the thematic patterns over the next few clauses, up to line 25. Line 25 begins with along the main road we ..., which again does not relate to the immediately preceding Themes or Rhemes, although as it picks up a location in the city, it is appropriate in the text as a whole. The Theme and Rheme of this clause can be seen to set up the thematic patterns in the following few lines, until line 30, which begins with I. The patterns triggered by this clause are sustained until the end of the text.

There are therefore clear ways of indicating that a radical shift in Theme patterning is about to occur. In this text, two types of Theme achieve such completing steps: the reporter's I, and a Theme with fronted circumstance, as in down below to the right of me and along the main road. While it is not the case that every instance of these devices would necessarily achieve this step (for example, there this morning in line 15 picks up part of the preceding Rheme), it does seem to be the case that in this text, these devices set up a strong expectation for a shift in Theme to follow. It is suggested here that they are probably typically used for this purpose in this text type in general (that is, in a reporter's account of current affairs), and that most text types would have their own particular way of signalling radical shifts in the Thematic path. (In a casual conversation, for instance, it would obviously not be uncommon to have I as a frequent Theme, and so in that context it would be unlikely to take the role of radically shifting the Thematic path.) Davies (1989) and Enkvist (1989)

make similar observations regarding the role of fronted Adjuncts in thematic development.

While the preceding discussion is not intended to be a comprehensive exposition of thematic development in the text, there should be sufficient detail to indicate the way in which path expectations are built up and altered in relation to the textual meaning of the text.

7.7.2 Interpersonal meaning

It is rather difficult to capture the unfolding of interpersonal meaning in a text, simply because the most significant grammatical realization of interpersonal meaning, *Mood*, tends to be constant throughout. In the sample text, for example, while it is opened with an interrogative from the news anchor (what can you see?), it otherwise consists entirely of declarative clauses. This is of course a functional choice - the report's entire text is a response to the anchor's question, and an interrogative on the part of the reporter would disrupt that. Some text types may give rise to an expectation for more variation than is the case in this text, as in a job interview, where there would be switches between declaratives and interrogatives. However in this text, as it is a reporter reporting a news event, no such expectation arises. Were a switch to an interrogative or imperative to occur, this would undoubtedly be marked, and would probably indicate special contextual circumstances, such as the reporter's need to clarify something with the news anchor.

This situation is not problematic for the path analysis: it can simply be recognised that Mood paths, once opened, are typically sustained for the

duration of the text. Changes to the Mood path would include switches in polarity or the introduction or modification of modality. But this does not seem to be saying a great deal about the unfolding of interpersonal meaning in a text. Lemke (1991) observes that there do seem to be complex interpersonal patterns unfolding in texts (such as subtle changes of tenor between participants in a conversation), but that they are difficult to capture with the grammatical analysis of Mood. We most certainly concur with this. There are, nevertheless, some interesting observations to be made about interpersonal meaning in the sample text.

Firstly, the components of the Mood and Residue elements (the nature of the Subject and so on) seem to have a significant effect on expectations as the text unfolds. As with the analysis of Theme, the components of the Mood elements (in terms of their ideational content), tend to occur in clusters; that is, for the space of a few lines in the text, there will be a general 'pool' of items from which the elements of Mood and Residue will be drawn. Once this pool is established (as part of the frame of the text), it is to be expected that further elements will be drawn from the same pool, unless there is a contrary indication. Signficantly, the content of these pools changes radically under two circumstances. In the sample text, when elements of the Residue precede the Mood component (as in line 14 down below to the right of me), or when the Subject is realized by I, most of the Mood and Residue components tend to change dramatically. This coincides with the radical shifts in thematic patterning observed in the preceding section.

A second observation relating to the interpersonal meaning of this text is that in line 27, the reporter's well no gives rise to the expectation for a change or completion of Mood, as in well no, are they? This possibility is not in fact taken up; the expected contrast occurs in ideational meaning

(they're firing against the buildings instead of into the air), but the example highlights the potential for Mood expectations to be affected by particular elements.

Another interesting feature for text development is the possibility of branching part of the Mood structure rather than repeating it. Lines 33-34 are an example of this, where two different Residues branch off from the same Mood component: they're moving in buses as new barricades at most of the intersections and defiantly setting fire to them. And signals that some feature of the preceding clause is to be sustained, but it is by no means certain that this will be the Mood component. The Mood is therefore posited as a deferred expectation, and as the clause continues to unfold and the expectation is never met, it must be understood that the Mood has been carried over from the preceding clause. This would be one of the options available to the speaker for concatenating Moods, and an option which would not cause the hearer any surprise.

The analysis of modality and attitudinal lexis is of course also an important part of interpersonal meaning. The contribution of these components would be not so much to an unfolding path per se, as to the frame of the text. As with all other analyses, the initial context of the text would give rise to certain expectations: given that the sample text is presenting the reporter's observations on a current situation, we may have expected a higher degree of modality and attitudinal lexis than actually occurs. Only the first line has an instance of modality, and only a small degree of attitudinal lexis occurs, all towards the end of the text (raking, billowing, huge...) Some of the lexical choices are indicative of attitude in an ideological or political sense: the fact that the reporter refers to one set of participants in this text as protesters indicates a particular attitude which would not be

found in a report from the Chinese government on the same event (cf Thugs frenziedly attacked People's Liberation Army troops ...; a statement from the Peking Government Martial Law Headquarters, as quoted in *The Independent*, 5-6-89, pg.10; it is of course not only the attitudinal lexis which differs). On the whole, however, the sample text does not provide a rich illustration of these factors.

7.7.3 Ideational meaning

Once a path of ideational meaning is opened in a text, it remains open until a subsequent clause cannot be interpreted as relating to preceding ideational choices in any way. This of course means that the text must be considered progressively, as it unfolds: the last line of the sample text, because they're all unarmed does not appear to have much in common with the ideational choices in the first line, I have a view out of the window ...., although ideational developments can be traced through the text which lead up to the last line.

However considerable further work is needed to determine what might constitute the criteria for continue or change steps between clauses. There are a variety of ways of relating clauses ideationally and the effect of these alternatives on path development needs to be further explored. For example, the basic clause structure may remain the same, but the components of one of the elements may change, as in lines 9 and 10, there is no ordinary traffic, there's no public transport. Or, the nature of the participants and process may remain the same, while the roles of the participants alter, with, for example, a switch from active to passive. Towards the end of the text, for example, people (meaning the protesters) comes to the fore in line 32 as

Agent, whereas in the preceding lines, they are only implicitly present. Such changes seem to be significant developments in the unfolding text, although at this stage it is difficult to categorise them in path terms.

Further, the changes which are effected by lexical links seem open to categorisation and classification. To give just a few examples of the types of links found in the text, there is the meronymic relation between city and factory chimney, the referential relation between noun and pronoun (as in the troops - they), or the relation of congruent and metaphorical forms, for instance between an initially congruent form and a later grammatically metaphorical form (as in thousands injured related to the later example of the injuries). Halliday and Hasan (1976) give a system of classification of lexical links which would begin to account for these relations, and Hoey (1991) extends this system, providing a more textually oriented account. It is beyond the scope of this thesis to deal with such classifications at this stage, particularly given the lexical (as opposed to a more strictly grammatical) nature of this ideational potential.

In terms of what sets up the ideational expectations in the first place, the general situation of the text provides the reporter with the potential to discuss anything relating to the events in question in China. This sets up broad expectations for Field in the frame of the text, and early selections will reweight the stacks. Although the announcer leads in with a specific question (what can you see?), it is known both by the reporter and by the audience that such a question serves only as a springboard for the reporter's text, and is not designed to restrict it in any way. Thus the receivers of the text would be unable to predict exactly what participants and processes will be relevant; however they would be able to recognise when an ideational selection fell outside the general range. From the producer's point of view,

it would be known that, unless a clear signal is given to the contrary, the next part of the unfolding text will be interpreted in light of the current one, so if a new ideational path is to be established, this must be clearly signalled to avoid confusion. Receivers would be attuned or would become attuned to the signals in the text that a general path is about to shift.

The preceding discussions of Theme and Mood have already identified several major 'chunks' of patterns in the sample text, and such patterns are also evident in the case of ideational meaning. The first cluster of ideational selections extends from line 1 up to line 13. While the lines in this section have a variety of participants, processes and circumstances, it can be seen that each line is 'about' the same thing, namely the city, and more specifically, the fact that it is not at work. This general ideational path is completed by line 14: down below to the right of me is the main road leading to Tiananmen Square. Or more precisely, given the radical shift in Theme and Mood in this clause, and the tenuous ideational link of this line with its predecessors (Tiananmen Square is part of the city, although the line does not seem to be related to the working aspects of the city), the expectation is that the ideational path will also shift. In fact, this clause tells us little in ideational terms: it specifies a location, but says little else. However the next line, 15, confirms the potential to shift paths, and with there this morning protesters gathered again after dawn, a new ideational path is opened, with a new participant-process configuration.

This general path extends up to line 18, I spoke to a man at the hospital which is nearest to us, which introduces another participant-process configuration. Note that while this is a marked change from the preceding part of the ideational path, it is not unexpected in terms of the overall frame of the text, as the reporter has the potential to express her role in

the event, and to talk about various aspects of the event. The ideational potential of line 18 enables a different ideational path to be developed from here: the participant a man at the hospital is used as a springboard to introduce a variety of participants and processes related to hospital (such as casualties received, deaths continuing and so on).

Another shift in the general ideational path is effected by line 25, along the main road we have seen tanks rolling this morning, and army convoys of armoured personnel vehicles. The first part of this line, along the main road is the signal that the path is likely to change, and the rest of the line confirms this. The lines immediately following this take up the potential of the 'new' participants, tanks and army convoys to describe what they are doing (pot-shotting, firing into the air).

This path continues up to line 30, I've also seen in the last hour smoke billowing ... This line can still be related to the preceding path, but here the focus is on smoke (I've seen smoke) and on army lorries being immobilised. Interestingly, line 32, while having strong lexical links with its preceding lines, seems to be effecting a subtle but significant change in the ideational path. The line begins this concerns what some of my colleagues who've been out this morning have seen that ..., and the projection set up by seen seems to set up the potential for an ideational shift. What is projected is despite all the huge numbers of troops, people are still setting fire to buses. While fire relates to the huge columns of black smoke mentioned earlier, and while troops relates to a lot of army lorries, people are now the focus of the path: what they do or are able to do, because of their current state of affairs. This path is sustained until the end of the text.

7.7.4 Simultaneous unfolding of metafunctional paths

The discussion of the metafunctions as they unfold between clauses has highlighted the difficulty of defining the criteria for path steps between clauses in terms of the individual metafunctions. Part of the reason for this is that the metafunctions of course operate in conjunction with each other, and variations in one may impact upon the others. For example, the nature of the participants and processes may be the same between two clauses, but a shift in Theme may alter their ideational configuration; the difficulty is then in deciding whether this constitutes a change in ideational terms or not. We will not further explore that difficulty here.

Within the clause, clear examples of the impact of metafunctional choices on each other were given in relation to clauses beginning with multiple ideational elements. There, it was shown that Mood played a significant role in delimiting the extent of the Theme (bringing it forward to the point at which a step into Finite occurs), and in providing a dividing line between an unfocussed and a focussed ideational path. Similarly, between clauses, the metafunctional paths interact. The preceding discussion of textual, interpersonal and ideational meaning has already highlighted several points in the sample text where all the metafunctional paths shift radically at the same time; these points (lines 14, 18, 25, 30, 32) signal the major semantic developments in the text.

It is also possible for only one or two of the metafunctional paths to change, while another remains constant. This also alters the overall semantic development of the text, but in a way which is less marked than the cases where they all change at the same time. It should be noted that *phasal analysis* also aims to account for the simultaneous interaction of

metafunctions, in terms of the way clusters of different metafunctional patterns may ebb and flow through a text (cf Stillar 1991; Young 1986; Gregory passim). However, while providing insightful observations as to how these metafunctions interact, the analysis is not undertaken from an unfolding, progressive view as defined here.

7.8 Brief summary of the chapter

In this chapter, we have presented an initial analysis of metafunctions from a dynamic point of view, as they unfold both within and between clauses. Because the relevance of a dynamic perspective is less obvious for an intra-clausal than an inter-clausal analysis of the metafunctions, the analysis was pursued in greater depth for the former case. The application of a dynamic perspective produced interesting results for all of the metafunctions; in particular, it forced the notion of Theme to be extended, it questioned the analysis of Mood, and also questioned the categories of the ideational analysis. The impact of the unfolding of the clause on the interrelation of the metafunctions was also explored. The exploration of the metafunctions as they unfold between clauses revealed interesting points of development in the sample text. Much work remains to be done in order to provide a comprehensive and replicable analysis of these various areas, but the basic principles and implications have hopefully been demonstrated.

It will have been noted that certain examples from the text have been repeatedly analysed for different purposes. For the sake of convenience, we present below the sections in which such lines have been discussed.

line:	Section:
1	7.3; 7.4; 7.4.3; 7.5.4
3	7.3.1; 7.4; 7.4.3; 7.5.2
15	7.3.1.1; 7.4; 7.4.1; 7.4.4; 7.5.3; 7.5.4; 7.6
33-34	7.4; 7.4.3; 7.7.2
36	7.3; 7.4

CHAPTER 8

CONCLUSIONS

8.1 Overview of the thesis

In contemporary linguistics, the understanding of language from a dynamic perspective has become an important goal. This thesis has attempted to contribute to the achievement of this goal, by fleshing out the fundamental components of such a perspective, and by applying the resulting model to the analysis of grammar.

In Chapter One, we defined the type of dynamic which was to be the focus of the thesis: that of an unfolding text. The concern with language as an unfolding, active process contrasts with the predominant linguistic - and general scientific - bias toward state rather than process, and the thesis has aimed to contribute to a redressing of this bias. In particular, we centred the thesis theoretically within the systemic functional school of linguistics.

The motivation for the thesis was discussed in Chapter Two, deriving from the work of Martin and Ventola and their development of theory and technique for the exploration of a dynamic view of language. Martin's work was critical in defining the relevant parameters for a study of this perspective. Most importantly, he clarified the need to understand language as both product and process. Ventola's work provided new techniques for analysing language from a dynamic point of view, developing flowcharts as a means of representing service encounter interaction. Yet a tendency in both these works to focus on a certain type of data (for example, spoken,

interactive texts) or a certain level of description (for example, generic structure) obscured the opportunity to explore the dynamic perspective in relation to potential. To maximise this opportunity, we argued that it was necessary to treat the dynamic perspective as something independent of the data or level of description to which it is applied. This is one of the key points of the thesis: that we are developing a dynamic way of looking at language, in contrast to the dominant synoptic ways of looking at language.

In order to explore what it means to take a dynamic perspective on language, Chapter Three established the characteristics of a dynamic perspective. A dynamic perspective is one which takes a progressive, unfolding and active view of text, rather than a totalising, global and static view. This means that choices are considered as a text unfolds, and so the syntagmatic dimension of choice is highlighted. It is therefore necessary to be able to compare expected with actual choices, to have a flexible definition of choice, and a probabilistic account of choice. An active view is facilitated by accounting for the context of the text, experience of the system, and previous history of the text. A schematic model was presented at the end of Chapter Three to illustrate how these different components interact.

More formal ways of modelling a dynamic perspective were examined in Chapter Four, including dynamic system networks, flowcharts, systemic flowcharts and augmented transition networks. These all provide alternatives to the standard systemic network, which is not suited to dynamic modelling because of its orientation to explosive generation. However, while the models examined are able to overcome the limitation of explosive generation, by generating moment-by-moment, they are not able to give a functional value

to the unfolding of a text, which was argued to be a limitation of these models.

The functional implications of a dynamic perspective for language and choice were explored in Chapter Five, where the metaphor of a path was developed to explain choices as they unfold in text. Movement from a current to a next choice was accounted for functionally, in terms of the way in which a next choice could contribute to the development of an unfolding path. Most importantly, the different types of path steps allow for an integration of paradigmatic and syntagmatic accounts of potential. The description of paths was augmented by the metaphors of stacks, accounting for a probabilistic view of choice, and of frame, accounting for text-context interaction as the text unfolds. Also, we introduced the notions of shadow and latent potential.

These general principles were then applied to an analysis of grammar. In Chapter Six, grammatical units, particularly groups and clauses, were analysed from a dynamic perspective. This provided an alternative view of grammar to available synoptic accounts, in particular raising interesting issues regarding the identification of boundaries, the necessity for simultaneous analyses, and the roles being played by particular grammatical items. The dynamic perspective provided not only a different way of looking at familiar phenomena, but brought its own insights to the understanding of language at this level of description. Metafunctional aspects of grammar were explored in Chapter Seven, where the synoptically developed analyses of Theme, Mood and Transitivity were re-examined from a dynamic point of view. The notion of a shadow Theme was introduced, and aspects of the Mood and Transitivity analyses were questioned. Again, the dynamic perspective brought

its own insights to the understanding of the textual, interpersonal and ideational meaning potential within and between clauses.

8.2 Implications of the study: theoretical implications

The thesis has demonstrated that not only is it possible to formulate and apply a consistently dynamic perspective to language, but that such a perspective is interesting in its own right and insightful for what it enables us to say about language. The attempt to clarify and define what a dynamic perspective is has enabled a model to be developed which incorporates the characteristics reflecting this perspective. The application of this model to data which is normally treated from a synoptic point of view, has enabled this data to be seen in a new light, showing that the statements and assumptions made about language are indeed dependent on the perspective adopted. Or put the other way around, it has shown that the nature of the perspective and the nature of the data are independent, and that recognising this allows the maximum use to be made of the insights offered by complementary perspectives.

