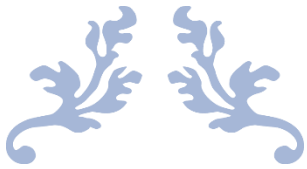

TOPICS IN GRAMMAR

A Workbook

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Grammars of English

Contents

Chapter 1
Early Approaches to Grammatical Analysis

1.0 Introduction

The name of this coursebook is 'Topics in Grammar', with the emphasis on *topics*. Its aim is to give an overview of some of the main grammatical theories of the last century. In short, it is a survey of some of the main grammatical theories developed in the 20th and early 21st century. The workbook is, however, not exhaustive – some grammatical theories are not covered – and I do not wish to imply that grammatical theorising began in the early twentieth century. People were thinking and writing about grammatical relationships in Ancient Greece – indeed many of our traditional categories (such as *noun, verb, conjunction, gender, case, tense*, and so on) can be found in the work of early Greek philosophers such as Dionysius Thrax, who lived in the first century B.C. However, in the last one hundred years, the study of the grammar of the contemporary vernacular languages has regained the status of an academic subject. Different 'schools' of grammatical theory have developed, all of which seek to account for the facts of language.

Many university undergraduate courses select the grammatical approach of one of these 'schools' and deliver a detailed introduction to that approach. This course is different. We will be looking at several approaches in somewhat less detail, in order to give a general orientation towards what grammatical theories try to do. We will argue that grammatical theories can be distinguished by their initial assumptions about what language is and by the overall goals of their grammatical descriptions. Much of this course will focus on the various approaches in order to show how their different assumptions lead them to think about grammar in rather different ways. The workbook is not organized chronologically, but thematically. To preview the workbook as a whole, we begin with functional grammar. We look at a popular and widely discussed linguistic theory, Systemic-Functional (SF) grammar, which assumes that grammar realises a set of *meaningful options* that develop to serve the individual and social requirement to communicate in different situations. The goal of the systemic-functional grammarian is to identify and describe the set of options or *meaning potential* of any given language. We then contrast functional grammar with a sequence of more formal approaches, some of which may be familiar to you from earlier courses you have taken. One of the earliest formal approaches, Immediate Constituent (IC) grammar, supposes that language is a complex set of *structures* which must be *described* using procedures which can be scientifically validated. A later approach, Transformational-Generative (TG) grammar, supposes that the structures that are acceptable in any given language derive from a *set of instinctive mental procedures,* and so the job of a grammarian is not just to describe the structures, but to *model* the kind of mental procedures which will generate the kind of sentences which are naturally produced by a native speaker. A development of TG grammar, Universal Grammar (UG) seeks to model and describe the *initial mental processes* which are supposedly common to all communicating humans, and which allow them to develop the particular grammars of their various mother tongues. More recently, since the early 1980s, technological progress in the development of *corpus-based* linguistic analysis has allowed the computerised searching of large amounts of 'authentic' language production to verify and dispute our intuitions about how grammar works. Corpus-based grammars claim to be *'data-driven'* – that is, they claim to arise from the analysis of language as it is used, not from the intuitions of the contemplative grammarian. However, as we shall see, there is no

such thing as a description of grammar that is innocent of some kind of theoretical assumption. Finally, we combine corpus based grammar with a consideration of more recent *cognitive grammars*, which attempt to account for the facts of grammar by appealing to more general ways in which human beings perceive and make sense of the world around them.

The breadth of this workbook is achieved at the cost of detail. This course is intended to give a flavour of each grammatical theory by suggesting its goals and hinting at its procedures. In the class tests and final essay, you are expected to demonstrate your familiarity with the broad sweep of the survey presented here, but you may also wish to look in greater depth one of the theories that appeals to you particularly. In other words, you are expected to use your own initiative to find out more about at least one of the grammatical theories introduced here. To this end, some introductory reading (upon which much of this workbook is based) is recommended in the closing pages of this workbook, and you will be given credit if you can show explicitly that you have engaged with some of these books in a critical and perceptive way in your assessed work.

2.0 Basic Grammar Revisited

I am assuming that most of you will be familiar with basic principles of grammatical description. Most of you will be able to analyse a sentence into formal and functional constituents. Just to refresh your memory, let's consider the following sentence:

I joined this course because I love grammar.

In most basic grammar courses, you would first of all gave these words *form* labels, e.g.

I joined this course because I love grammar.
pn V d N c pn V N

pn = pronoun V = Verb d= determiner N= Noun c = conjunction
(Open class words are put in capital letters; closed class words are in small letters.)

The form labels tell us what kind of word each of the above is. They do not tell us the relationship between the words as such. To show this, we gave the words *function* labels – labels that tell us the relationship of each word to the others around them. The three options for functional labels at the level of word and phrase are modifier (M), headword (H) and neither (x):

H H M H x H H H
I joined this course because I love grammar.
pn V d N c pn V N

By looking at the functional labels, we can divide the sentence into phrases, usually labelling each according to its *headword*:

H H M H x H H H
(I) (joined) (this course) because (I) (love) (grammar).
NP pn VP V NP d N c NP pn VP V NP N

We can now examine the functional relationship – not only between the *words* but between the *phrases*. Basically, this means asking what kind of job each NP is doing, what each VP is doing, and so on. In other words, we can begin to perceive the function of each phrase as a Subject, Predicator, Object, Complement or Adverbial, and we might come up with something like the following:

S H	**P** H	**O** M H	x	**S** H	**P** H	**O** H
(I)	(joined)	(this course)	because	(I)	(love)	(grammar).
NP pn	VP V	NP d N	c	NP pn	VP V	NP N

Here we have two clauses, linked by the conjunction 'because'. 'Because' is a subordinating conjunction, so we know that the clause following it is embedded within the first, main clause. Our sentence therefore has the full structure:

	S H	P H	O M H	A	x	S H	P H	O H
Se { MCl [(I)	(joined)	(this course)	SCl [because	(I)	(love)	(grammar).]}		
	NP pn	VP V	NP d N	ACl	c	NP pn	VP V	NP N

Now we have shown that the embedded clause, *[because I love grammar]*, functions as an Adverbial in the main clause: it is therefore an *Adverbial clause*.

Not every introduction to grammar, nor every grammar reference book, uses the same labels to describe grammatical categories – some books call Adverbials *Adjuncts*, for example, and others merge Objects and Complements as different kinds of *Complement*. But basically, with a little adjustment or flexibility with labelling, we will assume that you can take a relatively complex sentence like the example shown above, and you can identify the form labels, and how the words (= pn, N, V, etc) combine, as modifiers plus headword, into phrases (NP, VP, AjP etc), which in turn function as clause elements (SPOCA), which finally combine into sentences.

If you want to practise this kind of analysis, there is a good online program provided by University College London, *The Internet Grammar of English* available at https://www.ucl.ac.uk/internet-grammar and I strongly recommend you to explore that resource. This course moves beyond this kind of basic analysis. The main aim of this course will be to consider *why* we analyse sentences in the ways that we do – and to examine a range of different approaches. You can therefore expect some of the grammatical theories we are going to look at to make different assumptions about matters like the structure of the NP, or the relationship between Predicator and Object. This can be confusing at first, but as you become familiar with each theory, you should begin to understand the principles on which it is based.

What we will do is look at the main theories of English grammar over the past century: the European tradition is represented by the Prague School linguists and their heirs, particularly the British linguist, Michael Halliday, while the American tradition is represented by Leonard Bloomfield and Noam Chomsky and their followers. We shall also take a brief look at the work of corpus grammarians, focusing in particular on John Sinclair, and we complete this overview by looking at the cognitive grammar promoted by Ron Langacker, and others. Despite their differences, which should become

apparent, these grammarians have struggled collectively to make explicit the rules governing the structure of sentences: how are sentences organised; what are the best ways of classifying the linguistic items; what is the best way of representing the rules by which sentences are described, or even generated? These are the questions which link the bewildering array of modern grammarians, and they are questions which are popularly traced back to the work of a Swiss scholar, often described as the 'father of modern linguistics', Ferdinand de Saussure (1857-1913).

3.0 Ferdinand de Saussure

Ferdinand de Saussure was educated at the University of Leipzig in Germany. While he was an undergraduate there, at the age of 20, he produced what was later described as 'a monumental treatise on the Proto-Indo-European vocalic system'. He went on to teach Germanic languages and comparative grammar at the University of Paris, and then he returned to Switzerland, to the University of Geneva, where he taught a course in General Linguistics from 1907-11. He did not publish much in his own lifetime, and he died before any of his course in General Linguistics was committed to print. His students, however, felt that the course should be made public, and they tried to obtain the manuscripts of the lectures, only to find that Saussure had destroyed them. Therefore, they then reconstructed the course from lecture notes taken by various of Saussure's students, and this reconstruction was published in 1915 as *Cours de linguistique générale* – later translated into English as *Course in General Linguistics.* The legacy of this book is with us today, so much so that many of Saussure's revolutionary claims now have the status of common sense – you have to remember that they were not necessarily regarded as such in his own time. Saussure coined the terms 'diachronic' and 'synchronic' linguistics to distinguish the study of historical linguistics, or language development over time (= diachronic), and the description of a linguistic system at one particular point in time (= synchronic) – 'synchronic' linguistics now normally refers to the description of the language system at the present moment. A famous analogy that Saussure used was the comparison of language to a game of chess. Chess, like language, is governed by rules. You can follow the 'flow' of a game over time by charting move after move after move – this would be the equivalent of diachronic linguistics. Alternatively, you can stop the game at any point, and analyse the state of the game at that point (the number of pieces on the board, their relation to each other in the 'frozen' moment) – and you can do this without any reference to past moves. This would be the equivalent of synchronic linguistics.

The synchronic/diachronic distinction was influential, because it is fair to say that during the 19th Century the main focus of academic linguistic investigation was diachronic – people were in general interested in discovering how the present language evolved from earlier linguistic systems. Many people are still interested in diachronic questions – many people in English studies remain vitally interested in the explanatory power that diachronic linguistics has. But Saussure's work expanded the scope of linguistics from a consideration of diachronic linguistics to a study of synchronic linguistics, and thus helped validate the study of present-day language, without reference to previous forms, as an intellectually respectable pursuit.

4.0 Langue and parole

So how do you go about this study of synchronic linguistics – in particular, how do you go about analysing the structure of a language at the present time? What methodology do you follow, and what kind of theoretical concepts do you need? Again, it was

Saussure who formulated in a clear and accessible way some guidelines for future linguists to follow.

A crucial distinction he made was between *langue* and *parole* – two words that are sometimes inadequately translated as 'language' and 'speaking'. Most anglophone linguists therefore still use the French terms when referring to these concepts. 'Parole' is probably easier to define – the set of actual utterances which people produce when they are speaking or writing a language constitutes the 'parole'. The 'langue' is the abstract language system that people share, the evidence for which comes from the actual utterances, the parole. According to Saussure, what the linguist does is look at the parole and, using it as evidence, he or she tries to describe the langue. The rules of grammar are therefore aspects of the 'langue' and we can use these rules to describe actual utterances, the 'parole'. To return to the chess analogy, the researcher looks at actual games of chess (the equivalent to 'parole') and on the evidence of the way people play, tries to write the rules of the game ('the langue').

If you think about it, this distinction – between actual events and the abstract system they provide evidence for – has been influential well beyond grammar, or linguistics. It is the key theoretical concept in structuralist theories of literature or media studies. One way into genre studies – whether of folk-tales or *film noir* – is to consider a tale or a movie as a particular example of a set of conventions or rules which it is the critic's job to make explicit. For this reason, you hear people talk about constructing a 'grammar' of folk tales, or a 'grammar' of film. As we move from concrete instances to the abstract conventions that explain those instances, we are moving from parole to langue.

5.0 Paradigms and syntagms

So far, then, Saussure has helped us to justify synchronic linguistics, and he has helped us to distinguish between parole and langue. Still, how do you do it – how do you move from concrete example to abstract set of rules? What is the methodology that grammarians follow?

Again Saussure helps us by distinguishing between two types of grammatical relation into which any linguistic unit enters: *paradigmatic* and *syntagmatic*. To distinguish between these two on the level of grammar, let us return to the sentence analysed earlier:

> I joined this course because I love grammar.

Let's consider this sentence in relation to a similar one:

> She dropped this course because she hates grammar.

Consider them together:

I	joined	this course	because	I	love	grammar.
She	dropped	this course	because	she	hates	grammar.

Paradigmatic relations are on the *vertical* axis between these two sentences: in other words, the words 'I' and 'she' are somehow related, and we know this because one can be substituted for another. Similarly, 'joined'/'dropped' and 'love'/'hates' can be

substituted for each other – so these must be somehow related. To acknowledge this relationship, we classify these words similarly – 'I'/'she' are pronouns, while 'joined/dropped' and 'love/hates' are verbs. Part of the grammarian's rationale for classifying these words as belonging to the same set is because they exist in paradigmatic relation to each other. 'I' and 'the' *cannot* be substituted for each other – they are not in paradigmatic relation to each other – and so they are therefore different parts of speech.

Syntagmatic relations are on the *horizontal* axis. You might have noticed that there is a problem above with the straight substitution of 'love' and 'hates': if you try swapping them you get *'I hates', and *'she love' – neither of which is acceptable in standard English. What is happening here? Obviously, the form of the pronoun is influencing the form of the verb – you may remember this grammatical fact described in your earlier studies as Subject-Verb *concord* or *agreement*. Since concord is a grammatical relation along the horizontal axis of the sentence, it is syntagmatic.

Now, armed with these two powerful grammatical relations, we can begin to develop a methodology for analysing sentences. We can ask (i) what can be substituted for any particular linguistic unit (i.e. what exists in paradigmatic relation to it?) and (ii) what effect does the presence of a linguistic unit have on the others around it (i.e. what are its syntagmatic relations)? Every grammatical theory that we will look at has at its core the questions of classification and combination – what basic parts of speech are there, and how can they be combined into more complex units?

6.0 Conclusion

I have begun this workbook as I mean to go on, by being very selective in the concepts that I've chosen to present, in the hope that these concepts will seem reasonably clear and simple. In every simplification there is a distortion, however, and again I hope that you will engage in enough background reading to come to a more sophisticated understanding of the main theoretical ideas introduced in this workbook.

A last word about Saussure – he lectured on much more than I have mentioned here – on phonology, writing systems, dialect and even on diachronic linguistics. He was interested in the relationship of language and the mind, and language and the social group – as we shall see, these separate interests became the main focus of interest of American and European grammarians, the former arguably being more interested in the mind while the latter are arguably more interested in society. Saussure is also credited with inventing the discipline of semiology, or semiotics – 'the study of the life of signs' – and he saw language study as being part of this wider, as yet largely undeveloped, discipline. This insight has again been enormously influential in twentieth century literary and cultural studies, as well as in linguistic study.

7.0 Review Activities

These activities are mainly concerned with refreshing your memory of basic grammatical terminology. In this course we will survey different ways of modelling the grammar of English, but many procedures and concepts are common to different models. Remember that on this course, we are not only concerned with *what* label we give to a part of speech, but *why* we give it that label.

7. 1. Identifying words

a) Which of the following are prepositions and which are adverbs, and which can be both? How can your knowledge of *paradigmatic relations* help you decide this?

out outwards quickly in over fast now at

b) Using similar 'grammatical tests', decide which of the following are prepositions and which are conjunctions

if up although over because in that in

c) Can you think of a *syntagmatic* test which can help you to distinguish the following adverbs and conjunctions? Which can be either?

however but furthermore unless besides

Note
Grammatical tests can help us identify parts of speech, but few are reliable in isolation. Usually to determine how a word functions, different tests have to be devised.

2. Identifying phrases
Identify the phrase structure of the following by marking the phrases with round brackets. Label the phrases only.

a) a man
b) a loud-voiced man
c) a very loud-voiced man
d) A very loud voiced man is calling for you because he wants to take you away in his big, flashy automobile.
e) Don't let him!

3. Recalling clause structure
Identify the clause structure (SPOCA) of the sentences given below. Then try to devise some sentences of your own to illustrate the SPOCA labels.

a) They seemed friendly.
b) They rode over the hill.
c) Then they disappeared.
d) Some gave presents.
e) Others gave us gifts.

Chapter 2
Introducing Functional Grammar

1.0 Introduction

Many university departments collectively, or individuals within them, are primarily interested in what has come to be known as a 'functional' explanation of language structure. Even within the functional tradition, there are many different schools. One of the most highly developed functional explanations of grammatical structure is *Systemic Functional Grammar* (SFG), and that is what we shall focus on here.

SF grammar approaches the question of language description from a different angle. Again, SFG theorists want to do more than simply account for the structure of a sentence such as *Janet kissed James.* But a systemic functional grammarian would devise a description based on such questions as:

> Who is speaking?
> Why is this being said?
> What is the context?
> What alternative ways of saying this are there?
> Why has *this* particular realisation been chosen?

In other words, SF grammar views language as behaviour *in a social context*. A crucial aspect of this orientation is a greater concern with the *meaning* of sentences. Therefore, a SF grammarian would not necessarily ask, 'What rules transform *Janet kissed James* into *James was kissed by Janet'.* Instead, he or she would ask 'Why choose one option rather than the other? What is the status of *Janet* and *James,* and indeed the action of *kissing,* in each sentence? When would you want to use one type of sentence and when would you want to use the other?' SF grammarians do not see these structures as identical in meaning, and so they are concerned to account for the different types of meaning encoded in active and passive realisations. In short, SF descriptions are less interested in language as psychological facility and more interested in language in use. As such, SFG has been of considerable interest to many discourse analysts, sociolinguists, applied linguists, AI researchers, and literary critics. SF grammarians themselves have often made raids into these territories.

SF grammarians largely draw inspiration from the work of Michael Halliday, a British linguist born in 1925. Much of the next few chapters is based on Halliday's work, directly or indirectly. Although Halliday is the 'father figure' in systemic-functional linguistics, he has precursors.

2.0 The Concept of System in Firth and Halliday

Halliday studied Chinese at the University of London and was strongly influenced by the professor there, JR Firth. Principally a phonetician, Firth had joined the School of Oriental and African Studies in 1931, and he in turn was influenced by the work of a professor at the London School of Economics, the anthropologist, Bronislaw Malinowski, author of *Coral Gardens and their Magic* (1934). Malinowski had made the point that in order to understand the language of a community, you had to understand its function in its social context. Malinowski was not a linguist as such -- his observations were not exhaustive -- but his insights inspired Firth to focus on

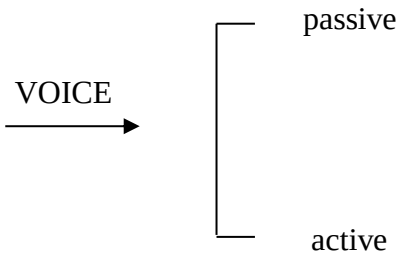
context, function and meaning in his programme for a new kind of linguistic description -- a programme which Halliday was to inherit and develop.

A crucial concept in the developing linguistic theory is *system.* Firth (1957: 143) wrote:

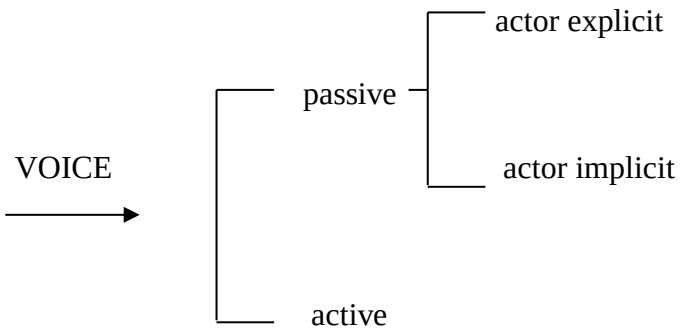
> Linguists and sociologists have to deal with *systems*, but systems very different from physical systems. Personal systems and social systems are actively maintained (with adaptation and change) in the bodily behaviour of men.
>
> ***
>
> Language and personality are built into the body, which is constantly taking part in activities directed to the conservation of the pattern of life. We must expect therefore that linguistic science will also find it necessary to postulate the maintenance of linguistic patterns and systems (including adaptation and change) within which there is order, structure, and function. Such systems are maintained by activity, and in activity they are to be studied. It is on these grounds that linguistics must be systemic.

This is effectively an early manifesto for systemic-functional linguistics, written around the time that Halliday was 23. There are some powerful ideas here: the idea of an ordered, structured, *functional* system which is nevertheless open to adaptation and change, and one which is to be studied 'in activity' – that is, in its everyday social context. We do not have here the idealised competence of Chomsky's grammar in the late 1950s, but instead we have an appeal to a grammar that will relate to language as it is used. You can also see here the influence of phonetics on the principles of early systemic linguistics. Phonemes are a system of possible contrasts: for example, if you choose /t/ rather than /d/ from the finite system of possible phonemic contrasts in English, the *meaning* of the lexical item changes (e.g. from 'drip' to 'trip'). In SF grammar, structures such as active and passive are similarly seen as contrasting options: the choice of one rather than the other is *meaningful*.

One way of demonstrating the range of grammatical choices available in a language is to devise a *systemic network*. We shall be looking at these in much more detail in the next chapter. But as a simple example, the options *Janet kissed James* and *James was kissed by Janet* can be accounted for by the following simplified network:



The network has a point of entry: the voice system at clause level. In this system there are two options, active and passive. We can build on this network. In English it is also possible to say *James was kissed* -- i.e. we can delete the actor in the passive voice. This possibility can be added to our network:



We shall return to the topic of systemic networks in more detail in the next chapter.

Systemic networks show the *system*: the relationship between different structures. But so far we have said little about the *functional* values of the elements of the structures. That is, the systemic network has shown us the difference between *Janet kissed James* and *James was kissed by Janet*, but we still have said little about the function of *Janet* in each sentence.

3.0 Function from the Prague School to Halliday

Halliday uses the concept of *functional components* to explain why the internal constituents of language are patterned as they are. Firth, as we have seen, also recognised the importance of function in linguistic descriptions. Halliday's concept of function was, however, most heavily influenced by a group of linguists known as the 'Prague School', although several of its members, like Jakobson and Mathesius, were from different eastern European countries and worked in cities like Moscow and Vienna as well as Prague. The functional side of SF grammar is dealt with more fully in Chapter 3. For now, by way of illustration, we shall trace the history of two of these functional components, Theme and Rheme, from their origins in the middle of the nineteenth century, through the Prague School, and into SF grammar.

In 1844 the German linguist Henri Weil published two theses which were written for his doctorate at the University of Paris. One of them was called *De l'ordre des mots dans les langues anciennes comparees aux langues modernes* -- later translated into English as *The Order of Words in the Ancient Languages compared with that of the Modern Languages* (1887). One of Weil's arguments -- which is obvious from the title of the book -- is that word order in a sentence is meaningful. The question is: what kind of meaning does word-order carry? Weil divided the sentence into two parts and explained them so:

> It was in the first place necessary that this other personage, with whom it was desired to communicate, should be placed at the same point of view with the speaker; it was necessary that a word of introduction should precede the remark which it was intended to utter; it was necessary to lean on something present, and known, in order to reach out to something less present, nearer, or unknown. There is then a point of departure, an initial notion which is equally present to him who speaks and him who hears, which forms, as it were, the ground upon which the two intelligences meet; and another part of discourse which forms the statement *(l'énonciation),* properly so called. This division is found in almost all we say.

From Weil, H (1887; 1978) *The Order of Words in the Ancient Languages compared with that of the Modern Languages* translated by CW Super, Amsterdam: John Benjamins p. 29

It is worth quoting Weil, or rather the 1887 translation of Weil, at some length, because his attempt to articulate the differences between the two components of the sentence finds many echoes down the decades, through the Prague School, to Hallidayan functional grammar. Consider the functions of his two 'parts' of the sentence:

The first part should:

(a) establish a common point of view between speaker and hearer
(b) serve as 'a word of introduction' to the ensuing remark
(c) lean on something present, or known
(d) act as a 'point of departure' or 'an initial notion'
(e) be 'the ground upon which the two intelligences meet'

The second part is 'something less present' or 'unknown'.

This formulation greatly influenced the Prague School linguist Mathesius, and he labelled the two parts of the sentence Theme and Rheme: the Theme being the given information, or point of departure, and the Rheme being the relatively new information. How does this division work in practice? To answer this, consider the two versions below of a paragraph written by the cultural theorist, Raymond Williams. Which of the two versions do you find more readable?

Version A
What is the history of film? We are likely to put a defining emphasis on 'film' and pass lightly over 'history' in considering this question. The noun that brings us to our subject is 'film'. Its already defined properties seem to be followed naturally by its history or any other intellectual properties relevant to it.

Version B
What is the history of film? In considering this question, we are likely to pass lightly over 'history' and put a defining emphasis on 'film'. 'Film' is the noun that brings us to our subject. Its history, or any other intellectual process relevant to it, seem to follow naturally from its already defined properties.

From 'Film History' in Raymond Williams (1990) *What I Came to Say* Hutchinson p132

B is the version as it was originally published. If you look at it, you can see the thematic progression from sentence to sentence. Sentence (1) asks a question. In Version B, sentence (2) begins by referring to this question (which has just been read and is therefore 'known'), and ends with the claim that 'film' rather than 'history' should be the focus of the discussion. Sentence (3) picks up the Theme of 'film' and Sentence (4) picks up the Theme of 'history'.

In Version A, as I have rewritten the paragraph, each sentence begins with a Theme which carries a considerable amount of 'new' information, and many of the Rhemes also carry 'given' information. The question in sentence (1) is followed by thematic 'We' in sentence (2). Sentence (2) then presents the question that we have already read in sentence (1) as its 'new' information at the end. Sentence (3) opens with 'The noun

that brings us to our subject' -- the thematic position in the sentence suggests that we should be acquainted with this noun but we are not. The noun turns out to be 'film' -- which was introduced in sentence (1). The final sentence begins with a reference to film's 'already defined properties' -- which, again, because of its thematic position in the sentence, we perhaps feel that we should know something about.

If you found Version A less readable it might be because the Theme and Rheme in each its sentences defy our expectation that sentences in English should begin with relatively 'known' or 'given' information, and proceed to relatively 'new' information. That at least was the expectation of Mathesius, following Weil. The study of Theme and Rheme was subsequently developed into a theory of Functional Sentence Perspective (FSP) by Prague School linguists such as Firbas and Daneš. Prague School linguists today see Theme and Rheme as a conflation not only of word order but also of intonation patterns -- the nucleus of the tone unit falls on the new information.

Halliday, as we shall see more fully in Chapter 3, departs from mainstream contemporary Prague School thinking on Theme and Rheme. He identifies the concepts of Given and New with the intonation system, and reserves the labels Theme and Rheme for only part of the definition proposed by Weil and Mathesius: the idea of a 'point of departure' rather than 'common ground. Indeed Halliday's definition of Theme in his *Introduction to Functional Grammar* (1985: 39) begins as a virtual paraphrase of Weil:

> ...the Theme is the starting-point for the message; it is what the clause is going to be about. So part of the meaning of any clause lies in which element is chosen as its Theme. There is a difference in meaning between *a halfpenny is the smallest English coin,* where *a halfpenny* is Theme ('I'll tell you about a halfpenny'), and *the smallest English coin is a halfpenny*, where *the smallest English coin* is Theme ('I'll tell you about the smallest English coin'). The difference may be characterised as 'thematic'; the two clauses differ in choice of Theme. By glossing them in this way, as 'I'll tell you about...' we can feel that they are two different messages.

The point to grasp here is that the 'functional' part of the 'Systemic-Functional' label should be seen in the context of a tradition of trying to understand grammar as the organisation of meaningful, functional elements which presuppose a relationship between a speaker, a hearer and a text. Theme and Rheme are two such functional constituents. There are more, as we shall see in Chapter 3.

Whereas some grammarians would see a sentence in the active voice and a sentence in the passive voice as preserving meaning, SF grammarians view the two sentences as different in meaning. In SF grammar, each sentence would represent a choice from a system of meaningful options, and the difference in meaning can be understood by referring to the functional elements which make up each clause – elements such as Theme and Rheme.

What I have tried to do here is to give a rough sketch of some of SF 's intellectual ancestry. In the coming chapters we shall consider system and function in more detail.

Chapter 3:
What is 'Systemic' about Systemic-Functional Grammar?

1.0 Systems

Chapter 2 considered very briefly the general concept of 'systems' in systemic functional grammar. This chapter moves on to a more detailed description of some important systems of English grammar.

Systemic descriptions of a language are prompted by the realisation that languages are complex, interwoven, interrelated structures: i.e. systems. Elements of a systemic grammar have value because they are in contrast with other elements as part of a system; in other words, each element of a systemic grammar does not have a value in itself, but has value in contrast with other elements, which form part of a network of related elements. In Margaret Berry's words: 'A system, then, is a list. It is a list of things between which it is possible to choose.' (1975: 143)

The example used in Chapter 2 was the verb system of voice: verbs in English can be active or passive. The individual categories, 'active' or 'passive', would not mean anything by themselves: their value arises from the contrast, the fact that there is, in this case, a binary option between them. Voice is therefore a system: it is a short list of things (active, passive) and it is possible to choose between them.

Systemic descriptions therefore attempt to give an account of the elements available as choices in the systems which make up English grammar. These elements include grammatical structures, as in the case of the voice system of the verb.

We can take the process of describing systems a step further by introducing the notion of delicacy. 'Delicacy' refers to the degree of complexity given in our descriptions. We could confine our description of the voice system to the listing of the options, active/passive, or we could go on to specify further options in the system. In Chapter 7 we added one more set of options to our network: the option of expressing or deleting the actor in a passive structure. This addition to the network gives our description a greater degree of delicacy.

To sum up, part of the project of SF grammar is to account for the possibilities of English grammar, by displaying the options available in so-called 'systemic networks' or 'systemic nets'. The remainder of this chapter will be devoted to looking at the way a more complex net is built up, one which incorporates the simpler system of voice. One final word before we embark on the adventure of building up a complex systemic network: the basis for differentiating between options in a systemic net is *meaning.* The basis, then, for differentiating between active and passive in the verb system, is that the structures have related but contrasting meanings: *Janet kissed James* has a different meaning from *James was kissed by Janet.* Moreover, *James was kissed by Janet* has a different meaning from *James was kissed*. Note that this claim -- that the meanings are different in some way -- distinguishes SF grammar from some other theories of grammar, which argue that in the passive transformation meaning is preserved. Propositional meaning *is* preserved, in this case, but more emphasis is placed in SF grammar on nuance.

2.0 Entry Conditions

Systems have a point of entry -- that is, the point at which we start. There are two things which should be noted about this point of entry. First, it is a point which will lead onto a series of distinctions between elements which are related in meaning. There is no reason for trying to distinguish between elements which are not related in meaning -- between, for example, the number system and the tense system. Whether an element is singular or plural has little bearing on whether it is marked for past or present tense. So, when you are starting out, you confine yourself to those areas of the grammar where the meanings are in some way related.

Secondly, this relationship in meaning has to have some representation on the 'surface' the grammar. To take the example of the number system again, English has a two-part number system consisting of singular and plural. Plurality is marked by such 'surface' features of the grammar as morphology (*-s* suffix for regular plurals) and verb concord. Some other languages are different: some languages have a three-part number system, consisting of singular, binary and plural (plural now being more than two items). This kind of system will also have representation on the 'surface' of the grammar, for example different noun suffixes for one item, two items, and more than two items.

Some languages categorise their nouns partly at least by their perceived length, or in some cases by how dangerous they are (cf. Lakoff's *Women, Fire and Dangerous Things*). In these languages, the noun systems will be represented somehow on the surface of the language – e.g. by the choice of particular determiners for each class of item.

