



**ENG 821**  
**ADVANCED SYNTAX**

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## **Introduction**

### **Welcome to ENG 821: Advanced Syntax**

*ENG 821: Advanced Syntax* is a 3-credit one semester postgraduate course. It comprises twelve study units sub-divided into four modules. The modules present recent innovations in generative syntax, particularly in relation to the place of meaning in syntactic computation. The material has been developed with local examples suitable for Nigerian students. This course guide gives you an overview of the course, providing you with information on the organisation and requirements of the course. You are advised to attend the online tutorial classes on the course to discuss perceived difficulties with your tutors.

Syntax and semantics are both in the field of linguistics. Syntax has to do with the building up of phrases, clauses and sentences; semantics has to do with meaning. The words, phrases and clauses that are built into sentences constitute specific information unit, all of which make up the meaning of a sentence. In this course, you will learn about diverse concepts, phenomena, processes and conditions that are currently receiving attention in discussions around meaning-making in sentence construction, particularly in the transformational generative syntax tradition. It is important for you to note from this point now that you will need to critically examine a lot of sentences as you go through this course, and you will have to generate many sentences on your own to further examine particular topics being discussed in each unit.

### **Course Aims**

The course aims to:

- i. enhance MA students' understanding of interfaces in the study of syntax;
- ii. expose MA students to how meaning is treated in recent innovations within the transformational generative grammar; and
- iii. explore morphological and syntactic concepts and phenomena, relating these to meaning-making.

## **Course Objectives**

By the time you complete this course, you should be able to:

- i. explain distinctly concepts, phenomena and processes that are central to both syntax and semantics;
- ii. discuss the interface between syntax and semantics;
- iii. engage in thorough grammatical judgment of sentences in relation to meaning-making; and
- iv. argue for/against the autonomy of syntax and semantics in language study.

In addition, it is important for you to note that there are objectives to be achieved in each unit of the course. You will find them at the beginning of each unit. Ensure that you read these objectives and internalise them before studying each unit.

## **Working through the Course**

To complete the course, you are required to read the study units and read the recommended reading materials. You will also need to undertake practical exercises for which you need a pen, a notebook and other materials that will be listed in this guide. It is advised that you do not jump units; study all of them because they have been arranged in such a way that the content of one unit is built on the content of a preceding one. There are exercises at the end of each unit. The exercises are to aid your understanding of the concepts being discussed. At the end of each unit, you will be required to submit written assignments for assessment purposes. At the end of the course, you will write a final examination.

## **Course Materials**

The major materials you will need for this course are:

1. The course guide
2. The study units
3. The relevant textbooks/journals, including the ones listed under each unit

4. The assignment file
5. The presentation schedule

## **Study Units**

There are 12 study units in this course. They are as follows:

Module 1 Structure and Meaning

Unit 1 Form-Meaning Relationship

Unit 2 Sentence, Utterance and Proposition

Module 2 Morphology-Syntax Relationship

Unit 1 Morphosyntax

Unit 2 The Primitives of Syntax

Unit 3 Feature Valuation in Computation

Module 3 Interpreting Syntactic Constituents

Unit 1 Syntax-Semantics Interface

Unit 2 Logical Form

Unit 3 Null Constituents in the Minimalist Program

Unit 4 Binding Relations in the Minimalist Program

Module 4 Syntactic and Semantic Scope

Unit 1 Scope and Anaphora in the Minimalist Program

Unit 2 Scope Ambiguity

Unit 3 Semantic Scope of Determiner Phrases

## **Assessments**

This course is assessed in two ways: tutor-marked assignments and a final examination. An assignment file and a marking scheme will be made available to you. In this file, you will find all the details of the work you must submit to your tutor for marking. The marks you obtain from these assignments will count towards the final mark you obtain for this course. Further information on assignments will be found in the assignment file itself and

later in this Course Guide in the sections on Tutor Marked Assignments (TMA) and Final Examination and Grading.

### **Tutor Marked Assignments (TMA)**

You will need to submit a specified number of the Tutor-Marked Assignments (TMAs). Every unit in this course has a tutor-marked assignment. You will be assessed on four of them but the best three will count. The total marks for the best three (3) assignments will be 30% of your total work. It is also important for you to note that TMAs are usually given as CBAs in NOUN. Thus, the tutor-marked assignments will be done online and they will be graded immediately. Therefore, you need to be on the lookout for the academic calendar to know when each of your TMAs is due to go live in the University TMA portal. It is also important for you to be ready in case any of your TMAs comes in the form of seminar presentation. In addition, it is obvious that you need to master your computer skills and become very techno-friendly.

### **Final Examination and Grading**

You are also expected to take an end-of-semester examination, which is 70% of your total mark. The final examination of ENG 821 will be of three hours duration. All areas of the course will be assessed. The examination will consist of questions which reflect the type of self-testing, practice exercises and tutor-marked assignments you have previously come across. You are advised to revise the entire course after studying the last unit before you sit for the examination.

### **Course Marking Scheme**

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

Assessment	Marks
Assignments (three)	=30%
Final Examination	=70%
Total	=100%

### **Course Overview**

This table brings together the units, the number of weeks you should take to complete them, and the assignments that follow them.

Unit	Title of Work	Week's Activities	Assessment (end of unit)
	<b>Course Guide</b>		
<b>Module 1 Structure and Meaning</b>			
1	Form-Meaning Relationship	1 Week	
2	Sentence, Utterance and Proposition	1 Week	TMA 1
<b>Module 2 Morphology-Syntax Relationship</b>			
1	Morphosyntax	1 Week	
2	The Primitives of Syntax	1 Week	
3	Feature Valuation in Computation	2 Weeks	TMA 2
<b>Module 3 Interpreting Syntactic Constituents</b>			
1	Syntax-Semantics Interface	1 Week	
2	Logical Form	1 Week	
3	Null Constituents in the Minimalist Program	2 Weeks	
4	Binding Relations in the Minimalist Program	2 Weeks	TMA 3
<b>Module 4 Syntactic and Semantic Scope</b>			
1	Scope and Anaphora in the Minimalist Program	1 Week	
2	Scope Ambiguity	2 Weeks	
3	Semantic Scope of Determiner Phrases	2 Weeks	TMA 4
	<b>REVISION</b>	1 Week	
	<b>EXAMINATION</b>	1 Week	
	<b>TOTAL</b>	<b>19 Weeks</b>	

### Presentation Schedule

The dates for submission of all assignments will be communicated to you. You will also be told the date for completing the study units and dates for examinations.

## **How to get the most from this course**

In distance learning, the study units replace the university lecturer. This is one of the advantages of distance learning; you can read and work through specially-designed study materials at your own pace, and at a time and place that suit you best. Think of it as reading the lecture instead of listening to a lecturer. In the same way that a lecturer might give you some reading to do, the study units tell you when to read your set books or other materials. Just as a lecturer might give you an in-class exercise, your study units provide exercises for you to do at appropriate points. 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 the 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 units, you must 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. The main body of the unit guides you through the required reading from other sources. This will usually be either from your set books or from your course guides. The following is a practical strategy for working through the course. If you run into trouble, send an email to your tutor. Remember that your tutor's job is to help you. When you need assistance, do not hesitate to call and ask your tutor to provide it. Adhere to the following advice carefully:

1. Read this Course Guide thoroughly; it is your first assignment.
2. Organise a study schedule. Refer to the 'Course Overview' for more details. Note the time you are expected to spend on each unit and how the assignments relate to the units. Whatever method you choose to use, you should decide on and write down dates for working on each unit.

3. Once you have created your own study schedule, do everything you can to stick to it. The major reason that students fail is that they get behind with their course work. If you get into difficulties with your schedule, please let your tutor know before it is too late for help.
4. Turn to Unit 1 and read the Introduction and the Objectives for the Unit.
5. Assemble the study materials. Information about what you need for a unit is given in the 'Overview' at the beginning of each unit. You will almost always need both the study unit you are working on and one of your set books on your desk at the same time.
6. Work through the unit. The content of the unit itself has been arranged to provide a sequence for you to follow. As you work through the unit, you will be instructed to read sections from your set books or other articles. Use the unit to guide your reading.
7. Review the objectives for each unit to ensure that you have achieved them. If you feel unsure about any of the objectives, review the study material or consult your tutor.
8. When you are confident that you have achieved a unit's objectives, you can then start on the next unit. Proceed unit by unit through the course and try to pace your study so that you keep yourself on schedule.
9. When you have submitted an assignment to your tutor for marking, do not wait for its return before starting on the next unit. Keep to your schedule. Consult your tutor as soon as possible if you have any questions or problems.
10. After completing the last unit, review the course and prepare yourself for the final examination. Check that you have achieved the unit objectives (listed at the beginning of each unit) and the Course Objectives (listed in the Course Guide).

11. Keep in touch with your Study Centre. Up-to-date course information will be continuously available there. Also ensure to check your emails, SMS and the University website for constant updates and information on your programme in general.

### **Facilitators/Tutors and Tutorials**

There are eight hours of tutorials provided in support of this course, which has been online since the 2020 session. You will be notified of the dates, times and location of these tutorials, together with the name and phone number of your tutor, as soon as you are allocated a tutorial group. Your tutor will mark and comment on your assignments; keep a close watch on your progress and on any difficulties you might encounter and provide assistance to you during the course. You must mail your tutor-marked assignments to your tutor well before the due date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible.

Do not hesitate to contact your tutor by telephone, e-mail, or through the discussion forum on your e-learning portal if you need help. The following might be circumstances in which you would find help necessary. Contact your tutor if:

- You do not understand any part of the study units or the assigned readings,
- You have difficulty with the self-tests and exercises,
- You have a question or problem with an assignment, with your tutor's comments on an assignment or with the grading of an assignment.

You should try your best to attend the online tutorials/facilitation. 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 learn a lot from participating in discussions actively.

Nonetheless, I need to mention that the policy in the University now is that there must be a minimum of 50 students for there to be any face-to-face facilitation, the major means of interacting with students presently is through the online facilitation platform. You should explore this forum to the full.

### **Summary**

*ENG 821: Advanced Syntax* explores the place of meaning in syntactic computation in recent innovations in generative syntax. The course aims to enhance your understanding of interfaces in the study of syntax with emphasis on how meaning is treated in recent versions of transformational generative grammar. You need to concentrate as you go through the course in order to understand the topics discussed in each of the twelve units that constitute the entire content of the course. Also, you must be determined to respond to all of the TMAs in each unit. Doing this will aid your understanding of the concepts being discussed and will ultimately help you to perform well in the overall assessment. Bracing your technological skills is a necessity since all assessments and submissions will be done online. Your tutor's telephone number and e-mail address will be made available so that you can reach him/her if you need help. It is advised that you always come to class prepared. This would require that you have read through the units' contents and you have contributions to make during interaction or that you have a list of questions to ask.

## Important Terms and Conventions

=	Same as
≠	Not same as
∅	Phonetically null
Adj	Adjective
Adv	Adverb
AdvP	Adverbial Phrase
C <sub>HL</sub>	Computation of Human Language
C-I	Conceptual Intentional
COMP	Complementiser
COPY	Operation copy
CP	Complementiser Phrase
D	Determiner
DP	Determiner Phrase
DS	Deep Structure
functors	Functional words
EST	Extended Standard Theory
GB	Government and Binding Theory
LF	Logical Form
MERGE	Operation Merge
Mod	Modal
MOVE	Operation Move
MP	Minimalist Program
N	Noun
PF	Phonetic Form
PP	Prepositional Phrase
PPT	Principles and Parameters Theory
REST	Revised Extended Standard Theory
Spec	Specifier
SS	Surface Structure
ST	Standard Theory

T	Tense
TP	Tense Phrase
V	Verb
VP	Verb Phrase
$\phi$ -features	phi-features

## **MODULE 1**

### **STRUCTURE AND MEANING**

This module deals with form-meaning relationship. The first part discusses concepts and phenomena that are relevant to meaning-making in sentences while the second deals with the interaction between utterance, sentence and proposition. In both cases, the focus is on the relationship between grammatical structures and their meaning counterparts. This unit serves as background to the course. While reading the units, you will learn how syntax relates to other aspects of language study.

<b>Units</b>	<b>Topics</b>
<b>1</b>	<b>Form-Meaning Relationship</b>
<b>2</b>	<b>Sentence, Utterance and Proposition</b>

## **UNIT 1**

## **FORM-MEANING RELATIONSHIP**

1.0 Introduction

2.0 Objectives

3.0 Main Content

3.1 Functional and Lexical Words

3.2 Relationship between Form and Meaning

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Reading

### **1.0 INTRODUCTION**

Language is one of the major features that distinguish the human species from other living creatures, particularly animals. It gives humans the ability to communicate and share ideas and experiences with one another. Some of the characteristics of human language, which you must have learnt, are that language is arbitrary and systematic. These two characteristics relate to language form and meaning. The relation between the form of a word and its meaning is arbitrary. Also, linguistic items are put together in a systematic manner for meaning to be realised. As a matter of fact, one of the tasks of all language learners is to match form and meaning. You need to know and use grammatical forms and understand the meanings of these forms in order to achieve effective communication. In essence, understanding the connections between form, meaning and use is crucial for language learners to develop a sense of how a language works, and consequently become more effective communicators. Therefore, this unit takes you through the relationship between a form and its meaning in language. The unit distinguishes between grammatical words and lexical words, which are considered crucial for your understanding of the relationship between form and meaning.

### **2.0 OBJECTIVES**

At the end of this Unit, you should be able to

- i. distinguish between lexical categories and functional categories (or functors);
- ii. discuss the syntactic functions of functional categories;

- iii. discuss the status of lexical categories; and
- iv. explain the relationship between form and meaning.

### 3.0 MAIN CONTENT

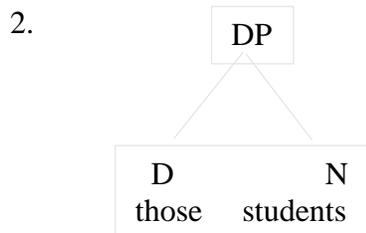
#### 3.1 Functional and Lexical Words

Words in a language are traditionally divided into two. These are grammatical words and lexical words. Grammatical words, also called functors or functional words in transformational generative grammar, are form words. They do not have independent meaning and therefore have grammatical functions in sentences. Examples of functors in English are determiners, inflections and complementisers. Lexical words are carriers of meaning. They differ principally from grammatical words simply in that they have meaning. Examples of lexical words are lexical verbs, adjectives, adverbs and nouns. In the Minimalist Program, however, functional words serve as heads while lexical words serve as complements to the head.

In a Determiner Phrase (DP), for instance, the determiner serves as the head while lexical words serve as its complement as in the following examples.

- 1a. a/the man
- b. that boy
- c. those students

The analysis of (1c) is as follows:

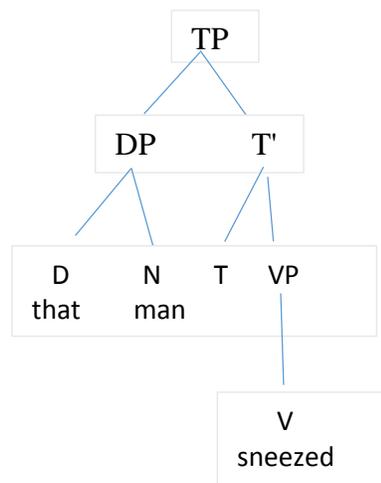


In (1-2), the determiners *the*, *that* and *those* precede the nouns *man*, *boy* and *students*, respectively. The determiners serve as functional heads while the adjoining nouns are complements. The phrase bears a name resembling the head of the phrase. Hence, the whole structure is referred to as Determiner Phrase (DP) rather than Noun Phrase (NP) that we used to know.

Another functional head, the inflection, can be discussed from two perspectives. Inflections feature as the head of the clause. In the Minimalist Program, tense (T) is an inflectional element and it is assumed to be the head of a sentence. Hence, a complete sentence is described as Tense Phrase (TP). In the sentence below, the T element is reflected on the main verb.

3. That man sneezed.

4.



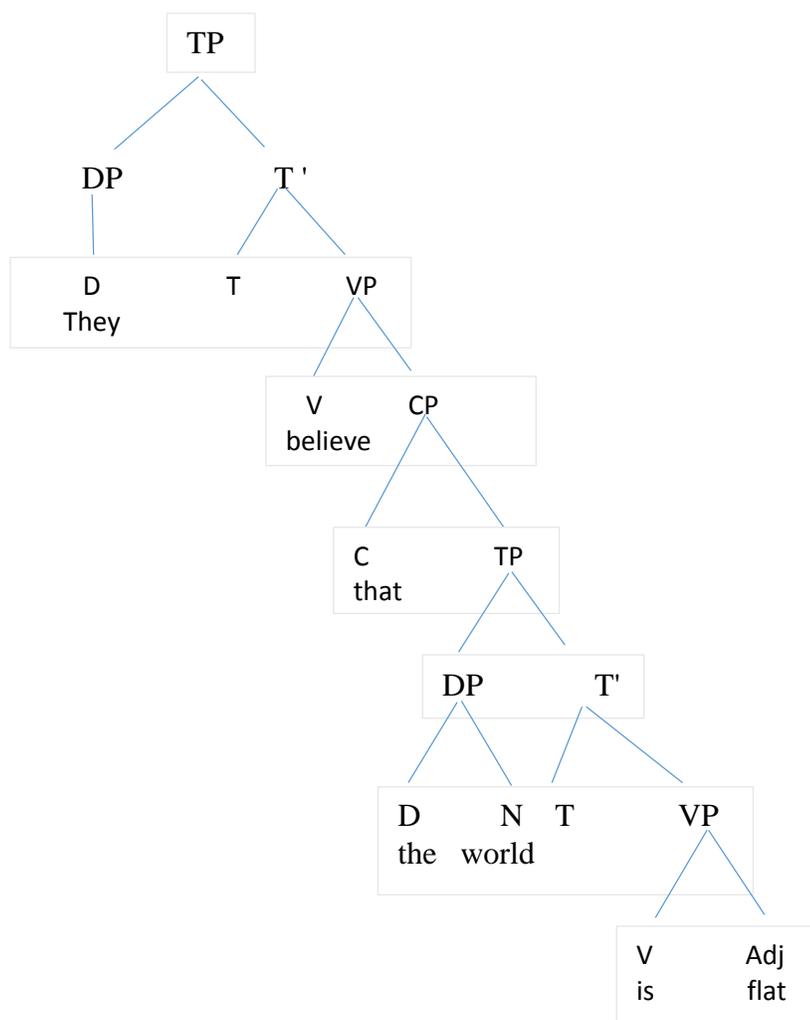
Notice that the tense element is *-ed* and is attached to the verb *sneeze*. In English, tense as an inflectional element cannot stand as an independent word or morpheme. Rather, the tense marker is reflected on the first verbal element, whether it is a main verb or an auxiliary verb. The above structure (4) shows that T is the head of the construct while the VP serves as its complement. The T node is empty because the tense affix has been merged with the verb head.

Finally, the complementiser also serves as the head of a subordinate clause. It takes a clause as its complement. Witness the following example:

- 5a. He wondered *if it would rain*.
- b. She asked *whether she should leave*.
- c. It is wrong *for Ojo to insult the president*.
- d. They believe *that the world is flat*.

The words *if*, *whether*, *for* and *that* are complementisers in the sentences above. Each serves as the respective head of the embedded clause in the sentences. Here is an analysis of (5d) for example.

6.



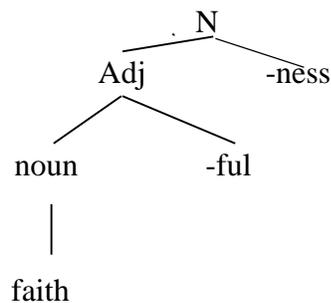
In this analysis, *that* is a complementiser. It serves as the head of the embedded clause: *the world is flat*. Like all the other complementisers above, *that* is also a clause introducer. Notice the positions occupied by T too: the nodes are empty because the affix marking tense has been lowered to the verb in each occurrence.

Other functional words are pronouns, prepositions, auxiliary verbs and conjunctions. Although none of them presents meaning explicitly, their inherent meaning manifests when they co-occur with lexical words. In other words, lexical words are carriers of meaning. In traditional grammar,

eight parts of speech are recognised. Among them, nouns, verbs, adjectives and adverbs are recognised as lexical words. This is because each of them has independent meaning.

Form-function also applies in the English morphological structure. Within the purview of word structure, the free morpheme may be a word which serves as the nucleus of the complex word. The bound morpheme serves as the head while the free morpheme serves as its complement. Consider the analysis of the word *faithfulness* below.

7.



In (7), *faithfulness* is identified as a noun (N). The root morpheme *faith* is a noun. When the suffix *-ful* is added to it, it becomes *faithful*, an adjective. When the suffix *-ness* is further added, it becomes *faithfulness*, a noun. What this means is that each time a suffix is added to a root or stem, the affix changes the class of the output. It follows that the suffixes (bound morphemes) are the heads in each case since they determine the class of the output word each time they are added to the root or stem.

Thus, whether as independent words or morphemes, functors serve as the head of a structure while the lexical words serve as the complement. While functors have little or inexplicit meaning, lexical words are the main carriers of meaning. Thus, while functional items serve as the frame of a structure, lexical items serve as the flesh of the structure.

### 3.2 Relationship between Form and Meaning

While form refers to the structure of a grammatical expression, meaning is the idea presented in a structure. Structures are often constructed and slanted in favour of the intended message. When a particular action is to be emphasised, such items bearing the action are usually topicalised or focused. Again, some expressions may be paraphrases of one another. These are different forms

of presenting meaning in the use of language. Thus, form-meaning relationship refers to the relationship between a structure and the meaning it presents.

A fundamental element of linguistic form is linguistic constituent structure. The interpretation of speech involves the assignment of a phonological constituent structure to the sequence of sounds, and the interpretation of a sentence involves the assignment of a syntactic constituent structure to the sequence of words. For example, given the set of sounds such as: /t, s, p, ɒ/, the structure (that is, the arrangement) of the sounds into words will bring about differences in meaning. Consider the different combinations below.