One of the most important implications of this study is the extended notion of choice arising from the dynamic perspective. It is a tenet of the systemic functional model that choices in language are functional, and the scope of this assumption has been augmented by demonstrating that choices from a dynamic perspective are also functional. In other words, we have demonstrated that it is meaningful to move forward from a given point in a given text in one way rather than another. The dynamic perspective accounts for paradigms as they open up along the syntagmatic axis, and so adds a syntagmatic dimension to the otherwise paradigmatically motivated account of

choice within the systemic functional school of linguistics. This represents a direct and forceful challenge to current systemic theory, as it queries some of its basic theoretical assumptions. Yet, there is no suggestion that the basic assumptions need to be abandoned; rather, they need to be augmented.

Another theoretical implication to emerge from the thesis pertains to the way in which the boundaries of units are defined. When a dynamic perspective is adopted, the boundary of the unit has to be passed, so to speak, before the boundary can actually be recognised. For example, while a structure may represent a potentially complete nominal group, it is not until a step into another group is achieved that the first group can be said to be completed. Potential points of completion therefore typically set up multiple analyses - that the current unit may end or may be extended by the next step. However, rather than being a disadvantage, this forces the linguist to elaborate how it is that boundaries are defined.

Further theoretical implications relate to the way in which the components of the theory are seen to interact. At every possible level of description - within grammar, in relation to other aspects of language, in relation to context - the dynamic perspective demands a rich and complex integration of different factors. At the grammatical level, for example, the dynamic perspective draws on the same theory of rank that is used in a synoptic description, but exploits it in a quite different way. As a text unfolds, it is essential to continually move up and down the rank scale, comparing the value of the current step at different ranks, in order to facilitate the description. The fact that the 'same' step has different values according to the rank of the description, provides the basis for a useful analytical heuristic. For instance, a completing step at group rank

is parallel to a change step at clause rank, whereas a change at group rank is parallel to a continue step at clause rank. Thus, if we were interested in monitoring developments in the clause, the most efficient approach would be to seek points of completion at group rank. From a synoptic perspective, it is easier to describe (although not necessarily to explain) the units of one rank in isolation from the other ranks. A further modification to the rank theory was the reinterpretation of rankshift as steps between primary and secondary paths.

In metafunctional terms, the dynamic perspective also highlighted some very interesting interaction between the different metafunctions, both confirming the value of Halliday's hypothesis, and shedding some new light on their role and nature. Within the clause, the metafunctions operate in conjunction, as Halliday's hypothesis suggests, but their respective roles seem to vary in importance as the clause unfolds, with each metafunction taking on particular importance at a particular place in the clause. Between clauses, a marked change in one metafunctional path may signal an expectation for changes in the other metafunctional paths.

The analysis of grammar highlighted another type of interaction which is necessary from a dynamic perspective. At many points in the grammatical analysis, it became obvious that other levels of description - semantics and phonology - were necessary to help inform what was happening in grammar. It is difficult to operate a dynamic perspective on one level of analysis in isolation from others. The importance of the relationship within lexicogrammar of grammar to lexis was also brought into light by the thesis, although not necessarily in a way which would give weight to either side of the grammar/lexis 'debate', as mentioned in Chapter Six.

The third type of interaction highlighted by the thesis is that between language and its context. It is virtually impossible to account for unfolding choices in text without accounting for the context which motivates and conditions those choices, or without accounting for the way in which the choices themselves alter the ongoing context. We have tried in the thesis to account for the general principles by which this interaction of language and context unfolding together can begin to be described, by combining systemic notions of register with Emmott's theory of frames. The practical details of this interaction are certainly complex, but the dynamic perspective brings such interaction to the fore.

A further implication of the proposals put forward here is that all attempts at a dynamically oriented description, at whatever level, must incorporate the functional value accorded to the dynamic perspective in this thesis. Thus, while we have not explored the details of descriptions of, say, genre or discourse from a dynamic perspective, future explorations of these areas must take on board the basic characteristics of the dynamic perspective: building the description from current to next, formulating expectations, re-evaluating expectations in light of actual choices, and so on. The exact nature of such characteristics will be dependent on the level of description. For instance, in her study of genre, Ventola explored the discourse systems (such as lexical cohesion) which realize generic stages in her texts. If a dynamic perspective as formulated in this thesis was applied to genre, the analysis would exploit observations about the genre and observations about the discourse system to determine whether a stage had been completed or not. The ability of our model to exploit a rank-based description and to move between different layers of analysis means that it

should be easily extended to other rank-based descriptions, such as Sinclair and Coulthard's 1975 model of discourse.

The fact that we have been able to give all choices a functional value from a dynamic perspective means that it is not necessary to split potential into 'dynamic systems' and 'synoptic systems', as proposed by Martin or Ventola. All steps have a dynamic force from our perspective, whether or not the step itself is overtly dynamic (such as aborting or suspending moves in conversation; cf Ventola 1987:105ff). For example, a step in a path which closes that path by completing it is as dynamic a step as one which closes by abandoning the path. Yet, in other approaches, only the latter case would be seen to be dynamic; the former would be absorbed as part of the synoptic potential of the existing system. Coincidentally, it is the former type of step which is already described by existing systems, and the latter which poses problems for existing systems. But from a dynamic point of view, both options alter the trajectory of the path, and provide the potential for a new path to open. Whether or not such steps are already described from a synoptic point of view, it is their value from the dynamic point of view which we have accounted for. Moreover, because all steps have a functional value from a dynamic perspective, even steps which might be interpreted as 'errors' from another point of view can be interpreted as a functional part of the unfolding of a text. Further, the impact of such an 'error' on the unfolding path can be explained as for any other path step.

8.2.1 Descriptive implications

The ability to explain and analyse a text from a dynamic point of view gives rise to interesting descriptive possibilities. In particular, the

ability to account for unfolding paths in a text enables aspects of both reception and production to be explained. A receiver, for instance, must be able to recognise path developments as the text unfolds. A producer must also be aware of the importance of path developments. For instance, one who is aware of the importance of paths may exploit this to make a text more effective, perhaps overtly signalling a path to ensure that a receiver will be able to follow it; or, on the other hand, he or she may produce a less effective text by failing to clearly signal the main path of a text, path changes, and so on.

It could, for instance, be argued that a mark of 'good' writing would be that of clearly defined paths, preventing misunderstandings by too easily confused paths. The following extract from a magazine article (*The Independent Magazine*, 7 July 1990) presents an interesting example of confused paths[1]. The writer is discussing the demise of real reading in the modern world:

> It is not that we lack room for our books, but rather the space to read them in our crowded day. In browsing through bookshops ... we are enticed to buy books which we would like to read or, more accurately in some instances, would like to have read, to become knowledgeable, fashionable or enlightened.
>
> But our eyes prove bigger than our stomachs. Suddenly it becomes apparent that, at our present rate of reading, we have amassed a year's or even two years' supply. There are even books which we know we will never read, lying reproachfully on our bedside table.
>
> The books I read when I was young - the old Everyman editions of the classics - had been read many times before...

It may not be the case that every reader would have the same problem that this reader did when the extract was encountered. In the last paragraph, I assumed that <u>The books I read</u> was an example of the present tense (as if the author was to say something like <u>the books I read when I'm in bed ...</u>), but I had to adjust this interpretation when I encountered <u>when</u>

I was young. The paragraphs preceding this line have established a certain path relating to tense and time, and there is nothing to signal that this path has been left behind - that the reader has moved from the present to the past. The line is therefore almost bound to be read 'wrongly', because there is no good reason to do otherwise. If, on the other hand, the line had been When I was young, the books I read ..., there would be no problem, as the first part of the line would act appropriately as a signal of the change in path, and so avoid any misunderstanding.

There are many cases where producers do use devices to separate paths which could otherwise be easily confused. For instance in Chapter Five, we noted the case of a news announcer introducing a news item with the phrase In a separate accident ..., in order to prevent confusion with the preceding news item. In other cases, information can be deliberately included to indicate a certain path direction. For instance, in Britain, the inclusion of Roman Catholic in the news headline A 32 year old Roman Catholic ... is a clear indication that events relating to Northern Ireland are about to be discussed. Also, as was illustrated in Chapter Seven, various structural devices can be used to signal changes relating to metafunctional paths.

At a more local level, the idea that a path may move forward in one way rather than another enables plays on meaning to be described from a dynamic point of view. For instance, many jokes and puns can be explained as the exploitation of the shadow potential of items: the joke is set up to create a 'most likely' expectation for the next point, and something unexpected, but nevertheless possible given the scenario up to then, is chosen instead. It also explains the ideological attitudes of some linguistic choices: racism or sexism for instance. The gratuitous inclusion of colour terms to describe a

person, for example, where they are not otherwise highly motivated, is usually interpreted as being racist.

Also, as we saw in Chapter Five, the dynamic perspective provides a plausible explanation for why the area of acceptability judgements is so fraught with disagreement and controversy. The combination of such variables as grammatical structure and frame considerations means that multiple, weighted expectations are posited from a current to a next point; in many cases, acceptability (or 'correctness') is a question of degree, and naturally, individuals are likely to have different cut-off points for what they consider to be acceptable. For instance, even if two people recognise the same criteria in ordering possible options at a next point, for one person it may be the case that only an option at the top of a stack would be acceptable; for another, options lower down the stack might also be acceptable.

8.3 Limitations of the research

While the thesis has been broad in its scope, there are clearly many areas which have not been satisfactorily dealt with. Firstly, we have not fully accounted for the way in which 'slab' choices - such as idioms in the lexicogrammar, formulaic responses in conversation and so on - would affect the path proposals. Slab choices represent a type of frozen path; steps which would otherwise be operative are virtually pre-determined, and this affects the definition of 'current' and 'next' as the path develops. As was noted in Chapter Five, there is a latent potential for the 'frozen' path points to be re-instated, as may happen when part of an idiom is made instantially relevant, but on the whole, the choices are packaged as one

large unit. This is an important area to be covered in trying to develop a dynamic perspective on language, as language consists of many such partly or wholly pre-determined formulaic options.

A most important area of theory which has not been elaborated is that of motivating the selection of one choice rather than another as a text unfolds. We have shown that a variety of options may be possible, and that these options may be ordered in terms of likelihood, and we have also shown the effect for a receiver of a producer choosing a more likely option over a less likely option, and so on. However, we have not described exactly what it is that motivates the ordering of the options, nor what would motivate a producer to make a particular selection. For instance, the motivation for choosing the most likely option could be 'maintain the status quo', while the motivation for choosing a less likely option might be 'create a novel effect' (and that is also how such options would be interpreted by receivers of the text). Motivating factors would operate in conjunction with the frame of the text and experience of the system, as described in Chapter Five, to fully elucidate the way in which choices are made as a text unfolds. At one extreme, a next actual choice which is beyond the expectations set up by previous paths must be deemed to be pathological. At the other extreme, a next actual choice which is an absolute prediction (a slab or fossilised choice) allows no room for motivation at all.

Another area which has been discussed, but not satisfactorily resolved, is that of relating paradigmatic and syntagmatic potential as a text unfolds. We have argued that options become available as a text unfolds, and that these options derive partly from an understanding of paradigmatic potential. However, we have not elucidated exactly how the dynamic perspective draws on existing knowledge of paradigmatic potential, nor how the choices made as a

text unfolds feed back into our synoptic understanding of potential. The means are available to describe potential from a synoptic point of view: there are rules for writing system networks, describing what constitutes a choice, what motivates a choice, how choices are interrelated and realized and so on. While we have begun to deal with such issues for the dynamic perspective, much work remains to be done. In particular, we need to show how a dynamic perspective draws on existing system networks, reformulating systemic (synoptic) choices each time a choice is made in an unfolding text. The proposed paths and stacks are a type of general lingua franca or non-technical means of describing this process, but do not in themselves constitute a real strategy or device for turning a synoptic system into an instantially operative one, nor for showing how instantial selections feed back into our understanding of the synoptic system. The discussion of text/context interrelations in Chapter Five begins to provide some clues as to this, as there a similar situation arises: a general contextual configuration becomes specified as a particular context once a text begins to unfold. But the area as a whole remains at present a grey one.

The limited discussion of how choices in an unfolding text contribute to our experience of the system reflects a further limitation of the thesis, namely the fact that we have not related our findings to other dynamic aspects of language. As outlined in Chapter One, the development of language in an individual and the development of language over time can also be seen to be dynamic. It is not suggested that these three areas of 'dynamics' are necessarily of the same order, that is, that the same issues and principles will be relevant to each. However, the issue of the text affecting experience of the system is relevant to all three areas. A child gradually learns to operate in the adult system through experience of how functional purposes may

or may not be achieved through language, thus a knowledge of the system is built up through experience of that system. Also, the choices made in successive, unfolding texts have a cumulative impact on the system as a whole, and so affect the phylogenetic development of the language.

While the thesis has highlighted the need for the grammatical analysis to interact with analyses at other levels, the nature of such interaction has not been explored. This is a further limitation of the thesis. In particular, the interaction of grammar with semantics and with intonation needs to be explored. With regard to semantic considerations, the dynamically oriented grammar begins with the assumption that there is a realizational relationship between the semantic and grammatical strata, so that any lexicogrammatical choice can be assumed to be a realization of a semantic option. But, because the perspective is unfolding, it is not assumed that all the semantic options relating to one unit have been made before the unit is realized; the dynamic unfolding of the unit has its own potential to mean.

With regard to intonation, the fact that the grammatical analysis proceeded without accounting for intonation meant that unnecessarily difficult questions were posed. For instance, intonation would undoubtedly help inform the analysis at points in an unfolding text where a unit could end or could be continued. While different accounts of intonation exist (compare, for instance, Halliday 1967 with Brazil *passim*), a common factor seems to be a basic distinction which could be glossed as 'stop/go'. For Halliday, the basic distinction revolves around the *fall/rise* opposition in tones; for Brazil, whose account is more specifically oriented to discourse, it is the relative values of successive tone units to each other which is important, and the stop/go distinction hinges on a functional definition of the tone unit, in terms of whether or not a tone unit constitutes a *telling*

incremement. A *telling* increment is a certain stretch of discourse that continues until the speaker has achieved his or her purpose. An account of intonation would encourage us, at particular points in the text, to either 'go on' (*sustain*) or 'stop' (*close*), and would help weight expectations for the next step accordingly. As with other factors which contribute to the weighting of expectations, effects of surprise are possible, particularly when there is disjunction between grammar and intonation (when a unit of one appears to 'stop', while a unit of the other appears to continue). Further study of such interaction is essential for a more fully elaborated account of language from a dynamic perspective.

Another major area of limitation in the thesis is that of relating the implications of Chapters Six and Seven to the issue of computationally-oriented modelling raised in Chapter Four. This gap is one of the most serious: while our proposals should be useful in their own right, their modelling in computational terms is an important avenue of research, and one which must be explored. This exploration cannot be undertaken here. What is possible, however, is to briefly highlight the relevant issues.

Given available linguistic and computational resources, an automated, dynamically oriented model should not be too far beyond the reach of the contemporary linguist. Most of the necessary components are available; it is a question of augmenting and integrating them. A model which is to be dynamically oriented must first of all have access to current synoptic knowledge: it needs to begin by accessing available synoptic networks, such as those developed for the Penman project (see for instance Mann 1983). Secondly, the model needs access to stores of information about contemporary usage of language, such as concordances from a large data base like that of the Cobuild project (see for instance Sinclair 1987b, 1991b), as well as

stores of idioms, phrasal verbs and so on, which could be derived from such a database. Thirdly, the model needs to be able to accept and manipulate information about the context of situation: such information would have to be fed in for each text. Finally, the model must be able to store information about previous passes through the synoptic network, to accumulate details about typical or fossilised choices, and so on.

In terms of elucidating what it is that the model needs to be able to do, it must first of all be able to choose its focus (word, group, function and so on), and then be able to oscillate between that parameter and others which relate to it. So, it must be able to move between different 'sizes' of unit (that is, different units on the rank scale) and between different 'types' of unit (that is, structural and functional parameters).

Having decided the initial focus, the model must then be able to know whether, for instance, it is in a verbal group or a nominal group, and where it is in the group, and what would constitute the relevant path steps of continue, change and so on, from that point. The relevant path steps could be programmed in as types of rules for different situations; so, *continue* after a noun in a nominal group would be a certain grammatical step, *change* another.

Given multiple options for proceeding from a given point, it is necessary to incorporate strategies for choosing among those options. So, if at one point the options are to continue, change or close, these options need to be stacked. Two different operations are needed to achieve this. Firstly, the stack has to be *informed*, that is, the model has to know what can go in the stack and what the ordering is to be. The factors contributing to this organization of the stack are found in the components of the model as a

whole: access to a knowledge base about the synoptic system, information about contemporary usage, and so on. Secondly, the stacks have to be automated. In the thesis, the stacks were developed as a type of metaphorical extension from their original computational origins, but they could be exploited in a form close to their computational formulation. However, instead of ordering the stack in terms of the original computational strategy of 'last in, first out', the stack would have to be ordered in terms of likelihood of selection at that point. Further, factors would have to be included to motivate the choice of the most likely option or of a less likely option; such factors could also be used to interpret the effect of such selections.

A computational model would also have to be able to define boundaries in a different way. As shown in the analysis, boundaries of units cannot be defined until they have actually been passed, and quite often, simultaneous analyses have to be left open, or an analysis has to be undertaken in relation to a different parameter, to inform the current one. It is not the case that one job can be simply finished and another started, but rather, that different tasks have to be undertaken simultaneously. This strongly suggests the need for parallel or incremental processing (see, for example, de Smedt and Kempen 1987), with strategies or heuristics programmed in for passing the reins between jobs. As well, there must be the facility to leave path analyses behind, and to return to a deferred path at a later point in the text if if necessary.