In English, it is possible in principle to group nouns together semantically in terms of length (including, let us say, rivers, string, bridges and elastic in our category of long items) or in terms of danger (perhaps including fire, nuclear waste, heroin and fast cars). Semantically, it could be argued that such items are related. But they have no grammatical marker on the surface of English grammar. Therefore we could not give a systemic account of such categories in English.

We might note in passing that English does categorise nouns in a particular way -- in the distinction between count and mass nouns. We talk happily of *one/two/three pens* but not **one/two/three chalks.* We would therefore be justified in writing a systemic network for the count/mass distinction because it does have a representation in the grammar of the language.

Once we have identified an area of the language where there is a choice between a set of related meanings, and once we have satisfied ourselves that these related meanings are represented in the grammar of the language, we can begin our network. We usually start by specifying the rank of the unit to which the system applies. That is, we state whether the unit in question applies to the rank of clause, phrase, word, or morpheme. The system of gender, for example, would relate to the rank of lexical item (Berry 1977: 62) and we would look at the way words are classed according to whether they are animate/inanimate and (if animate) masculine/feminine/neuter, etc.

3.0 A Case Study: Transitivity and Voice

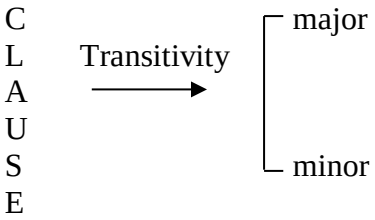
As a case study, we are going to look at the way a complicated systemic network is built up for the system of transitivity, and we shall also see the way in which the system of voice relates to the transitivity system.

Transitivity refers, in SFG, to the relationship between participants, processes and circumstances. At the centre of the clause in English is the Verb Phrase, which articulates different types of *process*: actions or states. *Participants* are Subjects Objects and sometimes Complements. *Circumstances* are those Adverb and Prepositional Phrases which give extra information, for example, about the time, place, duration or manner of the action or state. On the surface of the grammar, transitivity relationships lead to different realisations of NPs, VPs and Adverbials. There is, then, a general area of meaning, expressed by the grammar of English; and, since we are talking about relationships between NPs, VPs, and Adverbials, the point of entry to the system is the clause.

The transitivity network (shown in part at the end of this chapter) is adapted slightly from the one shown in Berry (1975; 1989: 189).

Step 1

The point of entry is at clause level. Here there are two options: major clause and minor clause. Major clauses are those which have verbs, eg *Carol read a book.* Minor clauses do not contain verb, and include expressions like *How about you?* and *University lecturer forgery shock!* Since we are concerned partly with processes, and since processes are expressed usually by verbs, we shall concentrate here on major clauses.



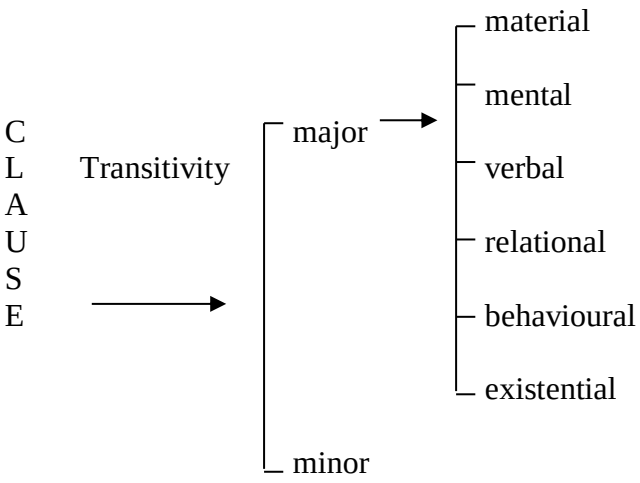
Step 2

The first step shows that the system allows two options, between major and minor clauses. The major clause has many further options (the number varies from three to six, depending on the theorist). Halliday (1985; see also Chapter 9) distinguishes six types of process that are expressed by the verbs in major clauses: material, mental, relational, behavioural, verbal and existential. Material processes are concerned with 'physical' events and actions, eg *She shot the albatross*. Mental and verbal processes are fairly self-explanatory. Behavioural processes are restricted to those actions which people might indulge in, eg *He smiled*. (Unlike material processes, these processes relate to conscious participants and never take objects.) Relational processes express processes of being eg *She is happy*, and existential processes express existence via the distinctive *There is/there are* type of structure, eg *There is a cat on the window-sill.* Some SF theorists conflate verbal and mental processes, arguing that verbal processes are a kind of externalised mental process. Others stress their differences.

For a summary of the set of criteria for distinguishing process types, see Halliday, 1985: 154. Several surface criteria, for example, distinguish material from mental processes.

One of the most obvious is that the unmarked, 'factual', expression of a mental process is given in the simple present *(eg What do you think? I think that....),* while a 'factual' expression of a material process is given in the present continuous *(What are you doing? I'm washing my hair...).* Again, a perceived difference in meaning is supported by identifiable differences in surface grammar.

In our example, we shall concentrate on only one type of process, the material process.



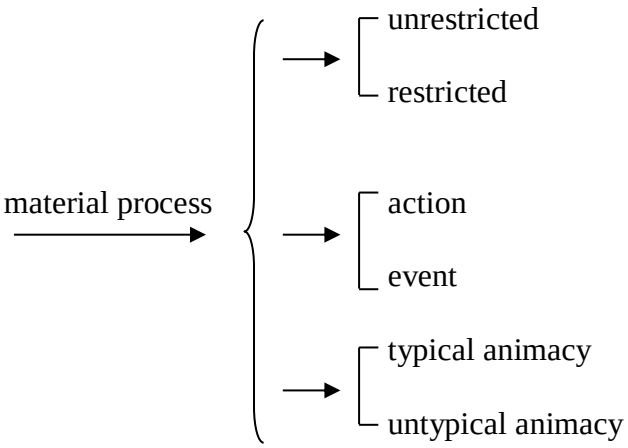
Step 3

So far our systemic network has shown a straightforward list of options. A clause is either major or minor, and in a major clause the process can be material, mental, verbal, relational, behavioural or existential. Once we look at the options available to a material process, however, the choice is less straightforward. At this point various options are available *simultaneously*. First of all, material process can be either actions *(She shot the albatross)* or events *(The boiler exploded).* Actions involve participants which are animate and have intentions. Events involve participants which are inanimate and therefore events are not intentional.

However, there are other, simultaneous choices available to material processes. They can be either restricted in the number of participants involved, or relatively unrestricted. *Shooting,* for example, implies two participants: the shooter and the shot, and it is therefore restricted. *Opening,* however, might involve either one or two participants: (a) *The window opened,* or (b) *She opened the window.* It is therefore unrestricted. Note that in sentence (b), we have made two simultaneous choices: unrestricted process and action process (the actor is animate). Sentence (a), *The window opened* is still unrestricted, but the process has changed from action to event (the actor is inanimate).

The third and final simultaneous choice made at this point is between typical and untypical animacy. It is possible but unlikely (=untypical) that an action process will have an inanimate actor: compare *The gun shot the albatross* and *The gun murdered the albatross.* The first possibility here could be taken as a restricted event with typical animacy -- shooting does not necessarily imply intention, if the shooter is inanimate. But murdering *does* normally imply intentionality: so in this case we would have a restricted action with untypical animacy. (You can see opportunities for discussion and debate beginning to appear!)

The three simultaneous choices give rise to a set of possible combinations: action/restricted/typical; or event/restricted/untypical; or event/unrestricted/typical; and so on. In a systemic network, the simultaneity of the choices is marked by the right-facing bracket.



We shall concentrate on that part of the systemic network that concerns voice: the choice between restricted and unrestricted numbers of participant.

Step four
Unrestricted processes can be further categorised in terms of causation: *She opened the window* is causative; *the window opened* is non-causative.

Restricted processes, in turn, can be further categorised in terms of whether they are so-called 'middle' or 'non-middle' processes. Restricted processes imply a fixed number of either one or two participants. If there is normally only one participant (the actor) then the process is a middle one *(eg The albatross died).* If there are normally two participants (actor and goal), then the process is non-middle *(She shot the albatross).*

Step 5
There is a further subnetwork of the non-middle and middle processes. Non-middle processes, remember, are defined by the fact that we expect there to be two participants, actor and goal *(She shot the albatross).* Clauses where both participants are present or explicit are *transitive.* However, in some cases the goal is absent or inexplicit, and the clause is *intransitive (She shot in the air).*

In middle processes we expect there to be only one participant (*He died*). The subnetwork of the middle process depends on whether or not there is a marked second participant, eg *At the Glasgow Empire, comedians died a death.* Other possible examples of typical and untypical middle processes are *He walks every day* (typical middle; usually one participant) and *He walks the dog every day* (untypical middle; two participants where you normally have one). Note that the categorisation very much depends on the meaning and use of the verb.

Step 6
At this point -- at long last -- we arrive at the voice system: the choice between active and passive with which we began this discussion. How does that system fit into the transitivity network?

One thing that the voice system needs is at least two participants, an actor and a goal. Therefore, voice relates to unrestricted processes which are causative *(She opened the door)*; untypical restricted middle processes *(He walked the dog)*; and transitive restricted non-middle processes *(She shot the albatross).*

For these process-types, there is a choice between active and passive realisation. If passive is chosen, there is the further choice of whether or not the actor is explicit. The choices are shown in the network given at the end of this chapter.

Summary
One of the main purposes of plunging you into part of the transitivity network is simply to alert you to the complexities of devising a systemic network. More information on the topic is given in Margaret Berry's *An Introduction to Systemic Linguistics, Volumes 1 & 2* (1975; reprinted 1989) and in Suzanne Eggins' *An Introduction to Systemic Functional Linguistics* (1994).

What should you have learned from this chapter? First of all, you should have begun to grasp what a systemic network looks like -- even from the partial example given here. Secondly, you will have realised that a systemic network is a way of trying to deal with some of the complexities of English grammatical behaviour that are not necessarily apparent in a basic grammatical analysis. In basic grammatical analyses, for example, *She opened the door* and *She shot the albatross* are treated as being identical, since both are SPO structures. (But if they are identical, why can we say *The door opened* as an alternative to the first, but not **The albatross shot* as an alternative to the second?)

4.0 Make your own systemic networks
The activities below give you some practice in constructing your own – simpler! – systemic networks for other parts of English grammar, and reading the more complicated parts of a systemic network.

4.1 Constructing a systemic network for mood
You are going to devise a systemic network for the mood system in English: i.e. those forms of the clause which determine the roles of speaker and hearer. Think of the options available to speakers of English, given below. Match them up with possible labels and organise them into a systemic network for mood.

Possible realisations

Close the door!	Let's have dessert.
Where have you been?	Have you seen my phone anywhere?
We're from Sao Paulo.	

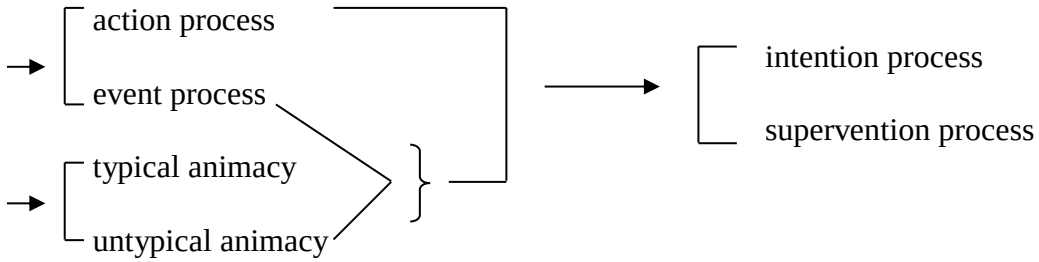
Possible labels

open	imperative	exclusive	declarative
closed	interrogative	inclusive	indicative

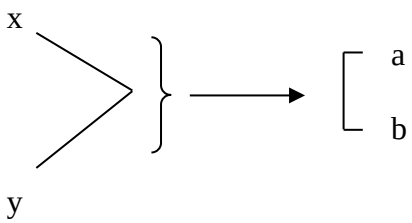
4.2 Reading more complex networks
Look at the Intention Process/Supervention Process part of the transitivity network, given below (Berry 1975: 188). (Supervention usually describes an action process where no intention is implied, eg *Fiona bumped into the table*). Explain how the

network for this part of the transitivity system (ie material processes) might explain the following realisations:

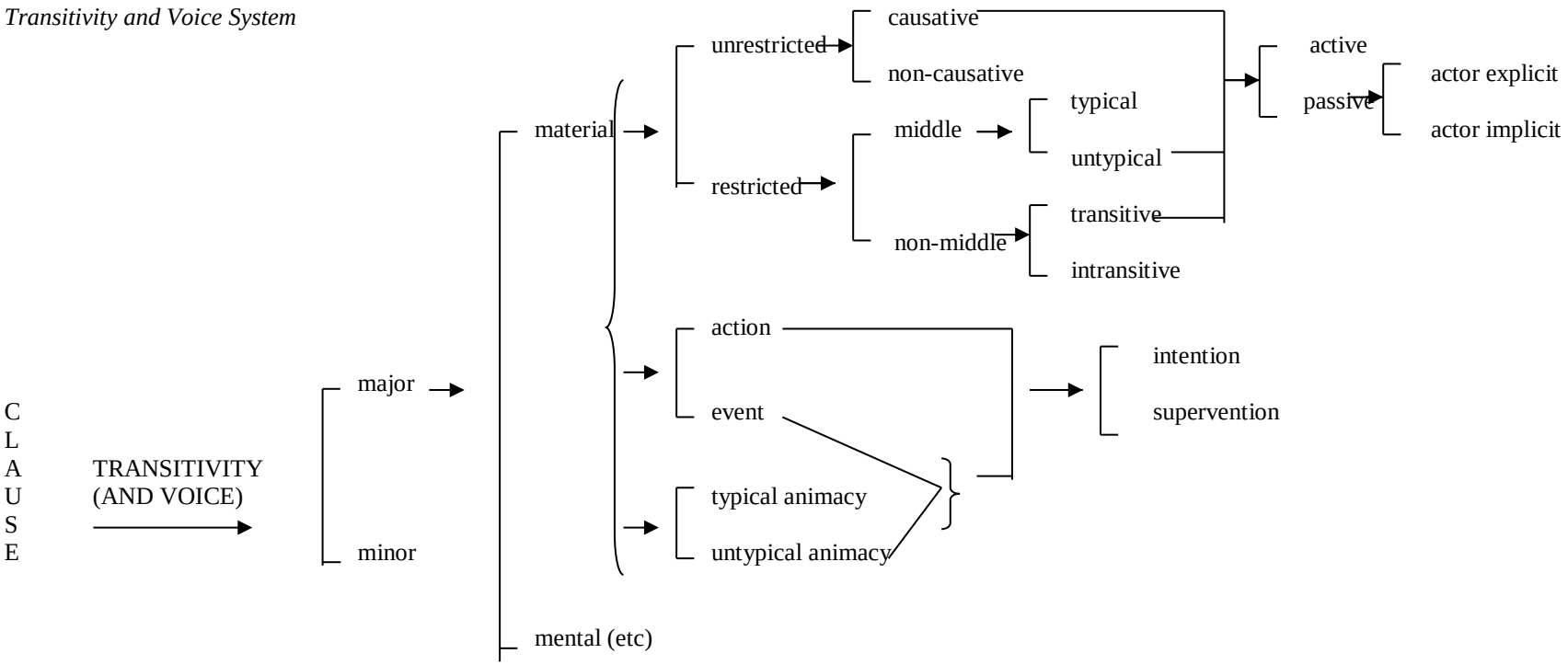
1. *Fiona bumped into the table.*
2. *Fiona flowed elegantly into the ballroom.*
3. *Fiona punched the barman.*
4. *Fiona cascaded helplessly down the stairs.*



How would you explain, in simple terms, the following notation for *complementary entry* into a system?



Transitivity and Voice System



Chapter 4
What is 'Functional' about Systemic-Functional Grammar?

1.0 Introduction

In the last chapter, we looked at the 'systemic' aspects of systemic-functional grammar, which can be simply summarised as stating that grammatical realisations exist as part of a system of choices. These choices are determined by differences in meaning: if you want to mean one thing, you make one set of choices; if you wish to convey another meaning, you make another set of grammatical choices. Systemic networks are a way of trying to give an account of the choices available in any point in the grammatical system.

What Chapter 3 did not do was actually analyse any individual sentences. True, certain clause types (active, passive, middle, non-middle, etc) were displayed in opposition to each other, but in doing so we were trying to put down on paper the meaning *potential* of English. In other words, we were trying to show in a fairly abstract way the kinds of meanings that English grammatical choices can communicate. In this chapter we shall be looking at actual sentences, and how grammatical functions are realised in these sentences. These grammatical functions relate to the systems illustrated in the previous chapter – it is possible to devise a systemic network that applies to them. We are simply moving from a statement of the choices that *can* be made in the grammar as a whole, to a description of the choices that *have* been made in any given sentence.

2.0 Form and function

If you think back again to earlier courses grammar, you might recall that much, if not all, of your time was spent looking at sentences and thoroughly labelling the words, phrases, and clause constituents. You might also remember how the labels were arrived at: words, phrases and clause constituents were classified according to form, function and meaning.

The question of form is usually dealt with in *morphology*: certain classes of word will often have certain roots and affixes. Function in a basic grammar course is usually confined to a consideration of how words and phrases relate to each other. For instance, determiners and nouns relate to each other as modifier and head, and together make up a NP. If a NP shows the relationship of concord with a VP, then we have a Subject-Predicator relationship. What was labelled underneath the sentence (i.e. word and phrase labels) were formal labels; while what went above the sentence (modifier/head or SPOCA labels), were function labels. When it was difficult to decide the classification of a word based on form and function, the slippery and unreliable third criterion of meaning might be called in:

```
          S  M    H        P  M    H       A  x  H          function labels
Se MCl { (The albatross)  (was flying)      (to shore)}
        NP  d      N       VP  a     V      PP  pr  N         form labels
```

SF grammar extends the notion of *function* in the description of clauses. As well as having modifiers and heads and SPOCA constituents -- which show the relationship between words in a phrase, and between different phrases in a clause respectively -- we

have functional constituents which again relate to types of meaning expressed in a communicative situation. These additional functions are sometimes called 'metafunctions':

3.0 Metafunctions of the clause in English

Type of metafunction	**What the metafunction does**	**Functional Components**
Ideational	Representation of 'reality'	Process, Participant(s) and Circumstances
Interpersonal	Exchange of information; Exchange of goods and services	Mood and Residue
Textual	Construction of a message	Theme and Rheme

In a systemic network, these metafunctions are simultaneous choices made for the clause: each clause in English will be representational, it will exchange something, and it will be constructed to communicate a message in a particular way. These functions will be realised by the nature and sequence of the grammatical components. Altogether, the three metafunctions are an attempt to look at the way grammar is organised and to relate that organisation to quite specific things we do with language: describe the world, exchange information, goods or services, and construct messages. Grammatical categories are made meaningful – SF grammar is sometimes called a 'semanticised grammar' because its categories are based on meaningful relationships rather than formal characteristics. In the rest of this chapter, we shall consider each metafunction in turn.

3.1 The ideational metafunction

This metafunction of the clause is to do with the way that language builds up a picture of a world – whether this world is real or imaginary. English grammar does this by presenting us with *participants* (usually NPs) which are involved in *processes* (VPs), sometimes involving other participants, and optional *circumstances* (Adverbials).

You will have noticed that this metafunction is very much to do with the systemic network of transitivity, discussed in Chapter 8: the ideational components of any given clause are the result of choices made at different points in the transitivity system. Other grammatical theories also have wrestled with this topic: Charles Fillmore's 'case grammar' is an attempt to deal with similar meanings within a transformational-generative framework (see Brown and Miller 1980, Ch 18 for a discussion based on this approach).

You might remember from the transitivity network that different process types are available in English. Halliday lists them roughly as follows, with key associated participants. (Other analysts have a slightly different set of processes and participants, so again be aware of the possibility of the terms meaning different things from theory to theory.)

Process Type	**Key Participants**
material	Actor, Goal, Beneficiary, Range
behavioural	Behaver
mental	Senser, Phenomenon
verbal	Sayer, Target, Receiver, Verbiage
existential	Existent
relational (= 'being')	Token, Value, Carrier, Attribute, Possessor, Possessed

The processes and participants above are illustrated in the examples below:

ACTOR	MATERIAL	GOAL	
Bill	burned	the rubbish.	

ACTOR	MATERIAL	RANGE	
Bill	climbed	the stairs.	

ACTOR	MATERIAL	RANGE	BENEFICIARY
Sally	bought	a watch	for Tom.

BEHAVER	BEHAVIOURAL
Tom	snores.

SENSER	MENTAL	PHENOMENON
Tom	knows	a secret.

SAYER	VERBAL	RECEIVER	VERBIAGE
Tom	told	Bill	his secret.

SAYER	VERBAL	TARGET	RECEIVER
Bill	reported	Sally	to the authorities.

ø	EXISTENTIAL	EXISTENT
There	were	many policemen.

TOKEN	RELATIONAL	VALUE
Sally	is	a criminal genius.

POSSESSOR	RELATIONAL	POSSESSED
Tom	has got	a criminal record.

CARRIER	RELATIONAL	ATTRIBUTE
Bill	was	very depressed.

Circumstances are optional elements in the clause, mainly expressed by Adverbials. They are indirect participants in the clause. Common circumstances express the following meanings:

Circumstances	**Examples**
extent (space and time)	....for a mile ...for a month
location (space and time)	...in a box ...in a minute
manner (means, quantity & comparison)	...by hard work ...a lot ...like a slave
cause (reason, purpose & behalf)	...because I must ...to help you ...for love
accompaniment	...with Fred and Barney
matter	... about a matter of some delicacy
concession	...although not in the first term
frequency	...six times a week
condition	...if you give it in on time
result	...as a direct consequence
role	...as a friend

The 'ideational metafunction' is the technical phrase used to express one job that the clause does: i.e. to present a 'picture' of some kind of real or fictional universe. It is a universe in which participants of different kinds get involved in processes of different types, under certain kinds of circumstance. There is not a natural one-to-one relationship between the universe and the language used to describe it: other choices from the system are always possible. Language, then, constructs particular world-views. Imagine, for example, that two people express affection by touching lips. This action in the real or fictional world can be encoded in language in a number of equally plausible ways. The way in which it is expressed, however, will subtly change the way in which factors like 'responsibility for the action' are realised. Look at the following possibilities and consider how the grammatical options chosen alter the way the action is represented:

Janet kissed James	*Suddenly, there were Janet's lips on his..*
James kissed Janet.	*Suddenly, there were James' lips on hers.*
James and Janet kissed.	*Suddenly, kissing occurred!*

3.2 The interpersonal metafunction

Constructing a world-view is not the only job that the clause does. It also functions to express the relationship between speaker and hearer, and to express the speaker's beliefs and attitudes about the propositions that he or she is expressing.

These functions are also encoded into the grammar of English as part of the interpersonal function, realised by constituents that we shall call the **mood** and the **residue.** Of these two constituents, the more important is the mood, which can be further subdivided into Subject and Finite. The Subject expresses the 'thing' by reference to which the proposition can be affirmed or denied, and the Finite is the part of the verb which 'places' the proposition in time or 'factuality'. In the basic grammar descriptions, these rather complicated notions are introduced as Subject-Predicator concord: the fact is that there is

a relationship between the grammatical Subject and the verb of a clause. It is this relationship which is explored further by the investigation of mood.

3.2.1 Mood: Subject and Finite

The mood of the clause consists of the Subject plus the Finite. The Subject is the main participant in most propositions. If we seek to deny the propositions *She saved the albatross* then we would say *No **she** didn't* -- not *The albatross didn't.* We affirm or deny the proposition by referring to the Subject.

The Finite 'places' the proposition, usually with reference to time and/or the speaker's judgement. The Finite may be realised by an auxiliary verb or it may be 'fused' with the lexical verb (as in the second example below):

Proposition	Finite	Lexical Verb
She is saving the albatross.	is	saving
She saved the albatross.	...saved...	
She might save the albatross.	might	save
She could have saved the albatross.	could	save
The albatross was saved.	was	saved

The Finite is usually seen as placing the proposition in terms of time or belief: the examples above can be interpreted as placing the proposition in the present (*is)* or past (*was*), or in terms of possibility, present or past (*might/could*). These possibilities can be seen as simultaneous options in the systems of tense and modality.

3.2.2 Residue

The structure of the residue is made up of those clause constituents which are not Subject or Finite: namely, the Predicator, Object, Complement and Adverbial. (Note that Halliday groups Object and Complement together as two different kinds of Complement, extrinsic and intrinsic respectively; and Adverbial is termed Adjunct).

The Predicator (minus the Finite element) gives secondary information about time ('secondary tense'), and it also gives information about other verb systems, such as aspect and voice. The lexical verb also gives information about the type of process involved.

The Complement is either the element in the residue which might become the Subject of another clause (ie the Object) or the element in the residue which express an attribute of the Subject (ie the Complement).

The Adjunct is an element in the residue which does not have the potential to become the Subject of another clause: it gives circumstantial information, it acts as a discourse linking device, or it expresses a range of meanings similar to those of the modal auxiliary verbs.

RESI-	[MOOD		]	-DUE	
Adjunct	Subject	Finite		Predicator	Complement
1. Yesterday,	she		was	peeling	potatoes.
2. However,					
3. Perhaps,					

1. Circumstantial adjunct (Gives information about time, place, etc)
2. Conjunctive adjunct (Links the proposition to other utterances)
3. Modal adjunct (Expresses meanings about possibility, obligation, frequency, etc.)

3.3 The textual metafunction

The final metafunction of the clause is based on the notion, discussed in the brief history of SF grammar given in Chapter 7, that the order of words in a sentence is important. As we saw, this idea was proposed by Henri Weil in a monograph on the modern and classical languages, published in English in 1887, and then taken up enthusiastically and developed by linguists of the Prague School.

One such scholar, Mathesius, coined the terms (i) Theme, to refer to the initial element in a clause, which often gives information that is known to the hearer, and from which the speaker proceeds, and (ii) Rheme, which often contains new or salient information. Fairy tales often give simple examples of the linear development of Themes:

1.	*Once upon a time*	there was a wise old king.
2.	*This old king*	had three beautiful daughters.
3.	*These three daughters*	had very special talents.

The initial Theme ('Once upon a time...') is formulaic, placing the story in time ('long ago') but more probably activating expectations by signalling the genre of the discourse. The Rheme of the first sentence introduces new information, which can then become, given, thematic information in the second clause. This linear development is continued in the third clause: Rheme becomes Theme. However, clauses 4-6 are different:

4.	*One*	was a qualified chartered accountant.
5.	*The second*	was a renowned lion tamer.
6.	*The third*	played bass guitar in a psychedelic rock band.

In these three clauses, the 'given', thematic information is *derived* from one Theme, the Theme of clause three, which Mathesius calls a 'hypertheme'. The study of how thematic and rhematic elements contribute to the development of discourse is termed *Functional Sentence Perspective (FSP).*

3.3.1 From FSP to Communicative Dynamism

In Mathesius we see two criteria being developed for identifying Theme and Rheme: position in the clause, and newness of information. Which is primary? Divergences in later approaches to Theme and Rheme relate to how you answer this question.

Within the Prague School, later scholars such as Firbas and Daneš argue that 'givenness' is the defining criterion of the Theme, and Themes therefore do not necessarily have to be sentence-initial. Prague School linguists developed a theory of *communicative dynamism (CD***)**: the part of the sentence that has the newest information has the highest CD and is therefore the Rheme. The part of the sentence that has the least new information has the lowest CD and is therefore the Theme. Sentence position is not crucial to the argument, although lowest CD is usually found in sentence-initial elements.
Which element of the answers to the following two questions has the highest and lowest CD? How might a shift in CD be signalled by intonation?

Q. Did you serve in the Cameron Highlanders?
A1. My father served in the Cameron Highlanders.

Q. What did your father do?
A. My father served in the Cameron Highlanders.

3.3.2 Halliday and Theme

Here Halliday departs from current thinking in the Prague School. He separates the systems of Given and New from Theme and Rheme, and argues that Given and New are in fact not part of the grammatical system, but that they are part of the system of English intonation. Theme in Halliday's grammar is *always* in sentence-initial position. This makes it easy to identify, but (if we take the notion of Given and New information away) what does Theme actually signify?

Halliday is rather vague on this point, but we can possibly consider Theme as providing an orientation or 'mind-set' for the hearer-reader: it provides a framework within which the Rheme can be interpreted. Halliday distinguishes between three types of Theme:

Type of Theme	Function
textual	to refer backwards/forwards in a text
interpersonal	to express the speaker's attitude to the proposition
topical	to orient the reader towards those elements which can be used as a framework for the message

The Theme of any particular clause is not considered 'complete' until the topical Theme is realised:

Theme			**Rheme**
Textual	*Interpersonal*	*Topical*	
However,	fortunately,	she	saved the albatross.
However,	fortunately,	yesterday	she saved the albatross.

Theme	**Rheme**
Topical	
Last month	we wanted to drive to Ubutuba,

Theme			**Rheme**
Textual	*Interpersonal*	*Topical*	
but	sadly	our car	broke down.

It should be noted that some SF grammarians always include the Subject of the clause in the Theme– they would therefore include 'we' as part of the Theme in *Last month we went to Glasgow*. There are arguments for and against such a categorisation – if writing on Theme make sure that your own position is explicit and consistent.

4.0 Summary

The 'functional' part of systemic-functional grammar therefore is a way of categorising the constituents of clauses using meaning as the primary criterion for classification. Form and function have also to be considered, but the main questions an SF grammarian asks include: *is this constituent representing a process, participant or circumstance; how does the clause articulate the relationship between speaker and hearer; and what does the construction of the clause tell us about the orientation of the message, and what is to be considered given and new*? Based on the answers to these questions, we can identify and label the grammatical constituents which make up the processes, participants and circumstances, the mood and residue, and the Theme and Rheme. However, since meaning is such a difficult thing to agree about, there are a number of differences amongst SF grammarians about how these constituents are to be defined and labelled.

5.0 Review Activities

The following activities are designed to help you practise thinking about the three metafunctions described above: ideational, interpersonal and textual.

5.1 Transitivity Analysis

The analysis of the ideational metafunction of clauses is usually referred to as *transitivity analysis* because it is obviously related to the systemic network of transitivity.

(1) Identify the participants, processes and circumstances in the following sentences (apparently originating in authentic motor insurance claim forms!) and use your description to account for the fact that they are 'howlers'.

(a) The other car collided with mine without giving warning of its intention.
(b) I had been shopping for plants all day and was on my way home. As I reached an intersection a hedge sprang up obscuring my vision and I did not see the other car.
(c) My car was legally parked as it backed into the other vehicle.
(d) A pedestrian hit me and went under my car.

From http://www.businessballs.com/amusement-stress-relief/insurance-claims-forms-gaffes/

(2) Identify the participants, processes and circumstances, and discuss the way male and female babies are therefore represented in the following birth congratulations cards:

(a) Little pink bonnets
and teddy bears too...
Cheeks made from rosebuds
so soft and so new...
Smiles made from sunshine
and bright stars above
Your own little princess
to cherish and love.
***Many Congratulations*.**

(b) A precious little baby boy
has come to live with you.
His little pack of
love and joy
will last
your whole life through.
Congratulations

5.2 Mood in discourse

Identify and discuss the realisations of mood and the markers of modality in the following extracts from (a) US President Donald Trump's State of the Union speech, delivered on February 5th, 2019 and (b) Stacey Abrams' rebuttal on the following day.

