



NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF ARTS AND SOCIAL SCIENCES

COURSE CODE:ENG 222

COURSE TITLE:ADVANCED ENGLISH SYNTAX

**COURSE
GUIDE****ENG 222
ADVANCED ENGLISH SYNTAX**

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Introduction

ENG 222 is a one semester, three-credit unit 200 level course. It is for students whose major discipline is English. The course consists of fourteen units which cover various aspects of Advanced English Syntax. The compulsory pre-requisite for this course is ENG 221.

The Course Guide tells you what the course is about, what materials you will be using and how to work your way through these materials. It suggests some general guidelines for the amount of time you are likely to spend on each unit of the course. It also gives you some guidance on your Tutor-Marked Assignments. You are advised to do the self-assessment exercises and attend the tutorial classes where you will discuss your problems with your tutors.

Course Aims

This course will attempt an in-depth study of one theoretical model – Chomsky’s Transformational model. Remember that it was one of the models introduced in ENG 221. In this course you will study in detail the workings of this model. The goals of the course are to:

- enable you attain a reasonable degree of mastery in the application of the model to the analysis of English language; and
- enable you appreciate the superiority of this model over others in the analysis of aspects of English language.

Course Objectives

There are objectives to be achieved in each unit of the course. Read these objectives and know them before studying each unit. It is hoped that by the time you finish this course, you should be able to:

- know the various modifications to the original formulation of Transformational Generative Grammar;
- know how they work and how to apply them in your syntactic analysis; and
- be able to determine their strengths and weaknesses.

Working through this Course

To finish this course successfully, you are advised to study the units, locate the recommended textbooks and read them. Do not forget other materials provided by NOUN. At particular points in each unit, you will find self-assessment exercises. You are advised to do them because they are geared towards testing your understanding of the topic discussed. You will also find tutor marked assignments at the end of each unit. You are required to submit these assignments to your Tutor for assessment purposes. These tutor marked assignments will count towards your overall performance in the course. There will be a final examination at the end of the course. The course will take you about fourteen weeks to complete. All the components of the course are listed below. You have to allocate your time to each unit in order to complete the course successfully and on time. Do not jump units; study all of them because they have been developed hierarchically. For example, to understand unit 2 well, you have to know unit 1.

Course Materials

The major components of the course are:

- (a) Study units
- (b) Textbooks
- (c) Assignments file
- (d) Presentation schedule

Study Units

There are fourteen study units in this course as follows:

Module 1 Chomsky's Universal Grammar

- Unit 1 Aspects of the Knowledge of Language
- Unit 2 Aspects of Parametric Variations
- Unit 3 Rules and Notational Conventions

Unit 4 English Phrase Structure Rules

Module 2 The Organization of the Syntax of English

Unit 1 Lexical Categories

Unit 2 Phrasal Categories via Merger Operations

Unit 3 Phrase and Clause Types

Module 3 Formalising Modules of Grammar

Unit 1 Projections, X-bar, Theta and Case Theories

Unit 2 Government, Binding and Bounding Theories

Unit 3 The D-Structure

Module 4 Syntactic Processes and Relations

Unit 1 NP Movement Structures

Unit 2 WH Movement Structures

Unit 3 Empty Categories

Unit 4 Introduction of Minimalism

Each unit consists of one week's work. Included in each unit are specific objectives, directions for study, self assessment exercises and demonstrating examples where necessary. Together with tutor marked assignments these exercises will help you in achieving the stated learning objectives of the individual units and of the course.

Textbooks and References

Certain books are recommended in the course. You should buy them yourself and read. Textbooks for further reading are listed at the end of each unit.

Assessment

This course is assessed in two ways: tutor marked assignments and a written final examination. In doing these assignments, you are expected to utilize the knowledge gathered during the course. The tutor marked assignments must be submitted to your tutorial facilitator for formal grading. Adhere to the deadlines given for their submission as stated in the presentation schedule and the assignment file. These tutor marked assignments will carry 30% of your total course grade.

Tutor-Marked Assignment

Tutor-marked assignments are found at the end of each unit. You are required to attempt all of them. You may be assessed on all of them but the best three or four performances will be used for your continuous assessment. One of the ones selected will come from each of the modules. The assignments will carry a total of 30% of your final grade.

When you have completed each assignment, send it together with a Tutor Marked Assignment file to your tutorial facilitator. Make sure that each assignment reaches your tutorial facilitator on or before the due date. If, for any reason, you cannot complete your work on time, contact your tutorial facilitator before the due date to discuss the possibility of granting you time extension. Extensions will not be granted after the date the assignment is due unless in exceptional circumstances.

Final Examination and Grading

The final examination of ENG 222 will be of three hours duration and will carry 70% of the total course grade. The examinations will consist of questions which reflect the kinds of self-assessment exercises and the tutor-marked problems you have previously encountered. All areas of the course will be examined. You should use the time between finishing the last unit of the course and the date of the examination to revise the entire course. You may find it profitable to go through your self assessment exercises and tutor-marked assignments before the examination.

Course Marking Scheme

The following table lays out how the actual course marking is broken down.

Assessment	Marks
Assignments 1-4 (the best three or four of all the assignments submitted)	Totaling 30%
Final examination	70% of overall course marks
Total	100% of course marks

Course Overview

Unit Title	of Work	Week's Activity	Assessment (End of Unit)
	Course Guide		
Module 1			
1 Aspect	of the Knowledge	1 Assignment 1	

	of Language		
2 Aspects	of Parametric Variations	1 Assignment	2
3 Rules	and Notational Conventions	1 Assignment	3
4 English	Phrase Structure Rules	1 Assignment	4
Module 2			
1 Lexical	Categories	1 Assignment	5
2 Phrasal	Categories via Merger Operations	1 Assignment	6
3 Phrase and Clause Types		1 Assignment	7
Module 3			
1 Projections,	X-bar, Theta and Case Theories	1 Assignment	8
2 Government,	Binding and Bounding Theories	1 Assignment	9
3 The D-Structure		1 Assignment	10
Module 4			
1 NP Movement Structures		1 Assignment	11
2 WH Movement Structure		1 Assignment	12
3 Empty Categories		1 Assignment	13
4 Introduction of Minimalism		1 Assignment	14
	Revision	2	
	Examination	1	
Total		17	

How to Get the Most from this Course

In distance learning, the study units replace the University lecturer. The advantage is that you can read and work through the study materials at your pace, and a time and place that suit you best. Think of it as reading the lecture instead of listening to the lecturer. Just as a lecturer might give you in-class exercises, your study units provide exercises for you to do at appropriate times.

Each of the study units follows a common format. The first item is an introduction to the subject matter of the unit and how a particular unit is integrated with other units and the course as a whole. Next is a set of learning objectives. These objectives let you know what you should be able to do by the time you have completed the unit. You should use these objectives to guide your study. When you have finished the unit, you should go back and check whether you have achieved the

objectives. If you make a habit of doing this you will significantly improve your chances of passing the course.

Self assessment exercises are interspersed throughout the units and answers are given at the end of the next unit. Working through these tests will help you to achieve the objectives of the unit and prepare you for the tutor-marked assignments and the examination. You should do each self assessment exercise as you come to it in the study unit. There will be examples given in the study units where necessary. Work through these when you come to them.

Facilitators/Tutors and Tutorials

There are fourteen hours of tutorials provided in support of this course. You will be notified of the dates, times and location of these tutorials, together with the name and phone number of your tutorial facilitator as soon as you are assigned to a tutorial group.

Your tutorial facilitator will mark and comment on your assignments, keep a close watch on your progress and on any difficulties you might encounter as well as provide assistance to you during the course. You must mail or submit your Tutor Marked Assignments to your tutorial facilitator well before the due date. They will be marked by your tutor and returned to you as soon as possible.

Do not hesitate to contact your tutor by telephone or e-mail if you need help. Contact your tutorial facilitator if:

- 1.0 You do not understand any part of the study units or the assigned readings;
- 2.0 You have difficulty with the self assessment exercises; and
- 3.0 You have a question or a problem with an assignment or with the grading of an assignment.

You should try your best to attend the tutorials. This is the only chance to have face-to-face contact with your tutor and ask questions which are answered instantly. You can raise any problem encountered in the course of your study. To gain the maximum benefit from course tutorials, prepare a question list before attending them. You will gain a lot from participating actively.

Summary

ENG 222 will enhance your knowledge of syntax by exposing you to an in-depth study of the new trends in Transformational-Generative theory. It is one of the popular syntactic theories in use today. Upon completing

the course you should be equipped with the skills required in applying the theory in the analysis of syntactic structures. You should be able to deal with such issues as:

- 1.0 competence and performance;
- 2.0 parametric variations;
- 3.0 phrase structure rules;
- 4.0 phrasal categories;
- 5.0 merger operations;
- 6.0 projections, X-bar, theta and case theories;
- 7.0 government, binding and bounding theories;
- 8.0 movement transformations;
- 9.0 empty categories; and
- 10.0 minimalism

I wish you success with the course. I hope that you will find it interesting and rewarding.

Course Code ENG 222

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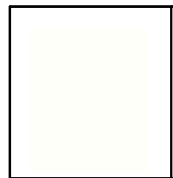
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MODULE 1 CHOMSKY'S UNIVERSAL GRAMMAR

Unit 1 Aspects of the Knowledge of Language

Unit 2 Aspects of Parametric Variations

Unit 3 Rules and Notational Conventions

Unit 4 English Phrase Structure Rules

UNIT 1 ASPECTS OF THE KNOWLEDGE OF LANGUAGE

Chomsky's Universal Grammar is concerned with the condition that must be satisfied by the grammar of all languages. This condition is made up of two parts: the Aspect of the Knowledge of Language (which is the core), and the Parametric Variations (which is the periphery).

In this unit, we shall consider some aspects of the knowledge of language. The unit is arranged as follows:

CONTENTS

1.0 Introduction

2.0 Objectives

3.0 Main Content

3.1 Linguistic and Non-Linguistic Knowledge

3.2 Intuitions

3.3 Competence and Performance

3.4 Acceptability and Grammaticality

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Readings

1.0 INTRODUCTION

The capacity for acquiring and using a language, is a property that distinguishes human beings from all other species. The task of the linguist is to explain what it is about human beings that renders them capable of performing this feat, and what it is about human languages that renders them capable of being learned and used by human beings.

In this unit, we shall attempt to clarify the relation between knowledge and language from two different directions. First, we would want to distinguish between two types of knowledge, linguistic and non-linguistic (and hence between two types of rules, linguistic and non-linguistic); second, we want to distinguish between knowledge of rules

and the exercise of that knowledge (and hence, between knowing language and speaking or understanding it). Our main purpose is to give a general idea of the range and type of facts which fall ~~within the~~ a grammar: of the facts that can be handled by linguistic rules, and those that cannot.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- distinguish between linguistic and non-linguistic knowledge
- distinguish between competence and performance
- know what acceptability and grammaticality mean.

3.0 MAIN CONTENT

3.1 Linguistic and Non-Linguistic Knowledge

Granted that a human being can have knowledge at all, it seems obvious that this knowledge can be classified in various ways. One ~~classification~~ classification would involve separating linguistic from non-linguistic knowledge. Following Chomsky, we want to say that such a classification is not only possible but correct: that it is not just imposed by the analyst, but has a basis in human mental organization. In other words, language, though only one among many cognitive systems, has its own principles and rules, which are different in kind from ~~those~~ governing other cognitive systems, and for this reason must be studied separately.

Most linguistic theorists attempt to explain the acquisition of language in terms of whatever general learning theory they espouse. In ~~the~~ approach, language is thus seen as acquired in the course of general intellectual development, and no language specific endowment, apart from general intelligence and the ability to learn, will be needed for its acquisition. It is clear, though, that there is an alternative to this position. Language may be different in kind from other cognitive ~~systems~~ systems requiring different learning strategies and different genetic programming. The two claims reinforce each other: if linguistic knowledge is different in kind from non-linguistic knowledge, then it is more likely that we need special programming to learn it; and if we have such special programming, then it is more likely that, the result ~~of~~ language-learning will be different in kind from other systems not so programmed.

There are a number of rather obvious points that support the special-programming view of language acquisition, and disconfirm the general-

intellectual ability approach. If we measure general intellectual development in terms of logical, mathematical and abstract reasoning powers, these powers are still increasing at puberty, when the ability to acquire native fluency in a language is decreasing rapidly. Particularly striking evidence for this mismatch between linguistic and general cognitive abilities comes from the case of the American girl Genie. Genie was discovered in Los Angeles in 1970, at the age of thirteen; she had been kept locked up in conditions of severe sensory deprivation from infancy. In particular, she had heard virtually no speech throughout the period in which children normally learn their first language. Despite this horrifying background, Genie's intelligence turned out to be within normal limits in essential respects, and thus her progress with language-learning provides a useful basis for comparison with the language acquisition of more ordinary children. Her early language acquisition was typical of all children in that it passed through stages of one-word, two-word, three-word and four-word utterances; however, Genie's three- and four-word utterances typically displayed a cognitive complexity not found in the early speech of normal children, and her vocabulary was much richer than that of children at the same stage of syntactic development. In general, her ability to store lists of words is very good, but her ability to learn and manipulate rules has been minimal. This is reflected in the fact that whereas the 'two-word' stage lasts for about two to six weeks with normal children, with Genie it lasted over five months.

It seems, then, that language-learning abilities are not only different in kind from other intellectual abilities, but that they also become considerably impaired at a time when other intellectual abilities are still increasing.

It should be noted that not even all knowledge about language is to count as linguistic knowledge. The principle behind this decision is as follows: knowledge about language which is merely a special case of some wider generalization about human beings does not count as linguistic knowledge. Knowledge about language which does not emerge as a special case of some wider generalization about human beings is the only knowledge that we are prepared to call linguistic.

As an example of knowledge about language which does not count as linguistic knowledge in our sense, consider the following. Most linguists have a stock of odd items of knowledge about various languages: that most West African languages are tone languages, that Japanese has the verb in sentence-final position, that Turkish exhibits vowel harmony, and so on. This knowledge seems rather clearly to be encyclopedic, of the same type as knowledge that the capital of Ghana is Accra, and that

elephants are found in East Africa. No special abilities would be required to acquire them.

Similarly, certain types of knowledge that native speakers have about their own language are not linguistic. For example, most native speakers of English can recognize the social or regional origins of others on the basis of linguistic cues such as accent, intonation, etc. They can also recognize such things as colloquial, deferential and authoritarian styles of speech, they can tell whether a particular remark is socially ~~factually~~ appropriate, and so on. Although there are certain rules and principles which make such judgments possible, we do not want to say that these judgments are evidence of linguistic knowledge, in our sense. Strictly linguistic knowledge, then, will reduce to knowledge of those principles of sentence-construction and interpretation which do not fall together with wider generalizations about human non-linguistic behaviour.

3.2 Intuitions

Native speakers of English have at their disposal a vast amount of fairly uncontroversially linguistic knowledge. For example, they know when two words rhyme; they know when two sentences are paraphrases; when a single sentence has two different meanings; when a change in word-order results in a change of meaning, and when it merely results in ungrammaticality. The aim of writing a grammar is to give a ~~full~~ account of all these facets of linguistic knowledge. How do we go about doing this?

Because, as we have already seen in the previous section, ~~linguistic~~ knowledge lies well below the level of consciousness, direct questioning of speakers of a language is likely to yield little reliable information about their linguistic knowledge. If we approach a native speaker ~~English~~ and ask him whether (1) and (2) below have the same syntactic structure, there is not the slightest chance of predicting what he will say:

1. I am leaving, for he makes me nervous
2. I am leaving, because he makes me nervous

He may have his own consciously worked out grammatical theory, or he may have no conscious idea of syntactic structure at all. In either case, there is no particular reason for believing the answer he actually gives us, and his knowledge of language will have to be investigated by rather more indirect means.

Whatever their conscious views on grammatical theory, most native speakers will be able to provide us with evidence of the following kind:

they will be able to tell us that each of the following sentence pairs has one grammatical member and one ungrammatical one:

3. (a) It was because he was nervous that he left
(b) *It was for he was nervous that he left
4. (a) Because he makes me nervous, I'm leaving
(b) *For he makes me nervous, I'm leaving
5. (a) Did you leave because he made you nervous?
(b) *Did you leave for he made you nervous?

The native speakers of English clearly have some linguistic knowledge which enables them to distinguish for-clauses from because-clauses, in spite of their similarity in meaning. An adequate grammar must provide some way of replicating this linguistic knowledge. For our present purposes it is not the actual rules which explain the speaker's linguistic judgments that are of interest. What is interesting is that such judgments give us good ground for imputing a particular type of linguistic knowledge to the speaker: in this case, knowledge of syntactic structure.

What we have just been suggesting is that one good way of investigating linguistic knowledge is to ask the native speaker for judgments about the sentences of his language: not directly but indirectly, by eliciting a range of judgments about, say, grammaticality, ungrammaticality, paraphrase and ambiguity, and then constructing a set of rules which will account for these judgments. The relevant judgments are generally called *intuitions*.

It is often felt, by both philosophers and linguists, that reliance on native-speakers intuitions is an extremely suspect part of Chomskyan theory: intuitions are 'unscientific', not amenable to direct observation, variable and untrustworthy. It seems to us that this is not a theoretical objection: discovering linguistic rules seems to us exactly analogous to discovering the rules of an invented, uncodified children's game by asking the children concerned whether certain moves are permissible or not, good moves or not, dangerous or not, and so on. How else would one go about discovering unwritten rules?

This is not to say that there are not considerable practical difficulties in deciding how much reliance should be placed on native-speaker intuitions on any given occasion. We can only argue for caution in dealing with native-speaker intuitions.

3.3 Competence and Performance

English sentences may usually be assessed on two quite different levels. First, do they conform to the principles of correct-sentence formation in Standard English: are they grammatical? Second, on an actual occasion of utterance, how appropriate, felicitous or comprehensible would they be: are they acceptable? The first level of assessment is a linguistic one; the second involves knowledge and abilities that go well beyond the purely linguistic. Within Chomskyan theory, the first is called the level of competence, the speaker's knowledge of language, and the second is called the level of performance, the speaker's use of language. The study of competence, then, is the study of grammars which are psychologically real, and which contain all the knowledge, whether innate or acquired, possessed by a given speaker of the language. The study of performance, by contrast, is concerned with the principles which govern language use: here such dimensions as appropriateness to context, ease of comprehension, sincerity, truth and stylistic euphony all play a part. Performance would have to include, as competence would not, some account of the principles by which sentences are actually produced and understood – and hence occasionally misproduced or misunderstood. Competence, therefore, is the innate linguistic knowledge that a native speaker has that enables him to produce and understand utterances in his language, while performance is what the native speaker does with this knowledge, that is how he uses the language in actual situations and contexts. Like the notion of intuition, the competence-performance distinction seems to us a theoretically valid one, although like the notion of intuition, it raises certain practical difficulties.

3.4 Types of Linguistic Knowledge

We have argued that a language is a set of sentences described by the rules of a competence grammar, and that knowing a language is, essentially, knowing these rules. In fact, a complete description of linguistic knowledge must invoke a number of different types of rule, corresponding to the different types of linguistic knowledge that speakers control.

Just as the speaker's ability to detect and correct mistakes indicates the existence of linguistic rules, so his reactions to mistakes of different kinds indicate the existence of different types of linguistic rule. Consider the following examples:

6. (a) John's car is old
 (b) ? John's car is not a car
 (c) *John's car does be blue one

- (d) *John's rca is dlo
 (e) ? John's car is made of straw

Whereas 6(a) is fully acceptable in every respect, all of 6(b)-(e) are odd in some way. 6(b) is contradictory and makes no consistent assertion, although it is perfectly well-formed in all other respects. 6(c) is meaningful somehow, but is syntactically ill-formed, since it contains a sequence of words, does be, which does not occur in Standard English. 6(d) is defective in neither of these ways, but includes a word rca which begins with a sequence of consonants that is impossible in English. 6(e), while admittedly peculiar, is not in the same category as any of the three preceding examples. It appears to be grammatically well-formed, and unless we stipulate arbitrarily that a defining criterion for cars is that they not be made of straw, it displays no oddity of meaning either. In this case, the apparent deviance is not linguistic at all, but is due solely to knowledge of the world. Thus we can imagine situations where 6(e) would cease to be odd at all, for instance in a fairy story, or in a community with an advanced technology for hardening straws for car manufacture.

The intuitive differences among these sentences are reflected in the typical reactions to them of native speakers. 6(b) is likely to be met by a blank and baffled 'what?' 6(c) is likely to be corrected to (7):

7. John's car is a blue one
 6(d) is likely to evoke a request for the repetition of the offending non-word; and 6(e) will probably be greeted with incredulity.

The various examples given here indicate that we probably need to make separate statements of well-formedness reflecting knowledge of meaning (or semantics), knowledge of pronunciation (or phonology), and knowledge of what is traditionally referred to as grammar (or syntax).

Despite this separation of linguistic knowledge into different types, there is one domain in which all of them converge: the lexicon or dictionary. While a language cannot be considered simply as a set of words, but must also contain principles of sentence-formation and interpretation, it is obvious that knowledge of a language includes knowledge of its vocabulary.

4.0 CONCLUSION

In this unit, we have tried to explain some aspects of the knowledge of language. These aspects are universal and everyone who knows a language knows them albeit unconsciously.

SELF ASSESSMENT EXERCISE

1. Mention two ways by which linguistic theorists try to explain acquisition of language.
2. What do you understand by intuition?
3. Do you agree that all knowledge about language is linguistic?

Give reasons

5.0 SUMMARY

In this unit, you have learnt the following:

- Linguistic and non-linguistic knowledge;
- What is meant by intuitions;
- What competence and performance mean; and
- Types of knowledge of a language.

6.0 TUTOR-MARKED ASSIGNMENT

1. What do you understand by non-linguistic knowledge?
2. Explain the difference between competence and performance.

7.0 REFERENCES/FURTHER READINGS

Freidin, Robert. (1994). *Foundations of Generative Syntax*. Cambridge, Mass: MIT Press.

Huddleston, Rodney. (1976). *An Introduction to English Transformational Syntax*. London: Longman.

Radford, Andrew. (1988). *Transformational Grammar*. Cambridge: CUP.

Smith, Neil & Deirdre Wilson. (1979). *Modern Linguistics: The Results of Chomskyan Revolution*. Bloomington: Indiana Univ. Press.

UNIT 2 ASPECTS OF PARAMETRIC VARIATIONS

In this unit, we shall discuss some aspects of parametric variations: variations at the sound level and variations at the sentence level.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Variation at the Sound Level
 - 3.2 Variation at the Syntactic Level
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

Universal grammar studies the conditions that must be satisfied by the grammar of all languages. It consists of two major aspects – the core and the periphery. The core aspect identifies all the elements and structures which are common to all languages, while the peripheral aspect refers to other elements and structures which are peculiar to languages. This distinction goes to justify the fact that much of the knowledge of a language is not learned, but is an intrinsic part of the human mind. If some knowledge of a language is built into the human mind, it must therefore be universal. On this view, languages are not all that different, deep down, and what we may perceive as profound variations are just minor ones: different words, different sets of sounds, different word-orders, and so on.

In this unit, we shall discuss two aspects of variation found in languages – sound variation and syntactic variation.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain what is meant by parametric variation
- know the various types of parametric variations
- explain how languages can vary.

3.0 MAIN CONTENT

3.1 Variation at the Sound Level

Languages have a lot of things in common. We can start considering these by looking at the way languages are acquired. We have shown that humans are endowed with the ability to acquire any language spoken within their environment. We refer to this ability as the Language Acquisition Device (LAD). This device makes it possible for a child to acquire the language spoken around him/her even if the language is not that of the parents. Since children acquire languages the same way, it is a universal process. Also, languages share categories such as Nouns, Verbs, etc.

Apart from what languages share, there are things that vary across languages, one of them is sound system and sound pattern. Although there are sounds that English language shares with most Nigerian languages, there are also sounds that are found in English but not in Nigerian languages. Consider, for example, the sounds phonetically represented as [θ] – voiceless and voiced dental fricatives (alphabetically represented as th). These sounds are found in English language but not in Nigerian languages. On the other hand, Nigerian languages have the sounds alphabetically represented as kp and gb. *These sounds do not exist in English. We thus see that languages can vary in their sound system.*

Languages can also vary in the way the sounds are patterned to form words. Consider, for example, the sounds /p,a,t/ which are found in English language. Although these sounds are also found in most Nigerian languages, the way English arranges them to form words differs from the way Nigerian languages may arrange them to form words. From these sounds, English may form the words pat, tap, apt. Most Nigerian languages may not form words with them in this way. Thus, the way sounds are arranged to form words differ in languages.