It is not essential to produce an automated model in order to explore and understand the implications of a dynamic perspective; however, such automation allows the suggestions to be tested, as well as opening the research to practical application in areas such as Artificial Intelligence

(AI). The strategies suggested here should provide a good basis for developing an alternative to an explosive, synoptic model - one which permits moment by moment decisions to be made, or text to be interpreted moment by moment, so that actual, motivated texts are produced and understood.

8.4 Future Research

This thesis has clearly been one of exploring and laying foundations; it is not and was never intended to be definitive. It is therefore particularly important to build on this research and consolidate the findings of the thesis. We suggest that three paths of development should be pursued.

Firstly, the findings of the thesis need to be extended to other domains, both exploring the analysis developed for grammar at other levels of description, and exploring the analysis in relation to languages other than English. In either case, the details of the path analysis would have to be radically revised, but it is the principles of the approach which need to be retained: the movement from current to next, the understanding of the potential which opens up as a text unfolds, the influence of conditioning factors on expectations, and so on. Different descriptions would result for different languages, and for different domains of language; it may be necessary to develop complementary techniques to the path analysis and to embellish the theory, but the dynamic perspective should be as relevant. Indeed, as we have successfully brought a dynamic perspective to an area of language which is usually seen to be anything but dynamic, its potential value for other, more obviously dynamic, areas of language is very exciting.

The second area of further research concerns the application of our proposals to more practical domains. As we suggested in section 8.2 above, an understanding of the way in which paths can be developed as a text unfolds should provide some interesting insights into the processes of producing and receiving both written and spoken texts. For reading and writing, as well as listening and speaking, it should be possible to teach ways of clarifying paths, melding paths, changing the direction of a path, and so on. For example, our model may explain such cases as when a learner of a language confuses what is heard, either muddling up possible path developments or failing to perceive the critical choices points and the way they are developed. Further, a dynamic perspective should enable some interesting text exegesis to be carried out, from the point of view of describing the unfolding development of the text.

Because of its strong orientation to the point of view of the receiver, the dynamically oriented model presented in this thesis should be particularly attractive for use by interpreters. It would, for instance, be able to suggest which types of points in the development of a text may help an interpreter differentiate multiple path possibilities. Rather than searching merely for key words, the model suggests that patterns, chains of realizations, and the changes within them, are the key to understanding a developing text. In particular, simultaneous translators need to predict the points at which the changes may or may not occur, and the model would be especially useful for them(2).

As noted above, the thesis should also be applicable to the domain of Artificial Intelligence (AI). Given that one of the major challenges for AI is to deal with natural language in the computer, a dynamically oriented model would seem to be essential for both producing and interpreting natural

language. It would seem particularly useful as the basis for an automatic parsing device. A dynamically oriented parser would parse the sentence as it unfolds, putting forward simultaneous analyses which would be weighted for their relative likelihood, and which would be resolved as the text continues to unfold (or, allowed to remain unresolved). It would have to wait for a next option in order to define a current boundary, and in order to decide which among multiple paths is being followed. For example, if the parser encountered a verb which could be either an auxiliary or a main verb (be, have), it would have to wait for the following choice to determine which possibility has been taken up. The proposals for grammatical analysis put forward in this thesis could be used for automatic parsing if the parser had access to an automatic class tagger, such as JEM (developed by Jeremy Clear at the University of Birmingham). With the text input tagged for grammatical class (or classes, if it could be a unit representing more than one class), a dynamically oriented parser would add path rules and rules of interpretation in order to parse the group and clause structure of the input, and also to determine the metafunctional roles being carried by the components of the input.

The final area of future research concerns development of the general proposals of the thesis. Evidently, the areas of limitation described in the preceding section all require attention, but also, more successful aspects of the thesis could benefit from further research. Both the unit and metafunctional analyses need to be explored in more detail, and the metafunctional analyses in particular require considerable further work in order to test the claims made in relation to their dynamic unfolding.

The path analysis itself could also be explored in more detail, seeking, for instance, more delicate path distinctions. Alternatives to the path as a

model could also be pursued, as it is not the path as a path which is of importance, but the path as embodiment of the characteristics of a dynamic perspective. The details and nature of text-context interaction from a dynamic perspective is another important area for further research.

The vigorous pursuit of all aspects of the theory and implementation of a dynamic perspective is essential if the perspective is to play a useful role in linguistics. The ability to understand and explain language as an active process, as well as a static product, is an area of considerable contemporary interest, but we have shown in the thesis that a perspective on language is essentially independent from the nature of language itself. Therefore, the nature of the perspective adopted in relation to language is critical: it both allows for and constricts the observations that can be made. It is not enough to pay lip-service to a perspective - it has to be fully incorporated into a model, a way of seeing, to be operative and valuable. And then, it has to be melded with other perspectives, to achieve a balanced view. In the study of language, the synoptic perspective has hitherto been dominant. While many linguists are interested in achieving a new balance, the thesis has demonstrated that this can only be accomplished if the aim is to see language as a whole from a dynamic perspective.

Endnotes

1 (Section 8.2.1): I am indebted to Gerlinde Hardt-Mautner for this example.

2 (Section 8.4): My thanks to Jean Ure and Carol Taylor-Torsello for their comments on this.

APPENDIX

1. The sample text

(a) Brief description of the text

BBC Radio 4, Evening News, July 5, 1989; Kate Adie reporting. Adie is discussing the general state of Beijing after the Tiananmen Square Massacre. The text seems to be unprepared, although it may have been produced in conjunction with some notes; there is no obvious time pressure on the reporter, no sense of urgency; no evidence of editing. The text is introduced and concluded by comments from the news anchor.

(b) Transcript

The text is presented clause by clause, without intonation analysis, although orthography and clause breaks reflect certain aspects of the intonation.

ANNOUNCER: Kate, what can you see from where you stand?

KATE ADIE:

1 - I have a view out of the window of a, a skyline, across probably a third of the city

2 - it's a city that isn't at work

3 - none of the factory chimneys are smoking

4 - which (are) normally belching polluted air at this time of day

5 - there's one in front of me in the distance

6 - none of the cranes on the construction sites are moving

7 - there's no one working

8 - there are cyclists in the street

9 - there is no ordinary traffic

10 - there's no public transport

11 - there are no commercial vehicles

12 - most of the shops are shut, except for some essential food stalls and markets

13 - they're still open

14 - um, down below to the right of me is one, is the main road leading to Tiananmen Square

15 - and there this morning protesters gathered again after dawn

16 - um, they , were gathered as usual

16a- facing the troops

17 - those, the troops fired at them

18 - I um spoke to um a man at the ah hospital which is nearest to us

19 - they have received fifty casualties this morning

20 - the senior medical officer at the hospital said

21 - that he'd been in contact with his medical colleagues around the city in the past few hours

22 - their estimate of the number dead, er the people they said they had seen, the corpses they had had in the hospital, totalled over one thousand

23 - and there are thousands more injured

24 - and the injuries and the deaths are still continuing

25 - along the main road, ah, we have seen tanks rolling this morning, and army convoys of armoured personnel vehicles

26 - they're firing into the air

27 - well no, they're firing against the buildings, that are on (at?) the sides of the streets

28 - and they're pot-shotting

29 - and they're raking the street occasionally with, with gunfire

30 - I've also seen in the last hour smoke billowing from an area about half a mile from us on the ring road where there were a lot of army lorries which were immobilised two nights ago before the firing, the shooting started

31 - and there've been huge columns of black smoke

32 - ah this concerns what some of my colleagues who've been out this morning have seen that, um, despite all the huge numbers of troops here, people are still setting fire to buses

33 - they're moving in buses as new barricades at most of the intersections

34 - and defiantly setting fire to them

35 - it's one of the few things that is, er, available for them to do

36 - because they're all unarmed

ANNOUNCER: Kate Adie, thank you

2. Unit analysis

(a) Key to the unit analysis

The following symbols are used:

(i) Path steps

(CO) = path sustained, but actual step not determined

CO = continue

C:C = continue:concatenate

C:A = continue:add

CH = change

CL = close

CP = complete

AB = abandon

RS = reset

PP = primary path follows from this point, but is not further analysed

(ii) Path movement

→ = fused analysis, i.e., two steps happening at same time

/ = simultaneous paths, i.e., the current choice could be picking up one of two paths

x = closure of one simultaneous path; i.e., the current choice could only be picking up one of the simultaneous paths.

((= secondary analysis; i.e., the current step has two path effects, one primary, one secondary.

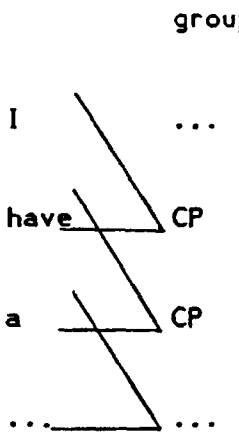
? + any path step: = deferred/discontinuous analysis

✓ + any path step: = activation of deferred option

(iii) Reading the path

Vertical lines are added between the steps to help the reader follow the unfolding path. They are not themselves significant, but gradual shifts from left to right as the path unfolds highlight the layers of analysis opening up.

Each word of each line is presented sequentially down the page. The first word in the text is not analysed as a path step, thus the analysis appearing to the left of the second word indicates the relation of the second word to the first. For example:

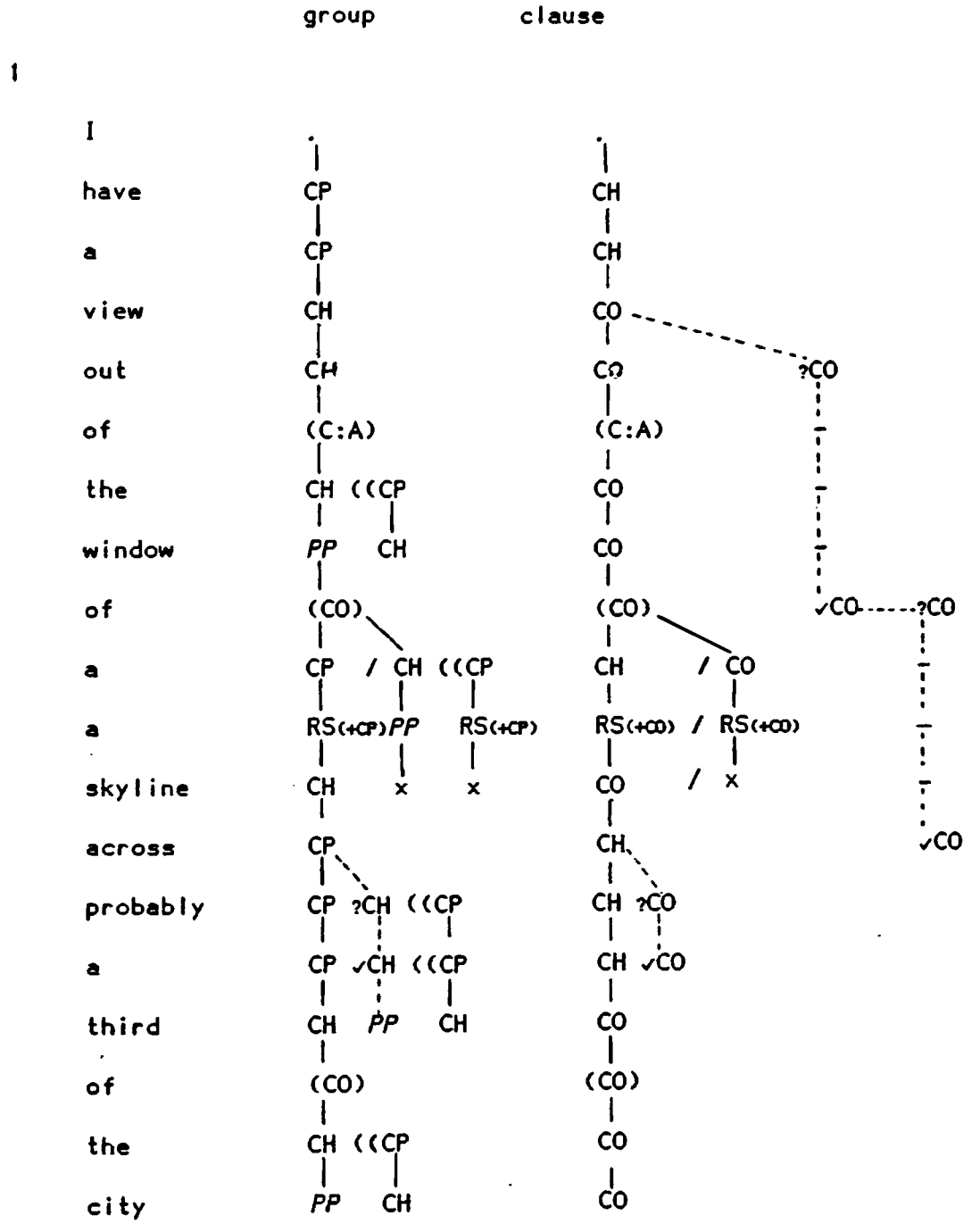


This example should be read in the following way: I opens a path analysis at group rank, but it is the step into have, in relation to the path established by I, which is analysed in path terms. Thus have *completes* the nominal group opened by I. In turn, a completes the verbal group opened by have, and so on. The directional lines in the above example are used to indicate the way in which the analysis is read, but are not included in the appendix as a whole.

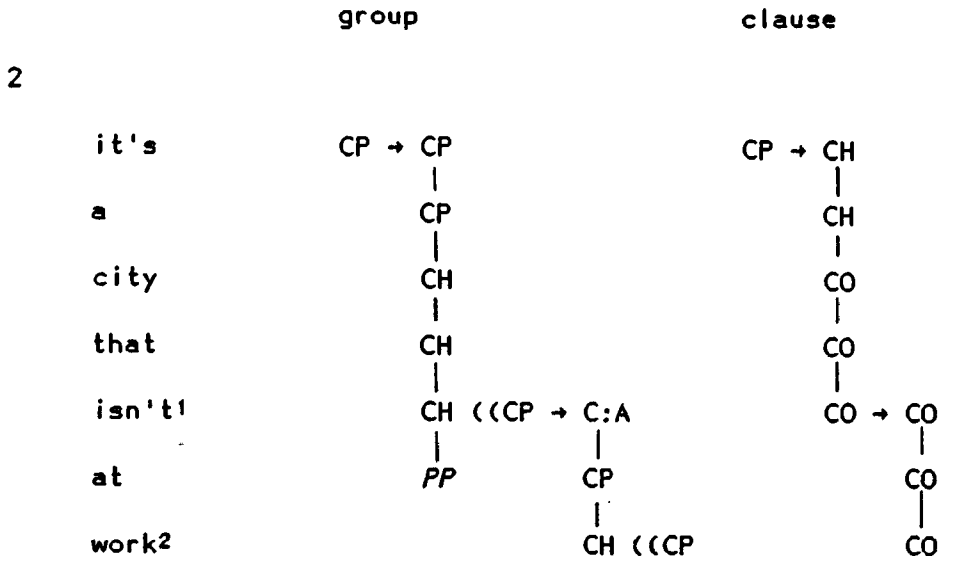
Finally, boundaries between clauses or lines have been emphasised with spaces or page breaks. This is for the convenience of the reader, and it

should be remembered that these boundaries were arrived at synoptically. Occasionally, sequential lines are presented together, where expectations are carried over between clauses and where it would be distracting to show the break.

(b) The analysis: the notes attached to the analysis are to explain any points which may not be obvious from the discussion in Chapter 6.



Note: The analysis of this line was discussed in detail in Chapter Six (6.4.7).



Note: 1 - While a secondary path is seen to open up from isn't, the primary path is not shown, for the sake of simplicity. Primarily the path step would be a change at group rank, and continue at clause rank.