8a. /spɒt/ = a small round or roundish mark, differing in colour or texture from the surface around it; a particular place or point; see, notice, or recognise (someone or something) that is difficult to detect

b. /stɒp/ = put an end to something/cease to happen

c. /pɒts/ = rounded or cylindrical containers, typically of metal, often used for cooking

d. /tɒps/ = the highest or uppermost point/part, or surface of something; shirts (slang expression).

You notice that when the form of the constituents changes, the meaning also changes. This tells you that the form to which a linguistic item is put has implications for the meaning one makes out of the item. This is also applicable in syntax. The form of the constituents of a sentence is capable of determining whether or not the sentence is meaningful or not, and it can as well bring about meaning differentiation. Assuming, for instance, that you have the words:

9a. [the, banana, goat, ate]

b. [God, me, bless]

You can get the following word combinations (10a-f) from set (9a).

10a. \*Ate the goat the banana.

b. \*The goat banana the ate.

c. \*The goat banana ate.

d. \*The banana ate the goat.

e. The goat ate the banana.

f. The banana the goat ate

As you can see, the forms found in (10a-d) are meaningless; only (10e) has a straightforward meaning. At the first reading of (10f), perhaps you needed to first ask yourself: “What is the meaning of this?”. Maybe a second consideration suggests to you that rather than being a complete sentence (like 10d), it is a noun phrase in which the head word ‘banana’ has a zero relative clause as a qualifier. This consideration would give us a full realisation such as: *the banana that the goat ate*. Consider the following forms from set (9b).

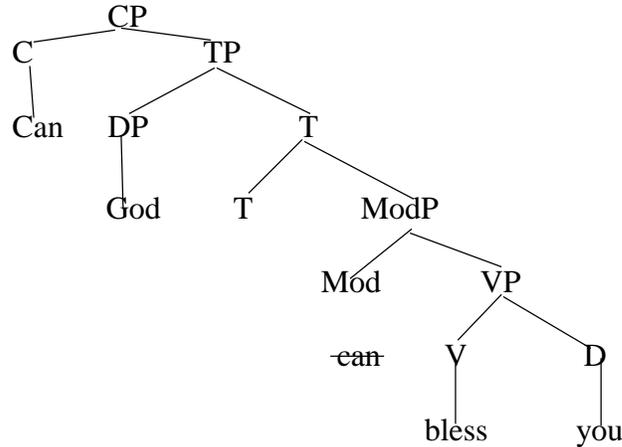
- 11a. God bless you.
- b. God can bless you.
- c. Can God bless you?
- d. God blesses you.
- e. God blessed you.

Certainly, the three structures (11a-c) are grammatical and meaningful. Most of us are familiar with the sentence in (11a). Perhaps you need to note that when you make such a sentence, you are not making a statement. The sentence has an underlying proposition. (You will learn about proposition in the next unit.) The speaker has only said a prayer. Hence, it has a subjunctive mood. Thus, it can be seen as the same with the longer stretches in (12a & b) below:

- 12a. May God bless you.
- b. I pray/wish that God blesses you.

You notice that there is auxiliary verb ‘can’ in (11b), which is a functor (see 3.1 above). The auxiliary verb brings about a proposition different from what is contained in (11a, d and e). In this example, the speaker makes an assertion, giving you an assurance of God’s ability to bless you. Thus, (11b) is a declarative sentence, indicating a declarative mood. As simple as the function word *can* is, it has changed the meaning of the initial sentence (11a). Again, the form in (11c) is realised from (11b). It is important to note that the realisation of (11c) involves a movement of *can* up the clause. This is shown in (13) below.

13.



The modal *can* is moved from its initial position (Mod node). Note that in the Minimalist Program (which is the model favoured in this course), a copy of any item to be moved must be created first (as required by the copy theory of movement). The newly created copy is moved into the C, CP while the original copy of the item remains unmoved in its initial position. However, it is deleted at the PF level. (For more details on movement, see Adegaju et al. 2014.)

The change in the structure of the same constituents of (11b) to (11c) led to changes in the sentences from an assertion to a question, indicating an interrogative mood. Like (11b), the form in (11d) is also a declarative sentence. However, they differ in that while the proposition in (11b) is the ability of God to bless, (11d) shows that God does it always (as a habit), and not just that He has the ability to do so. Similar information is conveyed in (11e). However, you would notice that the verb in (11e) has the form of *+ed* (that is, past tense). The idea in this sentence is that the involvement of *God* in the action no longer exists; it happened in the past. Perhaps, God does not bless the addressee any longer. This interpretation is not found in (11d). All this shows that the form of any given linguistic item can shape the meaning derived from such item.

#### 4.0 CONCLUSION

Two categories of words in English have been discussed in this unit. It is found that lexical heads have independent meaning while functional words depend on the lexical words to realise their meanings.

## 5.0 SUMMARY

In this unit, a distinction has been drawn between grammatical words and lexical words. It is shown that lexical words are carriers of meaning while functional words are frames of a structure. When both functional words and lexical words co-occur, the lexical words such as verbs and nouns often serve as complements to T and D, respectively.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. Analyse the remaining sentences in (1) and (5) above.
2. What's the difference between form and meaning?

## 7.0 REFERENCES/FURTHER READING

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## **Unit 2 SENTENCE, UTTERANCE AND PROPOSITION**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 What is a Sentence?
  - 3.2 What is an Utterance?
  - 3.3 What is a Proposition?
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

Linguistic expressions come in different shapes. While the speaker just utters a combination of sounds to suit different communicative experiences, linguists identify such sounds and classify them under different categories based on the context of use and the total meaning. In this sense, three related aspects of linguistic elements are identified. These are sentence, utterance and proposition. For a text to make sense (especially in a conversation), the utterances within the conversation do not only need to be well-formed but the utterances together must form a coherent whole. This implies that a sentence is not the same as an utterance, and both are different from a proposition. In this unit, we will explore these three concepts that are sometimes erroneously used as synonyms, especially among language learners. Emphasis will be laid on the differences between the concepts and how to identify each.

### **2.0 OBJECTIVES**

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

- i. differentiate between sentence, utterance and meaning
- ii. distinguish between a proposition and an utterance; and
- iii. account for the underlying propositions in sentences.

### 3.0 MAIN CONTENT

#### 3.1 What is a Sentence?

A sentence is described as a complete thought. It is an abstract theoretical construct which serves as a vehicle for conveying a message, a proposition. In other words, a normal sentence contains a proposition. The proposition in a sentence can be presented in different ways. First, it can be in the form of a declarative statement or a question as in the following examples:

1. Adam loved Eve.
2. Did Adam love Eve?

Sentence (1) is a declarative statement while (2) is an interrogative statement. While the former affirms a proposition, the latter queries it. Sentence (1) means that *Adam* has some kind of emotional feeling towards *Eve*. But in (2), this proposition is being questioned. In essence, there are different angles to the realisation of meaning in the two sentences. However, the kind of meaning in (1) is not inherent in the sentence as a whole. Rather, it is an accumulation of the meaning of each of the component parts. This is what is called compositionality.

Conversely, the meaning of an expression can be a combination of words. This is particularly so for idioms. Idiomatic expressions are not products of compositionality. Rather, the whole expression means only one thing which cannot be arrived at through the cumulative aggregation of the meanings of the component parts.

Here are a few idiomatic expressions:

3. The man ate a humble pie.
4. He threw in the towel.

Sentence (3) has nothing to do with a eating a pie and neither does (4) deal with the throwing of any towel. This perspective, which happens to be a literal translation, is wrong; because these sentences contain idioms. Rather, while sentence (3) means the man admitted that he was wrong, (4) means he surrendered. These two meanings have idiomatic interpretations.

A sentence can also have literal and figurative usages and interpretations.

5. You're my sweet tomato.

6. He murdered my goat.

Sentence (5) contains a metaphor in which a human being is referred to as *sweet tomato*. Compared to (1) above, sentence (5) has a metaphoric (rather than literal) meaning. This is simply because human beings are not tomatoes, but the speaker of sentence (5) is just comparing someone to a tomato. Sentence (6) has a figurative reading. The use of the word *murder* has the implied meaning of wickedness. You should note that the speaker could have used *killed* instead of *murdered* and the sentence would still have meant that the goat had been killed. But while *killed* has a neutral meaning, *murdered* has the additional meaning of *wickedness* on the part of the person that killed the goat. This is a figurative reading of the sentence.

A sentence would normally have a pattern, dictated by the language (say English, Yoruba, Hausa, Igbo, etc.) in which it is said. There are different structural patterns, one of which may be identified in a language. These patterns are SVO, SOV, OVS, OSV, VSO and VOS; where S is subject, V is verb and O is object. English, for example, has the Subject, Verb and Object pattern while Izon has Verb, Object, and Subject pattern. Other languages have one or the other of such patterns. What is the structure in your mother tongue?

### 3.2 What is an Utterance?

An utterance is any statement made by an individual. It is a bit of spoken language which can range from a set of letters to words, fragments and complete sentences. Examples are:

7ai. Wow!

ii. Ouch!

bi. Halt!

ii. Cowards!

c. Hmmm.

d. Eze goes to school

The examples in (7a & b) are exclamations. The ones in (7a) are involuntary reactions to situations that happened to the persons that uttered them: (7ai) shows surprise to or appreciation of what the person saw and heard; (7aai) is a reaction to a hurt (like someone accidentally

stepping on a drawing pin with the barefoot. The examples in (7b) are single word sentences. Example (7bi) is a command for someone to stop while (7bii) is a description of some people, perhaps, it is an insult. Example (7c) is a reaction to a person's appreciation of something, say food or a message received. Example (7d) is a complete sentence, a declarative sentence. All the utterances are meaningful. But, consider the expressions below:

- 8a. ididicudity
- b. gbejemious

These expressions are meaningless, especially since we cannot find a context in which they can be meaningful. Therefore, they qualify as nonsense utterances/words. An utterance can be meaningful or meaningless, depending on the context. It is meaningful when hearers understand its meaning and otherwise when it does not convey any logical meaning. It usually follows the rules of a particular language and is understood by the receiver of the utterance. This means that only people who share the rules of a language will appreciate the meaning of an utterance. Conversely, an utterance becomes meaningless in the following situations:

- 9i. It does not follow the laid down rules of a language
- ii. Receivers of the utterance do not share the language in which the utterance is made.

If we consider (i) for instance, an utterance formed from strange rules will obviously not be understandable to users of the language. You will understand this better if we rework the sentence in (1) (repeated below) as (10).

- 1. Adam loved Eve.
- 10. \*Loved Adam Eve.

This sentence in (10) is different from that in (1) because of word order. While (1) is arranged in form of Subject Verb Object pattern, (10) is arranged in Verb Subject Object order, and this explains its ungrammaticality. Given this distinction, monolingual speakers of English may not understand sentence (10) as having the meaning in (1). Therefore, (10) will be considered an utterance without a proposition while (1) has a proposition. It follows that the English language has a word pattern different from other languages such as Izon, Baatonun and Ebira, where the pattern is SOV.

In contrast to the foregoing, consider (11).

- 11a. I only beat the boy. (The only thing I did was to beat the boy.)
- b. I beat the boy only. (I beat the boy, and nobody else.)

The sentence in (11a) has a proposition. However, by changing the word order, specifically moving *only* into different positions, the propositions change, giving different meanings. In other words, sentences that make a proposition are meaningful. Sometimes, we can verify the truth or falsity of such sentences by invoking Logical Form.

For (10), it is obvious that a speaker of English will not understand what is said in an Izon equivalent, except the person guesses at gestures made when the utterance was being made; but the speaker cannot read the message in Izon. For instance, how many non-speakers of German can read the instructions on the manuals of cars imported from Germany? As far as such people are concerned, the instructions on the manual are meaningless. Also, the non-Yorùbá reader may want to attempt getting the meanings of the following expressions from the Yorùbá language:

- 12a. Adé fa ìrù eku. (Ade pulled the rat's tail.)
- b. Akéréle jẹ ẹ̀sẹ̀ eku. (Akererele ate a rat's leg.)

Examples (12a & b) will be meaningful to someone who understands Yorùbá. To others, it may not be intelligible. It follows that meaning plays important roles in the computation of structures. This thesis shall be further discussed under  $C_{HL}$  (Computation of Human Language).

### **3.3 What is a Proposition?**

A proposition is the information or meaning put forward in a sentence. 'It describes a state of affairs that holds in the world, and its correspondence with that state of affairs allows us to attribute truth or falsity to the proposition' and an utterance is an actual use of a sentence (Adger, 2002, p. 1). When an utterance is made, one gets a proposition. This means that a sentence and a proposition are not exactly the same. For an utterance to be meaningful, interactants in a language must understand the rules guiding the construction of words, phrases, clauses and sentences in that language. Hence, we can say that a sentence is made up of an utterance which

has a proposition. For a sentence to be acceptable in a communication, it must be a form-meaning pair. This is because words in a sentence are not arbitrarily put together. They follow specific patterns, guided by the rules of the language.

#### **4.0 CONCLUSION**

From the discussion above, we can see that there is an interrelationship between an utterance and a sentence on the one hand and between a sentence/utterance and a proposition/meaning on the other. An utterance can be as small as a free morpheme and it can be as long as a sentence. It may be construed as a sentence if it has a proposition; but it remains unintelligible if it is meaningless.

#### **5.0 SUMMARY**

In this unit, the differences between utterance, sentence and proposition have been discussed. The crux of the matter is meaning, which affords readers/listeners the ability to understand the proposition in a sentence.

#### **6.0 TUTOR-MARKED ASSIGNMENT**

1. Would you say that there is any link between logical form (LF) in generative syntax and proposition? Justify your position.
2. Indicate the underlining proposition in each of the following sentences.
  - a. He loves me.
  - b. He loves me!
  - c. He loves me?
  - d. He loved me.
  - e. He only loves me.
  - f. The Senate have submitted their reports.
  - g. The Senate has submitted its report.
  - h. God does not only bless you.
  - i. God does bless not only you.
  - j. Old habits never die.

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## **MODULE 2**

### **MORPHOLOGY-SYNTAX INTERFACE**

This module discusses the processes of selecting and merging morphemes, which also entails compositionality, the process of merging the meanings of words in a structure. Apart from discussing the concepts morpheme, morphology and morphosyntax, the unit explains the similarities and differences between syntactic and morphological computations, especially in the context of Distributed Morphology. Thus, the module presents two scholarly perspectives for discussing the interplay of morphological and syntactic rules in the construction of grammatical structures. In the module, you will learn the processes involved in the derivation of linguistic structures. Central among these are operations select, merge and move. A very crucial process in these operations is feature valuation, which checks both morphosyntactic and semantic features of linguistic items that make it into a syntactic computation. The success of these operations presents a structure for the spell-out stage, where phonetic and semantic features of items are processed separately by PF and LF representations, respectively.

<b>Units</b>	<b>Topics</b>
1	Morphosyntax
2	The Primitives of Syntax
3	Feature Valuation in Computation

## **UNIT 1**

## **MORPHOSYNTAX**

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Morphosyntax
  - 3.3 Morphology-Syntax Relationship
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

Structurally, morphology and syntax deal with the arrangement of grammatical elements, with a view to constructing well-formed sentences; and their respective influence is often perceived when they cooperate in the computation of structures. In this unit, you will learn about the interface of morphology and syntax. The emphasis is on the meeting point of both morphological and syntactic features in the study of the grammatical structures of a language, especially English.

### **2.0 OBJECTIVES**

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

- i. discuss the concept of morphosyntax; and
- ii. identify the relationship between morphology and syntax

### **3.0 MAIN CONTENT**

#### **3.1 Morphosyntax**

Morphosyntax as a concept is considered an interface between morphology and syntax. While morphological rules account for the combination of the morphemes that form a word, syntax deals with the rules that account for the combination of words into phrases and sentences. Since both deal with rules that account for combining linguistic elements to form bigger structures,

they are seen as generative processes, starting from the morpheme combinations to the sentence. Thus, both morphology and syntax have a meeting point, which ultimately produces morphosyntax. Morphosyntax, therefore, is a merger of both morphological and syntactic rules which generate the grammatical structures of a language.

Morphosyntax can be viewed from two perspectives. The first is the Lexicalist perspective which takes cognizance of the concept of the Lexicalist Hypothesis. In this sense, there exist two interwoven grammars that generate words and phrases. One of them is the grammar generating morphemes while the other is the grammar generating syntactic expressions. ('Grammar' in this context is the set of rules governing the workings of expression elements in a particular language.) This view emanated from the idea that certain words can be produced directly from the lexicon without transformations whereas some other words are products of transformations, following the ideas of Chomsky (1970). Recall that Chomsky distinguished between gerundive nominals (which are products of transformation) and derived nominals (which do not involve transformation). The second view is the non-lexicalist perspective. This is because the processes of combining the morphemes are similar to, if not identical with, the processes that produce syntax.

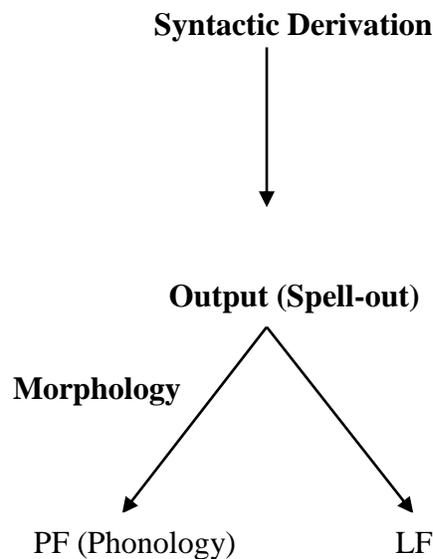
Scholarly views on these two perspectives posit that one must prove that certain words are solely produced without transformations before one can posit different grammars. Due to the similarity in the processes of morphological and syntactic derivations, it is assumed that there is only one grammar in which words are assembled by the rules of the syntax.

Given the foregoing, therefore, the theory of morphosyntax is assumed to have some elements:

- i. the basic elements of the syntactic derivation;
- ii. the principles governing the assembly of these primitives into complex objects; and
- iii. the manner in which phonological forms relate to the primitives and to the complex objects constructed from the primitives (Embick & Noyer, 2005).

Thus, the assumption in morphosyntax is that the same generative system derives all structures, whether words or sentences.

The above position aligns very much with the theory of Distributed Morphology (DM). DM also posits a grammar that has a single generative system for both word structure and phrase structure. The assumption is that all derivations, including morphological structure, are syntactic in nature. The following diagram, adapted from Embick and Noyer (2005, p. 3) and Bobaljik (2015, p. 1), shows how the grammar is organised.



(Embick & Noyer, 2005, p. 3; Bobaljik, 2015, p. 1)

According to the grammar, the processes of word formation are similar to the processes of sentence formation (which is discussed in the next unit). Within the syntactic derivation, which dominates the syntax, is the syntactic component that contains a set of rules. The rules generate syntactic structures which are subjected to further syntactic operations (such as *merge* and *move*) before morphemes undergoing computation get to the PF and LF interface levels. A typical scenario will be the selection of morphemes from the lexicon. These morphemes, say *un-*, *believe* and *-able*, will be deposited in the working area. A morpheme, say *believe*, will be targeted and merged with another, *-able*, to form a larger unit *believable* and an additional one such as *un-* will be further selected and merged until the required structure *unbelievable* is achieved. This structure will be formed in accordance with the syntactic rules of the language, in this case, English. The structure is further sent to Spell-Out, where rules of Full Interpretation will apply to the structure in order for it to satisfy PF and LF rules.

In some cases, additional PF processes may be invoked to meet language-particular needs. Such processes may modify or elaborate the syntactic structures in different ways. This modification or elaboration may be a product of the introduction of terminal nodes into the syntactic structure. For instance, the word *kick* can be further modified by invoking the number and tense features. For tense, the present/past tense features may be added, and this will eventually make the word become *kick* or *kicked*, according to the tense features added. In terms of number, when the third person singular number is invoked, the word changes to *kicks*; otherwise it remains *kick* for other persons or plural number.

*Morphology* on the diagram refers to a set of processes that are relevant for word formation. It entails *morphological structure*, which refers to structures at the PF stage of derivation. PF in this sense is a sequential derivation that ends in phonological representation. It is used as a term for a set of operations, not just as the final output of operations (Embick & Noyer, 2005). A cursory look at this grammar as presented here shows that it is similar to what obtains in the syntactic analysis. The only difference here is that some operations are syntactic (involving movement) while some are morphological (occurring at PF). This distribution of operations explains the concept Distributed Morphology).

In the production of speech, basic structures that are generated from the syntax follow a linear order. This order is determined by the operations in the PF. It follows that the structure must be processed in a serial, chronological order. According to Embick & Noyer (2005), linear order is considered a binary operator. It is represented by ‘\*’ which is imposed by an operation Lin, defined as follows:

$$\text{Lin [X Y]} \longrightarrow (X * Y) \text{ or } (Y * X) \text{ (p.4)}$$

This means that as items are inserted, they follow a particular linear order and items are added as needed, dictated of course by the language-particular operations in the PF. Notice that the above is the order for an SVO language; for an SOV or VOS language, the order will be different. Furthermore, the operations in the PF component often violate the Inclusiveness Condition, defined below:

### **Inclusiveness Condition**

No new features are introduced by  $C_{HL}$  (Embick & Noyer, 2005, p. 4)

The inclusiveness condition forbids the addition of elements in the process of computation. However, this is the major violation by operations in the PF, since, due to the language particular needs of a construction, they may add new items or features as a particular syntactic structure is being constructed as in the example of *kick* given above. Some of these operations include morphophonological operations that generate features such as syllabification, prosodic structure and phonology (Chomsky, 1995, p. 228). *Late Insertion* of features also violates Inclusiveness Condition. You may read more about Late Insertion in (Bošković, 2013).

