

An
Introduction to
Syntax:
A Minimalist Approach

by

Dr. Huda M.M. Ghaly
Ain Shams University

2000

Published By
Zahraa Al-Sharq BookShop, Cairo
116 Mohammed Farid Street

رقم الإيداع 2000 / 48 39

I.S.B.N : الترقيم الدولي :

977-314-079- 4

Table of Contents

I: Introduction : Basic Concepts

II: Chapter Two : The Different Theories of the study of Language

2. 1: A Theory of Language Structure

2. 2: A Theory of Language Acquisition

III: Chapter Three : Categories

IV: Chapter Four : Structure

V: Chapter Five : Empty Categories

VI: Chapter Six : Head Movement

VII : Chapter Seven : Operator movement

VIII : Chapter Eight : Subjects

IX: Chapter Nine : A-movement

X: Chapter Ten : VP shells

XI: Chapter Eleven : Agreement Projections

XII: Reference

1870

1871

1872

1873

1874

1875

1876

1877

1878

1879

1880

1881

1882

An Introduction to Syntax : A Minimalist Approach

I: Introduction : Basic Concepts

The first basic concept to be discussed is related to the fact that descriptive Linguistics has concerned itself primarily with spoken language : for the linguist of the Transformational Grammar this debate that Linguistics should concern itself primarily with spoken rather than written language is a non-issue. This is because Transformational Grammarian is seeking to describe the native speaker's *competence* (i.e. his linguistic knowledge ,which is a mental property that has two physical manifestations :spoken and written language). He studies “ *language* (in all its physical instantiations)” (A. Radford ,1989: 9);i.e. he does “not study only the spoken language, or only the written language.” (A. Radford ,1989: 9)

The second basic concept is related to the fact that all native speakers have to some extent their own individual way of speaking (i.e. an *idiolect*) and the fact that speakers with a common geographical background may share a common *dialect* while speakers from a common social background may share a common *sociolect*. However, despite the fact that the task of the linguist is to describe what people actually say (and this has lead to paying greater attention to the different dialects in different languages and to the tendency to accept these different dialects as different varieties of that language since they are not linguistically inferior) , Chomsky remarks in *Aspect* (1965:3) that “Linguistic theory is concerned primarily with an ideal speaker-listener ,in a completely homogeneous speech community.” In other words, Chomsky assumes that speech communities are homogeneous ,contrary to

fact. Accordingly, the problem of linguistic variation within a speech community is more appropriately dealt with in a partially separate discipline called Socio-linguistics. This leaves the syntactician free from tackling this problem of linguistic variation within a speech community. This is why "for practical purposes most linguists describing a language of which they are native speakers rely on their own intuitions ;and thus the grammar they devise is essentially a grammar of their own dialect ,which they assume is representative of the language as a whole". (A. Radford ,1989: 10)

The third basic concept is related to the fact that it can often be very difficult to decide in what way(s) a sentence is ill-formed ,or indeed whether it is. This is because in making judgments of the perfectly well-formed sentences in a language the native speaker is assumed to have discarded all pragmatically odd sentences (i.e. which express ideas which do not conform to our view of the way the world is) and any influence on him from prescriptive grammar ,apart from performance limitations such as fatigue or boredom. It is to be noted that sentences that are pragmatically anomalous are regarded as unacceptable to the native speaker even though they may not be linguistically ill-formed, as shown by sentences 1:

1.

- (i)My cat realizes that I'm a lousy cook.
- (ii)My goldfish realizes that I'm a lousy cook.
- (iii)My frying pan realizes that I'm a lousy cook.

Therefore ,we are assuming that we are working with ideal speakers who never make performance errors. That is, in order to arrive at the competence of the native speaker so that we could formulate a grammar of his language (which includes only the well-formed sentences of that language),we have to discard performance errors ,which may be due to pragmatic assumptions leading to the

unacceptability of well-formed sentences or due to limitations in performance such as fatigue or boredom.

However, in the vast majority of cases the distinction between sentences which are pragmatically, semantically, and syntactically odd is relatively straightforward, as shown in 2:

2.

- (i) John killed the stone (pragmatically anomalous)
- (ii) John killed Mary; but she did not die. (semantically ill-formed)
- (iii) Killed Mary John. (syntactically ill-formed)

The fourth basic concept is related to the "creativity of language", which is "the speaker's ability to produce new sentences that are immediately understood by other speakers". (Chomsky, *Topics* (1966), p.11) Chomsky illustrates this in his book *Syntactic Structures* with the following pairs of nonsense sentences in 3:

3.

- (i) Colorless green ideas sleep furiously.
- (ii) Furiously sleep ideas green colorless.

When Chomsky first made up these sentences, it is safe to assume that neither had ever occurred in the history of the English language. Both sentences are new and meaningless; but every speaker of English knows that the first sentence is grammatical in English even though it is meaningless. As for the second sentence, it is not grammatical.

This belief in the "creativity of language" raises the question of how many well-formed sentences there are in a given language. This leads us to the sixth basic conception of transformational grammar, in which Chomsky argues that the set of well-formed sentences in any natural language is *infinite*. This follows from the

fact that **there** is no limit on the length of sentences in any language even though there are *performance* limitations ;i.e. you might die before you finish a sentence of more than a million words. This infiniteness of the well-formed sentences in a given language is because we can always form a longer sentence by adding another Adjective, Prepositional Phrase, Clause, Adverb, Conjunction, as shown by sentences (4.).

4.

(i) John is **an** *intelligent ,sensitive ,tall, dark, handsome* man.

(ii) I like **that** *girl in jeans with long hair at the back of the room on the stage.*

(iii) Harry **said** *that Fred said that John said that Mary was ill.*

Therefore, the native speaker's competence ranges over an infinite set of sentences ,which is acquired on the basis of finite experience ;i.e. a child learns a language in a finite period of time and on the basis of having been exposed to a finite sample of speech. The task of the linguist , accordingly, is to devise a grammar which models the linguistic competence of the native speaker. This grammar is a *finite* set of rules, which are capable of specifying how to form, understand, and pronounce an *infinite* set of well-formed sentences. It follows that acquiring a language involves acquiring a finite set of rules with infinite capacity.

The **fifth** basic concept concerns the discovery of the rules which are internalized by the native speaker. M. Lester(1976) says that for the transformational grammarian the basic goal of linguistics is to account for what speakers know about their language. This implies that that a speaker of a language ,in some unconscious, intuitive way, "knows" the internal structure and the relationship of one part with another of all the sentences in his language. It is subconscious knowledge ,rather than conscious

knowledge because "human beings have no conscious awareness of the psychological processes involved in speaking and understanding a language."(A.Radford,1997:2)

As these rules are subconscious knowledge to the native speaker and the linguist brings them to consciousness by discovering them, the linguist cannot directly ask the native speaker what these rules are that he has internalized. Accordingly, he has to use the indirect approach : first he collects a set of data relevant to the phenomena being studied, then he hypothesizes a set of principles (i.e. rules) which account for the data ; and finally he tests the hypothesized rule(s) against further data. There are two different types of data which linguists typically work with in formulating grammars: the first is a recorded sample of speech or text, called *corpus of utterances*. The second type of data which linguists typically work with are *informant intuitions* ;i.e. to ask the native speaker ,for example, can you say "such and such",if so ,what does it mean ;and what is its negative form? It is then up to the linguist to deduce the rules which are internalized by the native speaker.

The sixth basic concept concerns how we know that a particular grammar of a particular language is adequate. A. Radford (1988) says that the weakest requirement for any grammar of a language is that it attain *observational adequacy* ,which is correctly specifying the sentences that are syntactically ,semantically ,morphologically ,and phonologically well-formed in a language. A higher level of adequacy is *descriptive adequacy* ,which is correctly specifying the sentences that are (and those that are not) syntactically ,semantically, morphologically ,and phonologically well-formed in a language ,and also properly describes the syntactically ,semantically ,morphologically, and phonologically well-formed sentences in that language. In order for a *grammar* to attain *explanatory adequacy* ,it becomes a *theory of language* ,which is a set of hypotheses about the nature of possible and impossible

grammars of natural languages. "While the concern of the descriptive linguist is to devise grammars of particular languages, the concern of the theoretical linguist is to devise a theory of grammar", (A. Radford ,1997:5) which "is a set of hypotheses about the nature of possible and impossible grammars of *natural* (i.e. human) languages. "(A. Radford ,1997:5)

There are a number of criteria that a *theory of language* should attain. The first criterion is *universality* in the sense that it enables us to describe the grammar of any natural language adequately e.g. English ,Arabic etc. The second is its being *maximally constrained or restrictive* in the sense that it can only be used to describe human languages ,showing that natural languages differ from artificial languages and animal systems of communication. Only a *maximally constrained* theory of language can lead to the development of an adequate theory of language acquisition.