2 - It may seem trivial to open a secondary path when it contains only one step, however this is felt to be necessary for two reasons. Firstly it maintains consistency with the analysis of other (longer) prepositional phrases, and secondly, from a dynamic point of view, it cannot be known in advance that the path will consist of one step only.

	group	clause
3		
none	CP	CP
of	(CO)	(CO)
the	CH ((CP	CO
factory	*PP* CH	CO
chimneys[1]	CH	CO
are	CP	CH
smoking[2]	CP / CH	CH / CO
4		
which	x / CP	x / CP
(are)[3]	CP	CH
normally[4]	CH / CP	CO / CH
belching	CH / x	CO / x
polluted	CP	CH
air	CH	CO
at	CP	CH
this	CH ((CP	CO
time	*PP* CH	CO
of	(CO)	(CO)
day	CH ((CP	CO

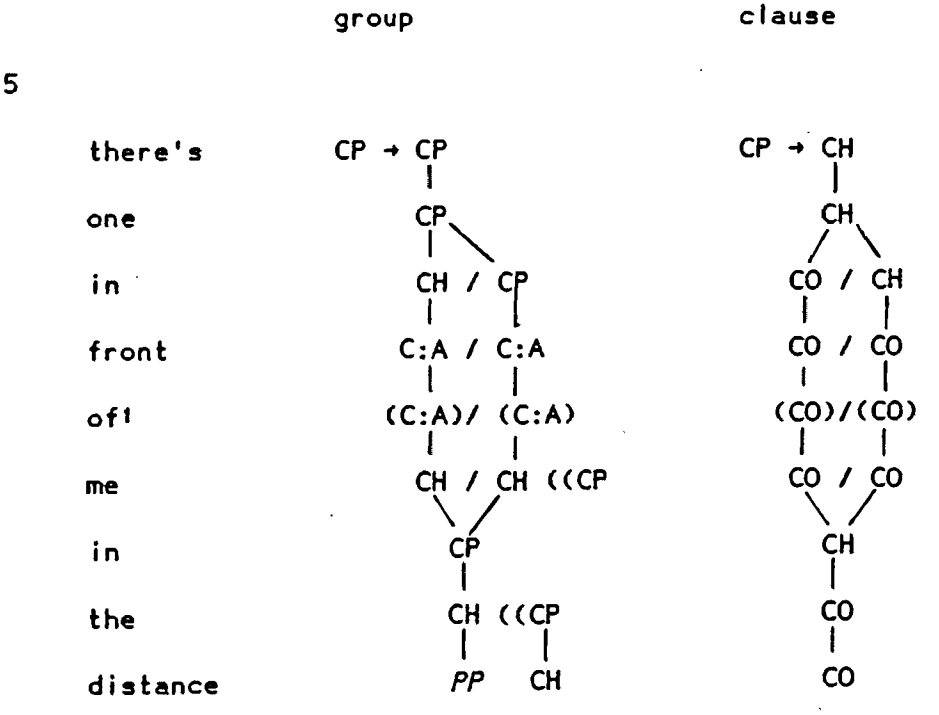
Note: 1 - While both factory and chimneys are of the same class, namely noun, and while chimneys might therefore be expected to be a continue:add step following factory, the different number between the nouns shows that the second is in fact a change from the first. The Head of the group (in a synoptic analysis) is none, and we know that none, being a selection from a

group of many things, has to select from a plural Head in the post-Modifying element. So the singular factory and plural chimneys are playing different roles. Had the group been none of the factory chimney ..., the step would have been C:A, and a plural noun would be expected to follow.

2 - The simultaneous analysis here allows for the possibility that smoking is an adjective opening a nominal group (and thus completing the verbal group opened by are). The beginning of the next clause, with which, causes this path to be dropped, as symbolised by x.

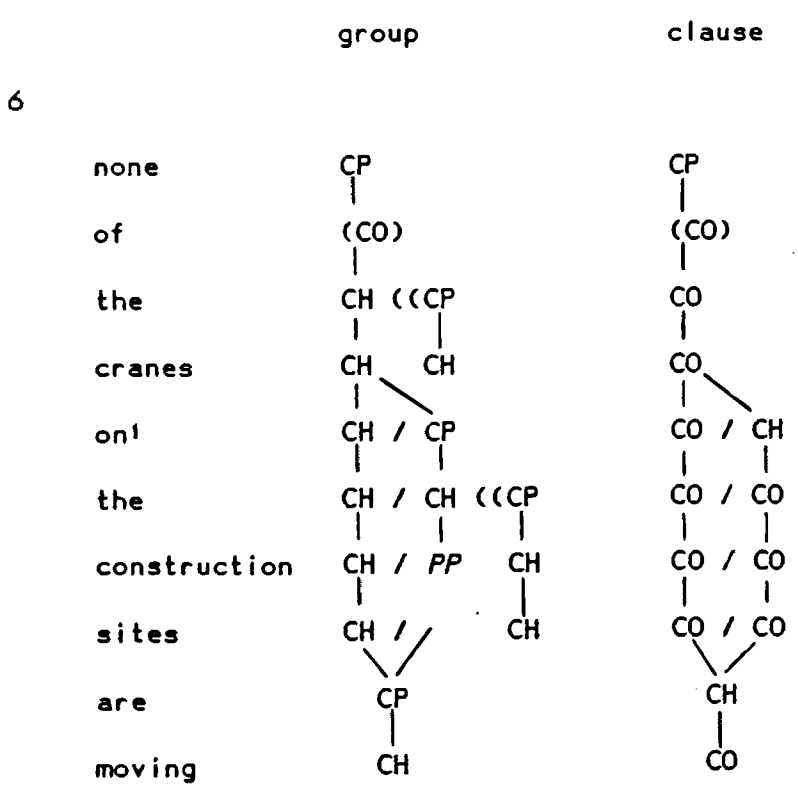
3 - are is bracketed because it is virtually swallowed up on the tape. This is one of the inadequacies of the transcription as acknowledged in Chapter 6.

4 - The analysis of normally was discussed in Chapter 6 (6.4.6.6)



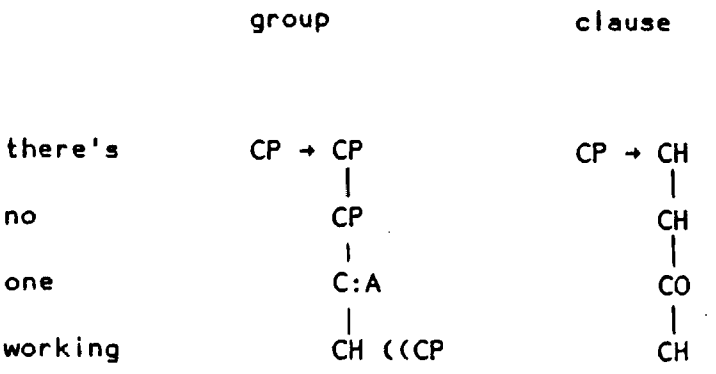
Note: 1 - An interesting feature of this analysis is that it highlights in front of as being a complex preposition, given that the opening step of the

group, in, is continued first by front then by of. In is seen to open a simultaneous analysis at group and clause ranks, on the left side being analysed as a change in the nominal group and continuation of the clause structure; on the right side being analysed as a complete of the nominal group and change at clause rank.

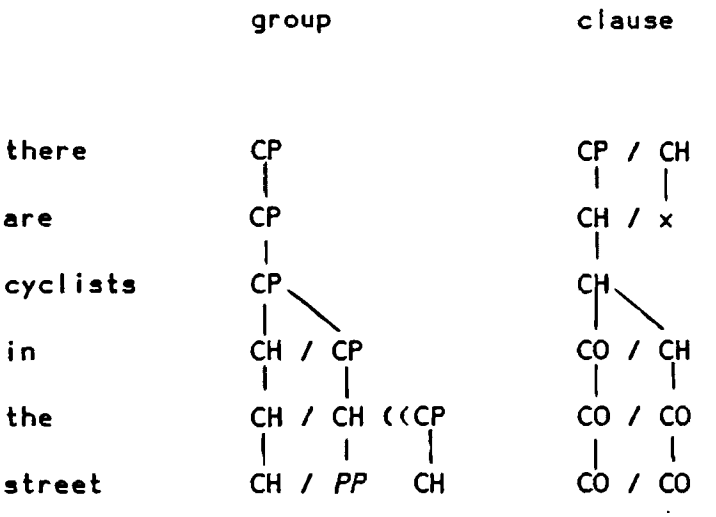


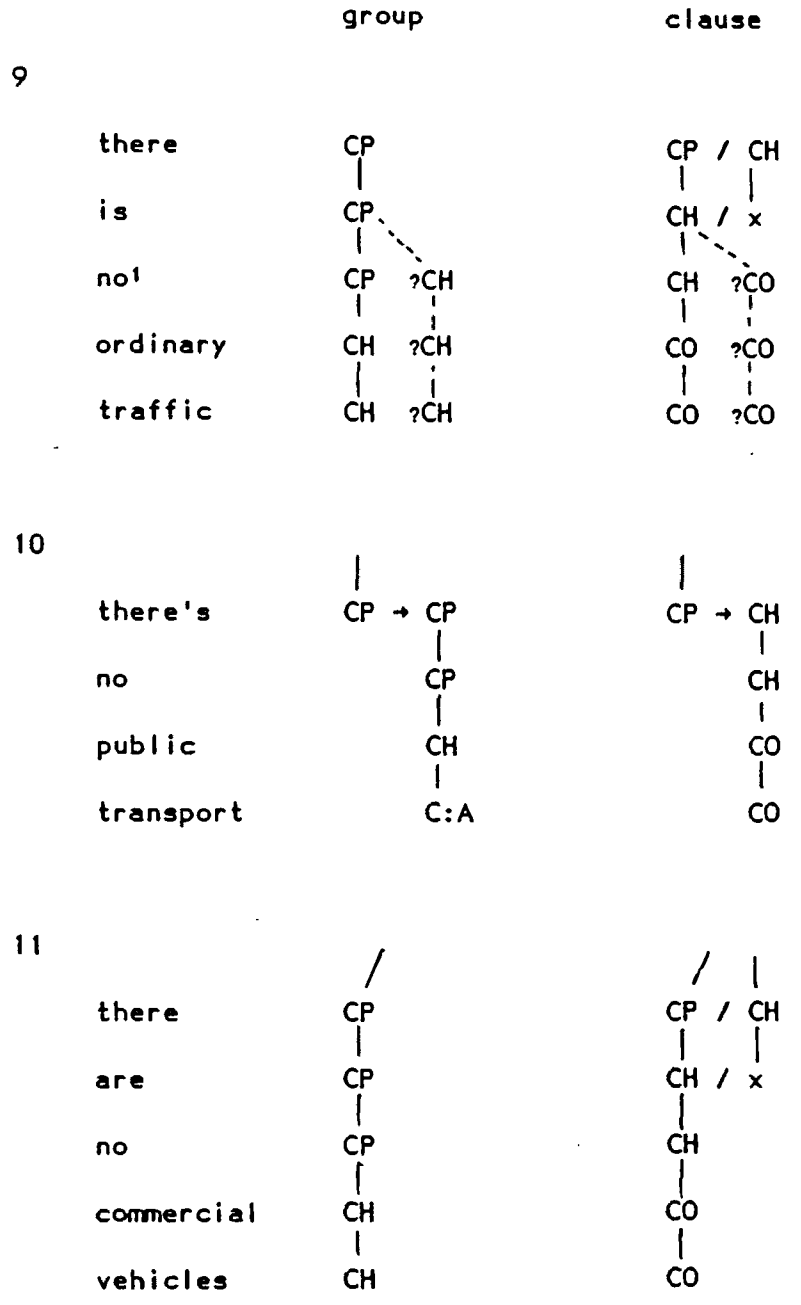
Note: 1 - The simultaneous analysis opening up from here follows the primary change path (at group rank) from the word above. That is, the complete step at group rank for on should not be read as following on from the secondary change step for cranes.

7


group
clause
there's
no
one
working
CP → CP
CP
C:A
CH ((CP
CP → CH
CH
CO
CH

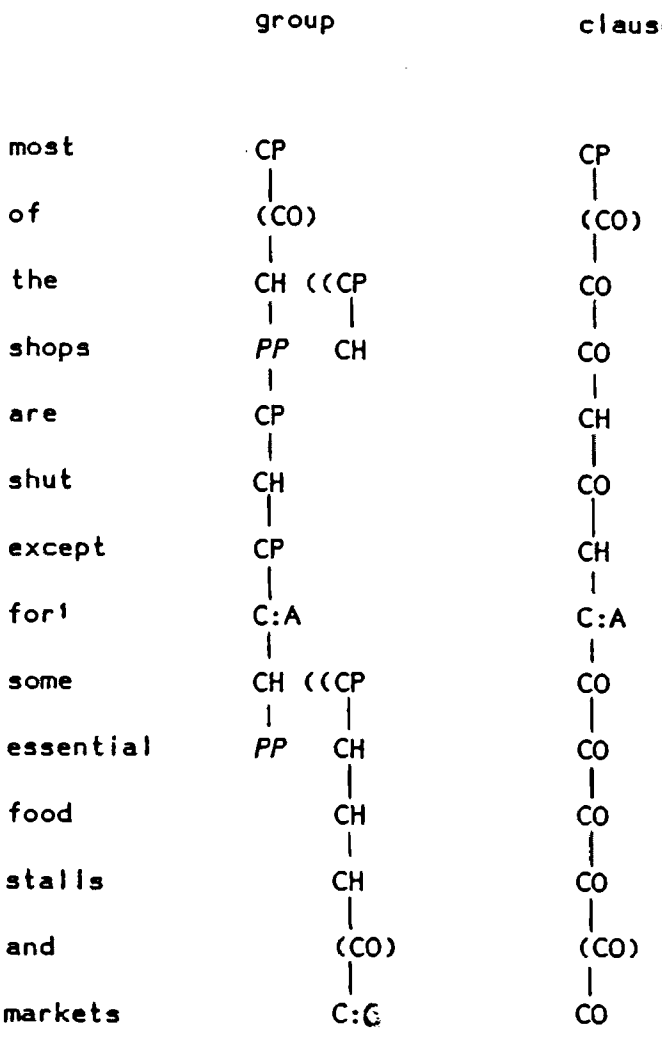
8


group
clause
there
are
cyclists
in
the
street
CP
CP
CP
CH / CP
CH / CH ((CP
CH / PP CH
CP / CH
CH / x
CH
CO / CH
CO / CO
CO / CO



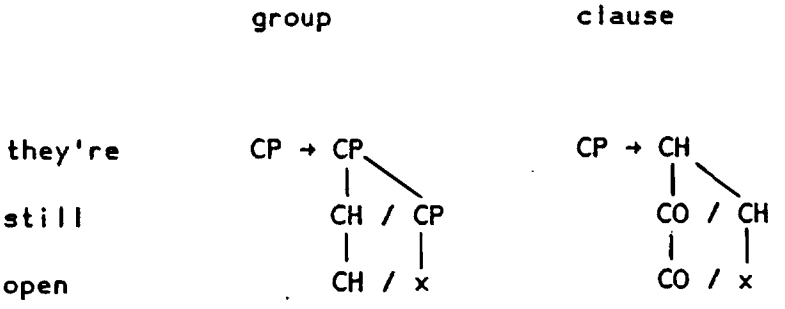
Note: 1 - It could be argued that a discontinuous analysis arises here because of the expectation for a main verb to follow is. However, the deferred path is never activated, as the step following traffic begins a new clause. Note also that the next clause, line 10, could also be said to have this deferred expectation, but the unfulfilled expectations of line 9 would decrease expectations for that pattern to occur in line 10.

12



Note: 1 - As with line 5, there is a complex preposition here, <u>except for</u>. This explains why <u>some</u> is analysed as a change step opening a secondary completing step, as it is part of the potential of a prepositional phrase to have a nominal group within it.

13



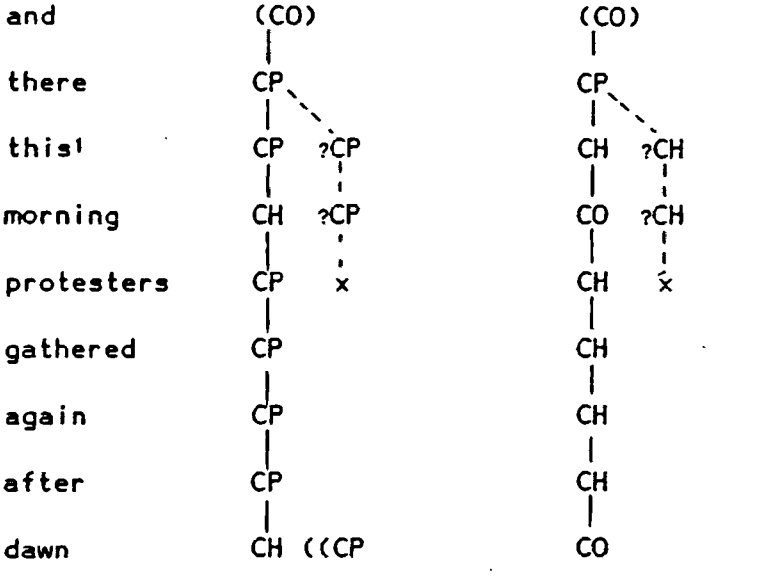
	group	clause
14		
down[1]	CP	CP
below	C:A	CO
to	CP	CH
the	CH ((CP	CO
right	*PP* CH	CO
of	(CO)	(CO)
me	CH ((CP	CO
is	CP	CH
one	CP	CH
is[2]	RS(+CP)	RS(+CH)
the	CP	CH
main	CH	CO
road	CH	CO
leading	CH ((CP	CO
to	*PP* CH	CO
Tiananmen	CH ((CP	CO
Square[3]	*PP* C:A	CO

Notes: 1 - A simultaneous analysis at clause rank should apply from here, as it could easily be seen to be a change step in relation to the preceding clause, rather than a complete introducing a new clause.

2 - Note the resetting here. Unlike other cases of resetting (as in line 17), there would be little need here to posit a simultaneous analysis, allowing for the possibility of a branched structure. This is because <u>one</u> has no immediately obvious referent: in Emmott's terms, there is no primed referent in the frame. This thus leads us to expect resetting.

3 - Ideally, Tiananmen Square should be analysed as one lexical item. Interestingly, following Tiananmen, a very narrow range of expectations applies. Either that the nominal group is not sustained at all, that is, that Tiananmen stands alone as a clause element, or that if it is sustained, then it will be sustained only by Square. (In other grammatical contexts, Tiananmen could be followed by other items such as massacre or event, but this is not possible in its circumstantial role, indicating a place rather than an event.)

15



Note: 1 - The discontinuous analysis here allows for a deferred expectation of are or is following there. The expectation is eliminated at protesters. Interestingly, this example highlights the 'buried' information drawn on in this analysis, as the analysis of the steps in the deferred path is in fact the same as for that in the actual path; it is the class information which is

different. In other words, the deferred path is waiting for a complete step which signals the opening of a particular verbal group.