Take another example. English may have three consonants before a vowel in its syllable structure (CCCV). Such words like scream, splash, stream reflect this. *Such consonant – cluster combinations may not be possible in most Nigerian languages.*

From all these we see that although languages may have some sounds in common, they may also differ in the types of sounds and the way in which those sounds are combined to form words.

3.2 Variation at the Syntactic Level

We have seen above that languages vary in their sound system and sound pattern. Languages also vary at syntactic level. Popular syntactic categories in English include Noun, Verb, Adverb, Adjective, Preposition, Conjunction and Determiners. Some languages may not have all of them. Also, the way these categories are used in English language may differ from the way they are used in other languages.

One characteristic of English language is that it is a strict word-order language. This implies that the words in an English sentence must be strictly ordered in a particular way. Consider the sentence:

1. He bought the book yesterday.

Sentence (1) is an acceptable English sentence because the words are arranged in a way permissible in English. However, sentence (2) would not be an English sentence because of the way the words are arranged. Although (2) is made up of English words,

2. *He yesterday the bought book..

It is not an English sentence because the words are not ordered in the way they should. Unacceptable words or sentences are usually starred.

Sentence (1) can be analysed as Noun (He) + Verb (bought) + Determiner (the) + Noun (book) + Adverb (yesterday) or as Noun + Verb + Object + Adverb (NVOA). This is an acceptable order of elements in an English sentence. Sentence (2) does not follow this order and is thus unacceptable as English does not have *Noun + Adverb + Determiner + Verb + Noun word-order.

On the other hand, although some languages may have the syntactic categories that exist in English, they may not share the English ordering of these categories. Consider these examples:

English: The man is tall
 (Det Noun Verb Adj)
 Igbo: Mmadu ahu di ogologo
 (Noun Det Verb Adj)

From these examples, we notice that in English determiner precedes the Noun, while in Igbo, it follows the Noun. Let us consider one more example:

English: John read the book
 Noun Verb Det. Noun
 Japanese: John – ga hon – o yonda
 Noun Nom. Noun Acc. read past

John the book read
 ‘John read the book’

We observe from the above example that in English, the direct object (the book) follows the verb while in Japanese it precedes the verb. Thus, in English, everything in the verb phrase appears to the right but in Japanese everything in the Verb Phrase appears to the left. English is, thus, Verb-initial while Japanese is Verb-final. In parametric variation this phenomenon is referred to as Head Parameter.

From these examples, we see that languages vary in the way elements are ordered in sentences. Syntactic categories in languages, therefore, vary. The differences are peculiar to languages and this is referred to as *periphery*.

4.0 CONCLUSION

We have seen in this unit that languages are similar and different in particular respects. The core elements comprise the elements languages have in common while peripheral elements comprise elements that are different in languages. The features that are not shared are said to be *marked because they are not replicated in other languages*.

5.0 SUMMARY

In this unit, you have learnt that:

- universal grammar consists of two major components: the core and the periphery;
- languages are similar in some respects and different in other respects;
- features shared by languages are referred to as the core while those that are different are referred to as the periphery.

6.0 TUTOR-MARKED ASSIGNMENT

- (a) Explain what you understand by ‘language variation’.
- (b) Discuss two ways by which languages could vary.

7.0 REFERENCES/FURTHER READINGS

Culicover, Peter W. (1997). *Principles and Parameters: An Introduction to Syntactic Theory*. London: OUP.

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UNIT 3 RULES AND NOTATIONAL CONVENTIONS

In this unit, we shall lay the groundwork for syntactic analysis within generative grammar. It deals with the Phrase Structure rules, Transformational rules and notational conventions.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 What are Rules?
 - 3.2 Phrase-Structure Rules
 - 3.3 Transformational Rules
 - 3.4 Notational Conventions
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

Our long-range goal is to provide a description of the native speaker's linguistic knowledge and to explain how language is acquired. In the previous unit, we described the linguistic knowledge of an ~~indiv~~ ^{indiv}idual speaker, what constitutes linguistic knowledge and how such knowledge is acquired.

We noted that there is something about human beings that permits them to learn languages, and something about human languages in general that permits them to be learned by human beings. In this unit, we shall discuss what it is that speakers learn when they learn a language.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- know what syntactic rules are and how to apply them in the analysis of language
- know Phrase Structure and Transformational rules
- know the notational conventions used in the Transformational generative model.

3.0 MAIN CONTENT

3.1 What are Rules?

Rules form an important aspect of Transformational Generative Grammar (TGG). Rules are used in linguistic analysis to capture the way native speakers acquire and use their language. A competent native speaker of a language does not simply string words together randomly because he recognizes those words as the words of his language, but adheres to specific rules of the language that make his utterances fall in line with how other speakers use them. These rules not only make it possible for him to produce the correct sentences of his language, but also make his sentences acceptable by other native speakers. These rules are, therefore, generalized descriptive statements that summarise the way acceptable sentences are produced in a language. They predict and reflect the native speaker's competence of his language.

3.2 Phrase Structure Rules

The basic idea in Chomsky's Transformational Generative grammar is that sentences of a language can be divided into constituent parts such that each word in a sentence is a constituent of some phrase that, in turn, is ultimately a constituent of the sentence. The constituent structure of sentences is determined in part by phrase structure rules of the grammar.

In TGG, finite (i.e. limited) rules are used to generate infinite (i.e. unlimited) sentences in a language. By 'generative' we mean 'to specify' or 'to account for' all the grammatical sentences in a language. Phrase Structure (PS) rules generate constituent structure representations for sentences in a language. Thus, a set of PS rules can generate many different sentences in a language. To see how PS rules can do this, consider the following set of PS rules needed to generate sentences like:

The man likes the car

1. (a) S NP VP
- (b) VP V NP
- (c) NP Det N

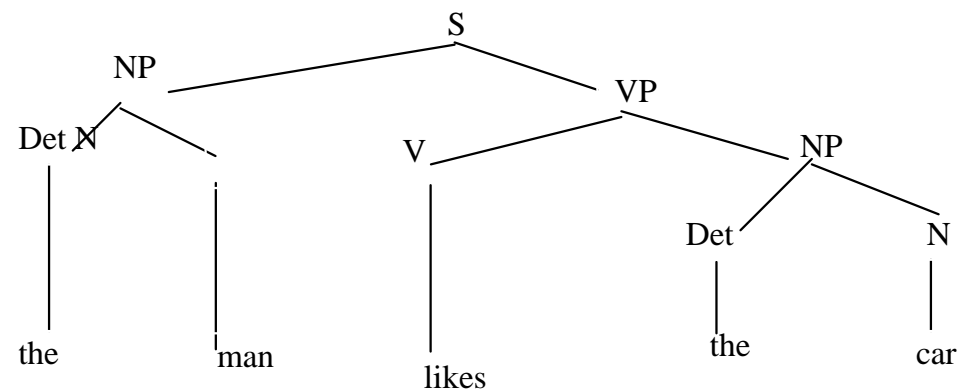
Phrase structure rules are a subclass of rewrite rules where a single syntactic category is 'rewritten' or 'expanded' as a string of categories (including the string consisting of a single category). The arrow should be interpreted 'rewrite as' or 'expand as'. Thus, rule 1(a) above should be read as 'the category S rewrites as the string consisting of an NP followed by a VP'. The rules apply as follows. Beginning with an initial symbol S, the rules apply one at a time until each phrasal category (e.g.

S, NP, VP) has been rewritten as a string of lexical categories (e.g. Det, N, V).

The rules in (1) allow several distinct but equivalent derivations – two of which are given in (2).

2. (a) S
 NP VP (by {1a}) NP VP (by {1a})
 NP V NP (by {1b}) Det N VP (by {1c})
 Det N V NP (by {1c}) Det N V NP (by {1b})
 Det N V Det N (by {1c}) Det N V Det N (by {1c})
2. (b) S
 NP VP (by {1a}) NP VP (by {1a})
 NP V NP (by {1b}) Det N VP (by {1c})
 Det N V NP (by {1c}) Det N V NP (by {1b})
 Det N V Det N (by {1c}) Det N V Det N (by {1c})

The derivations 2(a) and 2(b) are equivalent in that the same phrase structure rules are applied to the same categories in each case. They differ in the order in which the rules are applied: rule (1b) precedes rule (1c) in (2a), whereas rule (1c) precedes rule (1b) in (2b). As a result, derivation (2a) contains a string NP-V-NP that is not contained in derivation (2b); and conversely, (2b) contains a string Det-N-VP that is not contained in derivation (2a). The set of strings from all equivalent derivations is called a phrase marker. The phrase marker is a set of strings that assigns a phrase structure interpretation to a terminal string (the string of lexical categories that terminates the phrase derivation). The phrase marker of the terminal string Det-N-V-Det-N is the set of strings S, NP-VP, NP-V-NP, Det-N-VP, Det-N-V-NP, NP-V-Det-N, Det-N-V-Det-N. This phrase marker can be represented as a tree diagram:



3.3 Transformational Rules

Phrase Structure rules are not powerful enough to provide an adequate description of the syntax of English, and the inadequacies can be overcome by introducing rules of a new kind, called transformations. A phrase structure grammar consists exclusively of PSG rules and assigns to each sentence a syntactic structure in the form of a single **Phrase Marker** (except in the case of syntactically ambiguous sentences),

whereas a Transformational Grammar consists of a set of PS rules plus a set of transformational rules and assigns to each sentence a series of phrase markers, varying in the level of abstraction involved.

A context-free PSG could account for the differences between transitive and intransitive verbs but could not at the same time express the significant likeness between them. For example, consider this active/passive pair:

1. The dog frightened the boy
2. The boy was frightened by the dog

There is a systematic syntactic relation between (1) and (2) that cannot be expressed by means of PS rules. The highly elementary apparatus available in PSG does not suffice to handle this type of relation. Since PS rules do not allow for operations involving the movement of an element from one part of the structure to another: to formalize this kind of operation we shall need transformational rules.

There are various types of Transformational Rules. There are inversion rules, movement rules, deletion rules, insertion rules, and so on. (Detailed discussion of these rules will be taken up in Module 4). Phrase structure rules and transformational rules will generate an infinite number of sentences in any language.

Transformations can perform many functions as mentioned above:

- (i) they can move elements from one position to another in a sentence. Consider examples (1) and (2) above. Notice that in (2), the subject NP has been moved to the object position and vice versa.
- (ii) Transformations can insert new elements into a structure. In example (2) above, *was* has been inserted into the sentence to generate the passive sentence.
- (iii) Transformations can substitute an element in a structure. Consider examples (3) and (4) below.

3. Sam loves Sam
4. Sam loves himself

The second Sam in (3) is replaced by himself in (4). We call this *reflexivization transformation*.

- (iv) Transformations can invert the order of elements in a structure. This is evident when a declarative sentence is changed into a Yes-No question as in (5) and (6).

5. Jane can sing
6. Can Jane sing?

In the above, (6) is derived by moving the modal auxiliary to the initial position in the sentence.

(v) Transformations can also delete elements in a structure. This is also called gapping. Consider examples (7) and (8):

7. Ngozi peeled yam and Ngozi cooked it
8. Ngozi peeled yam and cooked it

Example (7) represents the deep structure. The noun Ngozi in the two conjoined clauses refers to the same person, i.e. the two noun phrases are coreferential. In this case, the second Ngozi becomes redundant, and it is deleted by a transformation on the basis of coreferentiality.

In syntax, it is usually the case that rules are ordered. By rule ordering we mean the logical and effective application of rules in the derivation of structure. For example, a rule can serve as an input or can produce an input for other rules to apply. In other words, the first rule must apply to produce the structure for other rules to apply. So, the rules are ordered.

Although it is possible for more than one rule to apply to a structure, rules can also be recursive. This is possible if the symbol to the left of the arrow also appears to the right of the same arrow as in (9) below:

9. NP NP S'

In this case, if this is the only rule we have, then, any time we expand the NP to the left of the arrow, we will get another NP S' to its right. When the first NP after the arrow is expanded, we will get the same result. Hence we have circularity in the application of the rule. This rule is, therefore, recursive since it produces indefinite number of rules in a circular manner.

We, thus, see that transformational rules are powerful, and when used with phrase structure rules, indefinite number of sentences can be accounted for in a language.

3.4 Notational Conventions

In Generative Grammar, various notational conventions are used. These notations refer to the set of symbols which are introduced into the analysis to facilitate the formulation of a statement, especially, in the form of a rule.

The syntactic rules describe the sentences of a language in terms of syntactic categories. A syntactic category is a group of words in a given language that can replace one another in any sentence of the language whatsoever without affecting grammaticality. We assume that each word of English will be assigned to its correct syntactic category in the lexicon, thus, boy, cat and toy are nouns, collect, destroy and disturb are verbs, purple, funny and good are adjectives, a, an and the are determiners, and so on. We can abbreviate the categories noun, verb, adjective and determiners by N, V, Adj and Det, respectively. Observe that it is now possible to talk about categories rather than about individual words. The fact that the boy destroyed a toy is a grammatical sentence of English could be stated in our grammatical description of English; but this would be an extremely cumbersome and unrevealing approach to take in general, owing to the fact that we would have to list all of the other grammatical sentences of English in precisely the same way. The list would have to include sentences like *The girl destroyed the toy, A girl destroyed a toy, The man met the woman, A cow ate the hay, and so on, all of which display the identical pattern Det, N, V, Det, N*. Without having access to these categories, however, it would be impossible for us to explicitly represent the fact that sentences that display this pattern are grammatical sentences of English. The problem is further compounded by the fact that the number of grammatical sentences of any language is infinite.

It is clearly impossible to construct an exhaustive list of the grammatical sentences of any language when there are an infinite number of them. The only hope of even beginning to deal with the question of what constitutes a grammatical sentence of the language is to state the conditions under which strings of words are grammatical in terms of the categories of the words in the string. We can, thus, state our observations in terms of rules. We will use notations in which such rules can be expressed in precise ways.

The symbol S represents the notion 'sentence of a language'. The symbol \rightarrow means 'may be of the form' or 'rewrite as'. In the grammar of English, then, the fact that a grammatical sentence may be of the form Det N V Det N is expressed as the following formula:

10. $S \rightarrow \text{Det N V Det N}$

Such a formula is called a phrase structure rule. It is not a rule in the sense that it says what a grammatical sentence must look like, but in the sense that it says what a grammatical sentence can look like. The rules are thus descriptive and not prescriptive. There will be other rules specifying what other sentences can look like. All of these rules together specify what sentences look like.

Other notations employed include the following:

- * asterisk: indicates a deviant sentence
- () parentheses: enclose optional elements in a rule
- { } braces: enclose alternative elements in a rule
- [] square brackets: enclose syntactic features
- / oblique: is used in context-sensitive rules
- double arrow: is used in transformational rules
- zero: indicates the absence of any element

4.0 CONCLUSION

In this unit, we have tried to provide some introductory information that will prepare you for syntactic analysis. We have discussed what rules are, and provided illustrations of what Phrase Structure and Transformational rules are, and how they operate. We have also given some notational conventions that are used in current syntactic analysis.

It is your duty to know these so that it will be easier for you to follow subsequent discussions.

5.0 SUMMARY

In this unit, you have been taught to:

- know what syntactic rules are;
- know what Phrase Structure and Transformational rules are, and how they operate; and
- know the notational conventions used in syntactic analysis.

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention and explain two differences between Phrase Structure *rules* and *Transformational rules*.
2. (a) What are the functions of transformational rules?
 - (b) What transformational rules have applied to derive the following sentences?
 - (i) The goal was scored by Kanu
 - (ii) John loves himself
 - (iii) Did the teacher come?
 - (iv) Will you finish the work?
 - (c) Explain what you understand by 'rule ordering'.

7.0 REFERENCES/FURTHER READINGS

Culicover, Peter W. (1982). *Syntax*. 2nd Edition. New York: Academic Press.

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UNIT 4 ENGLISH PHRASE STRUCTURE RULES

In this unit, we shall discuss the English Phrase Structure rules. In the previous unit, we discussed generally how phrase structure rules function and how they help, in part, to determine the constituent parts of a sentence. In this unit, we shall limit our discussion to the function of phrase structure rules in English.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Phrase Structure Rules of English
 - 3.2 Dominance Relations
 - 3.3 Lexical Insertion
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

We have mentioned earlier that Phrase Structure rules perform important functions: they state the constituents that make up a sentence, and they tell us in what basic order the constituents are to be arranged. In the previous section, we considered some phrase structure rules and saw how we can use them to generate an infinite number of sentences of a language. This is possible because the rules allow several distinct but equivalent derivations of sentences.

In this unit, we shall concentrate on English phrase structure rules and their application to the structure of English.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- know what English phrase structure rules are
- how they apply in the derivation of English sentence structure.

3.0 MAIN CONTENT

3.1 The Phrase Structure Rules of English

We can best begin the description of English phrase structure rules by taking a very simple example of a phrase structure of grammar, such as is given in (1) below:

1. (i) S NP VP
 - (ii) VP V NP
 - (iii) NP Det N
 - (iv) Det the
 - (v) N cat, mouse
 - (vi) V catch

This grammar consists of six phrase structure rules. ('Phrase structure' will henceforth be abbreviated 'PS'). Each rule is an instruction to 'rewrite' the symbol on the left of the arrow as the string of one or more symbols given on the right. The symbols used in the grammar are divided into two discrete sets (apart from the arrow): non-terminal symbols occur on the left of some rule or rules, terminal ones do not. The terminal symbols represent morphemes, the non-terminal ones syntactic categories (with the following abbreviations: S = sentence, NP = noun phrase, VP = verb phrase, V = verb, Det = determiner, N = noun).

Such rules permit the construction of sentences in a purely mechanical way in accordance with our goal of complete explicitness. The procedure is illustrated in (2), where the succession of 'strings' of symbols constitutes what is called a PS derivation.

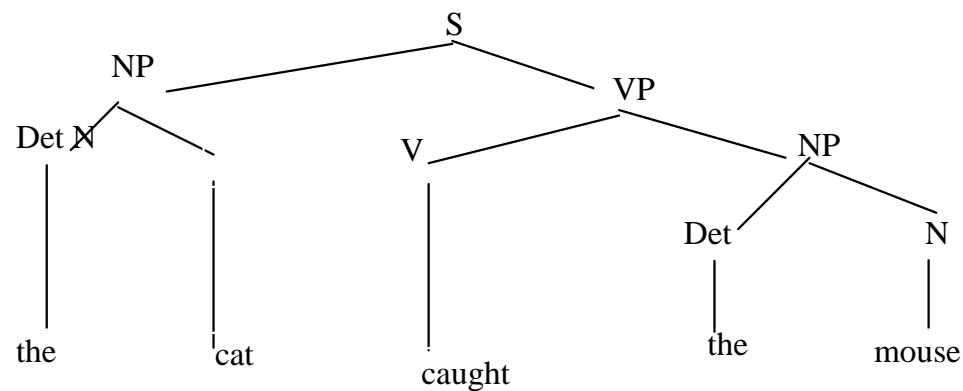
2. (i) #S#
 - (ii) # NP VP#
 - (iii) #NP V NP#
 - (iv) #Det N V NP#
 - (v) #Det N V Det N#

In the above, # indicates sentence boundary. S is designated as the initial symbol of the grammar, reflecting the fact that we are concerned with devising a grammar to generate sentences. Thus all PS derivations generated by this grammar (and others we shall consider) have #S# as the first line. Each subsequent line in a derivation derives from the one preceding it by one application of a PS rule. Line (2ii) derives from line (2i) by rewriting S as NP followed by VP according to rule (1i); line (2iii) derives from (2ii) by rewriting VP as V NP by rule (1ii), the initial NP of (2ii) being simply copied down unchanged into line (iii), and so

on. In moving from one line to the next we replace just one symbol, and copy the remainder unchanged. A derivation is complete, or terminated, when its last line contains no non-terminal symbols. The last line of the derivation can then be converted into the appropriate phonological representation by means of morphophonemic rules corresponding to *The cat caught the mouse.*

In addition to generating a set of sentences, such a grammar automatically assigns a structure to each. For example, the structure assigned to the sentence *The cat caught the mouse* by grammar (1) may be represented in a tree diagram (3):

3.



This kind of representation is known as a phrase marker (henceforth 'PM'). The phrase marker is a set of strings that assigns a structure interpretation to a terminal string (the string of lexical categories that terminates the phrase structure derivation).

Apart from using a tree diagram, phrase markers can be represented by labeled bracketing. In a labeled bracketing, whole constituents are enclosed in square brackets. Such constituents are labeled according to the name of the constituent in which they are enclosed. It should be noted that once a bracket is opened, it must be closed otherwise the analysis will be incorrect. Consider our example (3).

3. The cat caught the mouse

[s[NP[The] [cat]] [VP[caught] [NP[the] [mouse]]]]
 Det N v Det N

The grammar discussed so far can generate sentences such as 4(a), (b), (c) but not 5(a), (b), (c):

- 4. (a) The man has the book
- (b) John passed the exam

(c) Fali owns a truck

- 5. (a) The man will have the book
- (b) John may pass the exam
- (c) Fali can own a truck

Is it possible to make up a new rule that will generate the sentences in (5)? Indeed it is, and this new rule is formulated as (6):

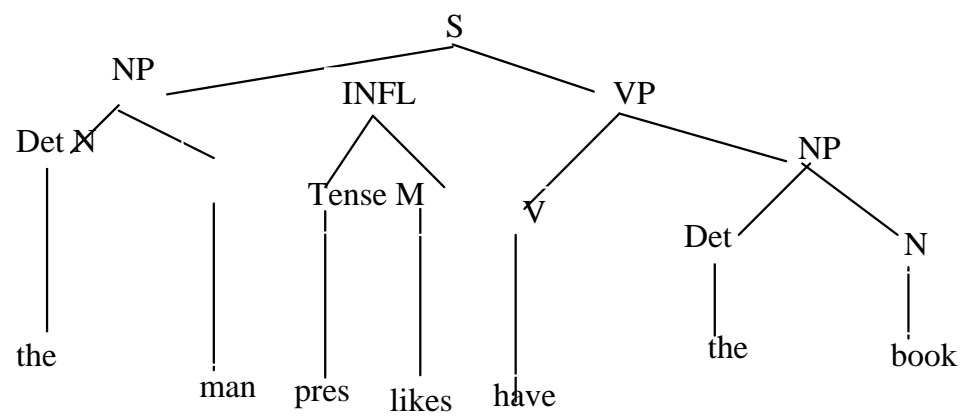
6. S NP INFL VP

As in (1) above, S = sentence, NP = noun phrase, INFL = inflection (this is the same as Aux = auxiliary used in some texts), VP = verb phrase. Each of these phrasal categories are broken down into its component parts as illustrated in (1). As can be observed, the only difference with (1) is the addition of the phrasal category INFL. This can be expanded to give (7):

7. INFL Tense (M) (have + en) (be + ing)

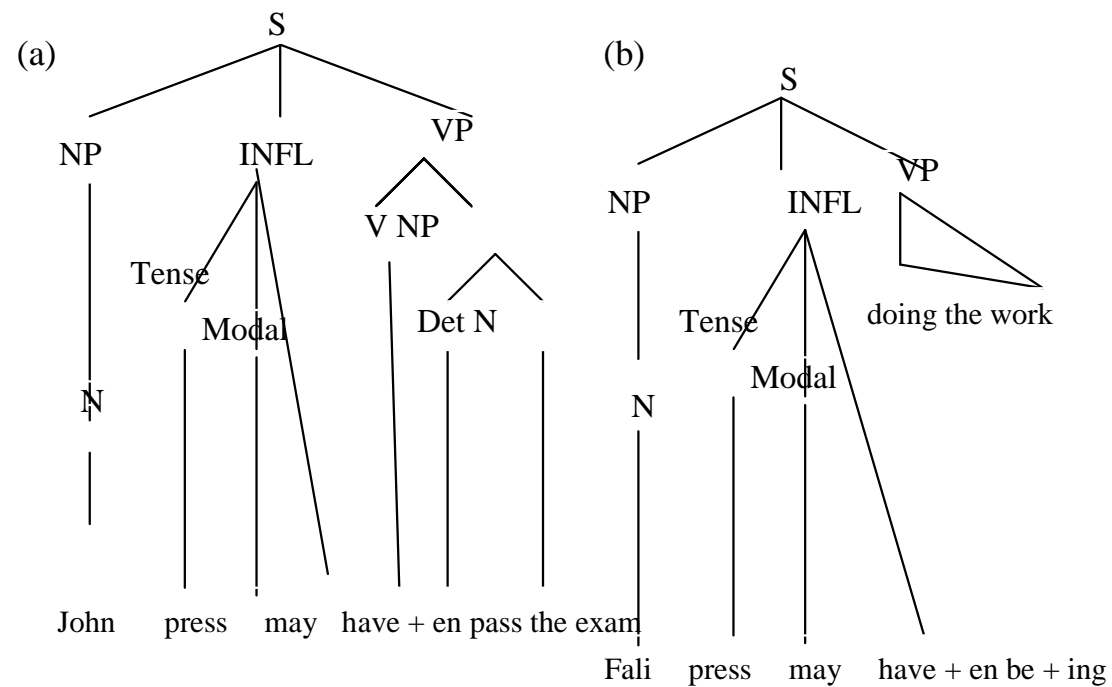
In (7) tense could be present or past, M = modal (will, would, can, could, shall, should, may, might, etc). Brackets still indicate optionality. We can, thus, represent 5(a) in a tree diagram as follows:

5. (a) The man will have the book



Note that have + en and be + ing are optional elements, hence they are not represented on the tree. If they are present as in 8(a) and 8(b), they will be represented as shown below:

- 8. (a) John may have passed the exam
- (b) Fali may have been doing the work



After the transformations have applied, we now have the surface structure derivations.