II: Chapter Two : The Different Theories of the study of Language

A. Radford (1989) says that Chomsky in his book *Language and Mind* (1972a) says that "the most fundamental reason for studying language is that language is a mirror of the mind". (A.Radford, 1989:1) In other words, Chomsky believes that by detailed study of language, we might hope to reach a better understanding of how the human mind produces and processes language; consequently, there are three inter-related theories which any detailed study of language seeks to develop:

- (i) Theory of Language Structure
- (ii) Theory of Language Acquisition
- (iii) Theory of Language Use

The Theory of Language Structure will concern itself with what are the defining structural properties of natural (i.e. human) languages. The Theory of Language Acquisition with the question of how children acquire their native language(s). The Theory of Language Use concerns itself with the question of how linguistic and nonlinguistic knowledge interact in speech comprehension and production. Of the three, the task (i) of developing a Theory of Language Structure is logically prior to the other two, since only if we first know what "language" is can we develop theories about how it is acquired and used.

2. 1:The Theory of Language Structure

Any adequate Theory of Language Structure must provide answers to questions such as the following:

- (i)What is language?
- (ii) What is it that you know when you a language?
- (iii) What are the essential defining characteristics of natural languages which differentiate them from, for example, artificial languages like those used in Mathematics or Computing ,or from animal communication systems?
- (iv)Do languages differ from each other in unpredictable ways ,or do they all share certain common, universal properties?

In order to attempt to develop a Theory of Language Structure ,we first formulate detailed descriptions of *Particular Grammars* such as English for instance. When we have compiled detailed grammars of a number of different languages , we abstract from particular grammars common, universal properties that they all share: this is the study of *Universal Grammar*-i.e. the search for linguistic universals. In other words ,the task of the linguist is to formulate grammars of particular languages (=the study of *Particular Grammars*),and to abstract from these sets of common principles which form the basis for the study of *Universal Grammar*.

Considering what it is that a grammar of a particular language sets out to describe, Andrew Radford (1989) says that Chomsky gives an essentially mentalistic answer to this question :”for him, a grammar is a *model* (= systematic description) of those linguistic abilities of native speakers of a language which enable them to speak and understand their language fluently.” (3) These linguistic abilities are called the *competence* of the native speaker. Thus, “a *grammar* of a language is a model of the linguistic competence of

the fluent speaker of the language". (Radford ,1989:3) *Competence* is contrasted by Chomsky with *performance*. Whereas *Competence* is "the speaker-hearer's knowledge of his language", *Performance* is "the actual use of language in concrete situations"(Chomsky, *Aspects* (1965),p.4) Very often, performance is an imperfect reflection of competence because of a variety of performance factors like tiredness ,boredom ,drunkenness ,drugs ,external distractions ,and so forth.

A.Radford (1997) says that "grammars traditionally set out to tell you what you need to know about a language in order to have native speaker competence in the language(i.e. to be able to speak the language like a native speaker)"(2) ; therefore, "grammar is concerned with competence ,rather than performance." (2) In other words, linguistics is primarily concerned with competence ;and a Theory of Competence will be a subpart of an eventual Theory of Performance because you have to understand what a native speaker knows about his language before you can study the effects of tiredness, drunkenness ,etc. on this knowledge. And by saying that grammar is the study of grammatical competence, we are "implicitly taking a *cognitive* view of the nature of grammar." (A. Radford ,1997:3) Thus, "grammar is part of the more general study of cognition (i.e. human knowledge)." (A. Radford ,1997:3)

Chomsky distinguishes two types of competence :(i) *grammatical competence*, and (ii) *pragmatic competence*. The former belongs to the Theory of Language Structure ,and the latter to the Theory of Language Use. Pragmatics is concerned with the role played by nonlinguistic information such as background knowledge and personal beliefs in our use of sentences. Making use of Chomsky's own example, we can say that if a friend of mine says to me that "*Today was a disaster*" and I know (by way of background information) that that friend was giving a special lecture today, then on the basis of this background knowledge I infer that he probably means that his lecture went down very badly.

By contrast, it is the native speaker's *grammatical competence* which enables him to understand that *he* in the sentence *He thinks that John is wrong* cannot be interpreted as referring to the same person as *John*. Since Chomsky has devoted himself primarily to the study of language structure ,rather than language use, he has focused almost exclusively on the task of attempting to characterize *grammatical* ,rather than *pragmatic competence*.

The native speaker's *grammatical competence* is reflected in two different types of *intuitions* which the speakers have about their native language(s):(i) intuitions about sentence *well-formedness* ,and (ii) intuitions about sentence *structure*. The term *intuitions* is used here in a technical sense which has become standardized in Linguistics: to say that a native speaker has *intuitions* about the *well-formedness* and of the *structure* of sentences ,we mean that he has the ability to make judgments about whether a given sentence is well-formed or not ,and about whether it has a particular structure or not. Unlike traditional grammars ,which "concentrate on *grammaticality* (i.e. on telling you how to form grammatical phrases and sentences)"(4), A. Radford (1997) says that "work on grammar within the Chomskyan paradigm tends to focus much more on explaining *ungrammaticality* (i.e. on explaining why certain types of structures are ungrammatical)." (A. Radford, 1997:4) Only by explaining *ungrammaticality as well as grammaticality* in a a language will the grammar acquire *descriptive adequacy*. To only describe *grammaticality* ,the grammar only acquires *observational adequacy*.

These *intuitions* about sentences cover different aspects of language such as *Phonology* (=the study of sounds and sound systems), *Morphology* (=the study of how morphemes (grammatical units smaller than the word) are combined together into words), *Syntax* (= the study of how words are combined together to form sentences),and *Semantics* (= the study of

meaning). We will look briefly at each of these different aspects of competence.

2. 1.1: Phonological Competence

A typical intuition reflecting a native speaker's *phonological* competence may be represented by the pronunciation of the sentence *This is a grammatical sentence* with the stress pattern in 5 (i), rather than in 5. (ii); i.e. we all have intuitions about possible and impossible stress patterns in sentences.

5.

(i) **THIS** is a gra**MM**atical **SEN**tence.

(ii) This is **A** grammati**CAL** sen**TENCE**.

Sentence 5. (i) is well-formed because it is O.K. to pronounce the sentence with primary stress on the capitalized syllables. We also have *phonotactic* intuitions, which are intuitions about what are possible and impossible sound sequences among native words in English. For example, we would all agree that 6. (i) is a possible native English word but 6. (ii) by contrast is not.

6.

(i) *blink*

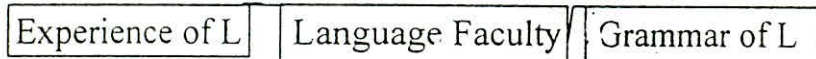
(ii) **bnick*

sufficiently general nature to allow the child to form, interpret, and produce new sentences that he has not come across before. Then, acquiring a language involves formulating an appropriate set of syntactic, morphological, phonological, and semantic rules. Jean Berko (1958) shows that there is evidence that language acquisition is *rule-governed*, as assumed by Chomsky. Jean Berko (1958) showed a group of children a picture of an imaginary animal, and told them that it was a *wug*; then she showed them a picture of two of the same animals. The children replied *wugs*. This experiment shows that the children formulate a morphological rule, which is assumed to be "you form the plural of Nouns by adding an -s at the end. There is also evidence that language acquisition is rule-governed by the overgeneralization of past tense forms like *comed, goed, seed etc.* frequently used by young children.

In *Language and Mind* (1972), Chomsky says that "the person who has acquired knowledge of a language has internalized a system of rules that relate sound and meaning in a particular way and that the linguist constructing a grammar of a language is in effect proposing a hypothesis concerning this internalized system. This faculty provides the child with a procedure subconsciously available to him for analyzing the experience he has with the language he is brought in, allowing him to devise a *grammar* of the language being acquired. In other words," the input to the language faculty is the child's experience; and the output of the language faculty is a grammar of the language being acquired." (A.Radford,1997: 8) This innate language faculty is species-specific (i.e. possessed only by human beings); i.e. it "the ability which all humans possess, entirely independent of their intelligence." (A.Radford,1997: 9) "This ability to acquire a native language is part of our genetic endowment-just like the ability to learn to walk" (A.Radford,1997: 10) (i.e. the child learns to walk upright, not like animals). All the child needs to walk is his legs and some experience in walking. Likewise, all the child needs to

learn a language is his vocal apparatus and some experience in a language. Therefore, "the child's experience is processed by the UG module which is an integral part of the language faculty" (A.Radford,1997: 15), as shown in 14.:

14.