16

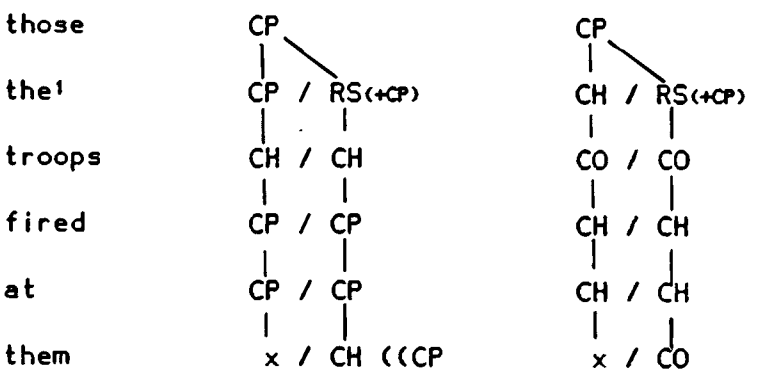
	group	clause
they	CP	CP
were	CP	CH
gathered	CH	CO
as	CP	CH
usual	CH	CO

16a

facing[1]	CP	CP
the	CP	CH
troops	CH	CO

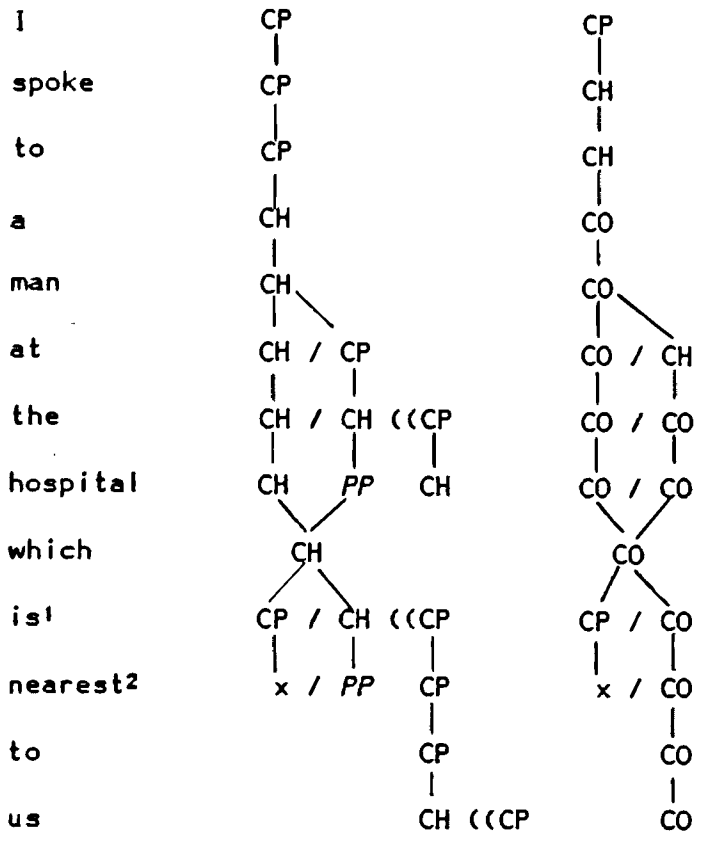
Note: 1 - It would be interesting to consider the possibility of analysing facing as a type of preposition (hence opening a secondary group analysis at the next step, and being analysed as a change step at clause rank).

17



Note: 1 - A simultaneous analysis arises from the, on the left hand side allowing for an example such as those the troops fired at were .... However it is not until relatively late, with them, that this path is dropped. On the right hand side, the analysis allows for the possibility that the is resetting the path opened by those. This, however, represents a strong orientation to the producer's perspective, as while the resetting possibility must be part of latent potential for the receiver, it would not be until them that this would be confirmed. Presumably of course the producer is aware of the resetting from the point at which it is shown to commence.

18

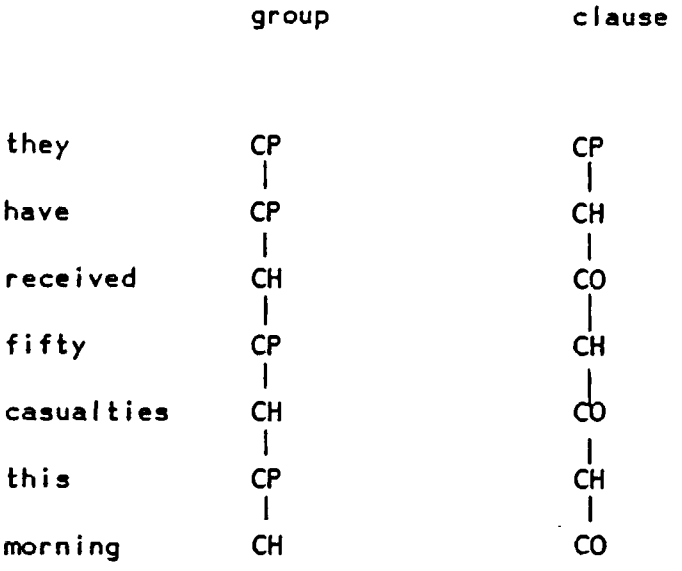


Notes: 1 - The simultaneous path on the left here allows for the possibility that which is co-ordinating a clause, as in ... which is the most useful thing I've done today. The next step, nearest causes this possibility to be dropped. The alternative path here is one which has a primary and secondary structure at group rank.

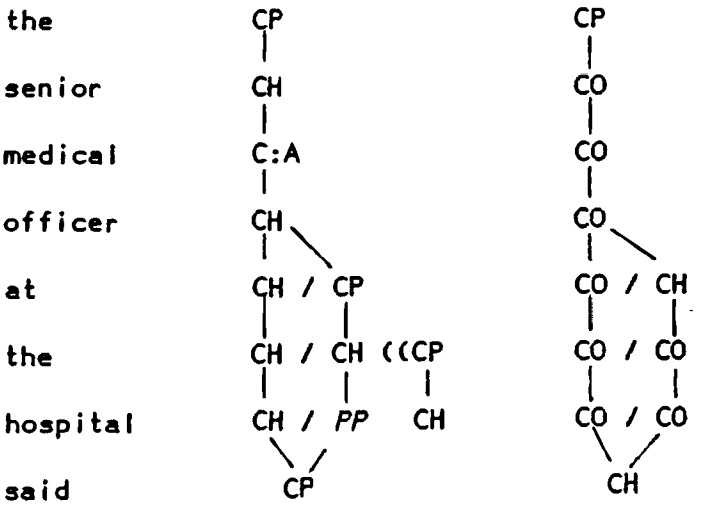
2 - It is interesting to note that there is a possible, if improbable, potential for nearest to be interpreted as a preposition. This is because of the morphology of the word, which means that momentarily it is received as near, which casts the grammatical shadow of its preposition status onto the word as a whole. If this were the case, then to would be a continue step, showing nearest to to be a complex preposition. While we do not actually suggest that this would be the most appropriate analysis for nearest, it

illustrates the way in which a dynamic analysis highlights alternatives which simply cannot be seen from a synoptic point of view.

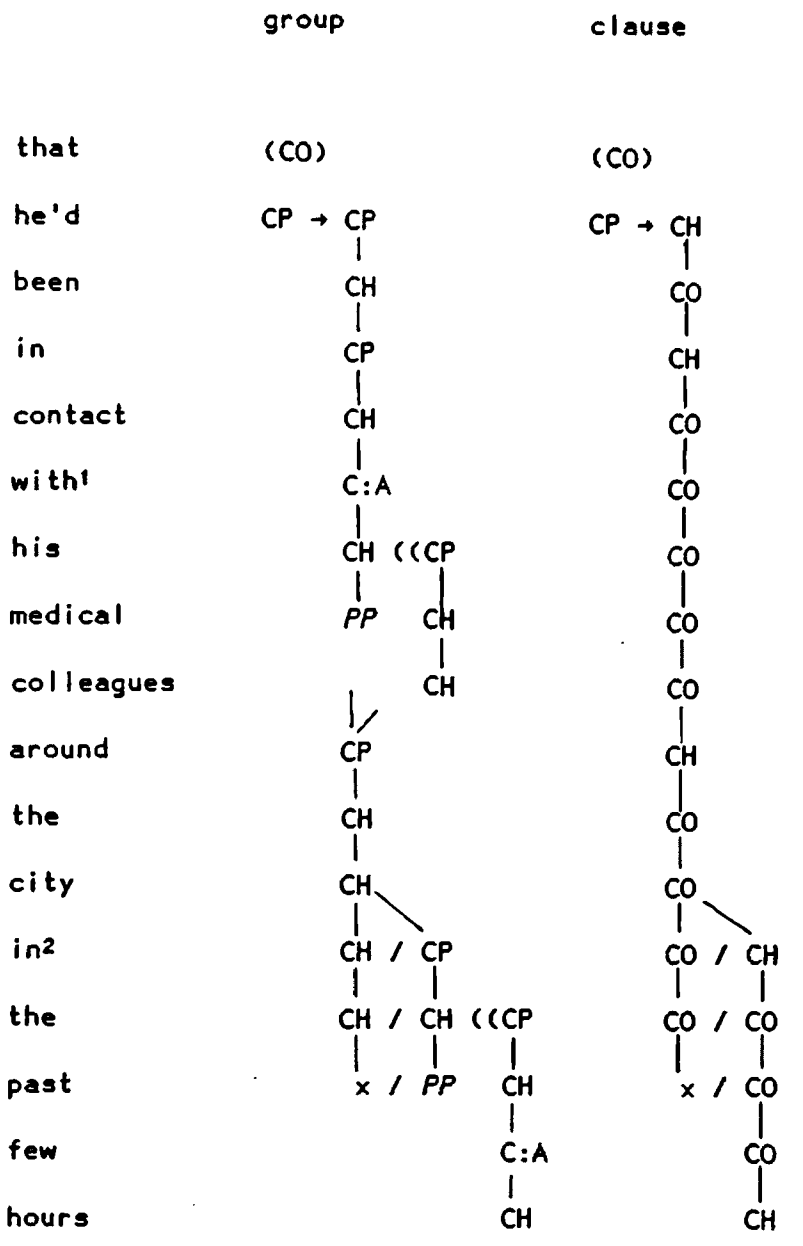
19



20

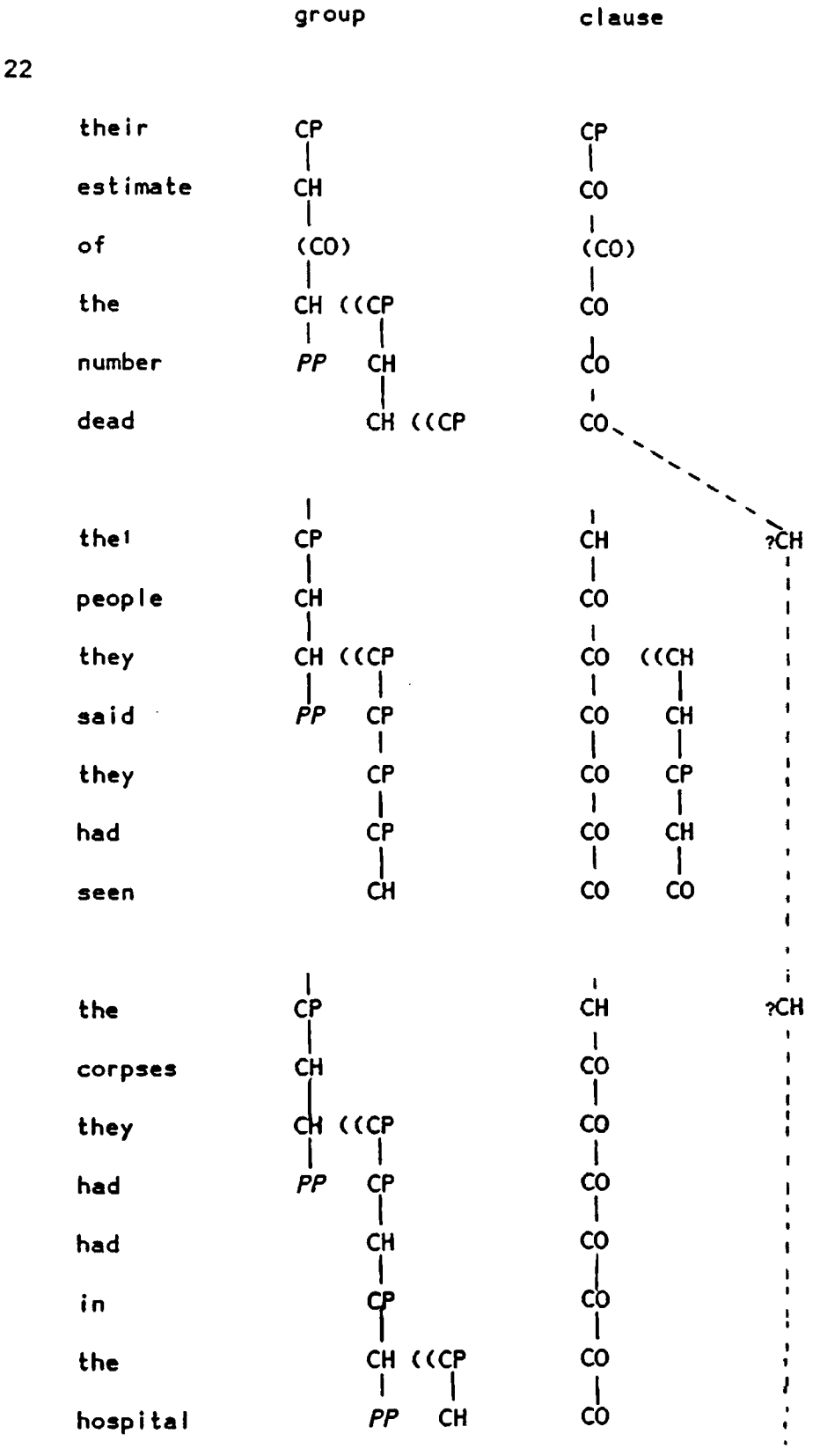


21



Note: 1 - The analysis of <u>with</u> here implies that <u>in contact with</u> is one complex preposition. A more conservative analysis would be to analyse <u>with</u> as a complete at group rank and change at clause rank, that is, a separate preposition group.

2 - The simultaneous analysis opening at <u>in</u> allows, on the left hand side, for an example such as <u>... in the best hospitals,</u> that is, the group would continue to be modifying <u>colleagues.</u> However, by the time <u>past</u> is reached, this possibility becomes extremely unlikely.

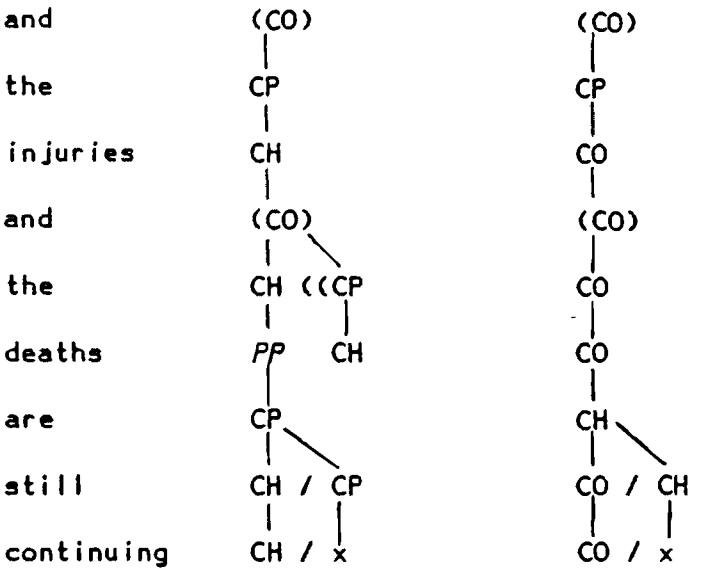

group
clause
22
their
estimate
of
the
number
dead
CP
CH
(CO)
CH ((CP
PP
CH
CH ((CP
CO
?CH
the!
people
they
said
they
had
seen
CH ((CP
PP
CP
CP
CP
CH
((CH
the
corpses
they
had
had
in
the
hospital
CH ((CP
PP
CP
CH
CP
CH ((CP
PP
CH

totalled	CP	CH	✓CH
over	CP	CH	
one	CH	CO	
thousand	C:A	CO	

Note 1: While the step into this (and the next) nominal group is analysed as a change at clause rank, there is a deferred expectation for another change step, namely into a verbal group, representing the process element of the clause. This deferred expectation is picked up by <u>totalled.</u>

	group	clause
23		
and	(CO)	(CO)
there	CP	CP
are	CP	CH
thousands	CP	CH
more	CH	CO
injured	CH ((CP	CO