### **4.0 CONCLUSION**

From the foregoing, one can infer that structures are meaningful from the different merger operations in the process of forming structures. In other words, meaning is built up cumulatively as the operations *merge* and *move* apply to produce grammatical sentences.

### **5.0 SUMMARY**

In this unit, the meeting point between syntax and morphology is explored. The processes of computation, especially in the grammar are also explained. The suggestion is that the non-lexicalist perspective to computation of structures is useful in this context and is therefore adopted.

### **6.0 TUTOR-MARKED ASSIGNMENT**

1. Construct a grammatical sentence of your own, using the processes highlighted in this unit.
2. How does the theory of morphosyntax align with Distributed Morphology?
3. In what ways is computation in morphology different from computation of syntax?
4. Do you think morphology and syntax should be regarded as different sub-fields of linguistics? Why?

## 7.0 REFERENCES/FURTHER READING

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## **UNIT 2        THE PRIMITIVES OF SYNTAX**

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 The Primitives of Syntax
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

Structurally, morphology and syntax deal with the arrangement of grammatical elements with a view to constructing well-formed sentences; and their respective influence is often perceived when they cooperate in the computation of structures. In this unit, you will learn about the interface of morphology and syntax. The emphasis is on the meeting point of both morphological and syntactic features in the study of the grammatical structures of a language, especially English.

### **2.0 OBJECTIVES**

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

- i. discuss the concept of morphosyntax;
- ii. identify the relationship between morphology and syntax

### **3.0 MAIN CONTENT**

#### **3.1 The Primitives of Syntax**

The syntactic operations, *Move* and *Merge*, are very important in computation. Operation *merge* merges morphemes while operation *move* moves them. Morphemes are complex in nature, and can be classified along phonological and syntactic/semantic lines. While the aspect of the phonological structure deals with phonetics, phonology and pronunciation, the aspect of syntactic/semantic structure deals with grammatical features and meaning.

The syntactic terminals of morphemes bifurcate into two. These are abstract morphemes and root morphemes. Abstract morphemes consist entirely of non-phonetic features, such as [past] or [pl], or grammatical features such as the English definite article, *the*. Roots on the other hand may consist of sequences of complexes of phonological and non-phonological features. It is assumed that roots are bereft of grammatical features since they are the base to which other morphemes attach (Embick & Noyer, 2005, p. 5). The major difference between the root and the abstract morpheme is that the former is language-specific while the latter is universal. Roots are open class since new roots can be added to the grammar of a language at any time. Abstract morphemes belong to the closed class. For instance, the root of *taught* is *teach*. *Teach* is a root morpheme in English, but not in any other language. The past tense of *teach* is *taught*. The past tense feature is not peculiar to English; other languages also have ways of realizing the past tense on the verbs. Hence, the past tense is a universal feature.

Roots are also categorised according to the functional categories that combine with them. This means the roots cannot appear without categorisation. Hence, roots surface as members of the lexical categories such as verb, noun, adjective and adverb. The combination of the root and the abstract morpheme makes the morpheme complex.

Abstract morphemes are part of the functional categories. Hence, the terms *functional categories* and *abstract morphemes* are interchangeable in this context. After computation, each morpheme has a set of phonological features (including phonologically null elements) which are instructions expected to be executed by the articulatory/perceptual system.

Computation of structures involves roots and abstract morphemes, otherwise called functional heads. Functional heads (morphemes, especially) have no phonetic content in the syntactic derivation of structures. Such morphemes are described as *abstract*. One major function of morphology is to supply phonological features to abstract morphemes. Conversely, roots keep all their features throughout the derivation.

Both abstract and root morphemes are stored in the list of terminals that the learner acquires during the development of language. Hence, language learners memorise the root while the possible abstract morphemes that often go with them, drawn from a universal feature inventory, are active in their lexicon.

## 4.0 CONCLUSION

From the foregoing, one can infer that structures are meaningful from the different merger operations in the process of forming structures. In other words, meaning is built up cumulatively as the operations *merge* and *move* apply to produce grammatical sentences.

## 5.0 SUMMARY

In this unit, the meeting point between syntax and morphology is further explored. The place of features in the computation of structures is also emphasized.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. What are abstract morphemes?
2. In what ways does morphology relate to syntax?
3. Why is the root morpheme necessary in the construction of a structure?

## 7.0 REFERENCES/FURTHER READING

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## **UNIT 3**

## **FEATURE VALUATION IN COMPUTATION**

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Processes of Derivation of Linguistic Structures
  - 3.2 Features
    - 3.2.1 Grammatical and Phonetic Features
    - 3.2.2 Interpretable and Uninterpretable Features
    - 3.2.3 Strong and Weak Features
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

Meaning is at the heart of every communication. When we speak, we communicate ideas to our interlocutors. These ideas might be in the form of statements, questions, answers, exclamations or any different expression that humans use to convey an idea. In this unit, you will learn about the processes of forming a meaningful structure and the different roles features play with emphasis on the Principle of Full Interpretation, the aspect that deals with the meaning of expressions being derived. The different types of features are also discussed.

### **2.0 OBJECTIVES**

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

- i. identify the process of human language computation;
- ii. discuss the importance of the features; and
- iii. discuss the place of meaning in PFI

### **3.0 MAIN CONTENT**

#### **3.1 Processes of Derivation of Linguistic Structures**

In the derivation of syntactic structures, the first port of call is the lexicon. The lexicon is a repertoire of all the words in a language, with their distinctive characteristics, which all make for the individuality or distinctiveness of each.

In deriving structures, certain computation processes are involved. These are spelt out below:

- i) Operation select – Lexical items are taken from the lexicon with their respective phonetic, semantic and grammatical features.
- ii) Operation merge – Constituents are combined in a pairwise fashion to form a phrase structure tree.
- iii) Operation move - Items undergoing computation are usually moved to check their unvalued features.
- iv) After spell-out, phonetic and semantic features of items are processed separately by PF and LF representations, respectively.

Following Chomsky's  $C_{HL}$ , computation of human language, the process of constructing an expression starts from Numeration. A lexical array of words from the lexicon is selected (through operation select) into the working area through the process of Numeration. A head is first targeted and projected. Then a complement is also selected. Thereafter, both are merged in a pairwise fashion, such that the head is merged with the other selected word, provided it subcategorises for it. This newly-selected word serves as the complement to the head word. The sentence is therefore formed by successive selection and merger operations until the combined structures form a phrase which gets to spell-out.

At spell-out, there are two interfaces. Spell-out is the point at which the phrase structures generated by the processes of selection and merger feed into different interfaces or components: Articulatory Perceptual and Conceptual Intentional (which in Government and Binding Theory are roughly equivalent to the PF component and the LF component, respectively. PF processes phonetic features; LF processes grammatical and semantic features). In other words, the phrase is mapped (converted) into two kinds of structural representation. These are the Conceptual Intentional or Logical Form, which represents the aspect of the structure that determines meaning

and the Articulatory Perceptual, which is the structure that determines the phonetic representation of the structure (PF). In the former are rules of interpretation that ensure that the structures are meaningful. For a structure to be meaningful, it has to reflect the meanings associated with such expressions in the society, otherwise it crashes. In the latter are rules that ensure that the structure is acceptable in the grammar for the purposes of speaking or writing. Again, any violation of the rules leads to a crash (or ungrammaticality) in the computation.

## **3.2 Features**

Features can be described as the phonetic, grammatical and semantic properties of words. These are the properties that define each word and determine its compatibility or otherwise with other words with which it may be merged, potentially. For the purposes of computation, features are important since the features of a word are tested with those of another (feature valuation) to find out if they match or mismatch. If they match, the structure is assumed to converge; if they do not, it crashes.

### **3.2.1 Grammatical and Phonetic Features**

Features are of different forms. These are grammatical or formal features and phonetic features. In the context of the Principle of Full Interpretation (PFI), phonetic representations in the computation of syntactic structures contain only phonetically interpretable features while LF representations contain semantically interpretable features. According to PFI, a representation must contain all and only those elements which contribute to its interpretation at the phonetic level. Hence, PF representations contain only those elements that are relevant to determine its own phonetic interpretation while LF representation contains only those elements that are relevant to semantic interpretation. When both PF and LF representations satisfy the requirements of PFI (that each contains only phonetically or semantically interpretable features, respectively), then the structure under construction is said to converge, i.e. it is grammatical. However, if either or both of the LF and PF representations do not satisfy the PFI requirements, then the structure is said to crash, i.e. it is ungrammatical. It is important to emphasise that PFI requires PF representation to contain only phonetic features while LF representations contain only semantic features.

Grammatical features, which also contain semantic features, are also called formal features. According to Radford (1997, p. 172), grammatical features play several roles in grammatical (i.e. morphological or syntactic) processes. These roles are:

- i) number (singular/plural), which accounts for agreement;
- ii) gender (masculine/feminine/inanimate), which are relevant in the syntax of reflexive anaphors; and
- iii) person (first/second/third), which are relevant in agreement relations.

Formal features also determine the morphological form of items. These features include case features of pronouns and inflectional features of verbs. Nevertheless, they do not include features which have no morphological or syntactic correlate (Radford, 1997, p. 172). Radford (1997) also notes that there are fuzzy edges to the distinction between semantic and grammatical features because many grammatical features have clear semantic content. Consider the following sentences for example:

1a. I *am* going to school.

b. We *are* eating.

c. You *are* reading the book.

d. He *is* driving a car.

e. Dinner *was* late.

f. They *were* playing a game.

g. Do not *be* angry!

In (1a) *I* has the grammatical feature of first person singular nominative. *Am* is an auxiliary verb with the 1st person singular feature; it requires a specifier with the grammatical feature of 1st person singular nominative, which is found only in *I*. It also takes the present participle verb form as complement. This feature is found in the *-ing* form of the verb *go*. In (1b & c) the verb form is *are*. This verb has features different from those of *am*. *Are* requires a subject with 1st person plural and 2nd person singular and plural in the specifier position, and requires the present participle form of the verb as complement. In (1d) the verb *is* requires a third person singular nominative element in the specifier position. Hence, *He* occurs in the position. The verb also subcategorises for a present participle verb form, which is satisfied by *driving*. The verbs in (1e-g) also have their distinctive features, which make them compatible with the words they co-

occur with individually. From these descriptions, we can see features that account for the grammaticality of the expressions. Note that the verbs belong to the family of BE. However, although each has peculiarities in the choice of specifier, they all require the same features for the complement. These are grammatical features because they have no role to play at LF.

If we look at the same set of examples from a semantic point of view, *I* is distinguished from any other speaker or listener. Given the features so specified above, it can only refer to one person; the individual that is speaking. Also, *We* can only refer to the individual or group that is speaking either for himself or herself (as in royalty), or for a group of people. *He* in the third sentence has features of *third person singular masculine nominative determiner*. The feature *third person* can refer to anyone in the society. The feature *masculine* will narrow it down to males. Thus, the pronoun *he* has a referent and the features that stand it out as referring to an individual is interpretable. Hence, the referent is different from *a tree*, *a woman* or any other referent that has features different from those attached to *he*.

Tense features are also semantic. When, for instance, (1d) changes to (2),

2. He was driving a car

the change in tense automatically changes the time specification in the narrative. Hence, tense is an interpretable feature. However, we also need to know that the case features are uninterpretable. The fact is that whether the case on a noun/pronoun changes or not, it does not affect the meaning of the pronoun.

Consider the following examples:

3. (i) We know [<sub>TP</sub> **her** to help].  
(ii) We know [<sub>TP</sub> **she** helps].

In these examples, regardless of the case assignment on both *she* and *her*, the sentences have the same meaning. Hence, case is uninterpretable. The same applies to the participial and agreement features of verbs. They have no role to play in semantic interpretation; they are purely formal features.

We can then conclude that while some grammatical functions are interpretable at LF, some are not. If, following PFI, LF representations contain only semantically interpretable features, then uninterpretable features must be eliminated from the construction in the course of derivation of an LF representation.

### **3.2.2 Interpretable and Uninterpretable Features**

A feature is interpretable if it contributes to the interpretation or meaning of an item in computation. Conversely, a feature is uninterpretable if it does not contribute to the meaning of an item in computation. These were demonstrated above and there is no need repeating same here.

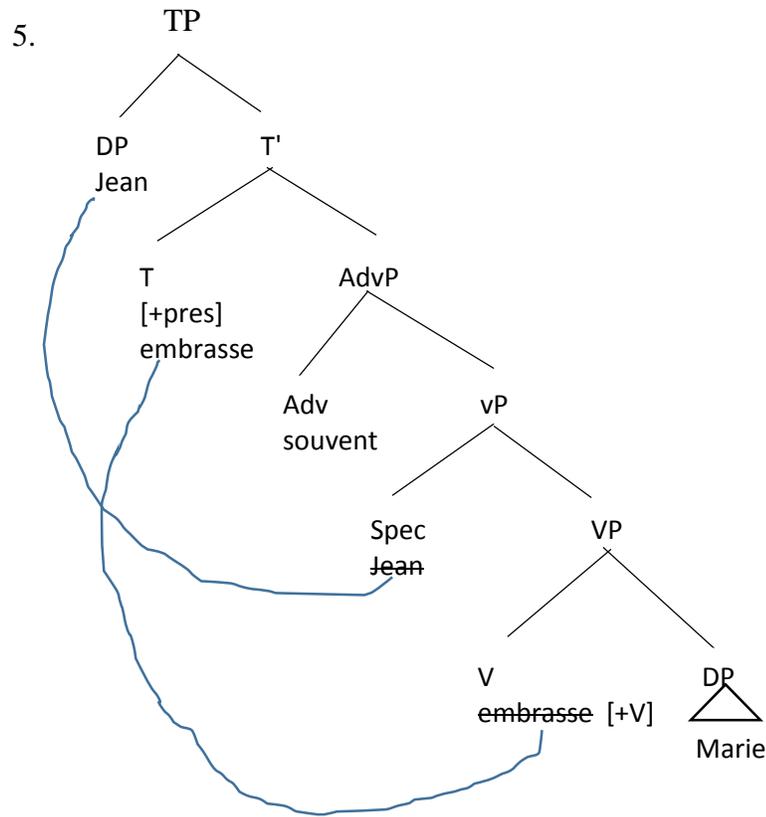
### **3.2.3 Strong and Weak Features**

A feature is considered strong or weak based on its inherent properties. A feature is strong if it has positive values. Such values must be checked for the computation to converge. Elements with strong features are often required to move, such that their features are checked. Consider the following example, borrowed from (Smith, 1999, p. 115):

4. Jean embrasse souvent Marie.

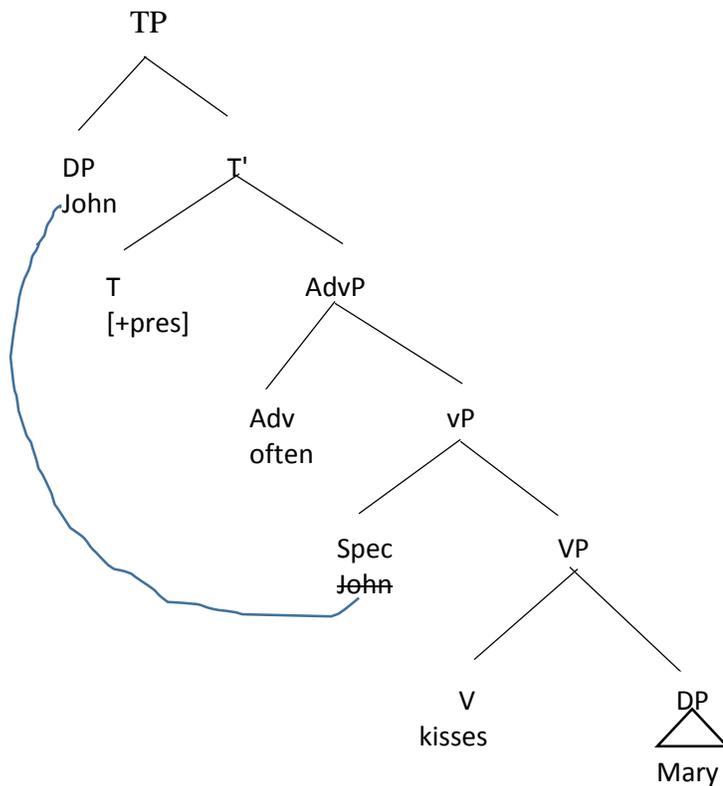
John kiss        often    Mary

‘John often embraces Mary.’



In this sentence (ex. 4), which is in French language, the verb *embrasse* has strong features that must be checked. Thus, it moves up to T to get the features checked and deleted. In English (ex. 5), on the other hand, the verb has weak features. Thus, the verb is not constrained to move since the features are weak and can be overlooked or ignored without making the derivation to crash. Hence, it stays adjacent to *Mary*, its object, as in the following diagram.

6.

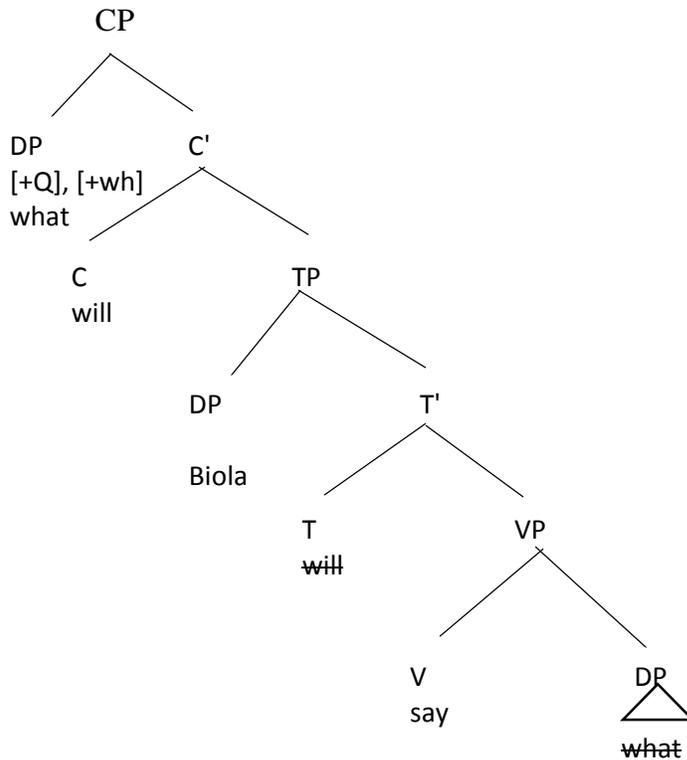


However, we note that tense has features that must be checked. It is assumed that the tense moves down to the verb to check its feature. The verb will therefore become *kisses* (rather than the original *kiss*) and the structure converges.

This strong and weak feature dichotomy also occurs in *wh*-questions. Considering the *wh*-parameter, certain languages such as Japanese can form *wh*-questions whereby the *wh*-word remains in situ, and the sentence so formed will be well formed. However, on the opposing side are languages such as English, where *wh*-words have to move to the sentence initial position to form a *wh*-question. The argument in this case is that in languages with strong *wh*-features, the *wh*-element will have to move to check its strong *wh*-features, which are in *Comp*. In the languages with weak *wh*-features, the *wh*-word need not move because the features are weak and can be overlooked since they cannot cause the derivation to crash. This is in line with the economy principle of Least Effort, which states that an item can use minimal or least effort in computation. Since the thing one can do with the least effort is to do nothing, the *wh*-word does not move. For the languages with strong features, the *wh*-word has to move to avoid a crash.

This is also in line with the Last Resort economy principle, which states that an item can move as a last resort to prevent a derivation from crashing.

7.



In the above structure, *What* moves from the object position of the sentence to the spec of CP. Note that the specifier has plus values for Q (for question) and wh (for wh-word) because the structure is a wh-question. Both features forced *what* and the modal *will* to move upwards.

#### 4.0 CONCLUSION

From the foregoing, we can see that meaning also plays a crucial role in the computation of structures. It is argued that only interpretable features are meaningful while uninterpretable features do not contribute to the overall meaning of the structure. Different types of features are also discussed with different functions in the computation.

## **5.0 SUMMARY**

In this unit, we have looked at the processes of the computation of human language. Much emphasis is laid on feature valuation as an important concept that makes a structure converge or crash.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Practice the processes of feature checking in your mother tongue.
2. What is the relevance of PFI?
3. How many types of features do you know?
4. What roles do each play in the computation of language?

## **7.0 REFERENCES/FURTHER READING**

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## **MODULE 3**

### **SYNTAX-SEMANTICS INTERFACE**

Syntax may be described as the rules guiding the correct arrangement of the components of a sentence while semantics has to do with the meaning in structures. There is hardly any structure that has no meaning. Hence, this module focuses on the relationship between syntax and semantics. In this module, you will be shown samples of structures where syntactic structure demands the cooperation of semantics. At one point, you will see the roles meaning plays when syntactic structures are being constructed; at another, you will be shown a sentence with the same D-Structure but two S-Structures. It is demonstrated that meaning plays a lot of roles in syntactic computation, especially in the theta roles assigned to nominal in sentences. The discussion establishes the differences between syntactic roles and semantic roles. It as well emphasises the fluidity of meaning in the interpretation of words in the context of theta role assignment and binding relations. Apart from words with phonetic content, null constituents are also found to have meaning. Thus, the syntax-semantics relationship is shown through the discussion of semantic roles, autonomy of syntax, null constituents and binding relations.

Units	Topics
1.	Semantic Roles in Syntactic Structures
2.	Logical Form
3.	Null Constituents in the Minimalist Program
4.	Binding Relations in the Minimalist Program

## **UNIT 1**

## **SEMANTIC ROLES IN SYNTACTIC STRUCTURES**

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 What are Semantic Roles?
  - 3.2 Autonomy of Syntax
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

Meaning is nebulous and sometimes intractable, but at the heart of each communication is the desire to put across a message. A message is only understood if it is meaningful. Hence, we pay attention to our choice of words. In this unit, you will learn about the peculiar nature and relationship of nominals and verbs. Nouns belong to different classes and therefore are allowed to occur in specific places due to semantic reasons. The verb is also central to a sentence and therefore determines and controls the meaning adduced to nouns or nominals that co-occur with it in a sentence. This is particularly true of subjects and complements of verbs as well as complements of preposition. All this is explored in this unit.