"If the acquisition of grammatical competence is indeed controlled by a genetically endowed language faculty incorporating principles of Universal Grammar, then it follows that certain aspects (or adult) competence are known without experience." (A.Radford,1997: 11) In other words, the child is born with an innate knowledge of universals, which are the properties of language that do not have to be acquired by the child, reducing the child's task to mastering the idiosyncratic, language -particular properties of the target language, on the basis of his linguistic *experience* (i.e. on the basis of the speech he hears around him). This leads to the assumption that all natural languages will share certain *universal* properties in common - properties determined by these genetic constraints and that "the language faculty must be such as to allow the child to develop a grammar of *any* natural language on the basis of suitable linguistic experience of the language (i.e. sufficient speech input)." (A.Radford,1997:11) It is in this respect that "in seeking to determine the nature of the language faculty, we are in effect looking for universal principles" (A.Radford,1997: 11) which could not possibly have been learned by experience. This in turn "minimizes the burden of *grammatical learning* imposed on the child" (A.Radford,1997: 15), accounting for the rapidity of the child's grammatical development.

2.2.1: Structural Learning:

Although there are universal principles which are innately acquired, there are also language-particular aspects of grammatical structure which children have to learn as part of the task of acquiring their native language. In other words, language acquisition involves both *lexical learning* and *structural learning*. Concentrating on *structural learning*, Chomsky says that it is limited to those *parameters* (i.e. dimensions, or aspects) of grammatical structure which are subject to language-particular variation (i.e. which vary from one language to another). In order to determine just what aspects of the grammatical structure of their native language children have to learn, we have to examine the range of parametric variation in grammatical structure between different (adult) natural languages. For example, Italian and Arabic differ from English in that finite verbs (i.e. verbs which carry present /past etc. tense) license a null (i.e. missing but understood) subject, as shown in 15.

15.

- (i) Maria speaks French.
- (ii) * speaks French
- (iii) (Maria) parla francese
- (iv) (Maria) bititkallim fransaawi

Thus, “finite verbs in a null subject language like Italian license either overt or covert (=null) subjects, but in a non-null subject language like English, finite verbs license only overt subjects, not null subjects.” (A.Radford, 1997: 17) In describing these differences between these two types of languages, we call Italian and Arabic as

null subject languages and English as a *non-null subject language*. It is to be noted that either language type has or has not the *null subject parameter* ;i.e. there is no language that allows the *null subject parameter* for some finite and not for others.

Another basic parametric difference between languages concerns *word order*. The first type of word order parametric variation concerns the *wh-parameter* ,which is the parameter which determines whether *wh-expressions* can be fronted (i.e. moved to the front of the overall interrogative structure containing them). For example, English allows the *wh-parameter* ;but languages such as Chinese and Arabic do not, as shown in 16.

16.

- (i) *What* do you think he will say?
- (ii) ni xiangxin ta hui shuo *shenme*
you think he will say *what*?
- (iii) tiftikir huwwa hay?uul ?*eeh*?
you think he will say *what*?

In languages such as Chinese and Arabic, the *wh-word* does not move to the front of the sentence, rather it “remains *in situ*(i.e. in the same place as would be occupied by a corresponding noninterrogative expression).” (A.Radford,1997: 17) Again, this parameter is *binary* in nature; i.e. a language either does or does not allow *wh-movement*.

A second type of *word-order* variation concerns the relative position of **heads** and **complements** within phrases. It is a general and universal property of phrases that every phrase has a head word which determines the nature of the overall phrase. For example, in *students of linguistics* , *in the kitchen* ,and in *fond of fast food* ,it is the first word that is the head of all these phrases and in turn determines the nature of these phrases ,making the first phrase a Noun Phrase, the second a Prepositional Phrase, and the third an

Adjective Phrase with the respective complements *of linguistics*, *the kitchen*, and *of fast food*. English is one of the languages in which the head of a phrase precedes its complement, as shown by the above heads N, P, and A. It is, therefore, a **head-first language**. On the other hand, Korean is a **head-last language**, in which heads follow their complements. For example, in Korean the head is after the complement as in *moonul dadala* (door close). This parameter is called the **head (position) parameter**; and as "UG allows only a binary set of possibilities—namely that a language may either be consistently *head-first* or consistently *head-last*", (A. Radford, 1997: 20) there is no other logical possibility wired into the language faculty such *head middle* for instance. Accordingly, the only structural learning which a child has to undertake when learning the word order properties of his native language is to choose which of the two binary alternatives (i.e. *head-first* or *head-last*) in this parameter on the basis of his linguistic experience since it is an inherent property of parameters that they constrain the range of structural variation between languages, and limit it to a simple binary choice.

Thus, the central task which the child faces in acquiring a language is to construct a grammar of the language; and this grammar is made of (i) a set of *universal principles* and (ii) a set of *structural parameters* which impose severe constraints on the range of structural variation permitted in natural languages. This is because "languages differ in their structure along a range of different **grammatical parameters**." (A. Radford, 1997: 23) In other words, the "child's structural learning task is limited to that of parameter-setting since the *universal principles* of grammatical structure are not learned. Obviously, this model has come to be known as the *principles-and-parameters theory* (=PPT) of language" (A. Radford, 1997: 21), in which "the child could set the parameter correctly on the basis of minimal linguistic experience." (A. Radford, 1997: 22) It is in this respect that "any

null subject languages and English as a *non-null subject language*. It is to be noted that either language type has or has not the *null subject parameter* ;i.e. there is no language that allows the *null subject parameter* for some finite and not for others.

Another basic parametric difference between languages concerns *word order*. The first type of word order parametric variation concerns the *wh-parameter* ,which is the parameter which determines whether *wh-expressions* can be fronted (i.e. moved to the front of the overall interrogative structure containing them). For example, English allows the *wh-parameter* ;but languages such as Chinese and Arabic do not, as shown in 16.

16.

- (i) *What* do you think he will say?
- (ii) ni xiangxin ta hui shuo *shenme*
you think he will say *what*?
- (iii) tiftikir huwwa hay?uul ?*eeh*?
you think he will say *what*?

In languages such as Chinese and Arabic, the *wh-word* does not move to the front of the sentence, rather it “remains *in situ*(i.e. in the same place as would be occupied by a corresponding noninterrogative expression).” (A.Radford,1997: 17) Again, this parameter is *binary* in nature; i.e. a language either does or does not allow *wh-movement*.

A second type of *word-order* variation concerns the relative position of **heads** and **complements** within phrases. It is a general and universal property of phrases that every phrase has a head word which determines the nature of the overall phrase. For example, in *students of linguistics* , *in the kitchen* ,and in *fond of fast food* ,it is the first word that is the head of all these phrases and in turn determines the nature of these phrases ,making the first phrase a Noun Phrase, the second a Prepositional Phrase, and the third an

Adjective Phrase with the respective complements *of linguistics*, *the kitchen*, and *of fast food*. English is one of the languages in which the head of a phrase precedes its complement, as shown by the above heads N,P ,and A. It is ,therefore , a **head-first language**. On the other hand, Korean is a **head-last language**, in which heads follow their complements. For example, in Korean the head is after the complement as in *moonul dadala* (*door close*). This parameter is called the **head (position) parameter** ; and as “UG allows only a binary set of possibilities-namely that a language may either be consistently *head-first* or consistently *head-last*”, (A.Radford,1997: 20) there is no other logical possibility wired into the language faculty such *head middle* for instance. Accordingly ,the only structural learning which a child has to undertake when learning the word order properties of his native language is to choose which of the two binary alternatives (i.e. *head-first* or *head-last*) in this parameter on the basis of his linguistic experience since it is an inherent property of parameters that they constrain the range of structural variation between languages ,and limit it to a simple binary choice.