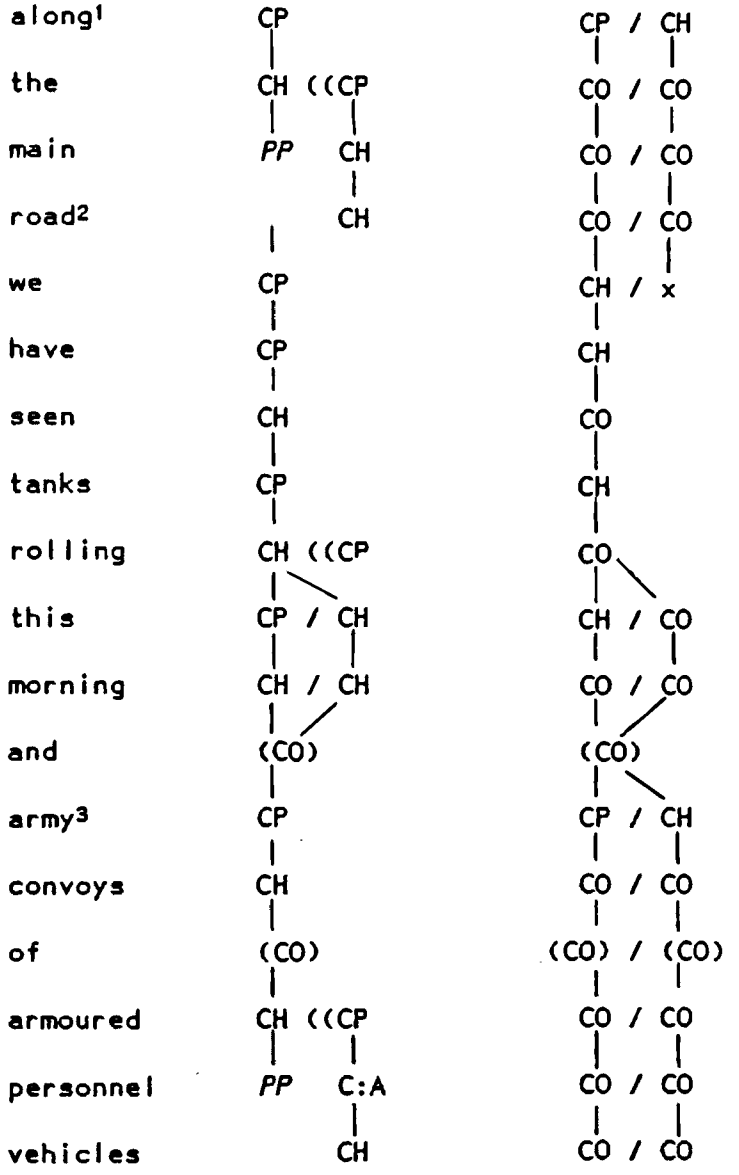
24



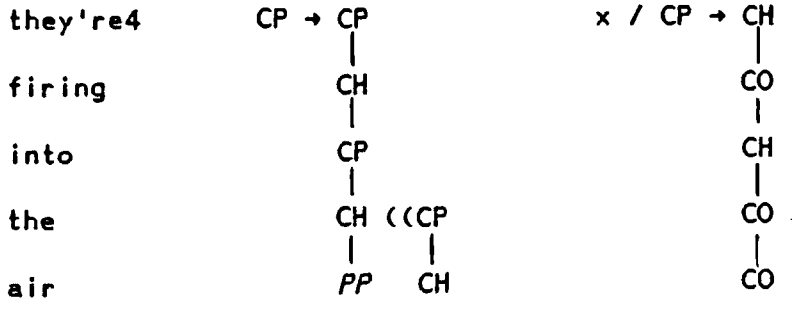
Note: Because of the concatenation of the nominal groups here, the two together function as one element in relation to the verbal group, and the second nominal group (the deaths) is seen to open a secondary analysis following and.

group clause

25



26



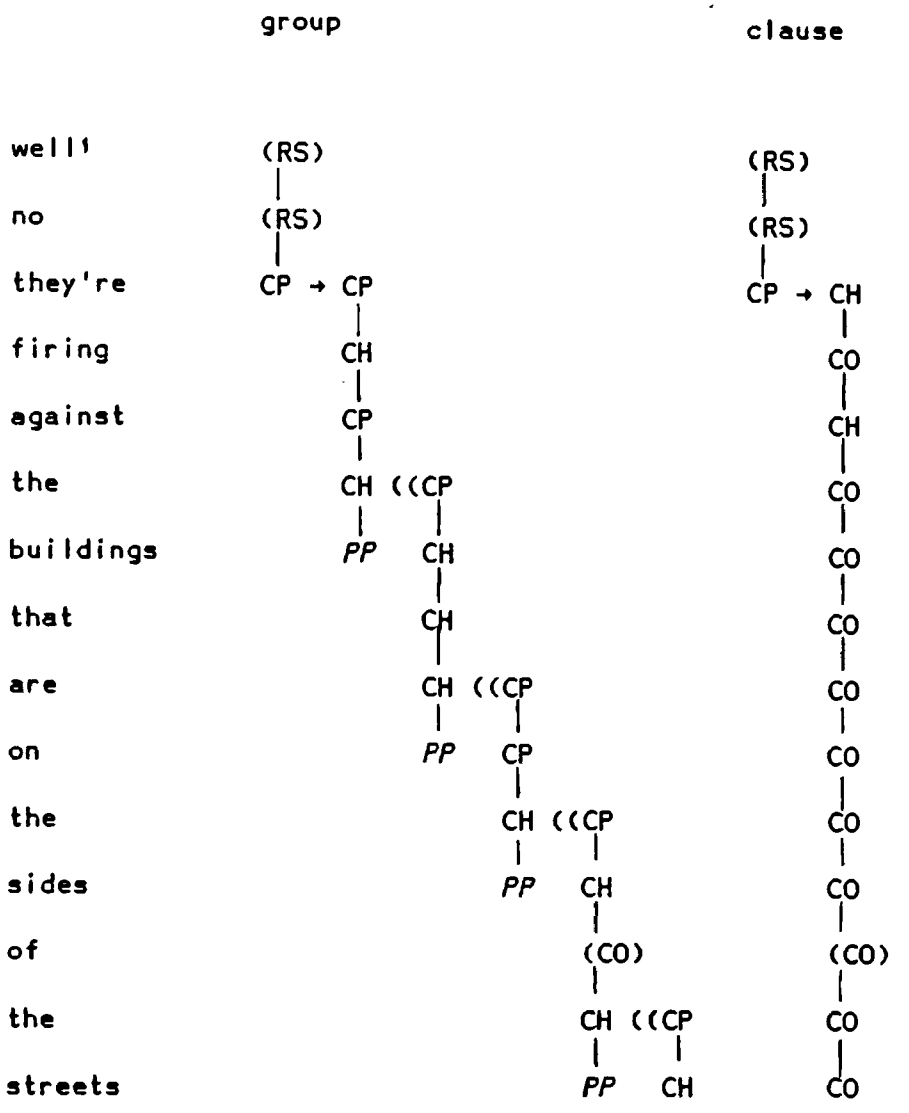
Notes: 1 - The simultaneous clause analysis opening from here allows for the potential that along the main road is an Adjunct to the preceding clause. If this were the case, then we could be analysed as opening a new clause. However, as acknowledged in Chapter 7, the transcription has in fact taken advantage of intonation and pauses to confirm clause boundaries, and so the alternative analysis is presented only to highlight the grammatical possibility.

2 - Note that for a speaker of Australian English, there would be a latent potential, particularly in a more colloquial context, for road to be seen as a continuation of main, as main frequently has a nominal use, to refer to the main or high street in a town. This means that the grammatical path posited for an Australian receiver would be different to that of the British producer.

3 - Before army, and gives rise to the expectation that a variety of units could be co-ordinated, possibly the circumstantial potential of this morning (as in ...this morning and through the day). However army shows that a nominal element is being co-ordinated. Further, another simultaneous analysis is seen to open up from army, as this could be completing the preceding clause and opening a new one. Such a simultaneous path would have to be carried to the next line, beginning they're. In fact there is a strong expectation that army convoys will be involved in some process, that is, part of a new clause, hence as the next line unfolds, there is a sense of unfulfilled expectations.

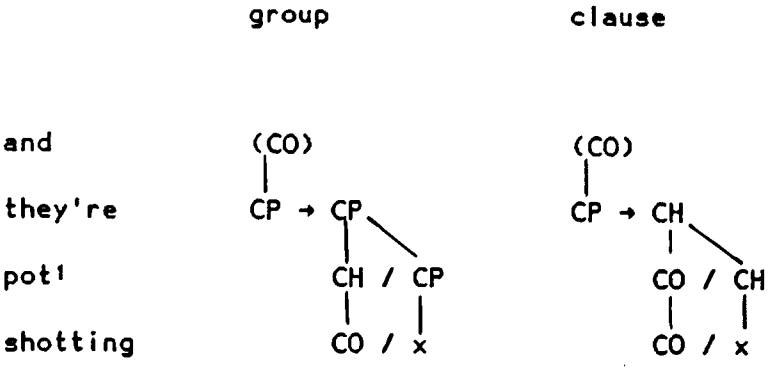
4 - The simultaneous analysis at clause rank picks up the simultaneous analysis from the preceding line, but shows that only one of those paths is being picked up here.

27



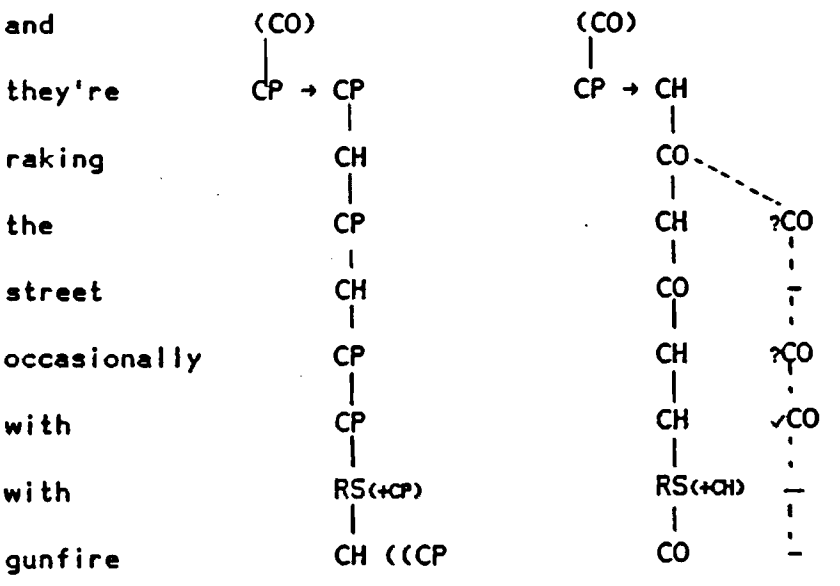
Note: 1 - Well no provides a very interesting example here. Well is analysed in a parallel way to that of and or of, that is, as a bracketed step, to indicate that it is serving a generalised function. In this case, well no signals that a reset is about to take place, without necessarily indicating exactly which aspect of the preceding line is to be reset.

28



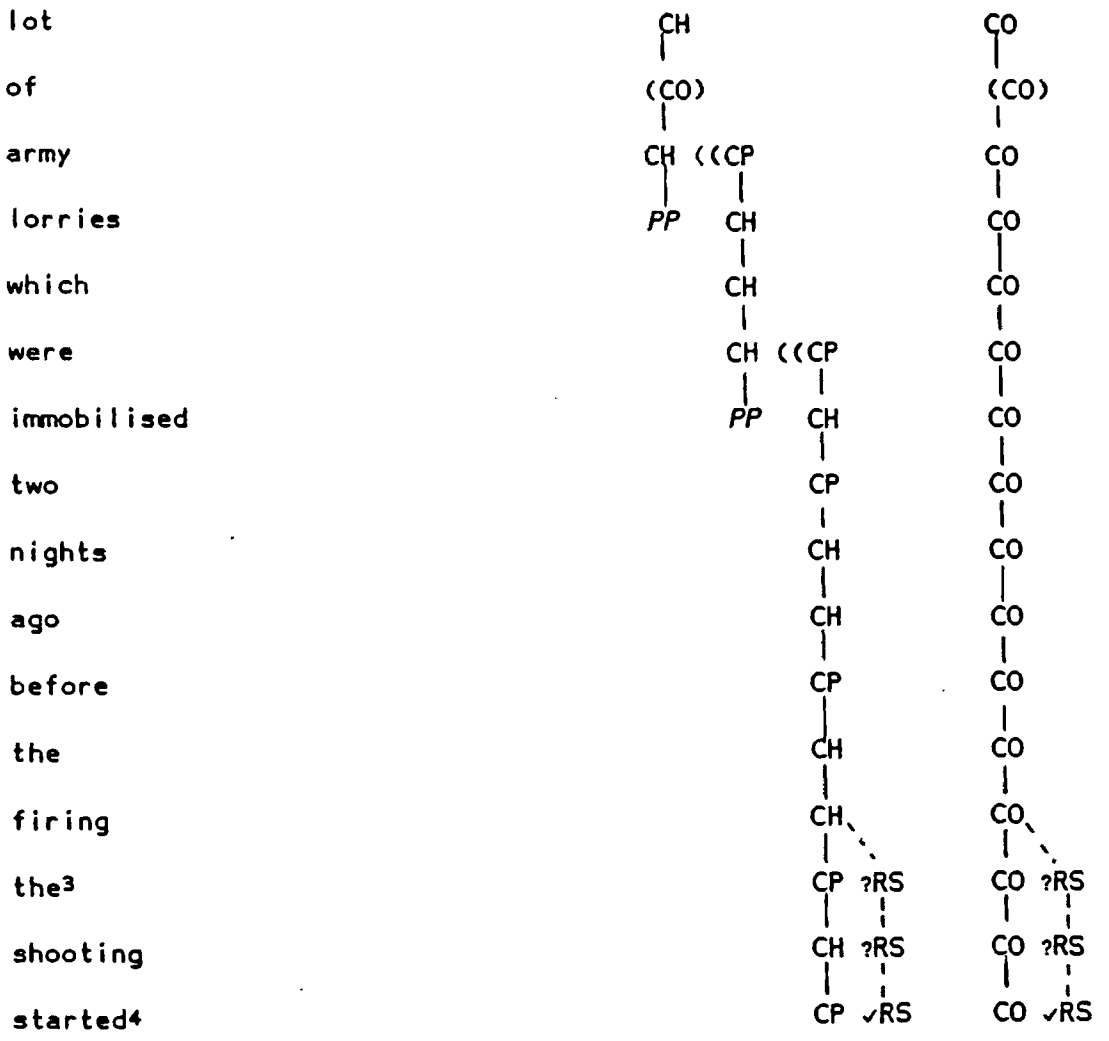
Note: 1 - The simultaneous analysis here allows for pot to be considered momentarily as a nominal element, or the beginning of an unusual verbal element.

29



30

	group	clause
I've	CP → CP	CP → CH
also	CH / CP	CO / CH
seen	CH / x	CO / x
in	CP	CH
the	CH ((CP	CO
last	*PP* CH	CO
hour	CH	CO
smoke	CP	CH
billowing[1]	CH ((CP	CO
from	*PP* CP	CO
an	CH ((CP	CO
area	*PP* CH	CO
about	CH ((CP	CO
half	*PP* CH	CO
a	CH	CO
mile	CH	CO
from	CH ((CP	CO
us	*PP* CH	CO
on	CH ((CP	CO
the	*PP* CH	CO
ring	CH	CO
road	C:A	CO
where[2]	CH ((CP	CO
there	*PP* CP	CO
were	CP	CO
a	CP	CO

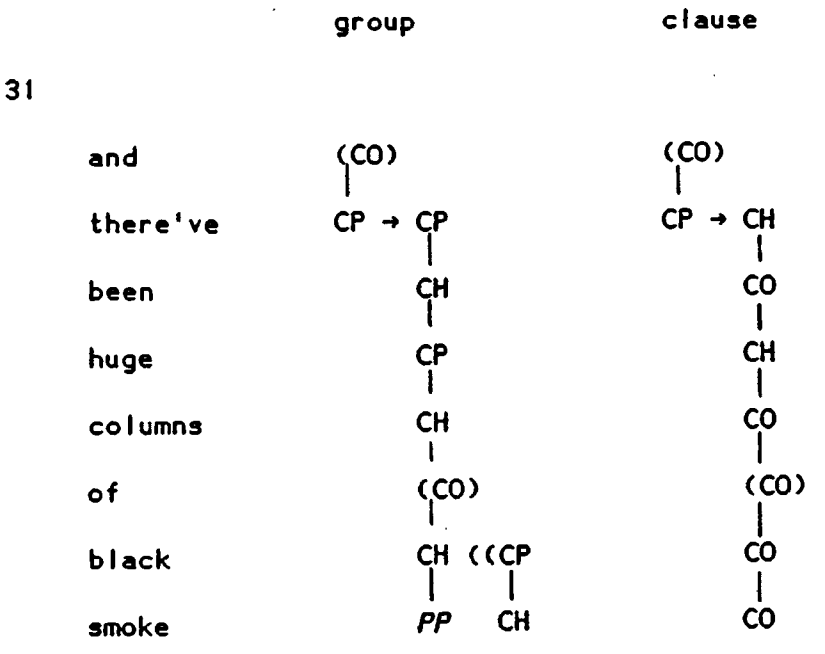


Notes: 1 - The secondary analysis opening from here means that a primary analysis should also be seen to be carried through. The step at primary level would be a change at group rank and continue at clause rank. Every subsequent step in this line would be analysed in the same way, as change and continue respectively. Similarly, for the secondary analyses opening at about, from, on, primary change/continue steps would be seen to follow through for the rest of the line, and following where, there would be a primary complete/change step. This would obviously make the visual representation extremely dense, and so such primary paths have been omitted.