### **2.0 OBJECTIVES**

At the end of this Unit, you should be able to

- i. critically examine the relationship between syntax and meaning,
- ii. identify the difference between theta role and semantic role, and
- iii. distinguish between D-Structure and S-structure.

### **3.0 MAIN CONTENT**

#### **3.1 What Are Semantic Roles?**

Syntax may be described as the rules guiding the workings of structures in a language. Such rules are descriptive, since they are based on the way and manner competent speakers of such languages speak them. Sometimes, they are universal, being features that the particular language shares with other languages. At other times, however, they are peculiar to a language; in which case they distinguish such a language from other natural languages.

Language is structural. In other words, words in a sentence are not arbitrarily put together. In this sense, they follow a particular order in terms of structure. In English, the pattern is Subject, Verb, Object pattern. This pattern is guided by some semantic relationship in the sense of the following questions:

- 1a. Who performed the action stated in the verb?
- b. Whom/What topic is the sentence talking about?
  
- 2a. What action is performed?
- b. What is the state of the subject of the sentence?
  
3. Who/What is affected by the action stated in the verb?

Answers to these questions are based on the semantics of the sentence. We need to know the meaning of each structure before we can decide whether it is performing an action or it is being described.

In Extended Standard Theory as well as Principles and Parameters Theory, semantics was emphasised in the concept of semantic or thematic/theta ( $\Theta$ ) roles. (There is actually some confusion between thematic roles, which are syntactic; and semantic roles, which are semantic. However, we will not delve into this here so as not lose focus). The semantic roles are assigned to nouns/nominals based on the functions they perform in the sentence. Such roles include agent,

patient, benefactive, source, goal, experiencer, etc. Semantic roles state the roles nouns perform in the situation described in a sentence as well as the way nominals contribute to a sentence.

Let us take a look at the roles vis-à-vis the sentence in which they occur.

**Agent:** This role refers to the entity that initiates or performs the action. Its major feature is the agent's ability to decide whether or not to carry out the action.

4a. *The farmer* harvested his crops.

b. *Audu* wrote a fat book.

In these sentences, *the farmer* and *Audu* are agents who performed the actions stated in the verbs. Note that each of the agents has the ability to take a decision or take necessary actions. In addition, the structure may also be in the passive voice, and the semantic role will not change. In the following example, *Audu* is still the agent. More importantly, the nouns refer to individuals that can be identified in the society. These individuals happen to be the referent (or meaning) of the nouns.

4c. A fat book was written by *Audu*.

It also follows that theta roles are not necessarily determined by the position a nominal element occupies, but by the meaning of the noun, especially in relation to the other words it collocates with in the sentence.

**Patient:** Patient describes the entity that suffers from or undergoes the action presented in the verb. Here are some examples:

5a. The woman hugged *her husband*.

b. The horse threw *the rider*.

In these examples, *her husband* and *the rider* have patient theta roles. While *her husband* undergoes the action of hugging, *the rider* suffers a throw from the horse.

**Instrument:** The instrument theta role refers to the entity that is used to do something. Consider the following examples:

- 6a. The hawk held the chick with *its claws*.
- b. She killed a cockroach with *her slipper*.
- c. He wrote a love letter with *a special pen*.

In these examples, *its claws*, *her slipper* and *a special pen* have instrument theta role since they are used as instruments by the respective agents to carry out the actions in the verbs in the respective sentences.

**Experiencer:** This role describes the entity that feels, partakes of, knows, enjoys or undergoes the effect of the action stated in the sentence. E.g.

- 7a. *Sade* saw the bowl.
- b. *Bintu* felt cold/happy.
- c. *We* know the way.
- d. *The guests* enjoyed the meal.
- e. *Tope* got angry.
- f. *The cat* hates the dog.

In these examples, the items italicised underwent different situations as depicted in the sentences. Notice that the actions were not voluntary. Hence, the nouns do not have agent theta roles.

**Location:** Location is an entity where action is performed. E.g.

- 8a. The boys met at *school*.
- b. We had lunch at *the restaurant*.
- c. We found her in *the room*.
- d. They kept the information to *themselves*.

In (8), *school*, *the restaurant*, *the room* and *themselves* are the places where the respective actions took place. Hence, they have location theta role.

**Source:** Source is the entity from which motion takes place. Consider the following examples:

- 9a. Efe left *Lagos* this morning.
- b. The toad jumped out of *the water*.

The italicised nominals *Lagos* and *the water* bear the source theta role, showing where they came from.

**Goal:** Goal theta role is the entity towards which motion is directed. Here are some examples:

- 10a. Lekwot has gone to *his farm*.
- b. They went *home* late.

In (10), *his farm* and *home* indicate the (final) destination of the entity that had been in motion.

**Benefactive:** This theta role refers to the entity that benefits from an action in the sentence. E.g.

- 11a. He bought his wife a necklace
- b. The woman cooked a delicious meal for her husband.

In (11), *his wife* and *her husband* have benefactive theta role because they benefitted from the actions in the sentences.

**Theme:** The theme is an entity being described. It is the topic of discussion. E.g.

- 12a. *The car* is unique.
- b. The scientist wrote about *termites*.
- c. Cats hate *rats*.

In these examples, *the car*, *termites* and *rats* are the topics of discussion; so, they have theme theta role. Notice that many scholars are not agreed on the specific function of the theme theta role. Some even confuse the theme role with the patient theta role.

In the principles and parameters theory, theta roles are guided by Theta Criterion. The theta criterion is a concept which suggests that a theta role is assigned to an argument and an argument

bears only one theta role. If the examples we constructed are put to the test, some of them will fail, thus violating Theta Criterion.

Consider the following sentence:

13. Zainab gave a book to Aisha.

In this sentence, *Zainab* has the agent theta role, since she has the power of volition to do so. It also has source theta role, since the book originated from her. Hence, *Zainab* has two theta roles, in violation of theta criterion! *A book* has the theta roles of theme, patient and experiencer; three roles at a go! Again, this violates theta criterion.

In syntax, a sentence that violates a syntactic rule is considered ungrammatical. However, considering the grammatical structures of the sentences above, we discover that they are perfectly grammatical even after violating Theta Criterion. The major reason we can adduce to this is that the roles are semantic rather than syntactic. In semantics, there are no absolute meanings; but there are rough edges such that meanings shade into each other. We cannot say a particular word means the same thing at all times since words are open to different interpretations, depending on their context of occurrence. This is different from syntax where a structure portrays a particular meaning and variations may portray a different meaning. It follows then that there is a difference between semantic role and thematic role, even though theta role is used to refer to both. Nevertheless, while theta or thematic role is syntactic, semantic role has to do with meaning.

Although we have described about nine theta roles, we cannot pretend that these are all the theta roles that scholars have described. There are more. However, some of these theta roles overlap and scholars often confuse one with the other or mistake one for the other.

So far, the implication of our discussion is that every structure has some meaning. This is probably contradicted in Chomsky's popular sentence:

14. Colorless green ideas sleep furiously.

Chomsky was making a claim that a sentence can be grammatical without being necessarily based on meaning. This was later proved to be erroneous as sentence becomes meaningful in

context, prompting Chomsky to revise his ideas in a later model of the grammar. The bottom line is that every acceptable sentence has some meaning.

Furthermore, in earlier models of transformational grammar, it was believed that transformations were meaning-preserving. Indeed, many structures confirm this claim as in the following examples:

15a Eve gave Adam an apple.

b. Adam was given an apple by Eve.

16a. It surprised the doctor that the patient died.

b. That the patient died surprised the teacher.

17a. It seems that John is happy.

b. John seems to be happy.

18a. Ahmed sat on a chair; he bought the chair.

b. Ahmed sat on a chair which he bought.

19a. Titi showed Ojo a book.

b. Titi showed a book to Ojo.

20a. Biodun called Bisi a butcher.

b. Biodun called a butcher for Bisi.

In (15), there is a meaning relation between the active and passive forms of the sentence. Despite the fact that both sentences are different in terms of voice, the meaning remains the same. In the Extended Standard Theory model of transformational grammar, the structure in (15a) shows the logical positions of the words in the sentence. This serves roughly as the deep structure. When the passive transformation is applied, the result, which is the surface structure will be (15b). When both are compared, there is no change in meaning after transformation.

The D-structure representation shows the following:

21 [e] was given Adam an apple by Eve

After transformation, the NP *Adam* which is the indirect object is moved to the sentence initial position to form the passive counterpart of (15a). In (16), there is a case of extraposition. The clause beginning with *that* is moved down the clause while the position left behind is occupied by a pleonastic *it* in order to satisfy the Extended Projection Principle (EPP). Whether it is moved as in (16a) or it remains in situ as in (16b), the meanings remain the same. In this case, there is no difference in meaning. The examples in (17) are those of raising. Example (17a) is the base structure of the expression, and (17b) is a derived structure. In (17b), *John* moves up the clause to the position formerly occupied by *it*. Regardless of the difference in word order, the meanings remain the same. In (18a), there is a repetition of an NP. In (18b), one of the identical NPs is deleted. This is a product of the application of the Equi-NP deletion transformation of the Extended Standard Theory. This transformation deletes one of the pair of the identical NPs. In example (19), there are direct and indirect objects. The indirect object is moved. This is the indirect object movement transformation. In both cases where movement occurs and where it does not occur, the meanings remain the same. We can say the same thing about the examples in (19). However, a closer look at (20a) shows an element of ambiguity. This sentence is ambiguous in two ways. Although it may mean that a butcher was called for Bisi, it can also mean that Bisi is referred to as a butcher. In this sense, we can postulate that (20a) has one deep structure but two surface structure interpretations.

In later developments of transformational grammar, scholars have found transformations to affect meaning in some contexts, especially passive structures. In this sense, the D-structure has a particular meaning while the S-structure will have another.

Consider the following sentence, adapted from Riemsdijk and Williams (1986):

22a. The editor did not notice many mistakes

b. Many mistakes were not noticed by the editor

23a. Two languages are spoken by people in this room

b. People in this room speak two languages.

In (22), although we can postulate that the sentences have the same deep structure, they have two different surface meanings. Similar comments can be made about (23). These will be further

discussed under Scope Ambiguity in Module 4 (Unit 2). As a consequence of this disparity in meaning between deep structure and surface structure, scholars suggested *D-structure* to substitute *deep structure* and *S-structure* to replace *surface structure* in the Principles and Parameters Theory.

### 3.2 Autonomy of Syntax

The autonomy of syntax (AoS) has been one of the major issues of debate among linguists since the 1940s. The phrase captures the position held by formal linguists (and particularly those in the generative tradition), that syntax is self-contained with respect to semantics. Advocates of autonomy of syntax contend that the syntactic rules and principles of a language are formulated without reference to meaning, discourse or language use. Does this mean that it does not matter if sentences are meaningless? The obvious answer is no! This can be validated when we consider Chomsky's distinction between grammaticality and acceptability and the need for having the two in place for any grammar. (See Chomsky's *Syntactic Structures* and *Aspects of the Theory of Syntax*).

Partee (2014) presents a better interpretation of AoS. He posits that syntactic structures, syntactic rules and syntactic primitives are not reducible to semantic structures, rules and primitives; the application of syntactic operations is not conditional on semantic factors. However, he asserts that even if syntactic operations are semantically irreducible, the syntactic generation of a sentence could (logically) depend on the interpretation that the generated sentence has or the context in which it is used or the communicative intent of the speaker. Moreover, as seen in Section 3.1 above, semantic features play a role in the functioning of syntactic rules. The theta theory module of GB and feature checking theory of MP offer some support for this view.

The Minimalist Program sees each lexical element included in syntactic computations as a bundle of features. These features are classified into phonological features, semantic features and morphosyntactic features. The semantic features are those through which semantic information is coded. The value of these kinds of features is usually rooted in context based on the understanding of the users of the code in question (Adegoju et al., 2014). This constitutes the sum of the LF interpretation.

## 4.0 CONCLUSION

Following the discussions above, we can see that meaning plays a lot of roles in theta role assignment. Since meaning is nebulous, it is axiomatic that meanings of words can shade into another and we cannot say with any air of certainty the meaning of a particular word until it is put in a specific context. It also means that there is a distinction between syntactic roles and semantic roles, the former being assigned strictly in accordance with Theta Criterion.

## 5.0 SUMMARY

In this unit, different theta roles have been discussed, with emphasis on the meaning of the words in the context of theta role assignment. The section ends with a postulation that meaning presented at the D-structure may not necessarily be derived at the S-Structure.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. What relationship exists between syntax and semantics?
2. What is the difference between D-Structure and S-structure?
3. What is the difference between theta roles and semantic roles?

## 7.0 REFERENCES/FURTHER READING

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## **UNIT 2**

## **LOGICAL FORM**

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 What is Logical Form?
  - 3.2 LF in Earlier Models of Transformational Grammar
  - 3.3 LF in Minimalist Program
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

One of the questions that language scholars and language philosophers have sought to answer in their debates on the relationship between syntax and semantic is “How is the meaning of a sentence determined by its syntactic form?” That is, scholars seek to elucidate how a natural language sentence expresses its meaning. Scholars who engage in this debate can be largely classified into syntacticians (linguists who specialise in the study of grammar and syntax) and logicians (scholars who are skilled in examining statements to decide whether they are true, or who are skilled in logic). Mainly, the most central position held among linguists (especially syntacticians and logicians) is that grammar and meaning are mediated through a linguistic level of logical form. What then is Logical Form? Can we say that while grammar is syntax, semantics is Logical Form? The answer to this question will be found in this unit. The unit discusses Logical Form as one of the central phenomena and level in syntax and semantics.

### **2.0 OBJECTIVES**

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

- i. define logical form;
- ii. explain how meaning is treated in different models of transformational grammar;
- iii. discuss the emergence of Logical Form; and

- iv. discuss the place of logical form in syntax

### **3.0 MAIN CONTENT**

#### **3.1 What is Logical Form?**

Logical form is a representation of the logical properties of an expression. This definition is common in discussions on semantics. It may interest you to know that the term was originally used in opposition with *grammatical* form. However, it has become a main concept in syntax. Hence, in this discussion, we will see logical form as a feature of sentences.

In generative grammar, it is regarded as a distinct, structural level of representation, which contains all (and only) the syntactic information that is relevant for semantic interpretation. Another way to put it is that Logical Form is the level of linguistic representation at which all grammatical structure relevant to semantic interpretation is provided. It is an abstract level of representation derived from the S-Structure level through transformational operations (Huang, 1994). Transformational grammar assumes that the rules that underlie the semantic interpretation of sentences do not apply directly to the S-Structure representation. Instead, they apply to the LF. LF is the interface between grammar and the conceptual-intentional (C-I) properties of a language. (See Chomsky 1957 for details about the C-I properties of a language.) Fox (2002) defines Logical form as a syntactic structure that is interpreted by the semantic component. We can simply say that Logical Form expresses aspects of semantic structure that are syntactically expressed. Thus, LF is the interface between an expression and its semantic sense).

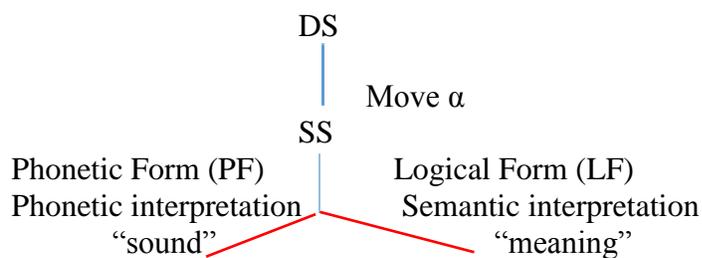
#### **3.2 LF in Earlier Models of Transformational Grammar**

You are aware that since the inception of transformational generative grammar (Chomsky, 1957), different models have been developed, subject to criticisms and revision of each preceding model of the theory. These models are Standard Theory (Chomsky, 1965), Extended Standard Theory (Jackendoff, 1972; Chomsky 1973), Revised Extended Standard Theory (Chomsky 1973), Principles and Parameters Theory (Chomsky 1981) and the contemporary Minimalist Program (Chomsky 1995). (Read more about these models in Lamidi, 2016.)

In earlier models of transformational grammar, the locus of interpretation is taken to be Deep Structure and the transformational operations that produced Surface Structures were assumed to

be meaning-preserving (See Chomsky 1965; Lamidi, 2008). Hornstein (1995) opines that transformational operations, in the beginnings of transformational grammar, did not contribute to the grammatical licensing of the interpretive information encoded in the Deep Structure phrase marker. In the Extended Standard Theory (EST) of 1972, it was proposed that grammatical levels other than Deep Structure syntactically determine sentence meaning. What this means is that different grammatical levels determine different features of sentential interpretation. Later, with the development of trace theory in the Revised Extended Standard Theory (REST), the S-structure (SS) was treated as the sole locus of semantic interpretation. The trace theory requires that a moved element leave behind a trace, and the trace preserves the structural relations that obtained prior to movement (see Lamidi, 2008 for more details on trace and trace theory). Thus, the trace theory has information-preserving quality. Because of traces, therefore, it is possible to consolidate all the grammatical information.

You know that theories are always subject to revisions. REST was also revised. The revision gave birth to Principles and Parameters Theory (PPT), also popularly known as Government and Binding theory or GB. Our focus in this unit is not on GB. Hence, if you are interested in knowing more about the framework, you may read Black (1998), Chomsky (1981), Haegeman (1994), Lamidi (2011) and Ouhalla (1999). However, for the purpose of our discussion here, we shall quickly examine the organisation of grammar in GB (as presented in the GB architecture below).



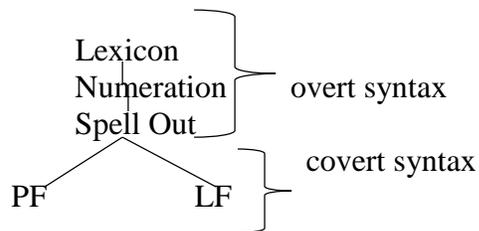
(Adapted from Hornstein, 1995, p. 2 and Akinmurele, 2019, p. 59)

The architecture shows how GB conceives the contribution of grammar to semantic interpretation. Hornstein posits that the locus of the grammatical conditions within GB is “LF”. The architecture shows that the LF is the path/level where interpretive-semantic information is represented. In other words, we can say that LF is a level which encodes all the information grammatically relevant to semantic interpretation. As Hornstein adds, “whatever we naively mean by “meaning” meets its grammatical or structural requirements at LF and thereby has the specific interpretive properties it enjoys” (Hornstein, 1995, p. 4)

### 3.3 LF in Minimalist Program

The GB model dominated the mainstream generative linguistics for more than a decade (1981-1995). In 1995, Chomsky developed a computational approach to grammar that uses a limited set of mechanisms and constraints to provide adequate explanation of language structures. This approach is known as the Minimalist Program (MP). Many reviews of the Minimalist framework have established that the Minimalist Program aims at developing further ideas involving *economy of derivation* and *economy of representation*. (Read more about Minimalist Program in Chomsky, 1995; Adegaju et al., 2014.)

As shown in the figure below, there are only two syntactic levels of representation in MP: Logical Form (LF) and Phonological Form (PF).



(Adapted from Adegaju et al., 2014, p. 107)

LF is the level of representation that interfaces with the Conceptual Intention system (CI). The CI denotes semantics. Hence, it is further shown in the framework that LF is the point where syntactic computation interfaces with semantics. Radford (2009) notes that LF, being a semantic representation, interfaces with systems of thought. In this regard, we can say that Chomsky’s CI

refers to systems of thought. There are a number of conditions that surface in the development of MP. Some of these are feature checking and principle of full interpretation (PFI). It is assumed in MP that each lexical element is a bundle of features, some of which are semantic features. PFI states that the syntactic representation cannot contain elements that have no semantic relevance. Hence, LF representations consist only of linguistic objects that have interpretable features. In order to obtain well-formed LF representations, features that are uninterpretable get effectively eliminated by means of feature checking. Therefore, items that make it into the syntactic computation are those that receive appropriate interpretations.

As noted by Adegaju et al. (2014), in feature checking, features that converge are merged and make it to the spell-out stage. After spell-out, every computation has two aspects: the phonetic and the semantic. The semantic aspect is labelled LF. Any derivation that does not violate any principle before reaching LF is said to converge at LF. In essence, we can say that MP places LF as an important aspect of a syntactic computation.

#### **4.0 CONCLUSION**

Logical Form (LF) surfaced for the first time within the GB model of transformational grammar. It is purely a semantic component of grammar. LF is the syntactic structure in which all structural properties relevant to semantic interpretation are represented. Logical Form is a feature of sentences.

#### **5.0 SUMMARY**

Logical form is a level of linguistic representation. It is abstract and it ensures appropriate interpretation of syntactic structures. LF is a level which encodes all the information grammatically relevant to semantic interpretation. Different models of transformational grammar differ in their approaches to LF. While Standard theory identifies LF with Deep Structure, REST equates LF with SS, but EST denies that LF exists. Nevertheless, GB and MP position LF as the locus of the grammatical conditions. Any derivation that violates any principle before reaching LF crashes.

#### **6.0 TUTOR-MARKED ASSIGNMENT**

1. What is LF?

2. Trace the origin of LF in transformational grammar.
3. Discuss the place of logical form in syntax. Would you say LF is independent of syntax? Justify your claim.