Thus, the central task which the child faces in acquiring a language is to construct a grammar of the language ;and this grammar is made of (i) a set of *universal principles* and (ii) a set of *structural parameters* which impose severe constraints on the range of structural variation permitted in natural languages. This is because “languages differ in their structure along a range of different **grammatical parameters**.” (A.Radford,1997: 23) In other words ,the “child’s structural learning task is limited to that of parameter-setting since the *universal principles* of grammatical structure are not learned. Obviously, this model has come to be known as the *principles-and-parameters theory* (=PPT) of language ” (A.Radford,1997: 21) , in which “the child could set the parameter correctly on the basis of minimal linguistic experience.” (A.Radford,1997: 22) It is in this respect that “any

adequate theory of language should be *universal* ,*explanatory* ,*restrictive* and should provide grammars which are *minimally complex* ,and hence *learnable* .” (A.Radford,1997: 23)

A. Radford (1997) describes this “*learnability*” as that “it must provide grammars which are learnable by young children in a relatively short period of time”. (A. Radford , 1997: 6) In other words, “the neurophysiological mechanisms which underlie linguistic competence make it possible for young children to *acquire* language in a remarkably short period of time; “(A. Radford , 1997: 6) i.e. a related requirement is that linguistic theory should provide grammars which make use of the *minimal* theoretical apparatus required to provide a descriptively adequate characterization of linguistic phenomena. This means that “grammars should be as simple as possible”. (A. Radford , 1997: 6) A. Radford (1997) goes on to say that “much of the work in syntax in the 1980s involved the postulation of ever more complex structures and principles” (A. Radford , 1997: 6) ; and “as a reaction to the excessive complexity of this kind of work, Chomsky in the 1990s has made **minimalism** (i.e. the requirement to minimize the theoretical and descriptive apparatus used to describe language) the cornerstone of linguistic theory.” (A. Radford , 1997: 6) This **minimalism** minimizes the acquisition burden placed on the child, and thereby maximize the learnability of natural language grammars.” (A. Radford , 1997: 7)

This theory of language ,then, constitutes an essential subpart of the theory of language acquisition that Chomsky seeks to develop on the basis of a detailed study of particular grammars, which in turn enable the linguist to hypothesize a set of linguistic universals which form the basis of his proposed theory of grammar. Therefore, Universals provide a key to *explanation* ;and it is only by hypothesizing that the child has innate knowledge of these universals that we can account for the rapidity of language acquisition. It is to be noted that Chomsky distinguishes two types

of universals: (i) *absolute* universals ,and *relative* universals. An absolute universal is a property which all languages share without exception; while a *relative* universal represents a general tendency in language, but one which has some exceptions.

Therefore, "it is not enough for a theory of Universal Grammar simply to list sets of universal properties of natural language grammars", (A.Radford , 1997: 5) rather "a theory of UG must seek to *explain* the relevant properties" (A.Radford , 1997: 5) making it *psychological real* . In other words, for Chomsky the reason for our studying language is that language is a mirror of the mind, enabling us to learn something about the way the mind produces and processes language ;i.e. to uncover the neuro-physiological mechanisms that make language possible.

This assumption that the child has an innate knowledge of Universal Grammar (UG) is known as the *Innate Hypothesis*. This Innate Hypothesis ,assumed by Chomsky, also makes the further assumption that a grammar of one language based on a particular framework will have to be discarded if facts from another language turn out to be incompatible with the assumed theoretical framework. Sentences (17.) provide us with an example of such innate knowledge of Universal Grammar that neither children acquiring English as their first language nor those learning it as a second language have to learn.

17.

- (i) John thinks that he is intelligent.
- (ii) He thinks that John is intelligent.

It is only in sentence 17 (i) that we may have coreference between *John* and *he*.

2.3. Markedness and Core Grammar

Intimately connected with the search for universals is the attempt to develop a *Theory of Markedness*, within which we distinguish between *marked* and *unmarked* phenomena. An *unmarked* phenomenon is one which accords with universal principles in language; a *marked* phenomenon is one which goes against some relative universal; i.e. it is exceptional in some way. For example, it might be said that the order [Modifier + Head] is the *unmarked* word order in English, as shown by (18):

18.

- (i) good food
- (ii) very interesting

But in (19), we have the marked word order in English, which is [Head + Modifier].

19.

- (i) court martial
- (ii) attorney general
- (iii) time immemorial

Related to the Theory of Markedness is the *Theory of Core Grammar* which Chomsky seeks to develop. This represents the attempt to establish a common, universal "core" of linguistic principles which characterize the full range of unmarked linguistic phenomena found in natural language. It follows that the grammar of any language will contain a *core* of unmarked rules and structures, together with a *periphery* of marked rules and structures. Since the middle of the 1970's, Chomsky has increasingly focused attention on the attempt to develop (i) a particular core grammar for

English ,and (ii) a universal Theory of Core Grammar. This means concentrating on the search for greater generalizations ,often at the expense of any attempt to account for apparent "exceptions."

In Universal Grammar, there is not only potentials for *similarities* between languages but also *differences* between languages. One of the essential tasks for linguistic theory is to define the set of possible *parameters of variation* across languages. The Theory of Core Grammar will have to allow for such parametric variation ,so that different languages will have different core grammars (though each such grammar will fall within the range of possible core grammars permitted by the associated linguistic theory).The Theory of Markedness and Core Grammar plays an essential role in Chomsky's Theory of Language Acquisition ;i.e. the child has genetic help in learning unmarked (i.e. core) rules and this is why they are mastered relatively quickly ;but peripheral rules generally take longer to acquire than core rules.

Exercises

1) State whether the following sentences are pragmatically, syntactically, or semantically ill-formed:

- (i) John is a living dead man.
- (ii) My wife is not my wife.
- (iii) Two and two is five.
- (iv) My toothbrush is pregnant again.
- (v) Colorless green ideas sleep furiously.
- (vi) Two and two are four.
- (vii) hit cat dog the.

2) Discuss why the sentences below are regarded as involving "bad grammar" by prescriptive grammarians, and say how they may be corrected:

- (i) It's me who gets the blame for everything.
- (ii) John and Mary love one another.
- (iii) You are taller than me.
- (iv) Nobody said nothing.
- (v) If I was you, I'd resign.

3) Below are typical utterances produced by two to three -year-old children. Try to work out the rule the children appear to have devised in each case and how it differs from the adult language.

(i) No the sun shining (No, the sun *is* shining.)

(ii) No, John drink all tea. (No, John *will* drink all *the* tea.)

(iii) No, mum sharpen it. (No, mum *will* sharpen it.)

(iv) He no bite you. (He *will not* bite you)

(v) I no want envelope. (I *do not* want an envelope)

(vi) I no taste them. (I *did not* taste them)

(vii) Where me sleep? (Where *will* I sleep?)

(viii) What me think? (What *do* I think?)

(ix) What the dolly have? (What *does* the dolly have?)

4) Define the following terms ,illustrating them with examples ,where appropriate:

(i) particular/universal grammar

(ii) competence/performance

(iii) linguistic intuitions

(iv) infinite rule-governed creativity

Exercises

1) State whether the following sentences are pragmatically, syntactically, or semantically ill-formed:

- (i) John is a living dead man.
- (ii) My wife is not my wife.
- (iii) Two and two is five.
- (iv) My toothbrush is pregnant again.
- (v) Colorless green ideas sleep furiously.
- (vi) Two and two are four.
- (vii) hit cat dog the.

2) Discuss why the sentences below are regarded as involving "bad grammar" by prescriptive grammarians, and say how they may be corrected:

- (i) It's me who gets the blame for everything.
- (ii) John and Mary love one another.
- (iii) You are taller than me.
- (iv) Nobody said nothing.
- (v) If I was you, I'd resign.

3) Below are typical utterances produced by two to three -year-old children. Try to work out the rule the children appear to have devised in each case and how it differs from the adult language.

(i) No the sun shining (No, the sun *is* shining.)

(ii) No, John drink all tea. (No, John *will* drink all *the* tea.)

(iii) No, mum sharpen it. (No ,mum will sharpen it.)

(iv) He no bite you. (He will not bite you)

(v) I no want envelope. (I do not want an envelope)

(vi) I no taste them. (I did not taste them)

(vii) Where me sleep? (Where will I sleep?)

(viii) What me think? (What do I think?)

(ix) What the dolly have? (What does the dolly have?)