(a) In the 20th century, America saved freedom, transformed science, and redefined the middle class standard of living for the entire world to see. Now, we must step boldly and bravely into the next chapter of this great American adventure, and we must create a new standard of living for the 21st century. An amazing quality of life for all of our citizens is within our reach.

We can make our communities safer, our families stronger, our culture richer, our faith deeper, and our middle class bigger and more prosperous than ever before. But we must reject the politics of revenge, resistance, and retribution -- and embrace the boundless potential of cooperation, compromise, and the common good.

Together, we can break decades of political stalemate. We can bridge old divisions, heal old wounds, build new coalitions, forge new solutions, and unlock the extraordinary promise of America's future. The decision is ours to make. We must choose between greatness or gridlock, results or resistance, vision or vengeance, incredible progress or pointless destruction.

Tonight, I ask you to choose greatness.

(b) In this great nation, Americans are skipping blood pressure pills, forced to choose between buying medicine or paying rent.

Maternal mortality rates show that mothers, especially black mothers, risk death to give birth and in 14 states, including my home state, where a majority want it, our leaders refuse to expand Medicaid, which could save rural hospitals, save economies, and save lives.

We can do so much more, take action on climate change, defend individual liberties with fair-minded judges. But none of these ambitions are possible without the bedrock guarantee of our right to vote.

Let's be clear. Voter suppression is real. From making it harder to register and stay on the rolls, to moving and closing polling places to rejecting lawful ballots, we can no longer ignore these threats to democracy.

While I acknowledge the results of the 2018 election here in Georgia, I did not and we cannot accept efforts to undermine our right to vote. That's why I started a nonpartisan organization called Fair Fight to advocate for voting rights. This is the next battle for our democracy, one where all eligible citizens can have their say about the vision we want for our country.

We must reject the cynicism that says allowing every eligible vote to be cast and counted is a power grab. Americans understand that these are the values our brave men and women in uniform and our veterans risk their lives to defend.

5.3 Theme and Rheme

(1) Consider the thematic structure of the following exchange, and discuss why it might sound strange:

Smith:	Come in, come in. You must be Samuel Jones.
Jones:	My name's Samuel Jones.
Smith:	I see. And you're looking for a job?
Jones:	I need a job.
Smith:	Quite. Now I see from your CV that you were in the army?
Jones:	What I was before was a soldier.

Is there any way of pronouncing this exchange so that it sounds less strange? Compare the Prague School concept of Communicative Dynamism, with the Hallidayan concept of Theme in your 'revised' reading.

(2) Consider the following two extracts from newspaper reports of a 21-12 defeat of Scotland by England in a rugby match. Pay attention to the thematic structure, and see if you can tell from that which extract is from a Scottish paper, and which from an English paper?

(a) It would be ungracious to deny Scotland the credit they deserve for the defensive scheme they threw across the Twickenham pitch like a seine net across the Spey, which anomalously also contributed much to their downfall, as time and time again they were penalised for lying up offside.

England won the match in the set pieces; the scrum was rock-solid and Ackford, Dooley, and Richards provided an impregnable wall at the line-out, which gave them emphatic possession against the Scots' more scrambled efforts.

But the English pack, which at all times moved forward like a bulldozer shifting snowflakes, was continually checked by Scottish grit and resistance, which was implicit in their tackling, in which Sole, Jeffrey, White and Turnbull played a huge part.

(b) Scotland were simply bombed out. Not just by Hodgkinson's boot, but by the accurate line-kicking of their stand-off Rob Andrew.

Scotland couldn't escape from defence often enough to mount any kind of sustained attack.

England's juggernaut forwards saw to that. They gave nothing away in the scrum, exerting the sort of shove which made life a joy ride for their scrum-half Hill.

Sole, Gray, Turnbull, White and Jeffrey all had England at panic-stations at odd times, but the defence quickly regrouped and in the end yielded nothing.

The suspicion that the Scots were a bit bare in ideas behind the scrum was borne out. There were individual touches, yes, but few combined movements.

It should be clear from the activities you have just completed that the kind of grammatical analysis you have just done is often used in stylistic and critical discourse analysis.

Chapter 5
Immediate Constituent Grammar

1.0 Introduction

In Chapter 1 we considered the effect of Ferdinand de Saussure's contribution to twentieth century linguistics. We focused on a number of topics in his work: first of all, his concentration on the state of language at a particular time, rather than its development over time -- ie synchronic rather than diachronic linguistics. Secondly we discussed his argument that the object of linguistic study should be the principles governing the set of utterances as a whole, rather than any one individual utterance -- ie the grammarian should attempt to describe the abstract rules represented by *langue* through reference to individual utterances, or *parole*. Finally, we considered the two axes of de Saussure's proposed grammatical relations: the *paradigmatic* relations which govern the selection of different items which might be slotted into any particular part of a sentence, and the *syntagmatic* relations which govern the 'horizontal' relations between any one constituent in a sentence and another.

This chapter takes the notion of paradigmatic and syntagmatic relations a stage further, and looks at the detailed description of sentence structure suggested by the American linguist Leonard Bloomfield and his followers, the so-called Structural Linguists, from the 1930s onwards. The Structuralists were less interested than Saussure in the general, theoretical procedures governing linguistic description; they were more interested in the practical necessities of identifying and relating the linguistic constituents of fast-disappearing native American languages. This anthropological interest led some to reconsider the nature of the grammatical constituents of English and to think again about how these constituents work together.

2.0 Immediate Constituents

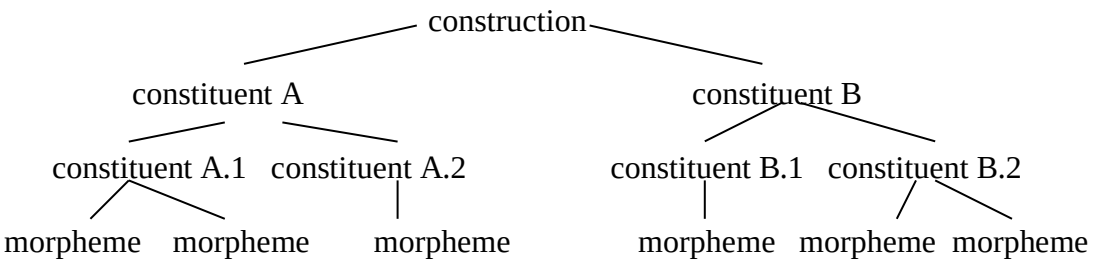
Let us begin by pretending that you know nothing about English grammar. Let us even pretend that you know nothing about English. Imagine that you are beings from another star system, flying past the planet Earth on your space cruiser, and you pick up some primitive transmissions on your sub-space decoder. As creatures of superior intelligence, what do you notice about these transmissions?

Well, first of all, they are not random. There are a limited set of sounds and symbols and they seem to recur and interact in a systematic fashion. This you take to be a sign of intelligence, so you look closer. You start sorting your data into groups of sounds or symbols which seem to conform to patterns. One group might look like the following:

> Lynn is laughing at Billy's joke.
> Tom doesn't think that Bill's joke is funny.
> Tommy thinks that Billy and Lynn are making fun of him.
> Tommy doesn't laugh.
> Tom *does* pour a tube of toothpaste over Billy's head.
> Tommy is rocking with laughter.

As aliens from another planet, your first act is to put this data through your Universal Translator. This machine notices several things. First of all, the sequence *laugh, laughing, laughter* occurs. This seems to be a combination of a basic form *laugh* with some kind of additional forms *ing* and *ter*. Does the form *ing* occur elsewhere? Yes, in *rocking* and *making*. Furthermore, the *-ing* forms seem regularly to be preceded by *is* or *are*. The forms *think* and *thinks* co-occur too, as do *Tom, Tommy, Bill, Billy, Billy's.* Interesting.

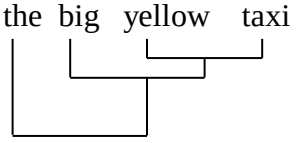
Your Universal Translator will now go on to look for forms like *laugh* or *Tom* or *pour,* or even *-ing, -n't,* or *-s* -- none of which can be broken down further into smaller units. And it will also pay attention to the possible ways of combining these small units into larger, complex units -- *laugh-ing, mak-ing, does-n't* etc -- until it builds up a picture of which combinations are and are not possible in this alien language. In other words, it will write a grammar of the language by building up a picture of which selections and combinations of grammatical units are possible. The sequences that it analyses will have the following (idealised) form:



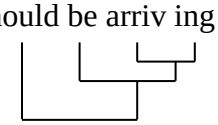
The largest grouping of constituents is called the 'construction'; this is made up of constituents, which in turn are made up of further constituents, which are in turn made up of further constituents, until you reach the ultimate constituents, the morphemes. The *immediate constituents* (ICs) are those from which any given construction are directly formed. The kind of grammatical that identifies structural elements by breaking them down into successively smaller units is called *immediate constituent analysis.*

IC analysis is not entirely dissimilar to the kind of analysis done in first-year. Then we broke sentences down into phrases and phrases down into words. Morphemes were even mentioned briefly. There is however one difference in IC analysis, in that constituents always tend to be broken into *two* smaller constituents, until such a division is no longer possible (and you have your basic unit, or morpheme). This means that sequences such as the NP *the big yellow taxi* or the VP *should be arriving* are broken into two then two again, until the morphemes are arrived at. This gives us the following structures:

the big yellow taxi
the + big yellow taxi
the + (big + yellow taxi)
the + (big + (yellow + taxi))



should be arriving
should + be arriving
should + (be+ arriving)
should + (be + (arriv + ing))



The structural description shown above is quite detailed. Within each phrase, we can see what the relationship of each part is: for example, in the NP the determiner *the* modifies not just the head word *taxi,* but the sequence *big yellow taxi.* Similarly, in the VP the modal auxiliary, *should* modifies not just the headword *arriving,* but the sequence *be arriving.* IC analysis does not usually label sequences of words as NPs or VPs – generally IC grammarians content themselves with showing the grammatical relations between constituents by annotating 'tree diagrams' such as those above, in ways that we shall shortly consider more closely.

The notion of aliens bypassing Earth and trying to work out a grammar of English according to the above principles might seem whimsical, but in fact it is not that far distant from the motivations governing the American structural linguists. In early 20th century America, linguistic anthropologists like the German immigrant Franz Boas (1858-1942) were aware of the threats to the indigenous Amerindian languages, and they very much wanted to record and describe these very different languages before they became extinct. They needed some systematic, scientific discovery procedures to help them figure out the meanings and structures behind the strings of sound produced by speakers of these very different languages. The procedures developed by this anthropological project were fed back into English language studies and used in the description of English grammar too.

It was Leonard Bloomfield in his book *Language* (1933) who proposed this idea of a basic grammatical unit, the *morpheme.* The morpheme is the *ultimate constituent,* something that cannot be broken down into further grammatical units. For example, *pour* is a morpheme, and *ing* is a morpheme. Both give grammatical information. Here, one type of morpheme can occur independently in an utterance *(Tom, laugh, pour)* -- these are 'free' morphemes. Others, such as *-ing, -s, 's, -n't,* can only occur in combination with other morphemes -- these are called 'bound' morphemes.

3.0 The structure of complex units

The followers of Bloomfield developed a means of describing sentence structure according to the way that morphemes combined to form larger units, and these larger units in turn combined to form even larger grammatical units, up until the largest structure which is the 'construction', effectively the sentence. From the reverse perspective, sentences were described as a complex structure of units, broken down into immediate constituents, until we reach the smallest one, the morpheme. How does this work in practice?

3.1: Endocentric and exocentric constructions

Take the simple sentence:

> Happy people live in Recife.

Our assumption is that even a simple sentence like this is made up of complex units. Some of these units can be reduced, for example, 'happy people' can be reduced to 'people' and the sentence will still make sense. 'Happy people' is therefore probably structurally related in some way to the single word, ‘people’.

We can reduce the phrase 'in Recife', too, to one word 'there' -- but notice that this type of reduction is different. We reduced 'happy people' to one of its constituents 'people' -- this single constituent is therefore deemed to be EQUIVALENT to the more complex phrase, and so is described as its HEAD. If we can reduce a complex unit to *one* of its constituent units (ie the head), we say that it is an ENDOCENTRIC construction.

However, when we reduce 'in Recife', we do not get a head word in the same class, (ie a single preposition or a noun), but another type of word, the adverb 'there'. This unit, then, is an EXOCENTRIC or 'headless' construction.

3.2 Types of Endocentric Construction

Endocentric constructions (ie those with heads) can be either coordinative or subordinative. Compare:

> Happy people live in Recife.
> Men and women live in Recife.
> Bruno, a grammarian, lives in Recife.

As we have seen, 'happy people' can be reduced only to 'people' -- 'happy' is subordinate to 'people' – in other words it is a *modifier*. But in the other two cases, you have a choice of head if you reduce the phrases. 'Men and women live in Recife' can be reduced to either 'Men live in Recife' or 'Women live in Recife'. This is therefore described as a coordinative endocentric construction. Similarly, 'Bruno, a grammarian, lives in Recife' can be reduced either to 'Bruno lives in Recife' or 'A grammarian lives in Recife'. Again, we have a choice of headwords when we reduce the phrase, so it is a coordinative endocentric construction.

The labels might sound daunting at first but remember that their function is to distinguish between different types of relationships between constituents in a phrase. These different relationships can be summarised in a table:

Type of construction	Reduction characteristics	Relationship between constituents
Exocentric	Cannot be reduced to a single constituent	Constituents are mutually dependent
Endocentric:		
(1) subordinative	Can be reduced to one obligatory constituent (=head)	Modifiers are dependent on head
(2) coordinative	Choice of heads	Constituents are independent of each other

As our examples of coordinative endocentric constructions showed, there is sometimes a conjunction marking the relationship between the joint heads (the conjunction can be additive or alternative -- 'and' or 'or'), or the nouns might be in apposition (ie A=B, 'John, a grammarian').

3.3 An example of an IC sentence analysis

An Immediate Constituent analysis of a sentence would follow the procedures illustrated below. Note that IC analyses are interested in showing the structural relations between grammatical constituents – they are less interested in attaching labels such as NP, VP, or SPOCA. Although these labels are not specified in IC analyses, they are often implicit in the descriptions presented.

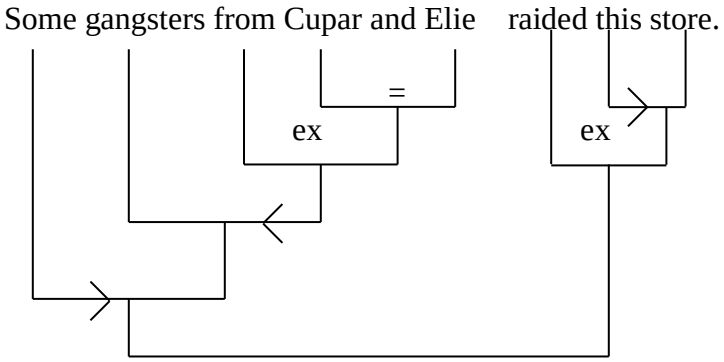
1. Show word structure; eg gangster+s, raid+ed

2. Show phrase structure; eg on Friday, this store, Cupar and Elie

3. Identify types of phrase construction:

exocentric	ex
coordinative	=
subordinative	> or <

The arrows > or < in endocentric subordinative constructions show the relationship between the modifiers and the headword. The arrow points from the modifier to the headword.



There are various points to note about this tree diagram. First, it could go further and subdivide *gangsters* and *raided* into the morphemes *gang + sters* and *raid + ed.* However, the level of analysis has stopped at the word. Otherwise, it is an attempt to show the kinds of grammatical relationship between the elements of the sentence, by breaking them into their immediate constituents, two by two. So we begin by breaking the sentence into two: *Some gangsters from Cupar and Elie + raided this store.* Then each of these constituents is further broken down, two by two, until the ultimate constituents are reached: *Some + gangsters from Cupar and Elie; gangsters + from Cupar and Elie; from+ Cupar and Elie; raided+ this store; this + store.* The annotations show the kind of grammatical relationship holding between each constituent, eg the arrows show what is modifying what.

4.0 Some problems with IC Analysis

There are some well-established problems associated with Immediate Constituent Analysis. Some are practical, and are about how you present a particular sentence or structure. Others are more theoretical in nature, and are to do with the claims made by the grammatical theory, mainly about the presence or absence of a *semantic* element -- how important is *meaning* to our categorisation of constituents?

4.1 Ambiguity:

It is not always immediately obvious from the structure of a sentence alone how it is to be interpreted. Many sentences and structures have more than one possible interpretation. ICA can show the possibilities but *by itself* it cannot identify which interpretation is preferable in a given context. For example, the sentence *Some thieves and varlets from Elgin* is open to various interpretations, such as:

(a) Some thieves from Elgin and some varlets from Elgin.
(b) Some thieves (from somewhere) and some varlets from Elgin.
(c) Some thieves and (an undetermined number of) varlets from Elgin.
etc

ICA can show by tree diagrams the different possibilities for interpretation, but it cannot explain how people decide which is plausible in any given context.

4.2 Identification of basic units:

Morphology, the study of morphemes, could justify a course to itself. Suffice it to say here that it is not always easy to identify the 'ultimate constituents' of structures. It's relatively easy for words which conform to regular patterns, like DENT+IST, DENT+AL, but things get trickier when you have to identify the basic constituents of words like 'hamburger' and 'beefburger', or 'sheep' (sing.) and 'sheep' (pl.).

A ‘hamburger’ (like a ‘frankfurter’) was originally a foodstuff named after its place of origin. We therefore have historical justification for analysing it into the morphemes *hamburg+er* by analogy with *frankfurt+er.* However, with the popularity of hamburgers,

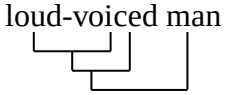
and possibly the confusion caused by the accidental presence of the element *ham,* we now have words like *beefburger, cheeseburger,* and so on – suggesting a morphemic analysis of *beef+burger, cheese+burger...*and *ham+burger.* Here diachronic and synchronic linguistics seem to pull us in different directions: the analysis *hamburg+er* accords with the historical facts of the language (and indeed with the ingredients of the foodstuff), while *ham+burger* accords with the way the language currently operates, with *burger* as a still-productive free morpheme. It is difficult to say which is a 'correct' representation of the ultimate constituents of this word. Both analyses have arguments in their favour.

The problem with *sheep* is that it belongs to a small class of English words that do not formally mark the plural. Most English words mark plural by adding the bound morpheme *–s* to the free morpheme of the stem, e.g. *book+s.* Usually, then, we can say that the ultimate constituents of the English plural are made up of two morphemes, one of which marks plurality. To make words like *sheep, deer* and *aircraft* fit this pattern, then, some grammarians propose the existence of the 'zero morpheme' which is added to *sheep* (singular) in order to arrive at *sheep* (plural). The former *sheep* is made up of one morpheme; the latter is made up of two. There are drawbacks to this proposal, clearly discussed in Brown and Miller (1980: 161-230). One problem, if you begin proposing 'zero morphemes' as ultimate constituents, is that it is difficult to know where to stop. For example, if we argue that number in English is to be marked by the addition of a singular or plural morpheme, then we can argue that actually the singular form has a zero-morpheme: i.e in *book+s,* plurality is marked by the morpheme *+s,* while in *book,* singularity is marked by a zero-morpheme. If we follow this logic with *sheep,* however, then we are led to the position that both singular and plural forms are marked by zero-morphemes!

The logic here might seem tortuous, but it represents a theoretical problem which IC analysis needs to resolve. The morpheme is an *abstract* grammatical concept, and although it accounts for many of the facts of grammatical behaviour, we cannot account for them all without tinkering with the nature of the abstract concept.

4.3 Cross-cutting

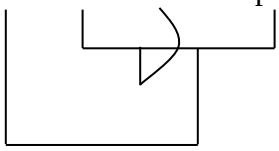
In complex constructions, word-boundaries and morpheme boundaries do not entirely correspond. For example, in 'loud-voiced man', the word 'loud' is assigned to 'voice', not 'voiced' (compare 'man with a loud *voice*'). The morpheme 'voice', therefore cuts across the word boundary:



Although this is not a serious theoretical problem, it does cause difficulties when we are attempting to represent grammatical relationships diagrammatically. See Simpson (1979: 117) for a further explanation of this and other examples.

4.4 Discontinuous constituents:
Another problem arises when we are trying to represent a discontinuous constituent, that is, a structure which is interrupted by another structure. The rather messy solution is to make one of your lines 'hop over' the other, so:

She would never complain.



She + would complain + never

She + would (+ never) complain

For further explanation and examples, again see Simpson (1979: 117).

4.5 Meaning and discovery procedures
The final problem to be considered here is again more theoretical, and it concerns the aims of structural linguistics. In an ideal world, the structural grammarian would sit down and consider a corpus of material – let us say a group of utterances in an unknown language. The grammarian would listen to the phonemes, work out the morphemes and words and phrases from the recurring regularities (i.e. working from *parole* to *langue*), until he or she had a full grammar of the language. The way that the grammarian would proceed would be by grammatical tests or *discovery procedures* -- these would be purely structural, purely governed by patterns and distributions. In other words, they would not depend on the grammarian knowing the meaning of any of the items. The construction of discovery procedures became the main goal of structural linguistics, and its main task was the separation of structures into levels -- phonemic and grammatical, for example.

The problem is that it is in fact almost impossible to give an adequate description of any part of the language system without already making assumptions about any other part, and it is very difficult to classify items without considering their meanings. Otherwise, we would always be barking up wrong trees, for example, as Simpson observes (1979: 123) we would think gooseberry would have something to do with geese, and that hipp+*opotam*+us shared a morpheme *opotam* with Mes+*opotam*+ia.

Still, structuralist linguistics has taught us to think carefully about how we classify structures, and to recognise the assumptions, inconsistencies and sometimes even contradictions that go into grammatical descriptions.

5.0 Review Activities
These activities review the work of this chapter and are designed to get you thinking like a structuralist grammarian.

5.1 Exocentric and Endocentric Constructions
Do an IC analysis of the following sentences and phrases (beginning at the level of words). Be critical: ask yourself *why* should the words X and Y be joined to form any particular construction. What types of construction -- exocentric or endocentric, subordinative or coordinative -- result from your analyses?

1. A brief examination revealed the proceeds of the robbery.

2. Don't forget to register on time!

3. her remarkable child's playpen.

4. hare-brained scheme

5.2 Morphemes

What are the 'ultimate constituents' of the following words? On what basis have you identified the morphemes? What problems arise during this identification?

1. disarm
2. dismay
3. solemn
4. condemn
5. connect
6. potash
7. potato
8 pottery
9. aircraft
10. crafty

5.3 Discovery Procedures

How easy is it to identify grammatical patterns and to devise rules for completely unknown languages, without having recourse to meanings? Try out the following activities, which give you progressively less and less information about the meanings of the languages considered.

A: Klingon

Let us begin by returning to the fantasy of visiting an alien planet and attempting to untangle the grammatical structure of a non-human species, by observing how they communicate. Let us imagine that you have been orbiting the Klingon homeworld, in a cloaked starship, with a mission to boldly do an Immediate Constituent Analysis of *tlhIhngan*, Klingon. So far you have figured out a paradigm for intransitive verbs such as *Qong* (sleep). In Klingon speech, *Qong* appears with pronoun prefixes:

jIQong
bIQong
Qong
} *singular*

maQong
SuQong
Qong
} *plural*

With transitive verbs, however, a whole range of verbal prefixes is employed to indicate simultaneously Subject and Object. Take, for example, the verb *legh* (see). The prefixes seem to fall into certain groups, some of which are given below (*S* = Subject):

1st person S	*2nd person S*	*3rd person S*	
qalegh	cholegh	mulegh	*singular Subject*
vIlegh	Dalegh	Dulegh	
Salegh	julegh	legh	

1st person S	*2nd person S*	*3rd person S*	
pIlegh	tulegh	legh	*plural Subject*
		lulegh	

Through careful ethnographic observation, you discover that one Klingon challenges each other to a duel by saying 'show' (*ang*) 'face' (*qab*). The adversary will usually answer 'I don't hide (*So'*) it'. Observers might at that point murmur, 'He/she shows his/her face clearly'.

With all this data in hand, can you identify the various morphemes in the following challenge issued by Chancellor Gowron to Worf, with Kor observing? In particular, can you spot the morphemes that express imperative, possession and negation?

GOWRON: qablij HI'ang!
KOR: qab legh 'e' poQ.
WORF: qabwij vISo'be'!
KOR: Ahhh, qabDaj 'angchu.

For further information, see Okrand, M (1985, 1992) *The Klingon Dictionary* (Pocket Books) and Okrand, M (1997) *Star Trek: Klingon for the Galactic Traveler* (Pocket Books).

B: Scots Gaelic (adapted from Brown and Miller (1980: 62-3))
Coming back down to earth, try to identify the relationship between the constituents of the following sentences of Gaelic based on the data given. (* marks an unacceptable structure.)

1. Bha an cù dubh.
2. Bha an cat bàn.
3. Bha Calum mór.
4. Bha an cù sgìth.
5. Bha Màiri beag.
6. Bha an gille mór.
7. Bha an cù beag.
8. Bha Màiri bàn.
9. Bha an gille beag.
10. Bha an cat mór.

11. Bha Màiri beag.
12. *An cat dubh bha.
13. *Bha cat an dubh.
14. *Bha dubh an cat
15. *Bha an Calum sgìth
16. *Bha cat dubh.

C: Bolivian Quechua

Here are six question-and-answer drills from a textbook on Bolivian Quechua, a South American Indian language. Can you identify the morphemes that are being taught in this unit from the textbook? (At the end of this chapter, the English translation is given and the morphemes in question are identified.)

1. Tapuy mamaykita, ¿pichus kay chusita apamun?
2. Pichus apamunpis ari, ma yachanchu.
3. ¿Imapaqchus kayman apamunkupis?
4. Imapaquchus apamunkupis ari.
5. ¿Mashkhachus kay valisqanpis?
6. May-chhikachus valisqanpis ari.

D. Basque

The activities above have been simplified by selecting and arranging the data. What (if any) deductions about Basque can you make from the following excerpt from a guide to the Guggenheim Museum in Bilbao? Can you identify recurring morphemes and make any deductions about, say, the form of the nouns, verbs adjectives or adverbs? Again a translation into English is given at the end of the chapter.

> Guggenheim Bilbao Museoak ateak zabaltzen dituen honetan, hainbat helburu bete nahi ditu: gure garaiko arterik esanguratsuena bildu eta interpretazeko aukera ematea, arte-hezkuntza indarberritzea eta jendearen ezagutza dendotzea, eta aldiberean Solomon R. Guggenheim Foundation-eko biduma zabala osatzea. Joan den 20ko hamarkadan Solomon R. Guggenheim eta Hella Rebay bere aholkulariak fundatutako erakunde horrek, joan zen mendearen amaieratik gaur egun artean mendebadeko kulurak sortu duen arte bisual osoaren erakusgarriak dauzka.

Translation of B: Bolivian Quechua

1. *Ask your mother, Who could have brought this rug?*
2. *She doesn't know who could have brought it.*
3. *What could they have brought it here for?*
4. *Good question, what could they have brought it for?*
5. *How much would this cost?*
6. *Yeah, I wonder how much it would cost/*

The morphemes being taught in this unit are the suffixes –chus *and* –pis. *The form* –chus *is attached to* pi (who), imapaq (what for) *and* mashkha (how many) *to indicate that they are interrogative sentences. For example, in sentence 3 the morpheme* –chus *marks the sentence as an interrogative:*

¿Imapaq**chus** kayman apamunkupis?

This morpheme is also used in the declarative responses to indicate doubt. This doubt is reinforced by adding –pis *to the verb, eg to the relevant forms of* apamuy (bring), *as in sentence 2:*

Pi**chus** apamun**pis** ari, ma yachanchu.

For further information on Quechua, see Luis Morató Peña and Luis Morató Lara (1994) *Quechua Boliviano Trilingüe* La Paz: Los Amigos del Libro

Translation of C: Basque

The Guggenheim Museum Bilbao opens its doors with the threefold mission of bringing together and interpreting the most representative art of our time, fostering artistic education and the public's knowledge and understanding of the arts, and complementing the extensive collection of the Solomon R. Guggenheim Foundation. The Guggenheim Foundation, founded in the twenties by Solomon R. Guggenheim and his artistic advisor Hilla Rebay, has collected objects produced in the twentieth century from the full range of Western visual arts.

Chapter 6
Towards a Generative Grammar

1.0 Rethinking what a grammar should do

Consider for a moment some of the 'big ideas' which have dominated our survey of grammatical theories so far. Saussure's 'big idea' was the notion that you could take a snapshot of a language at any one time – let us say, today's English -- and then describe it as a series of constituents that would be paradigmatically and syntagmatically related. Remember that much -- though by no means all -- linguistics beforehand had concentrated on language evolution and change. Saussure legitimised the investigation of the structured nature of present-day language.

Bloomfield and the Structuralists focused on 'discovery procedures'. Given a language, or at least a string of elements from that language, what procedures can we use to identify phrases, words and morphemes -- the basic 'building-blocks' of language – and how can we show the relationships (endocentric and exocentric) between these constituents? In other words, grammarians start off with a set of utterances, and then use a set of strategies to try and describe the general set of structural patterns to which they conform.

Structuralist grammar dominated American linguistics from the 1930s to the 1950s. Then, in 1957, a young man at Massachusetts Institute for Technology published a slim monograph which was to revolutionise linguistics. His name was Noam Chomsky, his book was *Syntactic Structures*, and his 'big idea' was that a *real* grammar of English would not just tell you the patterns that sentences conformed to, or even how to discover the patterns that sentences conformed to -- a grammar of English should tell you how to *make* these sentences. This is a hugely ambitious undertaking, because, if you have a grammar that tells you how to generate potentially *all* the possible sentences in English (and *only* those sentences which are acceptable), then maybe you've got a model of that other sentence-generating device, the human mind itself. Chomskyan grammar, or transformational-generative (TG) grammar, dominated linguistics for the next 30 years or so.

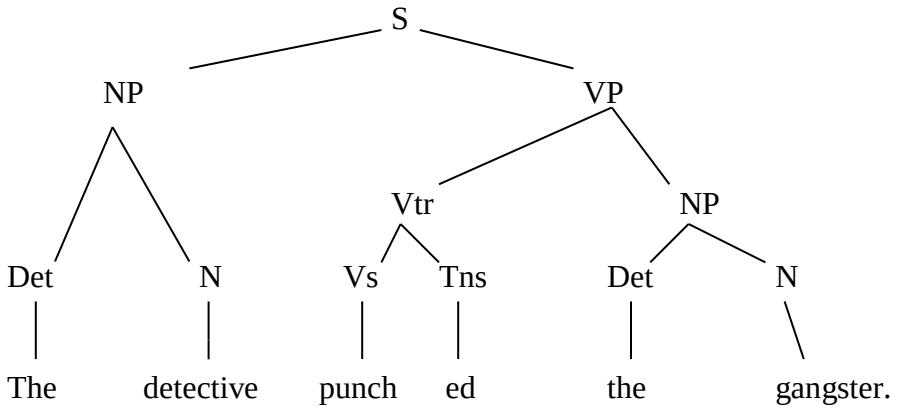
Chomsky's workplace, Massachusetts Institute of Technology, is one of the foremost scientific establishments in the USA. It is therefore perhaps not surprising that Chomsky aspired to the rigour and precision of mathematics in his formulation of grammatical theory -- this rigour appeals strongly to those who like their linguistics to be verifiable, quantifiable and objective. TG grammar can therefore intimidate those who think that language study belongs in the humanities and should bear as little resemblance to algebra or symbolic logic as possible. In short, TG grammar can look quite daunting, but bear with it. In the coming pages we are not going to go very deeply into the fine details of the theory -- as with the other grammatical models we consider here, we shall focus on the general framework, that is, what the TG grammarians were trying to do. Their work is relevant to contemporary research, not just into grammar but into psychology and first and second language acquisition. Those among you who wish to delve deeper into the details of TG grammar are directed to the recommended reading.