## 7.0 REFERENCES/FURTHER READING

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## **UNIT 3**

## **NULL CONSTITUENTS IN THE MINIMALIST PROGRAM**

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 What are Null Constituents?
  - 3.2 Nature and Types of Null Constituents
    - 3.2.1 Null Subject
    - 3.2.2 Null Auxiliaries
    - 3.2.3 Null Complement
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

In our daily social interactions, we usually communicate by using sentences. The items that make up these sentences are constituents. A constituent is a unique composite part of a larger sentence, phrase, or clause. Therefore, a constituent may be a word, phrase or clause that constitutes a specific information unit in a sentence. You will observe that sometimes when we make sentences, it appears that some items are ‘missing’. Regardless of the absence of such constituents, the meaning of the sentence is not affected; and such missing items are recoverable. Such (physically) missing items are called null constituents. In this unit, you will learn about these constituents and how they are treated in recent grammar traditions.

### **2.0 OBJECTIVES**

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

- i. identify what constitutes null elements in minimalist syntax; and
- ii. discuss the nature and types of null constituents in English.

### 3.0 MAIN CONTENT

#### 3.1 What are Null Constituents?

Null constituents are items that form part of a sentence or a clause but which do not have overt phonetic features. That is, they are not pronounced. As defined by Radford (2009), a null constituent is one which is 'silent' or 'unpronounced' and so has no overt phonetic form. However, they have semantic and grammatical functions in the sentence. They are also called empty categories. Such constituents are phonetically null in positions, which were earlier occupied by a lexical item, but have now been decomposed or displaced due to deletion or transformational process in grammar (Lamidi, 1996, p. 36). Radford (2009, p. 92) also describes them as “constituents which have grammatical and *semantic features* but lack audible phonetic features and so are silent or inaudible”.

#### 3.2 Nature and Types of Null Constituents

There are different forms of null constituents. In this section, we discuss null subjects, null auxiliaries and null complements.

##### 3.2.1 Null subject

Some languages allow non-referential sets of  $\phi$ -features (phi-features). Such languages are called non-*pro*-drop. Such languages do not show agreement and all occurrences of null subjects can also be explained simply by topic prominence. Such subjects are possible in some languages because subjects occupy a higher (A-bar) position and so matrix subjects are able to identify null embedded subjects by binding them. In languages that permit phonologically null subjects, such argument positions may be licensed and identified without the participation of verbal agreement. Below are examples from Japanese and Arabic.

1.  $\emptyset$  siken-ni otita. (Japanese)  
Exam failed  
'pro failed the exam.' (Neeleman & Szendroi, 2005, p. 299)
2. katab-at riwayatn (Arabic)  
wrote-3p.sg.f a novel  
“She wrote a novel.” (Altamimi, 2015, p. 12)

It is understood that the above sentences have subject pronouns that are phonetically null. Such pronouns are conventionally designated as *pro* (or ‘little *pro*’). The *pro*, therefore, captures the intuition that the sentence has an ‘understood’ subject.

English does not allow such constructions. You may check your indigenous language, using the following examples, to test if your language has such features. With the claim that English does not belong to the category of such languages described above, it is implied that finite clauses in English require overt subjects. Hence, the following sentence would be said to be ungrammatical.

3. \*Goes to school every day

If anyone makes such a sentence, you would definitely ask “Who goes to school?” This is because you expect an overt (physical) subject who performs the action *goes*. On the other hand, if the speaker says:

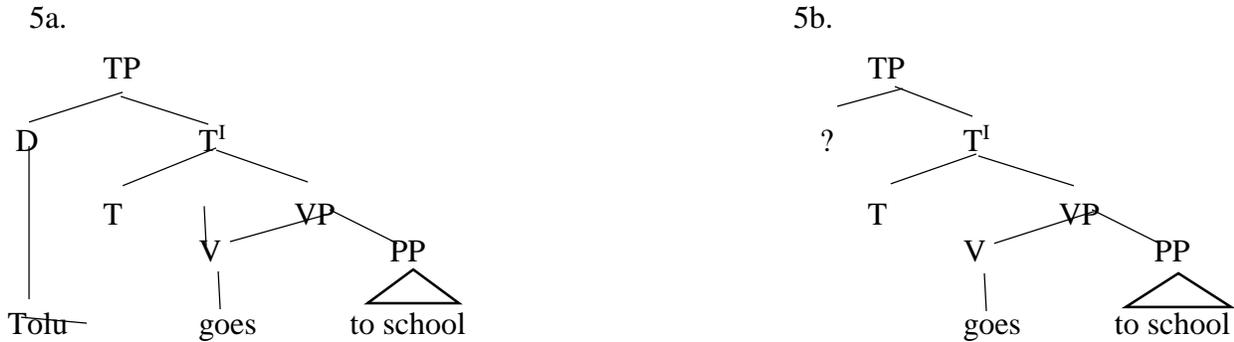
4a. Go to school every day.

You would understand this to mean an order or instruction to someone being addressed directly. Also, you should note that English allows a null subject in imperative sentences. Such subjects are intrinsically second person, that is *you*. It can be said that the pronoun *you* can have a null spell-out. Another way to put this is that the phonetic features of *you* are not spelt out when the word is intended for the subject of an imperative sentence.

You may not ask the same question as that presented above because you are likely to know the addressee, that is, the person to whom the command is given. What this suggests therefore is that the two sentences do not give the same meaning, and they vary in the syntactic details that may be provided about them. In the case of (2), all the required syntactic operations needed for the derivation of the structure take place. In the selection of constituents, a DP is selected which undergoes feature valuation with other constituents, particularly the verb ‘go’. Since the features are fully interpreted and they agree, the structure goes to spell-out as:

4b. X, go to school every day. (where we can assume X to be a person, say Tolu).

If we assume that these two structures are ‘under construction’, we can represent them on the tree diagram as shown below.



In the Minimalist Program, there is overt syntax and there is covert syntax. Overt syntax refers to operations that take place before spell-out while covert syntax refers to any operation that takes place after spell-out operation. (You can read more about this in Adegaju et al., 2014). A major syntactic operation that takes place in sentence (2) is operation delete. The subject DP (*Tolu*) is deleted at the PF interface. Note that post-spell-out operation can only affect the other interface (LF), without affecting the grammaticality of a structure. In the case of (1), the possibility we can argue for is that the subject DP selection does not take place. Hence, such a structure cannot make it to spell-out.

While structures like (1) above are not likely to be said by someone who has learnt English syntax up to, at least, your level, one often comes across sentences such as (6) and (7) below, especially in informal conversations and in some writings.

6a. I am your friend.

6b. \*Am your friend.

7a. I have bought a new phone.

7b. \*Have bought a new phone.

8a. I don't know the way.

8b. \*Don't know the way

9a. I think I gave you the money

9b. \*Think I gave you the money

9c. \*Think gave you the money

10a. \*Why do always lose things? (Radford, 2009, p. 93)

10b. Why do I always lose things?

It may be assumed as well that there was a selection of the subject DP in the pre-spell-out phase of each of the sentences, and that the DP was deleted at PF level after spell-out, for stylistic effect. It is obvious that the ‘b’ sentences above (6-9) are ungrammatical. In the case of sentences (9) and (10), notice that while the subject pronoun is deleted/omitted at the beginning of the sentence (main clause) in (9b, c & 10a), the subject of the (embedded) complement clause of the (9c) sentence is deleted as well, and all this results in ungrammaticality. The subject is restored in (10b) and the sentence is grammatical. What can you deduce from the structures? Such clauses bearing truncated null subjects are shortened by giving a subject pronoun like a null spell-out if it is the first word in a sentence.

It must be noted, however, that not all sentence-initial subjects can be truncated, regardless of whether they are used in formal or informal context. Sentence (3) above and (11b) below are examples. They are ill-formed.

11a. He is tired.

11b. \*Is tired.

Nevertheless, considering the ungrammatical sentences in (6b), (7b) & (11b), one can surmise that they were probably mispronunciations of the contracted forms *I’m*, *I’ve* and *he’s*, respectively, which were properly spelt out in the (a) examples. The bottom line in these structures with null constituents is that they are meaningful. The meaning of the null constituents can also be recovered from the structure. This explains how listeners understand the sentences to be referring to the ‘understood *you*’.

Also, Rizzi (2004) notes that children of around age 2 years freely drop subjects, irrespective of whether the language they are acquiring is a null subject language. In addition, children at this

age also drop determiners and auxiliary verbs, but objects are not freely dropped. For instance, it is possible to hear a 2-year-old child say something like:

12a. Mummy, [∅] sweet.

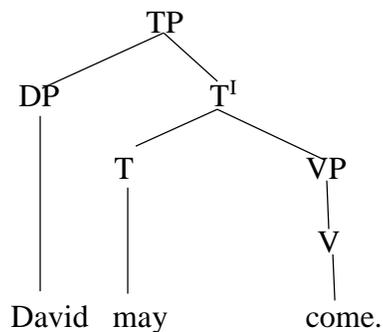
12b. Mummy, [∅] want sweet.

12c. Mummy I want sweet.

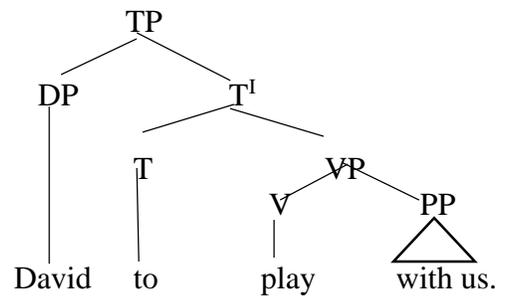
While the subject DP *I* and the verb *want* are deleted in (12a), only the subject is deleted in (12b), while (12c) shows the full constituents of the sentence. It is implied that the operation by which (2) above is generated is also applicable in (12b). That is, the subject DP was selected and its features were checked and merged with the V in the pre-spell-out phase. The same constituent was deleted at the PF interface post-spell-out.

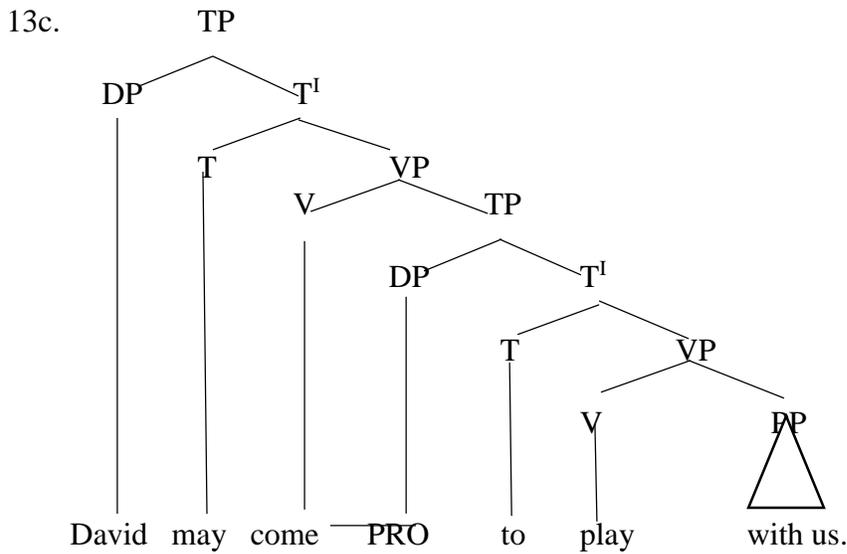
Another type of null subject found in English is the non-finite null subject. This is found in non-finite clauses. As you already know, non-finite clauses do not have an overt subject. Do you still remember the ‘big PRO’ and its interpretation in control clauses? PRO often refers (back) to an antecedent, i.e. another noun or pronoun within or outside the sentence, and it can therefore be said to be synonymous to the noun or pronoun it refers to in the matrix clause. For example, the system that generates (13c) can be explained in terms of (13a) and (13b).

13a.



13b.





The null subject (PRO) in the complement clause in (13c) has the same grammatical and referential properties as the noun *David*. Thus, PRO is a null pronoun. As seen in (13b), what constitutes the complement clause has the subject DP *David* which is merged with the non-finite verb phrase *to play with us*. Post-spell-out, the phonetic content of the DP is deleted. What this implies is that *David* enters into the lower string (that is, the small clause) and has its semantic features fully interpreted. After that, deletion of *David* takes place.

### 3.2.2 Null Auxiliaries

Recall that the auxiliary verbs in English play important roles in the grammaticality of a sentence. One of the first things about verbs (both auxiliary and lexical) is that they mark tense. It is assumed that you are familiar with seeing auxiliary verbs (physically) in sentences and, in such cases, they definitely have phonetic realisation. Perhaps what you may not quite know, for now, is whether such elements that bear much grammatical relevance can be null in a sentence or a finite clause. Before we go on, let me tell you that all clauses contain TP (Tense Phrase), and are headed by a finite auxiliary (in finite clauses) or infinitival *to* (in non-finite clauses). If a finite auxiliary heads a TP, you may then wonder how possible it is for such an element to have a null spell-out in a sentence without crashing the sentence at LF. In this unit, you will see clearly that finite clauses may lack an overt auxiliary.

Like subject pronoun dropping in English, null auxiliary occurs in informal language use. For instance, consider those expressions in (14b) and (14c), which you commonly hear characters say in your favourite (African) American movies, as well as (15b), which you probably have used at one point or the other in your conversations with your friends.

14a. She is gonna cancel the date.

14b. She's gonna cancel the date.

14c. She [<sub>aux</sub>∅] gonna cancel the date.

15a. You are planning to go on a date.

15b. You're planning to go on a date.

15c. You [<sub>aux</sub>∅] planning to go on a date.

16a. They have bought a new phone.

16b. They've bought a new phone.

16c. They bought a new phone.

17a. The students will visit the chairman.

17b. The students'll visit the chairman.

17c. The students visit the chairman.

Just like (14b) and (15b), sentences (16b) and (17b) also involve contractions involving *have* and *will* auxiliaries, respectively. Certainly, we cannot give another interpretation other than what the (a) sentences mean. On the contrary, (16c) and (17c) would give us interpretations that are quite different from the (a) sentences. While (16a) has a perfective aspect feature, (16c) has a simple past tense feature. Likewise, while (17a) indicates a future tense, (17c) indicates a simple present tense. Thus, there are slight differences in their respective meanings when compared to the (a) examples. Hence, the representations of these structures on phrase markers will be different. Based on this discussion, it is safe to submit that auxiliaries that can have a null spell-out are the 'be' auxiliary verbs. Rather than having null variants, *have* and modal auxiliaries can only be said to involve a different computation.

Another kind of null auxiliary that is possible in (informal) English expression is the type found in strings involving ellipsis or abbreviation. Let us examine one of the examples given by Radford (2009).

18. He could have helped her, or [she have helped him]. (Radford, 2009, p. 98)

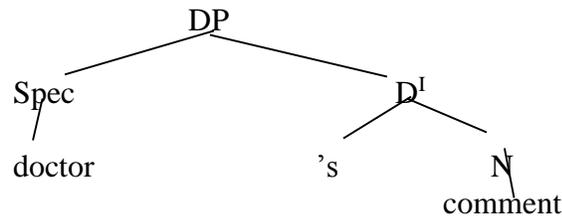
Sentence (18) above contains two finite clauses: *He could have helped her* (clause A) and *she have helped him* (clause B). Both clauses are finite, containing a finite T; they both have nominative subjects (he/she). The finite T is quite obvious in clause A since it contains the finite modal auxiliary ‘could’. You may have some doubts as regards what makes clause B a TP since the finite T does not occur physically. As rightly explained by Radford, the string in clause B [*she have helped him*] is an elliptical (that is, abbreviated) variant of *she could have helped him*. Perhaps a way to convince you about this is to remind you that, by feature, ‘she’ does not agree with ‘have’, in terms of number, at least in the context of Standard English. Hence, the two words cannot be merged in the same string. Thus, there is a T constituent ‘could’ in the computation that does not have phonetic spell-out. Therefore, the null auxiliary in the (second) clause undergoes what is known as *gapping*. Radford (2009) explains that gapping is a grammatical operation which allows the head of a phrase to be given a null spell-out. The word ‘gapping’ tells us that such ‘silence’ leaves an apparent ‘gap’ in the phrase where the head would otherwise have been (Radford, 2009). This gapping is possible when the same item occurs elsewhere within the sentence, and it is silent. Notice too that the gapped element is recoverable in the sense that the meaning is complete despite the gap. In other words, the interpretation of the sentence assumes that the gapped element is still there, even if it is phonetically null. It is possible to recover the meaning because the first clause contains the relevant word and it is actually to avoid repeating the same word (*could*) that the second occurrence of it was deleted (gapped).

### 3.2.3 Null Complement

You would recall that constituents that occur post-head are generally regarded as complement. For example, consider ‘comment’ and ‘my mother’ in the structures below.

19a. Doctor's comment

19b.



20. I love my mother.

The D heads the structure in (19) and by implication, *comment* is only a complement (to D) in the phrase. While the verb *love* in (20) heads the VP, the DP *my mother* is its complement. In this section, we consider structures in which complements are null. Junker, Stainton and Wearing (2006) refer to such complements as ‘pragmatically controlled zero anaphora’, ‘understood arguments’ and ‘linguistically unrealised arguments’.

We have mentioned earlier that even in the case of structures where some constituents are null, they are only so at PF. They have their LF programmed before the spell-out. Hence, the meanings of structures involving null constituents remain intact as they are in the pre-spell-out syntax. Where syntactic objects are merged (we may call this ‘merge site’ for now) is determined primarily by their semantically motivated, lexically specified selectional needs (Resnik, 1996; Ernst, 2002). What this means is that the position where a syntactic object is merged into the clausal projection is determined by the selectional properties of the object. The selectional properties and placement of a constituent have implications for the semantic effect of such constituent in a syntactic configuration. Thus, constituents regardless of whether they are overt or covert cannot just occur anywhere in a sentence. This is illustrated in the following examples.

21a. The students already know.

21b. The students already know [*e*].

22a. James left.

22b. James left [*e*].

23a. The pastor gave to the church members.

23b. The pastor gave [*e*] to the church members.

24a. \*The students purchased.

24b. \*James expected.

A common feature in structures (21-23) above is that they all contain null complements. In (21a), it is implied that ‘the student’ already knows something (noted as *e* in (21b)). For instance, it could be that the students already know ‘the answer’, or ‘the new teacher’ and the like. Similarly, it is possible to imagine the possible complement of ‘left’ in (22). The sentence may read: *James left the country; James left his job* and so on. What the pastor ‘gave’ in (23) may be money, food items, Christmas gifts and the like. The verbs *know*, *left* and *gave* in (21), (22) and (23), respectively, can be said to have semantic frames which determine whether they necessarily select an overt complement or a null complement. In contrast, the ungrammaticality of structures (24a) and (24b) above shows that the semantic frames of the verbs *purchased* and *expected* in the respective sentences do not accommodate null complements. These structures show that selectional restriction is one of the semantic factors in syntax. Each constituent selects a specific type of semantic argument, and it is merged into the sentence at the point where it c-commands the syntactic realisation of this argument.

In the next few paragraphs, we will quickly distinguish three semantic (or discourse-referential) values realisable by null complements. They are generic, anaphoric and referential (indefinite). Our focus is on the first two, though we shall briefly comment on the third. This is because the third one is often outside the scope of syntax. It is situated within the domain of pragmatics and discourse analysis (Lorenzetti, 2008; Dvorak, 2017).

Generic null complements (GNCs) are also known as indeterminate null complements. They are syntactically represented as pronouns (namely PRO<sub>arb</sub>) or DPs. They consist of a set of  $\phi$ -features; they are specified as [+human], [+generic]; and they are possibly case-marked. GNCs are represented as syntactic arguments, that is, they occur in argument positions.

25. The Nigerian economy can tempt [someone<sub>i</sub>] PRO<sub>i</sub> to be fraudulent.

26. Romantic poems reconcile [one<sub>i</sub>] with oneself<sub>i</sub>

27. Good remuneration makes [labourers] happy.

28. A happy wife greets [her husband] on her knees.

Sentences (25) and (26) above suggest that generic null complements are pronominal in nature. Sentences (27) and (28), however, caution against settling for such a conclusion. Test this by reading each of the sentences without pronouncing the words in the square brackets. Do they make sense to you? They do not, except you read the sentences as if the items in the square brackets are implied. You should have definite interpretations that would include the existence of the bracketed words. Some of the syntactico-semantic features of GNCs, as shown in the sentences, include the fact that they can control into infinitival clauses (25), bind anaphors (26), and count as subject of a small clause (27). From sentence (27), the complete stretch (29) can be inferred.

29. Labourers are happy.

An anaphor is an element, overt or covert, with an interpretation that depends on elements appearing in the same context. Indefinite Null Complements (INC) is typical of a variety of activity verbs of the *eat* type, such as *drink*, *sing*, *bake*, *cook* and *paint*, among others. Such verbs have a pronounced manner component in their meaning and “fairly circumscribed selectional restrictions” (Lorenzetti, 2008, p. 63; Dvorak, 2017, p. 12). The content of the null object is more or less predictable, for it will correspond to the literal meaning of the verb.

INC may evoke a discourse referent. Examples are what we find in imperative structures consisting of only verbs.

30. Eat.

31. See.

When you say words like (30) and (31) above, you and the person you are talking to can identify particularly the complements of the verbs *eat* and *see*. Thus, the interlocutors’ attention is being specifically drawn to the thing or event involved, which is available within the situational context, though anyone who does not share the context of the conversation may not have a definite idea of the complements of the verbs. Consider sentence (32) below.

32. Korede eats.

If you consider *eats* as a transitive verb, you will realise that there is an unpronounced VP complement. The most typical interpretation of the null complement position is likely to be achieved through the underspecified word *food*. In interpretation, the complement will be things like rice, yam, chocolate and similar items. A caution here is that the possible interpretation that the person is accustomed to having a meal or as many meals as she can during the whole day is neglected. Therefore, an underlying context may be required to ascertain the adequate and fully specified interpretation.