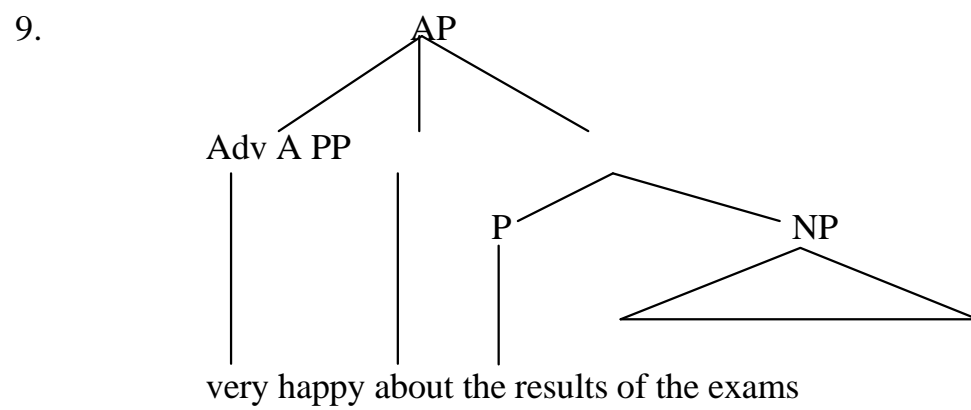
3.2 Dominance Relations

Before we consider how lexical items are introduced into phrase markers, it will be useful to discuss the relations between the elements in phrase markers. The relation between a category and its constituents is called dominance. That is, a category dominates all of its constituents. For example, the category VP in (3) dominates the category V, NP, Det and N. However, the relation between VP and NP is different from the relation between VP and N. VP immediately dominates NP, but it does not immediately dominate N since another category, NP, intervenes between VP and N. We may say that a category X dominates category Y when X dominates Y and every other category dominating Y dominates X. When X immediately dominates Y, then Y is an immediate constituent of X.

In example (3) above, both NP and N are constituents of VP, but only NP is an immediate constituent of VP. Dominance relations between categories in a structural description determine the hierarchical *structure of sentences*. If two categories in a phrase marker are not in dominance relation, then they are in a precedence relation, for example, the subject NP in (3) precedes VP. Precedence relations determine the linear (left-to-right) ordering of elements in the phrase marker and hence determine the linear structure of sentences.

In terms of three diagrams, two kinds of branching are possible: unary branching (where a category immediately dominates only one constituent) and n-ary branching (where a category has two or more immediate constituents). When a category has just two immediate constituents, it constitutes an instance of binary branching. A node is a point on the phrase marker where there is a category label. This category label can be phrasal (e.g. NP, VP) or lexical (e.g. N, V, Adj.) A path is the line that links a node to the other. In (3) the line from NP to N is a path, and so is VP to V or VP to NP. As we shall see later, the branching property of structural descriptions plays an important role in defining principles of syntactic theory.

Some phrasal categories are defined in terms of the lexical categories they contain (e.g. VP in terms of V). The lexical category stands as the *head of its phrasal category, and the phrasal category is designated as the phrasal projection of the lexical category.* Whether or not every lexical category projects its own phrasal category is open to discussion. We will assume, however, that it is not the case. For example, Det in (3) does not project its own phrasal category. Rather, it is a lexical constituent of the phrasal projection of N (=NP). A similar relationship holds between the adverb *very* and the adjective *happy* in the adjective phrase (AP) in *very happy about the results of the exams* as represented in (9).



Lexical constituents of phrasal projections like Det and Adv act as modifiers of the lexical head of the projection. Each can be referred to as a specifier of the lexical head it modifies. Phrasal constituents of phrasal projections are designated as complements of the phrasal head. Thus, in (3) the object NP is a complement of V; in (4) the PP is a complement of A, and the NP is a complement of P.

In general, the non-head constituents of phrasal projections are optional. For example, NP's can lack determiners, as in *Francis admires Chidi.* Parentheses are used to express the optionality of constituents; for

example, the notation in (10) indicates that Det is an optional constituent of NP.

10. NP (Det) N

Similarly, the fact that some verbs occur without NP objects can be expressed as in (11):

11. VP V (NP)

Braces are used to collapse rules where a disjunctive choice of constituents is involved. For example, English VP's may be of the form: V-NP-NP (told John a story) or of the form, V-NP-S (told John Ngozi was leaving). Since English does not have VP's of the form V-NP-NP-S (or V-NP-S-NP), it appears that the occurrence of a second NP complement in a VP precludes the occurrence of an S complement, and conversely. This disjunction can be represented by placing NP and S in braces to indicate that only one can be chosen in the expansion of VP, as shown in (12):

12. VP V (NP) $\left[\left[\text{NP} \right] \right]_S$

3.3 Lexical Insertion

So far, we have discussed the formalism for rules that constitute structure for sentences. We must now relate constituent structures to sentences – that is, strings of words in a language. This relationship is established at the level of lexical categories and lexical items. In what follows, we will see that a lexical item is a ~~justification~~ instantiation of a lexical category – from which it follows that a lexical item is not a constituent of a lexical category.

A lexical item consists of three separate parts that concern ~~meaning~~ meaning and structure. Consider, for example, the kinds of information that would be contained in a lexical entry for man.

13. Man

mæn
+N
+ animate
- plural
+ human
+ masculine
”

The phonemic transcription (/mæn/) gives a representation of the lexical item man in terms of its sound. The [+N] is a categorial feature indicating that man belongs to the class of nouns. Categorial features provide syntactic information about lexical items. Finally, there is a group of features that relate to the semantic interpretation of man. Thus, *man is [-plural] as opposed to men, which is [+plural]; [+masculine] as opposed to woman, which is [-masculine]; [+animate] as opposed to plant, which is [-animate]; and [+human] as opposed to bull, which is [-human]*. Representations such as (13) show that lexical items can be represented, at least partially, in terms of sets of features that relate them to their phonological, syntactic, and semantic forms.

Lexical insertion can be formulated as an operation that substitutes a fully specified lexical feature matrix (the lexical item) for a partially specified matrix (the categorial feature alone). So the derivation of a sentence containing the lexical item man would include an operation that substitutes (13) for a [+N] in the phrase marker.

Lexical insertion of verbs is sensitive to syntactic context. Thus, a verb like sleep cannot be inserted into a phrase marker where V is followed by an object NP as in (14b); nor can a verb like mention be inserted into a phrase marker where V is not followed by an object NP as in (15b). In the case of put, V must be followed by both an object NP and a PP as in (16a):

14. (a) Mary slept
(b) *Mary slept the room
15. (a) Mary mentioned the book
(b) *Mary mentioned
16. (a) Mary put the money in the wallet
(b) *Mary put the money

To account for this context-sensitivity of lexical insertion, the grammar must be able to distinguish among three distinct subcategories of verbs:

- (i) verbs that may not occur with an NP object (slept), (ii) verbs that must occur with an NP object (mention), and (iii) verbs that must occur with both an NP object and a PP (put). These contextual features are designated as subcategorization features.

A subcategorization feature constitutes a lexical property of a specific lexical item. When the subcategorization feature and actual syntactic context of the lexical item match, we can say that this lexical property is *satisfied*. *When they do not match, the lexical property is not satisfied*. It is the fact that the lexical properties are not satisfied that is responsible for the ungrammaticality of (14b), (15b) and (16b). The grammar

should, therefore, contain a principle that requires lexical properties to be satisfied. That is, the grammar consisting of phrase structure rules, a lexical insertion transformation, and the principle of lexical satisfaction will designate as ungrammatical any sentence containing a lexical item whose subcategorization feature does not match its actual context in a phrase marker.

4.0 CONCLUSION

In this unit, we have discussed the phrase structure rules of English. We have also tried to explain certain terms that will help you follow the discussion – dominance relations and lexical insertion. Study these rules and try to use them in generating your own sentences. It is by so doing that you will acquaint yourself of their operations.

5.0 SUMMARY

At end of this unit, you should have learnt:

- the Phrase Structure Rules of English;
- what is meant by Dominance relations;
- what is meant by lexical insertion; and
- how to use these rules in generating some English sentences.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the following terms:

- (a) phrase marker
- (b) immediate domination
- (c) lexical entry

2. Use the grammar discussed in this unit to generate the following sentences using tree diagrams:

- (a) David killed Goliath
- (b) The President can rule the country
- (c) I may visit the governor
- (d) Students own cars

7.0 REFERENCES/FURTHER READINGS

Freidin, Robert. 1994. *Foundations of Generative Syntax*. Cambridge, Mass: MIT Press.

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Radford, Andrew. 1997. *Syntactic Theory and the Structure of English*. Cambridge: CUP.

MODULE 2 THE ORGANIZATION OF THE SYNTAX OF ENGLISH

Unit 1 Lexical Categories
 Unit 2 Phrasal Categories via Merger Operations
 Unit 3 Phrase and Clause Types

UNIT 1 LEXICAL CATEGORIES

The study of syntax is concerned with the structural representation of sentences in human languages. The representation is done through the use of constituents which constitute syntactic categories. A category can be lexical (e.g. N) or phrasal (e.g. NP) which can be part of another category. In this unit, we shall discuss lexical categories.

The unit is arranged as follows:

CONTENTS

1.0 Introduction
 2.0 Objectives
 3.0 Main Content
 3.1 Lexical Categories
 4.0 Conclusion
 5.0 Summary
 6.0 Tutor-Marked Assignment
 7.0 References/Further Readings

1.0 INTRODUCTION

Language is made up of words, and these words are often grouped into classes or categories depending on their positions in sentences or constructions. All words that can appear in the same position in a given sentence or construction are said to belong to the same class or category. In this unit, we shall discuss lexical categories and show how they are represented in language analysis.

2.0 OBJECTIVES

At the end of this unit, you should know:

- what lexical categories are
- the lexical categories of English
- how they are represented in the analysis of English sentences.

3.0 MAIN CONTENT

3.1 Lexical Categories

A lexical category can be defined as a group of words which can substitute for one another in a similar position in a sentence or construction without affecting the grammaticality of the sentence in which they occur. For example, nouns can occur in subject, object or complement positions in a sentence of English. Therefore, all nouns belong to a category. In the same vein, verbs, adjectives, etc are grouped into categories based on their regular positions in sentences.

Lexical categories are determined in a string of words as in example (1) below:

1. The book is on the table

Det	N	V	P	Det	N

We thus see that lexical categories are represented as Det (Determiner), N (Noun), V (Verb), P (Preposition) and so on. We can also distinguish the following categories:

Adv (Adverb) – quickly, soon, ...
 Adj (Adjective) – good, white, ...
 Conj (Conjunction) – and, but, or, ...
 Aux (Auxiliary Verb) – be, have, ...
 Mod (Modal) – can, shall, may, ...
 Q (Quantifier) – all, every, some, ...

As can be seen from the above, quantifiers are usually distinguished from determiners.

Every lexical category often projects its own phrasal category. For example, N projects NP, V projects VP, and P projects PP. Thus, it is the lexical category that determines the phrasal category as in (2) below:

2.

	XP
	X

In (2), the lexical category X (where X represents a category variable) projects a phrasal category XP, and X is the lexical head of XP.

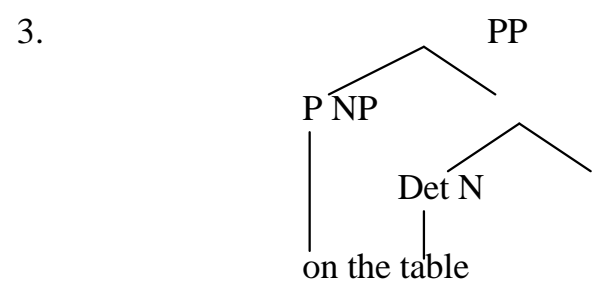
The head is very important in X-bar theory. The primacy of the head starts from the D-structure. Each head is projected from the D-structure in what is called the Projection Principle. Put informally, the principle states that each head must be represented at all levels of analysis. These levels are the D-structure, S-structure and logical form (a term approximating to meanings). Given the importance of the head, it has some unique features. First, it is the only obligatory category in a phrase and other words (its satellites) modify it. Second, it determines the structure of the words or phrases adjacent to it. For instance, a noun head in a noun phrase may not be premodified directly by an adverb. Only determiners, numerals, adjectives, etc., can premodify the noun head. Also, adjective heads do not allow premodification by nouns. This is due to the lexical properties of each head in a phrase.

Chomsky (1970, 1986) introduced binary distinctive features [$\pm N$, $\pm V$, etc) to classify the four major lexical categories:

[+N, -V] = Noun
 [-N, +V] = Verb
 [+N, +V] = Adjective
 [-N, -V] = Preposition

The binary features are meant to describe each major lexical category distinctly. Thus, [+N, -V] describes a word which has the property of nouns but not of verbs (e.g. king), while [+N, +V] describes words which have properties of both nouns and verbs. For instance, poor can be used as a noun (e.g. the poor) and as an adjective (e.g. the poor man).

Lexical categories can occupy any syntactic position in a sentence. The relationship between these syntactic categories can be graphically represented in a labeled tree diagram, where the category labels constitute nodes of the tree, and lines between nodes indicate branches. Consider the constituent structure of PP in a tree diagram in (3):



In the above, P, NP, Det and N are constituents of PP. The relationship between P and PP is quite different from the relationship between N and PP. P is an immediate constituent of PP whereas N is not. Immediate constituent can be defined as follows:

4. A category B is an immediate constituent of a category C if and only if

- (a) B is a constituent of C, and
- (b) B is not a constituent of any constituent of C.

In terms of a tree diagram, B is an immediate constituent of C if they are connected by a single line; in that case C is immediately above B in the diagram. Hence we can say that PP is a phrasal category that contains a P, a lexical category and an immediate constituent.

In conclusion, a lexical category is an immediate constituent. The lexical category is the terminal string that terminates the phrase structure derivation.

4.0 CONCLUSION

In this unit, we saw that words are grouped into classes or categories according to their regular positions in a sentence or construction. This grouping is referred to as a lexical category. The lexical categories are heads of the phrases they project, and they constitute the terminal strings of a derivation.

5.0 SUMMARY

In this unit, you have learnt:

- what lexical categories are;
- the functions of lexical categories and their relationships to the phrases they project, and
- how lexical categories are represented in a tree diagram.

6.0 TUTOR-MARKED ASSIGNMENT

1. What do you understand by 'lexical categories?' Illustrate your answer with examples.
2. Discuss two functions of lexical categories in the analysis of sentence structure.
3. List ten prepositions and use each of them to make a sentence.

7.0 REFERENCES/FURTHER READINGS

Freidin, Robert. 1994. Foundations of Generative Syntax. Cambridge, Mass: MIT Press.

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UNIT 2 PHRASAL CATEGORIES VIA MERGER OPERATIONS

In the previous unit, we said that words in natural language belong to a highly restricted finite set of word-level categories such as Noun, Verb, *Modal, Adjective, Adverb, Preposition, Determiner, etc.* These major word-level categories can be expanded into the corresponding phrasal categories by the addition of other constituents. In this unit, we shall discuss the phrasal categories projected by the lexical categories, and then go on to explain merger operations.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Noun Phrases
 - 3.2 Verb Phrases
 - 3.3 Merger Operations
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

Sentences are structured not only out of words belonging to various word-level categories, but also out of the phrases belonging to the corresponding set of phrasal categories. There exist convincing non-syntactic, syntactic and semantic evidence in support of the recognition of phrasal categories in natural language. However, we shall not go into such issues here.

Phrasal categories are phrasal entities like NP (Noun Phrase), VP (Verb Phrase), PP (Prepositional Phrase), Adv. P (Adverbial Phrase) and Adj P (Adjectival Phrase). The phrasal category is larger than the lexical category, but it is lower and immediately dominated by S which is the sentential structure as shown in (1) below:



As can be observed in (1), S is said to contain two phrasal categories: NP and VP.

In defining the phrasal category, we say that an NP is a phrase that bears a certain relation to a noun that it contains; a VP is a phrase that bears a certain relation to the verb it contains; a PP is a phrase that bears a relation to a preposition that it contains, and so on. Thus, the phrasal category is defined in terms of the lexical category contained in the phrase. The lexical category stands as the head of the phrase, and the phrasal category is designated as the phrasal projection of the lexical category. Hence we say that every lexical category projects its own phrasal category.

A sentence can be made up of a noun and a verb as in the following examples:

2. Speed kills
3. Jesus saves
4. Road closed

In examples (2)-(4) above, the sentences are headed by either a noun or a verb. However, such sentences are limited and cannot sustain communication. One of the reasons why this is so is because they are not complete sentences in the right sense of the term. They are better referred to as phrases.

In this unit, we shall use only two major phrasal categories: the noun phrase and the verb phrase. We are doing this for two reasons. First, a simple sentence usually contains the two categories, so, it will be proper to start with the two types of phrasal categories. Second, since we shall consider phrase and clause types in the next unit, we shall reserve our discussion of other phrasal categories in Unit 3.

2.0 OBJECTIVES

At the end of this unit, you should know:

- what phrasal categories are, and how they are constituted
- what noun phrases are, and how they are constituted
- what verb phrases are, and how they are constituted
- how to represent phrasal categories in a phrase marker.

3.0 MAIN CONTENT

3.1 Noun Phrase

As the name implies, a noun phrase is a construction type which has a noun as its head. A typical noun phrase (NP) could be made up of a noun (head), a determiner (Det) and an adjective (Adj). This could be represented as in (5):

5. NP (Det) + (Adj) + N

Noun phrases, may appear in various constituent positions. A noun phrase may serve as the subject, object or complement as in the following examples:

6. The man is a driver (subject)

7. Ngozi bought a bus (object)

8. The books are treasures (complement)

Notice that in (5) above the categories Det and Adj are enclosed in brackets. This means that they are optional categories. An NP, therefore, may not contain a Det and/or an Adj, but it must contain a noun. Determiners and adjectives serve as modifiers of the noun phrase. A noun phrase, then, may have a determiner as the modifier of the head (e.g. the man; a man), an adjective as the modifier (e.g. killer drugs; bad boys), and a determiner and an adjective as the modifiers (e.g. the beautiful girl). Sometimes, a determiner and more than one adjective could appear as modifiers (e.g. the tall beautiful girl). The most common sequence in a noun phrase is Det + Adj + N (as in: a fine dress; the small girl; the big table).

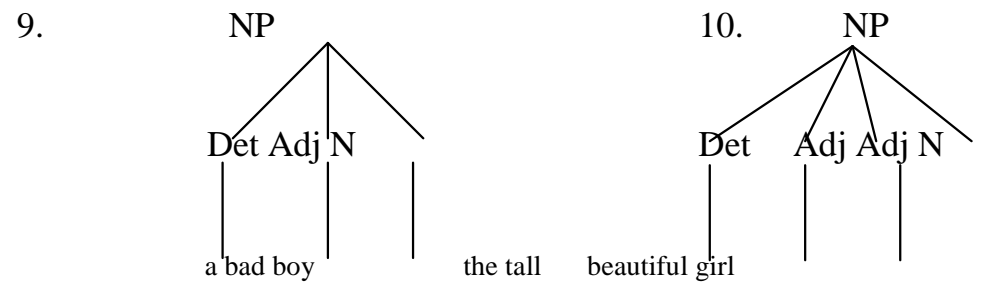
In line with what we have discussed above, we can represent the structure of the Noun Phrase using a phrase marker (tree diagram). The following examples can be used as illustration.

9. a bad boy

10. the tall beautiful girl

(In these examples, the heads are italicized).

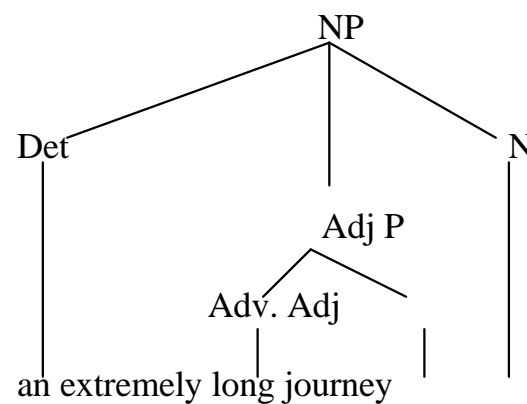
The analysis of the above examples will be as follows:



In the two phrase markers, the headship of the N is acknowledged.

In addition to the foregoing, noun heads can be premodified by adjective phrases as in (11):

11. an extremely long journey

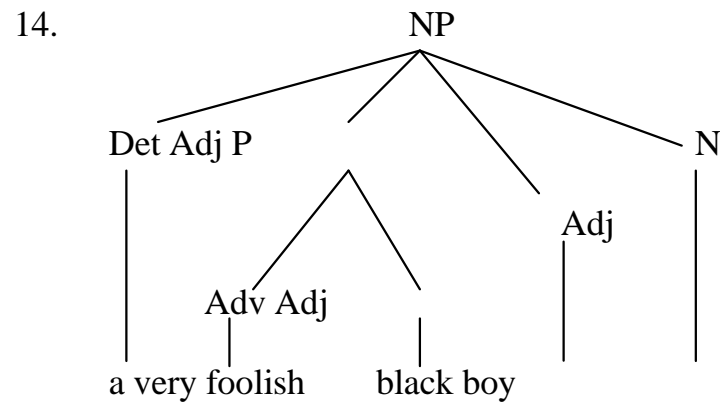


In (11), the head, journey is premodified by a determiner and adjective phrase which is further analysed as adverb and adjective. Note that within the adjective phrase the adverb, extremely modifies the adjective, long which is the head of the adjective phrase. Other examples to illustrate this are:

12. a very foolish black boy

13. these extremely fat girls

The structure of (9) differs a little from that of (11). In (9), the adjective phrase very foolish and the adjective black do not form a single constituent; each modifies the noun separately as shown in the phrase marker below:

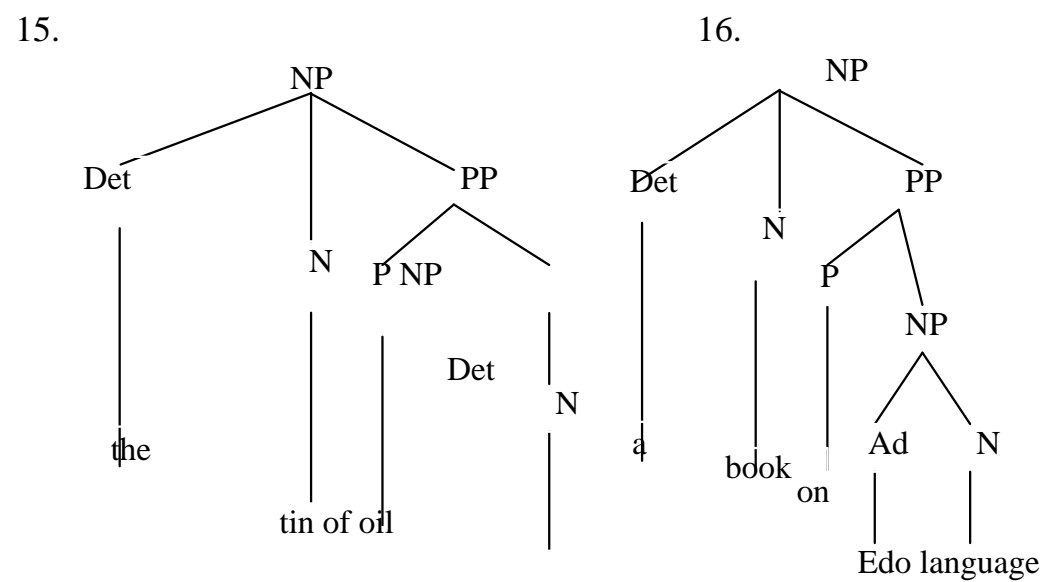


The Adj P consists of a degree adverb and an adjective which is distinct from the adjective that is closer to the head, N. It follows that the analyses of structures depend on the words that form constituents. Those that belong to the same constituent will have one node label while those that belong to different constituents will have different node labels.