Despite the revolutionary nature of Chomsky's grammar, he did build on concepts that he inherited from earlier linguists: that language was a structured set of sentences, and that certain relationships held between the structures. Like Saussure and Bloomfield, Chomsky and his followers attempt to devise a grammar of formal rules which explain language behaviour. The difference about TG grammar is that it is an attempt to devise a grammar that tells us how to *generate* acceptable sentences, not just a grammar that *describes* them when they occur. Chomsky began by devising what are called 'rewrite rules'. There are three types of rewrite rule -- phrase structure (PS) rules, transformational (T) rules, and morphophonemic rules – in this workbook we shall focus mainly on two of these: PS and T-rules.

2.0 A Simple Set of PS rules.
Take the sentence:

The detective punched the gangster.

This sentence could be represented as a 'tree diagram' showing the constituent parts:



There are various things to note about this 'tree diagram' or 'derivational tree'. The first is that it is shows slightly different grammatical relationships from those you may have encountered in earlier grammar courses. There is no representation of *functional* constituents such as SPOCA or modifiers and headwords. Chomsky's is a *formal* grammar, and so tends to ignore functional elements as such. You will note that, as in structuralist grammar, the sentence is initially divided into two: in traditional grammars these elements were called *subject* and *predicate.* This division means that the second NP is deemed to be part of the verb phrase – and, indeed, this sentence would be considered incomplete if the NP was missing: **The detective punched.* The NP, then, is considered to be an essential part of this VP.

The tree is made up of branches and nodes. The labels given to the various nodes are sadly not consistent, even from one version of TG grammar to the next. Here Det is used for the determiner, *the,* but you might equally find Art (Article) in some books. Prepare to be flexible when you read grammatical theory, but also try to be consistent when you

are constructing your own tree diagrams! The other nodes here are NP (Noun Phrase), VP (Verb Phrase), Vtr (transitive Verb), Vs (Verb stem), Tns (Tense, here the past tense marker), and N (Noun). Sometimes the relationships between the elements labelled is described as a 'family tree'. Thus the Det and N are 'daughters' of the NP, which itself is a 'sister' of the VP. Another way of expressing the relationship is to as that the NP 'governs' the Det and N, as the Vtrans 'governs the Vs and Tns.

This 'derivational tree' still simply describes the sentence given. However, it can be recast as rewrite rules. The rewrite rules which equally well account for the phrase structure of the sentence. The arrow → means 'can be rewritten as'.

S → NP + VP
VP → Vtr + NP
NP → Det + N
Vtr → Vs + Tns

Tns → *ed*
Vs → *punch*
N → *detective, gangster*
Det → *the*

The first four lines of this sequence of rewrite rules would allow you to generate any sentence of this type. The next four lines fill in the lexical and morphological components, ie the words and their inflexions. The beauty of rewrite rules is that they account for all similar structures in the language. As well as *The detective punched the gangster,* these PS rules can generate sentences such as *The gangster punched the detective, The stewardess boarded the flight, The pilot landed the plane, The car rounded the bend.* The possibilities are, in principle, boundless (though see section 5.0 below).

There are a few points to note about PS rules:

(a) the rule tells you to rewrite the symbol on the left of the arrow as a string of symbols on the right of the arrow

(b) only one symbol may appear on the left of the arrow

(c) apart from the first symbol, S, anything which appears on the left of the arrow must already have appeared further up, on the right.

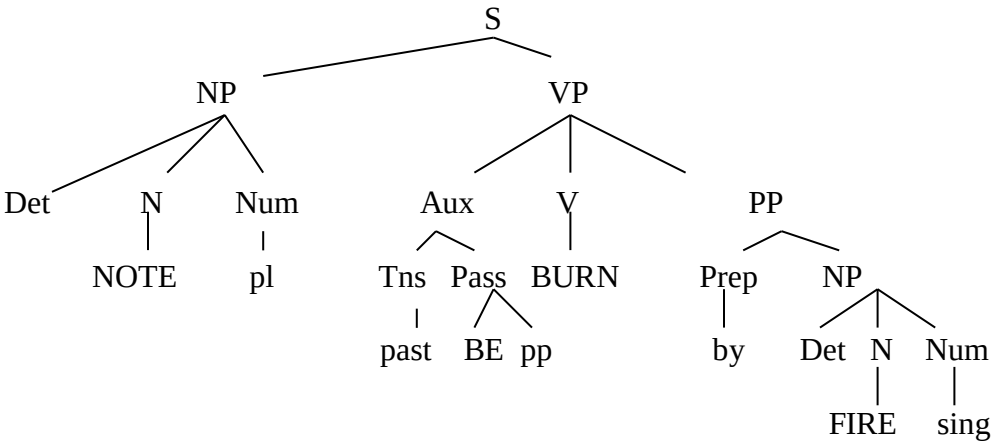
(d) no symbol may be used on the left hand side more than once

(e) the symbols on the right which are not subject to rewriting constitute the *lexicon* (words and morphemes); a comma separating them indicates a choice.

2.1 The Quest for Power and Economy

As the complexity and power of rewrite rules develop in TG grammar, their form and order changes from the kind of simple sequence given above. The goal of a formal description of language by rewrite rules is to achieve a *powerful* and *economic* set of rules which account for as many acceptable structures as possible. To that end, for example, more sophisticated PS rules place morphemes like Tns *before* rather than *after* the Verb stem to which they apply. This would give the rewrite rule as Vtr → Tns + Vs. If directly rewritten as a phrase, this would obviously give the affix before the verb stem: *edpunch.* To avoid this happening, it is assumed that all verbs undergo a *transformation* (see Chapter 5) which makes the affix 'hop' from the beginning to the end of the verb. The reasons for doing this are complex, but they boil down to the fact that the combination of a PS rule that positions affixes before verbs, plus a transformation rule that makes affixes 'hop' to the end of the verb, is in the long run more economical and powerful than having PS rules which position affixes after the verb stems.

An illustration of a more complex derivational tree (including morphemes realising Number and Passive voice) looks something like this:



This derivational tree accounts for sentences like *The notes were burned by the fire.* Look particularly at the Aux and V elements: the inflexional information about the formation of the tense of BE and the past participle of BURN are both included *before* the verb stems themselves. For further details, see, for example, Brown and Miller (1980: 204-221). The crucial point to understand here is simply that the rules and constituents of TG grammar are *formal abstractions* and do not need to conform to the sequences of phonemes and graphemes constructed by a speaker or writer. What people actually say and write are handled by morphophonemic rules which turn the abstract constituents into sounds and scribbles.

3.0 Morphophonemic Rules

It is worth briefly mentioning morphophonemic rules at this point. In the illustration of a simple series of PS rules, given above, all the symbols are considered to be *abstract*, even

those in the lexicon, the words and morphemes. That is to say, in the rewrite rules and in the tree diagram, the word *detective* is actually an abstraction, a token of the word as it might be spoken or written. If we then attempt to describe written and spoken behaviour (and not just grammatical structures) we would have to add another set of rewrite rules, along the lines of (for my own speech):

the → /ðə/
detective → /dɪ'tɛktɪv/
gangster → /'gaŋstər/
punch+ed → /'pʌnʃt/

Obviously, not all rewrite rules are this simple. To consider a small complication, imagine that the sentence had been, 'The detective saw the gangster'. The PS rules governing the verb would then have been:

VP → Vt + Tns
Vt → *see*
Tns → *ed*

The symbols 'see' and 'ed' would mark the choice of verb and tense, but we don't actually say 'see+ed'. We handle this problem by the morphophonemic or morphographemic rewrites:

see+ed → /sɔ/ (morphophonemic)
see+ed → saw (morphographemic)

Notice that for these rewrite rules, it *is* possible to have more than one symbol on the left-hand-side of the arrow.

4.0 Structure Tests

A crucial question -- perhaps *the* crucial question -- in TG grammar is: how do you categorise syntactic constituents, that is, the bits and pieces that make up your sentences? TG grammarians seek formal answers to that question -- in other words, they make judgements about syntactic categories by focusing on the patterns that are possible and not possible in the language. They devise 'structure tests' to help them do this. These structure tests are comparable to the discovery procedures used in IC analysis. An important point to keep in mind, for the moment, is that structure tests are purely formal: as with discovery procedures they do not appeal to the meanings of constituents in order to categorise them. The following 'structure tests' (adapted from Radford, 1988: 89-105) are attempts to determine which strings of words are constituents, and if so, what category they belong to.

1. Can a word or string of words be *replaced* by another phrase of a given type? If so, it is also a phrase of the given type.

The student	looked up the word in the dictionary.
The woman in the red dress	looked up the word in the dictionary.
Gillian	looked up the word in the dictionary.
NPs	

2. Can the word or string of words undergo *movement* in the sentence? If so, it is a phrase of some sort.

The woman in the red dress	hit me with a book.
Hit me with a book, *the woman in the red dress*	did!
NPs	

3. Can the word or string of words serve as a sentence-*fragment*? If so, it is a phrasal constituent.

Who hit you with the book?	What did she do?
The woman in the red dress.	*Hit me with a book.*
NP	*VP*

4. Neither NPs nor PPs allow *adverbials* to be positioned *internally*. Therefore, adverbials must be positioned either between phrases, or within VPs. This can help identify (a) adverbials, and (b) NP and PP boundaries.

Slowly the woman was raising her arm in the air.
The woman *slowly* was raising her arm in the air.
The woman was *slowly* raising her arm in the air.
The woman was raising her arm *slowly* in the air.

But not:

*The *slowly* woman was raising her arm in the air.
*The woman was raising her arm in *slowly* the air.

5. Can the phrase be linked to another phrase by the *conjunctions* 'and' or 'but'? If so, they are phrases of the same type.

The man next door and *his wife* are very nice.
He is *very clever* but *rather inarticulate.*

But not: **The man next door* and *rather inarticulate* are nice.

6. Can the word or string of words be *'shared'* by two clauses, linked by 'and' or 'but'? If so, it is a phrase.

Gillian peered, and Douglas ran, *up the road.* [PP]
Douglas will, and Gillian might, *go to the party.* [VP]

7. Can the word or string of words be replaced by an *appropriate pro-form*? If so, it is a phrase of the same type as the pro-form.

That wonderfully gifted professional footballer on whose every word the tabloid press hang in wonderment missed a penalty last night.

He missed a penalty last night. [NP]

I first saw you *in the crumbling yet picturesque streets of old Salerno.*
I first saw you *there*. [pro-PP]

Douglas thinks Gillian is *very aggressive* but I've never found her *so.* [pro-AP]

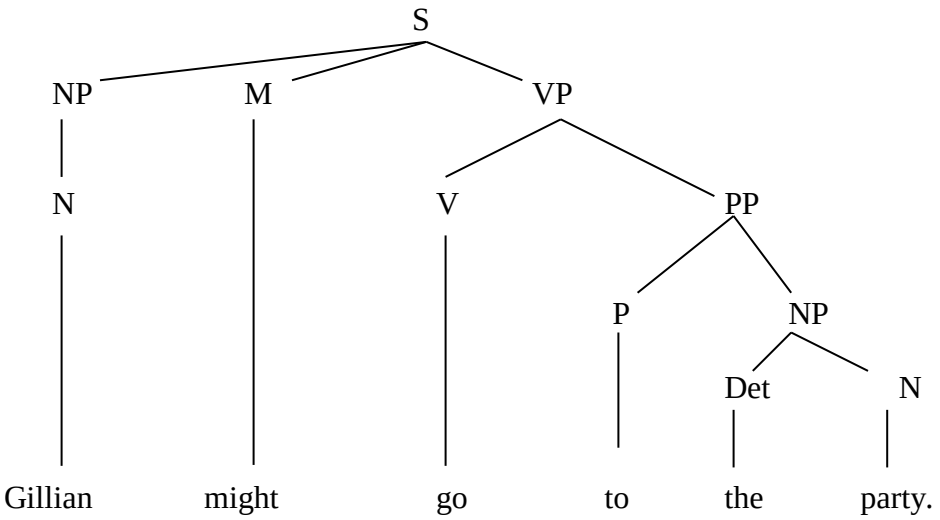
8. In certain contexts, can the word or string of words be *omitted* (ie undergo *ellipsis*)? If so, it's a VP.

Douglas won't *go to the party* but Gillian will *[go to the party].*
Gillian *likes mixing her drinks,* but Douglas doesn't *[like...].*

But not:

*Douglas won't *go to the party* but Gillian.
*Gillian *likes mixing her drinks,* but Douglas doesn't *like mixing.*

Tests such as those above help us to decide which 'strings of words' should go together to be analysed. For example, the final test (8) suggests that the phrases *go to the party* and *mixing her drinks* should be analysed as a unit (ie a VP), because they can be omitted under certain conditions. The auxiliaries 'might' and 'doesn't' are analysed separately (ie outside the VP) because they cannot be omitted. Thus a tree diagram for 'Gillian might go to the party' could look like this:



This in turn can be written as a PS rule:

S → NP + M + VP
NP → (Det) + N
VP → V + PP
PP → P + NP

M → *might*
Det → *the*
N → *Gillian, party*
V → *go*
P → *to*

Note that for reasons of economy, the NP rewrite rule is only given once, with the brackets signifying that the determiner is optional.

5.0 Lexical constraints

At this point you might be slightly worried about the final step in the Phrase Structure rules – the point at which the symbols such as M, Det and N above are rewritten as words such as *might, the* and *Gillian.* Obviously, not *every* N, V or even Det can be slotted into the positions described by PS rules. The rules in the section immediately above conceivably could generate the sentence **A Gillian should hope in that biscuit.* Clearly, not every word which is categorised as a N can fill the N slot in a PS rule such as that given above. There are therefore *constraints* on the behaviour of each lexical item. If there were not, as Chomsky famously observed, our PS rules would result in meaningless sentences such as 'Colourless green ideas sleep furiously'.

There is little space here to go into lexical constraints in any depth. For more detail, see Brown and Miller (1980, Ch 7). In brief, one way of solving the 'colourless green ideas' problem is to assign two types of categorisation to each lexical item. The first, 'inherent subcategorisation', refers to the kind of lexical item a particular word is – is it

'inherently' a noun, a verb, an adjective, etc? The 'inherent subcategorisation' of *green,* for example, is as an adjective. The second categorisation, or 'strict subcategorisation' constructs a *frame* which describes the *linguistic environment* in which a word can occur. Effectively, rules are constructed in order to determine which words can collocate with which. For example, *green* can collocate with concrete nouns such as *armchair,* but not abstract nouns like *ideas.* Other categorisations that are relevant to nouns include whether or not they are animate/inanimate, human/non-human, male/female or common/proper. The lexical constraints on *green* therefore would look something like this:

GREEN Adj; Cop ____; NP (N[+concrete]) ____

The first part of this description (Adj) is the inherent subcategorisation, telling us that *green* is an adjective. The rest forms the strict subcategorisation, telling us what kind of linguistic environments *green* occurs in. 'Cop _____' tells us that *green* follows copulative verbs (ie those which are naturally followed by an Aj P, such as *be, becomes, seems,* etc). The final part, 'NP (N[+concrete]) ____' tells us that *green* can also occur in NPs where the noun is concrete. The constraints therefore allow sentences and phrases like:

The armchair was green
The green armchair

but not sentences or phrases like:

**The ideas dreamed green*
**The green ideas*

Every word in the language would need a detailed inherent and strict subcategorisation in order to ensure that the rules account for 'normal' language usage. Metaphorical usage is more difficult to account for – poets such as Andrew Marvell tend to talk about things like 'a green thought in a green shade', but in fairness to Chomsky, poetic language allows 'deviation' from the normative rules.
The general rule for lexical insertion can be formulated thus (adapted from Brown and Miller 1980):
For any terminal symbol of the PS rules:

(i) select from the lexicon a member of the class named by the terminal symbol in question (ie select a noun for the symbol N , a verb for V, etc)
(ii) Attach this item as a daughter of the relevant symbol
(iii) The strict subcategorisation for the relevant item must not conflict with the environment into which the item is to be inserted.

Like the strict subcategorisation description suggested above, the lexical insertion rule can be elaborated upon, but the simplified version given above illustrates the general principle by which words are selected to fill the slots generated by the PS rules.

6.0 Summary

To sum up, then, part of the project of Transformational-Generative grammar is to go further than Immediate Constituent Analysis: the constituents of a sentence are discovered and categorised in such a way as to make possible the writing of formal rewrite rules, which will not simply describe but also generate possible English sentences.

7.0 Review Activities

The activities below are designed to review the present chapter and to start you thinking like a transformational-generative grammarian.

7.1 From tree diagrams to rewrite rules

Use the structure tests mentioned in the lecture to identify and categorise the constituents of the following two sentences. First draw tree diagrams of the sentences, and then write PS rules that would generate them, and others like them.

a) The curious student looked up the word in the dictionary on the shelf.
b) The curious student looked up the kilt of the soldier on the ladder.

7.2 Structure Tests (based on Radford, 1988: 162-164)

Despite the apparent rigour of TG grammar, the complexity of the structural tests do not always result in a single, undisputed analysis of any given sentence. Chomsky himelf analysed the sentence *He might have been writing a letter* in slightly different ways in books and articles published in 1957, 1955 and 1972. Consider the different merits of the three analyses, given the structural tests mentioned in the lecture and the sentences below:

1. A: What might he have been doing?
   B: *Writing a letter*
   Been writing a letter.
   Have been writing a letter.

2. He might have been *writing a letter* or *watching TV.*
   He might have *been writing a letter* or *been watching TV*
   He might *have been writing a letter* or *have been watching TV.*

3. He might have been -- but he might not have been -- *writing a letter.*
   He might have -- but he might not have -- *been writing a letter.*
   He might -- or he might not -- *have been writing a letter.*

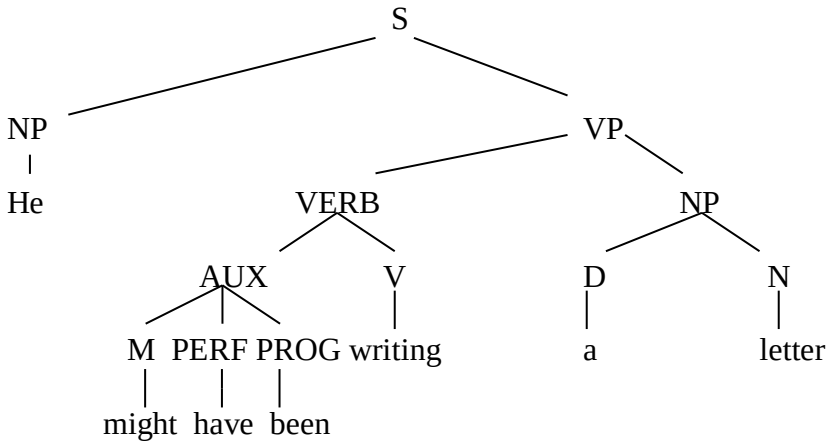
4. He might *possibly* have been writing a letter.
   He might have *possibly* been writing a letter.
   He might have been *possibly* writing a letter.

5. She says he might have been writing a letter and so he *might have been.*
She says he might have been writing a letter and so he *might have.*
She says he might have been writing a letter and so he *might.*

6. A: Do you think he might have been writing a letter?
B: *Yes, he might have been*
Yes, he might have.
Yes, he might.

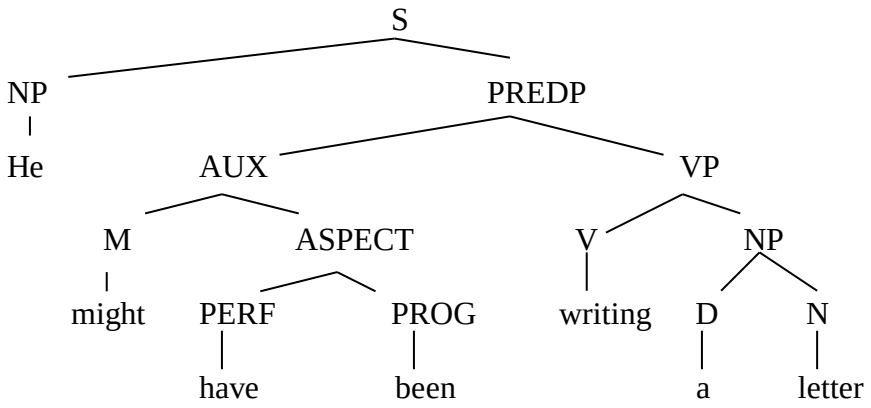
The different decisions made about the categories used to construct this sentence obviously affect the writing of the PS rules. How do the rewrite rules for (a) (b) and (c) differ?

1. Chomsky, *Syntactic Structures* (1957)



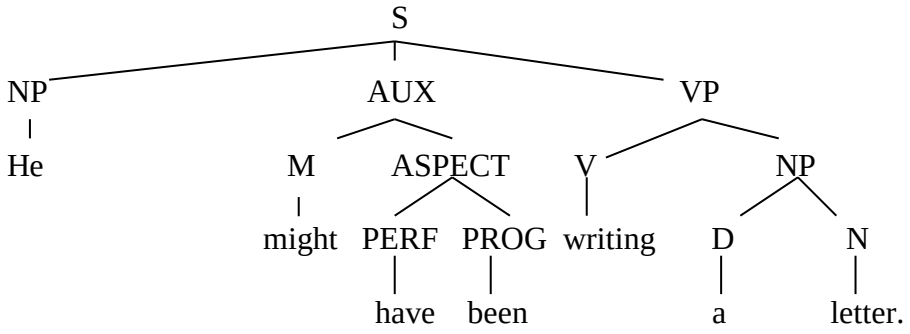
(AUX=Auxiliary; M/PERF/PROG = Modal/Perfective/Progressive Auxiliary)

2. Chomsky, *Logical Structure* (1955/75)



(PREDP=Predicate Phrase; ASPECT=Aspectual Auxiliary)

Chomsky, *Studies* (1972)



Other TG grammarians have come to other interpretations of the same sentence. See Radford (1988: 163) for examples, and a discussion.

Chapter 7
Between Words and Phrases: X-Bar Theory

1.0 Introduction

In Chapter 6, we looked at the first stages of PS grammar: we considered the constituent structure of sentences (categorised with reference to various *structure tests*) and we started analysing sentences with a view to devising a set of rewrite rules that would generate sentences of a similar type to the ones we were analysing.

In this chapter, before we move onto the 'transformational' part of TG grammar, we shall look again at phrase structure, focusing less on complete sentences and more on phrases themselves. In doing so, we shall consider some of the more subtle problems that arise if you are trying to write a grammar that will generate language.

2.0 The Structure of the NP Revisited

Let us begin with a fairly simple NP, 'the Queen of Sheba'. In basic descriptive grammar course, we would probably analyse this as a NP with an embedded PP functioning as postmodifier of 'Queen':