Null complements can also realise anaphoric semantic value, that is, they refer (back) to specific item in the same construction in which such null complement occurs. In this case, the implicit internal argument is not only referential and identifiable (see Cornish, 2005), but anaphoric. In earlier models of transformational grammar (particularly GB), anaphors are regarded as reflexives (such as *himself*, *themselves* and the like) and reciprocals (*each other* and *one another*). Recent studies have shown that anaphora is not limited to these two classes. Discussions in recent times have begun to make enquiry into the phenomenon of anaphoric null complement as a form with semantic value realisable by null complements. This null complement is commonly discussed in syntax literature as Null Complement Anaphora (NCA). Null Complement Anaphora elides a complete complement, which can only be a finite clause, (small) infinitival clause, or prepositional phrase. The omitted elements may be the direct objects of verbs, or may even be other constituents such as clausal complements and adjuncts. The following sentences illustrate these.

33. The court ordered the agency to release the seized goods but it *refused*\_\_\_\_\_.

34. The teacher expected the prefects to tell him what happened to the new student but they did not *know*\_\_\_\_\_

35a. The Senate considered the electoral reform bill but most of the senators from the north objected\_\_\_\_\_.

The complement of the verb ‘refused’ in (33) is the infinitival clause *to release the seized goods*, while the complement of the ‘know’ (34) is the CP *what happened to the new student*. The complement of the verb ‘objected’ in (35a) is not the DP *electoral reform bill*. Rather, it is a

prepositional phrase *to electoral reform bill*. These null positions are interpreted here based on context. You may argue against this view, especially given the fact that there is no such PP in the preceding clause. You will, however, agree that sentence (35b) is ungrammatical, especially when you pay attention to the nature of the verb ‘objected’, which necessarily requires a PP complement.

35b. \*The Senate considered the electoral reform bill but most of the senators from the north objected *the electoral reform*.

The foregoing demonstrates that the semantic interpretation of NCA is determined by its antecedent and the predicate that selects it. Also, the examples above show that NCA can be of the syntactic category CP, VP, or PP, but not DP. Hence, it cannot have the semantic features of a DP.

NCA has the behaviour not of a pronoun, or that of a definite description. NCA is neither like a definite description nor like a pronoun. In NCA, core semantic participants are not instantiated as overt arguments, but are nevertheless understood in context. In this light, Cornish (2005) refers to it as contextually-definite null complements. The high dependence on context indicates that both syntax and semantics are important for the licensing and interpretation of anaphors.

#### **4.0 CONCLUSION**

Different constituents can lack phonetic form, depending on what different languages permit. In the Minimalist Program, all constituents required for a sentence are selected from the lexicon and overt syntactic operations take place to realise a complete stretch. Certain constituents can thereafter be deleted only at PF, leaving the LF intact.

#### **5.0 SUMMARY**

Null constituents are constituents deleted at the PF within a sentence. Such deletion occurs post-spell-out, and does not affect the grammaticality of, or meaning in, a sentence. Null constituents are classified based on their semantic (or discourse-referential) values. The classifications are generic, referential - (in)definite and anaphoric.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. Do you agree that null constituents have semantic features? Justify your position on this.
2. Examine the following sentences and discuss their structures in relation to null constituents.
  - i. God bless you.
  - ii. God blesses you.
  - iii. Bless you.
3. What do you understand by truncated null subjects?

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## UNIT 4

## BINDING RELATIONS IN THE MINIMALIST PROGRAM

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 What is Binding?
  - 3.2 Binding Theory in the Minimalist Program
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### 1.0 INTRODUCTION

Binding theory is one of the seven interacting modules of Government and Binding Theory (GB). It is a hallmark of the success of generative grammar. The sub-theory straddles the syntax–semantics interface. Chomsky’s introduction of Binding Theory sought to address a central question of how to describe and explain the differences in distribution between “plain pronouns” like *he*, *she* and *it* (called pronominals or pronouns), reflexive pronouns like *himself*, *herself* and *itself* (called anaphors) and similar forms. In GB, binding is regarded as a structural constraint clearly spelt out in the three binding principles A, B and C. In this unit, you will learn how binding is treated in the Minimalist Program.

### 2.0 OBJECTIVES

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

- i. explain the phenomenon of binding;
- ii. discuss the place of binding theory in the Minimalist Program;
- iii. state the conditions for binding in the Minimalist Program; and
- iv. appraise the treatment of binding in the Minimalist Program.

### 3.0 MAIN CONTENT

#### 3.1 What is Binding?

Binding Theory is concerned primarily with the differences in the distributions of pronominals and reflexive pronouns. We can then say that binding theory concerns syntactic restrictions on nominal reference. Binding is relevant for nominal categories only. It particularly focuses on the possible co-reference relationships between a pronoun and its antecedent (the nominal that a non-deictic pronoun depends on for its reference). This co-reference is established by means of co-indexation. In semantic building, a binder  $\beta$  semantically binds a DP if and only if: (a)  $\beta$  and DP are co-indexed; (b)  $\beta$  c-commands DP. (See more details about this and binding conditions in Chomsky, 1981; Lamidi, 2011). The implication of co-indexation condition here is that two DPs co-refer if *and only if* they are co-indexed. There is another phenomenon that has been introduced in relation to co-indexation. This phenomenon is contra-indexing (Büring, 2004; Bonato, 2006). It means lack of an index on either DP. Contra-indexing denotes a situation in which two DPs being considered for binding relations bear different denotations. Contra-indexing indicates non-coreference. Contra-indexing between two DPs means that they are not required to be co-referential. Let us quickly illustrate the two phenomena of co-indexing and contra-indexing.

- 1a. Since [<sub>DP</sub> my sister]<sub>j</sub> left this country, she<sub>j</sub> has not called me.
- b. Since [<sub>DP</sub> my sister]<sub>j</sub> left this country, she<sub>k</sub> has not called me.
- c. \*She<sub>j</sub> has not called me since [<sub>DP</sub> my sister]<sub>j</sub> left this country.

In (1a), the DP *my sister* is co-indexed with the pronoun *she*. Hence, binding relationship exists between the two DPs. We can say that *she* is co-referential with *my sister*, and thus the pronoun is bound by *my sister*. The kind of co-indexation found in (1a) is not found in (1b). Thus, *my sister* and *she* are not co-referential, and there is no binding relationship between the two. By implication, the referent of the pronoun *she* is not found within the sentence. *She* can only be another person, other than *my sister*. You are already familiar with the use of asterisks in syntax discussion (as used in 1c) as an indication of ungrammaticality. You may wonder why such sentence is considered ungrammatical. Just like we see in (1a), the pronoun *she* and *my sister* are co-indexed, indicating that they have the same reference. However, the ungrammaticality of the sentence is informed by the location of the bound element in the string. A binder should occur

leftwards to the bound element, where the binder will have to be at least a node up (the syntactic) tree from the pronoun (Jacobson, 2003). (You may also see Cecchetto, 2004; Rizzi, 2011; Heck & Muller, 2016 and Belletti, 2018 on locality condition/locality constraint). Since this is not the case in (1c), the sentence is adjudged to be ungrammatical. Let us contrast (1c) with (1d) (below).

1d. She<sub>j</sub> has not called me since [<sub>DP</sub> my sister]<sub>k</sub> left this country.

Now in (1d), *she* and *my sister* are not co-indexed. Therefore, they do not refer to the same entity. The sentence is grammatical. We can formalise the interpretations of sentences (1a-d) as (2):

- 2a. she = my sister
- b. she ≠ my sister
- c. \*she = my sister
- d. she ≠ my sister

Another point to note from the above discussion is that binding has to do with logically possible co-reference relations that may exist between two DPs in a given sentence. According to Buring (2004), there are three logically possible co-reference relations which two DPs in a sentence can show: (i) obligatory co-reference, (ii) obligatory non-co-reference, and (iii) optional co-reference, and only one of such relations is possible at a time. The examples below illustrate these relations.

- 3a. Adesola<sub>j</sub> loves herself<sub>j</sub>.
- b. She<sub>j</sub> adores Adesola<sub>k</sub>'s teachers.
- c. Adesola<sub>j</sub> adores her<sub>j</sub> teachers.
- d. Adesola<sub>j</sub> adores her<sub>k</sub> teachers.

Sentence (3a) illustrates obligatory co-reference. In (3b), the pronoun *She* and Spec-DP *Adesola* are not co-indexed. Hence, co-referentiality does not hold between these two nominal entities. Of course, such co-reference relation is not expected, else the structure will be ungrammatical (as shown in (3g) below). Thus, (3b) illustrates obligatory non-co-reference. Sentences (3c) and (3d) show optional co-reference. This means that the reference of *her* may be *Adesola* (as seen in 3c)

and it may not be, such that it refers to another entity outside the sentence (3d). In interpreting (3c), it implies that *her* refers to *Adesola*, and thus (3d) can be read as:

3e. Adesola<sub>j</sub> adores Adesola's<sub>j</sub> teachers.

Meanwhile, (3d) does not share this reading. Rather it could be read as:

3f. Adesola<sub>j</sub> adores Ibidunni's<sub>k</sub> teachers. (where Ibidunni is also female)

It should be noted that any reading (indicated by means of co-indexation) of (3a) and (3b) contrary to what we have discussed above will only yield anomalous representations of the sentences as respectively given in (3g) and (3h) below.

3g. \*Adesola<sub>j</sub> loves herself<sub>k</sub>.

3h. \*She<sub>j</sub> adores Adesola<sub>j</sub>'s teachers.

The ungrammaticality of (3g) and (3h) above underscores the obligatory co-reference and the obligatory non-co-reference that characterise (3a) and (3b) versions of the sentences, respectively.

### **3.2 Binding Theory in the Minimalist Program**

In this sub-section, we focus on the place of binding theory in relation to semantics within the Minimalist Program (MP). The first point we should mention here is that Binding Theory which exists as an independent module of GB is eliminated in MP, or at best, it is reduced to chain formation. In the GB framework, the binding theory requires reference to D-structure, S-structure, and LF. Since these interfaces have been eliminated in MP, it implies that binding is reduced to the LF interface. Thus, binding relations are considered largely as semantic components rather than structural constraints.

As part of efforts to eliminate the complexities evident in earlier models of generative grammar, Chomsky (1993, p.43) states a very simple interpretive version of Binding Theory thus:

- A. If alpha is an anaphor, interpret it as co-referential with a c-commanding phrase in D.
- B. If alpha is a pronominal, interpret it as disjoint from every c-commanding phrase in D.
- C. If alpha is an R-expression, interpret it as disjoint from every c-commanding phrase.

You may wonder: How does this version differ from the version of binding principles A, B and C contained in GB? The difference, as also indicated by Al-Momani (2015), is in the fact that in the GB version, binding principles are conditions on representations; whereas, in the MP version, binding involves interpretive procedures that assign certain interpretive relations among DPs and are, by nature, derivational.

Most reviews on these conditions have interpreted Chomsky's *D* in the above conditions as relevant local domain. The above assertions indicate that binding is not a structural component but strictly semantic/interpretative. This thinking is also possible if we consider the fact that the notions of government (which is central in the government and binding model) and governing category have been eliminated. Thus, binding theory is reduced to "interpretive" mechanisms, which are not syntactic in nature. In the Minimalist Program, interpretive mechanisms operate at the conceptual-intentional interface (that is, LF level). Hence, binding should only hold at LF. Butler, Keenan and Mattausch (2006) aver that they arise as relations that are established with an interpretation. Thus, binding relations are fundamentally semantic in nature.

Let us quickly examine the implication of Chomsky's postulations stated above. An anaphor has some uninterpretable  $\phi$ -features concerning its reference, which must be checked in the domain of a Phase by a c-commanding element. The features determine the referential relation between an anaphor and its antecedent. (Phase is a notion introduced in MP to refer to a limited workplace in which selection of a subset of Lexical Arrays and its derivation should take place).

- 4a. Tunde understands why [<sub>TP</sub> Mr Ajibola<sub>i</sub> praised himself<sub>i</sub> in the presence of his classmates.]
- b. \*Tunde<sub>i</sub> understands why Mr Ajibola<sub>i</sub> praised himself<sub>i</sub> in the presence of his classmates.

Following Chomsky's first condition above, 'himself' is interpreted as co-referential with the subject DP. The anaphor *himself* is interpreted as *Mr Ajibola*. The local domain for the anaphor *himself* is the TP. Therefore, the TP is the Binding Phase. In this binding phase, the DP *Mr Ajibola*, which c-commands the anaphor, has a set of gender (male), person (third) and number (singular) features identical to those of the anaphor. Therefore, the DP checks the anaphoric feature of the anaphor; consequently, the anaphor is interpreted as being identical to *Mr Ajibola* in this sentence. Any other interpretation, as contained in (4b) is unwarranted, at least in English. This is so because *Tunde* is not in the local domain of the anaphor *himself*. Hence, *himself* cannot

be interpreted as co-referential with *Tunde*. We can further illustrate this by considering structure (5a) (below) in which there is no DP which c-commands the anaphor.

- 5a. \*Mr Ajibola<sub>i</sub>'s sister enjoyed himself<sub>i</sub> at the party.
- b. \*Mr Ajibola's sister<sub>i</sub> enjoyed himself<sub>i</sub> at the party.
- c. Mr Ajibola's sister<sub>i</sub> enjoyed herself<sub>i</sub> at the party.

In (5a), *Mr Ajibola*, which is the Spec-DP, does not c-command the anaphor *himself*. Since the c-commanding relation is necessary for checking, the *Mr Ajibola* cannot bear the checking relation with the anaphor. Hence, the uninterpretable  $\phi$ -feature of *himself* is left unchecked (resulting in the ungrammaticality of the sentence). In the light of Chomsky's first condition, (5b) imposes co-referentiality between *Mr Ajibola's sister* and *himself*, such that the anaphor *himself* is interpreted as the DP *Mr Ajibola's sister*. This kind of co-referentiality is not acceptable because the anaphor does not bear  $\phi$ -features identical to those of the DP.

In the previous sentences, the focus was on anaphors. Let us consider some pronominals, starting with a sentence Heinart (2002) gave but which he failed to explain in relation to Chomsky's interpretation of binding in the Minimalist Program.

- 6a. \*John<sub>j</sub> wondered [which picture of Bill<sub>i</sub>] he<sub>i</sub> saw [<sub>copy</sub>Bill].
- b. John<sub>j</sub> wondered [which picture of Bill<sub>i</sub>] he<sub>j</sub> saw [<sub>copy</sub>John]. (Heinart, 2002, p. 5)

Note that the *Bill* and *John* at the right end of the sentences are copies. (Recall copy theory of movement which replaces the GB trace). Also, the copies are not our focus. We are discussing binding. Hence, we are concerned with the pronominal *he* in the two versions of the same sentence.

There are two names in the above sentences. Which of these two names do you think the pronoun *he* refers to? Example (6a) shows that the reference of *he* is *Bill*. Do you agree with this? Try to read it this way:

- 6c. \*John<sub>j</sub> wondered [which picture of Bill] Bill saw [<sub>copy</sub>Bill].

Certainly, this reading is awkward. Hence, (6a) is ungrammatical; it also lacks logical relations of DPs. On the other hand, you can easily read (6b) as:

6d. John<sub>j</sub> wondered [which picture of Bill<sub>i</sub>] John<sub>j</sub> saw [<sub>copy</sub>John].

With (6d), it is clear that *he* in (6b) refers to *John*, and not *Bill*. Thus, the pronoun *he* (as required by Chomsky's condition) is interpreted as co-referential with *John*.

7. \*She<sub>k</sub> said that Mrs Ajayi<sub>k</sub> won an award.

The interpretation of (7) above (as shown by the co-indexation) is that *she* and *Mrs Ajayi* are co-referential and should be seen as logically the same entity. This is not true. *She* can only have a referent outside of that sentence. Also, *Mrs Ajayi* is an R-expression and so it does not require an interpretation.

So far, our discussion has made co-indexation and co-referentiality central concepts in binding, especially in the Minimalist Program. In previous models of Transformational Generative Grammar (GB especially), binding is discussed from the perspective of head-complement (or binder-bindee) relationship, which only exists under government relation. In MP, binding is largely a function of co-indexation, where co-indexation is a symmetric relation: if A is co-indexed with B, then B is co-indexed with A. In this light, rather than see *himself* as (structurally) bound by *Mr Ajibola's sister* (thereby suggesting *Mr Ajibola's sister* as a head), we have to say that *himself* (2c) is co-indexed with *Mr Ajibola's sister* and *Mr Ajibola's sister* is co-indexed with *herself*.

#### 4.0 CONCLUSION

Linear order plays a role in binding relations. In most cases, a pronoun follows its antecedent, and in many cases, the co-referential reading is impossible if the pronoun precedes its antecedent. The treatment of binding in MP is a form of the relegation of the binding theory to the C-I interface (LF).

#### 5.0 SUMMARY

In binding relations, co-indexing and contra-indexing are central concepts. These two may be regarded as systems of implementation of restrictions on co-reference relations. DPs (particularly nouns, pronouns and anaphors with their antecedents) are co-indexed to account for the

grammatically determined co-reference between them. Contra-indexing accounts for the grammatically determined non-co-reference between nouns and pronouns.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. What is binding?
2. Explain binding relations, illustrating the different possible binding relations that can exist among DPs.
3. How is the treatment of binding in GB different from that of MP?
4. Do you think MP adequately takes care of binding? Justify your claim.

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## **MODULE 4**

### **SCOPE IN SYNTAX AND SEMANTICS**

Ambiguity is a common feature in natural language use. Although language users attempt to avoid it, there are cases where speakers may not be successful at the effort. As such, ambiguity constitutes a problem in communication. Ambiguities can be addressed by resolving the scope of the interacting syntactic elements. This module therefore focuses on scope and scope-bearing elements, demonstrating how central it is to both syntax and semantics as sub-fields of linguistics.

<b>Units</b>	<b>Topics</b>
<b>1</b>	<b>Scope and Anaphora in Minimalist Program</b>
<b>2</b>	<b>Scope Ambiguity</b>
<b>3</b>	<b>Semantic Scope of Determiner Phrases</b>

## **UNIT 1                      SCOPE AND ANAPHORA IN THE MINIMALIST PROGRAM**

### **Content**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 What is anaphora?
  - 3.2 What is Scope?
  - 3.3 Garden-Path Structures
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

Scope and anaphora are crucial phenomena in linguistics. These two phenomena are important because they bear relevance to meaning-making in sentences. There are linguistic elements that bear scope; they are called scope-bearing elements. Scope-bearing elements have continued to attract linguists' attention because they offer interesting insights into how linguistic meanings can be understood in sentences. For instance, linguists working on children's language acquisition in recent times have been investigating children's comprehension of sentences containing multiple scope-bearing elements. Some of them (like Moscati, 2012) have claimed that such sentences pose problems in that children need to relate a single sentence to two distinct logical representations. In this unit, the concepts of anaphora, scope and scope ambiguity are discussed. In the discussion you will learn how meaning can be derived from sentences.

### **2.0 OBJECTIVES**

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

- i. define anaphora and scope;
- ii. identify scope-bearing elements; and
- iii. account for possible interpretations of ambiguous sentences.

### 3.0 MAIN CONTENT

#### 3.1 What is anaphora?

Anaphora is the use of an expression that depends specifically upon an antecedent expression for interpretation. Generally, anaphora binds different syntactic elements together in a sentence. In generative grammar, anaphors are reflexive and reciprocal pronouns, and they are said to have anaphoric relations with nominals. Anaphoric relation is typically said to hold whenever the semantic value of a linguistic form is related to the value of some previous or anticipated mentions. Thus, in anaphoric relations, there are “referentially dependent” expression (the anaphor) and “referentially independent” expression (Hinzen, 2016, p. 29). The latter serves as antecedent to the former, and the former gets its reference from the latter.

1a. Mrs Adekunle<sub>i</sub> loves *herself*<sub>i</sub>.

1b. Mrs Adekunle<sub>i</sub>, not Mr Adekunle, loves herself<sub>i</sub>

1c. \*Mrs Adekunle loves *themselves*.

1d. \*Mrs Adekunle loves *himself*.

To determine the semantic value of an anaphoric expression, we need to know what its antecedent is, and we need to know the semantic rules that determine the value of the anaphor in terms of the value of its antecedent. The semantic value can be determined by means of feature valuation. For instance, sentences (1c) and (1d) above are ungrammatical because the number feature of *themselves* (1c) is not interpretable. Also, the gender feature of *himself* (1d) in relation to that of *Mrs Adekunle* does not converge. In (1a & b), these features (number and gender) converge. Also, the anaphor *herself* is referentially dependent on *Mrs Adekunle*.

The study of anaphora involves both syntax and semantics. We need syntax to describe the distribution of anaphoric expressions and their antecedents, and we need semantics to describe how the semantic value of an anaphoric expression is determined.

#### 3.2 What is Scope?

Scope can be described as the domain in which a particular phrasal head, say the negative marker, has control over some elements in the sentence. Scope is a concept borrowed from

symbolic logic. Usually related to quantifier, scope is the extent of the interpretation of a quantifier. The core notion of scope in natural language is the same as in logic (Szabolcsi, 2006). Pirog et al. (2017) define scope as the semantic order of operations in syntactic constructions. The phenomenon of scope originated within a field of semantics known as formal semantics, which has a major concern for the relationship between operators' syntactic positions and their semantic effects. Scope is that part of a formula to which an operator is prefixed.