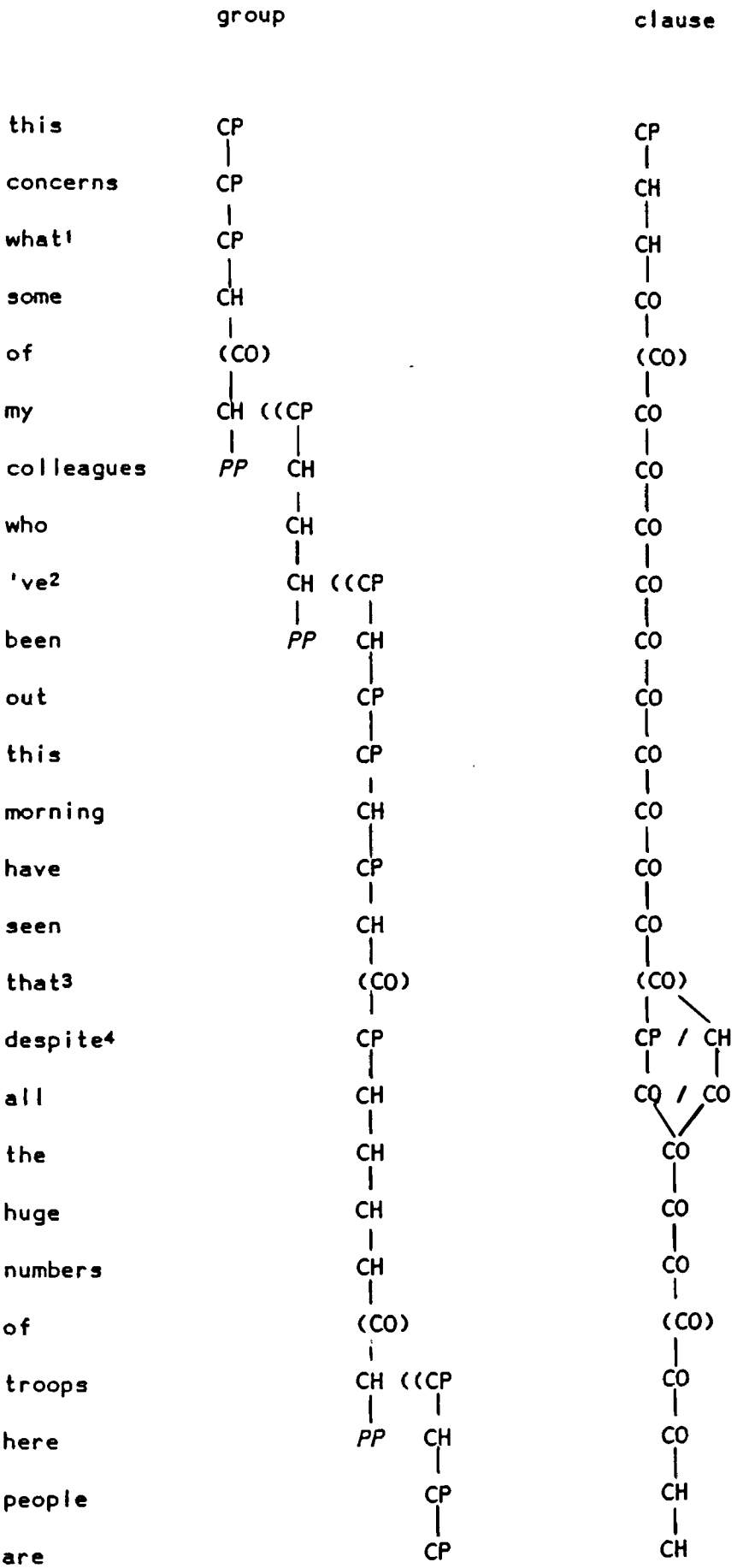
2 - It would be possible to analyse where as simultaneously being a complete step at group and clause ranks, that is, representing a clause boundary. This possibility would arise from the latent potential of where to begin clauses. However, in the context of this particular unfolding path, this possibility is rather low, particularly given the complex structure of the path up to this point: the speaker seems to be repeating a pattern of extending the path from the most recent secondary step (that is, by exploiting what in synoptic terms is called rankshift).

3 - The step into a different nominal group here is also analysed as a deferred expectation for a resetting step to occur. However, it is not until started is reached that we can be sure that a reset has occurred, although the virtual synonymy between firing and shooting is a strong indication that this is the case.

4 - The implication of this analysis is that smoke is the last true primary step in this path, and that everything following it is, so to speak, projected from here by building up more and more layers in the path.



32


group
clause
this
concerns
what1
some
of
my
colleagues
who
've2
been
out
this
morning
have
seen
that3
despite4
all
the
huge
numbers
of
troops
here
people
are
CP
CH
(CO)
CO
PP
((CP

still	CH	CO
setting	CH	CO
fire[5]	CP	CH
to	CP	CH
buses	CH ((CP	CO

Notes: 1 - The group opening up from what is the last true primary step in this path: everything following this is subservient, so to speak, to this group.

2 - This step should be represented as a fused step, but is presented on separate lines to avoid complication or confusion with the secondary analysis.

3 - From a synoptic perspective, this clause would have to be analysed as a grammatical error, as the speaker seems to have intermingled two clause structures (viz: this concerns what (they) have seen and (they) have seen that ...). The 'mistake' is that by the time seen is reached, a potentially complete clause has already been produced, but the speaker extends the clause from seen as if it was the main verb of a clause, and not a rankshifted verb as is the actual case. Thus, following that, the speaker produces a clause acting as a projected Phenomenon to the mental process of seen. But most interestingly, the path analysis enables this 'mistake' to be explained. Firstly, even though seen is a secondary path step (in synoptic terms, rankshifted), it occurs, relatively speaking, a long way away from the actual main verb. This enables the latent potential of seen to be functioning as a main verb to come to the fore; in combination with the coordinating function of that, this enables the speaker to 'forget' that seen is not in fact a ranking process, and to proceed from that point as if it were. It is also

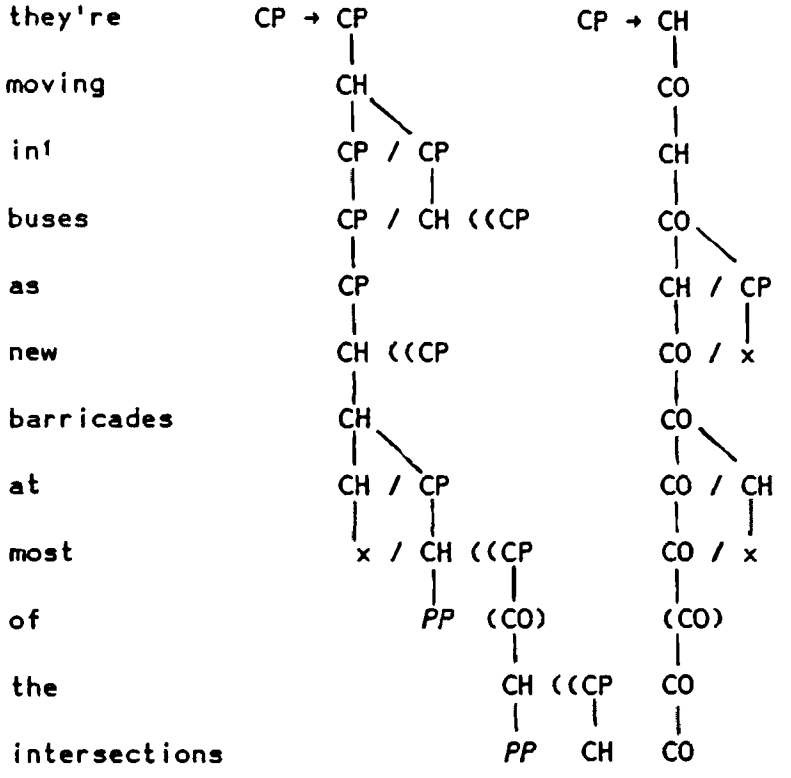
interesting to note that despite the synoptic 'error' here, the example would cause few problems of understanding for receivers.

4 - Note that a simultaneous analysis opens up from despite, as it could be completing the clause, or changing it by adding another Adjunct. The simultaneous analysis should be carried through until the beginning of the next clause, but, as each subsequent step following despite would receive the same analysis for either path alternative, we do not represent it. This is perhaps one ramification of the speaker's 'mistake' for the dynamic unfolding of the path, as in most cases, it is possible at some point to choose between such simultaneous paths.

5 - Ideally, a lexical path unfolding simultaneously with the grammatical path would show the lexical unity of setting fire; grammatically they are still analysed as separate units, although the lexical and grammatical path would then be in conflict, and this needs to be resolved.

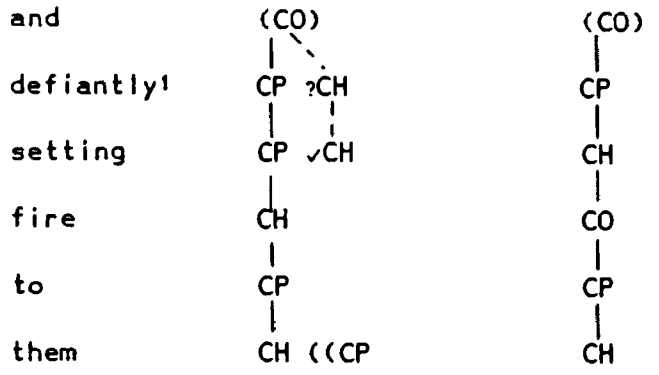
group clause

33



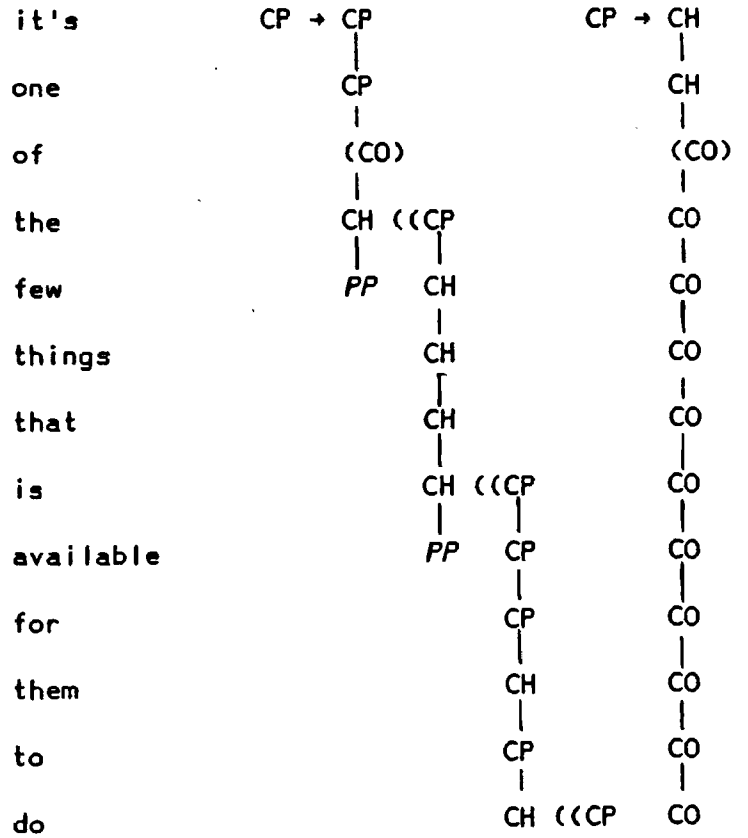
Note: 1 - While the simultaneous analysis opening from <u>in</u> is analysed as the same step, the left captures the potential for <u>in</u> to be an adverbial, and on the right for it to be a preposition.

34



Note: 1 - The deferred analysis here allows for the possibility that defiantly subsumes the auxiliary from the preceding clause.

35



	group	clause
36		
because[1]	CP	CH / CP
they're	CP → CP	x / CH → CH
all	CP	CH
unarmed	CP	CH

Note: 1 - Because is analysed as a complete at group rank, but a simultaneous change or complete at clause rank, as it could be adding a prepositional phrase or opening a new clause. The step into the following nominal, they... confirms the latter option.

REFERENCES

Ballmer, Thomas T. 1981a "Context Change and its Consequences for a Theory of Natural Language" in Herman Parret, Marina Sbisa and Jef Verschueren (eds) *Possibilities and Limitations of Pragmatics, Proceedings of the Conference on Pragmatics, Urbino, July 8-14, 1979* John Benjamins: Amsterdam pp17-55

Ballmer, Thomas T. 1981b "Words, sentences, texts and all that" *Text* 1 (2) pp163-190

Ballmer, Thomas T. (ed.) 1985 *Linguistic Dynamics - Discourses, Procedures and Evolution* De Gruyter: Berlin

Bateman, John A. 1989 "Dynamic Systemic-Functional Grammar: a New Frontier" *Word* 40 pp263-286

Bates, M. 1978 "The theory and practice of augmented transition network grammars" in L. Bolc (ed.) *Natural Language Communication with Computers* Springer-Verlag: Berlin

de Beaugrande, Robert 1980 *Text, Discourse and Process: Toward a Multi-disciplinary Science of Texts* Longman: USA

Bee, Robert. L. 1974 *Patterns and Processes: An Introduction to Anthropological Strategies for the Study of Sociocultural Change* The Free Press: New York

Benson, J.D. and Greaves, W.S. (eds) 1985 *Systemic Perspectives on Discourse, Volume One* Ablex: Norwood, New Jersey

Benson, J.D.; Cummings, M.J. and Greaves, W.S. (eds) 1988 *Linguistics in a Systemic Perspective* John Benjamins: Amsterdam

Berry, M. 1975 *An Introduction to Systemic Linguistics 1: Structures and Systems* Batsford: London

Berry, M. 1981 "Systemic Linguistics and Discourse Analysis: A Multi-layered Approach to Exchange Structure" in M. Coulthard and M. Montgomery (eds) pp120-145

Berry, M. 1982 "A Review of M.A.K. Halliday: Language as Social Semiotic" in *Nottingham Linguistics Circular* 11.1 pp64-94

Berry, M. 1987 "Is 'teacher' an unanalyzed concept?" in M.A.K. Halliday and R.P. Fawcett (eds) *New Developments in Systemic Linguistics, Volume One: Theory and Description* Frances Pinter: London pp41-63

Berry, M. 1990 "Thematic development and success in writing" English Language Research Seminar, University of Birmingham

Birch, David 1989 *Language, Literature and Critical Practice: Ways of Analysing Text* Routledge: London

Blackwell, Susan 1987 "Syntax versus orthography: Problems in the automatic parsing of idioms" in R. Garside, G. Leech and G. Sampson (eds) *The Computational Analysis of English - A Corpus-Based Approach* Longman: London and New York pp110-119

Bolinger, Dwight L. 1952 "Linear Modification" *PMLA* 67 pp1117-1144

Bordieu, Pierre 1977 *Outline of a Theory of Practice* (Translated by Richard Nice) CUP: Cambridge

Brazil, David 1983 "Intonation and discourse: Some principles and procedures" *Text* 3 (1) pp39-70

Brazil, David 1985 *The Communicative Value of Intonation in English* Discourse Analysis Monograph No.8, English Language Research, University of Birmingham

Brazil, David 1987 "Intonation and the Grammar of Speech" in R. Steele and T. Threadgold (eds) Vol. 2 pp145-149

Brazil, David 1990 *The Grammar of Speech* Mimeo, School of English Language and Research, University of Birmingham; also presented as an English Language Research Seminar, University of Birmingham

Butler, Christopher S. 1985 *Systemic Linguistics: Theory and Applications* Batsford: London

Cheepen, Christine 1988 *The Predictability of Informal Conversation* Pinter: London and New York

Chomsky, Noam 1957 *Syntactic Structures* Mouton: The Hague

Clear, Jeremy 1988 "Process Grammar" Mimeo, School of English Language and Literature, University of Birmingham

Collin, S.M.H. 1988 *Dictionary of Computing* Peter Collin Publishing: Great Britain

Cook, Guy 1990 "Transcribing Infinity: Problems of Context Presentation" *Journal of Pragmatics* 14 pp1-24

Coulthard, M. (ed.) 1987 *Discussing Discourse* Discourse Analysis Monograph 14, University of Birmingham

Coulthard, M. and Montgomery, M. (eds) 1981 *Studies in Discourse Analysis* Routledge and Kegan Paul: London

Cowling, A. 1987 Ph.D Thesis proposal Mimeo Department of Linguistics University of Sydney

Cowling, A, Perrett, G. and Thwaite, A. 1987 "Investigating the exchange" Paper presented to the 14th International Systemic Workshop, University of Sydney, August 24-28

Cowling, A, Nesbitt, C. and Plum, G. 1987 "Probabilistic Grammars" Workshop presented to the 14th International Systemic Workshop, University of Sydney, August 24-28

Daneš, F. 1974 "Functional Sentence Perspective and the Organisation of the Text" in F. Daneš (ed.) *Papers on Functional Sentence Perspective* Mouton: The Hague pp106-128

Davies, Florence 1989 "Functions of Sentence Initial Adjuncts in Discourse" English Language Research Seminar, University of Birmingham

Davies, M. and Ravelli, L.J. (eds) 1991 *Advances in Systemic Linguistics: Recent Theory and Practice* Frances Pinter: London Forthcoming

Eggins, S. 1987 "Keeping the conversation going" Paper presented to the i4th International Systemic Workshop, University of Sydney, August 24-28

Emmott, C. 1989 *Reading Between the Lines: Building a Comprehensive Model of Participant Reference in Real Narrative* Ph.D Thesis, School of English Language and Literature, University of Birmingham

Enkvist, Nils-Erik 1989 "Text Types and Text Strategies" Plenary address, 16th International Systemics Congress, Hanasaari, Finland

Fawcett, R.P.; Halliday, M.A.K.; Lamb, S.M. and Makkai, A. (eds) 1984 *The Semiotics of Culture and Language, Volume Two: Language and Other Semiotic Systems of Culture* Frances Pinter: London

Fawcett, R.P. and Young, D.J. (eds) 1988 *New Developments in Systemic Linguistics, Volume Two: Theory and Application* Frances Pinter: London

Fawcett, R.P.; van der Mije, A. and van Wissen, C. 1988 "Towards a Systemic Flowchart Model for Discourse Structure" in R.P. Fawcett and D.J. Young (eds) pp 116-143

Fine, Jonathon 1989 "The static and dynamic choices of responding toward the process of building social reality by the developmentally disordered" to appear in E. Ventola (ed.)