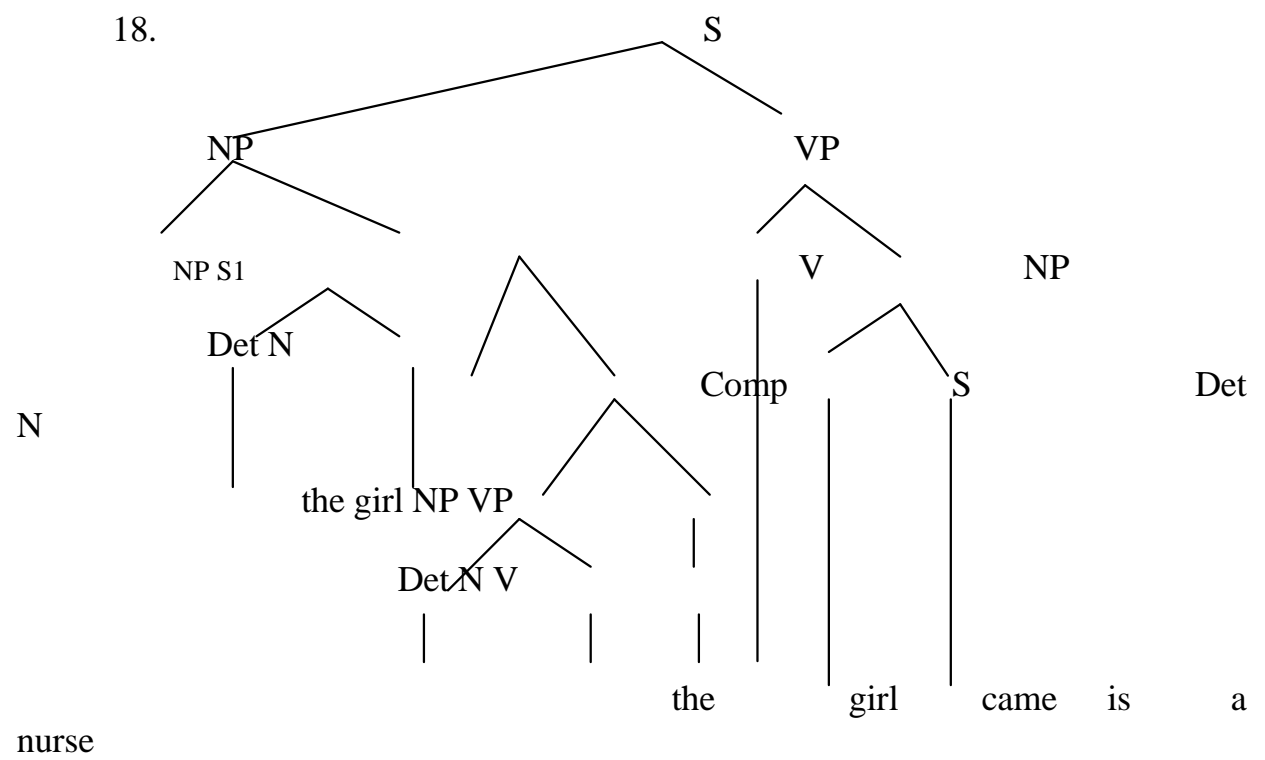
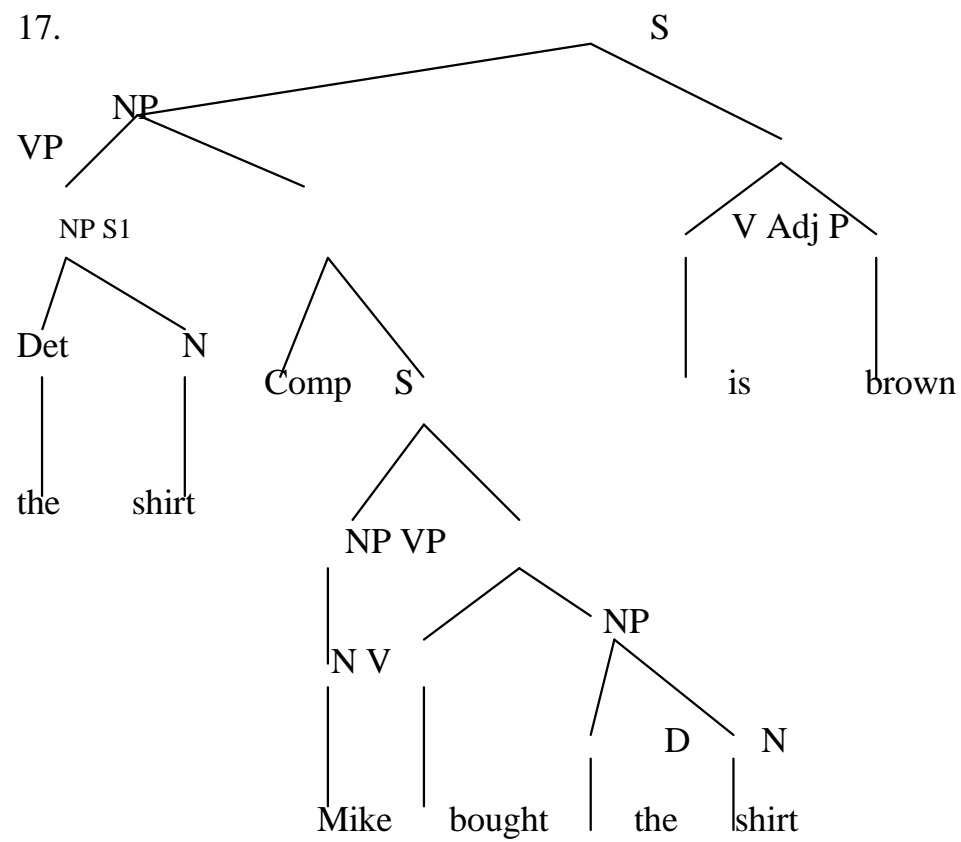
Apart from premodification, the head nouns can also be postmodified. Usually prepositional phrases (PP) and subordinate clauses serve as post-modifiers. Consider the following examples:

- 15. the tin of oil
- 16. a book on Edo language
- 17. the shirt which Mike bought is brown
- 18. the girl who came is a nurse

In (15) and (16), the heads, tin and book respectively, occur before (and are therefore post-modified by) the following prepositional phrases as illustrated in the phrase marker below:



In (17) and (18) relative clauses, which Mike bought and who respectively, are inserted in front of their NP antecedents in the matrix sentences. A clause is relativised when an NP within it is identical (and is therefore changed to a relative pronoun). We can represent (17) and (18) in phrase markers as follows:

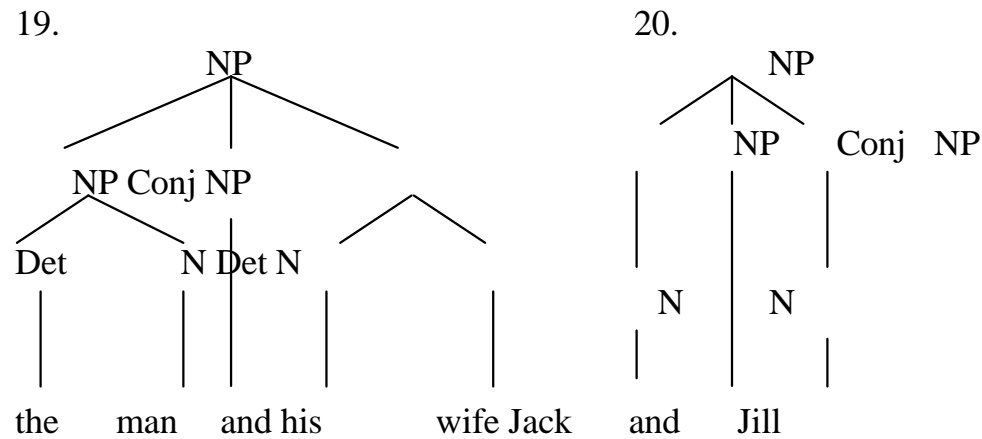


notice that in the two phrase markers (17) and (18), the noun phrases in the matrix sentences are identical with the noun phrases in the subordinate clauses, hence the noun phrases in the subordinate clauses are changed to the relative pronouns which (in 17) and who (in 18).

Sometimes, two noun phrases can be conjoined in the same structure. In such situations, there will be two heads for the phrase. Each head may or may not have its own satellites but its scope over the adjacent words is limited by the intervening conjunction as in the following examples:

- 19. the man and his wife
- 20. Jack and Jill

These can be represented as follows:



From the foregoing, we see that the structure of the noun phrase is complex. The noun heads in a noun phrase can be premodified by a *determiner, adjective, etc., and/or post-modified by prepositional phrases or subordinate clauses.*

3.2 Verb Phrase

A verb phrase is a group of words with the main verb as its head. It consists of a main verb and one or more auxiliary verbs. Its structure is determined by the type of verb that exists in the constituent. For example, a verb can be transitive in which case it selects (or co-occurs with) an object or two, or intransitive in which case it co-occurs with or without adverbials. Consider the following examples:

- 1. He threw the ball (transitive)
- 2. She laughed (intransitive)

The lexical or main verb in a verb phrase is obligatory while the auxiliary is optional.

Verb phrase can expand as an obligatory V followed by either optional NP and an optional Adv P or PP. In other words, the verb can either be followed by a PP to account for a particular structure followed by NP or Adv P to account for other structures. Thus, we can have such phrase structure rules as:

3. VP → V (NP) (Adv P)
4. VP → V (PP)

These two rules can be collapsed as (5):

5. VP → V (NP) (Adv. P }
 PP }

A verb phrase can occur between the NP and the complement as in the following examples:

6. He sees the moon
7. He is reading a book
8. She must have written a book
9. The book must have been bought by him
10. The boy is reading an interesting book

The main function of the verb phrase is to restrict or qualify the general meaning of the main verb. In English, this is done through the process of *inflections*. *There are four such inflections that can be attached to the verb:*

- (a) the third person singular (-s) e.g. drives, eats
- (b) the past tense (-ed) e.g. laughed, talked
- (c) the past participle (-n) e.g. driven, taken.
- (d) the present participle (-ing) e.g. driving, singing.

In English, special function words called auxiliaries help to build verb phrases in order to express fine shades of meaning not covered by the inflections. These shades of meaning include perfective, mood, and active voice. *Perfective is expressed by the auxiliary have; mood by the auxiliary might and active voice by the absence of the specific indicator of passive – the auxiliary be with the Vn form of the main verb.*

From the foregoing, we see that the verb phrase consists of a main verb and other elements. The verb serves as the head of the VP. Categories that complement the verb are also identified as the phrasal categories of their respective word classes.

3.3 Merger Operations

On the basis of what we now know about NP and VP, let us consider how they work together to form clauses and sentences. As a first step, let us consider the mini dialogue below:

1. A: What is Emeka planning to do?
B: Buy houses

As speaker A's reply illustrates, the simplest way of forming a phrase is by combining two words. For example, by combining the word *buy* and the word *houses*, we get the phrase *buy houses*. The grammatical properties of phrases are determined by one of the words in the phrase. Thus, when a verb like *buy* is combined with a noun like *houses*, the resulting phrase *buy houses* seems to have verb-like properties (as opposed to noun-like properties, for instance). This can be seen from the fact that the phrase *buy houses* can occupy the same range of positions as a verb like *react*, and hence, for example, occur after the infinitive particle *to*:

2. (a) The woman has the right to react
(b) Emeka has the right to buy houses

Conversely, *buy houses* cannot occupy the kind of positions occupied by a plural noun such as *houses* as we see in (3):

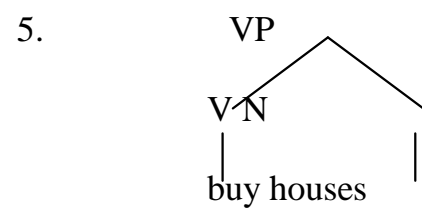
3. (a) Houses are very expensive in Nigeria
(b) *Buy houses are very expensive in Nigeria

Thus, it becomes clear that the grammatical properties of the phrase like *buy houses* are determined by the verb *buy* and not by the noun *houses*. We can then say that the verb *buy* is the head of the phrase *buy houses*, and that the phrase *buy houses* is a projection (i.e. a phrasal expansion) of the verb *buy*. Since the head of the phrase is the verb *buy*, the phrase *buy houses* is a VP. If we use the labeled bracketing technique to represent the phrase, we have (4):

4. [VP (V buy) (N houses)]

We observe from (4) that the phrase *buy houses* is a VP, and that it comprises the verb (V) *buy* and the noun (N) *houses*. The verb *buy* is the head of the phrase, and the noun *houses* is the complement of the verb *buy*. The operation by which the two words are combined to form a phrase is called merger.

We can also represent the structure in (4) with a labeled tree diagram as in (5):



The tree diagram is equivalent to a labeled bracketing in the sense that the two provide us with precisely the same information about the structure of the phrase. The difference between a labeled bracketing and a tree diagram is purely notational: while each category is represented by a single node (point) in a tree diagram, a pair of brackets is used in a labeled bracketing. Apart from this, representing a long phrase with labeled bracketing will be confusing.

From the foregoing, we can claim that all phrases are formed essentially the same way as the phrase in (5), namely, by merging two categories to form a larger category. However, it should be noted that not all phrases are formed from just two words. Consider the following mini dialogue:

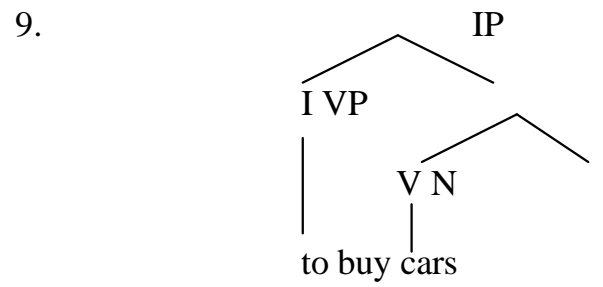
6. A: What is Emeka's next plan?
B: To buy cars

Speaker B's response in (6) is formed by merging the infinitive particle *to* with the verb phrase *buy cars*. What then is the head of the resulting phrase *to buy cars*? There seems to be evidence that indicates that the head is the infinitive particle *to*, and that the resulting phrase *to buy cars* is an infinitive phrase (IP). The evidence is that the strings such as *to buy cars* have a different distribution from verb phrases as shown in examples (7) and (8) below:

7. (a) He wants [to buy cars]
(b) *He wants [buy cars]
8. (a) He should [buy cars]
(b) *He should [to buy cars]

If we assume that *buy cars* is a verb phrase while *to buy cars* is an infinitive phrase, we can then account for the constructions in (7) and (8) by saying that *wants* is the kind of word which requires an infinitive phrase after it as its complement, while *should* is the kind of word that requires a verb phrase as its complement.

The infinitive phrase to buy cars is formed by merging the infinitive particle to with the verb phrase buy cars as represented in the tree diagram below (the infinitive particle is denoted as I in the diagram):

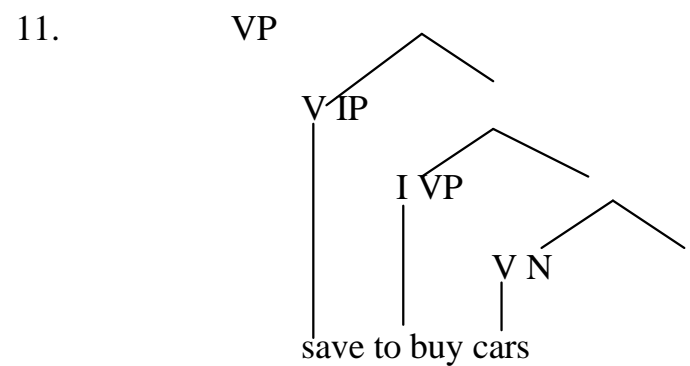


In (9), IP is headed by I (to) and the VP, buy cars is the complement of to.

From our discussions so far, we see that we can build complex structures by successively merging pairs of categories to form even larger phrases. For example, by merging the IP to buy cars with the verb save, we can form the phrase save to buy cars. This phrase is headed by the verb save because it can be used after the infinitive particle to in sentences like those in (2) above:

10. Emeka has the right to save to buy cars.

The phrase can be represented as in (11):



The phrase in (11) introduces us to an important concept in grammar, called recursion. Going by our analysis, save to buy cars is a VP which itself contains another VP, buy cars. It is easy to see that application of merger will yield a larger VP, for example, expect to save to buy cars that include the VP in (11). We thus see that this simple operation of merger as a core operation in the theory of grammar, deals with the fact that English, like any other language, has a potentially infinite number of sentences.

4.0 CONCLUSION

In this unit, we have discussed phrasal categories, and used the Noun Phrase and Verb Phrase to show how lexical categories build up phrasal categories. We have also seen how phrasal categories can be expanded into larger phrasal categories via merger operations. The fact that we can continue to prolong phrasal categories in this fashion gives credence to the recursive nature of sentences in a language.

5.0 SUMMARY

In this unit, you have learnt:

- what phrasal categories are;
- what Noun Phrase and Verb Phrase are and how they are structured; and
- what merger operation is and how it operates.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain with the aid of examples, the following:

- (a) Noun phrase
- (b) Verb phrase
- (c) Merger operation
- (d) head

2. Use a phrase marker to represent the following phrases:

- (a) a terribly bad case
- (b) a very obedient student

3. Explain the relationship between lexical categories and phrasal categories.

4. Give the grammatical names of the italicized phrases in the following sentences, and state their functions:

- (a) The teacher works as hard as the Headmaster
- (b) She has not come since my brother traveled
- (c) I helped him because he was tired
- (d) The boy whose father died yesterday is here

7.0 REFERENCES/FURTHER READINGS

Francis, W.N. (1965). *The English Language: An Introduction*. New York: W.W. Norton and Company.

Radford, Andrew et al. (1999). *Linguistics: An Introduction*. Cambridge: Cambridge University Press.

UNIT 3 PHRASE AND CLAUSE TYPES

In this unit, we may define a phrase as a group of words without a subject and a predicate that functions as a single part of speech. We must distinguish phrases as discussed here from the two types of phrases discussed in the previous unit (Noun Phrase and Verb Phrase). The two types of phrases discussed in Unit 6 are what constitute a basic sentence, and are also referred to as subject (Noun phrase) and predicate (Verb Phrase).

The phrases we shall discuss here do not have subjects and predicates, rather, they modify either the subject or the predicate of a sentence, or even the entire sentence. The phrases in question are: the Prepositional Phrase, the Adjectival Phrase and the Adverbial Phrase.

We shall also discuss clause types. We shall define a clause here as a group of words that has a subject and a predicate. We have two major types of clauses: independent or main clauses and dependent or *subordinate clauses*. *Included in dependent or subordinate clauses are* such clause subtypes as Adverbial Clauses and Adjectival Clauses.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Prepositional Phrase
 - 3.2 Adjective Phrase
 - 3.3 Adverbial Phrase
 - 3.4 Clauses
 - 3.4.1 Independent (Main) Clauses
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1.0 INTRODUCTION

In the previous unit, we discussed two phrase types: the Noun Phrase and the Verb Phrase. In this unit, we shall discuss the other types, the Prepositional Phrase, the Adjectival Phrase and the Adverbial Phrase. As we shall see, these phrases modify either the Noun Phrase or the Verb Phrase, or even the entire sentence.

We shall also discuss the two major clause types: the independent (or *main*) clauses, and the dependent (or *subordinate*) clauses. We often classify sentences based on their internal structure or the way they are built up. One of the ways to classify sentences is to identify the kinds of clauses they contain, and on the basis of this classification to group them into types. You will be required to pay particular attention to discussion, noting the cues and signals that will enable you to recognize the types.

2.0 OBJECTIVES

At the end of this unit, you should know and be able to explain:

- what Prepositional Phrases are and how they function in sentences
- what Adjectival Phrases are how they function in sentences
- what Adverbial Phrases are and how they function in sentences
- what Independent and Subordinate Clauses are
- how they function in sentences.

3.0 MAIN CONTENT

3.1 Prepositional Phrases

A Prepositional Phrase is made up of a preposition and its object. It begins with a preposition and ends with a noun phrase which is called its object or complement. As the noun is the head of a noun phrase, so is the preposition the head of a prepositional phrase as in the following examples:

1. (a) ...in the house
- (b) ...at the bank
- (c) ... on the table
- (d) ...about the topic
- (e) ...before the station

Sometimes the noun which serves as the object of the preposition has modifiers, but the important words in the phrase are the preposition and the object. The prepositions and the objects are italicized in the following examples:

2. He jogged round the field
3. The cap with the eagle feather is mine

The prepositional phrase is, therefore, a subordinating construction that provides information about place and time of events. It also gives descriptions, indicates ownership, and so on. In the following examples, prepositional phrases indicate either place or time.

4. The house by the river is haunted (place)
5. She has an appointment with the Registrar tomorrow (time)

Other examples of prepositional phrases which make descriptions or indicate ownership are:

6. ... the dome of a building (description)
7. ... a bag with a black label (description)
8. ... the home of the President (ownership)

As can be observed from the above examples, a prepositional phrase can function as an adjective or an adverb. Consider these additional examples:

9. I met John at the bank (functions as Adv. Phrase)
10. The old man in a black suit is a clergyman (functions as an Adverbial Phrase)

Since adjectives and adverbs are modifiers, the prepositional phrase is also a modifier.

3.2 Adjectival Phrases

Adjectival Phrases qualify or modify nouns or pronouns. They perform the same functions as adjectives and are often equivalent to adjectives. Adjectival phrases perform attributive (when they appear before or premodify nouns) and predicative (when they come after the nouns) functions as can be seen in the following examples:

1. The beautiful lady is my wife (attributive)
2. A careless statement was made by the speaker (attributive)
3. Fat men cannot run (attributive)
4. His house is small (predicative)
5. Mr. Paul is rich (predicative)
6. The man looks stupid (predicative)

From our discussions in the last section of this unit, we can say that adjectival phrases can also be prepositional phrases that modify nouns or pronouns. Consider the following examples:

7. The man at the gate turned her away.
8. She lives in the house near the river
9. He killed the bird with red feathers

In the above examples, the italicized prepositional phrases function as adjectival phrases in that, like adjectives, they describe or qualify the nouns near to them.

From the foregoing, we see that Adjectival Phrases qualify nouns or pronouns. They may appear before or after the nouns. Where they function as prepositional phrases, they describe and modify the nouns.

3.3 Adverbial Phrases

An Adverbial Phrase is a group of words that modifies a verb, adjective or another adverb or even the whole sentence, by telling us *how, when, where, why, to what extent or the condition of an action* indicated by the verb. That is to say, an adverbial phrase expresses time, *place, manner and degree as in the following examples:*

1. The plane arrived yesterday (modifies the verb arrived)
2. These boys are quick, especially Moses (modifies the adjective *quick*)
3. John runs extremely fast (modifies fast)
4. He will visit in the morning (modifies visit and tells us when)
5. Adam lived in the garden (tells us where)
6. She left the house in a hurry (tells us how)

As can be seen from the examples, prepositional phrases function as adverbial phrases. Adverbial phrases that modify verbs are very easy to identify. The same cannot be said of adverbial phrases that modify adjectives and adverbs. When an adverbial phrase modifies an adjective or a verb, it usually follows the category it modifies as in (7)

7. He seemed afraid of the dark (modifies afraid)
8. John came quite early (modifies came)

As with other categories we have discussed, Adverbial Phrases can have adverbs as heads, and the adverbial phrases usually occur within verb phrases as in the following examples:

9. He ran very quickly
10. He died suddenly

3.4 Clauses

3.4.1 Independent (Main) Clauses

There are two kinds of clauses: Independent (or main) Clause and *Dependent (or Subordinate) Clause*.