4) Define the following terms ,illustrating them with examples ,where appropriate:

(i) particular/universal grammar

(ii) competence/performance

(iii) linguistic intuitions

(iv) infinite rule-governed creativity

(v) observational/descriptive/explanatory adequacy

(vi) innate hypothesis

(vii) markedness

(viii) core/peripheral rule

III: Chapter Three : Categories

For grammars to be *maximally constrained*, we may make constraints as in (1):

(1) **Structure-Dependence Principle**

All grammatical rules are structure-dependent

Structure-dependence , in (1) , means that you cannot apply any language rule to any sentence unless you know what the syntactic structure of the sentence is ,and what *grammatical categories* the words and the phrases in the sentence belong to. This constraint will prevent the generation of the ill-formed sentence like * *Boy the will get the prize* from *The boy will get the prize* , * *Will down come taxes* from *Down will come taxes*, and * *Received John a prize* from *John received a prize* by applying the rule in (2).

2. NP - AUX inversion

Invert a Noun Phrase (= NP) with an immediately following Auxiliary Verb (=AUX)

This ill-formedness is because we have not moved the whole NP, rather we have just inverted the first word with the second.

3.1: Lexical Categories

In discussing the status of categories in the Minimalism Program of Chomsky , (1995) , A. Radford (1997) says that it is a fact that “all words in the language belong to a restricted set of **grammatical categories**”. (A.Radford,1997:29) A grammatical

category may be defined as "a class of expressions which share a common set of grammatical properties." (A.Radford,1997:29) Evidence in support of postulating that words belong to categories is morphosyntactic (i.e. morphological and /or syntactic in nature. Morphological evidence comes from the *inflectional* and *derivational* properties of words. Syntactic evidence for assigning words to categories relates to the fact that different categories of words have different *distributions* (i.e. occupy a different range of positions within phrases or sentences)." (Radford,1997:31) For example, only a noun, but not a verb ,preposition, adjective or preposition can be inserted in the position marked ---- in sentence *They have no -----*. Similarly, we can differentiate adjectives from adverbs in syntactic terms; i.e. only an adjective can be inserted in the position marked ----- in sentence *They are very -----* (i.e. as the complement of the verb *be*. Also, adjectives are used to modify nouns; whereas adverbs are used to modify other types of expressions; e.g. *He is really nice* and *He walks really slowly*. A syntactic property of prepositions is that they permit an immediately following *objective pronoun*.

Another syntactic test which can be used to determine the category that a particular word belongs to is that of **substitution**, which is seeing whether (in a given sentence),the word in question can be substituted by a regular noun ,verb, preposition, adjective, or adverb. For example ,we can differentiate between comparative adjectives and adverbs ending in *-er* since they have identical forms is by the substitution test: *He is better at French than you/ He is more fluent at French than you* and *He speaks French better than you/ He speaks French more fluently than you*. Thus, our *substitution* test provides us with syntactic evidence that *better* in the former sentence is an adjective ;whereas in the latter sentence it is an adverb. Therefore, "given that different categories have

different *morphological* and *syntactic* properties ,it follows that we can use the morphological and syntactic properties of a word to determine its categorization (i.e. what category it belongs to).” (Radford,1997:35)

“It is standard practice to to use capital-letter abbreviations for categories, and so to use **N** for noun, **V** for verb, **P** for proposition, **A** for adjective ,and **ADV** for adverb. The words which belong to these five categories are traditionally said to be **contentives** (or **content words**),in that they have idiosyncratic *descriptive content*.” (Radford,1997:37) “In addition to *content words* languages also contain **function words** (or **functors**)-i.e. words which serve primarily to carry information about the grammatical function of particular types of expressions within the sentence (i.e. information about grammatical properties such as number, gender person, case,etc)”. (Radford,1997:37) For example, *car* is a contentive but *they* is a *function word* because the former word denotes an object ,which can be drawn, but the latter does not: it only denotes a set of grammatical properties in that it is a third person plural nominative pronoun. One way to find out whether words have descriptive content is to see “whether they have *antonyms* (i.e. opposites) :if a word has an antonym, it is a contentive”. (Radford,1997:38) For example ,a noun/N such as *loss* has the antonym *gain*; a verb/V such as *rise* has the antonym *fall*; an adjective/A such as *tall* has the antonym *short*; an adverb/ADV such as *early* has the antonym *late*; and a preposition/P such as *inside* has the antonym *outside*. Thus, ”nouns, verbs, adjectives, adverbs, and prepositions typically have descriptive content and so they are contentives”. (Radford,1997:38) In other words, “contentives have lexical content” (Radford,1997:38) ;therefore, they are called **lexical categories**.

3.2: Functional Categories

“Particles [like infinitival *to*], auxiliaries [like *do* (cf. *Do you want to smoke?*)] , determiners [like *the*], pronouns [like *they*], and complementizers [(i.e. complement-clause introducing particle) like *that* (cf. *I said that I was tired*)] are **functional categories** because words belonging to these categories have essentially grammatical function.” (Radford,1997:38)“ and “have no obvious antonyms”. (Radford,1997:38)

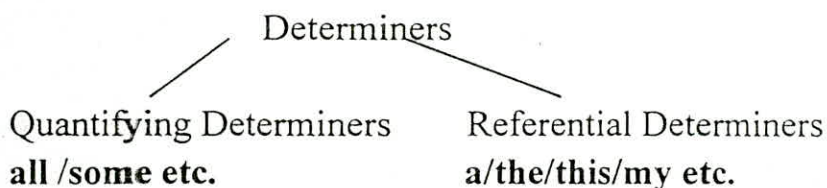
3.2.1 :Determiners

Items as in the bold-printed in (1) are called determiners (i.e. belonging to the category of **determiner** , abbreviated to **D**, or sometimes to **DET**) because they determine the referential or quantificational properties of the italicized noun expression which follows them:

(1)

- (i) I bought **a** *new battery* from **the** *local garage*.
- (ii) I prefer **this** *painting* to **that** *photo*.
- (iii) **My** *studio apartment* is bigger than **your** *garage*.
- (iv) **All** *comedians* tell **some** *bad jokes*.

Quantifying determiners ,such as **all** and **some** ,are sometimes regarded as a subcategory of quantifiers. Referential Determiners refer to a specific entity assumed to be known by the hearer.



Determiners are regarded as forming a different category from adjectives because .

(1) **Determiners** have a different **distribution** from **Adjectives**:

(i) Determiners may not be stacked together ;whereas adjectives can.

(ii) Determiners must precede adjectives when they are both modifying the same noun; e.g. **My** *nice new* clothes.

(2) It is only a count noun that is preceded by a determiner that can stand on its own forming an NP ,and not one preceded by an adjective ;e.g. **a chair** is an NP ;while *big chair* is not. On the other hand, **a big chair** is an NP.

(3) There is a set of determiners that go with countable nouns and a distinct set that goes with non- countable nouns ;but both types of nouns take the same adjectives ;eg **some** *simple and comfortable furniture/ a simple and comfortable chair*.

(4) As adjectives have “specific descriptive content” (Radford,1997:41), they are subject to semantic and pragmatic anomaly ;eg *a thoughtful friend/?cat/?? fish/ ??? pan /! problem*. This is not the case with determiners e.g. *a / the/another/ this /my*

friend/ cat/ fish/ pan / problem. It is to be noted that ? and ! denote increasing degrees of semantic and pragmatic anomaly.

Many determiners function as proforms of nouns ,”traditionally categorized as pronouns”. (Radford,1997:41) “Personal pronouns differ morphologically from nouns and other pronouns in Modern English” (A.Radford,1997:42) in that they encode a set of grammatical properties -viz. person ,number ,gender ,and Case. Thus , personal pronouns are functors because they have no specific reference ;e.g. the reference of personal pronoun *they* depends on its linguistic or its nonlinguistic context.

Despite the fact that personal pronouns are only proforms, they have been regarded by Postal (1966), Abney (1987) and Longobardi (1994) as having the categorial status of determiners because of their ability to function as determiners when they are in the 1st and in the 2nd person.

(i) [We psychologists] do not trust [you linguists].

(ii)*They boys

Consequently, adjectives constitute a lexical category; whereas determiners constitute a functional category. There are also prenominal and pronominal in both types of determiners : referential and quantifying.

3.2.2 :Auxiliaries

The second type of functional category to be discussed is that of **Auxiliary** (abbreviated to **AUX**). Auxiliaries differ from verbs

in that verbs take a range of different types of complements (e.g. a subjectless infinitival to-complement as in *I want [to go home]*, an infinitive a subject as in *I want [you to keep quiet]*, or a noun expression as in *I want [lots of money]*. Auxiliaries, on the other hand, “typically take a verb expression as their complement, and have the semantic function of marking grammatical properties associated with the relevant verb, such as *tense, aspect, voice, mood or modality*” (A.Radford,1997:44), such as *He is coming/ It is being made / He might come*. As regards syntactic differences between auxiliaries and verbs, the former has the ability to undergo inversion in questions, may generally be negated, and can appear in sentence-final tags without the dummy *do*, such as *Is he here?, He is not here, He is here, isn't he?*.