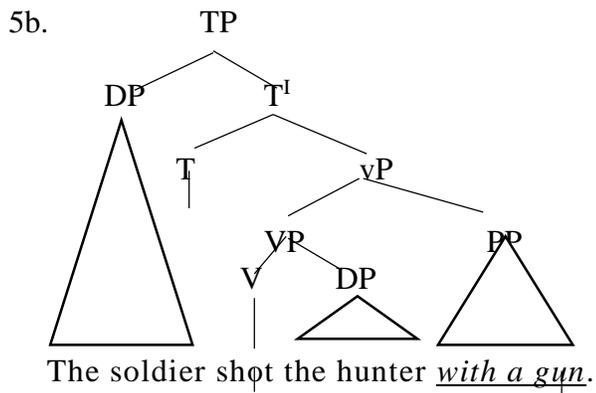
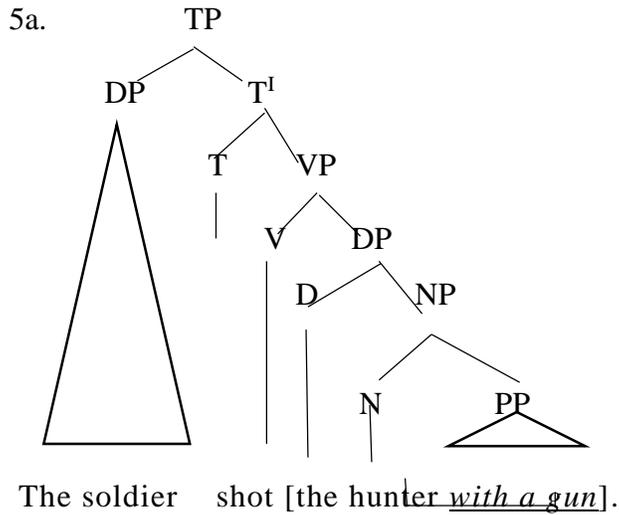
In syntax, scope relates to the possible ambiguities that may arise out of the interaction of meanings of syntactic elements. It is a phenomenon in syntax and semantics that relates to precisely interpreting sentences that contain certain kinds of expression in English. Syntactic theories like the Minimalist Program posit a level of syntactic structure called logical form, in which an item's syntactic position corresponds to its semantic scope. Scope is, thus, essentially a part of the Logical Form approach (LF).

Let us start the discussion here by considering the sentences below, but before you read the explanation, pause and attempt to interpret the sentences.

2. Everyone prays for someone. (See similar structures in Hagstrom, 2006, p. 5)
3. The soldier shot the hunter with a gun.
4. Tolani slapped the man in that room.

Sentence (2) can be interpreted in either of two ways. First, there is an individual X, and some person Y such that prayers are said by every X for Y. In this interpretation, the indefinite pronoun *everyone* has wider scope over the indefinite pronoun *someone*. This means that each person prays for another person, though not everyone prays for the same person. The second interpretation is that there is some person X, and there is an individual Y such that X prays (in request) for Y. In this second interpretation, *someone* has wider scope over *everyone*. This means that everyone prays for the same individual. In a real-life situation, people involved in conversation in which this kind of sentence is uttered usually can choose only one out of the two interpretations.

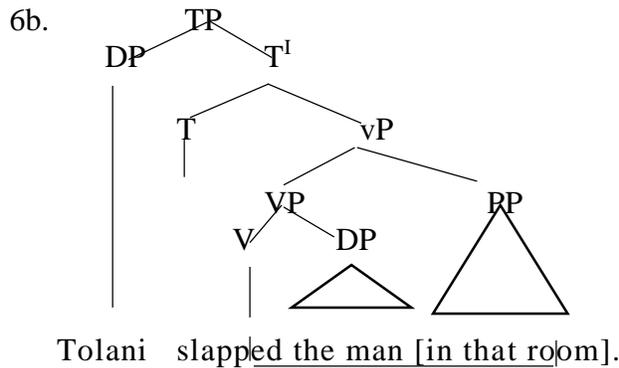
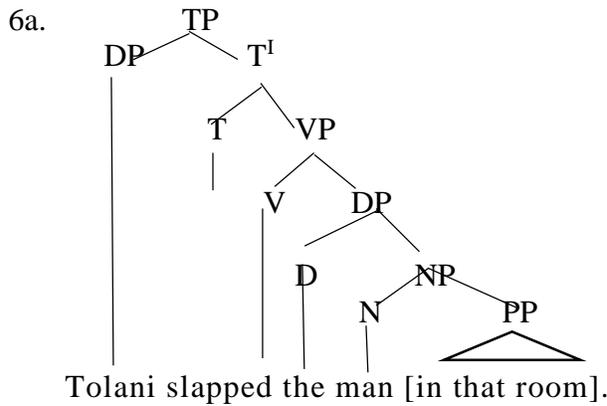
Then, if you are asked to state the function of the prepositional phrase *with a gun* in sentence 3, what will you say? The tree diagrams below will guide you into answering the question.



Structures (5a) and (5b) establish clearly that the sentence *The soldier shot the hunter with a gun* is ambiguous. Structure (5a) above shows that the scope of *with a gun* is defined within the DP where it is c-commanded by the noun *hunter*. Hence, it is interpreted as ‘there is a hunter who has a gun’, and which makes him (*the hunter*) different from any other hunter (that might have also been shot by *the soldier*). It therefore qualifies the noun *hunter*. On the other hand,

structure (5b) shows that the same phrase has its scope defined by the VP (up the tree) where it is c-commanded by the verb *shot*. Its interpretation therefore shows that of instrumentation, that is, the soldier used a gun to shoot the hunter, and not any other weapon (such as arrows). By implication it is the phrase that modifies the verb *shot*.

Consider the tree diagram analyses for (4):

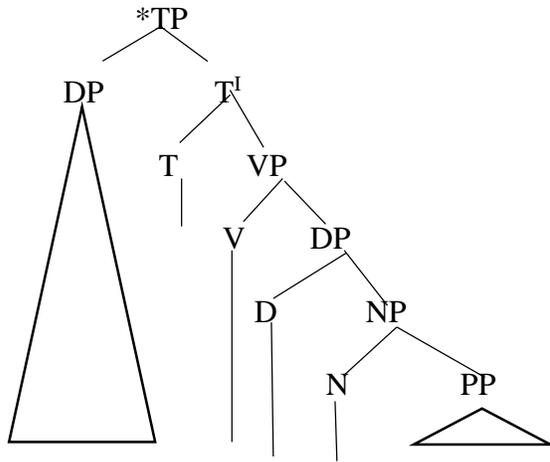


There are also two possible interpretations for sentence (4). As seen in (6a), *in that room* has its scope defined within the DP *the man...*, which c-commands the PP. The first interpretation, therefore, is that there is a particular *man* (known to the speaker and the addressee) who was slapped by *Tolani*. Thus, *in that room* qualifies the noun *man*. On the other hand, structure (6b) shows that the same phrase has its scope defined by the VP (up the tree) where it is c-commanded by the verb *shot*. Its interpretation therefore shows that of location (of the action expressed by the verb *slapped*).

Let us contrast example (4) above with example (7) below.

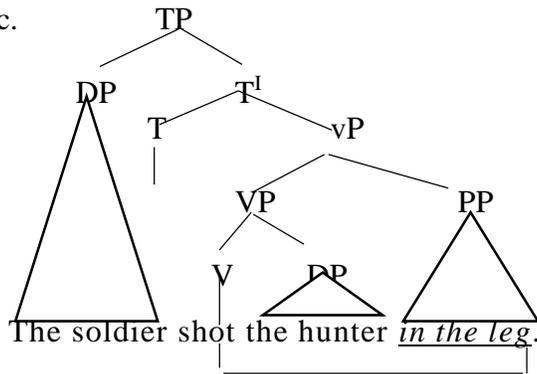
7a. The soldier shot the hunter *in the leg*.

7b.



The soldier shot [the hunter in the leg].

7c.



The only possible interpretation of (7a) is contained in (7c); the analysis as well as the interpretation as in (7b) would be unnatural and anomalous (a hunter cannot be in the leg!).

### 3.3 Garden-Path Structures

Garden-path is a model of analysing structures. Garden-path sentences are those which when first read lead the reader to read again for re-analysis. It is usually a structure for which the reader initially assumes a meaning but quickly changes his or her mind after getting to a point in the sentence, which causes the reader to re-read the sentence. Garden-path sentences also have

elements of ambiguity. Examples (3&4) above, reproduced below, can also be described as garden-path structures.

8. The soldier shot the hunter with a gun.
9. Tolani slapped the man in that room.

Consider the following additional examples:

- 10a. The friends met after 10 years at the school.
- b. Azeez told the boy that nobody liked the story.

In sentence (10a), the ambiguity is located in the prepositional phrase: *after 10 years at the school*. The first interpretation is that the friends met at the school after they had left one another while the second is that they met after spending 10 years (working) in the school. In the same manner, the ambiguity in example (10b) is within the predicate: *the boy that nobody liked the story*. Depending on what the author intended, the structure can mean that the boy was told a story that nobody liked or a boy that nobody liked was told a story. In both examples, the sentence remains ambiguous until it is contextualised. Otherwise, it cannot be disambiguated. Alternatively, in (10b) the sentence can be interpreted as *a story was told a man*, because the embedded clause is introduced by *that* instead of *whom*.

#### **4.0 CONCLUSION**

The phenomenon of scope is central to both syntax and semantics as sub-fields of linguistics. The morphosyntactic as well as semantic scope of an anaphor is determined by the feature value of its antecedent (to which it is co-indexed). Thus, when two linguistic items are co-indexed, they are interpreted as having the same value and referent. When this is not the case, such sentence will be ungrammatical. While anaphoric expressions belong to nominal class, garden-path structures are usually prepositional.

#### **5.0 SUMMARY**

Anaphors are reflexive and reciprocal pronouns, and they have anaphoric relations with nominals. The antecedent of an anaphor is needed for us to determine the value of the anaphor. The semantic value of an anaphor can be determined by means of feature valuation. Scope originated within a field of semantics known as formal semantics, but is frequently investigated in the field of transformational grammar.

## 6.0 TUTOR-MARKED ASSIGNMENT

1. Write short notes on scope and anaphor.
2. What are scope-bearing elements? Discuss any two.
- 3a. Consider the following sentences to discuss their possible interpretations.
  - i. Possibly a dog is barking.
  - ii. Daniel did not respect many prophets.
  - iii. Many of us don't like many women.
  - iv. Everybody didn't leave.
  - v. The student saw the vendor at Mellamby Hall.
- 3b. Discuss the scope in each with particular focus on which is wider and which is narrower in each case.
- 3c. What class of scope does *each* relate to?

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## **UNIT 2                   SCOPE AMBIGUITY**

### **Content**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Types of Ambiguity
  - 3.2 Scope-Bearing Elements
    - 3.2.1 Quantifier Scope
    - 3.2.2 The Scope of Negation
    - 3.2.3 The Scope of Adverbs
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Reading

### **1.0 INTRODUCTION**

An expression is ambiguous if it is capable of more than one interpretation. In this sense, interpreters view the expression from different perspectives, all of which are correct, following the norms of interpretation in the language. Although there are different types of ambiguity, in this unit, we are concerned principally with the syntactic ambiguity. Therefore, attention is paid to *scope* which is the domain of the core word that causes ambiguity. In this wise, ambiguity orchestrated by negative scope, quantifier scope and adverb scope are discussed.

### **2.0 OBJECTIVES**

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

- i. distinguish between types of ambiguity;
  - ii. understand the concept of semantic scope and c-command in relation to ambiguity;
- and

- iii. analyse ambiguous structures perfectly.

### 3.0 MAIN CONTENT

#### 3.1 Types of Ambiguity

There are different types of ambiguity. These are lexical ambiguity, phonological ambiguity and syntactic ambiguity. Lexical ambiguity occurs when an expression has different meanings. Consider the following:

- 1a. the Yorùbá teacher
- b. the Russian lover

Each of these expressions has two possible interpretations. Example (1a) may mean a teacher of Yorùbá Language or a teacher who hails from the Yorùbá region. The difference in meaning is caused by the status of the word *Yorùbá*. If *Yorùbá* is conceived as a noun, then the first interpretation applies. However, if *Yorùbá* is an adjective, then the second interpretation becomes relevant. As the expression stands, both interpretations are acceptable; except otherwise disambiguated through a syntactic analysis. Without a syntactic analysis, however, the expression may be disambiguated in the context of use.

In the second example (1b), there are three possible meanings as follows:

- 2a. the Russian that is in love with another person
- b. the lover of a Russian citizen
- c. the lover of the Russian language

In the first two cases, *Russian* is an adjective. In examples (2a & b), *Russian* as an adjective refers to a national of a particular entity (Russia). Note that these two interpretations are possible due to the meaning of the word *lover*, which makes it possible that references can be made to either the subject or the object of the verb. The third example is that in which *Russian* occurs as a noun, since it refers to a language.

The second type is syntactic ambiguity. This type involves longer stretches of expression. In this context, however, certain words determine the interpretation of the expression. When such words precede others, we have a particular interpretation, and when they are preceded by another word, another meaning comes to the surface. Consider the following expressions:

- 3a. I saw the boy with the binoculars.
- b. Biola is in a troubled state.
- c. The police cannot stop taking bribes.
- d. Daddy asked us to ignore cold water and warm water.

In these examples the structures have two meanings each. Sentence (3a) has the meaning of the speaker seeing a boy through the binoculars and seeing a boy who holds the binoculars. Sentence (3b) has the meaning of Biola being worried over something and Biola, even if happy, finding herself in a state, say Borno State of Nigeria, which is in trouble. The third example (3c) means that the police are used to taking bribes and so cannot stop the habit. The second interpretation is that the police cannot stop other people from taking bribes: it is probably not part of their job. Finally, the last example (3d) has the interpretation of a *daddy* instructing his children to ignore two things: cold water and warm water. The second interpretation is that the addressees are to ignore cold water and perform the action of warming water.

Perhaps, we can classify these examples under lexical ambiguity. In each of the examples, only one word in each sentence caused the ambiguity in that sentence. These are *with*, *troubled*, *taking* and *warm*. *With* has the meaning of *through* and *as instrument*. *Troubled* can describe individuals or a city. *Taking* can be used as a participle or as an adjective. *Warm* can be used as a noun or as an adjective. In all cases, the sentences are ambiguous because these words have two meanings each.

The third class of ambiguity is that in which an expression is phonologically ambiguous. Certain pairs or groups of words are homophones (they are pronounced alike). When they occur in speech, they may be misconstrued as the other in the context of speaking. Here are some examples:

- 4a. some/sum

- b. see/sea
- c. son/sun
- d. right/rite/write
- e. wrath/wrought
- f. advise/advice
- g. belief/believe
- h. site/sight/cite
- i. ones/once

However, they can easily be disambiguated when they are spelt out either in writing or through their alphabetical symbols. In cases where they have the same spelling, their context of occurrence can disambiguate them.

Our discussion of different types of ambiguity now leads us to the study of the concept of scope-bearing elements.

### **3.2 Scope-Bearing Elements**

Sometimes, ambiguities may arise out of the interaction of meanings of syntactic elements in some sentences. These ambiguities are addressed by resolving the scope of the interacting syntactic elements. Scope, being a semantic property, specifies the domain of interpretation of an expression.

Scope ambiguity is relevant in discussing the interaction between syntax and semantics. It is an instrument used in resolving ambiguity in expressions. Scope ambiguity is a concept that directly relates to quantifier scope. It occurs when two quantifiers or similar expressions can take dominion over each other in different ways in the meaning of a sentence. It is this phenomenon that leads to the idea of quantifier scope.

Scope can be classified according to the possible meanings deductible from an expression. When the meaning of an expression matches the syntax of the expression, it is referred to as surface scope. This means that only one meaning can be found in the sentence. If, however, there are more than one meaning, it is referred to as inverse scope. This means that there are different

meanings which deviate from the structure presented facially in the syntax. In other words, the structure has to be analysed in different ways to arrive at other acceptable meanings.

The inverse scope also bifurcates into two. These are narrow scope and semantic scope. These two types are determined by the positions of a relevant head against that of the other. The relevant condition for determining meaning in this context is c-command. C-command is a structural relation between two elements in a structure, such that both share the same branching node and neither dominates the other. Take for instance a negative construction that is ambiguous. The narrow scope involves a c-command relationship between the negative marker and elements dependent on it or elements that are within the domain of the negative marker. However, there is wider scope when the negative marker is preceded and c-commanded by a relevant element that precedes it. By *relevant* in the description above is meant a word or phrase that affects the meaning of an expression when it is moved to a new position. Hence, they determine the structure and, in context, the meaning range of such expressions.

English has several different classes of scope-bearing elements. Quantifiers, adverbs, focusing words (such as *only* and *even*), and negative words (such as *no* and *not*) are some of them. These, we consider in this section. Before we continue, recall that scope and c-command are essential elements to consider in resolving ambiguity (See Lidz & Musolino, 2005; Viau, Lidz & Musolino, 2010; Dayal, 2012 for more details). Generally, the semantic scope of a scope-bearing element is determined on the basis of its c-command domain. Scope is closely related to the c-command relationship. A scope-bearing element takes scope over everything that it c-commands in the syntactic construction.

In this unit, we shall be discussing quantifier scope, negation scope and wh-scope, all of which are important in disambiguating apparently identical or similar expressions.

### **3.2.1 Quantifier Scope**

Have you heard the word *quantifier* before? What does it mean? Quantifiers are words that state the quantity of identified NPs. Such words include *someone*, *everyone*, *many* and *few*. A quantifier is also a type of determiner (such as *all*, *some*, or *much*) that expresses a relative or indefinite indication of amount or quantity. A quantifier usually goes before a noun to express

the quantity of the object. The quantity expressed may be precise (like *eight boys*) or imprecise (like *some boys*). Quantifiers cover the class of numerals (such as *one, twelve, forty* and so on), the so-called "quantitative adjectives" (such as *all, some, many, any, each* and the like), and the so-called "indefinite pronouns" (the likes of *someone, something, everybody* and *anything*).

As observed in the concept of scope above, a word determines the meaning of an expression based on the c-command relationship that obtains between it and elements that depend on it. However, if another word c-commands the expression, the meaning may change, depending on the position occupied by the quantifier. Hence, scope refers to the interpretation of some part of an expression with respect to an existing quantifier in a sentence.

Consider the following examples, borrowed from Riemsdijk and Williams (1986) (and see similar structures in Partee, 2007, p. 14 and Lamidi, 2016, p. 47).

- 5a. Everyone in this room speaks two languages
- b. Two languages are spoken by everyone in this room.
  
- 6a. The editor did not notice many mistakes.
- b. Many mistakes were not noticed by the editor.

In the first example (5a), *everyone* c-commands and therefore has semantic scope over *two languages*. Hence, the meaning is that each person in the room speaks two languages. Therefore, each person in the room is bilingual. However, the languages spoken by each person may be different from the languages spoken by any other person in the room. In the passive structure (5b), *two languages* c-commands and has semantic scope over *everyone*. This means that there are only two languages available among the people in the room. Like (5a), *everyone* in the room is bilingual. However, (5b) differs from (5a) in that *everyone* in (5b) speaks the same two languages.

We can illustrate this as: Messrs Oni, Ana, Ola and Otunla are together in a room; and there are languages such as Edo, Urhobo, Egun, Fula and English. The first interpretation could therefore be like:

- 7a. Mr Oni knows Edo and Fula.
- b. Mr Ana knows Egun and English.
- c. Mr Ola knows Fula and English.
- d. Mr Otunla knows Urhobo and Edo.

The second interpretation is that there are just two languages (say Urhobo and English) known to the four people and they know that each of them knows the two languages. These two interpretations of (5) are informed by the difference in the relative domains of applicability of the two expressions *everyone* and *two languages*. For the first interpretation, *everyone* has wider (or higher) scope than *two languages*, whereas we say that for the second interpretation, *two languages* has wider (or higher) scope than *everyone*.

In the second pair of examples, the NP (6a), *the editor* c-commands and has scope over *many mistakes*. This implies that the editor did not notice many mistakes in the manuscript (possibly because it was well written). Conversely in (6b), *many mistakes* c-commands and has semantic scope over *the editor*. This means that there are many mistakes which the editor did not notice (probably because the manuscript was poorly written). Notice that in both pairs of examples, the positions occupied by the quantifiers *everyone* and *many mistakes* are changed due to the passivisation of structures. It follows that in passive structures involving negation, there is a possibility of meaning change, especially when quantifiers and negative constructions are involved.

Consider the following additional examples too.

8. Every man loves a woman. (Kiss & Pafel, 2017, p. 2)
9. Some man danced with every woman.

The more prominent meaning of the sentence in (8) is that for every man, there is a woman. So, it tells us something like Mr A loves Mrs B; Mr C loves Mrs D; Mr E loves Mrs F, and the list continues. In this sense, it is implied that each man loves a different woman. The sentence also

has a second possible meaning, which is that there is one particular woman who is loved by every man. Hence, it reads like [*Every man loves Alake*].

The two possible interpretations of (8) will also show us that the quantifier *some* brings some ambiguity. First, the sentence may mean that there is at least one man (among the men in a given place) who danced with every woman (present also in the same place with the man). In this case, the interpretation of *with every woman* (which is the prepositional object quantifier) is dependent on the interpretation of *some man* (the subject quantifier). Thus, the subject quantifier has broader scope than the object quantifier. It may also mean that there is a particular man who danced with every woman in the vicinity! Another interpretation which this may give us is that: for every woman (in a given place), there is at least one (possibly different) man (among the men in a given place) who danced with her.

### **3.2.2 The Scope of Negation**

Negation can be defined as the logical operation of negating an expression or making an expression negative. Negative constructions contain negative markers and all or part of the meaning of a sentence is contradicted in a *negative* construction. Negator or negative marker is a term used to refer to words such as *no*, *not* and the contraction *-n't*; the negative indefinite pronouns *nothing*, *nobody*; the adjective *no* (as in *no one* or *no money*); the adverbs *nowhere*, *never*; and the conjunctions *neither ... nor*. Negation plays a central role in affecting both the structure and the total meaning of a sentence at the same time. Negation can interact with other scope-bearing elements such as quantifiers.

When the negative marker precedes an item, the negative marker c-commands and has scope over that item and therefore has a specific meaning. However, when the same item precedes the negative marker, the expression has another interpretation. In comparison, the two expressions have different meanings because of the position and area of influence of the negative marker.