An independent clause has a subject and a predicate and does not depend on anything else for its meaning. It expresses a complete thought and can stand alone. It is a simple sentence as in the following:

1. The football match has ended.
2. The girl is dark in complexion

However, consider (3) below:

3. The man gave her some money and she paid her school fees

In (3), there are two independent clauses: the man gave her some money and she paid her school fees. The conjunction and joins the two clauses.

In other words, these two clauses are two simple sentences that are joined by and. The conjunction does not belong to any of the simple sentences – it simply joins two simple sentences to form a sentence.

3.5 Dependent (Subordinate) Clauses

A Dependent or Subordinate Clause is a group of words that has a subject and a predicate but it cannot express a complete thought. In other words, it cannot stand alone. It is called a dependent or subordinate clause; it depends on the main clause for its meaning. The idea of a subordinate clause implies that there is a main clause upon which a subordinate clause depends. The word that introduces the dependent clause is called a connective and it plays an important role in making such a clause dependent. Consider this example:

1. She paid her school fees when the man gave her some money

In (1), the italicized group of words is a dependent clause. Though the clause has both a subject and a predicate, it cannot stand alone. The connective when which introduces the clause makes the other words in the clause to depend on the main clause for the meaning of the clause.

That is why the clause when the man gave her some money is called a dependent clause. The group of words she paid her school fees is an independent clause and so, can stand alone. It is the main clause of the

sentence because it carries the main idea in the sentence. Examples are:

2. The book that has a hard cover is mine
3. I bought it because it has a hard cover
4. The goal which Kanu scored was disallowed
5. The man who died yesterday was a student

The italicized clauses in (2)-(5) above are dependent clauses. As can be noticed in the examples, although the subordinate clauses do not make complete thought, they have subjects and predicates.

3.6 Types of Dependent Clauses

There are three types of dependent clauses, namely, noun clauses, *adjectival clauses and adverbial clauses*. The noun clause functions as a noun, the adjectival clause function as an adjective and an adverbial clause functions as an adverb.

3.6.1 Noun Clauses

Noun clauses, just like noun phrases, perform the functions of nouns in sentences. A noun clause can function as the subject of a sentence, the *direct object of a verb, the complement and the object of a preposition*. Consider the following examples:

6. That he was offered admission uplifted him a great deal (subject of sentence)
7. The chief gave us what we wanted (object of verb)
8. We made the man what he is today (object complement)
9. The important thing is that he has arrived (subject complement)
10. He spoke of what took place several years ago (object of preposition)
11. Where you erect your building is not my concern (subject of sentence)
12. You should remember where you lost the keys (object of verb)

Noun clauses are usually introduced by what, that, how and where. Some of these words are also used to introduce adverbial and adjectival clauses. To be sure you are dealing with noun clauses and not adjectival and adverbial clauses, you should determine what the function of the clause is in the sentence. If the clause performs the same function that a noun normally performs, then it is a noun clause.

3.6.2 Adjectival Clauses

Adjectival clauses perform the functions of adjectives and adjectival phrases. They qualify nouns and pronouns. An adjective clause is a subordinate clause used to describe or limit a noun or a pronoun.

An adjective clause is usually introduced by a relative pronoun. A relative pronoun is a pronoun that joins an adjective clause to some word in the main clause. The word to which the relative pronoun relates is known as the antecedent of the relative pronoun. The relative pronouns used in this way are *who* (whom), *which*, *that*, *whose* and *where* as in the following examples:

1. I saw the car that he bought (qualifies car)
2. I saw the thief that stole the car (qualifies thief)
3. He bought the house which the governor commissioned (qualifies house)
4. The man called the police who chased away the robbers (qualifies police)
5. Ngozi visited the village where she was born (qualifies village)
6. The woman whose goat was stolen is here (qualifies woman)

3.6.3 Adverbial Clauses

Adverbial clauses, like adverbs and adverbial phrases, modify verbs, adjectives and adverbs. Consider this sentence:

1. They always cry when their mother travels

In the example, the subordinate clause *when their mother travels* is an adverbial clause and it modifies the verb *cry*. Because this clause expresses time, it is an adverbial clause of time.

Just like adverbs, adverbial clauses answer the questions *how*, *when*, *where* and *to what extent or degree the action is performed*. Adverbial clauses can also express several other ideas which the simple adverb does not express. The adverbial clause modifies a verb more than it modifies an adjective or an adverb.

An adverbial clause is a subordinate clause, and like other subordinate clauses, it is usually introduced by a subordinating conjunction. A subordinating conjunction is so called because it makes the idea expressed subordinate to the main clause in the sentence. It also shows the relation between the subordinate clause and the word in the main clause which the subordinate clause modifies.

Let us consider more examples:

2. Peter lives where his school is located (modifies lives; adverb of *place*)
3. I saw him when he came to the class (modifies saw; adverb of *time*)
4. They sang as if they were angels (modifies sang; adverb of *manner*)
5. We visited him because he was sick (modifies visited; adverb of *reason*)
6. She laboured so hard that she fell sick (modifies laboured; adverb of result)
7. He came so that he can talk to you (modifies came; adverb of *purpose*)
8. If it rains, I will not come (modifies will not come; adverb of *condition*)
9. He drinks beer more than I do (modifies drinks; adverb of *comparison*)
10. She wept because she failed the exams (modifies wept; adverb of *reason*)
11. The party started when the commissioner arrived (modifies started; *adverb of time*)

4.0 CONCLUSION

In this unit, we have discussed phrases and clauses. We saw that phrasal categories are projections or expansions of lexical categories, and they perform functions similar to those performed by their lexical counterparts.

We also discussed clauses which differ from phrases in that they contain subjects and predicates. These clauses – Noun Clause, Adjectival Clause and Adverbial Clause – function like nouns, adjectives and ~~adverbs~~ respectively. They are dependent or subordinate clauses because they depend on the main clauses for their full meaning.

5.0 SUMMARY

In this unit, you have learnt about:

- what a phrase is;
- what a Prepositional Phrase is and how it functions;
- what Adjectival Phrase is and how it functions;
- what Adverbial Phrase is and how it functions; and
- what Dependent and Independent (subordinate) clauses are, how they function, and how they are signaled in sentences.

6.0 TUTOR-MARKED ASSIGNMENT

1. With the aid of examples, differentiate between a phrase and a *clause*.
2. Explain the following, using appropriate examples:
 - (a) dependent clause
 - (b) independent clause
 - (c) prepositional phrase
3. Name with examples, three kinds of subordinate clauses.

7.0 REFERENCES/FURTHER READINGS

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MODULE 3 FORMALIZING MODULES OF GRAMMAR

Unit 1 Projections, X-bar, Theta and Case Theories
 Unit 2 Government, Binding and Bounding Theories
 Unit 3 The D-Structure

UNIT 1 PROJECTIONS, X-BAR, THETA AND CASE THEORIES

In this unit we shall discuss the interacting subsystems of principles in syntactic analysis. We shall discuss Projections, X-bar, Theta and Case theories.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Projections
 - 3.2 X-Bar Theory
 - 3.3 Theta Theory
 - 3.4 Case Theory
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

In this unit, we shall discuss a more advanced theory of ~~grammar~~. The approach to be adopted is that associated with the *Principles and Parameters* model developed by Noam Chomsky in the 80's and 90's.

As we noted in the preceding units, syntax is concerned with the ways in which words can be combined together to form phrases and sentences. *Grammar is traditionally concerned not just with the principles which determine the formation of words, phrase and sentences, but also with the principles which govern their interpretation – i.e. with the principles which tell us how to interpret (= assign meaning to) words, phrases and sentences.* In this unit, we shall consider a number of these principles.

2.0 OBJECTIVES

At the end of this unit, you should know:

- what Projection is and what it is used for
- what X-bar, theta and case theories are
- how to employ these principles in syntactic analysis.

3.0 MAIN CONTENT

3.1 Projection Principle

Projections are employed in the analysis of the structure of phrases. X-bar (X1) theory is a theory of what constitutes a possible phrase in natural language. In theory, word-order and constituent structure are important and the theory takes into consideration the strict-categorization frame that occurs between verbs and nouns, and generalizes this over other phrasal categories including sentences. The internal structure of each phrasal category (such as an NP) is similar to others such that the same set of rules can apply to each of them. Thus we say that x-bar theory uses cross-categorial generalizations.

When we talk of the structure of a phrase, we mean the left-to-right relationships between syntactic categories of the phrase. We thus say that projections connect or link all constituents in the phrase structure. This is possible because phrases have certain features in common. For example, a phrase contains a head (e.g. N, V, P, etc) and every phrase has a head. Phrases are projections of their heads; the category of the phrase is the same type as the category of the head. In other words, if the head is N, the phrase is NP, when the head is V, the phrase is VP, and so on.

The concept of the head is very important in X-bar theory. Each head must be represented at all levels of analysis: the D-structure, S-structure and logical form. By this, a head is projected from the D-structure. This is called the Projection Principle. This principle ensures that heads occur at the D-structure though such heads may not have a phonetic (physical) realization. In this case, the head is said to be base-generated. However, some positions may be empty from the D-structure in which case nothing can project from there to the S-structure. If the empty slot is the subject position of a sentence, then a pleonastic element (e.g. it, there) will occur at the S-structure. These pleonastic elements are merely place-holders that are not base-generated.

The uniformity assumption postulates that within a given language, the left-to-right ordering of constituents within categories is uniform (e.g.

heads always precede complements). The head is the only obligatory category in a phrase and other words modify it. The head determines the structure of the words or phrases adjacent to it. For example, a noun head in a noun phrase may not be premodified directly by an adverb – only determiners, numerals, adjectives, etc can pre-modify a noun head. In the same way, adjective heads cannot be premodified by nouns. This is as a result of the lexical properties of each head in a phrase.

Some heads take complements. The relationship between a head and its complement is characterized by the fact that they are sisters: each c-commands the other and they are immediately dominated by the same node. Generally, X1-theory proposes that all phrases have the following structure, called X1 schema, ignoring linear order:

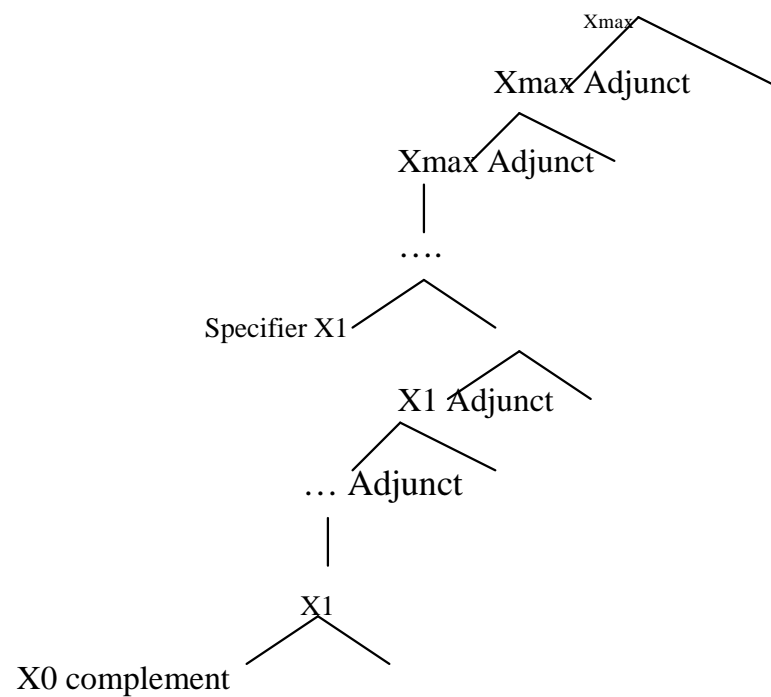
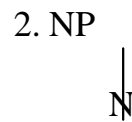


Fig. 1 (From Culicover, 1997, p.137)

From the schema above, we see that complement is the sister of X0, while adjunct is adjoined to X1. Therefore, we can say that X1 is an intermediate projection (the two important projections in the tree diagram above are the maximal projections and the intermediate projections) and Xmax is a maximal projection.

Every lexical category projects its own phrasal category. Thus, N projects NP, V projects VP, Adv. projects Adv. P, and P projects PP. A phrasal category NP constitutes a phrasal projection. This can be represented as in (2):



In (2) N is a lexical head of the phrasal projection NP.

Lexical constituents of phrasal projections, like Det and Adj act as modifiers of the lexical head of the projection. Each can be referred to as a specifier of the lexical head it modifies. Phrasal constituents of phrasal projections are designated as complements of the phrasal head.

As an illustration, let us consider this noun phrase:

1. their acceptance yesterday of the proposal

In (1) above, the head of the phrase is acceptance. The complement is *the proposal* (because it parallels the direct object in the verb phrase *accept the proposal*); there is an argument, since it receives a -role from acceptance, in fact the external (subject) -role, parallel to they *accepted the proposal*. We call this the specifier of the phrase. *Yesterday*, which is neither complement nor specifier, is an adjunct.

In summary, the head determines the category of the projection, the complement is the sister of the head, the specifier is assigned the external -role, and the adjuncts are everything else.

By assumption, these four classes, head, complement, specifier and adjunct, are exhaustive, in that everything in a phrase falls under one of these classes. If this assumption is correct, questions about general properties of phrases and differences between phrases can now, in principle, be productively formulated in terms of these classes.

SELF ASSESSMENT EXERCISE

1. Explain the following terms:

- (i) the head
- (ii) the specifier
- (iii) Complement

2. Identify the head, the specifier, and the complement in each of the following noun phrases:

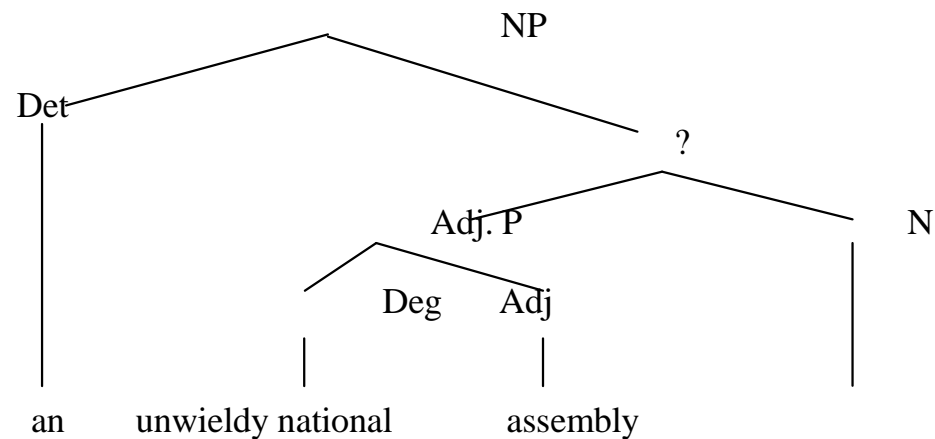
- (a) the destruction yesterday of the city
- (b) a ruler with many wives
- (c) the box of cookies in the kitchen

3.2 X-Bar Theory (X1 Theory)

Among the factors that led to the development of X-bar theory, the most prominent seems to be the fact that phrase structure grammar is limiting in the number of categories it recognizes. Phrase structure grammar recognizes phrasal categories (e.g. NP, VP, PP, etc) and lexical categories (e.g. N, V, Adj., etc). However, it does not have a place for intermediate categories. There exist in language structures larger-than-lexical categories but smaller-than-phrasal categories. Consider (6) below:

6. an unwieldy national assembly

For a better illustration, let us represent (6) in a tree diagram:

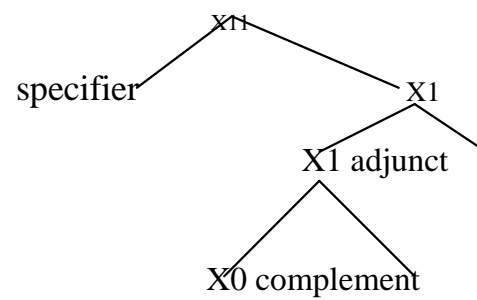


In the above tree diagram, the node marked (?) is a combination of Adj P and N which form a complement or constituent. This constituent is, however, greater than a lexical category (e.g. assembly) but smaller than the phrasal category like an unwieldy national assembly. Also, this constituent does not have the same distribution as a phrasal category. Thus, it will be inappropriate to categorize it as a phrasal or lexical category. There has to be a way to explain such structures and the X-bar theory, which accommodates intermediate categories, became the only option.

We have mentioned in the previous section that the X-bar theory is a theory of the structure of the phrase – it looks at the relationship between phrases in syntactic analysis. This is because it shows what constitutes a possible phrase in a language. It came into use to handle some of the lapses of phrase structure grammar. As we mentioned earlier, it provides for intermediate categories which phrase structure grammar cannot account for.

The three categories of X-bar theory can be represented in a schema (7):

7.



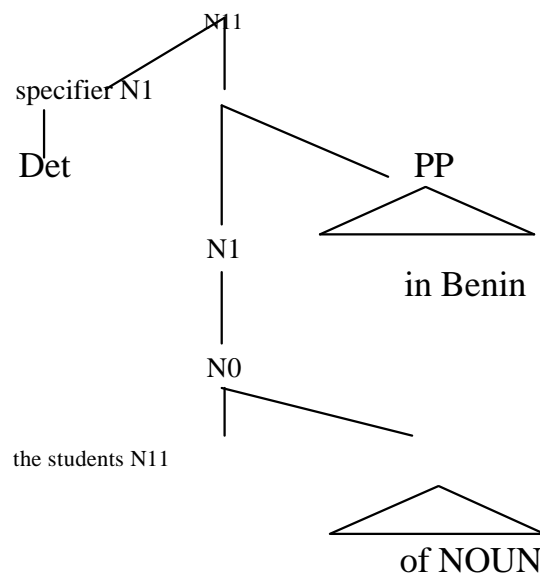
This schema can be explained as follows: X can be taken as variables representing N, V, A, P, etc which are lexical heads of their own phrase. A very important principle of the X-bar theory is uniformity or *endocentricity*. *All the satellites converge on the head, hence each phrase has a head from which it derives a name*. Thus, the head of a noun phrase is an N, VP, a V, etc.

The head is obligatory and is X0. A lexical category can be post-modified by a complement, and the complement is the sister of X0 while an adjunct is adjoined to X1. The maximal projection is separated from the intermediate projection by the specifier which is adjoined to the maximal projection.

In X-bar theory, levels of projections are labeled in terms of number of bars. In other words, the first level of projection has a single bar and the next a double bar (as shown in (7)). The double bar level (X11) is the

maximal projection (phrasal projection) which dominates X1 and X1 immediately dominates X0. This is shown in (8):

8. the students of NOUN in Benin



SELF ASSESSMENT EXERCISE 1

- (a) What factor led to the development of X-bar theory?
 (b) How is X-bar theory superior to phrase structure grammar?

3.3 Theta Theory (θ-Theory)

The function of θ-theory is to explain how syntactic structure determines the assignment of θ-roles to a particular constituent of a sentence. In other words, θ-theory shows how θ-roles are assigned to an object and a subject of a sentence.

A θ-role assigned to a constituent within the VP is called internal θ-role while a θ-role assigned to the subject of a sentence or outside the VP is called an external θ-role. The assumption is that the subject of a sentence is external (outside) to the VP, and so it cannot be assigned a θ-role by the verb, but the verb assigns θ-roles to its object.

The internal θ-role is an internal argument while the external θ-role is an external argument, hence the relationship between the internal argument and the external argument is termed argument structure. The role assigned to a noun by the verb is the thematic relation between the noun and the verb. These roles are Agent, Patient, Source, Instrument, Goal, Locative, Theme, Benefactive and Experiencer.

Agent: the agent θ-role is an actor that performs the action in a sentence

9. (a) Peter shut the door
 (b) Ada killed a goat

Patient: the patient role suffers the action in the sentence

10. (a) The man slapped the girl
 (b) He shot the bird

Source: this is the entity from which motion takes place

11. (a) She got the money from the bank
 (b) I bought the book from the store

Instrument: this is the object with which an action is performed

12. (a) He killed the goat with a knife
 (b) They prepared the pie with flour

Goal: the entity towards which motion takes place

13. (a) Joan gave him an apple
(b) Kate traveled to London

Benefactive: this role is assigned to an object in whose favour an event takes place

14. (a) I called Ngozi for him
(b) I bought Peter an orange

Locative: this indicates a place where something is

15. (a) He lives in Kaduna
(b) The cup is on the table

Theme: the entity that is being discussed

16. (a) The man died in the night
(b) The animal appeared on the screen

Experiencer: the object that experiences or feels an event

17. (a) Ayo likes oranges
(b) He witnessed the match

SELF ASSESSMENT EXERCISE 2

Assign roles to the italicized noun phrases in the following sentences:

- (a) He bought the car from Lagos
(b) The President visited last week
(c) The fish is in the oven
(d) The teacher flogged the boy
(e) I killed it with a stick
(f) She eats cookies

3.4 Case Theory

Some natural languages have overt case systems in which every NP in a sentence bears particular relation to particular arguments. In a sentence, other languages may not have such overt case marking systems, or the case marking may be restricted as in English. In such languages, when we talk about an NP being marked for case, we are talking about an abstract notion rather than the concrete realization that does show up on

noun phrases. Languages with extensive morphological case systems must be marked overtly with the appropriate case.

The Case Uniqueness Principle constitutes a condition on syntactic representations. Such conditions function as filters to exclude ill-formed structures that would otherwise be generated by the rules of grammar.

In case theory, Abstract Cases are assigned to noun phrases. An NP in a subject position in a sentence is assigned Nominative Case while a direct object is assigned Accusative Case. The assumption is that the verb in a sentence 'governs' the direct object and as a result assigns Accusative Case to it. However, the Nominative Case is not assigned by the verb because it is not directly governed or dominated by it.

Case assigners are lexical heads (e.g. N, V, P, etc). It should be noted that case assignment is done following the definition of Government theory of adjacency (sisterhood).

Two principles associated with case theory are: (i) Case Filter and (ii) *Case Uniqueness*.

(i) Case Filter

This principle states that 'every NP must be marked for case'.

By this principle every NP in a structure must be assigned a case, otherwise it will be filtered out for violating the case filter. It should also be noted that a lexical NP is qualified to be case-marked only once in accord with Case Uniqueness principle.

(ii) Case Uniqueness

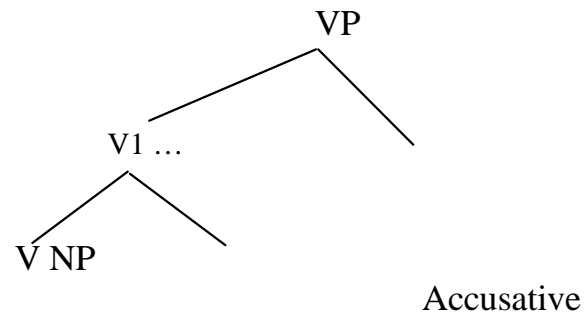
This principle states that 'a lexical NP may have only one case marking'.

In a strictly syntactic theory of case assignment, the conditions under which these cases are assigned must be syntactic. In the case of Accusative Case, for example, there are in fact several different syntactic relations that would serve to uniquely identify the NP:

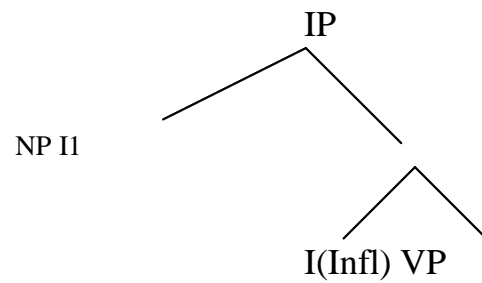
- (e) In the linear ordering of constituents, the NP is strictly adjacent to V;
- (f) The NP is dominated by the node in the tree that immediately dominates the case assigner;

- (g) The NP is immediately dominated by the node in the tree that immediately dominates the case assigner (i.e. the case assigner and the NP are sisters; and
- (h) The NP is dominated by the lowest maximal projection that dominates the case assigner.