Fine, Jonathon 1991 "Functions of Probabilities on Linguistic Systems" To appear in M. Davies and L.J. Ravelli (eds) Forthcoming

Firth, J.R. 1968 "A Synopsis of Linguistic Theory, 1930-1955" in F.R. Palmer (ed.) pp168-205 Originally in *Studies in Linguistic Analysis* Special Volume of the Philological Society: Oxford pp1-31

Francis, Gill 1989 "Thematic Selection and Distribution in Written Discourse" *Word* 40 pp201-222

Fries, Peter H. 1981 "On the status of Theme in English: Arguments from Discourse" *Forum Linguisticum* 6 pp1-38

Fox, B.A. and Thompson, S.A. 1990 "A discourse explanation of the grammar of relative clauses in English conversation" *Language* Vol. 66, No.2 pp297-316

Garside, R; Leech, G, and Sampson, G. (eds) 1987 *The Computational Analysis of English: A Corpus-Based Approach* Longman: London and New York

Gazdar, G; Franz, A; Osborne, K; Evans, R. 1987 *Natural Language Processing in the 1980s: A Bibliography* CSLI (Center for the Study of Language and Information): Stanford

Gleick, James 1988 *Chaos: Making a New Science* Cardinal/Sphere Books

Goffman, E. 1975 *Frame Analysis. An Essay on the Organization of Experience* Penguin: Harmondsworth

Gregory, Michael 1985 "Towards communication linguistics: a framework" in J.D Benson and W.S. Greaves (eds)

Gross, Maurice 1975 *Méthodes en syntaxe - régime des constructions complétives* Hermann: Paris

Gross, Maurice 1985 "Sur les déterminants dans les expressions figées" in *Langages*, No. 79 September pp89-117

Gross, Maurice 1986 "Les Nominalisations d'Expressions Figées" in *Langue Française* February pp64-84

Gross, Maurice 1988 *ESPRIT Basic Research Actions Proposal - Coordinated Construction of Electronic Lexicons and Grammars; A Multi-Language Approach* LADL-CERIL: Paris

Halliday, M.A.K. 1961 "Categories of the Theory of Grammar" *Word* 17.3, also reprinted in G. Kress (ed.) 1976 pp52-72

Halliday, M.A.K. 1967 *Intonation and Grammar in British English* Mouton: The Hague

Halliday, M.A.K. 1973 *Explorations in the Functions of Language* Edward Arnold: London

Halliday, M.A.K. 1975 *Learning How to Mean* Edward Arnold: London

Halliday, M.A.K. 1976a "The form of a functional grammar" in G. Kress (ed.) pp7-25

Halliday, M.A.K. 1976b "Functions and universals of language" in G. Kress (ed.) pp26-31

Halliday, M.A.K. 1978 *Language as Social Semiotic: the social interpretation of language and meaning* Edward Arnold: London

Halliday, M.A.K. 1981a "Types of structure" in M.A.K. Halliday and J.R. Martin (eds) pp29-41 Originally published as a Working paper for the Osti Programme in the Linguistic Properties of Scientific English, 1965

Halliday, M.A.K. 1981b "Structure" in M.A.K. Halliday and J.R. Martin (eds) pp122-131

Halliday, M.A.K. 1985a *Introduction to Functional Grammar* Edward Arnold: London

Halliday, M.A.K. 1985b *Spoken and written language* Deakin University Press: Deakin

Halliday, M.A.K. 1985c "Systemic Background" in J.D. Benson and W.S. Greaves (eds) pp1-15

Halliday, M.A.K. 1987 "Language and the Order of Nature" D. Attridge, A. Durant, N. Fabb and C. MacCabe (eds) *The Linguistics of Writing* Manchester University Press: Manchester.

Halliday, M.A.K. 1989 "Towards Probabilistic Interpretations" To appear in E. Ventola (ed.) Forthcoming

Halliday, M.A.K. 1991 "How do you mean?" To appear in M. Davies and L.J. Ravelli (eds) Forthcoming

Halliday, M.A.K; McIntosh, A. and Strevens, P. 1964 *The Linguistic Sciences and Language Teaching* Longman: London

Halliday, M.A.K and Hasan, R. 1976 *Cohesion in English* Longman: London

Halliday, M.A.K and Hasan, R. 1985 *Language, context, and text: Aspects of language in a social-semiotic perspective* Deakin University Press: Deakin University

Halliday, M.A.K and Martin, J.R. (eds) 1981 *Readings in Systemic Linguistics* Batsford: London

Harris, S. 1988 "Court discourse as genre: some problems and issues" in Fawcett and Young (eds) pp94-115

Hasan, R. 1981 "What's going on: a dynamic view of context in language" in J.E. Copeland and P.W. Davis (eds) *The 7th Lacus Forum 1980* Hornbeam Press: Columbia pp106-121

Hasan, R. (ed.) 1983 *Discourse on Discourse* ALAA Occasional Papers No.7

Hasan, R. 1984 "The nursery tale as a genre" in *Nottingham Linguistics Circular*, 13 pp71-102

Hasan, R. 1985 "Meaning, Context and Text: Fifty Years after Malinowski" in J.D. Benson and W.S. Greaves (eds) pp16-49

Hazadiah, Mohamad Dahan 1991 *The Structure of Topic in Conversation with special reference to Malaysian Discourse* Ph.D Thesis, School of English Language and Literature, University of Birmingham Forthcoming

Hjelmslev, Louis 1943/1969 *Prolegomena to a Theory of Language* (Translated by F.J. Whitfield) University of Wisconsin Press: Madison, Wisonsin

Hoey, Michael. 1983 "Three Metaphors for Examining The Semantic Organisation of Monologue" *Analysis: Quaderni di Anglistica* anno I, n.1 pp27-53

Hoey, Michael. 1991 *Patterns of Lexis in Text* Oxford University Press: Oxford

Hunston, S. 1989 *Evaluation in Experimental Research Articles* Ph.D Thesis, School of English Language and Literature, University of Birmingham

Kempen, Gerard (ed.) 1987 *Natural Language Generation: New Results in Artificial Intelligence, Psychology and Linguistics* Martinus Nijhoff Publishers: Dordrecht

Koch, Walter A. 1985 "Tension and Suspense: On the Biogenesis and the Semiogenesis of the Detective Novel, Soccer and Art" in T. Ballmer (ed.) pp279-321

Kress, G. (ed.) 1976 *Halliday: System and Function in Language - selected papers* Oxford University Press: Oxford

Leal, W.M. 1975 "Transition Network Grammars as a Notation Scheme for Tagmemics" in J. Grimes (ed.) *Network Grammars*, a publication of the Summer Institute of Linguistics of the University of Oklahoma

Lemke, Jay L. 1987 "Semantics, Ideology and Change" Plenary Address, 14th International Systemic Workshop, University of Sydney, August 24-28

Lemke, Jay L. 1989 "Textproduction and Dynamic Text Semantics" Paper presented to the 16th International Systemics Congress, Hanasaari, Finland

Lemke, Jay L. 1991 "Interpersonal meaning in discourse: value orientations" To appear in M. Davies and L.J. Ravelli (eds) Forthcoming

Longacre, R.E. 1983 *The Grammar of Discourse* Plenum Press: New York

Mann, W.C. 1983 *An Overview of the Nigel Text Generation Grammar*" Information Sciences Institute: University of Southern California

Martin, J.R. 1985 "Process and Text: Two Aspects of Human Semiosis" in J.D. Benson and W.S. Greaves (eds) pp248-274

Martin, J.R. 1985b *Factual Writing: exploring and challenging social reality* Deakin University Press: Deakin

Martin, J.R. 1986a "Grammaticalising Ecology: The Politics of Baby Seals and Kangaroos" in Terry Threadgold, E.A. Grosz, Gunther Kress and M.A.K. Halliday (eds) *Semiotics, Ideology, Language (Sydney Studies in Society and Culture, No.3)* Pathfinder Press: Sydney pp225-268

Martin, J.R. 1986b "Systemic Functional Linguistics and an Understanding of Written Text" in *Working Papers in Linguistics: Writing Project Report No.4* Linguistics Department, University of Sydney pp91-108

Matthews, P.H. 1974 *Morphology - An Introduction to the theory of word-structure* CUP: Cambridge

Matthiessen, Christian. 1987 "Notes on the Organization of the Environment of a Text Generation Grammar" in G. Kempen (ed.) pp253-278

Matthiessen, Christian. 1989 *Lexicogrammatical Cartography: English Systems; Draft 3* Mimeo, Department of Linguistics, University of Sydney

Matthiessen, Christian. 1991 "Interpreting the Textual Metafunction" To appear in M. Davies and L.J. Ravelli (eds) Forthcoming

McCarthy, M. 1987 "Interactive Lexis: Prominence and Paradigms" in M. Coulthard (ed.) pp236-248

McCarthy, M. 1988 "Lexical Relations" English Language Research Seminar, University of Birmingham

Mead, Richard 1985 *Courtroom Discourse* Discourse Analysis Monograph, English Language Research, University of Birmingham

Minsky, M. 1977 "Frame-system theory" in P. N. Johnson-Laird and P.C. Wason (eds) *Thinking. Readings in Cognitive Science* CUP: Cambridge pp355-376

Nesbitt, C. 1987 "Probabilisation of grammar: questions and problems" Paper presented to the 14th International Systemic Workshop, University of Sydney, August 24-28

Nesbitt, C. and Plum, G. 1988 "Probabilities in a systemic-functional grammar: the clause complex in English" in R.P. Fawcett and D.J. Young (eds) pp1-38

O'Donnell, Michael 1986 "A Dynamic Systemic Representation of Exchange Structure" Unpublished BA Honours Thesis, Department of Linguistics, University of Sydney

O'Donnell, Michael 1990 "A Dynamic Model of Exchange" Paper presented to the 17th International Systemics Congress, University of Stirling

Oxford English Dictionary 1989 Clarendon Press: Oxford

Palmer, F.R. (ed.) 1968 *Selected Papers of J.R. Firth; 1952-1959* Longman: London

Plum, Guenter A. 1988 *Text and Contextual Conditioning in Spoken English: a genre-based approach* Ph.D Thesis, Department of Linguistics, University of Sydney

Prigogine, Ilya and Stengers, Isabelle 1985 *Order Out of Chaos: Man's New Dialogue with Nature* Fontana Paperbacks: London

Quirk, Randolph and Greenbaum, Sidney 1973 *A University Grammar of English* Longman: London

Ravelli, L.J. 1988 "Grammatical metaphor: an initial analysis" in E.H. Steiner and R. Veltman (eds) *Pragmatics, Discourse and Text: Some systemically inspired approaches* Frances Pinter: London pp133-147

Ravelli, L.J. 1989 "A Dynamic Perspective on Systemic Grammar: getting the perspective right" Paper presented to the 16th International Systemics Congress, Hanasaari, Finland.

Ravelli, L.J. 1990 "Problems and implications of a dynamic approach to grammar" Paper presented to the 17th International Systemics Congress, University of Stirling

Reichman, Rachel 1978 "Conversational Coherency" *Cognitive Science* 2, pp283-237

Reichman, Rachel 1985 *Getting Computers to Talk Like You and Me. Discourse Context, Focus and Semantics (An ATN Model)* MIT Press: Cambridge, Massachusetts

Reid, T.B.W. 1956 "Linguistics, Structuralism, Philology" *Archivum Linguisticum* 8

Rumelhart, D; McClelland, J.L. and the PDP Research Group 1986 *Parallel Distributed Processing - Explorations in the Microstructure of Cognition* Vols 1 & 2 MIT Press: Cambridge, Massachusetts

Salat, D.S. 1985 *'Aid' in expanding the grammar: lexis as most delicate grammar* Unpublished BA Honours Thesis, Department of Linguistics, University of Sydney

Sampson, Geoffrey 1987 "Probabilistic Models of Analysis" in R. Garside *et al* (eds) pp16-29

Sankoff, D. 1988 "Probability and Linguistic Variation" *Synthèse* 37 pp217-238

de Saussure, Ferdinand 1987 *Cours de linguistique générale* Payot: Paris First published 1916

Schank, Roger and Abelson, Robert 1977 *Scripts, Plans, Goals and Understanding: An Inquiry into Human Knowledge Structures* LEA: Hillsdale

Shannon, C.E. 1951 "Prediction and Entropy of Printed English" *The Bell System Technical Journal*, Vol.XXX pp50-64

Shannon, C.E. and Weaver, W. 1949 *The Mathematical Theory of Communication* The University of Illinois Press: Urbana

Sinclair, J.McH. 1983 "Planes of Discourse" in S.N.A. Rizvil (ed.) *The Twofold voice: Essays in Honour of Ramesh Mohan* Salzburg Studies in English Literature Universität Salzburg pp70-90

Sinclair, J.McH. 1985 "On the Integration of Linguistic Description" in T.A. van Dijk (ed.) *Handbook of Discourse Analysis, Volume Two* Academic Press: London pp13-28

Sinclair, J.McH. 1986 "First Throw Away Your Evidence" in G. Leitner (ed.) *The English Reference Grammar* Niemeyer: Tubingen

Sinclair, J.McH. (ed.) 1987 *Collins COBUILD English Language Dictionary* Collins: London

Sinclair, J.McH. (ed.) 1987b *Looking Up* Collins: London

Sinclair, J.McH. 1988a "Inference: Two worked examples" Mimeo School of English Language and Literature University of Birmingham

Sinclair, J.McH. 1988b "Text-Based and Functional Grammars" English Language Research Seminar, University of Birmingham

Sinclair, J.McH. 1989 "Uncommonly common words" in M.L. Tickoo (ed.) *Learners' Dictionaries: State of the Art* SEAMO, RELC, Anthology Series 23

Sinclair, J.McH. 1990 "Uniguity" English Language Research Seminar, University of Birmingham

Sinclair, J.McH. 1991 "Trust the Text" To appear in M. Davies and L.J. Ravelli (eds) Forthcoming

Sinclair, J.McH. 1991b *Corpus Concordance Collocation* OUP: Oxford

Sinclair, J.McH. and Coulthard, R.M. 1975 *Towards an Analysis of Discourse - The English used by teachers and pupils* OUP: Oxford

Singer, H. and Ruddell, R.B. (eds) 1985 *Theoretical Models and Processes of Reading* IRA/Earlbaum Associates

de Smedt, Koenraad and Kempen, Gerard 1987 "Incremental Sentence Production, Self-Correction and Co-Ordination" in G. Kempen (ed.) pp365-376

Smith, Raoul N. 1973 *Probabilistic Performance Models of Language* Mouton: The Hague

Steele, Ross and Threadgold, Terry (eds) 1987 *Language Topics - Essays in Honour of Michael Halliday* John Benjamins: Amsterdam

Stillar, G. 1991 "Emerging Discoursal Patterns: A Phasal Analysis and Catalysis of Leonard Cohen's 'Alexander Trocchi, Public Junkie, Priez Pour Nous'" To appear in M. Davies and L.J. Ravelli (eds) Forthcoming

Stucky, N; Gray, P. and Park-Fuller, L. 1990 "Minding the Stops: Performance and Affective Stylistics" *Text and Performance Quarterly* 10 pp269-281

Suppes, Patrick 1970 "Probabilistic Grammars for Natural Languages" *Synthèse* 22 pp95-116

Tadros, Angela 1985 *Prediction in Text* Discourse Analysis Monograph No.10, English Language Research, University of Birmingham

Tognini-Bonelli, E. Forthcoming *A Textual Perspective on Inference* Ph.D Thesis, School of English Language and Literature, University of Birmingham

Tsui, Bik-May Amy 1986 *A Linguistic Description of Utterances in Conversation* Ph.D Thesis, School of English Language and Literature, University of Birmingham

Ure, Jean 1971 "Lexical density and register differentiation" in G.E. Perren and J.L.M. Trim (eds) *Applications of Linguistics: selected papers of*

the 2nd International Congress of Applied Linguistics, Cambridge 1969 CUP: Cambridge

Ventola, E. 1984a "The Dynamics of Genre" *Nottingham Linguistics Circular* 13 pp103-123

Ventola, E. 1984b *Can I help you? A Systemic-Functional Exploration of Service Encounter Interaction* Ph.D Thesis, Department of Linguistics, University of Sydney

Ventola, E. 1987 *The Structure of Social Interaction - A Systemic Approach to the Semiotics of Service Encounters* Frances Pinter: London

Ventola, E. 1989 "Problems of modelling and applied issues within the framework of genre" *Word* 40 Nos1-2 pp129-161

Ventola, E. (ed.) 1989 *Recent Systemic and Other Functional Views on Language* Berlin: Mouton Forthcoming

Ventola, E. and Steele, R. 1983 "A dynamic representation of casual conversation" in R. Hasan (ed.) pp25-29

Willis, D. 1987 "An analysis of Directive Exchanges" in M. Coulthard (ed.) pp20-43

Woods, W.A. 1970 "Transition Network Grammars for natural language analysis" *Communications of the ACM* 13 pp591-606

Young, David J. 1980 *The Structure of English Clauses* Hutchinson: London

Young, L. 1986 "Static and Dynamic Discourse Structure: an analysis within the framework of Communication Linguistics" *ITL - Review of Applied Linguistics* 72 pp27-51

Yule, George 1985 *The Study of Language - An Introduction* CUP: Cambridge