The third type of functor found in English is the **infinitival particle to**. It is called so because the only kind of complement it will allow is one containing a verb in the *infinitive* form, which is the verb in its uninflected base form, i.e. the verb form cited in the dictionary. It is to be noted that **infinitival particle to** “seems to be a dummy (i.e. meaningless) functor with no intrinsic semantic content, as shown by the following sentences:

- (i) I wonder whether to [go home].
- (ii) Many people want the government to [change course].
- (iii) We do not intend to [surrender].
- (iv) * We do not intend *right/ straight* to [surrender].

It is to be noted that Infinitival *to-* is different from the preposition *to* in English:

(a)Prepositional *to* is a contentive with intrinsic semantic content :it means “as far as” ;in turn ,it can be modified by intensifiers like *right/ straight* ,as shown in the following sentences:

- (i) He stayed *right to the end* of the film.
- (ii) He went *straight to the police*.

(b) Prepositional *to* (like many other prepositions) takes a noun expression as its complement ;whereas Infinitival *to-* requires a verbal complement ,as shown by the following sentences:

- (i) I intend to resign (= verb) /* to resignation (= noun)
- (ii) She waited for John to arrive (= verb) /* to arrival (= noun)

© “Genuine prepositions in English only permit following verbal complements when the verb is in the + *ing* form (i.e. gerund form),and not where the verb is in the uninflected base/infinitive form” (Radford,1997:47) :

- (i) Try and do it without complaining /* complain.
- (ii) Think carefully before deciding /* decide.

On the other hand, Infinitival *to-* can only take a verbal complement when the verb is in the uninflected base/infinitive form ,never when it is in the gerund form:

- (i) I want to go / *going there.
- (ii) You must try to work / * working harder.
- (iii) You managed to upset /* upsetting them.

(d) A fourth difference between the Infinitival *to-* and the prepositional *to* is that Infinitival *to-* permits *ellipsis* (i.e. omission) of its complement ,whereas prepositional *to* does not:

- (i) *Speaker A*: Do you want to go to the cinema?

Speaker B: No ,I don't really want to. (omission of Infinitival *to-* complement)

*No ,I don't really want to go to. (omission of prepositional complement).

In the late 1970's ,Chomsky suggested that there are significant similarities between Infinitival *to-* and a typical auxiliary *should*.

(i) They occupy the same position within the clause (i.e. between subject and verb)

(ii) Both Infinitival *to-* and the auxiliary *should* require a verb in the infinitive form:

a- It's vital [that John *should* show interest].

b- It's vital [for John *to* show interest].

c-* It's vital [that John *should* showing interest].

d- -* It's vital [for John *to* showing interest].

(ii) Both Infinitival *to-* and the auxiliary *should* allow ellipsis of its complement:

a- I don't really want to go to the dentist's ;but I know I should.

b- I don't really want to go to the dentist's ;but I just don't want to.

c.* I don't really want to go to the dentist's ;but I just don't want.

Chomsky concludes that "the fact that *to* patterns like the auxiliary *should* in several respects strengthens the case for regarding Infinitival *to-* and auxiliaries as belonging to the same category." (Radford, 1997:48) This category which comprises finite auxiliaries and infinitival *to* is labelled by Chomsky in 198(82) as **INFL** or **inflection** and in 1986b(3) as simply **INFL** or **I**. Thus, for

Chomsky finite auxiliaries and infinitival *to* are different exponents of the same category **I** (or **INFL**). (Radford,1997:56)
 “The general idea behind this label is that finite auxiliaries inflect for tense/agreement ,and infinitival *to* serves much the same function in English as infinitive inflections in languages like Italian which have overtly inflected infinitives.”(Radford,1997:48)

The fourth type of functional category to be discussed is that of **complementizer**. It is abbreviated to **Comp** in earlier work and to **C** in more recent work. This term is used to describe the *subordinating conjunctions* italicized,in the following sentences:

- (i) I think [*that* you are right].
- (ii) I doubt [*if* you can help me].
- (iii) I'm anxious [*for* you to receive the best treatment possible].
- (iv) *I think [*that* you **to** be right].
- (v) *I'm anxious [*for* you **should** receive the best treatment possible].

The **complementizer** introduces *complement clauses* . It is regarded as a **complementizer** because it “ functions as the complement of the word immediately preceding it ;i.e. *think, doubt,* and *anxious* in the above sentences. Complementizers are functors in the sense that they encode particular sets of grammatical properties. For example, *that* and *if* are inherently finite in the sense that they can only be used to introduce a finite clause ,and not a non-finite clause. “The term finite verb/clause denotes an auxiliary or non -auxiliary verb or clause which can have a subject with nominative **Case** like *I/we /he/she/they*. By contrast, a verb or clause which has a subject with objective or null Case is nonfinite”(Radford,1997:260), such as *Don't let [them annoy you]*

and *You should try [to PRO stay calm]*." In general, finite verbs carry tense/agreement properties, whereas nonfinite verbs are tenseless and agreementless forms-e.g. infinitive forms like *be*, and *+ing/ +n* participle forms like *being/been* are nonfinite)." (Radford,1997:260) On the other hand, *for* is an inherently infinitival complementizer ;i.e. it can be used to introduce a clause containing infinitival to ,but not a finite clause.

The above discussed complementizers serve three grammatical functions:

(i) They mark the fact that the clause they introduce is the complement of the word that precedes them.

(ii) They serve to indicate whether the clause they introduce is finite or infinitival.

(iii) They mark the *illocutionary force* (i.e. semantic/pragmatic function) of the clause they introduce. That is, *if* introduces an interrogative clause and *that / for* introduce other types of clauses with *that* introducing a declarative clause.

The words *if / that / for* are regarded as complementizers ,rather than *if* as an adverb, *that* as a determiner ,and *for* as a preposition. This is because there are significant differences between complementizers and apparently similar words. For example ,one basic difference between the complementizer *for* and preposition *for* is that the latter has intrinsic semantic content and therefore can be intensified by *right/ straight* ,whereas the former is a dummy functor and can never be so intensified:

(i) He headed *right/ straight* for the doctor.

(ii) *He was anxious *right/ straight* for nobody to leave.

The second difference between the complementizer *for* and the preposition *for* is that the former has the syntactic behavior of having the clause it introduces as the subject of the predicate

would be unthinkable ;whereas a phrase introduced by the preposition *for* cannot:

- (i) *For you to go there on your own would be unthinkable.*
- (ii) * *For you would be unthinkable.*

The third difference between the complementizer *for* and the preposition *for* is that most prepositions in English are not generally followed by infinitive complement.

- (i)* *I am not sure about [you to be there].*
- (ii)* *I have decided against [us to go there].*
- (iii) *I have decided against [our going there].*

The fourth difference between the complementizer *for* and the preposition *for* is that the latter can be preposed to the front of the sentence along with its noun expression ;whereas the former cannot:

- (i) I will vote for Senator Eastwood.
- (ii) For which senator will you vote?
- (iii) Which senator will you vote for?
- (iv) They were anxious for Senator Eastwood to keep his cool.
- (v) * For which senator were they anxious to keep his cool? .
- (vi) * Which senator were they anxious for to keep his cool?

The fifth difference between the complementizer *for* and the preposition *for* is that the former can be substituted by a clause introduced by another complementizer:

- (i) *Is it really necessary for there to be a showdown?*
- (ii) *Is it really necessary that there should be a showdown?*
- (iii) *We are heading for a general strike.*

(iv) * *We are heading that there (will / should) be a general strike.*

Thus, there seems to be considerable evidence in favor of drawing a categorial distinction between the preposition *for* and the complementizer *for*. (Radford, 1997:51)

Similarly, there are significant differences between *that* as a complementizer and *that* as a determiner. The former has a reduced vowel; whereas the latter does not:

(i) *I refuse to believe that* ($\delta \text{æ} t$) [*rumour*].

(ii) *I refuse to believe that* ($\delta \text{ɔ} t$) [*Randy Rabbit runs Bunny Bar*].