We can illustrate this Accusative Case assignment in the following configuration:



The subject of a sentence differs crucially from the object in that the subject is not the sister of the verb, but is outside of the verb phrase. A commonly accepted structure for the subject is that the subject is the 'specifier' of an abstract head Infl as shown below. Infl contains the inflectional morphology realized on the verb (i.e. Tense). The Nominative Case is assigned by 'Tense' in the verb.



4.0 CONCLUSION

In this unit, we have provided brief discussions on Projection, X-bar theory, theta theory and case theory. Each of these has a role to play in syntactic representations of the phrase. Familiarize yourself with these and try to see how they are related.

5.0 SUMMARY

At the end of this unit, you should know:

- what projection means; and
- what X-bar, theta and case theories are, and the part they play in the analysis of the structure of a noun phrase.

6.0 TUTOR-MARKED ASSIGNMENT

Explain the following:

- (a) Projection
- (b) X-bar theory
- (c) Theta theory
- (d) Case theory

7.0 REFERENCES/FURTHER READINGS

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UNIT 2 GOVERNMENT, BINDING AND BOUNDING THEORIES

In this unit, we shall discuss some subsystems of principles, namely government theory, binding theory and bounding theory.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Government Theory
 - 3.2 Binding Theory
 - 3.3 Bounding Theory
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

We are still continuing our discussions on the elements in the structure of the phrase. We shall discuss the relations holding between noun phrases or wh-phrases and their antecedents, adjacency relations holding between the head and elements dependent on it, and the restrictions imposed on the movement of phrases within a sentence.

2.0 OBJECTIVES

At the end of this unit, you should know:

- what government means and how it operates
- what binding means and how it works
- what bounding means and how it works.

3.0 MAIN CONTENT

3.1 Government Theory

Government theory specifies that adjacency relations should hold between the head and elements that are dependent on them. The minimal definition of government is:

A. a governs if and only if

- (i) a is a head
- (ii) a m-commands β

B. A lexical head a governs a category

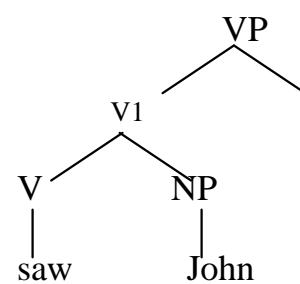
β if and only if a m-commands β and β m-commands a.

In government theory, lexical heads (N, V, P, etc) are governors; they govern and assign case to their NP's. Consider (1) below:

1. Nobody saw John

This will be represented as (2):

2. Nobody [saw [John]]
 [V NP]
 VP



In the above example, the lexical head V dominates and governs the subject NP (John) that it immediately dominates and assigns Accusative Case to it. In this case we say that V and NP are sisters.

We also observe from the above example that the VP is the highest node. It is possible to delete V1 from the tree and this will not change the fact that V dominates and governs NP. For instance, we can have the representation as in (3) deleting the intermediate node:



Government thus specifies adjacency relations holding between the head and the elements dependent on it. It is the head that governs all other elements dependent on it.

3.2 Binding Theory

In the previous section, we discussed adjacency relations holding between the head and the elements dependent on it. Here, we shall examine long distance relations called binding. Binding is a type of referential dependency, whereby the reference of the bound element is exactly the reference of the antecedent. Consider the example in (1):

1. Every girl likes her mother

In this example, every girl binds her. The reference of her is dependent on the reference of the antecedent. This type of binding is called *variable binding*, because the pronoun *her* is interpreted as a variable bound by its antecedent.

Reference is a relationship between part of a sentence and the external world. A referring expression picks out some entity in the world. Binding is, therefore, a semantic relation since it involves reference.

In order to represent the relation of referential dependency, we use indexing (i). The index of an NP correlates with what the NP refers to. Thus, if two NP's have the same index, they refer to the same thing; that is they co-refer; if they have different indices, this indicates that they refer to different things. Semantics interprets the indices, mapping a particular index into a particular referent in the world. However, it is important to recognize that referential dependence and coreference are different relations, as can be seen in sentences where a quantifier phrase binds a variable as in (2):

2. [No student]_i thought that he_i would pass.

In this sentence, the NP *no student* does not refer to anyone, yet he is coindexed with this NP and is (referentially) dependent on it. But he and *no student* are not coreferential.

There are three principles or conditions under which binding theory holds:

- (a) An anaphor must be bound in its domain.
- (b) A pronominal must be free in its domain.
- (c) An R-expression must be free.

Anaphors refer to reflexives (e.g. himself, herself, themselves, etc) and reciprocals (such as each other, one another, etc). Pronominal refers to pronouns (e.g. him, he, she, etc) while R-expressions (referring expressions) refer to names (e.g. John, Mary, tiger, etc).

Let us consider more examples to illustrate the principles discussed above.

3. (a) Johni likes himselfi
 (b) Maryi believes herselfi
 (c) Mary and Susani love each otheri

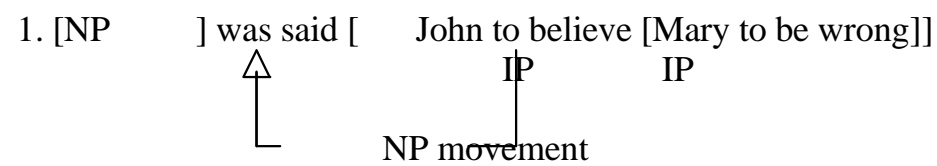
4. (a) John'si mother likes himi
 (b) Every girli thought that shei would win

5. (a) Ngozi'si mother-in-law adores Ngozii
 (b) Bill returned Peter'si book to Peteri

In the above, examples 3(a)-(c) illustrate principle (a). In all the cases, the indexed NP's are coreferential. In 3(a), John coindexes with himself; in 3(b) Mary coindexes with herself and in 3(c) Mary and Susan coindexes with each other. Examples 4(a) and (b) and 5(a) and (b) illustrate principles (b) and (c) respectively.

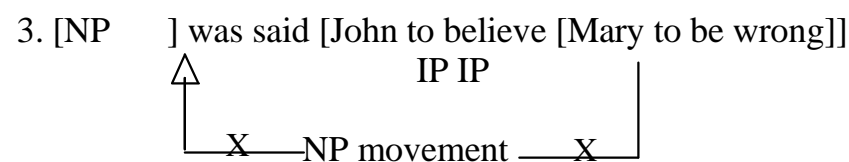
3.3 Bounding Theory

Bounding theory imposes restriction on the movement of phrases within a sentence. Some transformations we shall consider in the next module seem to be bounded in the sense that they can move constituents from one place to another. Some can move constituents over a long distance while some can move constituents over a limited distance. For example, NP movement in passive structures can move an NP across a single IP boundary as in (1):



and this results in the grammatical sentence (2):

2. John was said to believe Mary to be wrong.
 However, passivization (NP movement) is not possible across two intervening IP boundaries so that we cannot passivize Mary in the manner shown in (3):



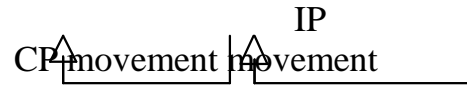
as we see from the ungrammaticality of the resultant sentence (4):

4. *Mary was said John to believe to be wrong.

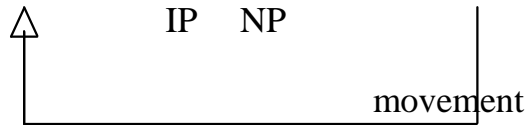
The theory illustrates the subjacency condition which states:
Movement cannot cross more than one bounding node, where bounding nodes are IP and NP

Let us consider more illustrative examples: (t = tree)

5. (a) [whoi would [[ti that John saw ti] surprised Susan]



(b) *[whoi would [[a funny picture of ti] surprised Susan]



As exemplified in 5(a) above, extraction of the wh-word may pass through the specifier of the lower CP without violating the subjacency condition, but in 5(b) the movement has violated the subjacency condition because extraction from subject NP is not allowed. As evident in the sentence, IP and NP are the nodes that are bounding.

Let us consider I-movement which is bounded in much the same way, for example, it can move the italicized auxiliary out of I into C across a single intervening IP boundary as in (6):

6. [C] [John might suspect that [he will resign]]

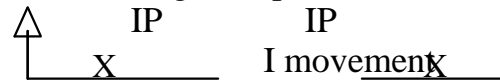


This results in the grammatical sentence (7):

7. Might John suspect that he will resign?

However, I-movement cannot move the subordinate clause Auxiliary *will* across the two bracketed IP boundaries in (8):

8. [C] [John might suspect that [he will resign]]



Since the resultant sentence (9) is ungrammatical:

9. *Will John might suspect that he resign?

How can we account for the fact that both NP movement and ~~movement~~ appear to be bounded in much the same way (i.e. they are unable to move a constituent out of more than one containing IP node)?

The most principled answer to this question would be to posit that it is an inherent property of all movement rules that they are intrinsically bounded. That is to say, transformations can move constituents so far (e.g. out of a single containing IP node) and no further.

4.0 CONCLUSION

In this unit, we have discussed various relations holding within sentences. It should be noted that these relations interact in the analysis of the sentence, the fact that we have discussed them ~~separately~~ ^{separately} standing. You should familiarize yourself with these terms and observe how they interact.

5.0 SUMMARY

In this unit, you have learnt:

- that government refers to the adjacency relations that hold between the head and the elements dependent on it;
- that binding refers to the relations that hold between noun phrases and their antecedents; and
- that bounding refers to the restrictions imposed on the movement of elements within a sentence.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the following terms as clearly as possible:

- (a) Government
- (b) Binding
- (c) Bounding

7.0 REFERENCES/FURTHER READINGS

Culicover, P.W. (1997). Principles and Parameters Oxford: O.U.P.

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UNIT 3 THE D-STRUCTURE

In this unit we shall discuss the D-structure which developed from the deep structure of the earlier models of transformational grammar.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 The D-Structure
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

In the earlier models of transformational grammar, the surface structure and the deep structure levels are posited. The deep structure is an abstract level where the underlying representation of elements is fully specified and all the constituents are in their original positions. Typical subjects and object of verbs, for example, are in their normal positions. In addition, empty nodes may occur in the structure. This facilitates accurate semantic interpretation. Thus, we know who ~~what~~ what, when, how and where.

Transformations act on the deep structure and map elements there onto the surface structure. In other words, the structure which occurs at the deep structure is changed to what we find at the surface. ~~Transformations~~ Transformations acting on the deep structure may bring about modifications that are reflected at the surface structure. Thus, the surface structure is the physical form of the sentence after the application of transformations.

The above represents the situation at the earlier models of transformational grammar. In this unit, we shall discuss the D-structure as it is represented in later models of transformational grammar.

2.0 OBJECTIVES

At the end of the unit, you should know:

- what the D-structure is
- what information are represented at the D-structure level
- how transformations can modify the D-structure.

3.0 MAIN CONTENT

3.1 The D-Structure

In recent times, the deep structure of the earlier models of transformational grammar has been changed to D-structure, and the surface structure to S-structure (representing the superficial syntactic structure of sentences). This is because the earlier models could not adequately handle certain characteristic constructions in natural languages. In order to provide a principled account of the syntax of these constructions, the D-structure level is posited. The D-structure and the S-structure are interrelated by a set of movement rules known technically as transformations. The D-structure does not solely determine the meaning of structures; meaning is realized at S-structure and is rediscoverable at the D-structure.

Movement of elements always takes place at the D-structure level. It is assumed, for example, that the subject position is always empty at the D-structure level, hence movement of an element from the object position to the empty subject position where case is assigned to it. Thus, we say that *θ*-role is assigned at the D-structure. This assignment can be illustrated by the following examples:

1. (a) You saw who?
(b) Who(m) did you see *t_i*

Notice that in 1(b) who(m) is the D-structure direct object of see. In this position it is assigned *θ*-role and Accusative case, but when it is moved to the empty subject position (*t_i* represents the trace), it is assigned the Nominative Case. In example (2) below:

2. John_i was arrested *t_i*

John is moved from its original position to the empty subject position where it is assigned the Nominative Case. It follows, then, that *θ*-role is assigned at the D-structure while case is assigned at the S-structure.

We shall go on to show that the D-structure and the S-structure are related by looking at some transformational rules. Let us consider the rule of V movement.

Finite clauses contain modal auxiliary such as will/would, can/could, shall/should, may/might, etc. Modals are generated under a finite I, and a finite I carries Tense (past/present) and agreement (person, number) features. Because these features are an intrinsic property of I, ~~because~~ modals are generated under I, the relevant tense and agreement features are realized on the Modal. Thus, in (3) below:

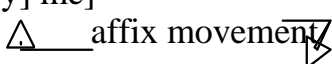
3. John [I] [VP annoy me]

I will contain Tense and agreement features which are normally realized as suffix on the Modal in I. However, when there is no Modal in I, these features are realized on the leftmost V of VP which is then inflected for the relevant tense/agreement features as in example (4):

4. John annoys me

where annoys carries the –s inflection which characterizes a third person singular present tense verb.

But how can tense/agreement inflections associated with I end up on a verb which originates as the head V of VP? The solution proposed by Chomsky is to suppose that there is a rule which assigns the elements of INFL to the initial verbal element of VP. Assume this rule to be Affix Movement rule. The rule involves affix movement in the sense ~~tense~~ tense/agreement affixes which would normally be suffixed to the Modal in I end up suffixed to the leftmost V of VP. The rule of affix movement involves attachment of an empty finite I to the right of V to form an inflected verb, and it will apply as represented in (5):

5. (a) John [I] [VP [V annoy] me]

 (b) John [VP [V annoys] me]

The result of affix movement is that the V, annoy acquires the relevant tense/agreement features normally associated with I, and the resultant inflected verb from annoys remains as the head V of VP.

However, a very different solution is suggested by other scholars. Here it is proposed that a finite clause where I does not contain a modal and hence is empty, the head V of VP moves into the empty I position by a rule of V movement (more specifically, V-to-I movement), and thereby

comes to acquire the tense/agreement properties associated with I, so becoming an inflected verb form. The representation will now be as in (6):

6. (a) John [I] [VP [V annoy] me]
 \downarrow V movement
 (b) John [I annoys] [VP me]

The essential difference between the two analyses (5) and (6) is that under the affix movement analysis (5), the resultant inflected verb *annoys remains within VP, whereas under the V movement analysis (6), the inflected V annoys ends up as a constituent of I. It is difficult to choose between the two rules because in English I and V are adjacent constituents, so that in either case the rule applies vacuously (i.e. the rule applies in such a way as to change constituent structure without producing observable change of word order). Therefore, irrespective of whether we adopt affix movement analysis or the V movement analysis, we end up with the same overall NP V NP word order. For this reason, it is suggested that in choosing between the two rules, we must look at languages where I and V are not adjacent constituents, and where the two rules will not apply vacuously.*

Although space will not allow us to discuss some more transformational rules, from the above discussion we see that incorporation of movement rules into a grammar presupposes that there are two different levels of syntactic structure in grammars: (i) the level of D-structure which serves as input to the movement rules, and (ii) the level of S-structure which serves as the output of the movement rules. Clearly, S-structures are generated from D-structures, by the application of movement rules. But how are D-structures generated? We assume that the *Categorical Component (or Base Component) of our grammar directly generates D-structures (or Base Structures) and that these then serve as input to a set of movement rules which convert or map them into the corresponding S-structures. The output of a movement rule is known as a derived structure.*

4.0 CONCLUSION

In this unit, we have tried to show that it is important to posit a D-structure in syntactic analysis. We have discussed the functions and importance of the D-structure and how it interacts with the S-structure. You should familiarize yourself with all we have discussed to enable you follow what will be discussed in subsequent modules.

5.0 SUMMARY

In this unit, you have learnt:

- what is meant by the D-structure and S-structure;
- how they interact in syntactic analysis;
- that the D-structure serves as an input to movement rules;
- that the S-structure serves as the output of the movement rules; and
- that the D-structure is directly generated by the Categorical Component (i.e. Base Component)

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain what is meant by the 'D-Structure'.
2. (a) Mention and explain two functions of the D-structure
(b) How does the D-structure interact with the S-structure?

7.0 REFERENCES/FURTHER READINGS

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MODULE 4 SYNTACTIC PROCESSES AND RELATIONS

Unit 1 NP Movement Structures
 Unit 2 WH Movement Structures
 Unit 3 Empty Categories
 Unit 4 Introduction to Minimalism

UNIT 1 NP MOVEMENT STRUCTURES

In this unit, we shall discuss NP movement structures. The unit is arranged as follows:

CONTENTS

1.0 Introduction
 2.0 Objectives
 3.0 Main Content
 3.1 NP Movement in Passive Constructions
 3.2 NP Movement in Raising Constructions
 4.0 Conclusion
 5.0 Summary
 6.0 Tutor-Marked Assignment
 7.0 References/Further Readings

1.0 INTRODUCTION

In Government and Binding (GB) theory, the move- α rule is a syntactic transformational rule which moves categories from one position to another, thereby leaving traces at the S-structure. In movement operations, we call the position from which an element is moved the *movement site* and the position to which it is moved the *landing site*. As mentioned earlier, in any movement operation, there must be a trace which must be coindexed with the moved element.

The assumption in movement operations is that certain conditions must warrant the movement of an element. The condition could be for the element to receive case or θ -role. In this unit, we shall be considering some of the movement operations.

2.0 OBJECTIVES

At the end of this unit, you should know:

- what movement operations are
- how movement operates in Passive Constructions
- how movement operates in Raising Constructions.

3.0 MAIN CONTENT

3.1 NP Movement in Passive Constructions

NP movement occurs when an NP moves from one grammatical function position to another. It could be the movement from object to subject position, or from subject to object position. One of the reasons for NP movement is to 'promote the salience of the object NP over the subject NP'. This 'promotion' is sometimes effected so as to emphasise the role of the object rather than that of the subject. It may also be as a result of the fact that the subject is unknown, unidentified or unimportant.

One of the most common examples of NP movement in the English language is passivization. Thus, there is basically an NP movement in every passive construction. Consider the following examples:

1. The ship was named Salome.
2. Some children were eaten by the leopard.
3. I was messed up by the rain
4. Nigeria was knocked out of the tournament by Ghana

Sentences (1) to (4) are passive constructions whose declarative counterparts would be (5)-(8):

5. NP* named the ship Salome.
6. The leopard ate some children.
7. The rain messed me up.
8. Ghana knocked Nigeria out of the tournament.

Whether or not sentences (5)-(8) are accurate reconstructions of (1)-(4) the fact remains that there are some more basic structures with preferred basic word order from where sentences (1)-(4) are derived.

In sentence (1), the purpose of the passivization is to emphasise ~~the~~ the name of the ship rather than who named the ship. In sentence (2) the passive structure places emphasis on the children who were eaten and not on the leopard that ate them. In (3), the fact that I was messed up is given prominence over the rain, while in (4), the fact of Nigeria being knocked out is emphasized over and above who knocked them out.

Four main properties distinguish active sentences from passive sentences:

- (i) passive sentences generally contain some form of the auxiliary *be*. In (1), (3) and (4) it appears as *was*, while in (2) it occurs as *were*.
- (ii) the verb is usually in the *-n* participle form (known as passive participle form) as in *eaten*.
- (iii) passive sentences may include a *by*-phrase.
- (iv) the expression which serves as the subject in the passive construction appears as the complement of the verb in the corresponding active construction.

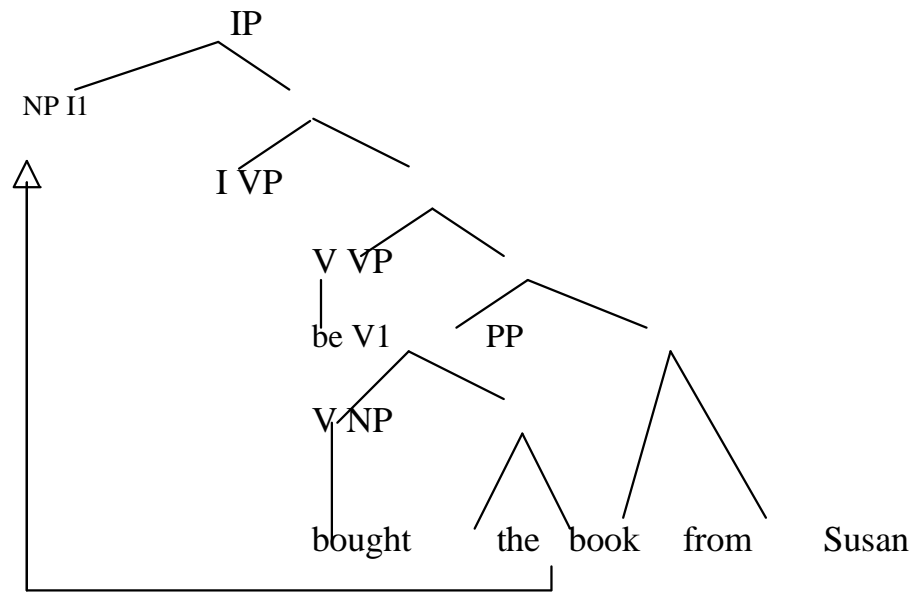
The question now is: if the subject of a passive clause originates as the complement of the passive participle, how does it move to the subject position? What happens is that the subject is moved from complement position within VP to subject/specifier position within IP (Infinitive Phrase). NP movement has a movement site and a landing site just like other movements. The movement could be in Passive constructions or in Raising constructions.

In passive constructions, the NP object of the sentence moves to the subject position with the introduction or insertion of *by*. The assumption here is that a direct object must move from its D-structure position where it has been assigned a *-role* to the S-structure subject position where it would be assigned case. Consider this example:

1. (a) John bought the book from Susan
 (b) The book was bought from Susan by John

This can be represented in a tree diagram as follows:

1.



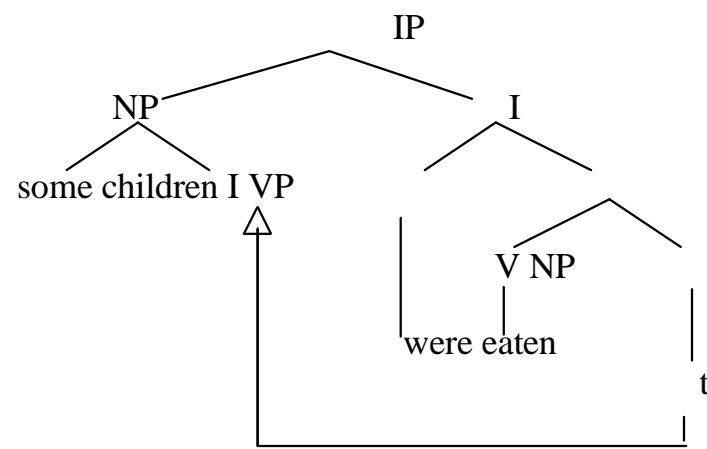
In this example, the book at the object position has moved to the subject position in order to be case marked.

Let us take another example:

- 2. (a) The leopard ate some children
- (b) Some children were eaten by the leopard

We can represent this on a tree diagram as follows:

2.



The above analysis claims that some children originates as the complement of the verb eaten and is then moved into the ~~specifier~~ position within IP to become the subject (and specifier) of the passive auxiliary were. As illustrated above, this type of movement is traditionally referred to as passivization. However, because the passivized NP moves from complement position to subject position (or

from one argument position to another as it is usually referred to), this type of movement is also known as A-movement (Argument movement).

You will notice that under the predicate in the tree diagram (2) above, there is a projection (t) which is linked to the NP. That t is conventional notation for trace. Trace arises from the argument that when a constituent moves from one position to another (as some children moved) the position from which it moves remains in tact, and it is filled by empty category. In other words, a moved expression leaves a trace of itself in the position from which it moved.