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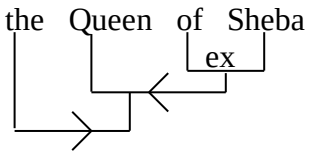
        M      H     M  x     H
       (the   Queen     (of Sheba))
NP      d      N      PP p     N
```

Immediate Constituent analysis, as we saw in Chapter 5, would show this relationship in a slightly different way – in particular, the tree diagram below makes it clear that *the* modifies the sequence *Queen of Sheba,* and not just *Queen.*



Bear in mind that ICA usually breaks things down into twos: *the Queen of Sheba* is broken down first of all into *the* and *Queen of Sheba,* then *Queen of Sheba* is further broken down into *Queen* and the postmodifying PP *of Sheba,* which in turn is broken down into preposition *of* and noun *Sheba*. As we saw in Chapter 5, the relationship between *the* and *Queen of Sheba,* and *of Sheba* and *Queen,* is subordinative endocentric (since both can be reduced to the head word: *Queen*), and the relationship between *of* and *Sheba* is exocentric (because these words cannot be reduced to a single head word).

A reasonable question is 'How do you know what the first step is?' In other words, how do you know to break the sequence into *the + Queen of Sheba* and not *the Queen + of Sheba* (which a basic grammatical analysis might actually suggest)? Here we bring in structure tests of the type we were using in the previous chapter.

First of all, let us test that 'the Queen of Sheba' as a whole is indeed a NP. First of all, we can replace the phrase with other NPs like *the Queen* or the pronoun *she*, so it seems indeed to be a NP

Secondly, the postmodifier *of Sheba* does seem to be a full PP. It can be used as a sentence fragment by itself:

A: Was she the Queen of Norway?
B: No, *of Sheba.*

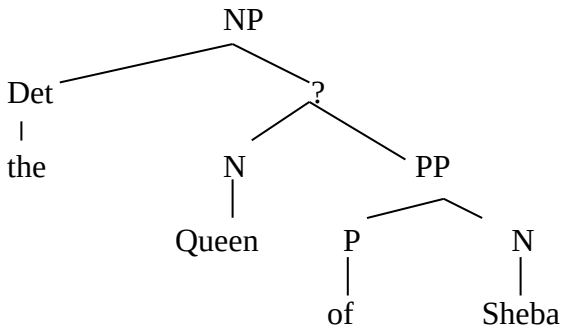
On this evidence, our first-year analysis of the sequence as a NP with embedded PP seems fair. What about the division between *the* and *Queen of Sheba* then? Clearly, 'Queen of Sheba' can occur without 'the' in sentences like:

She became *Queen of Sheba.*

Furthermore, it can occur in co-ordinate constructions with an expression in which 'the' is omitted:

She was the *Queen of Sheba* and *monarch of all she surveyed.*

Here *the* seems to modify not just *Queen of Sheba* but also the later *monarch of all she surveys.* This suggests that the sequences *Queen of Sheba* and *monarch of all she surveys* are in some way self-contained units. Now, if we accept the argument that there is a structural division between 'the' and 'Queen of Sheba', then we are posed with a problem when drawing a tree diagram showing the phrase markers:



The constituent marked '?' is obviously bigger than a word, but is it a phrase? This problem is particularly taxing for the TG grammarian, because he or she wishes to generate similar phrases using PS rules. So, let us try calling it a phrase (specifically, a NP) and see what happens:

NP → Det + NP [assuming '?' = NP]
NP → N + PP
PP → P + N

Det → *the*
N → *Queen, Sheba*
P → *of*

The problem with this is that it does not work. First of all we have two separate rules for making NPs. We should only have one. (Remember that anything appearing on the left side of the arrows should appear only once.) More specifically, the first rewrite rule does not work if you try to generate phrases from it. If we accept that 'the' is a determiner' and 'the Queen' is a NP, then D + NP actually gives us *'the the Queen*'. In technical terms, the rule is 'recursive' -- ie the same structure appears on both sides of the arrows, signifying some kind of embedding. Sometimes recursion does operate in English phrase structure, but not with the determiner! So, in this case, the '?' in the tree diagram must be something else -- neither a word nor a phrase, but something in between. In TG grammar, it's given the name N-bar, abbreviated to N', which gives us the rewrite rules:

N'' → Det + N' [N''=NP]
N' → N + PP
PP → P + N
Det → *the*
N → *Queen, Sheba*
P → *of*

This rule has the advantage both of working (in the sense that it generates similar phrases) and of reflecting the relationship between constituents such as is suggested by our structure tests.

3.0 Other types of NP

Obviously this set of PS rules does not account for every type of NP, just those which fall into the pattern of 'the Queen of Sheba'. Let us briefly consider a few other possible noun phrase structures:

a) a collector of butterflies
b) an actress with talent

Again, superficially, these NPs look like 'the Queen of Sheba', in that our first-year analysis of them both would have shown a noun premodified by a determiner, and postmodified by a PP. But structure tests suggest that there is something different about them. For example, (a) can be paraphrased:

a) She collects butterflies.

Whereas (b) cannot be paraphrased:

b) *She acts talent.

In (a) the postmodifying PP tells us *what* the collector collects; whereas in (b) the postmodifying PP tells us extra information about the actress: *she has talent*. In (a) we call the prepositional phrase the Complement; in (b) the Adjunct. (Note that these are *phrasal* Complements and Adjuncts and must be distinguished from the kind of *clause-level* Complements and Adjuncts that are usually found in basic grammatical descriptions.) The phrase structure of a prepositional Complement and a prepositional Adjunct are different, as can be seen in a noun phrase which has both: *a collector of butterflies with talent.* The tree diagram for this is shown below.

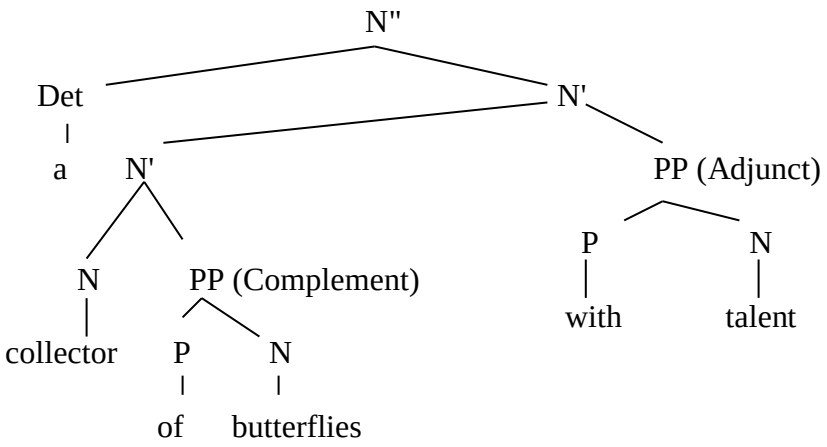
The PS rules for NPs can now be made more sophisticated as:

N'' → Det + N' [ie Determiners expand N' into NPs]
N' → N'+PP [ie PPs which are Adjuncts expand N' into N']
N' → N+PP [ie PPs which are Complements expand N into N']

You may have noticed that the first of these N' rules seems to be illegal:
N' → N'+ PP has the same symbol on both sides of the arrow and therefore invites recursion. However, this is one area in English where recursion *is* possible: you can indefinitely expand the number of adjunct PPs embedded inside the NP, as in:

a collector *with talent, with charm, with a winning personality, with halitosis...*

Having a rewrite rule which invites recursion is therefore justified in this special case.

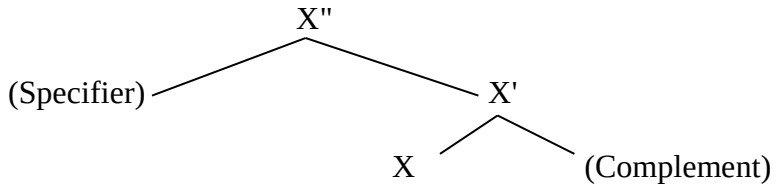


4.0 Other phrase types: towards the X-bar

Let us pause for a moment and summarise the discussion so far. First of all, when we look closely at noun phrases that -- on the surface -- look very similar, we can see that they act differently when we apply various structure tests. This difference suggests that there are subtle differences in grammatical structure between them. TG grammarians want (i) to describe those differences and (ii) to write PS rules that will allow us to generate acceptable phrases of similar kinds. In order to achieve these goals, we have to imagine that there is a unit of grammatical organisation -- the N' -- *between* the word and

the phrase. This N' allows us to write rules in such a way that we do not end up with unacceptable phrases or gibberish.

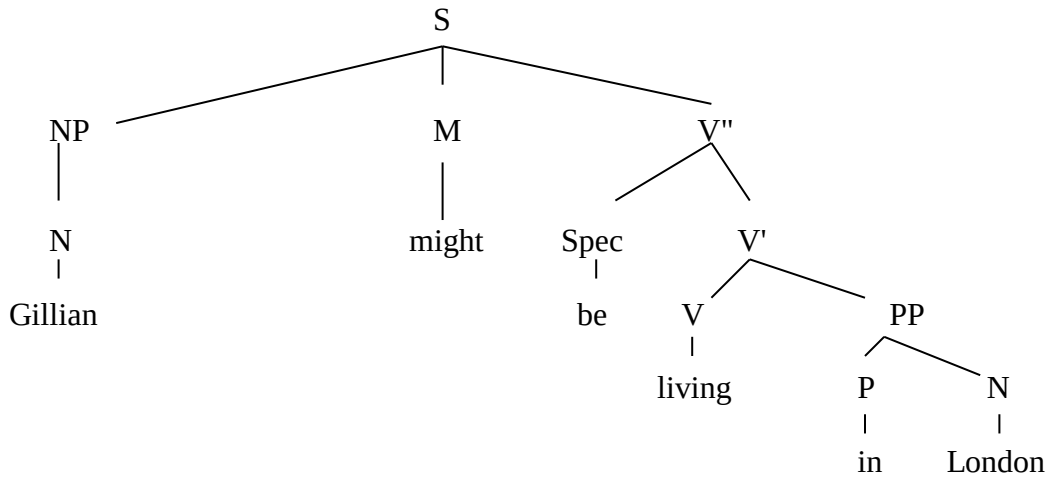
The principle of specifying an intermediate level of grammatical structure between the word and the noun phrase can also be applied to other phrases in the sentence. In fact, similar 'intermediate' constituents can be discovered for all the major word/phrase categories, Verbs, Prepositions, Adverbs and Adjectives, as well as Nouns. These 'intermediate' constituents all share some structural similarities with the N' -- and so, instead of continually renaming these intermediate constituents V', P', ADV', A', etc, we can cover them all by the category variable, X, and talk about the X-bar (X'). The advantage of talking about an X' is that we can make *powerful* and *economical* generalisations about the structure of all phrases, which will look like this:



As we saw earlier, in the NP 'the Queen of Sheba', the Determiner 'the' functions as Specifier; and the PP 'of Sheba' functions as the Complement. How does this work in other phrases? A few examples are given below (the relevant phrases are *italicised*).

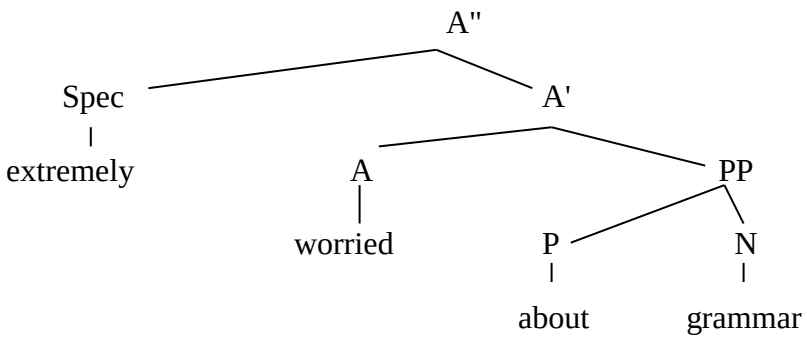
Notice that *all* the phrases shown below are variations on the basic X' structure given above. In other words, there seems to be a fundamental structure common to all phrase types in English, and represented by the diagram immediately above.

4.1 Verb Phrases:
Gillian might *be living in London.*



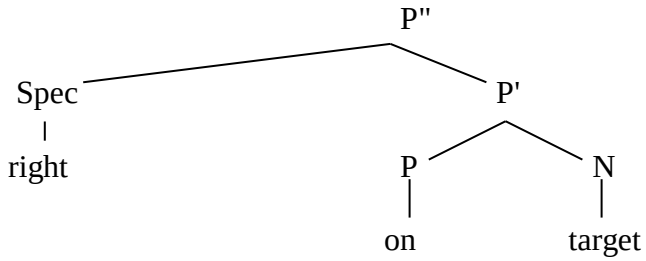
Here the Specifier (Spec) is an Aspectual Auxiliary verb.

4.2 Adjective Phrases
Douglas was *extremely worried about grammar.*



Here the Specifier is an Adverb.

4.3 Prepositional Phrases
Gillian's blow was *right on target.*



In each of the above, the analysis and the construction of PS rules is facilitated by positing a structural unit at the level of the X-bar. Again, individual phrases can obviously be much more complicated than those we have looked in this chapter, but the point is that they can be analysed using exactly the same principles, and -- theoretically -- rules can be devised to generate all the complex phrases we need.

5.0 Review Activities

These activities are based on the work of the last two chapters, and focus particularly on formal analyses of phrases.

5.1 Phrase Structure Rules

Match up the PS rules given below with the structures that they generate. Most of the PS structures were covered in this chapter, but one was not so you will have to use your ingenuity! The round brackets indicate that the constituent may or may not be present in a given structure, i.e. that it is optional.

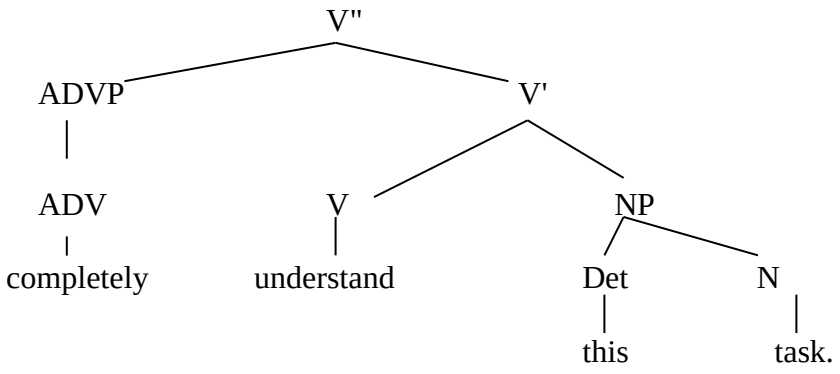
a) N'' → (Det) + N
b) N' → N' + PP
c) N' → N + (PP)
d) N' → (NP) + N

i) What we need is a *parliament with teeth.*
ii) She's a *language student.*
iii) A *house by a river* is all I want.
iv) *The cook* arrived late,
v) I'm a *singer of ballads*.
vi) Don't do that, *children.*
vii) He'll never be a *leader of men.*
viii) *Tax rebates* are seldom given.

5.2 Devising tree diagrams and rewrite rules

Now try devising tree diagrams and PS-rules for the italicised phrases below. Do not worry too much at this stage about the exact labels you use (whether, for example, you use the abbreviation AV or ADV for adverbs, or Art or Det for articles), so long as you are consistent and clear about what your abbreviations mean. One example is done for you.

Example: I don't *completely understand this task.*



V'' → ADVP + V'
ADVP → ADV
V' → V + NP
NP → Det + N
ADV → *completely*
V → *understand*
Det → *this*
N → *task*

1. I can't stand *the lecturer in English with the beard.*
2. His lectures on grammar *totally bore me to death.*
3. One of his colleagues, mind you, makes me go *all weak at the knees.*
4. His lectures on discourse analysis hit me *right in the pit of the stomach.*

5.3 Dealing with ambiguity

Show by analysis the ambiguity of the following sentence. Analyse the whole sentence!

The French lecturer could endanger your sanity.

Note

The chapters here on transformational generative grammar and its developments merely scratch the surface of a complex topic. For a fairly approachable and much more detailed discussion, see Radford, 1988: especially, Chs 4 & 5, or another introduction to TG and its successors. The more daring of you might try reading some unadulterated Chomsky, but be warned -- it's challenging stuff!

Chapter 8
Movements:
Transformations, S-structure and D-structure

1.0 Why do we need transformations?

The previous two chapters concentrated on one aspect of TG grammar -- identifying and writing rules that will generate phrases and sentences. We have not paid very much attention to the 'transformational' side of TG until now. The notion of transformations was one of the novelties of TG. Grammarians who devised earlier theories obviously knew that there is some kind of relationship between, say, sentences like --

> Gillian has ruined the paintwork.
> The paintwork has been ruined by Gillian.

-- but the sentences were simply categorised as active and passive voice, and their structures were described independently. However, in TG there is a crucial new assumption: first, it is assumed that one sentence is not just related to the other -- one is *derived from* the other, and we can write a T-rule which will describe the process of that derivation. Secondly, and possibly even more importantly, TG grammarians argue that *both* sentences are originally derived from a 'base structure', a kind of basic formula from which surface structures of different kinds are generated. This set of basic formulae is known variously as the 'base structure', the 'deep structure' -- or now simply as the 'D-structure' of the language. What we recognise as sentences, derived from these 'D-structure formulae', used to be called 'surface-structures' but now are more usually known as 'S-structures'.

The main reason for devising transformational rules is, as mentioned in Chapter 6, the desire for *power* and *economy* in our formal description of English grammar. Without transformational rules, the TG grammarian would have to devise *separate* PS rules for, say, both active and passive constructions. However, with a transformational rule the grammarian can *derive* the passive structure from the active structure, and only one set of PS rules is necessary. In general, the incorporation of transformational rules into the grammar greatly increases the power and economy of the PS rules by reducing the need for a proliferation of PS rules.

The nature and formulation of the derivational rules -- known sometimes as 'transformations' or 'T-rules', sometimes simply as 'movement rules' -- have been subject to change, evolution and considerable unresolved debate over 40 years, so in the interest of clarity the discussion here will again be kept as simple as possible. The present chapter will point out the fundamental principles involved in transformations, and some of the issues, and try to identify the advantages of this rather daunting intellectual adventure.

2.0 Transformational Rules

Transformational rules do three things: (1) they change the order of words in a sentence; (2) they delete items in a sentence; (3) they add items to a sentence. Simple examples of transformations in operation would be:

Permutation	Suddenly Douglas jumped.	→	Douglas suddenly jumped.
Deletion	Douglas suddenly jumped.	→	Douglas jumped.
Adjunction	Douglas jumped.	→	Douglas didn't jump.

Transformations can be *optional*, or *obligatory*. The transformation rule that governs subject-verb concord, for example, is obligatory in standard English -- all finite sentences must have verbs that agree in number with the subject noun. But sentences can be either active or passive -- the choice of voice is optional.

What would you need to do to devise a transformational rule for passivisation? Let us assume for the moment that the active voice is primary:

Gillian has ruined the paintwork.
NP1 Aux V+en NP2

What would you need to do to get to the passive voice?

The paintwork has been ruined (by Gillian).
NP2 Aux be+en V+en by NP1

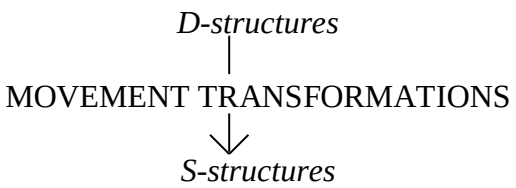
The Topt Pass Rule (i.e optional transformation: passive rule) here can be formulated as:

Topt Pass NP1+Aux+V+en+NP2 → NP2+Aux+ be+en+V+en (by+NP1)

This transformational rule *reorders* the elements in the sentence, *adds* the elements 'be' and 'by', and shows (by bracketing) that the PP phrase can be *deleted*.

So, we now have a grammar that gives a formal account of the way sentences are related. But remember that this account assumes that there is a D-structure from which both S-structures here, *both* the active and passive voice -- are derived. What does this D-structure look like?

3.0 D-structures and S-structures

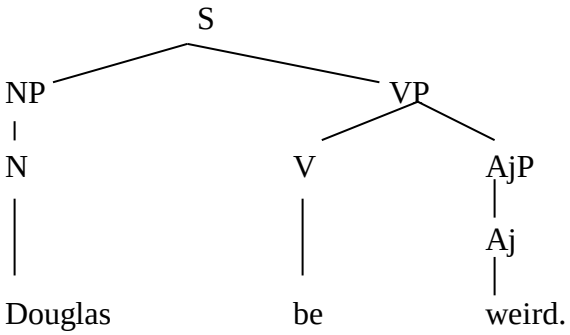


Consider the two related sentences:

1. Douglas is weird.
2. Is Douglas weird?

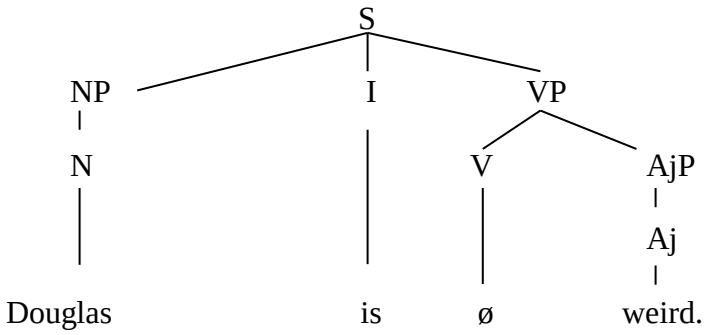
Let's assume the second is derived from the first, 'Douglas is weird'. What could this be derived from? Basically, we have a NP 'Douglas' and a VP 'be weird'. The VP is made up of the V 'be' and the AjP 'weird'. The deep structure of this sentence might therefore look something like:

Provisional D-Structure

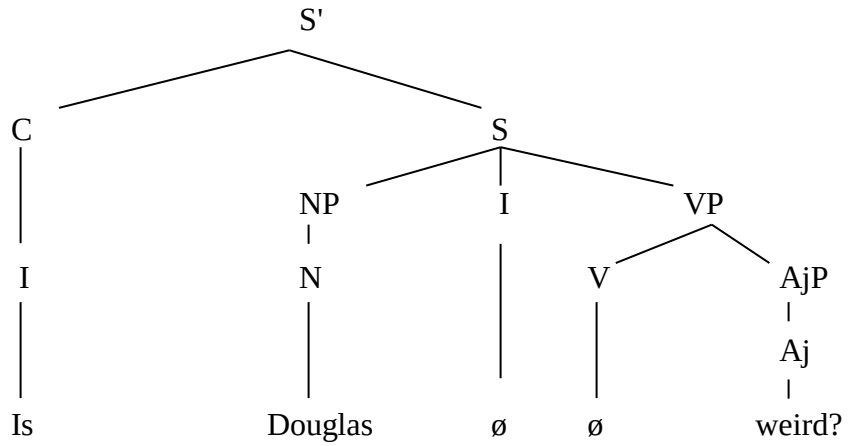


What happens to this structure is that the verb 'be' is then marked for tense and number. The abbreviation for this is I (=Inflexion). When this happens, a transformation (called V-movement) takes 'be' out of the VP, so:

Derived Structure (1)



What happens next is a bit trickier. In order to get to the further derived structure 'Is Douglas weird?' we have to take the inflexion 'is' out of the sentence altogether. 'Is' becomes what is known as a 'Complementiser' -- that is, a clause-introducing particle which remains *outside* the structure of the clause as such, because it relates to the clause *as a whole*. In order to bring the complementiser into our analysis, we have to postulate an S-bar in the same way as we postulated an X-bar in Chapter 7:



The inflexion has now moved from within S to a complementising position outside the clause as such (cf Radford, 1988: 298-303). The two transformations can be summed up in the following diagram (Radford 1988: 420):

Summary of transformations, with revised D-structure

a) [C e] [S Douglas [VP *be* weird]]

V-MOVEMENT

b) [C e] [S Douglas [I *is*] [VP __ weird]]

I-MOVEMENT

c) [C *Is*] [S Douglas [I __] [VP __ weird]]

e = empty

The revised D-structure simply shows an empty (e) complementiser slot, ready to be filled by the I-MOVEMENT transformation later on.

4.0 The Advantages of TG Grammar

I am going to try to illustrate the benefits of all this theoretical effort in two ways -- one quite specifically relating to a practical grammatical problem, the other relating to the goals of the theory in general.

First of all, thinking about the relationships between sentences, and thinking about derivations and basic forms -- even in quite general terms -- can help us sort out superficially similar structures into distinct categories. This can be illustrated by asking the question, 'When is a passive not a passive?'

Consider the following sentences. Which sentences are in the passive voice? Which are not? And which are ambiguous?

1. The response was expected.
2. The response was unexpected.
3. The response was unusual.

We can use structure tests based on derivational rules to argue that only (1) is a 'true' passive. Only (1) could be derived from an underlying structure such as

Someone expected the response.
cf *Someone unexpected the response *or* *Someone unusual the response.

In (2) and (3) 'unexpected' and 'unusual' simply act as adjectives: despite the surface similarity, the sentences are derived from a different D-structure from (1). Other structural tests confirm that (2) and (3) are grammatically different from (1) at a deeper level. Consider the transformation known as NP-RAISING:

There was expected [S _____ to be the response]

This sentence is derived from deep structures which could be summarised as

Someone expected something.
There was the response.

In the full sentence, the second of these clauses is in some way subordinated to the first. In the final derivation, the 'there' is raised from the subordinate clause to the main clause. This works for the verb 'expected' but not for 'unexpected' or 'unusual'

**There* was unexpected [S _____ to be the response]
**There* was unusual [S _____ to be the response]

One of the advantages of 'unpacking' deep structures from surface structures should now be clear. By thinking of derivations, and by formalising the relationships between sentences, we can systematically devise structure tests that will help us to sort out our grammatical constituents into categories that might not be immediately obvious from S-structures alone.

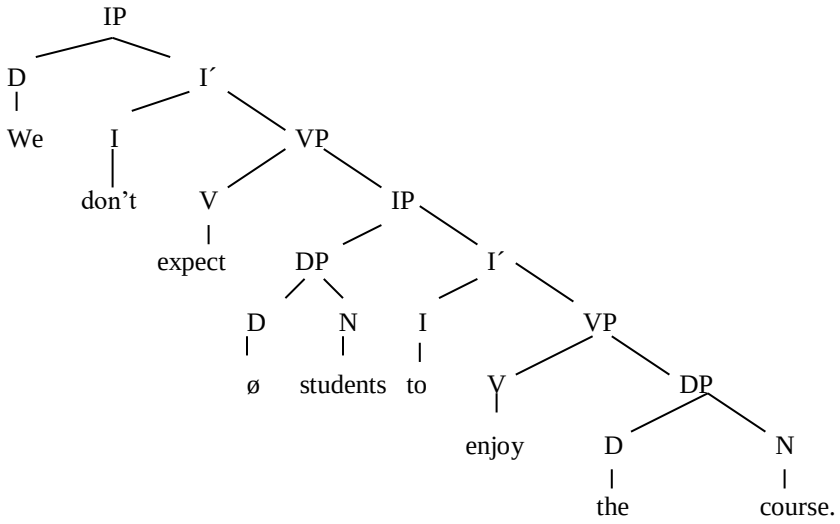
That is the first justification. The second was mentioned briefly in the opening section of this chapter but is worth restating. By adding T-rules to our PS-rules we potentially make our TG grammar much more economical and powerful. This is because we don't need as many rules if we have T-rules -- we don't need, for example, one set of PS rules for active sentences and another set of PS rules for passive sentences. Instead, we just have a set of D-structures, one set of PS rules which will realise S-structures, and a set of T-rules which will further transform our set of S-structures (if necessary) into final derived structures.

4.1 Recent Developments in Chomskyan Linguistics: Minimalism

In 1995, Chomsky published a book called *The Minimalist Program* which aimed further to refine his thought on the ways in which language works. The Minimalist Program is in line with his earlier thinking insofar as it seeks *economy* by arguing for a grammatical description that has 'the minimal set of theoretical and descriptive apparatus necessary' (Radford, 1997b: 265). This 'minimal set' still requires a formidable set of principles and conditions, but in very rough terms, languages are seen as consisting of three elements (cf Chomsky, 2000: 10):

(a) properties of sound and meaning, called 'features'
(b) lexical items, which are assembled from 'features'
(c) complex expressions (e.g. phrases) constructed from lexical items

In the terms of the Minimalist Program, complex expressions are constructed by 'merging' lexical items into ever larger units. The basic structure of a unit would be a 'head + complement'; thus, in this theory, an auxiliary verb is the head of a verb phrase, and a determiner (not the noun!) is the head of what becomes known as a 'determiner phrase' (not a NP!). Thus, ever more complex expressions can be built up as follows:



If you follow this tree diagram from the 'bottom up', you can see how the word 'course' merges with 'the' to form a 'determiner phrase', which then merges with 'enjoy' to form a VP. This phrase then merges with 'to' to form an 'Inflection-bar', that is, not a complete phrase. The complete Inflection Phrase 'students to enjoy the course' is constructed by merging the I-bar with the Determiner Phrase 'students', which in turn is constructed by merging 'students' with the zero-determiner. The IP is merged with 'expect' to form a VP, the VP is merged with the auxiliary verb to form another incomplete phrase, or I-bar, and finally the I-bar is merged with 'We' to form the maximum projection, the final IP. The whole construction is formed by merging

consecutive constituents until the maximum projection is formed. The resulting analysis is again not entirely dissimilar to that which is found in Immediate Constituent analysis.

Movements in the Minimalist Program are constrained by the 'Minimality condition' that requires that words or phrases be moved from one position in a structure to another by the shortest possible steps. Thus 'She may get arrested' derives from a deep structure in which 'she' is originally the complement of 'arrested' (compare the active 'arrested *her*'). The pronoun moves first into the position before 'arrested', then into the position before 'get arrested', and finally into the position before 'may get arrested', at which point the nominative case of 'she' *checks* with the feature of 'may' that requires a nominative head. The step-by-step movement of the pronoun from the complement of 'arrested' to the head of 'may' satisfies the 'Minimality condition' imposed by the Minimalist Program.

More can be found out about the Minimalist Program by reading Chomsky (1995), or the rather more accessible Radford (1997a&b). Chomskyan linguistics is abstract and difficult, and it embodies a more diverse set of approaches than is sometimes realised. However, its goals remain reasonably consistent: to construct an abstract model of grammar that accounts for the construction of acceptable English sentences using as few phrase structure and movement rules as possible. The more economical the model, the better the theory. In Chomskyan grammar less is definitely more.

5.0 The End of History?

It is commonplace to say that when Chomsky's *Syntactic Structures* appeared in 1957 it caused a revolution in linguistics. Chomsky redefined what a grammar had to do, he redefined how a grammatical model should be presented, and he appealed to a rigorous and daunting mathematical model in order to accomplish this. His influence, particularly in American linguistics, is without parallel. However, there are problems -- fairly fundamental ones -- in the TG project.

TG grammarians are concerned with constructing a model which will generate all the possible acceptable sentences in a language. They are not concerned to describe language in use -- the language that is actually used, after all, only represents part of the language that is possible. Chomsky differentiates between *competence* and *performance*: competence is what any native speaker of a language intuitively knows about how sentences are formed -- it is this knowledge that TG rules attempt to model. Performance -- what people actually say and write -- only represents the rather distorted output of these rules, and is of little value to the TG grammarian. The TG grammarian values intuition -- our knowledge about whether or not sentence X or Y is acceptable. However, language being language, and people being people, intuitions about acceptability vary. And as we move into the age of computerised corpora, which can gather together and search quantities of data undreamt of in the 1950s and 1960s, it is becoming evident that we do not always use language in the ways that we think we do. In the past two decades, performance rather than competence has come back to the fore (see further, Chapter 10).

Secondly, Chomsky, like the structuralist linguists who preceded him, downplayed the role of semantics in his grammar. To some degree, semantics enters into the constraints that TG grammarians have devised for the lexicon of English (see Chapter 6, Section 5.0) but it is safe to argue that ideally a TG grammar would present a set of rules without recourse to the slippery subject of meaning. That is well and good, but some of us are interested in meaning, and in the way that grammar encodes meanings. Within the TG tradition there have been attempts to shoehorn in a semantic component -- Case Grammar is the best known of these attempts -- but even Charles Fillmore, the foremost Case Grammarian, admits that the attempt to formalise meaning in ways compatible with TG have so far been unsatisfactory.

Even so, TG is a formidable grammatical theory. It represents a rigorous attempt to account for language behaviour by constructing a powerful set of rules which in principle will be able to generate *all* the possible sentences an English speaker could produce and *only* those sentences. In doing so, it has led us to many insights, particularly about the structure of the phrase in English, and conceivably, how those structures might be encoded in the mind.

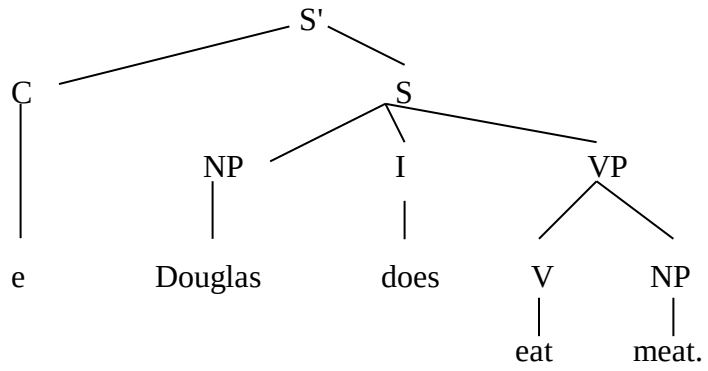
6.0 Review Activities

The activities in this section are designed to help you review the chapter on movements.

6.1 Clause structure and transformations

The basic structure of the 'ordinary clause' in English is as follows.

C= Complementiser e=empty



What kind of transformations are involved in the following derived structures? Draw tree diagrams of them.

a) Douglas eats meat. (V-MOVEMENT; Radford 1988: 401-410)
b) Does Douglas eat meat? (I-MOVEMENT; Radford 1988; 411-420)

Say why the active sentences below are ambiguous but their passive counterparts are not.

c) Nobody could explain last night.
d) Last night couldn't be explained.

e) They decided on the boat.
f) The boat was decided on.

6.2 S-structure and D-structure

Consider the underlying structures which would distinguish these superficially similar sentences.

a) Gillian is eager to please.
b) Gillian is easy to please.

Chapter 9
The Acquisition of Grammatical Competence

1.0 Universal Grammar (UG)

Chomsky and his successors, as we have seen, attempted to devise a grammar that would effectively model the ability of the human mind to generate acceptable sentences in a given language. The concern of the transformational-generative grammarians was therefore to account for humans' ability to produce grammatically acceptable sentences. This interest in the psychology of language production has also led Chomsky and other grammarians to attempt to devise a model of the 'initial state' of a child's mind before it has learned any particular language. The model of this 'initial state' is referred to as Universal Grammar (UG). It is assumed that all healthy human children are born with a capacity – sometimes referred to as an instinct – to develop a mother tongue. Universal Grammar tries to account for the initial capacity to learn the language, rather than model the language itself.

UG theories also developed partly as an attempt to account for the similarities among the world's languages. As such, it is one of a number of 'universalist' theories of language, going back at least to the 17th Century. UG has evolved from transformational-generative models of English, which accounts for a certain 'ethnocentric' interest in features like word-order. Even so, UG takes its cue from the assumption that all normal humans are born with a Language Acquisition Device (LAD) as part of their mental makeup. Universal Grammar attempts to describe the characteristics of the LAD. Obviously, UG relates to first language acquisition, but the theory has also been very influential in theories of second language acquisition (SLA). We shall look in particular at some of the consequences of the theory for teaching English as a Foreign Language later in this chapter. (It should also be noted that there are other ways of accounting for the acquisition of language, more in keeping with the functional models of grammar we considered in Chapters 2-4 of this workbook. A different approach to first-language acquisition can be found for example in MAK Halliday (1975) *Learning How to Mean* London: Edward Arnold.)

Supporters of UG argue that a mental capacity for solving language-specific problems is necessary to explain three problems encountered when trying to explain children's acquisition of their first language (L1). Children acquire subtle and similar grammatical competence while being exposed to input from adults that is *underdetermined* (i.e. there is often not enough data available to them to make the necessary grammatical hypotheses), and *degenerate* (i.e. it is unclear how children are able to distinguish between the ungrammatical sentences and the grammatical sentences adults produce, when they are developing their own competence). Thirdly, since children mainly receive input about what is possible in the language (known as positive evidence), it is unclear how they make hypotheses about what is *not* possible in any given language – there is, in other words, little *negative evidence* for children to base linguistic hypotheses on. Studies suggest that adults seldom give negative evidence, for instance by correcting children's errors.

Theorists continue to argue about the need to construct a Universal Grammar; however, it is undeniably difficult to account for the sophistication of children's linguistic acquisition without arguing for some kind of 'built in' or instinctive knowledge about how grammars work.

2.0 Principles and parameters

In simple terms, UG is the set of properties or conditions which make up the initial knowledge of the first language learner. That is, UG is the basic knowledge from which knowledge of one's first language develops. We can think of UG as consisting of a set of *principles* (e.g. that the order of words is important in all languages) plus a limited set of options (i.e. *parameters*) -- which every human child is born 'knowing', at an instinctive level. The options remain open until exposure to and interaction with the linguistic environment occurs. Then the options are assigned a value. As values are gradually assigned to options, the learner's linguistic competence 'grows'.

That the set of options is limited accounts for the similarity between languages: human beings are designed to set their linguistic parameters in a finite number of ways. UG also claims to account for the fact that children acquire their first language (L1) despite poor feedback from the environment: a powerful in-built universal grammar constrains (i.e. limits) the number of hypotheses that a learner will make. Otherwise, the number of hypotheses which could be made is limitless.

2.1 Principles

We have already noted one very basic principle about language that children seem to know 'naturally' – that word-order is important. Word-order is particularly important in present-day English, in which it is often the only way of identifying Subject and Object, but it is also important in those languages which have case-endings and therefore more flexible word-orders. A more subtle principle in English involves the knowledge that children acquire about when they can and cannot contract a spoken form like 'want to' to 'wanna' (cf White, 1989: 6-7). Consider the examples below. The asterisks (*) identify those examples which are considered 'unacceptable':

Ai) I want to leave.
Aii) I wanna leave.
Bi) Where do you want to go?
Bii) Where do you wanna go?
Ci) Gillian wants to go to the cinema but we don't want to.
Cii) Gillian wants to go to the cinema but we don't wanna.
Di) Who do you want to take you there?
Dii) *Who do you wanna take you there?
Ei) Who do you want to drive the car?
Eii) *Who do you wanna drive the car?

Evidence suggests that 'wanna-contraction' is avoided in spoken sentences like (Dii) and (Eii) while they are 'allowed' in (Aii-Cii). Universal Grammarians argue that there is a

principle at work here. (Dii) and (Eii) result from a transformation, or movement, of an element from *between* 'want' and 'to'. In recent TG grammatical theory, it is assumed that elements which have been moved leave a 'trace' behind, shown in the sentences below as ø. The element being moved is a pronoun, shown in the sentences below as *someone/who.*

Diii) You want *someone* to take you there.
Div) *Who* do you want ø to take you there?
Eiii) You want *someone* to drive the car.
Eiv) *Who* do you want ø to drive the car?

Notice that in sentences A-C there is no 'trace' of a moved element between 'want' and 'to', blocking the contraction to 'wanna'.

Children seem to acquire knowledge of this principle (namely, that a trace element between 'want'and 'to' blocks their contraction to 'wanna'), despite the facts that (a) the trace element is an invisible and inaudible abstraction, and (b) they are exposed to variable and unreliable amounts of input from adults on which to base their hypotheses. Arguably, then, children are 'primed' instinctively to acquire such rules, thanks to innate knowledge of a range of grammatical principles.

2.2 Parameters
As well as knowing principles, children seem to be born knowing about different *options* available to different kinds of language. Two well-known parameters are the *pro-drop* parameter, and the *head-position* parameter (see White, 1989, Ch 4).

The Pro-drop parameter
Evidence from comparative linguistic studies suggests that if a language has a flexible word-order (eg if S-V inversion is possible) then the Subject pronoun may be omitted, or 'dropped' in certain contexts (eg Italian Andiamo in Roma = [We] are going to Rome). Italian shares this 'pro-drop' parameter (ie option) with Spanish, and various other flexible languages. English, and other languages with a rigid word-order, do not allow pronoun omission in these contexts. We can therefore argue that learners of the 'pro-drop' languages and the non-'pro-drop' languages have assigned different values to the parameters. Once again, the child learning these languages is born 'knowing' the options available (i.e. either the pronoun can be dropped or it cannot), and exposure to the mother tongue results in the assignation of the appropriate value to the parameter.

The Head-position parameter
Languages vary in the positioning of a head-word and its complement, for example, the relationship between a verb and an object, or a noun and a post-modifying relative clause. However, there appear to be only two main options: the head-word appears *initially* (before the complement) or *finally* (after the complement). English is *head-initial* since the head *precedes* the complement, while Japanese, for example, is *head-final* since in this language the verb is realised *after* the object, and a noun would appear after the equivalent to a relative clause.

The interesting thing about the Head-position parameter is that it is consistent. Once the value of the parameter has been set, or in other words, after one of the two options has been chosen, then the position of head and complement are consistent throughout the language. There are no known languages that vary the position of head and complement. However, there are languages such as German in which the Head-position parameter does not seem to operate in an entirely straightforward manner, and there is also considerable debate about the transferability of this parameter to second language (L2) learners (White, 1989: Ch 4).

3.0 First Language and Second Language Acquisition

There are obviously differences between first and second language acquisition. Most obviously, first languages -- or at least their grammars – need not be formally taught or learnt. Children can at least understand and speak their mother tongue without formal schooling – though writing has to be learned more formally. First languages are 'triggered' and 'grow' owing (some argue) to the interaction of the linguistic environment with the learner's innate grammar processor. The questions which are posed for second language acquisition are therefore:

1. Are the open parameters of the UG still available for the second language learner, or do these learners have to 'reset' or 'readjust' the parameters which have been given values? The answer to this question will have implications for contrastive analysis and language transfer (i.e. the study of differences between languages and of how these differences affect second language learning).

2. Should L2 learning attempt to mimic L1 learning? If language 'grows naturally' as a result of exposure to the target language and interaction with its speakers, are teachers and formal courses really necessary?

4.0 Grammar teaching: past and present

Traditionally grammar teaching has relied on descriptions of language. Curriculum and syllabus design were based on some kind of linguistic description, e.g. structurally 'simple' sentences were assumed to be easy to learn, while structurally 'complex' sentences were assumed to be difficult to learn. Grammar teaching has not until recently paid much attention to the process of language acquisition. Investigation of the way children and adults actually acquire first and second languages calls into question those programmes based simply on degrees of structural complexity.

Formal grammar teaching went into a partial decline with the advent of task-based learning, and this decline was fostered by some SLA theorists (for example, Stephen Krashen) who popularised the view that formal grammar teaching was in fact an obstacle to effective language acquisition. This led in some quarters to the active avoidance of formal grammar instruction in the second language classroom. However, the so-called learning-acquisition dichotomy is not as popular as it was in the early 1980's.

Grammar teachers today begin with the assumption that language learning is a natural process which goes through certain stages: the foreign language learner (with his/her knowledge of UG) is continually in the process of developing hypotheses about the target language. The developing interim grammars which result from these hypotheses are called interlanguages. The second language teacher's problem is how to promote the quick and efficient development of these interlanguages so that they result in something approximating target language competence. Most teachers nowadays further assume that:

a) both conscious and subconscious learning are necessary if learners are to achieve both accuracy and fluency in the L2.

b) formal classroom instruction if given at the appropriate time and in the appropriate manner should have a beneficial effect on the learner's hypotheses about the L2.

c) if formal instruction is sensitive to the tentative 'natural order' of language acquisition (see further below), then the speed of learning and degree of accuracy achieved should both be increased.

Grammar teaching which stresses the process of learning, and the need to match instruction to the learner's readiness to acquire certain items, has been labelled consciousness-raising. The associated exercises are consequently known as 'C-R activities'. (See 6.0 below.)

5.0 What processes do learners undergo?

If learning a language (which includes learning the grammar) involves the more-or-less predictable 'growth' of a mental model, via evolving interlanguages, then what stages can the teacher expect to observe? The following patterns have been suggested:

a) A 'U-shaped learning curve'

It is naive to expect learners to acquire bits of language in a linear fashion. There is a continuous reformulation of linguistic knowledge in the learner's mind, resulting in apparent 'backsliding'. Teachers will become familiar with a broad pattern:

1) learners produce unanalysed chunks of formally correct language
2) learners produce analysed chunks of formally incorrect language
3) learners produce analysed chunks of formally correct language

It is step two which causes second language teachers grief: after having apparently 'mastered' a structure, students later regularly get it wrong. What is often happening is that the learner is freeing up processing space to analyse the chunk of language for the first time, and when this happens, errors tend to occur. However, in time students should proceed to step three, although the phenomenon of 'fossilisation' (ie getting stuck at step two) is not uncommon. 'Fossilisation' is one of the phenomena which distinguishes first language from second language acquisition.

b) A 'Natural Order'

It is argued -- but it is still controversial -- that languages are acquired in a roughly predictable order. That is, you can say in general which items are likely to be early or late acquired, although it would be rash to make these claims for any one particular learner. The following areas might well cause problems for learners whose competence is still quite low:

1. Beginners like the grammar and the meaning to be related in a fairly linear fashion. There is therefore a reluctance to delete items which reinforce this linearity: eg the final pronoun is often kept in sentences like:

   *That's the boy who my mother hit him.

2. Beginners similarly avoid nominalisations, preferring processes to be expressed by verb phrases. Therefore:

   'Books are distributed nationwide' is preferred to:
   'Books have a nationwide distribution'.

   Learners will also make mistakes in NP construction, eg

   *The problem is the destroy of nature.

3. Learners prefer a topic-comment structure in sentences, eg

   *This man his hat is too big.

Most of these problems are experienced by learners from a wide range of language backgrounds, in the early stages of their acquisition of English. The problems are not necessarily specific to learners whose L1 is a particular language, although the 'errors' can correspond to correct usage in the learner's L1 (i.e. there are languages, such as Arabic, in which there are constructions equivalent to *'That's the boy who my mother hit him'). In such cases, errors can be said to be the result of negative transfer.

c) Resetting parameters: negative transfer

Behaviourist theories of second language learning saw the influence of the first language as wholly negative: transfer from the L1 to the L2 was labelled 'interference'. In short, the habits acquired in the L1 had to be unlearnt for L2 acquisition to proceed.

UG theorists are rather more sophisticated in their approach -- and consequently the model is much more complicated. If all languages share certain features, eg an attention to word order, then some transfer from L1 to L2 will be positive. However, it may be that some parameters have to be 'reset' with new values in the L2.

One example of parameter resetting occurs, as we have seen, with word order. English has a rigid SVO or SVC pattern; other languages might have greater flexibility, employed, for example, to vary the focus of information. For example, a Spanish student might use a VCS pattern (*'Was very interesting that movie'). An English speaker could

also have 'that movie' as the climax of the sentence, but only if he or she maintains the SVC pattern by inserting a dummy Subject ('*It* was very interesting, that movie.')

Spanish students, then, come to a study of English with the inbuilt knowledge that word order carries meaning (positive transfer of a principle). However, some of the parameters of their own language have to be assigned new values, as is the case with word-order flexibility. Where parameters have to be reset, we can expect negative transfer from the L1.

6.0 Consciousness-Raising Activities

The following activities (mainly taken or adapted from Rutherford, 1988) are designed to 'raise to consciousness' aspects of English grammar for overseas students. They can also be used by the second language teacher to gauge the level of learners' productive competence. For example, the first activity might show that learners are able to produce sentences like 'The police blamed the accident on the weather' and 'The weather was blamed by the police for the accident' but they may not yet produce 'It was the weather that the police blamed for the accident.' However, it would be wrong to assume that learners would not understand such a sentence if confronted with it, from the fact that they might not produce it without prompting.

1. Skeleton sentences

blame -- accident -- weather -- police

How many ways can these words be combined to make a sentence in English? In what kind of contexts would these sentences be appropriate?

This activity raises to consciousness the relationship between discourse and grammar. The various constructions (elicited and/or presented) will all be used to shift the focus of attention around the clause, whilst retaining a basic SPOAC pattern. This and the matching activity below encourage learners to pay attention to the constraints of discourse upon syntax.

2. Matching sentences

a) Match the following sentences so that the answer follows the question fairly naturally. (The sentences are a little artificial. More than one answer might sometimes be possible, although some answers are likelier than others.)

a)	What did Mary do?	1.	Mary sliced something with a knife.
b)	What did Mary do to the carrots?	2.	It was the carrots that Mary sliced.
c)	Who did what?	3.	Mary sliced the carrots with a knife.
d)	What did Mary slice the carrots with?	4.	What Mary did to the carrots was slice them.
e)	What was it that Mary did with the knife?	5.	What Mary did was slice the carrots with a knife.
f)	Who sliced the carrots?	6.	What Mary did was slice the carrots.
		7.	Mary sliced the carrots.

g)	What did Mary do with the knife?	8.	It was with a knife that Mary sliced the carrots.
h)	Who sliced what?	9.	It was Mary who sliced the carrots.
		10.	What Mary sliced the carrots with was a knife.

b) Complete the second sentence in each sequence, choosing active or passive voice as appropriate.

1. On stage there appeared a man and a child. 2. sing--child--song

1. Last on the programme there was a song. 2. sing--child--song

3. Grammatical judgement

Semantic realisations can also cause problems for learners: not all languages allow various case roles to occupy Subject position in the clause; and marked roles (eg Instrument) will be later acquired than unmarked roles (eg Agent). The two exercises below are designed to raise to consciousness the relationship between syntax and semantics in English. Such exercises can easily be adapted for group-work or self-correction, using data gathered from class error analysis.

a) Which of the following sentences are acceptable English? YES NO

1. The thief broke the window with a hammer.
2. The hammer broke the window.
3. The window was broken by the thief.
4. The window broke.
5. The hammer broke the window by the thief.
6. The window was broken with a hammer.
7. The window broke with a hammer

b) Complete the following text, choosing the appropriate words:

Although the Province of Quebec has resisted efforts

	avoid		avoided
	deny		denied
	deprive		deprived
to	forbid	it of its French-speaking	forbidden
	keep	identity, no-one can say that they are	kept
	prevent		prevented
	prohibit		prohibited

	avoid	
	deny	
to speak English. That is,	forbid	
in making French the official	keep	
language of Quebec, the laws still do not	prevent	anyone
	prohibit	

from speaking whatever language they choose. Some people speak French and	avoid deny deprive forbid keep prevent prohibit	speaking English.

In Canada, they don't	avoid deny deprive forbid keep prevent prohibit	you your rights.

The latter of these two activities can be related to the *lexical constraints* on the use of vocabulary items, briefly discussed in Chapter 6. The vocabulary options for each 'slot' in the sentence are similar in meaning, but they behave differently in different grammatical contexts. For example, some can and others cannot be followed by infinitive forms, while others can or cannot be followed by the preposition *from + Ving*. This kind of C-R activity effectively raises to consciousness the grammatical constraints on the use of vocabulary items which are otherwise similar in meaning.

7.0 Summary

In this chapter we have again shifted our focus, in order to look at the impact of grammatical theories, and in passing the impact of Universal Grammar, on the way we understand how languages (and particularly English) are acquired. In brief, UG developed out of the interest Chomskyan linguists had in modelling the psychological processes which lead to the production of a grammar. UG, unlike the grammars discussed earlier in this book, is not so much a grammar of English, as a description of the initial state of instinctive knowledge from which English, and every other language, develops. Every child is assumed to be born with an innate knowledge of basic linguistic principles, and a set of parameters -- a finite set of options -- that are assigned values through exposure to the mother tongue, and interaction with its speakers. UG seeks to define what these principles and parameters might be.

Researchers into language acquisition are interested in the processes by which children and adults learn their first and second languages. If the UG model is correct, then it seems likely that most children will follow similar routes towards first language acquisition, and that second language acquisition too will follow a 'natural order' determined by the application of universal principles and the setting and resetting of parameters. Where the values assigned to parameters are similar in the L1 and L2, there is likely to be positive transfer; where they are different, there is likely to be negative transfer until the parameters are reset. While the acquisition of the grammar of one's first language is an instinctive, largely subconscious process, it is clear that the acquisition of a second language by adults is aided by some degree of formal instruction, for example through 'consciousness-raising' activities.

The Chomskyan tradition has focused much scholarly attention on the formal and cognitive aspects of language behaviour. It has its critics – for example, in a book entitled *Educating Eve* (1997), Geoffrey Sampson offers a spirited criticism of the very foundations of post-Chomskyan linguistics. Another criticism of this tradition is that it neglects to consider the social function of language. When language is seen primarily as a set of formal operations which model the mental processes of the individual, there is little scope for explanations which attempt to take into account the relationships of individuals in social and cultural groups, or the relationships of individuals with their world. Formal and functional grammarians' linguistic descriptions might well be incompatible in some respects simply because they are interested in fundamentally different things and look to different criteria for evidence of their explanations. The next chapter of this workbook returns us to issues relating to performance rather than competence.

Chapter 10
Data-driven Grammars

1.0 Of Armchairs and Corpora

Charles Fillmore, in an article published in celebration of the great English grammarian Randolph Quirk, distinguishes between armchair and corpus grammarians. This workbook so far has focused almost entirely on 'armchair grammarians', since corpus grammarians have only really gained prominence in the past three or four decades. In 1959, Randolph Quirk founded the 'Survey of English Usage' at the University of Durham – it later moved to University College London, where it remains. The original Survey built up a corpus that sampled 5000 words from 200 texts, covering a range of genres, spoken and written. Grammatical information from these texts was transferred to slips of paper, stored in filing cabinets, and used in the making of reference books like *A Comprehensive Grammar of the English Language* (Quirk et al., 1985). The corpus grammarian had been born. In the years that followed, advances in computer technology would bring the corpus grammarian to the fore.

How does Fillmore distinguish between the corpus and armchair grammarian? The armchair grammarian, he says, sits by the fireside in a cosy armchair. He or she -- let us say it is a he -- sits for long hours, a glassy expression in his eyes. Suddenly he sits up, strikes his forehead, cries, 'Gee, that's a interesting fact!' and writes it down. It might be a classification of determiners, a new rule for affix-hopping, or a systemic network for ergativity. Let us say that it is the principle for 'wanna-contraction' discussed in Chapter 9, Section 2.1. The corpus grammarian – let us assume this one is a woman -- comes along and looks at the fact, and comments, 'Yes that *is* interesting -- but how do you know it's true?' The 'wanna-contraction' principle is a good example of the armchair grammarian's reliance on intuition – who is to say that the 'unacceptable' forms are indeed unacceptable?

The corpus grammarian relinquishes the armchair for the computing laboratory. She scans into her computer memory thousands, perhaps millions, perhaps even a billion words of running text, gathered from carefully constructed, representative samples of speech and writing. From this vast array of data, using concordances, statistics and sophisticated tagging and parsing programs, she comes up with a fact about language about which she can demonstrate the truth. Let us say that the fact concerns the statistical frequency of the use of 'wanna' in a given spoken genre. She prints this out. The armchair grammarian happens by, perhaps on his way to buy a new pair of slippers, and comments, 'Yes, that *is* true -- but is it interesting?'

The point of this story is to illustrate two extreme examples of the way grammarians, past, present and probably future, operate. Until recently, people who tried to formulate grammars of a language were for practical reasons limited to quite small collections of data. Even the Survey of English Usage was later confined to a one million words – a drop in the ocean when you think of the number of words an individual uses in a day, a week or a month. Let us say, then, that you wanted to show how the demonstratives *this, that, these, those* worked in English -- you generally looked at some examples, and you

used your intuitive knowledge of the language to fill in the blanks. You did not look at how the demonstratives were used in a billion words of contemporary running text, because it would take too long to read and tabulate. Furthermore, if you were a Chomskyan linguist, looking at a billion -- or two or three hundred billion -- words would not only have been impractical but a terrible waste of time. Your billion words would be an example of *performance* and what you really want to produce is an account of *competence* -- the deep structure rules that allow such sentences to be generated.

Thanks to large-scale computing projects, however, certain hitherto impossible actions have become not only possible, but quite easy and very fast. Following the Survey of English Usage, large machine-readable collections of text (corpora) have also been assembled: for example the Brown Corpus in America, the Lancaster-Oslo-Bergen (LOB) Corpus, the Helsinki Corpus, the COBUILD (Collins-Birmingham-London) Corpus (now called the 'Bank of English'), and the BNC (British National Corpus). The Survey of English Usage is currently contributing to a vast International Corpus of English (ICE). The British National Corpus alone will contain 90 million words of written English and 10 million words of spoken English. This means that if you wish to find out how a particular word functions in literally a billion words of written and spoken English, then you simply press some buttons, and the computer searches and displays all the items you want. So far, such corpora have mainly been used in dictionary-making, but they have obvious implications for all sorts of linguistic research, including research into grammar. We are no longer tied to our own intuitions -- we have evidence. The next question, as Fillmore suggests, is: *is it interesting?*

The armchair linguists have a point. Data in itself is not a theory -- and even if you have an almost limitless corpus of text to search, then you still have to have some idea of what you're looking for. And -- depending on the complexity of what you are looking for -- you must program the computer to find it. What kinds of things might you wish the computer to find? Some of the possibilities include:

frequencies of words
frequencies of phrases
frequencies of word-types (n., v., av., aj., etc)
frequencies of phrase-types (NP, VP, AjP, etc)
frequencies of sentence types

This kind of information is obviously useful to grammarians. Let us say we want to find out how the word 'out' is used, both as a preposition, and in phrasal verbs such as 'find out', 'come out', 'break out' etc. We can look at the data in our corpus, break down the instances into related groups, and compare the frequencies of occurrence. The information obtained might be used in different applications, such as syllabus design in teaching English as a foreign language.

That kind of information (the occurrences of a particular word) is now reasonably easy to find -- ten minutes in the STELLA lab and you are well on your way. Difficulties begin to arise once you wish to move into more abstract areas – e.g. frequencies of word, phrase or sentence *types.* The computer can recognise the letter sequence 'o-u-t' but it

will not immediately recognise that it is a preposition, or a part of a verb, or even, perhaps, in some contexts, an adverb.

Therefore, if you want to get information about the frequencies of word, phrase and sentence types, then you will have to tag each instance of each word, phrase and sentence -- probably manually, though some of the work can be done by crude automatic parsers. (It is presently best to check their tagging, though!) Notice that if you are tagging items, then you must already have a framework for grammatical description, and if you have a framework, then you must already have a theory. The paradox (which is a normal paradox in scientific experimentation) is that the theory predates the data analysis -- though the data analysis may then modify the theory. Some corpora have been tagged using a generative framework (LOB has been tagged in this way) while others have been tagged using a systemic-functional framework (e.g. the Polytechnic of Wales -- POW -- Corpus). Arguments can then be made about the frequency of certain surface realisations. While corpus grammars claim to be *data-driven* this therefore does not mean that the data *precedes* the theory. However, it is fair to say that the relationship between theory and data has changed, since it is now much easier to check theoretical intuitions with reference to a vast amount of hitherto inaccessible evidence. The status of data – of performance – is much more significant in grammars that have been formulated with reference to computer corpora.

Obviously, over the past two or three decades a lot of hard work has been done for us -- large corpora have been assembled on statistically-sound principles, some have been tagged carefully, and they are in the process of being analysed. The armchair grammarian's ideas are being checked and new questions are being asked. The rest of this chapter will be spent looking at specific instances: (i) where armchair grammarians' ideas have been tested, and (ii) where new types of question about grammar have been asked.

2.0 Rethinking 'Of'

This section is based on Sinclair's observations about the word 'of' (Sinclair 1990: 81-98). 'Of' is common little word, but it is difficult nevertheless to pin down. Halliday (1985: 190) groups it with prepositions, which in his variety of functional grammar are related to verbs: you will remember that in the first-year course the structure of the PP was described as xMH, for example: *in big trouble*. Halliday's argument is that the x plus MH structure can be considered similar to the Predicator plus Complement structure at clause level. Prepositional phrases have two possible grammatical functions: (1) as Adjunct or Adverbial in a clause, e.g. *I saw the news* ***on television*** or (2) as post-modifier in a NP e.g. *The news* ***on television*** *is so depressing*.

Halliday (1985) also notes that 'of' is a little strange – it is not strictly a preposition, he says, because it only is found in phrases which act as post-modifiers in NPs -- except in the single instance where 'of' means 'about' and marks a circumstance of matter, e.g. *He spoke of strange and terrible omens.* This constraint on the use of 'of' leads Halliday to class it as mainly a structure marker in a nominal group.

This observation seems borne out by Quirk et al.'s *Comprehensive Grammar of the English Language.* 'Of' appears intermittently but is treated in greatest detail in a subsection of 'The Noun Phrase' entitled 'Postmodification by prepositional phrases'. In this section the following meanings are the main ones suggested for Of-phrases:

(a)	possession	*the funnel of the ship (usually inanimate objects)*
(b)	quantities	*a glass of water (= 'partitive' constructions)*
(c)	objective	*the imprisonment of the murderer (someone imprisoned the murderer)*
(d)	subjective	*the arrival of the train (the train arrived)*
(e)	appositional	*the city of Rome (Rome =city)*

Sinclair ran a search for 'of' in a corpus of machine-readable text, and found that, as expected, by far the majority of instances (c.80%) occurred in noun phrases. The 20% that didn't occurred (a) in set phrases like 'of course', (b) after certain verbs (eg *reminded of,* and (c) after certain adjectives (eg *capable of*). The number of circumstances of matter *(of mice and men,..*etc) are few and far between.

By far the majority of 'of-phrases' occur in noun phrases. Now in basic grammar courses, we analysed a noun phrase with an embedded PP phrase like this:

```
      M     H    M x      H
   (this kind     (of problem))
NP  d     N    PP pr    N
```

This analysis seems plausible enough: 'kind' is the headword of the noun phrase as a whole, and 'of problem' simply postmodifies that headword. Or does it? Sinclair grouped some of his occurrences thus:

this kind	of	problem
the axis	of	rotation
the bottle	of	port
the treadmill	of	housework
leaves	of	trees

The problem here is that the headword of the PP seems more important than the first headword, i.e. the headword of the NP in these phrases. We do not normally expect embedded headwords to be more salient -- more important -- than the headword which the embedded phrase modifies. We shall return to this problem shortly (2.5 below).

On the basis of the evidence gathered from his search of the corpus, Sinclair divided the occurrences of 'of' in NPs as follows:

Group A (Conventional Measures)

both	of	them
a couple	of	weeks
one	of	my oldest friends
millions	of	cats
three quarters	of	the world
another	of	these devices

a lot	of	the houses
some	of	these characteristics
a number	of	logistic support ships

Group B (Less conventional measures)

a series	of	S-shaped curves
the bulk	of	their lives
a fraction	of	a second
an average	of	12.9 trout
groups	of	five
the amount	of	sulphur dioxide
the bottle	of	port

Group C (Focus on part)

the middle	of	a sheet
the end	of	the nipple
the edge	of	the teeth
the top	of	the pillar
the end	of	the day
a part	of	us
the undersides	of	plates

Group D (Focus on a specialized part)

the evening	of	5th August
the first week	of	the war
some green ends	of	onion
small dried drop	of	it
the interior	of	Asia
the depths	of	the oceans
the point	of	detonation
in the midst	of	the grey gloom
the beginning	of	the world
the outskirts	of	Hanover
the horns	of	the bull
leaves	of	trees

Group E (Focus on a component, aspect or attribute)

the whole hull	of	your boat
the cream	of	Cambridge theatre
an arrangement	of	familiar figures
the perils and labours	of	incubation
a uniform grouping	of	all arms
a shrill little gasp	of	shock
the recommendations	of	the Nunn-Bartlett report
the text	of	two or three White House tapes
the disadvantages	of	wear and tear
generations	of	men

Group F (Support nouns: (1) nouns which are rarely used alone)

the notion	of	machine intelligence
the position	of	France
an object	of	embarrassment
various kinds	of	economic sanctions

many examples	of	local authorities
the context	of	a kitchen
the familiar type	of	the peppery conservative

Group G (Support nouns (2): vagueness indicators)

a sort	of	parody
the kind	of	thing that Balzac would have called
some sort	of	madness
this kind	of	problem

Group H (Metaphors)

the juices	of	their imaginations
the grasp	of	the undertow
a twilight	of	reason and language
the treadmill	of	housework

Group I (Titles)

the Duchess	of	Bedford
the United States	of	Europe
the new President	of	Zaire
the garden	of	Allah

Group J (Nominalisations)

the British view	of	the late senator
widespread avoidance	of	the call-up
a wonderful sketch	of	her
the aim	of	the lateral thinker
reflection	of	light
the description	of	the lady
the growth	of	a single-celled creature
the teaching	of	infants
the expectation	of	a million dollars
the design	of	nuclear weapons

It will now be clear that the use of 'of-phrases' in nominal groups (or NPs) can be clarified by collecting instances from a large-scale corpus, and classifying the instances into groups. Sinclair has four broad categories: measures, focus nouns, support nouns and double-headed nominal groups. Let us consider them in more detail.

2.1 Groups A and B: Measuring nouns

Groups (a) and (b) express measures of more or less conventional kinds. Nouns such as *both, couple, lot, some, number* obviously express measurement, while in group (b), such nouns as *bulk, series, bottle* do a similar job but in less obvious ways. Sinclair argues that the nouns in group (b) are lexically 'richer' than in group (a), but it is clear from Sinclair's contrast of *fraction* and *three-quarters* that the edges blur. In general, however, we might argue that there is a class of nouns, expressing measurement of different kinds, which trigger, or collocate with, 'of-phrases'.

2.2 Groups C, D and E: Focus nouns

Focus nouns do not express measurement as such, but they focus in on part of the second noun (Group C), or indeed some specialised part (Group D), or some component, aspect or attribute of the second noun (Group E). Again, the area of differentiation among these groups is sometimes blurred -- is, for example, 'the whole hull' a *component* or a *part* of the boat? Sinclair says 'component' but his reason is not clear -- perhaps it is motivated by the presence of the determiner 'whole'. Perhaps it is unwise to get bogged down in detail: the overall function of the first noun in all three groups (C, D, E) is to focus on some part or aspect of the second noun. This can be done in a variety of ways, some of which might overlap.

2.3 Groups F, G and H: Support nouns

Sinclair classifies Groups F, G and H as 'support nouns'. Again the spotlight is on the first noun of the phrase. In *Collins COBUILD English Grammar*, Sinclair, Fox and others gloss Group F-type nouns as those 'which are rarely used alone'. Frequency analysis by concordance can testify to the accuracy of this claim. These do seem to be nouns which involve some kind of intellectual abstraction whether this is by classification or clarification or contextualisation or description -- entities are being discussed or analysed in some way.

A less formal, more colloquial kind of 'support' is in vagueness indicators such as those in Group G. Again some kind of discussion or analysis is going on, but this time probably more in speech or in very informal writing.

The last main type of support (Sinclair also discusses more 'marginal' ones) is metaphor: Group H. In these figurative phrases, some semantic feature of the second noun is made vivid by the metaphor expressed by the first noun.

2.4 The Structure of Groups A-H

In the phrases realised in Groups A-H, Sinclair argues for a restructuring of the conventional NP to accord headword status to the second noun, not the first. This would make the first noun phrase the embedded one. Sinclair does not in fact do this explicitly, but it would be interesting to see how he would analyse such a phrase. 'Of' would need to be recategorised formally as something like a 'structure marker' (let's say *m*) rather than as a preposition -- it would presumably follow rather than precede the noun-phrase it is attached to. The NP analysed earlier might now look something like this:

```
      M M    H      x      H
(   (this kind) of problem))
NP NP d     N      m      N
```

Note what has happened here. The primacy of the second headword (*problem*) has been acknowledged, as has the modifying function of the initial NP. The preposition has been reclassified as a 'marker' -- so far the only one of its kind in our grammar -- and its function -- like an ordinary preposition -- is not to modify but to indicate a particular kind of grammatical relationship. Its function is therefore marked with an 'x'.

2.5 Double-headed nominal groups

You will have noticed that Groups I and J have not yet been mentioned. This is because Sinclair argues that these NPs work in a different way. He argues for the primacy of the second noun in Groups A-H, and this primacy has been shown in our analysis above. But in Groups I and J, according to Sinclair, both nouns are equally necessary. The phrases are simply double-headed. The cases where this is so are the easily-identified set of titles , as in Group I *(the Duchess of Bedford)* , and nominalisations, as in Group J (where actions and states are expressed as nouns: eg *avoidance of call-up*).

The representation of this kind of structure would demand a new kind of phrase structure. We could keep 'of' as a structural marker, here a kind of phrasal conjunction perhaps, but we would need a new type of phrase that allowed the presence of two headwords. Perhaps the best way to do this would be to show the structure of each separate NP linked by 'of'

```
          M        H        x      H
     (  (the President) of   (Zaire))
NP   NP d         N        m NP  N

          M      H           x       M   H
     (  (the description) of   (the lady))
  NP  NP  d      N           m NP  d     N
```

But, unfortunately, even this is not entirely clear-cut. Sinclair argues that if focus and support nouns are modified, their lexical 'weight' might increase to the point where they are better regarded as double-headed noun phrases, so we have a distinction between:

```
          M M  H      x     H
     (   (a gasp) of  shock)
  NP  NP d   N       m     N


              M  M     M     H       x          H
     (     (a little shrill gasp) of     (shock))
  NP  NP1 d    Aj     Aj     N       m  NP2  N
```

In the former analysis, *a gasp* modifies *shock,* while in the latter, *a shrill little gasp* is classified as a NP on an equal footing with *shock.* Without a theory, of course, you pays your money and you takes your choice. Some people may not be convinced by the double-headed NP and prefer the old-fashioned postmodifying PP (*of shock)* as a solution to titles and nominalisations, possibly because they could argue that the first NP *is* more important than the second in these phrases. But the idea of focus and support nouns as premodifiers nevertheless has some attraction.

It is worth noting in passing that double-headed nominal groups might solve other problems in grammatical analysis. In other grammar courses, you might have encountered the concept of 'nouns in apposition', that is, phrases like 'Robert, that rugged individual' or 'that rugged individual, Robert'. For the sake of convenience, we

treated such expressions as embedded noun phrases, in which the second phrase always post-modified the first:

```
          H   M M    M          H              M     M         H        M  H
    (Robert  (that rugged individual))  (that rugged individual (Robert))
NP     N   NP d    Aj         N         NP d     Aj        N       NP  N
```

A double-headed nominal phrase would allow us to treat the two constituents as equal in value:

```
          H        M    M         H               M     M        H            H
    ((Robert) (that rugged individual))     ((that rugged individual) (Robert))
NP NP1 N    NP2 d     Aj         N         NP NP1 d     Aj        N       NP2  N
```

Here we have no structural marker, like 'of' to link the two phrases explicitly, but our analysis still suggests that the two phrases within each NP are equivalent, rather than that they exist in a Head-Modifier relationship. As before, much depends on what you understand the relationship between the two phrases to be.

The general point is nevertheless that, with concordances, we can break free of a dependence only on intuition, and supplement our intuitions with evidence from a large amount of text, quite quickly and quite easily. We can check and test our grammatical observations. But we can also ask new kinds of question, as new grammars, particularly of spoken English, are beginning to illustrate. Fuller descriptions of the grammar of spoken language are now available in grammar books such as Biber et al (1999) and Carter and McCarthy (2006).

3.0 The grammar of speech and writing

The traditional model of grammar is, of course, very much based on written language. In the early days of large-scale digitised language corpora, the model of grammar based on written language was not greatly challenged, for the simple reason that it is easier to collect large quantities of already-written text, than to record and transcribe speech. Only in recent years have substantial corpora of relatively spontaneous spoken interaction become available, and accounts of English grammar are beginning to focus on evidence from everyday speech. One of the strengths of corpus-informed language study is that we can now look in detail at how conversational English is constructed.

Two corpora that can be used to investigate conversational English are the British National Corpus as made available by Brigham Young University (BYU-BNC) and the Scottish Corpus of Texsts and Speech (SCOTS). These are available online at the following urls:

BYU-BNC: http://corpus.byu.edu/bnc/
SCOTS: http://www.scottishcorpus.ac.uk

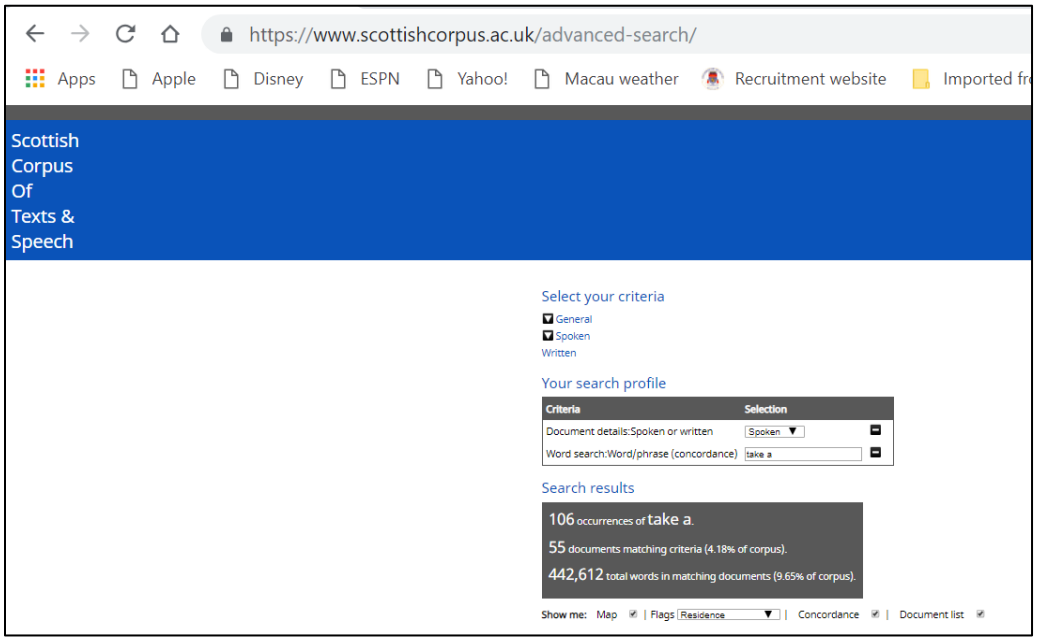
The British National Corpus data can easily be restricted to particular registers, which include 'spoken', or, defining more narrowly, 'courtroom speech', 'interview', 'sermon', 'conversation', and so on, by selecting from a pull-down menu on the BYU-BNC page, and the SCOTS data can be restricted to the spoken documents only by selecting 'spoken' in the Standard or Advanced Search options. By limiting our searches to spoken documents, we can begin to explore aspects of the grammar of speech. Here we focus on one common feature of speech to which the availability of corpora has drawn our attention, namely delexicalised verbs.

3.1 Delexicalised verbs

In the discussion of clause structure above, we assumed that clauses with transitive verbs typically involved a subject, a verbal process and an object through which the process was realised. So, for example a typical written clause might be:

> If you simply **take** cuttings from an apple tree they will grow vigorously…

Here the subject of the first clause is *you*, the object is *cuttings*, and the verbal process is *take*, which has its basic dictionary meaning of moving something or someone from one place to another. However, if we search for the sequence *take a* in the spoken section of the SCOTS corpus, we find other possible uses of *take:*



SCOTS' Advanced Search page

These uses include:

> I **take** a drink
> Do they **take** a big jump at the top
> Before you had to **take** a breath
> maybe you can just also **take** a look at this one

ye just **take** a nap or a kip yeah
just **take** a wee sippie at a time

In these examples, *take* has lost its meaning of moving something from one place to another – in other words it has become delexicalised. What seems to be happening here is that the delexicalised verb substitutes for a verb that has been turned into a noun and put in the object position in the clause (*drink, jump, breathe, look, nap/kip, sip*). The reason for this is possibly that the action that would have been expressed as a verb can more easily be modified when it has been turned into a noun (*big jump, wee sippie*). Delexicalised verbs are also a relatively common feature of written English but they seem particularly useful in spoken language, where there is perhaps greater emphasis on evaluating events and actions. Other common delexicalised verbs are *have* and *give,* as in the following examples, also from the SCOTS data:

lie doon and **have** a wee bit relax
if you want to **have** a wee blether with him
can we just **have** a wee look at this
I'd like to **give** an especial welcome
so I **give** another wave as I'm going over
I think she'll **give** me a wee phone when she gets it

Task: Delexicalised verbs
1. Go to the BYU-BNC at http://corpus.byu.edu/bnc/.
2. Search for delexicalised verbs plus adjectives plus nominalised verbs by entering a sequence like *have a [aj*] [vvb]* in the word/phrase box.
3. When you get the results, click the number in the DISTRIB column to check if they are more common in speech or in written registers. If the register is written, consider the register (fictional prose, for example, often mimics the conventions of speech).

4.0 Colligation
The availability of language corpora has allowed linguists to turn their attention more fully to *colligation*, that is, the grammatical relationships that words and phrases form. Hoey (2005, p.43) defines colligation as:

1. the grammatical company a word or word sequence keeps (or avoids keeping) either within its own group or at a higher rank
2. the grammatical functions preferred or avoided by the group in which the word or word sequence participates
3. the place in a sequence that a word or word sequence prefers (or avoids)

In other words, to explore the colligation of a word or phrase, we would consider the following questions:

- how is the word or phrase modified, and/or what does it modify?

- does the word or phrase typically appear as part of the subject, predicator, object, complement or adverbial in a clause?
- does the word or phrase typically function as the head or modifier in a phrase?

In this fashion, we build up a profile of the grammatical behaviour of the word or phrase in question. To explore colligation, let us consider a fairly rare lexical item, *eco-friendly*. In the 100 million words of the BNC, *eco-friendly* occurs only 15 times, in the following contexts:

1. It's more **eco-friendly**, as (a) the plants are a replaceable resource, and (b) burning ethanol distilled from them doesn't add to atmospheric CO 2.
2. …I would like to be allowed to put my faith in wine merchants such as the Kendricks or Simon Loftus of Adnams when they tell me which of their wines are **eco-friendly**.
3. The play is a musical about **eco-friendly** aliens whose mission is to save our planet.
4. Muji's own make of **eco-friendly** transport follows sturdy, basic designs…
5. **Eco-friendly** collectives such as Catweasle Press, Conscious Earthwear and No Lo Go (a label and an Oxfam shop in London's Marylebone High Street) are embracing unbleached cotton, old bedspreads and jumble sale clothes.
6. And it may be a comforting thought to some that an Australian company is experimenting with **eco-friendly** coffins made of newspapers, which are cheap and biodegradable.
7. …that salted peanuts are a killer for birds; that **eco-friendly** insecticides are a contradiction in terms;
8. In Japan and traditionally **eco-friendly** European countries such as Switzerland and Denmark, it has never been popular.
9. …a wing of guest rooms in every hotel converted to an **eco-friendly** environment, to be monitored over two years to see how energy consumption compares with standard rooms.
10. Will my hon. friend look at the work being done in Austria and France to make an **eco-friendly** diesel fuel from oilseed rape and other oil crops?
11. Enter Goldfinger, the **eco-friendly** banana.
12. The initiative, based on ideas introduced by the Inter-Continental group, focuses on areas such as energy-saving heating, recycling waste and buying **eco-friendly** products.
13. Do you want to know how easy it is to affect the environment of the world by planting trees or buying **eco-friendly** products?
14. **Eco-friendly** power plant planned for capital's centre…
15. They were impressed by the **eco-friendly** solvent spinning operation, which starts with harvested woodpulp and uses chemicals which can be totally recycled.

On the basis of the 15 examples from the data provided by the BNC, then, we can make the following tentative suggestions about the colligation of *eco-friendly*.

How is the word modified, and/or what does it modify?

Eco-friendly modifies nouns. More specifically, it modifies nouns expressing human or human-like beings and institutions (*aliens, collectives, European countries*), products (*ethanol, wines, (make of) transport, coffins, insecticides, diesel fuel, banana, products* (x2)), industrial plant or processes (*power plant, solvent spinning operation*), and ambience (*environment*). The most common type of headword is product. *Eco-friendly* can in turn be modified by the intensifying adverb *more,* indicating that it is a quality.

Does the word or phrase typically appear as part of the subject, predicator, object, complement or adverbial in a clause?
If for the sake of argument we look mainly at the function of the phrase in which *eco-friendly* appears in the clause or subordinate clause in which the phrase appears, then we find the following results:

Subject of clause	**Object**	**Complement**	**Adverbial**
5	3	2	5

There is a fairly even distribution of phrases amongst the clause functions. In the subject position, people and things that are described as *eco-friendly* engage in actions (*embrace, enter, follow*), are described (*are a contradiction in terms*) and are subject to action in passive constructions (*are planned*). They also participate as objects in other clauses, in which they are *made* and *bought* (x2). Alternatively, things such as *ethanol* and *wine* are described as *eco-friendly,* and those things and people that are *eco-friendly* are present in different kinds of Adverbial (*about eco-friendly aliens, with eco-friendly coffins, in…eco-friendly countries, to an eco-friendly environment, by the eco-friendly solvent spinning operation*).

Does the word or phrase typically function as the head or modifier in a phrase?
In the overwhelming majority of instances (13 of the 15), *eco-friendly* is a modifier, preceding a noun. In two instances it is the head of its own phrase, and once it is modified by *more.*

The above profile confirms – if confirmation were needed – that *eco-friendly* is an adjective that enters into particular kinds of relationship with nouns and adverbs – as we would expect from our discussion of adjectives earlier. However, the colligational profile tells us more than this – it shows the grammatical and semantic preferences in the use of the adjective: its use as a modifier rather than a headword, for example, or its extensive use with different kinds of product. This kind of information is particularly useful to dictionary-makers and learners of English as a foreign language.

Task: Colligation
Eco-friendly is of course a fairly straightforward word, which yields sufficient examples to provide a quick and fairly rough analysis. Using the BNC data, you might wish to attempt a colligational profile of another word – a more frequent and variable one, like *baby*.
1. Go to the BYU-BNC at http://corpus.byu.edu/bnc/.

2. Search for the sequences ‘baby [n*]’ and ‘baby [aj*]’. Your results will give you insights into the use of the word in phrases like *baby boom,* and *baby fresh.*
3. Then search for ‘[n*] baby’ and ‘[aj*] baby’. Your results will show you instances of *baby* as a headword.
4. Since there are over 8000 instances of *baby* in the BNC, take a sample of perhaps 100 instances and track the use of phrases with *baby* as subject, predicator, object, complement and adverbial. One question that such an analysis would answer is how much *agency* babies tend to be given in Anglophone culture – do they tend to be the subject or the object of active clauses?

5.0 Verb systems

The verb phrase is the heart of the grammar of the clause. The other constituents (subject, object, complement, adverbial) are all related to the verb phrase. In this section, we turn our attention to the forms and meanings of the verb itself.

Grammarians talk about different verb systems when they attempt to relate the different forms of verb phrases to their meanings. Verb systems include tense and aspect (whereby the verb form usually changes to express meanings related to time and duration). Other verb systems include mood (the distinction between statements, questions and commands), modality (the use of modal auxiliaries to express concepts like possibility and obligation, e.g. *might work, should work*), voice (the distinction between active and passive uses, e.g. *he has remodelled the house, the house has been remodelled*), and finiteness (the capacity of the verb phrase to signal tense, as in *is/was working,* or not to signal tense, as in *working*). Here we will touch briefly on the use of corpora to explore two features of verb systems, namely aspect and voice.

5.1 Verb aspect

The tense of the verb in English gives us a basic two-part distinction between present and past tense, with futurity being expressed by a variety of means including the modal auxiliaries *will/shall.* The combination of tense with aspect offers English speakers the option of expressing the occurrence of events in a fairly nuanced fashion with respect to time and duration (see *Figure: Combination of tense and aspect*, below). For example, if I am referring to a habitual action that may or may not be happening at the moment of utterance, I can say *I work in a chemist’s shop.* If I am referring to an action that *is* happening at the moment of utterance, and that has duration, I can say *I’m working right now, can you call back?* If I am referring to something that occurred at some unspecified point in the past, I can use the present perfect aspect to express it (e.g. *I’ve worked occasionally*). If I want to add the notion of duration to the sense of ‘sometime in the past’, I can say *I’ve been working on and off for years.*

	Present tense	**Past tense**
Simple aspect	I work	I worked
Continuous aspect	I am working	I was working
Perfect aspect	I have worked	I had worked
Perfect & continuous	I have been working	I had been working

Combination of tense and aspect

One of the features often taught to learners of English as a foreign language is that certain types of verb, namely verbs of perception and affect, like *see* and *love* tend to be expressed using the simple aspect, even though the actions the verbs refer to have duration and may be happening at the moment of utterance. That is, learners are taught that *I see* is preferable to *I'm seeing,* and that *I love you* is preferable to *I'm loving you*.

A corpus can help us to investigate exactly how these verbs behave with respect to tense and aspect. For example, we can run a search for 'see*' in the BNC, restricting the search to spoken data. First of all we can note that the instances of *see* far outnumber the instances of *seeing.* Many of the instances of *see* can be accounted for by the common discourse marker, *I see.* Even so, it is revealing to compare the uses of *see/seeing* in oral presentations, e.g.:

> Here we **see** an advertisement for Eyesilmar make up.
> So again we **see** a split in the er in in in amongst the great powers…
> We **see** the creation of of of the confederation of the Rhine.
>
> And we are **seeing** in eighteen thirty a significant gap…
> But we are **seeing** a widening gap…
> …what we're **seeing** here is oxygen being utilized by respiration…

We can observe that there is an option in English to choose *either* the simple or continuous aspect in this kind of context – but there is a subtle change in meaning. The first group of utterances treat *see* as an uncontested *fact* – something has presented itself to our sight or our understanding. In the second set of utterances, the emphasis is on *seeing* as a *process* of perception or understanding – the process is what is at stake in these utterances, and it might be more easily contested than in the first group of utterances.

Task: Verbs of perception in the simple and continuous aspect
1. Go to the BYU-BNC at http://corpus.byu.edu/bnc/.
2. Select *Spoken* from the box labelled *Register 1*
3. In the word/phrase box, search in the spoken data for a verb of perception or affect, like *hear, love, feel, know.*
4. Consider the distribution of your chosen verb's uses in the simple and continuous aspects.
5. Then look more closely at the options in context, and consider if the choice of aspect changes the meaning of the utterance in any way.

5.2 Formal and informal passive constructions

O'Keeffe, McCarthy and Carter (2007: 106-114) analyse and discuss the meanings of *be*-passives and the less formal *get*-passive, as in

> He was arrested.
> He got arrested.

They conclude that the *get*-passive is used more in informal contexts when 'speakers are marking attitude, most probably that attitude denoting concern, problematicity in some way, or, at the very least, noteworthiness of the event *as judged by the speaker*, beyond its simple fact of occurring' (*ibid*, pp.113-14; emphasis in original).

Their observations can be tested by running a search on the spoken data in BNC for *was *ed* and *got *ed* and comparing the 'neutrality' or otherwise of the speaker's stance in the results. Some of the results might support the suggestions made by O'Keeffe, McCarthy and Carter; in other cases the stance of the speaker using the informal *get*-passive is more difficult to gauge. Compare the following examples:

> My wedding wasn't an ordinary wedding, I **was married** on top of Arthur's Seat…
> I mean, my father **was killed** ten weeks after the war started.
> Yes, I **was involved** in the nineteen twenty six strike…
>
> Er well there was none of them **got married** during the time that I was there.
> Er my biggest downfall was that the guy that employed me who was the eldest brother of the two that owned the company **got killed** in a bloody erm riding accident…
> And eleven of them **got involved** in a fist fight in the middle of one of those New York streets.

Arguably, in the view of O'Keeffe, McCarthy and Carter, the use of the *get*-passive by the second group of speakers problematises the actions of being married, killed or involved more explicitly than does the use of the *be*-passive in the first, although in some instances the use of the *get*-passive simply signals that the event is 'noteworthy or of some significance to the speaker' (*ibid*, p.111). An alternative theory is that, more explicitly than the *be*-passive, the *get*-passive assigns responsibility for the action to those affected by it. Thus if the speaker says *I was involved in the 1926 strike,* the speaker's agency is not explicitly expressed; he or she might have been involved by accident. But if the speaker says *I got involved in the 1926 strike,* then his or her agency, or carelessness, is more explicitly expressed. If those affected by an action bear some of the responsibility for it, and the speaker expresses this, then the situations are probably more likely also to be those that problematise the action in question.

6.0 Data-driven grammar versus intuition

The general issues raised by the discussion of *be* and *get*-passives cast light on a key topic of debate amongst grammarians, namely, the value of using corpus data at all. Until the widespread availability of automatically searchable, digitised, language corpora,

linguists had to rely for their observations on more limited language data, manually collected and analysed, or alternatively, they had to rely on intuition, their reflections on their own knowledge of language and their feelings about what is acceptable and unacceptable, and what particular constructions mean. The view that grammarians should rely on intuition was strengthened, from the 1950s on, by the prominent linguist Noam Chomsky's distinction between *competence*, an individual's knowledge about language, and *performance*, the spoken and written language that an individual actually produces (see Chomsky 1965). Chomsky made the description of competence, or knowledge of grammar, the goal of linguistic scholarship, and played down the value of performance. For armchair grammarians following in Chomsky's footsteps, intuition is the key to eliciting generalisations about language structure and to formulating rules that show the relationship between one structure and another. In generalising about the structures of language and the relationships between these structures, they attempt to model knowledge about grammar. Performance, as represented by corpora, plays little or no part in this project. Corpus grammarians, therefore, have had to engage in restating the value of analysing performance. They claim that the study of language data on a large scale brings to light structures and behaviour that are not available to intuition alone. At their most extreme, corpus linguists argue that their models of grammar are 'data-driven', that they emerge from a study of the language behaviour of thousands of people. Corpus linguists must show that data-driven analysis leads to genuinely innovative insights into and models of grammatical behaviour, as in Hunston and Francis (1999).

Despite the relative novelty of corpora, the proven insights that corpus data have given us into the behaviour of words and phrases now make it difficult for any grammarian to dispense with the immensely powerful tools that corpora represent for the study of language. Performance is back on the linguistic agenda. However, it is an indisputable fact that data does not automatically give rise to theories that explain it; we still use our intuition to search corpora for features that we think might be interesting: we construct hypotheses based on our intuition or a partial analysis of the data, and we test those hypotheses against further data. There is therefore a continuous interaction between our intuitions and our data-based analyses. For example, people brought up in Scotland might feel intuitively that the distribution and meanings of modal auxiliary verbs in the Scottish speech community vary from those that are current south of the border. They might feel on the basis of their intuitions about their own and their fellow Scots' practice that certain modals were avoided, others used, and yet others had meanings particular to the Scottish community. They could then form a hypothesis based on their intuitions, test them against corpus data and refine them in the light of their findings.

Data driven grammars based on corpus data, then, are powerful tools for the description of the behaviour of a speech community – whether that community is conceived of as being determined by geography, class, gender, profession or other criteria. But some grammarians remain interested in accounting for grammar by appealing to the mind of the user, not the collected output of a given community of users. And some grammarians wish to do this without necessarily appealing to the formal mechanisms of generative syntax. This desire has given rise to the relatively new field of cognitive grammar.

Chapter 11
Cognitive Grammar

1.0 All in the mind

We have seen a consistent interest, since the Chomskyan revolution of the late 1950s and early 1960s, in grammar as a largely cognitive phenomenon. The assumption of the influential school of generative grammarians is, you will recall, that there is in each human brain a 'language organ' or a 'language instinct' in Stephen Pinker's phrase (see Pinker 1994), conceptualised as a facility to learn languages that is uniquely human. The mechanisms by which this 'organ' generates sentences can be modelled by formal means – phrase structure and movement rules – and the principle of economy argues that the most powerful model, that is, the model which generates most sentences with fewest rules and movements, is closest to representing the workings of the mind. Another branch of this field of linguistics attempts to model the initial state of the language organ *before* the rules of any given language have been acquired, and these models fall under the category of Universal Grammar.

Not all grammarians, as we have also seen, share this primary interest in psycholinguistics, and not all of the grammarians who *are* interested in the nature of the mind share the formal linguists' fascination with the formulation of generative rules. In the 1980s, also largely in America, an alternative school of cognitive linguistics began to form, influenced by the work of Ron Langacker, who was, in turn, interested in research into linguistic topics such as cognitive metaphor, by scholars such as George Lakoff and Mark Johnson (e.g. Lakoff, 1996). Lakoff and Johnson, to simplify their work considerbably, popularised a shift in the study of metaphor from an analysis of linguistic texts to focus instead on the mental processes that arguably produce metaphor, which they see as a mapping of one conceptual domain (e.g. A JOURNEY) onto another (e.g. LIFE) which would account for our ability to comprehend sentences such as 'I have reached a milestone in my life.' Lakoff and Johnson believe that such metaphors arise from embodied experience and perceptions of the world; while cultural differences in language and metaphor certainly exist, there seems to be a universal tendency to associate UP with happiness (e.g. 'I'm on a high') and DOWN with sadness (e.g. 'I'm feeling low'), a tendency that probably has less to do with an innate language organ, and more to do with bodily sensations.

Langacker's contribution has been to take the kinds of insight Lakoff and Johnson brought to Semantics and apply them to grammar. Unlike grammarians such as the generativists, who are interested in formalising cognitive operations, this school of cognitive linguists do privilege meanings in their grammatical descriptions and accounts. To this extent, some of their interpretations might remind you of SF accounts, though the connection is seldom made (in his introduction to cognitive linguistics, for example, David Lee makes no direct reference to work by Halliday, though a few other systemicists, such as Günther Kress, are cited, and their work appear in his bibliography). This chapter of the workbook focuses on several key concepts in cognitive grammar, and

illustrates them with a few features of grammar that might cause you problems: prepositions, phrasal verbs and raising constructions. The accounts in this chapter are largely drawn from Lee (2001). The concepts are *construal, perspective, foregrounding, metaphor, frame* and *extension.*

2.0 Construal

A fundamental assumption of cognitive linguistics (which it shares with SFG) is that states and events in the natural world (and, by extension, the world of the imagination) are 'encoded' into the system of language. There is no single way of doing this, and so a state or event can be conceptualised or 'construed' in one of a number of ways. Different construals may give rise to alternative structures for the same state or event or disallow apparently similar structures. Consider the following sentences:

The doctor showed me the results of the test.
The doctor showed the results of the test to me.

Here, traditionally, we have two ways of representing the 'indirect object' (*me/to me*). We have two ways of encoding what is the same situation, and a generative grammarian would simply account for the difference with movement rules. However, there are other situations in which this kind of equivalence seems less 'natural', e.g.

I can show you a good time.
**I can show a good time to you.*

While the first sentence sounds natural enough, the second one doesn't. This suggests that while the structures look similar, they represent different conceptualisations, or – to put it in the terms of cognitive grammar – the relationships between the actors and the processes are construed differently in each of the four sentences. Clearly the meaning of 'show' and its relationship to the direct object is different in 'show the results' and 'show a good time', and our conceptualisation of these processes and relationships make the realisation of the indirect object as a prepositional phrase (*to me/to you*) more or less natural.

One task of the cognitive grammarian, then, is to explain *why* we can say one thing but not another in terms of how we *construe* the events that we are encoding in language.

3.0 Perspective

The perspective of the person producing the utterance is a factor in the different ways of construing an event or state. Points of reference are either implicit or explicit in an utterance. They are explicit in some pairs of sentences about the same event, e.g.

Alicia is coming home tomorrow.
Alicia is going home tomorrow.

Obviously, the speaker's perspective on the event changes, even if the act of travelling home is the same – in the first sentence above, the speaker construes the act from the

perspective of someone who is also ‘at home’ (even if that someone is not actually the speaker) and towards whom, therefore, ‘Alicia’ is ‘coming’. In the second sentence, the sentence is construed from the perspective of someone who is not ‘at home’ and towards whom ‘Alicia’ is not, therefore, ‘going’ when she travels ‘home’.

As David Lee (2001: 3) points out in his discussion of perspective, the construal of the same event from different points of view can have an impact on the meanings of identical phrases. What does ‘a good price’ mean in the following two sentences – is it a high price or a low price? How does your understanding of ‘a good price’ in each sentence indicate the orientation you are taking to the utterance – in other words, your perspective on the event?

> *Lucas bought the car from Maria for a good price.*
> *Maria sold the car to Lucas for a good price.*

Perspective often entails points of reference and movement, construed from different points of view. In the first pair of sentences above, ‘Alicia’ is moving towards ‘home’, the point of reference. In the second pair of sentences, the car is moving from Maria to Lucas, each of whom can be a point of reference. In cognitive grammar, we refer to the points of reference as the ‘landmark’ and whatever is moving is called the ‘trajector’. The speaker of the first two sentences construes the movement of the trajectory (‘Alicia’) either from the perspective of the landmark (‘home’) or not. The speaker of the second pair of sentences construes the movement of the trajectory (‘the car’) either from the perspective of Maria or Lucas (the potential landmarks) and interprets ‘for a good price’ accordingly (‘good for Maria’, or ‘good for Lucas’).

The sun’s going down. Or the earth’s coming up, as the fashionable theory has it. (Small pause.) *Not that it makes any difference.*

Rosencrantz’s observation and comment in the final scenes of Tom Stoppard’s *Rosencrantz and Guildenstern are Dead* illustrate a common view of different perspectives, that ‘it doesn’t make any difference’. But the humour of the lines lies in the fact that while both of the construals – the sun going down and earth coming up – are possible, only the former seems ‘natural’, at least according to our everyday experience. The earth is usually perceived as the landmark and the sun the trajector, rather than vice versa, although we know from astronomy that it is indeed the earth that rotates as it goes around the sun. The ‘natural’ construction emerges from our embodied perspective, not our scientific knowledge.

4.0 Foregrounding

When an individual construes an event, he or she often has the choice of selecting one particular component as being relatively more prominent. We know from SF grammar that we can manipulate prominence, or salience, by selecting a particular participant as Subject and by moving its position in the sentence (eg from Rheme to Theme). And so we have alternative ways of encoding a particular event in language:

I *broke your car window with my golf ball.*
A golf ball *has broken your car window.*
Your car window *has been broken.*

While SF grammar focuses on the *linguistic* resources for manipulating salience (eg the ideational and textual functions of language), cognitive grammar is more concerned with the mental workings of the individual who produces the sentences: perspective and salience seem to be rooted in visual perception. Foregrounding, then, goes beyond indicating responsibility for an event through shifting the selection of Subject and ordering the sequence of sentence constituents. You can foreground a perception simply by changing a preposition:

She was standing in the road.
She was standing on the road.

The first of the above two sentences foregrounds the perception of 'the road' as a container, while the second foregrounds the perception as a surface. What is foregrounded in a sentence can depend on the relationship of the verb to the participants, e.g.

I was born in Scotland.
Scotland voted against Brexit.

Here the relationship between verb and participants indicates that in the first sentence the speaker foregrounds 'Scotland' as a geographical space, while in the second, the construal of 'Scotland' that is foregrounded is that of the collective of the voting population.

Foregrounding has a long history in literary and critical linguistics, where textual patterns are assessed in discussions about salience in the interpretation of a given text. In Prague School linguistics, for example, foregrounding is known as *aktualizace*. The interest of the cognitive grammarian, however, is less in textual patterns and more in what part of the individual's knowledge base is activated by a word, phrase or larger structure. If a man says to his wife *The dog's been bitten by a snake* then the phrase *the dog* presumably activates both her knowledge about dogs as a category, and their own dog in particular – her knowledge about its visual appearance and behaviour, for example. Her knowledge about the dog will be greater than her knowledge or concern with the snake (compare the husband's possible sentence *A snake's bitten our dog!* which, by selecting the snake as Subject and shifting it to thematic position foregrounds the snake).

Foregrounding in cognitive grammar brings together a range of phenomena that other theories of grammar might treat separately. The general concern of foregrounding in cognitive grammar is how the speaker perceives the important (or salient) aspects of an event or state. The argument is that it is this perception of salience that accounts for the grammatical formulations that the speaker produces.

5.0 Frame

The concern with the knowledge that speakers and listeners bring to interactions extends to what in cognitive linguistics are known as 'frames'. 'Frames' refer to an individual's knowledge of a situation and how the elements that make up that situation function within it. For example, which frames are triggered by the word *goal* in the following sentences?