Apart from such phonological differences (i.e. *that* as a complementizer has a reduced vowel and *that* as a determiner has an unreduced vowel), there are also syntactic differences between the two uses of *that*. Firstly, *that* in its use as a determiner can be substituted by another determiner (such as *this/the*):

(i) *Nobody else knows about that /this /the accident.* (= determiner)

(ii) *I'm sure that /*this / *the you are right.* (= complementizer)

Secondly, the determiner *that* can be used pronominally (without any complement); whereas the complementizer *that* cannot:

(i) *Nobody can blame you for that mistake.*

(ii) *Nobody can blame you for that.*

(iii) *I am sure that you are right.*

(iv) * *I am sure that.*

Therefore, the clear phonological and syntactic differences between the two uses of *that* argue strongly that the particle *that* which serves to introduce complement clauses should not be analyzed as a determiner. (Radford, 1997:52)

If differs from interrogative adverbs like *where/when/whether* not only in its form (it does not begin with *wh*), but also in its distribution. Firstly, typical *wh*- adverbs can occur in finite and infinitive clauses alike, *if* complementizer is restricted to introducing finite clauses:

(i) *I wonder [when/where/ whether/ if I should go]* (finite clause)

(ii) *I wonder [when/where/ whether/ *if to go]* (infinitive clause)

Secondly, *if* is different from interrogative *wh*-adverbs in that it cannot introduce a clause which serves as the complement of the preposition.

(i) *I am not certain about [whether/when/where he will go].*

(i) **I am concerned over [if taxes are going to be increased].*

(iii) **I am puzzled at [that he should have resigned].*

Thirdly, whereas an *wh*-adverb can typically be coordinated (i.e. joined with *and / or*) with another similar adverb, this is not true of *if*:

(i) *I do not know [where or when to meet him]*

(ii) *I do not know [whether or not to meet him]*

(iii) **I do not know [if or not to meet him]*

“The words *need/dare* resemble modal auxiliaries like *will/shall/can/may/must* in that they lack the third person singular +s inflection, and take a *bare* infinitive complement(i.e. a complement containing the infinitive verb form *say* but lacking the infinitive particle *to*).”(Radford,1997:57) They also behave like auxiliaries in that they undergo inversion in questions ,can appear in tags, and can be negated.

(i) *Need/dare anyone say anything?*

(ii) *He need not/dare not say anything ,need /dare he?*

Sentence (viii)

This sentence “is structurally ambiguous as between one analysis on which *for* functions as a preposition ,and a second on which it functions as a complementizer.” (Radford,1997:58) When we have *for* functioning as a complementizer ,then the *for*-clause can be substituted by a *that*-clause.

() *It is important that parents should spent time with their children.*

But when *for* functions as a preposition ,the string *for parents* in its interrogative counterpart can be preposed to the front of its containing sentence.

(i)*For how many parents is it important to spend time with their children?*

Sentence (xv)

The first *to* is an infinitive particle ,and the second *to* is a preposition. Thus ,the second *to* (i) can be modified by the prepositional intensifier *straight*; i.e. *He likes to drive straight to*

work. Moreover, the second *to* (ii) is a contentive. It has the antonym *from*: *He likes to drive from work.* (iii) Like a typical transitive preposition, the second *to* can be followed by an objective pronoun like *them*: *They think the only way of getting to their offices is to drive to them.* Accordingly, the second *to* cannot allow ellipsis of its complement; whereas the first *to* does: *He likes to.*

II: Assign to each word a grammatical category by using the labelled bracketing technique:

(i) He was feeling disappointed at only obtaining an average grade in the morphology exercise.

(ii) Student counsellors know that money troubles can cause considerable stress.

(iii) Linguists have long suspected that peer group pressure shapes linguistic behavior patterns in very young children.

(iv) Students often complain to their high school teachers that the state education system promotes universal mediocrity.

Model Answer

Sentence (i)

(i) [D He] [I was] [V feeling] [A disappointed] [P at]
[ADV only]

[V obtaining] [D an] [A average] [N grade] [P in] [D the] [N morphology] [N exercise]

It is to be noted that the pronominal is a *determiner*; and the word *average* functions as an adjective. This is indicated by its

ability to be modified by an adverb, such as *a relatively average grade*. But *morphology* is a noun ;therefore, it may be modified by an adjective, such *inflectional morphology*.

IV: Chapter Four : Structure

4.1: Phrasal Merging

A. Radford (1997) says that “the structure of phrases and sentences “ may be defined as “the way in which words are combined together to form phrases and sentences.”(61) “The simplest way of forming a phrase is by **merging** (a technical term meaning ‘combining’) two words together: for example ,by merging the word *help* with the word *you* ... , we form the phrase *help you*.” (A.Radford,1997:61) The resulting phrase *help you* seems to have verblike , rather than nounlike properties. This is shown by the fact that it can occupy the same range of positions as the simple verb *help* ;therefore, it can occur after the infinitive particle *to*.

(1)

- * (i) We are trying **to help**
- * (ii) We are trying **to help you**

By contrast, *help you* cannot occupy the kind of position occupied by a pronoun such as *you*, indicating that it has the grammatical properties of a verb and not those of nouns.

(2)

- (i) *You are very difficult.*
- (ii) **Help you are very difficult.*

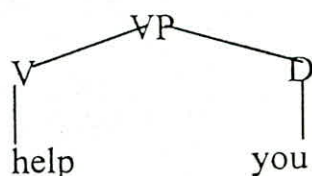
Therefore ,we might say that the verb *help* is the **head** of the phrase *help you* ;and accordingly, the phrase *help you* is a **projection** of the verb *help* ,making this phrase a **verb phrase** (i.e. a VP).

(3)

[VP [v help] [D you]]

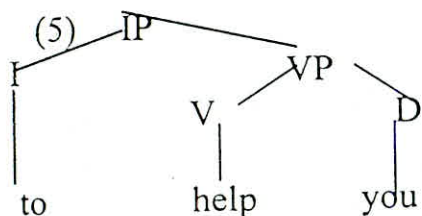
An alternative way to the traditional labelled bracketing technique to represent this structure is in terms of a labelled tree diagram, which is entirely equivalent to the labelled bracketing technique in the sense that it provides us with exactly the same information. The difference between them is purely notational: in the tree diagram each category is represented by a **single node**; and in the labelled bracketing each category is represented by a **pair of brackets**.

(4)



It is to be noted that *you* is the **complement** (or **object**) of the verb *help*. "The operation by which the two words are combined together is called **merger** (cf. Chomsky 1995)". (A.Radford,1997:62) We might also generalize saying that "all phrases are formed essentially the same way " i.e. "by **merging** (i.e. combining) two categories together to form a larger category." (A.Radford,1997:62) That is, "phrases and sentences are formed by a binary merger operation which combines pairs of categories to form larger and larger structures." (A.Radford,1997:76)

We can also merge categories that contain more than one word. For example. the infinitive phrase *to help you* is formed by merging the infinitive particle *to* with the verb phrase *help you*, resulting in the formation of a category that is headed by the particle *to* and has the verb phrase *help you* as its complement.



It is to be noted that the *infinitive phrase* has a different distribution from the *verb phrase*.

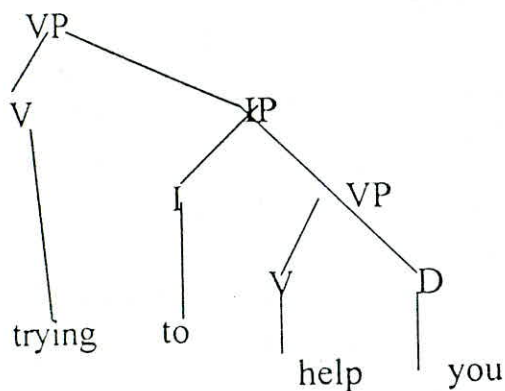
(6)

- (i) They *ought to help you*. (= *ought* + *infinitive phrase*)
- (ii) * They *ought help you*. (= *ought* + *verb phrase*)
- (iii) They *should help you*. (= *should* + *verb phrase*)
- (iv) * They *should to help you* (= *should* + *infinitive phrase*)

ought requires an *infinitive phrase* as its complement ;but *should* requires an *verb phrase* as its complement.