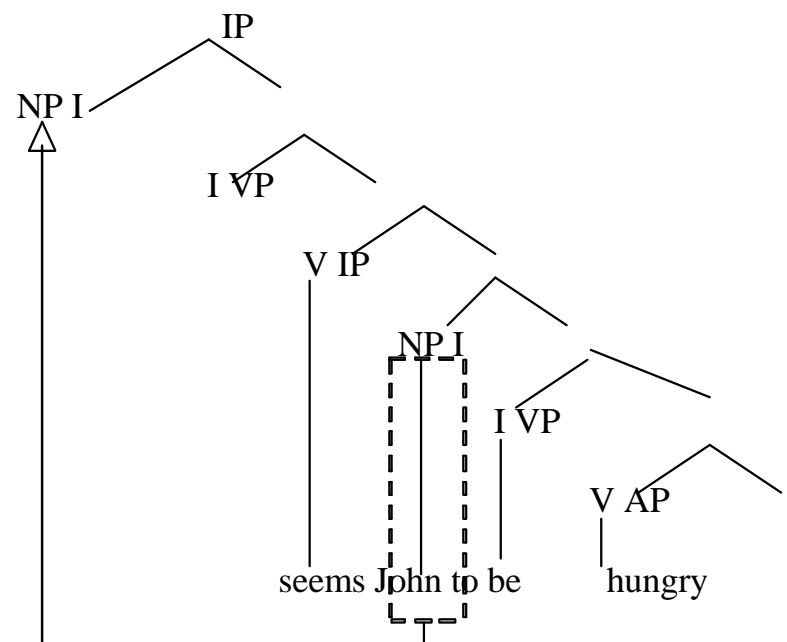
3.2 NP Movement in Raising Constructions

Another NP movement occurs in Raising Constructions. Let us take the subject Raising Construction. Subject Raising is a kind of NP movement which results in the raising of an NP in the object position to the subject position in the phrase marker where it would be assigned a case, since case cannot be assigned in an infinitive position. (An infinitive position is a position where we have the to-infinitive). The movement usually involves a special class of verbs and adjectives like appear, seem, certain, look and likely. Consider the example below:

- 1. (a) John seems to be hungry.
- (b) [IP Johni seems [IP t1 to be hungry]]

Example (1b) shows the trace of the raised subject, John in S-structure. This is represented thus:

- 1. (b)



Predicate adjectives like *likely* can take either infinitival or finite clause complements as in the following examples:

2. (a) He is likely [to be telling the truth]
 (b) It is likely [(that) he is telling the truth]

In (2a) the lexical subject *he* has moved from its D-structure position as subject of the complement to the main clause subject position. By this movement, the *he* (subject) assumes a higher position in the ~~phrase~~ **phrase**.

4.0 CONCLUSION

In this unit, we discussed the transformational rules that move categories from one place to the other. Specifically, we discussed the NP movement rules in Passivization and Raising Constructions. The NP's move into their landing sites leaving traces from where they moved. In their new positions, they receive case assignments. Acquaint yourself of these movements, and try to generate other phrase markers involving them.

5.0 SUMMARY

In this unit, you have learnt:

- what NP movement is and how it operates;
- how NP movement in Passivization takes place, and how to represent it in a phrase marker;
- how NP movement in Raising constructions take place, and how to generate it with the aid of a phrase marker; and
- what trace, empty category, and move a rule mean.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the following terms:

- (a) trace
 (b) empty category
 (c) Raising construction

2. Use a phrase marker (tree diagram) to generate the following sentences:

- (a) The goal was scored by the captain
 (b) The man was bitten by the dog
 (c) John is likely to win the contest
 (d) She is certain to pass the examinations

3. Explain what you understand by NP-Movement and give reasons why it takes place.
4. Transform the following sentences into passive constructions:
 - (a) My father gave me some money
 - (b) Her mother named her Violet
 - (c) James Peters knocked out Dick Tiger

7.0 REFERENCES/FURTHER READINGS

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UNIT 2 WH-MOVEMENT STRUCTURE

In the previous unit, we considered NP movement in two types of constructions, Passivization and Raising constructions. In this unit, we shall discuss another type of movement, called WH-movement.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 WH-Movement Structure
 - 3.2 Adjunct Movement
 - 3.3 WH-Movement and Subject NP
 - 3.4 Relativization Constructions
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

In English, there are some sentence types that are generated employing the WH-Movement rule. Such sentences include *Relativization, Focusing, Topicalization and Indirect Questions*, among others. The most typical sentence type generated by WH-Movement, however, is the interrogative content word question. In this unit, we shall discuss some of these types of WH-Movement. Pay attention to the discussion so that you will derive maximum benefit from it.

2.0 OBJECTIVES

At the end of this unit, you should:

- know what WH-Movement is all about
- know how WH-Movement operates
- know what Adjunct movement is
- know how Relativization constructions are generated.

3.0 MAIN CONTENT

3.1 WH-Movement Structures

WH-Movement derives its name from the English spelling of question markers which are called WH-words, such as what, where, when, who, *which, and so on. Questions which begin with any of these are known as WH-questions. Even constructions that do not have WH-words, but show similar behaviour as are attributed the WH-ones are also called WH-Movement constructions.*

Content-word questions require that information be provided. Answers to such questions or information are usually couched in a WH-phrase as in the following examples:

1. She wants to buy WHAT?
2. WHAT does she want to buy?

In (1) what can be shoes, tomatoes, bread, beer, or any NP. However, questions are not often asked as in (1). A more typical pattern for a question is (2). Because what is actually an object of buy, people use the (1) format when they want the inquired XP repeated or re-echoed. That is why (1) is known as echo-questions. Echo questions are used when the listener wants the speaker to repeat a particular statement. The reason for an echo question could be that the listener has not heard right, or that he is incredulous about the sanity of such a statement, or that he is expressing disbelief.

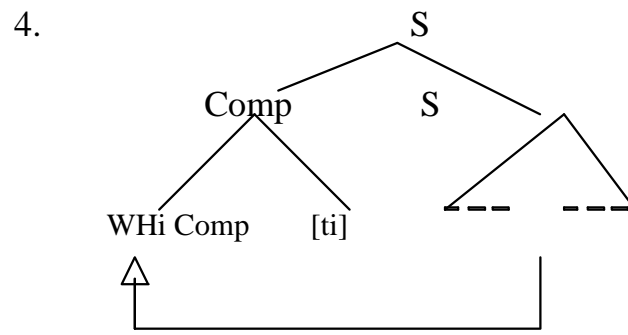
From the foregoing, we posit that (1) is the basic pattern, and the D-structure of (2). The examples are repeated here for convenience:

1. She wants to buy WHAT?
2. WHAT does she want to buy?
3. WHAT does [she want to buy---]

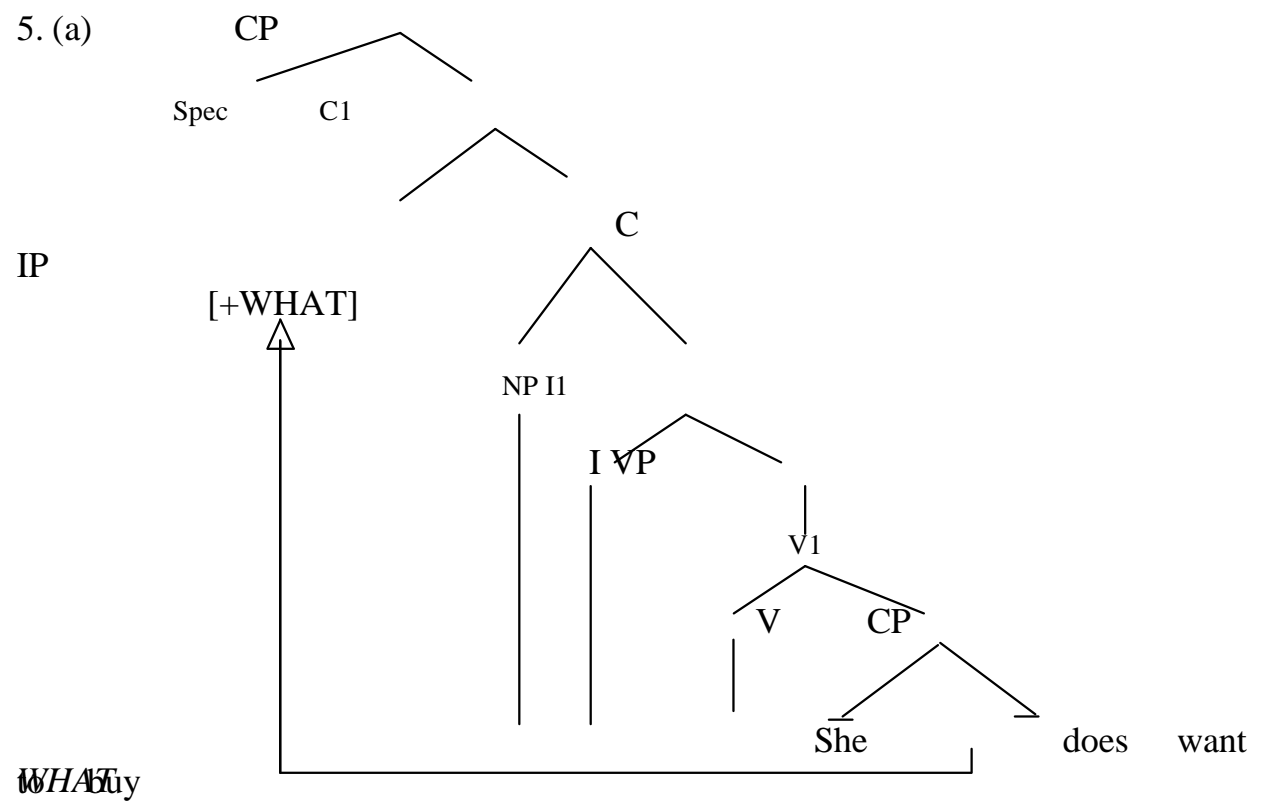
△—————|

The path of the movement is indicated in (3). By this notation, we have demonstrated that the WH-phrase actually moved out of the sentence enclosed by the brackets.

The extraction site of a WH-phrase is a governed position, in this particular case, a complement of the verb buy. And from our earlier observation, we would say that the WH-phrase lands in a COMP site as shown in the following phrase marker:



Using the X-bar analysis, we can spell out the landing site as in the following phrase marker:



The SPEC (specifier) of CP is the host for the moved WH-phrase. That is to say, the SPEC base-generated in CP provides a natural landing site rather than a make-shift abode for the WH-phrase.

In a more technical sense, the extraction site (or movement site) is a subcategorized position, a complement of a V. Any position is called argument position (i.e. an argument of the verb), commonly abbreviated as A-position. However, since there is no verb that subcategorises for a SPEC position, it is posited that the [SPEC, CP] is a non-argument position, an A-bar position. What happens, then, is that the WH-phrase moves from A-position (extraction site) to an A-bar position (landing site) where it is assigned a θ -role.

There are cases where a WH-word may be attached to a preposition, and the WH-word has to move with the preposition instead of leaving it behind. In this type of situation, we say that the preposition is pied piped (a situation where a WH-phrase moves with the preposition attached to it instead of leaving it stranded). Consider this example:

- (b) To [whomi did [You give ti the book]]
 CP CP

In the above example, the preposition *to* is stranded outside the labeled bracket.

3.2 Adjunct Movement

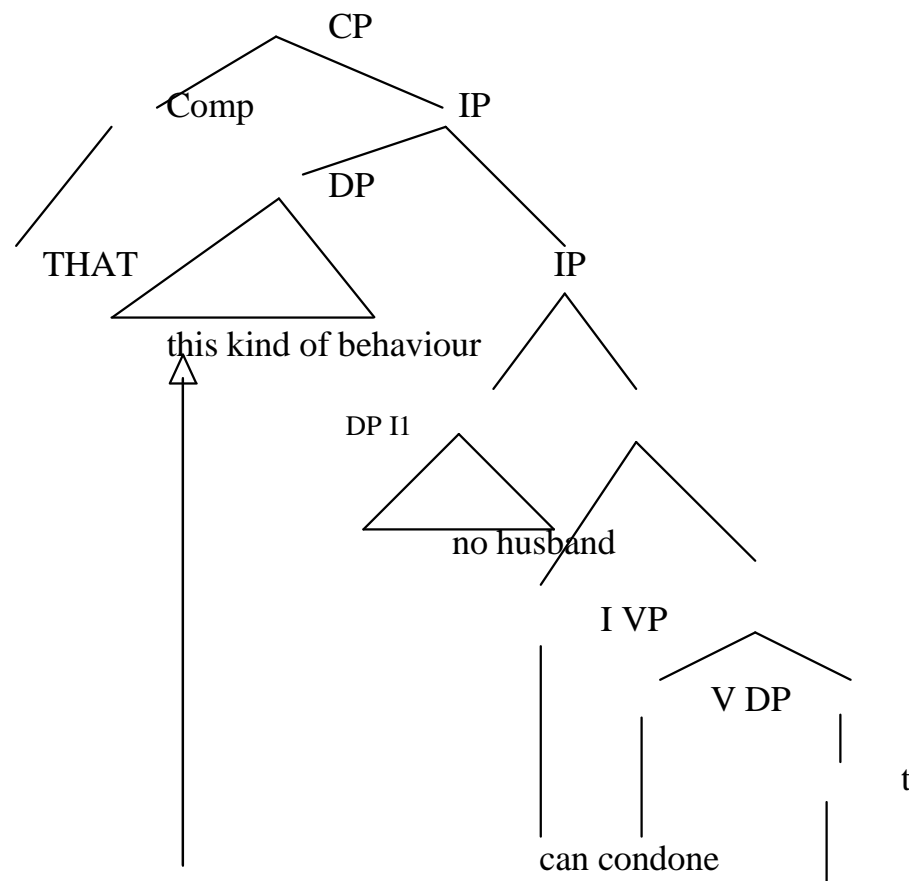
This type of movement operation can be illustrated by the following sentence:

6. (a) She must realize that this kind of behaviour no husband
 can condone.
 (b) She must realize that no husband can condone this kind of
 behaviour
 (c) She must realize [that this kind of behaviour no husband can
 condone]

In (6a), the italicized CP: *this kind of behaviour* appears to function as the complement of *condone*, and we might therefore suppose that it originates in post-verbal position as in (6b). It is then topicalised (i.e. made the topic of the bracketed *that*-clause as in (6c)) by being moved into a more prominent position at the front of the clause. But where exactly is the italicized phrase moved to?

Clearly, it is moved to a position somewhere between the COMP (complementizer) *that* and the following IP which begins with *no husband*. *The analysis of this kind of structure we adopt here maintains that the topicalised expression undergoes an operation known as adjunction by which it is adjoined (attached) to the left of IP, and that it leaves a trace behind in the position out of which it moves (the extraction site) so that the that-clause is derived as in (7):*

7.



Adjunction is an operation whereby a given type of category is expanded into a larger category of the same type by the addition of another expression. In the case of (7), the original IP, *no husband can condone this kind of behaviour* is expanded into the larger IP, *this kind of behaviour no husband can condone t* by moving the DP (Determiner phrase), *this kind of behaviour* and adjoining it to the left of the original IP, leaving behind a trace as the complement of *condone*.

3.3 WH-Movement and Subject NP

So far, we have concentrated our discussion of WH-Movement on the object position of V or P. In English, when the subject is moved, it is not immediately apparent that any phrase has vacated its place. Consider these examples:

8. (a) Who killed his banana tree?
 (b) Who is addressing the conference?
 (c) Who will tell the President?

WH-Movement in English is often characterized by the metathesis of the Tense-bearing modal with the subject NP. Compare the following:

9. (a) Where will they drop the anchor tonight?
 (b) When can you find time to pay us a visit?
 (c) What can a poor man say to the King?

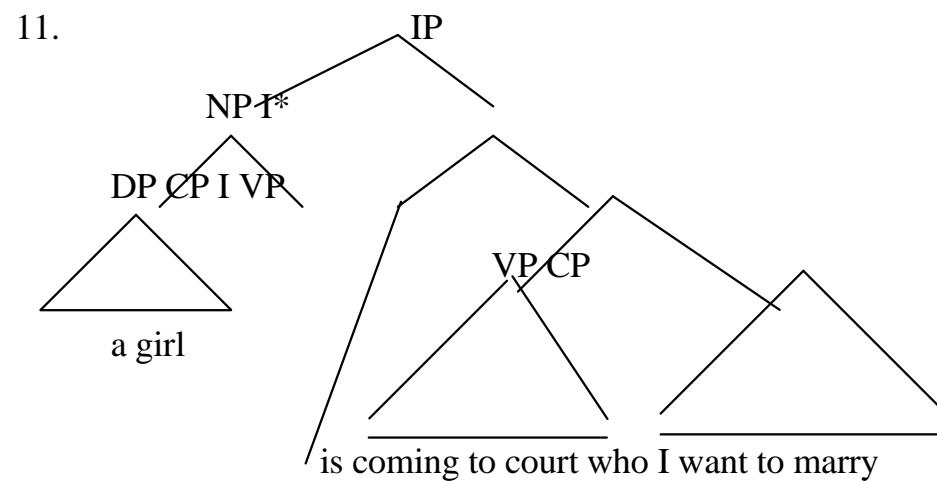
In (9a) and (9b), where and when are adjunct PP's located sentence – finally, while in (9c) what is a complement of say. The examples in (9) involve AUX-NP inversion in the SS, but the same is not the case with (8) where movement originates in the subject position.

3.4 Relativization

Sometimes WH-Movement may not affect a WH-phrase properly contained in subject NP. There appear to be rules of English grammar that can extract other constituents properly contained in a subject NP. Consider the following pair of sentences:

10. (a) A girl who I want to marry is coming to court.
 (b) A girl is coming to court who I want to marry

In the above examples, who I want to marry is a relative clause that modifies the head of the subject girl. In (10a) the relative clause is a constituent of the subject NP, whereas in (10b) it has been moved out of the subject to the end of the sentence. Suppose the movement results from the adjunction of the relative clause (CP) to VP via a rule called *Extraposition*, we would analyse the structure of (10b) as (11) below:



The empty CP in the subject NP represents the trace of the extraposed relative clause in VP.

4.0 CONCLUSION

In this unit, we have been discussing WH-Movement operations. We have tried to show how WH-Movement operates in some constructions. Just like other movements, WH-element (or phrase) has an extraction site and a landing site – the target, and it also leaves a trace ~~which~~ indexes with the moved element.

5.0 SUMMARY

In this unit, you have learnt:

- what WH-Movement is, and how it operates in some constructions;
- what Adjunct movement is; and
- how WH-Movement operates in Relativization constructions.

6.0 TUTOR-MARKED ASSIGNMENT

1. Write short notes on the following, using examples to illustrate your answer:

- (a) WH-Movement Structure
- (b) Adjunct Movement
- (c) Relativization constructions

2. Transform the following relative clauses into tree diagrams:

- (a) The boy who I went to see has traveled.
- (b) The woman who sold the cat is dead.
- (c) The clock which he gave to me is a fake clock.

3. Explain the terms extraction site and landing site.

4. What are echo questions? Explain their roles in WH-Movements.

7.0 REFERENCES/FURTHER READINGS

Radford, Andrew et al. (1999). *Linguistics: An Introduction*. Cambridge: Cambridge University Press.

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UNIT 3 EMPTY CATEGORIES

In the previous unit, we discussed several types of WH-Movement constructions. In this unit, we shall consider Empty Categories.

The unit is arranged as follows:

CONTENTS

- 11.0 Introduction
- 12.0 Objectives
- 13.0 Main Content
 - 13.1 Empty INFL
 - 13.2 Pro: Empty Subject of Infinitive Clauses
 - 13.3 Extraction-motivated Empty Categories
 - 13.4 Covert Complements
- 14.0 Conclusion
- 15.0 Summary
- 16.0 Tutor-Marked Assignment
- 17.0 References/Further Readings

1.0 INTRODUCTION

It is generally assumed that syntactic structures are projections of overt constituents (i.e. of words, phrases and clauses which have overt phonetic form). However, as our understanding of syntax deepens, strong opinions have emerged which argue that syntactic structures can also contain what are variously referred to as covert, null or empty constituents, *i.e. silent constituents which have no overt phonetic forms.*

In this unit, we shall discuss a number of different types of empty categories along with the arguments for supporting that such categories play a role in the grammar of English.

2.0 OBJECTIVES

At the end of the unit, you should know:

- what empty categories are
- the various types of empty categories and how to analyse them
- the syntactic arguments in support of the existence of such categories.

3.0 MAIN CONTENT

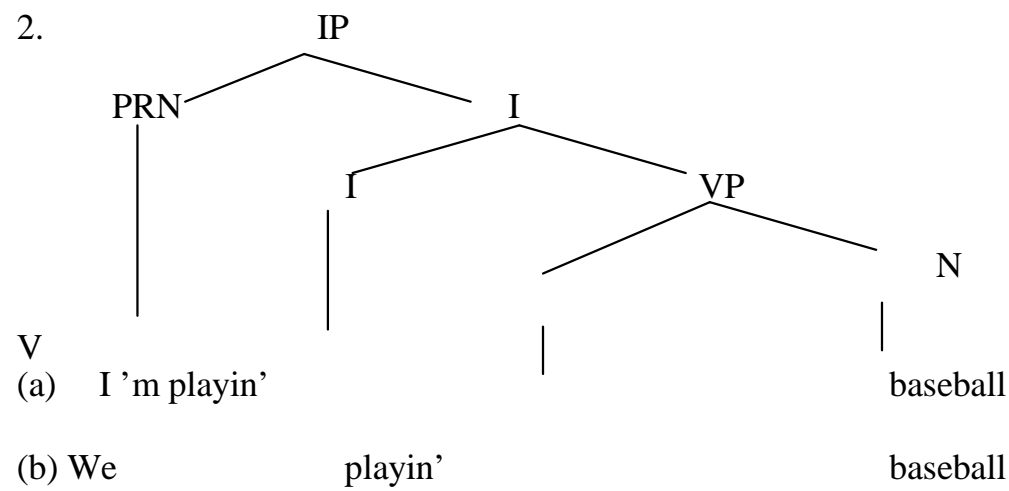
There are two main types of empty categories as far as the theory of grammar is concerned. They are trace and pro. A trace is an empty category caused by movement. That is, an empty category or space left when a constituent is moved to another position in a phrase marker. The empty category Pro, is a base-generated empty NP that remains empty at S-structure. Pro is an empty category that relates with an antecedent NP (a matrix subject) in a sentence.

3.1 Empty INFL

We shall start our discussion of empty categories by looking at the following pair of sentences of American Vernacular English (as given by Radford, et al, 1999:304).

1. (a) I'm playin' baseball
- (b) We/You/They playin' baseball

Example (1a) contains an overt form of the auxiliary be, namely, the contracted form 'm. However, the examples in (1b) contain no overt form of be, yet, there are good reasons to suppose that they contain a covert/null or empty variant of are/is which we will symbolize as \emptyset . If this is so, (1a) and (1b) will have essentially the same representation as (2a) and (2b):



Since (2b) is an IP headed by a null variant (\emptyset) of are, we can provide a straightforward account of why the subject we is nominative (because \emptyset is a variant of the auxiliary are and it is a specifier feature like are that they require a nominative subject) and why the complement verb playin' is in the ing form (because \emptyset is a variant of are, and it is a complement feature of the auxiliary are that it selects a complement headed by a verb in the -ing form).

Further evidence that structures like (2b) contain a null auxiliary come from HAVE examples reported by Ralph Fasold such as the following (where gonna = going to):

3. He gonna be there, I know he is.

In structures like (3), the italicized auxiliary in the second clause is a copy of the one in the first clause in some other varieties of English. The following examples illustrate this point:

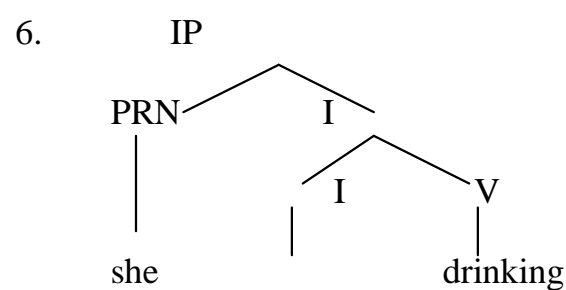
4. (a) He can do it, I know he can.
 (b) She is crying, I know she is
 (c) They will kill it, I know they will

So, the fact that the auxiliary appears in the second clause in (3) suggests that the first clause contains a null counterpart is.