In the remaining part of this section, we shall look at different structures in which the negative marker triggers differences in meaning due to its position/influence. Consider the following examples:

- 10a. Olu decided not to play pranks
- b. Olu decided to not play pranks

In these examples, *not* precedes *to*, and therefore has wider semantic scope over *to* in the structure. Sentence (10a) means that *Olu* deliberately will not play pranks. In (10b), the decision to stop playing pranks is more deliberate. This means that there is more emphasis on *Olu*'s determination not to play pranks. This little difference in meaning is caused by the arrangement of words in the sentence. In (10a) *not* precedes *to*, but in (10d) *to* precedes *not*. In other words, *not* precedes and c-commands *to* in (10a) but *to* precedes and c-commands *not* in (10b). This simple difference accounts for the meaning change despite the apparent similarity of words and their arrangements in the sentences. The meaning change, we should note, is due to the change in scope.

Radford also observes that there is a similar scope difference between *will* and *not* in sentences. Here are examples:

11a. He almost certainly won't cooperate with the police.

b. He will almost certainly not cooperate with the police (Radford, 2009, p. 163).

In (11a), *not* has semantic scope over *won't* (*will* contracted with *not*) and the sentence means **it is not the case** that he will cooperate with the police. In (11b), however, *will* has scope over *not* and the sentence means it **will be the case** that he does not cooperate with the police.

Here are additional sentence analyses:

12a. Many students were registered for the examination.

b. Not many students read the novel.

What is the interpretation of sentence (12a)? You will notice some ambiguity while trying to interpret the sentence. It could mean either of the variants below.

c. There were many students X, but only Y of X were registered (but Y is all of X).

d. There were not many students X, and so only Y of X were registered (and possibly not all of X).

Based on the interpretation in (12c), the quantifier *many* has wider scope than the negation *not*, whereas in the interpretation in (12d), *not* has wider scope than *many*.

There is also a class of words and phrases known as negative polarity items. These elements occur only within the scope of negation.

- 13a. John talks a lot.
- b. John does not talk much.
- c. \*John talks much.

- 14a. Tunde loves his neighbour very much.
- b. Tunde does not love his neighbour at all.
- c. \*Tunde loves his neighbour at all.

You would notice that (13a) does not involve negation but (13b) does. You also notice that when we removed the negative operator and the *do*-support (which are last resort operations in the construction), ungrammaticality sets in. What this suggests is that *much* cannot occur in an affirmative version of (13b). Similarly, (14c) demonstrates that the phrase *at all* can only occur with the negative element. In the light of this discussion, we can conclude here that negation exerts an influence on the distribution of items within its scope, and especially selects negative polarity items.

### 3.2.3 The Scope of Adverbs

You know that adverbs are traditionally regarded as words that modify verbs, adjectives or another adverb. Certain adverbs exhibit the scope phenomenon. The scope of an adverb is the part of an utterance with which it combines in meaning (Matthews, 2014). In this sense, the placement of an adverb phrase affects the scope. Adverbs and adverbials can occur both pre-verbally and post-verbally. It appears that adverbs (especially manner adverbs) may bring about meaning differences (scope variation) in connection to their syntactic position. Let us consider some examples below.

- 15a. Only the man saw the president once.

- b. The man only saw the president once.
- c. The man saw only the president once.
- d. The man saw the president only once.

These examples show the semantic scope of the adverb *only* on different variants of the sentence. In (15a), the scope is on *the man*, which means *only* c-commands *the man* and therefore has scope on it. This means that the man and nobody else saw the president. In the second example (15b), the semantic scope is on the verb *saw*. This implies that the emphasis is on *saw*. The man *saw* rather than *heard* (about) the president, for example. In (15c), *only* has scope over *the president*. This implies that the man saw nobody else but the president. Finally, in (15d), *only* has scope over *once*. In this sense, the emphasis is on the number of times the man saw the president. In all these cases, *only* c-commands the expressions it precedes and therefore has scope over each.

Consider this other example:

16a. The priest always meets with ten communicants after every service.

Just like some of the sentences we have considered previously, (16a) too is ambiguous. Consider the two interpretations presented below.

- b. The priest does not have more than ten communicants, and he meets with the ten of them after every service.
- c. There are ten communicants, with whom the priest always meets after every service (and there are other communicants he does not meet with).

Given the first interpretation (16b), the adverb *always* has wider scope over the quantified DP *ten communicants* without a mention of any specific ten communicants. On the other hand, the interpretation in (16c) presents the adverb *always* as having a narrower scope and the DP *ten communicants* has a wider scope over the adverb *always*; ten specific communicants (1-10) are being referred to.

And here is another set:

- 16a. She did not respond to the messages because she probably dislikes you.
- b. She did not respond to the messages probably because she dislikes you.

Sentences (16a) and (16b) above contain a subordinate adverbial clause *because she dislikes you*. With the manner adverb *probably* occurring within the subordinate clause in (16a), the expressed probability is related to *dislikes*. In this case, some uncertainty is expressed as to whether or not the subject DP, *she*, dislikes the object DP, *you*. Hence, *probably* takes a scope below the complementiser *because*. In (16b), the probability is with the entire subordinate clause. In this case, while it is given that the subject DP, *she*, dislikes the object DP, *you*, the uncertainty expressed is in relation to whether or not the dislike is the reason for which *she* did not respond to the messages. Thus, *probably* takes a scope higher than the complementiser *because*.

Finally, consider this set of examples too:

- 17a. She definitely did not respond to your messages.
- b. She did not definitely respond to your messages.
- c. She did not respond to your messages definitely.

In (17a), the only possible interpretation is that there was no response to the addressee's messages whereas (17b) suggests that there was some sort of response. However, it could not be established whether or not the response was definite or not. That is, the unseen third person (being discussed) did not give a definite response. Thus, *definitely* is within the scope of negation. Sentence (17c) suggests that the subject *she* responded. However, the response may not be to the messages sent by the addressee. The response might be to another message. Hence, the placement of the adverb *definitely* has scope over *messages*, and not any other item in the structure.

#### 4.0 CONCLUSION

Having looked at the different aspects of scope ambiguity in this unit, one can infer that the scope determines the meanings of structures in otherwise ambiguous structures. The differences in scope of scope-bearing elements within the same sentence become especially clear when one considers the relative scope of one element as compared to that of another. Our discussions have shown that some structures are syntactically ambiguous while some are semantically ambiguous. Scope ambiguities are genuine *semantic ambiguities*. In the sense of DP with quantificational determiners (*each, every, most, several, some, few, no* and the like), guided by their scope, quantifiers interact with one another and with other elements such as negation and some kinds of

adverbials (such as manner adverbs). The scope of an element in any given structure has to do with the interpretation of the structure. Hence, it should not be altered by derivational processes.

## **5.0 SUMMARY**

In this Unit, the concepts of scope and ambiguity are discussed. The different scope-bearing elements such as quantifier scope, negative scope and adverb scope are also explained. It is established that scope is a semantic property, and it specifies the domain of interpretation of an expression.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Citing copious examples, clearly differentiate between lexical ambiguity, phonological ambiguity and syntactic ambiguity.
2. Do you think ambiguity is avoidable in a natural conversation situation? Justify your answer.
3. With copious illustrations from self-generated sentences or sentences excerpted from natural conversation situations, illustrate how ambiguities can be resolved through scope.
4. What interpretations can you give to the following sentences?
  - i. Everybody does not like Buhari.
  - ii. Not everybody likes Buhari.
  - iii. Never did anybody like Buhari.
  - iv. Someone knows the answer.
5. Do you think there are more scope-bearing elements in your native language other than the ones discussed in this unit? Examine and discuss them by providing adequate examples from your mother tongue.

## **7.0 References/Further Reading**

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## **UNIT 3**

## **SEMANTIC SCOPE OF DETERMINER PHRASES**

### Content

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 What are DPs?
  - 3.2 Modification of DPs
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- 4.0 Conclusion
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### **1.0 INTRODUCTION**

One of the primary functions of language is communication. For us to communicate effectively, the sentences we use must have clear meaning, which is also largely achieved by the words constituting each sentence and how the words are arranged or placed in the sentence. In many cases, the way a linguistic item is placed against another can define the interpretation of the sentences we make, that is, it shapes the meaning we give to sentences. This underscores the phenomenon of semantic scope. Semantic scope, therefore, is defined as the meaning or information that a particular linguistic object entails or carries.

In several grammar books, you must have learnt that the noun phrase is headed by a noun and can perform the function of a noun in a sentence. You will agree with me that there is hardly any sentence you make without using nouns and noun phrases. These linguistic items interact with other items in making meaningful sentences. Also, it is assumed that you understand what determiners are, and you can correctly identify and categorise them when you see them in sentences. Maybe what is relatively new to you is the notion of Determiner Phrase (DP). In this section, you will learn what a DP is as well as its syntactic features. Briefly stated, DPs are what are traditionally known as noun phrases. You have also learnt that in the construction of noun

phrases, determiners and adjectives commonly occur before the noun (as modifiers). In some cases, also, a prepositional phrase or an embedded clause (such as relative clause or non-finite clause) may occur after the noun (as a qualifier). The placements of these linguistic items in the construction of noun phrases can define how such phrases are interpreted. In other words, they define the semantic scope of such nouns.

Moreover, there are different syntactic models, among which is the transformational generative grammar (TGG). Different models have emerged within the TGG tradition, the most recent being Chomsky's Minimalist Program (MP). Our discussion in this unit is presented within the framework of the MP. Therefore, our terms and model of analysis here are within the MP.

## 2.0 OBJECTIVES

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

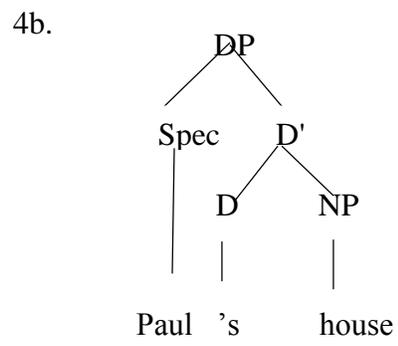
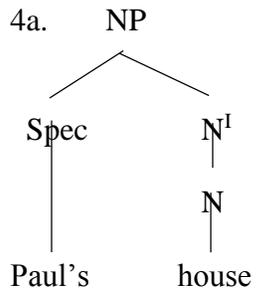
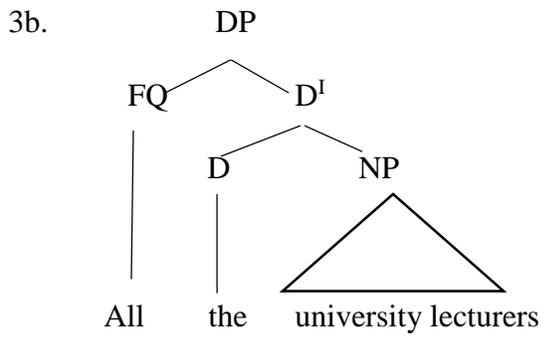
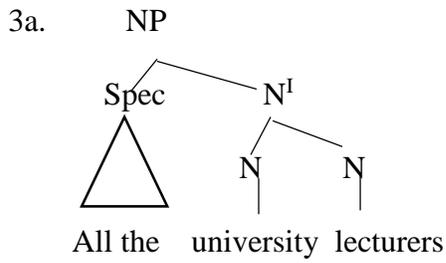
- iv. distinguish between DP and NP;
- v. identify the possible elements in the modification of DPs; and
- vi. explain quantificational DP

## 3.0 MAIN CONTENT

### 3.1 What are DPs?

One of the recently introduced concepts in the transformational generative grammar is the notion of the Determiner Phrase Hypothesis (henceforth, DP Hypothesis). A determiner phrase is that phrase in which at least one determiner functions as the head. The DP hypothesis (Abney, 1987) claims that what we traditionally think of as a noun phrase (NP) [for instance, *the old man*] has the determiner as its head, but not the noun. In this kind of analysis, the NP is in fact a complement in the DP. By implication, the DP represents the functional, extended and maximal projection of the lexical head, the noun. This is illustrated in the tree diagrams below in which the underlined phrases in sentences (1) and (2) are analysed:

1. All the university lecturers have been paid.
2. We walked to Paul's house.



The (a) and (b) versions of the structures above show, respectively, the NP and DP analyses of *all the university lecturers* and *Paul's house*. You see that while the determiners *all* and *the* are treated as specifiers in (3a), they are not so treated in (3b). The positioning of D in (3b) shows that it heads the DP, and *university lecturer* is its complement. The DP view is more visible in (4b). The possessive marker heads the entire structure. Do you notice that these determiners are often common in what you have traditionally known as noun phrases? Thus, when you come in contact with 'DP', think of 'NP'. The DP hypothesis has become the standard for syntactic analysis within the framework of the minimalist syntax.

One argument in support of the DP-analysis and its view of the determiner as the functional head that is merged with the noun is that determiners, especially articles and demonstratives, determine number in phrases. When the determiner is singular, the noun complement is singular. If it is plural, the noun is also plural. Here are examples:

- 5a. this boy
- b. these boys
- c. this/that book
- d. these/those books
- e. Ø boys/books
- f. \*that books
- g. \*these boy

Examples (5a-d) are grammatical and meaningful because there is agreement between the determiner and the noun complement. Example (5e) has null realisation of determiners. However, (5f & g) are ill-formed because there is disagreement in number between the determiners and the noun complement.

A determiner (D) is a *functional category*, and it includes different sub-categories which might have very few shared morphological or semantic features. For instance, you can clearly distinguish the article (*the*), the quantifier (*all*) in sentence (1), and the possessive marker in sentence (2). Others may include the demonstrative pronoun (*this, those*), interrogative pronoun (*which, what, whose* and the like) and even what we know as expletives (*it, there*).

### 3.2 Modification of DPs

Modification (and qualification) relate to phrasal construction. They describe or limit the semantic scope of syntactic construction by means of linguistic items. Modification involves the use and arrangement of modifiers and qualifiers in syntactic constructions, particularly phrases. Generally, modifiers and qualifiers change, clarify, or limit a particular word in a sentence in order to add emphasis, explanation, or detail.

One of the reasons for which it may be easy to agree with the claim of DP Hypothesis on the determiner being the head to a noun in a DP is the fact that the determiner precedes the noun because the noun head is its complement and heads precede their complements in English. Moreover, one of the characteristics of determiners, which distinguishes them from other functional heads is in their semantic contribution (though usually it is second-order). In this regard, they regulate or contribute to the interpretation of their complement. They mark grammatical or relational features. Hence, they shape the meanings of sentences. For example, the sense/interpretation of the noun *book* in (i) *a book* or (ii) *the book* will not be the same as that of (iii) *Korede's book*. The phrase in (i) is indefinite, that in (ii) is definite and in (iii), the existence of a possessor is projected. These varied interpretations are strictly informed by the determiners not the nouns. Otherwise, the noun is the same in the three phrases and therefore does not seem to contribute to the distinction shown here. If the determiner heads the DP, we should also consider how the determiner can be modified. In generative grammar term, modifiers are called specifiers.

Let us consider the following phrases:

(i) the book

(ii) Korede's book

(iii) \*Korede's the book

(iv) \*my some books

(v) \*the all books

Since determiners precede their nouns, *book* remains complement in each of the three phrases above. As shown above, (6iii) is obviously not only ungrammatical, but also meaningless. This is so because it does not conform to the assertion made above: the only item that can make it to the computation after the determiner head is a noun. Like all specifiers, the Spec, DP should be a single phrasal element which comes before the head. Applying this to (6iv), we will consider ‘some’ as a head in the DP. After all, one can say ‘some books’. If seen in this way, it implies that the determiner ‘some’ is preceded by the pronominal possessor ‘my’. This phrase lacks meaning. The same applies to (6v). The most obvious choice of a Spec, DP (at least in English) would be a possessor, since only (6ii) is grammatical. With the ‘s as the head of the DP, the noun ‘Korede’ is the specifier and ‘book’ is the complement.

### 3.3 Quantificational DPs

Quantifiers are expressions that indicate quantity. They include numerals (*seven, ten, twenty*, etc.), quantitative adjectives (*all, some, many, any, each, every*, etc.) and indefinite pronouns (*someone, something, everybody, anything*). They convey something about the number or proportion of persons and objects.

Quantificational DPs denote functions whose arguments are characteristic functions of sets, and whose values are truth values, because quantifiers map properties into truth values. Such functions are sometimes called “second-order properties” or “generalised quantifiers”.

7. Every linguist knows Chomsky.

Quantificational DPs show essentially the same distributional patterns as proper names, but they have different semantic properties. Quantificational DPs do not refer to individuals; this differentiates them from real names. Let us consider the following structures:

8a. Yemi does not know Chomsky.

b. Some linguists do not know Chomsky.

While the proper noun *Yemi* denotes an individual, the quantificational DPs, *some linguists* and *every linguist*, do not. This is because the phrases are about *all* (a selection from among) linguists

rather than about a particular individual. While *some* does not exhaust the set denoted by its NP-complement, the determiner *every* exhausts the sets they are applied to.

In some structures involving different quantifications, the problem of ambiguity may arise. This happens because quantificational DPs interact with one another. Winter (2012) says that the structure of the DP affects its semantics in that the NP level within the DP is purely predicative and the DP level itself is purely quantificational. In this light, the phenomenon of scope bears relevance to our discussion of quantificational DPs. Let us consider sentence 9 below:

9. Everybody plays a game.

Sentence (9) too can be interpreted in two ways. The first is that *Oni*, *Ana*, *Ola* and *Otunla* are friends or they are students. Each of them plays a different game. For instance, Oni plays volleyball; Ana plays cricket; Ola plays soccer; and Otunla plays tennis. Hence, there are no two people who play the same game. The second interpretation is that there is one specific game that all of them play. Thus, *Oni*, *Ana*, *Ola* and *Otunla* all play soccer, but not any other game.

### 3.4 Negative DPs

Negation in English is a fascinating area of syntactic study, precisely because it plays a central role in affecting both the structure and the total meaning of a sentence at the same time. Recall that there are some words that are traditionally categorised as pronouns; they are used as replacements for nouns in sentences. Hence, pronouns are also DPs. There are different types of pronoun. Some are called indefinite pronouns. Why are they so called? They refer to a person or a thing without being specific. They are words like *all*, *any*, *anyone*, *anything*, *each*, *everybody*, *everyone*, *everything*, *few*, *many*, *nobody*, *none*, *one*, *several*, *some*, *somebody* and *someone*. We can regard them as indefinite expressions. Among these sub-types of pronouns, there are some that are morphologically marked for negation. Examples are *nobody*, *nothing*, *none* and the likes. These are negative indefinites.

Since we have said that pronouns are also DPs, it implies that such negative indefinites are Negative DPs.

Witness these examples:

12a. Nothing vanished.

b. Everything vanished.

c. Something vanished.

13a. Nobody attended the lecture.

b. Not everybody attended the lecture.

c. Everybody did not attend the lecture.

Rather than denoting an individual or a set of individuals, *nothing* in (12a) says something about the denotation of the predicate *vanished*. It states that there is no individual for whom the predicate is true; that is, there is no individual that vanished. If we replace *nothing* with *everything*, the claim is that the predicate is true of all individuals; and with *something*, that there is at least one thing for whom the predicate is true.

The interpretation of (13a) is that there is no single individual who attended the lecture (though it was expected that they did). A different interpretation is seen in (13b). It suggests that while some individuals attended the lecture, some others (who were expected to attend) did not do so. The negative indefinite *nobody* (13a) and the negative operator *not* (13b) clearly define the interpretation of the sentences. Do you notice that (13c) is capable of different interpretations informed by the negative operator in the string? For instance, without the negative operator, the sentence would read *Everybody did attend the lecture*, and thus clearly mean *Everybody attended the lecture*. With the negative operator, the sentence is more likely to be interpreted as (13a), a (mis)interpretation of the same sentence as (13b) is also possible. Thus, while the operator appears to structurally relate directly to the verbal elements (auxiliary and main verbs *did* and *attend*, respectively), it also affects the semantic scope of the subject DP.

Negative DP may also be derived by the use of negative operators (as seen in (13) above and (14) below). That is, rather than their lexical entry such as *nothing* (in 12a) or

*nobody* (in 13a), the negative and the existential meaning part of a DP may be separated by a semantic operator such as *no* or *not*. When this happens, the semantic scope of the DP is influenced by the position of the operator in relation to the DP.

14a. It is not required that an anaesthetist is present during the operation. (Penka, 2012, p. 1)

b. No anaesthetist is required to be present during the operation.

c. It is required that no anaesthetist is present during the operation.

The examples in (14) also show some semantic effect of negative operators on how DPs are interpreted in sentences. In (14a), it is clear that the presence of an *anaesthetist* (not any particular one) is not obligatorily required. In (14b), the DP *anaesthetist* can be seen as having a scope over the indefinite negative operator *no*. The obligatory presence of anaesthetists is implied, though there is no particular one among the *available* ones. While this interpretation seems to be unnatural, it is a possible sense someone can make of the sentence. With *no anaesthetist* in (14c), the negative quantifier *no* takes scope above the DP *anaesthetists*, and therefore expresses a necessity of the absence of anaesthetists. That is, it is prohibited to have any anaesthetists during the operation.

#### **4.0 CONCLUSION**

Every DP contains a noun, which only has the syntactic role of a complement to the determiner (D). While the DP is more favoured in MP, the N is an important constituent that gets its scope defined by the determiner in the DP. The discussion above shows that quantificational DPs and Negative DP may bring about sentence ambiguity.

#### **5.0 SUMMARY**

The configuration of what is traditionally known as noun phrases usually involves a determiner. This informs the arguments in favour of DP. Modification of DP limits semantic scope of syntactic construction by means of linguistic items. Only a possessor can occupy the Spec, DP position.

#### **6.0 TUTOR-MARKED ASSIGNMENT**

1. What are DPs?

2. How are they different from NPs?
3. What is quantificational DP?
4. How is it different from any other nominal?
5. Do you agree with the claim that a determiner heads the nominal structure? Justify your position, providing succinct examples.
6. How are DPs modified?

## 7.0 REFERENCES/FURTHER READING

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