> *He beat the offside trap and scored a magnificent **goal**!*
> *She dodged the opposing team's scrum half and attempted a drop **goa**l.*
> *Our primary **goal** for the coming year is to increase market share.*

We make sense of these three sentences in relation to our knowledge of the situations that they are likely to refer to: football (or 'soccer'), rugby, and business, respectively. Even the sentence *The dog's been bitten by a snake* is likely to conjure up a frame in which the dog is running free in the countryside, rather than being taken for a walk in the city.

Conceptual frames are culturally relative and change over time. How natural, for you, are the following sentences?

> *I love fruit, particularly bananas.*
> *I love fruit, particularly apples.*
> *I love fruit, particularly avocados.*
> *I love fruit, particularly tomatoes.*
> *I love fruit, particularly cucumbers.*

Bananas and apples fall into our prototypical category of fruit, though Brazilians and British people might, for example, be more inclined to think of one or the other as a preferred example. Tomatoes and cucumbers are – technically – also fruit, insofar as they also develop from the flower and contain seeds. But they do not usually fall into the same frame as apples and bananas when we think of eating 'fruit'. Avocados are more contentious. Brazilians may think of them as being like apples and bananas; British people (like me) might be more inclined to think of them as being like vegetables. Personally, I think of avocados as a type of savoury foodstuff, which I add olive oil to and eat in salads. The idea of avocado mousse, with sugar added, or an avocado smoothie, I initially found repulsive. For me, it was like suggesting a cucumber mousse or tomato smoothie. But, living in Brazil for some time now, I have readjusted my frame of what you eat in a salad and what you eat as dessert…or in a smoothie.

The concept of frame in grammar is particularly useful for explaining particular 'normative' selections that are subject to change over time. The most obvious example is how we conceptualise mental and physical activities. To generations of language teachers (and to SF grammarians) one of the features that distinguishes a mental process from a material process is that when we are referring to things that are happening right now, the 'default' realisation for a mental process is the simple present while the 'default'

realisation of a material process is the present continuous. Thus the following sentences are both acceptable and make sense:

I hear what you're saying. I'm listening to you.
No, no, you're listening but you don't hear what I'm saying.

The argument goes that we frame the actions as either mental (*hear*) or physical (*listen*) processes. Typically, physical processes have a beginning, a middle and an end point: when I listen to you, I might turn my head towards you, attend to you when you are speaking, and stop listening when you stop speaking. The present progressive acknowledges the duration of this physical activity. Mental processes do not have this same 'bounded' characteristic: one doesn't start or stop 'hearing', particularly in the sense that it has here, which is something like 'register and understand'. So, normally, mental processes do not acknowledge duration, and the 'default' realisation is the simple aspect.

But, as we have seen, frames are culturally relative, and the way we perceive things might change. What is the difference between these two sentences – in other words, what kind of 'frame' about the nature of the process do they trigger?

I love that new series on Netflix.
I'm loving that new series on Netflix.

The first of these two sentences frames 'loving' as an unbounded process, something with no beginning or end, which in this instance has attached itself to the series on Netflix. In the second sentence we understand 'loving' as an experience of intense enjoyment that began as the series started (or when I started watching it), and so is bounded by the duration of the series so far. The second sentence is also more likely to be produced by a slightly younger speaker – the use of 'love' and its ability to enter into these kinds of structures has changed in the last few decades. Cognitive grammarians account for such grammatical changes as cultural and conceptual shifts in the relationship of the word, phrase or larger structure with the frames that govern the way we think about entities (like fruit and vegetables) and processes (like events that are bounded or unbounded).

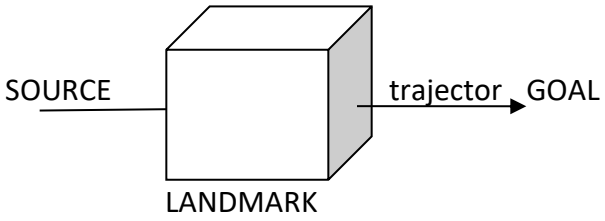
6.0 Metaphor

We have seen that cognitive grammarians account for aspects of sentence formation and structure by appealing to the ways in which we construe an event or statue from a particular perspective, foregrounding the salient aspects and relating them to our frames of typical situations. Often, however, we make sense of one conceptual domain with reference to another – this is the basis of metaphor. For example, we might understand the phenomenon of death in terms of absence, or being elsewhere:

She's passed away.
He's gone, but not forgotten.

Metaphor is far from a marginal issue in cognitive grammar – it is an everyday and pervasive means of accounting for grammatical phenomena that might otherwise appear random and unrelated. It is normally part of the extension of meaning of a word, phrase or structure that allows it to be used in a wider range of contexts with a wider range of meanings. Metaphorical extension can be illustrated in the many nuanced interpretations of the preposition *through* (cf Lee, 2001: 39-48 for more detail).

First of all, let us assume that the prototypical meaning of *through* relates to a locational frame, that is, it is part of our knowledge about how things move. They can go *over, under, around* or *through*, for example. If we think of how speakers visualise movement *through* we can come up with what is called an 'image schema' which might look like this:



In other words, the 'basic' meaning of *through* involves a trajector moving from a source towards a goal, and, on the way, it enters and leaves a landmark. In a prototypical sentence, all or most of these elements might be present, e.g.

The diesel fuel is transferred from an underground tank through pipes to above-ground dispensers.

In this sentence, the trajector is the diesel fuel, the tank is the source, the pipes are the landmark and the above-ground dispensers are the goal. However, if you look at a given corpus of English, remarkably few instances of *through* actually appear in sentences of physical motion and location. The basic meaning based on the image schema – of a trajector moving into and out of a landmark towards a goal – frequently goes through a number of increasingly abstract and metaphorical extensions. Consider the following examples.

> *She gazed through the window at the falling rain.*
> *He walked through the door into the bedroom.*

As David Lee observes (2001: 41), examples like this treat the trajectory and/or the landmark in a more abstract fashion. In the first sentence, there is no actual trajectory, just the woman's line of sight which is directed beyond the window to the rain outside. In the second example, the man presumably does not literally walk through the door (or he would be hurt!); rather he passes through the doorway. In each of these cases, the basic image schema is being extended in some way. The meaning of *through* becomes increasingly more metaphorical in the following examples, where the preposition might

be used adverbially, or, sometimes, is combined with a particular verb to form a phrasal verb.

First, there is the possibility that the trajector's passage affects the landmark in some way, possibly damaging it or consuming it completely:

The minister's confessions are causing panic through the entire government.
I'm afraid we've gone through all our budget.
You and me, we're through.

Then there is the possibility that the landmark is difficult for the trajector to pass through:

We inched our way through the heavy traffic.
I just can't get through to you, can I?

In most of the examples we have considered so far, the motion is through space (although sometimes that space is metaphorical, e.g. a relationship can be perceived as a space that the lovers pass through, until the relationship is finished). If we draw upon the common conceptual metaphor that SPACE is TIME, then we can understand the following sentences:

The USA experienced a series of social revolutions through the 1960s and 1970s.
I woke up half way through the night, desperate for something to drink.

If we combine the metaphorical notion that SPACE is TIME, and that the landmark is an obstacle, then events can be construed as ordeals to be endured:

I don't know how I got through 15 weeks of an advanced grammar course.
I had to sit through four hours of an opera in a language I don't know without subtitles or any idea of the plot.

In another type of metaphorical shift, there is also the possibility that the landmark is perceived as an *instrument* by which the trajector can move from the source to the goal:

We booked our ticket through Expedia.
We received the medicine through the National Health Service.

In the above two sentences there is a metaphorical shift from the conceptual domain of MOTION to the domain of ACQUISITION. To accomplish this shift, we need to think of the trajector not as something that is moving, but as something that is acquiring. The goal is the acquisition, and the landmark is the means of acquisition.

In examples like *through* there is what is called 'radial extension' from the core image schema. In other words, the basic meaning, rooted in our experience of a world where objects might enter and leave landmarks on their way from source to goal, 'radiates out'

to encompass other meanings, through the processes of abstraction (objects become concepts) and metaphor (e.g. the passage through space is reconceptualised as a passage through time, or as the process of acquiring something). The result is that words, phrases and larger structures might be used to express meanings that, at first glance, seem unrelated, but which can be explained by attending to the abstractions and metaphorical relations that the linguistic phenomena enter into. At first glance, there might be little to relate the use of *through* in *We drove through the tunnel in the mountain range between São Paulo and Minas* and *He's going through a really hard time just now.* But if we think of the steps by which the meaning radiates from the core image schema, the relationship may become clearer.

7.0 Conclusion

Cognitive grammar, then, shares with Chomskyan approaches to syntax a concern not so much with text as with the mental processes that explain why we can say certain things in certain ways. The difference between the approaches lie in the Chomskyan assumption that we can account for syntax by creating a formal model that will generate all (and only) the acceptable sentences of English, and that the most efficient version of this model will effectively represent a human-specific 'language organ'. Cognitive grammarians do not share this assumption. Rather they assume that language originates in our perceptual experiences of the world and the 'image schemata' that result from our embodied perceptions. Meanings radiate out from these core image schemata via abstraction and metaphor. The resulting structures continue to exhibit the trace evidence of these processes, and they continue to express the knowledge frames, attributions of salience and the perspective of the speaker.

8.0 Activities

1. Construal

From the perspective of cognitive grammar, how would you account for the factors that trigger the following encodings in English.

a) Matteo kissed Gabriella.
b) Gabriella kissed Matteo.
c) Gabriella and Matteo kissed.
d) He's eaten every biscuit on the plate.
e) He's eaten each biscuit on the plate.
f) Would you like a chocolate?
g) Would you like some chocolate?
h) The woman at the corner table wants coffee.
i) The woman at the corner table wants a coffee.
j) The local team is playing really well at the moment.
k) The local team are playing really well at the moment.

2. Foregrounding

What is being foregrounded and backgrounded in the following sentences? Does any seem less 'natural' than the others? If so, why?

a) To test her reflexes, I tapped a small hammer against her knee.
b) To test her reflexes, I tapped her knee with a small hammer.
c) To test her reflexes, I tapped a small hammer against Wendy.
d) To test her reflexes, I tapped Wendy with a small hammer.

3. Framing

What knowledge frames do you draw upon to make sense of the following sentences?

a) After five days, we saw land.
b) After five hours, we saw the ground.

Certain texts have been deliberately devised to deprive readers of contextual frames. In the absence of a frame, how do you make sense of the following passages? How does your understanding change when the frame becomes clear?

c) A newspaper is better than a magazine, and on a seashore is a better place than a street. At first, it is better to run than walk. Also, you may have to try several times. It takes some skill but it's easy to learn. Even young children can enjoy it. Once successful, complications are minimal. Birds seldom get too close. One needs lots of room. Rain soaks in very fast. Too many people doing the same thing can also cause problems. If there are no complications, it can be very peaceful. A rock will serve as an anchor. If things break loose from it, however, you will not get a second chance.

d) The procedure is actually quite simple. First, you arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step; otherwise, you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run, this may not seem important but complications can easily arise. A mistake can be expensive as well. At first, the whole procedure will seem complicated. Soon, however, it will become just another fact of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one can never tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually, they will be used once more, and the whole cycle will then have to be repeated. However, that is part of life.

Passages are from Bransford, J. D., and M. K. Johnson. "Contextual Prerequisites for Understanding Some Investigations of Comprehension and Recall." *Journal of Verbal Learning and Verbal Behavior* 11, no. 6 (1972): 717-726.

4. Extension

Match the sentences with the developing image schemata on the following page. These examples are based on the discussion of *out* in Lee (2001: 35ff).

a) Alicia went out for a walk. *(central image schema)*
b) He spread the tablecloth out.
c) We are stockpiling food in case supplies run out.
d) Suddenly, the lights went out.
e) All of a sudden, the sun came out.
f) The ship set out on its voyage at dawn.
g) I'm trying to blank out the memory.
h) In the end, we will find out the truth.
i) There's no use talking to her, she's completely out of it.

Once you have matched the sentences, consider the radial network and discuss how useful (or not) you find the visualisations of the image schemata.

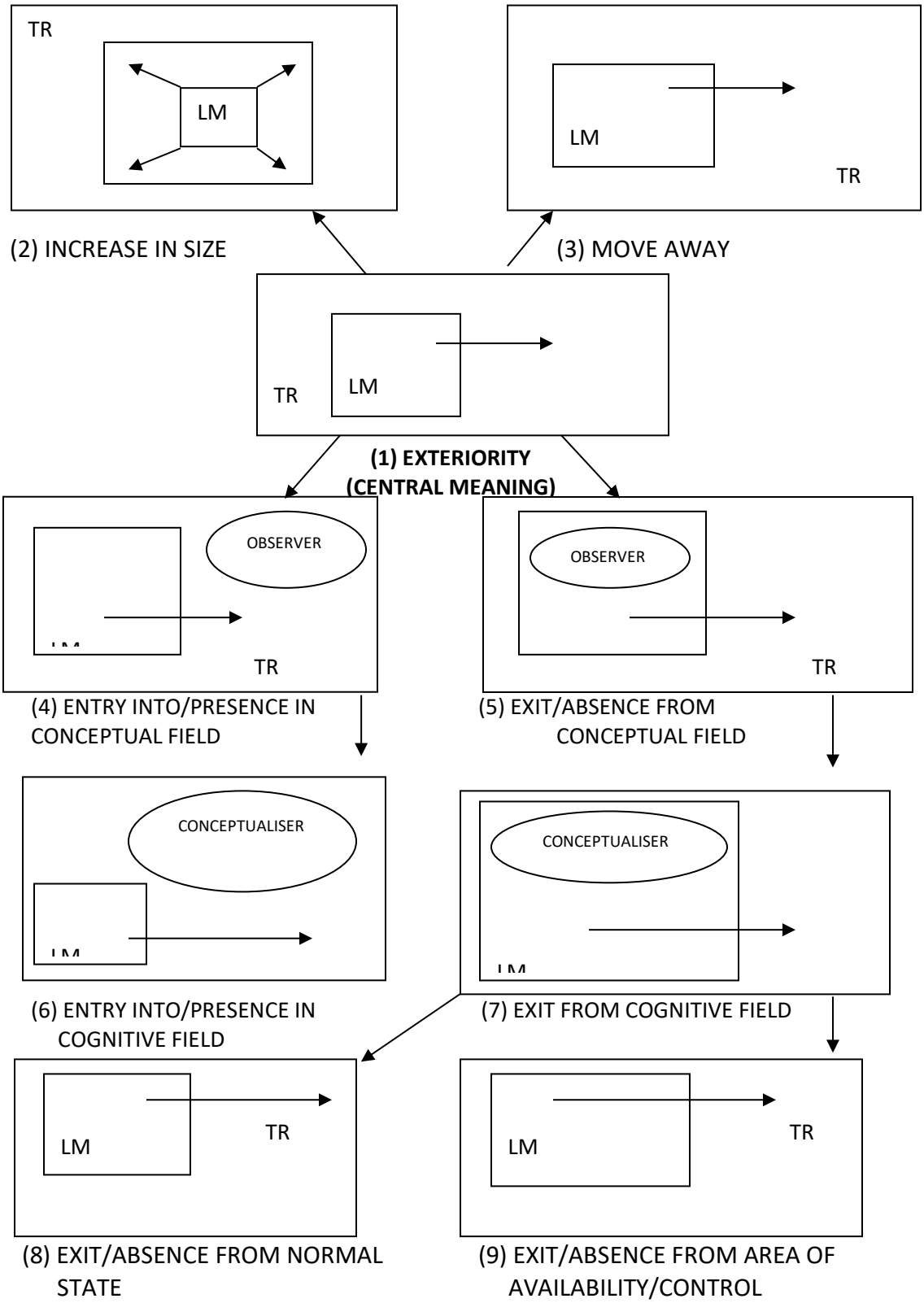
9.0 Envoi

This course has introduced you to a fairly wide range of grammatical theories. The purpose of looking at these different 'grammars of English' is to try to get 'underneath' the kinds of grammatical description you were probably exposed to in earlier parts of your language study, and to offer you reasons *why* grammatical phenomena are described in the ways that they are.

As you look back on this course, you might reconsider the *evidence* used by the different grammars of English: the 'discovery procedures' of the structural grammarians, the structure tests of the formal and generative grammarians, and the slightly more subjective ways that surface features are linked to meanings by the SF and cognitive grammarians. Corpus grammarians sometimes stress the data they can collect by computerised searches more than the rigorous application of any one theory – but even their descriptions must proceed on some theoretical basis and using some – inevitably debatable – assumptions about what grammar is and what kinds of things grammars can and should tell us.

None of the grammatical theories we have looked at is 'correct' or 'wrong' in terms of the others – although the adherents to the different schools of grammar can sometimes become quite territorial and aggressive in arguing for their own approach and against others. While they clearly overlap in their concerns and even in their solutions to particular problems, the grammars we have looked at are largely incompatible, mainly because they have quite clearly differentiated goals – whether those goals are the

Radial network for *out* (Lee, 2001: 35)



description of given structures, the generation of possible sentences, or the linking of sentences to their social context or mental perceptions. However, it should by now be obvious that insights from one school do often shape the procedures used in another school. For instance, TG, SF and cognitive grammarians attempt to account for 'processes, participants and circumstances' in recent versions of their grammars, although they tend to approach this topic in quite different ways. So do not expect much consistency across textbooks and theoretical discussions in the field!

As emphasised throughout, this course can only deliver a sketch (sometimes approaching a caricature) of the various grammars mentioned. The recommended reading gives some guidance in the selection of introductory textbooks and more advanced work on each of the grammars covered. None of the more advanced texts is particularly easy reading – but it is in the nature of theory to be difficult. This workbook should at least help you get oriented as you start your investigation of a sometimes tough but always rewarding subject.

Further Reading

The following list includes books used heavily in the preparation of this course. Other good books are coming on the market all the time. If a book does not appear on this list, it is not necessarily an indication of its lack of worth!

General:

The following books give useful general background to grammar, or are standard reference guides, including the mighty Quirk et. al. (1985) *Comprehensive Grammar of English* and more recent, corpus-informed pretenders to its authoritative throne, Biber et al (1999) and Carter and McCarthy (2006). It is worth looking at them with a view to discovering which grammatical theories underpin the descriptions given. Simpson (1979) gives a brief account of pre-20th century grammatical theories as well as more detailed descriptions of 20th century schools of thought. Sampson (1980) is also excellent if a little dated.

Biber, D., E. Finegan, S. Johansson, S. Conrad and G. Leech (1999) *Longman Grammar of Spoken and Written English*
Carter R. and M. McCarthy (2006) *Cambridge Grammar of English: A Comprehensive Guide*
Crystal, D (1987) *The Cambridge Encyclopedia of Language*
Huddleston, R (1984) *Introduction to the Grammar of English*
Huddleston, R (1988) *English Grammar: An Outline*
Leech, G & Svartvik, J (1975) *A Communicative Grammar of English*
Palmer, F (1983) *Grammar*
Sampson, G (1980) *Schools of Linguistics: Competition and Evolution*
Simpson, JMY (1979) *A First Course in Linguistics*
Quirk, R & Greenbaum, S (1973) *A University Grammar of English*
Quirk, R, Leech, G & Svartvik, J (1985) *A Comprehensive Grammar of the English Language*

Ferdinand de Saussure:

An introduction to the 'father of modern linguistics' by Culler, and the reconstituted 'cours' in translation:

Culler, J (1976) *Saussure*
de Saussure, F (1959) *Course in General Linguistics,* tr. W Baskin

Systemic Functional Grammar

An approachable and thorough introduction to systems and functions is Eggins (1994) – it is a good starting point for newbie SF enthusiasts. Bloor and Bloor (2004) and Thompson (2004) focus on the 'functional' side of SF grammar. Butler (1985) is a difficult but excellent critical survey of the field – his 1989 article covers similar ground in a shorter space. Prague School origins are usefully detailed in Davidse (1987). Major works by SF linguists are Halliday on function (1985; there is a new 3rd edn by Halliday and Matthiessen, 2004) and Berry on system (1975, 77; reprinted 1989). A scathingly critical review of Halliday (1985) is found in Hudson (1986).

Berry, M (1975, 1977) *Introduction to Systemic Linguistics, Vol 1 & 2*
Bloor, T and Bloor, M (2004) *The Functional Analysis of English* 2nd edn
Butler, CS (1985) *Systemic Linguistics: Theory and Applications*
Butler, CS (1989) 'Systemic models: unity, diversity and change' in *Word* 40:1-2 pp 1-35

Davidse, K (1987) 'MAK Halliday's Functional Grammar and the Prague School' in Dirven, R and Fried, V eds *Functionalism in Linguistics*
Eggins, S (1994) *An Introduction to Systemic Functional Linguistics*
Halliday, MAK (1985) *An Introduction to Functional Grammar*
Halliday, MAK and Matthiessen, C (2004) *An Introduction to Functional Grammar* 3rd edn
Hudson, R (1986) 'Systemic Grammar' *Linguistics* 24 pp 791-815 (A review of Butler 1985 and Halliday 1985)
Thompson, G (2004) *Introducing Functional Grammar* 2nd edn

Structural Grammar

Simpson (1979) has an accessible account of the strengths and weaknesses of structural grammar. Lyons (1968) is more complicated but worth a look. The other books are primary reading – Bloomfield's legendary *Language* sketches out some grammatical principles amidst a wealth of other information about phonetics and morphology. Fries fleshes out the skeleton; Hymes and Fought provide a useful reflection on the continuing impact of structuralism, post-Chomsky.

Bloomfield, L (1933) *Language*
Fries, C (1957) *The Structure of English*
Hymes, D. and J. Fought (1975) *American Structuralism*
Lyons, J (1968) *Introduction to Theoretical Linguistics*
Simpson, JMY (1979) *A First Course in Linguistics*
Wells, RS (1947) 'Immediate Constituents' in *Language* 23: 81-117

Transformational Generative Grammar

Radford (1988, 1997a&b) are approachable and thorough accounts of recent work. Brown and Miller (1980) is rather dated but is nevertheless a good introduction to syntax based on TG principles, and it covers a range of other topics briefly and succinctly. Chomsky's own work is notoriously difficult and should probably be first approached through an intermediary such as Lyons or Radford. If you are interested in Old or Middle English you might want to look at Elizabeth Traugott's study. Pinker (1994) is a popular introduction to Chomskyan thinking and is readable but polemical. Sampson (1997) is an equally polemical broadside against Chomsky and Pinker. Handle both with care.

Brown EK and Miller, JE (1980) *Syntax: A linguistic introduction to sentence structure*
Chomsky, N (1957) *Syntactic Structures*
Chomsky, N (1965) *Aspects of the Theory of Syntax*
Chomsky, N (1975) *Reflections on Language*
Chomsky, N (1988) *Language and Problems of Knowledge*
Chomsky, N (1995) *The Minimalist Program*
Chomsky, N (2000) *New Horizons in the Study of Language and Mind*
Huddleston, R (1976) *An Introduction to English Transformational Syntax*
Lyons, J (1970) *Chomsky*
Pinker, S (1994) *The Language Instinct*
Radford, A (1988) *Transformational Grammar: A First Course*
Radford, A (1997a) *Syntactic Theory and the Structure of English: A Minimalist Approach*
Radford, A (1997b) *Syntax: A Minimalist Approach*
Sampson, G (1997) *EducatingEve: The 'Language Instinct' Debate*
Traugott, E.C. (1972) *A History of English Syntax: A Transformational Approach to the History of English Sentence Structure*

Universal Grammar and Second Language Grammar
Most of these books presuppose some familiarity with UG and/or a Chomskyan grammatical model. They are useful examples of how formal grammatical theory has been applied to second language education. For a critical perspective, see Atkinson (1982).

Atkinson, M (1982) *Explanation in the Study of Child Language Development.*
Cook, V (1991) *Second Language Learning and Language Teaching*
Cook, V (1993) *Linguistics and Second Language Acquisition*
Cook, V (1996) *Chomsky's Universal Grammar: An Introduction*
Ellis, R (1985) *Understanding Second Language Acquisition*
McLaughlin, B (1987*) Theories of Second Language Acquisition*
Rutherford, W (1987) *Second Language Grammar: Learning and Teaching*
Rutherford W & M Sharwood Smith (1988) *Grammar and Second Language Teaching: A Book of Readings*
White, L (1989) *Universal Grammar and Second Language Acquisition*

Corpus-informed Grammar
See Biber et al (1999) and Carter and McCarthy (2006) in the general section above for recent reference grammars that use corpus-informed insights. Sinclair's anthology of articles is still a good introduction to corpus grammar; Hunston (2002) goes from theory to applications; Hunston and Francis (1999) suggest a new data-driven model of grammar. Anderson and Corbett (2017) give a basic introduction to corpus-driven language analysis and guidance on how to use online corpora.

Anderson, W. and J. Corbett (2017) *Exploring English With Online Corpora* 2nd edn.
Biber, D, Conrad, S and Reppen, R (1998) *Corpus Linguistics: Investigating language structure and use*
Hunston, S. and G. Francis (1999) *Pattern Grammar: a corpus-driven approach to the lexical grammar of English*
Hunston, S. ed (2002) *Corpora in Applied Linguistics*
McEnery, T, and Wilson, R (1996) *Corpus Linguistics*
Meyer, CF (2002) *English Corpus Linguistics: An Introduction*
O'Keeffe Anne, Mccarthy Michael, Carter Ronald (2007) *From Corpus To Classroom: Language Use And Language Teaching*
Sinclair, J (1991) *Corpus, Concordance, Collocation*

Cognitive Grammar
The main theorist behind Cognitive Grammar is Langacker, and his texts are the foundational ones in the field. An accessible introduction is by David Lee, whose account is used as the basis for the chapter in this workbook. A broader view of cognitive semantics and grammar is Lakoff (1987).

Lakoff, G. (1987) *Women, Fire and Dangerous Things: What Categories Reveal about the Mind*
Langacker, R. (1981) *Foundations of Cognitive Grammar: Theoretical Prerequisites*
Langacker, R. (1990) *Concept, Image and Symbol: The Cognitive Basis of Grammar*
Lee, D. (2001) *Cognitive Linguistics: an Introduction*
Rudzja-Ostyn, B. (ed) (1988) *Topics in Cognitive Linguistics* (includes Langacker's chapter 'An overview of cognitive grammar').

Useful Web Resources
University College London has a web-based grammar course for undergraduates. It can be found at **http://www.ucl.ac.uk/internet-grammar**

Systemic Functional Linguistics resources and news can be found at:
http://www.isfla.org/Systemics/definition.html

There has been an explosion of online corpora in the last two decades and they are becoming more sophisticated and varied. They include:

British National Corpus (BNC) / BYU-BNC
The BNC contains 100 million words of British English texts from the late twentieth century. Ten per cent of the corpus is transcribed spoken language; ninety per cent is written language of a wide range of genres. The corpus is part-of-speech tagged. Information about the British National Corpus can be found at: http://www.natcorp.ox.ac.uk/. Simple searches can also be carried out through this site; these indicate the total number of hits for a search word and retrieve a random sample of fifty examples in context. Searches may be restricted by part of speech.

Brigham Young University Corpora
The complete BNC can also be explored through the user-friendly interface created by Professor Mark Davies at Brigham Young University, available at http://corpus.byu.edu/bnc/. This interface offers the facility of identifying collocates, comparing words across registers, and viewing all hits for search terms in the corpus. Full texts are not available but an expanded context of several sentences can be viewed.

The BYU portal at http://corpus.byu.edu/ gives access to the most powerful collection of corpora available online. You can spend hours browsing the collection, the most useful of which is probably the **Corpus of Contemporary American English.** If you are interested in language change and diachronic linguistics, the **Corpus of Historical American English** and **TIME** corpus are fascinating. If you are interested in pop culture there is the SOAP corpus and there are also massive corpora of World English and news sites. You have to register for this site and you will be limited to a certain number of queries per day unless you pay a modest registration fee.

Business Letter Corpus
This site, at http://www.someya-net.com/concordancer/, offers access to a 1-million-word part-of-speech tagged corpus of business letters in English, through an online concordancer. Additional corpora (personal letters, fiction, State of the Union addresses, etc.) can also be searched.

Compleat Lexical Tutor
The Compleat Lexical Tutor is a set of online data-driven language learning tools: http://www.lextutor.ca/. Among many other features, it offers a concordancer which can be used on a selection of corpora of English including the 1-million-word Brown Corpus and the BNC Sampler (a 1-million-word subset of the BNC).

GlossaNet
GlossaNet, at http://glossa.fltr.ucl.ac.be/, run by the University of Louvain in Belgium, facilitates concordance analysis of daily-updated corpora of newspaper texts in many languages. Users can specify language and search term requirements, and receive concordances by email. The GlossaNet Instant facility provides concordances online.

Michigan Corpus of Academic Spoken English (MICASE)
Available to search and browse at http://quod.lib.umich.edu/m/micase/, MICASE contains close to 2 million words of audio recordings and transcripts of academic speech events which can be searched according to various criteria such as the academic role of the speaker, the type of speech event, academic discipline, and so on. Complete transcripts can be viewed and also downloaded. Searching for a word gives a sortable concordance view, and additional context can be shown.

Hong Kong Polytechnic University Language Bank
The Hong Kong PolyU Language Bank resource, at http://langbank.engl.polyu.edu.hk/indexl.html, offers access to a bank of corpora (of English and other languages), all of which can be searched, and concordances created. The available corpora include the BNC Sampler, and corpora in the domains of business, academia, travel and tourism, medicine and fiction.

Scottish Corpus of Texts & Speech (SCOTS) & Corpus of Modern Scottish Writing (1700-1950)
SCOTS, available at www.scottishcorpus.ac.uk, contains 4 million words of texts in Scottish English and varieties of Scots, covering a wide range of genres from conversations and interviews to prose fiction, poetry, correspondence and official documents from the Scottish Parliament. Twenty per cent of the corpus is made up of spoken texts, which are presented as orthographic transcripts synchronised with streamed audio/video recordings. Features include a concordancer and map visualisation. Complete texts can be viewed and downloaded, and audio/video recordings can also be downloaded. Extensive demographic and textual metadata is available for each text, and can be used to refine a search. A historical counterpart of 4 million words of written English in Scotland (including a subcorpus of transcribed letters) is available via the same website.

WebCorp
WebCorp allows the user to harness the World Wide Web for use as a language corpus of English and other languages: http://www.webcorp.org.uk/. WebCorp features collocation analysis, the possibility of filtering results according to date and collocates, and a word list generator, which creates word lists for individual web pages. While it is very difficult to use the Web to make quantitative statements about language, because the overall quantity of data and proportions of different registers is almost impossible to establish (not least because it is constantly changing), the unparalleled quantity of authentic language data which the Web offers makes it a valuable resource for exploring features of language such as uncommon words and neologisms.

Essay Titles

The following essay titles are suggested for this part of the Topics in Grammar course. In the essay, you are expected to show that you have engaged with and understood some of the recommended reading for the course, and additional credit will be given if you have sought out and incorporated some recent research relevant to the topic (e.g. in journals or newly-published books). You should look at two or three different sources at least for any essay chosen; some questions require more independent work than others – credit will be given for more ambitious essays.

Your essay should directly address the topic given, and make reference where appropriate to the background reading (using proper citations and references). Credit will be given if you (a) adapt the examples from your background reading to show that you have understood the theoretical principles being discussed; and (b) engage in a critical discussion of the background reading, rather than simply reproducing the ideas of others.

1. Explain the roles of the three 'metafunctions' in functional grammar. Discuss, too, the advantages and disadvantages of devising 'semantic' definitions of grammatical constituents.

2. Discuss the acquisition of grammar EITHER by children OR second language learners from EITHER the perspective of Universal Grammar OR systemic-functional grammar.

3. How are the constituents of Immediate Constituent Analysis identified and defined? In your answer, illustrate by using ICA to give sample analyses of phrases and sentences.

4. Take two or three sentences of different types and write phrase structure (PS) rules for them. What do PS rules attempt to do that, say, the tree diagrams of the structuralist grammarians do not do?

5. Why is it that derivational trees as devised by transformational grammarians are sometimes inconsistent? Take one or two sentences and discuss the problems of devising a derivational tree for it/them. Clearly show the different options and why they are possible.

6. What grammatical problems does the notion of the X-Bar attempt to solve? Furthermore, what advantages in terms of power and economy does the concept of the X-Bar have for Transformational-Generative grammar?

7. Illustrate different kinds of movement (or 'transformation'). What are the advantages for a grammatical theory of having a set of movement rules?

8. From your own reading into the subject, give an explanation of the key principles underlying the Minimalist Program in recent Chomskyan linguistics.

9. Discuss the acquisition of grammar EITHER by children OR second language learners from EITHER the perspective of Universal Grammar OR systemic-functional grammar.

10. Are corpus-based grammars *really* driven by data? Illustrate the kind of insights that a grammar based on a computer corpus can give us, and discuss the roles of theory and evidence in delivering these insights.

11. Using examples of your own, illustrate how the concepts of *construal, perspective, foregrounding, metaphor* and *frame* are used in a cognitive approach to grammar. You might look at one of the following topics in your discussion: prepositions & adverbs, phrasal verbs, verbal aspect, mass & count nouns.