Although standard varieties of English do not allow the use of a null auxiliary in sentences like (1), there are specific types of constructions in which auxiliaries can be null. In this connection, compare the sentences in (5):

5. (a) He was eating and she was drinking.
 (b) He was eating and she – drinking

Sentence (5b) seems to contain a gap in the position marked –. The auxiliary was has been omitted in (5b) to avoid repetition, and we say that it has undergone a particular kind of ellipsis known as gapping, so resulting in the structure in (6) below:



As can be seen in (6), the clause is an IP headed by a null auxiliary, \emptyset . If we assume that \emptyset here is a null variant of was, we can account for the fact that the subject is she (since was requires a third person singular nominative subject like he or she), and the verb crying is in the progressive –ing form (since \emptyset requires a complement headed by a verb in this form).

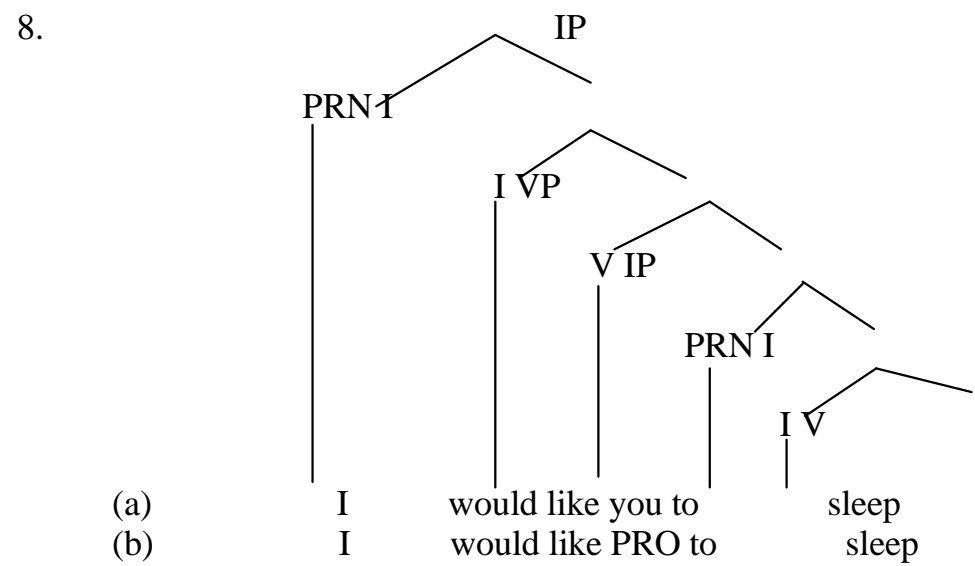
3.2 Pro: The Empty Subject of Infinitive Clauses

Compare the structure of the bracketed infinitive clauses in (7a) and (7b):

- 7. (a) I would like [you to sleep].
- (b) I would like [to sleep]

Each of the bracketed infinitive clauses in (7) is an IP headed by the infinitive particle *to*, and each bracketed IP serves as the complement of the verb, *like*, and therefore a complement clause. An apparent difference between the two is that the bracketed infinitive clause in (7a) has an overt subject, *you*, whereas its counterpart in (7b) appears to be subjectless. However, it is evident that the apparently subjectless infinitive clauses contain understood null subjects. Since the null subject found in infinitive clauses has much the same grammatical properties as pronouns, it is conventionally understood as *PRO*.

Given this argument, sentence pairs such as (7a) and (7b) are essentially the same structure except that the bracketed IP has an overt pronoun *you* as its subject in (7a), but a covert *PRO* as its subject in (7b). These structures appear as (8a) and (8b) below:



Introducing the relevant technical term, we can say that the null subject *PRO* in (8b) is *controlled* (that is, refers back to) the subject, *I*, of the *would* clause, or equivalently, that *I* (i.e. the expression which *PRO* refers back to) is the controller or antecedent of *PRO*. Verbs such as *like* which allow an infinitive complement with a *PRO* subject are said to function as control verbs.

An obvious question to ask at this point is why we should agree that apparent subjectless infinitive complements like those bracketed in (7b) have a null PRO subject. Part of the motivation for positing PRO is semantic in nature. In traditional grammar it is claimed that subjectless infinitive clauses have understood or implicit subject; and positing a *PRO subject in such clauses is one way of capturing the relevant intuition*. The implicit subject becomes explicit if the relevant clauses are paraphrased by a clause containing an auxiliary like will as in the paraphrase of (9a) given in (9b):

9. (a) The lecturer hopes [to be understood]
 (b) The lecturer hopes [he will be understood]

The fact that the bracketed clause in (9b) contains an overt (underline) subject makes it plausible to suppose that the bracketed clause in (9a) has a covert PRO subject.

There is also syntactic evidence in support of the claim that subjectless infinitive clauses have covert PRO subjects. Part of this evidence comes from the syntax of reflexives (i.e. –self/-selves forms such as myself, yourself, himself, themselves, etc). *As can be observed in the following examples, a reflexive generally requires a local (i.e. nearby) antecedent:*

10. (a) They want [John to help himself]
 (b) *They want [John to help themselves]

In examples like (10), a local antecedent means an expression which the reflexive can refer back to within the same (bracketed) clause. Thus, (10a) is grammatical because it satisfies this locality requirement: the antecedent of the reflexive himself is the noun John, and John is contained within the same bracketed help-clause as himself. Conversely, (10b) is ungrammatical because the reflexive themselves does not have a local antecedent (i.e., it does not have any expression it can refer back to within the bracketed clause containing it); its antecedent is the pronoun they, and they is part of the want-clause, and not part of the bracketed help-clause. *In the light of this locality requirement, let us consider the example in (11):*

11. Kola likes [to praise himself]

We can account for the grammaticality of (11) thus. Given that a reflexive needs a local antecedent, the reflexive himself must have an antecedent within its own (bracketed) clause. This requirement will be satisfied if we assume that the bracketed complement clause has a PRO subject as in (12):

12. Kola likes [PRO to praise himself]

We can then say that *himself* has an antecedent within the bracketed clause containing it, since *himself* refers back to *PRO*. Because *PRO* in turn refers to *Kola*, this means that *himself* refers to the same person as *Kola*.

From the foregoing, we can affirm that clauses are IP structures of the form subject + INFL + complement: the subject is an overt or covert pronoun or nominal (i.e. noun-containing) expression, INFL is occupied by an overt or covert auxiliary or infinitive particle, and the complement is a verb or verb phrase.

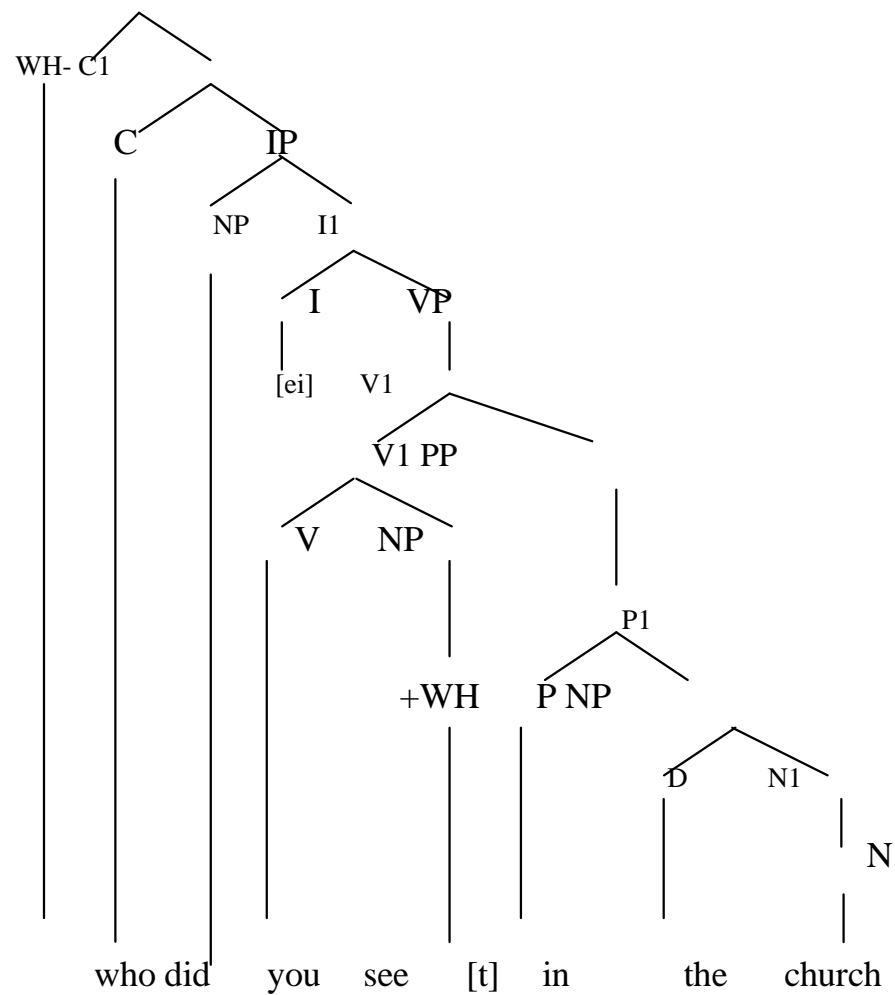
3.3 Extraction-Motivated Empty Categories

Empty categories may occur as a result of gaps resulting from extraction. Let us consider the following examples:

13. (a) Who did Njide see in the office?
 (b) Who saw Kunle in the market?
 (c) Who did you say you saw in the market?

We will show in (14) that some WH-phrase, originally in situ, moving from an extraction site and landing in [SPEC, CP], leave gaps at the extraction site:

14. CP



The gap may be deeper down in the construction as in (13c), reproduced here as (15):

15. Who did you say [CP you saw – in the church]

The WH-phrase, CP-initial in (15), originated from the bracketed clause. This implies that it has crossed two sentence boundaries. Considering that (16c) below is the S-structure of the D-structure (16b) for which (16a) is the surface phonetic form, it becomes obvious that such movements as exemplified above, leave traces at the extraction sites.

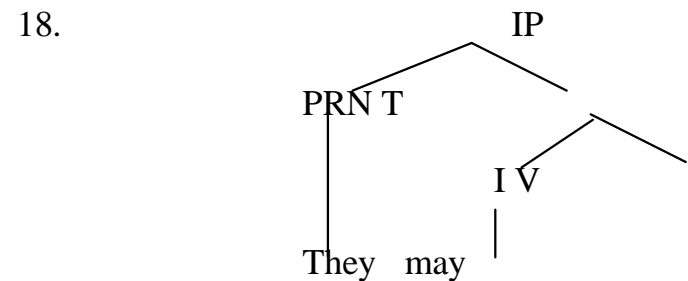
- 16. (a) The doctor was arrested
- (b) NP_e TNs BE-EN arrest the doctor
- (c) The doctor_i; was arrested [t_i]

3.4 Covert Complements

Just as both INFL and its subject can be covert, so too the complement of INFL can be covert in structures where it undergoes ellipsis. Example, in (17) below, B's reply is understood as an elliptical form of *they may come*:

17. A: Do you think they will come?
B: They may.

On the basis of the above, we may suggest that the auxiliary *may* has a null complement, and that the sentence *they may* has the structure shown in (18):



In (18), *may* is understood as having the same grammatical and semantic features as *come*, differing from *come* only in that it has no phonetic features. Thus, clauses are always IP's of the form: *subject + INFL + complement, and the subject may be overt or covert; INFL may be overt or covert; and the complement may be overt or covert.*

4.0 CONCLUSION

In this unit, we have discussed four kinds of Empty categories: Empty INFL, Pro, Extraction – motivated and covert complements. In all of them, we have tried to show that syntactic structures can contain empty constituents. We have also provided arguments in support of this stand. We hope you followed the argument in the discussion. Try to familiarize yourself with the technical terms used in the discussion.

5.0 SUMMARY

In this unit, you have learnt:

- what Empty categories refer to;
- what is meant by Pro, Extraction-motivated, and covert complements; and
- the argument in support of the existence of Empty categories in syntactic structures.

6.0 TUTOR-MARKED ASSIGNMENT

- (a) What do you understand by Empty Categories?
- (b) Explain the following as clearly as possible:

- (i) Pro: Empty Subject of Infinitive Clauses
- (ii) Covert Complements
- (iii) Extraction-Motivated Empty Categories

7.0 REFERENCES/FURTHER READINGS

Radford, Andrew et al. (1999). *Linguistics: An Introduction*. Cambridge: Cambridge University Press.

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UNIT 4 INTRODUCTION OF MINIMALISM

The Minimalist Program is the recent model of Chomsky's analysis of grammar. The model tries to reduce or minimize the complexity of syntax. It also tries as much as possible to delete or replace features in the Principle and Parameters (Government and Binding) theory.

The unit is arranged as follows:

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Introduction of Minimalism
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

4.0 INTRODUCTION

The notion of Minimalist Program (MP) was introduced by Chomsky (1993, 1994, 1995). It makes some general assumptions about the nature of phrase structure and the nature of movement. The Minimalist Program is intended to be a significant departure from what has gone before. It basically claims, contrary to previously existing hypothesis, that D-structure, S-structure, the government relation, the x-bar schema and referential indices play no essential role in syntactic theory, and should, therefore, be dispensed with. Minimalist program is basically motivated by economy considerations.

In what follows, we shall discuss the basic assumptions of the program.

5.0 OBJECTIVES

At the end of the unit, you should be able to:

- explain what Minimalist Program is all about
- know the economic principles and how they work
- utilize the insight in syntactic analysis.

6.0 MAIN CONTENT

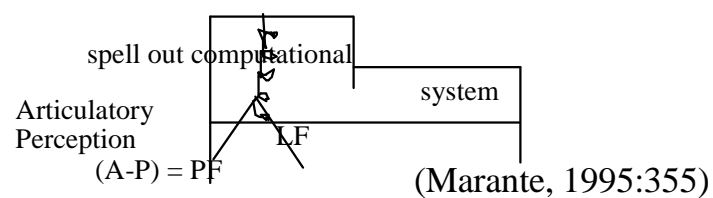
3.1 Introduction of Minimalism

MP's approach is to account for the structure of language as the consequence of what are assumed to be intuitively natural economy *conditions on the computational mechanisms that comprise grammars*.

There are essentially two such mechanisms: phrase structure which falls under X-bar theory in the principles and parameters framework, and *movement, which is characterized by move-a in the Principles and Parameters framework*.

In Principles and Parameters theory, and much of the work leading up to it, a major driving force is the uniformity principle. Under this principle, the value attached to any grammar depends on the extent to which it conforms to general configurational and derivational patterns. However, in the MP there is a strong principle of structural and computational simplicity: grammars are more highly valued to the extent that they minimize structure and derivations. Below is the model:

Minimalist Model



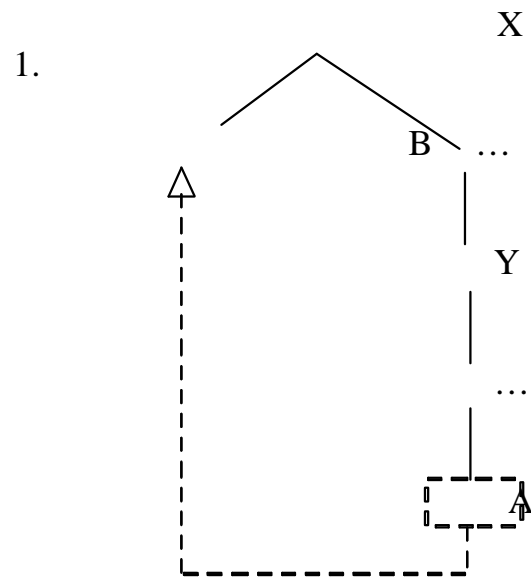
In this model, lexical items are spilled into the working areas from the lexicon, and each lexical item has phi-features (gender, number, person) attached to it. Computation starts from a set of lexical resources. There are operations in working areas in this model: *operation select, operation merge, and operation move*.

Operation Select selects the items which are relevant for the realization of a structure; Operation merge merges selected items to individual features, while Operation Move moves merged items to the PF or LF for interpretation where they cross spell-out.

The PF and LF are the two interface levels recognized in MP and moved elements converge at these levels. The x-bar theory, case theory, D-structure and S-structure of Government and Binding (GB) theory, are all deleted in this model, while the Move- α (move alpha) is replaced with operation move. Some economic principles used in this model are:

- (a) Short Move: This took over the subjacency principle, and it states that movement of an item must be to the next available upper space from its source.
- (b) Greed: This states that an element moves to check its own feature. In other words, a constituent does not move unless it has to in order to satisfy some requirement that it has.
- (c) Procrastination: This states that if an element can wait, it must wait; this makes movement occur as late as possible in derivation.
- (d) Last Resort: This principle states that a short derivation is preferred to a longer one.
- (e) Least Effort: This refers to the choice of a derivation in which minimum effort is required. In other words, a derivation takes a very minimal effort.

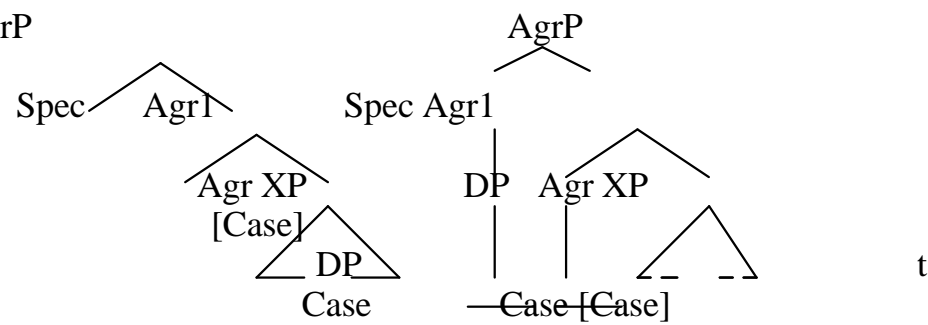
Let us begin by examining the notion of intuitively natural economy conditions as it relates to movement. The basic principle motivating the NP is that other things being equal, the more economical derivation is preferred. Let us take movement from A to B, and then to a more distant C, for example. If A to B is a legitimate movement, then the additional movement to C is a further operation, adding complexity to the derivation. One interpretation of economy is that the shorter derivation is preferred over the longer one, and blocks the longer derivation. However, if we take this idea literally in its most simplistic form, we would end up with the notion that no movement is possible since the absence of movement is maximally economical. What is necessary in order to make the idea of economy more realistic is to consider alternative movements where the outcome of the alternatives is independently required, so that the option of no movement at all is not available. Thus, we can consider why movement takes place as well. Let us take movement just from A to B as an example. It is natural to think of the most economical way of going from A to B to be the path that involves the fewest steps. In a tree such as (1) below, a single movement to B might appear to be the most economical. On the other hand, the length of each step might enter into the computation of economy. It is difficult to see how a movement from A to B that employs many steps of minimal length would be more or less economical than the movement illustrated above without some stipulation.



Again, it is necessary in resolving this matter to consider not only what kind of movement is involved, but also why the movement takes place. Simply preferring a stepwise derivation of the movement from A to B will not entail an empirical difference with a single movement from A to B, since the same structure is derived in both cases. The notion of economy can, in principle, have some empirical consequences if in certain cases, non-movement and movement are valued differently as long as there is a fixed reason for why movements occur. Recalling our discussion concerning movement from A to B and then to C, for example, suppose that the shorter derivation blocks the longer one. Under such circumstances, the two derivations will give rise to different derived structures, yielding empirical differences. The principles of *Greed and Procrastination* substantiate this idea.

Procrastination can be motivated in terms of economy if we assume that early movements are more costly, in computational terms, than late movements, in particular Logical Form (LF) movements. To illustrate, let us consider the feature [Case]. Suppose that every DP possesses such a feature, and that in order to be licensed, a DP with this feature must appear in the specifier position as a case assigner (which we can call Agr) that possesses this feature. This relationship is an instance of feature checking. Assume further more, that a feature that is not licensed produces ungrammaticality. Now, since the feature [Case] must be licensed, it must move to [Spec, Agr P].

2. AgrP



The striking out of the feature in the derived structure is one way of indicating feature checking.

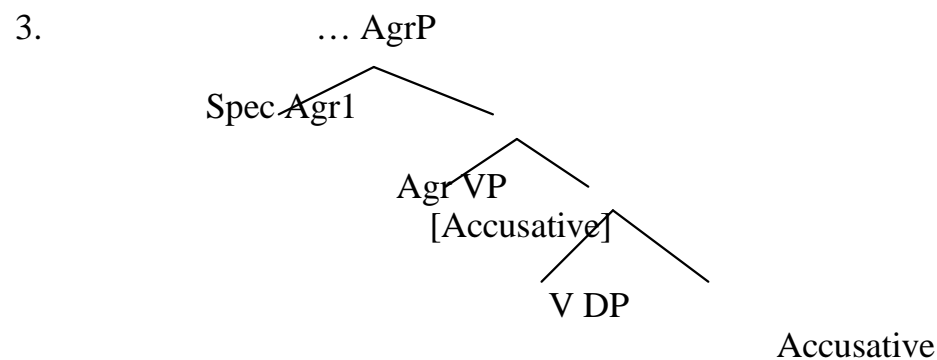
The next question that arises has to do with how the notion of economy can produce any real linguistic consequences, given that everything that has to move does move, and nothing moves until the last possible moment. The key is in our understanding of last possible moment, or *Last Resort*. The idea here is that for each feature there is a structure of Last Resort, such that the feature must be checked at some point in the derivation no later than that structure. Procrastinate together with Last Resort will produce the result that the feature will not be checked before this structure is derived.

Let us suppose that for some feature, the structure of Last Report is the equivalent of S-Structure, that is, the structure that corresponds to the perceived order of constituents. In this case, the movement will produce some reordering of constituents. Let us suppose that for some feature the structure of Last Resort is LF. In this case, the movement will occur and the feature will be licensed, but the movement will produce no superficial effects. In other words, it will have no consequence for phonetic form (PF).

It is important to note that the MP does not assume that there is actually a distinct level of S-structure with certain well-defined properties. Rather, what corresponds to what we would call S-structure is the structure that exists at a stage of the derivation where the mapping into PF occurs, a process called Spell-Out. This stage can be any point in the derivation, so that S-structure is nothing more than the structure as it exists at the point of Spell-Out. In contrast, in the more traditional application the mapping into PF is determined by the independent level of structure, that is, the level at which the Binding theory, agreement requirements, the ECP, and so on, apply. Effectively, there is no level of S-structure in the MP, although we will continue to use the term informally to refer to the structure at the point of Spell-Out.

Movements that occur prior to Spell-Out are costly in terms of economy of derivation, while movements that occur in LF are cost-free. Hence, it is preferable to wait until LF if at all possible, that is Procrastinate.

Now, let us consider what features force movements before Spell-Out/S-Structure. As we noted at the beginning of this unit, Chomsky makes a distinction between strong and weak morphology. A strong feature is one that must be licensed at S-Structure prior to Spell-Out, while a weak feature is one that need be licensed only at LF. Crucially, the same feature may be weak in one language and strong in another, a difference that produces differences in constituent order assuming precisely the same underlying phrase structure. Continuing our example of case features, suppose that Accusative is strong in one language and weak in another, and suppose further more that the underlying structure is that of (3) below:



Assume that uniformly, agreement holds between a head and its specifier. When this feature is strong, the DP will move to [Spec, AgrP] prior to s-structure, producing an ordering in which the object precedes the V. In a language in which the feature is weak, the DP moves at LF and the order of constituents is unchanged, and the object follows the V. Assuming that there are no other movements, we thus reduce the Head Parameter to the relative strength of the object case morphology. In languages in which the subject precedes the verb, it is plausible to suppose that the Nominative feature is strong and that the subject moves to [Spec, AgrSP] prior to s-structure.

7.0 CONCLUSION

The Minimalist Program is the most current model of Chomskyan grammar. In this model, there is a progression towards minimalism, that is, the theory aspires to reduce the expressive power (complexity) of syntax. In this model, syntactic structures are built up through generalized transformations that may insert already formed trees into trees. In this model, certain features of the Principles and Parameters model are conspicuously absent. These include Case theory, X-bar

theory, D-structure, S-structure and Move Alpha. The last of these is replaced with operation move.

8.0 SUMMARY

At the end of this unit, you have learnt:

- what Minimalist Program means;
- the principles of NP and how they work; and
- how NP is applied in the analysis of the syntax.

9.0 TUTOR-MARKED ASSIGNMENT

- (a) What do you understand by Minimalist Program?
- (b) Explain the following economy principles of the program:

- (i) Greed
- (ii) Last Resort
- (iii) Procrastination

10.0 REFERENCES/FURTHER READINGS

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