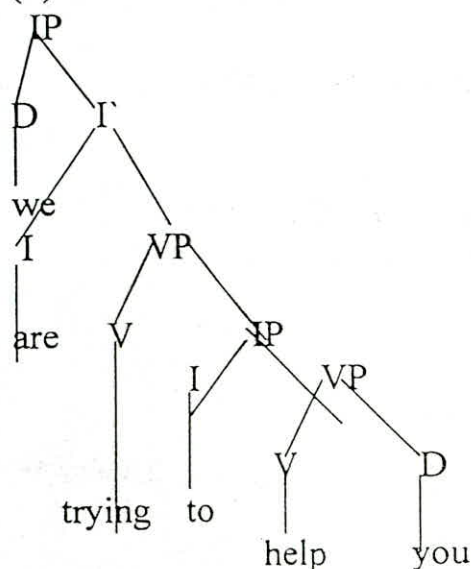
What is implicit in this discussion is that phrase formation is recursively done. Likewise , we can form the phrase *trying to help you* ,which can be used after words like *be*, *start*, or *keep*. The head of the overall VP is *trying* ,and its complement is the IP *to help you* as its complement.

(7)



In a similar respect, in the formation of clauses or sentences we assume exactly the same merger operation ;i.e. of combining two categories together. For example ,the sentence *We are trying to help you* has the structure:

(8)

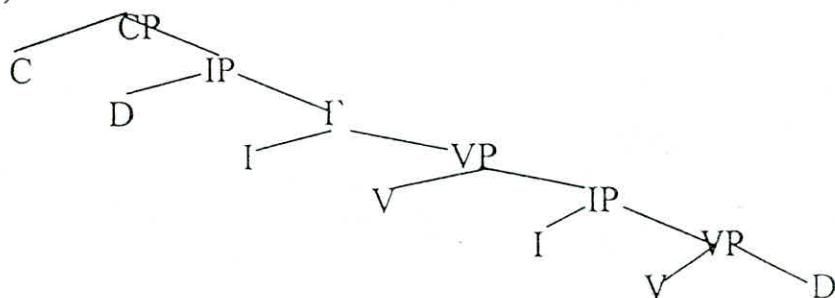


Note that *are trying to help you* is a projection of the auxiliary *are* since *are* belongs to the category **INFL** (=I). However, *are trying to help you* is not a complete IP because in answer to the question *What are you doing*, we cannot say * *are trying to help you*. On the other hand, *to help you* is an IP because in answer to the question *What 's your aim* , we can say *to help you*. Thus, according to A. Radford (1997) when we merge an auxiliary (=I) with a verb phrase (=VP), we form an incomplete IP that is called I'. Note that if we assume that the auxiliary phrase is a complete IP ,then the whole clause *We are trying to help you* is the projection of the pronominal determiner *we* ,and hence the whole clause is a DP. But this is not right. Therefore, we have to assume that "only when we merge the

relevant I-bar with its subject do we form an **IP** (i.e. a complete auxiliary phrase).” (A. Radford ,1997:65) In this IP, the pronominal determiner *we* is said to be the **specifier** (and also the **subject**) of the auxiliary *are* (since it specifies who is trying to help you);and the VP *trying to help you* is the **complement** of *are*. Thus, “a projection of a given head may contain not only a complement ,but also a specifier.” (A. Radford ,1997:66)

In addition to IP, we also have a **CP (complementizer phrase)** (Stowell 1981 and Chomsky 1986b) , which is a clause with a complementizer such as *that*, *for*, and *if*. This is illustrated by a clause such as *That we are trying to help you* in answer to a question such as *What are you saying?*

(9)



Therefore, a tree diagram “provides a visual representation of the **categorial constituent structure** of the corresponding sentence - i.e. it tells us how the sentence is structured out of **constituents** (i.e. out of component words and phrases) , and what category each constituent belongs to.” (A. Radford ,1997:66)

4.2. Grammatical Features

The above tree diagram “provides only a partial representation of the overall grammatical structure of the corresponding sentence.” (A. Radford, 1997:67) Just as the phonetic and semantic properties are represented in terms of sets of features, the grammatical properties may also be represented by in terms of sets of features. For example, the /m/ sound is distinguished from the /b/ sound in terms of the phonetic feature [nasal]; and the nouns *boy*, *girl*, *kid*, *kitten*, and *puppy* may be shown to represent the semantic feature [YOUNG]. Likewise, “words carry three sets of grammatical features: **head-features** (which describe their intrinsic grammatical properties), **complement - features** (which describe the kinds of complements they take) and **specifier-features** (which describe the kinds of specifier/subject they can have).” (A. Radford, 1997:67) For example, *are* carries the **head-feature** [Pres], indicating that it is a present -tense form (its status as an auxiliary is indicated by the category label I attached to the node containing *are*), its **complement - features** is that it selects a verbal complement carrying the participial inflection +*ing*, and its **specifier- features** include a Case feature (i.e. it requires nominative Case and not objective Case), and (person/number) agreement features, shown in abbreviations as [2/PNom], meaning that *are* in *We (politicians) are trying to better ourselves* requires a second person or plural subject or specifier carrying nominative Case.

The **head-features** of the complementizer *that* include a feature such as [Decl], indicating that it introduces declarative (statement-making) clauses such as in *That we are trying to help you*. Its **specifier -features** indicate that it cannot have a specifier; and its **complement -features** indicate that it requires a complement headed

by a finite I constituent ;e. g. the head of this complement may be *are* (a finite I constituent). The pronoun *we* has the head -features first person plural nominative pronoun. Its specifier -features indicate that it cannot take a specifier ;but its complement -features indicate that it may have a complement as in *We (politicians) are trying to better ourselves.*

Trying = Its head -features: progressive *ing* participle

Its specifier -features: may be used in a verb phrase that does not have a specifier or may have a specifier. Its complement -features: requires a complement headed by the infinitive particle *to*.

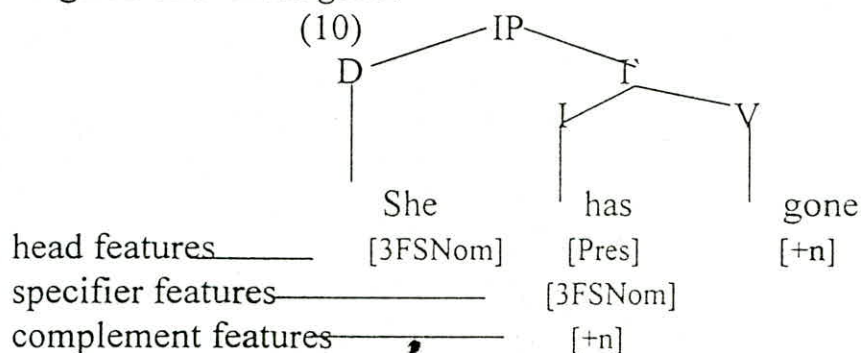
To = Its head -features: infinitive particle.

Its specifier -features: allow it to be used without any specifier or subject. Its complement -features: selects a complement headed by a verb in its uninflected (infinitive) form. Therefore, as each word has restrictions imposed on the choice of its subject and complement, each word in the sentence is said to have grammatical properties that can be represented in terms of features; head features (“which describe the intrinsic grammatical properties of words” (A. Radford ,1997:77)), specifier -features (“which determine the kinds specifier/subject they allow” (A. Radford ,1997:77)), and complement -features(“which describe the types of complement they allow” (A. Radford ,1997:77)).

We ensure that the grammatical features carried by the different words in a sentence are compatible with one another by means of a theory of **feature -checking** developed by Chomsky (1995). Chomsky (1995) also assumes that the syntactic structures are generated (i.e. produced) by merging pairs of categories together ,using this merging as the basis for computing two types of structural representation for a sentence : a representation of its phonetic form (= a **PF representation**), and a representation of its logical form (= a **LF representation**). The **PF representation** of a sentence tells us how it is pronounced ,and its **LF representation** describes linguistic aspects of its meaning. Chomsky (1995) also

maintains that some grammatical features are **interpretable** (at LF); whereas others are **uninterpretable** (at LF) by virtue of having no semantic content. Therefore, **LF representations** may contain only (semantically) interpretable features. He continues to say that if a derivation (i.e. a set of grammatical operations used to form a given type structure) gives rise to an LF-representation which contains only (semantically) interpretable features, the relevant derivation is said to **converge** (at LF). On the other hand, if an LF-representation containing one or more (semantically) uninterpretable features, the relevant derivation is said to **crash** (at LF) (i.e. the sentence is ill-formed). Also, grammatical features are **checked** in the course of a derivation, and uninterpretable features are erased once checked.

Applying this to a concrete example, we have the following tree diagram of *She has gone*.

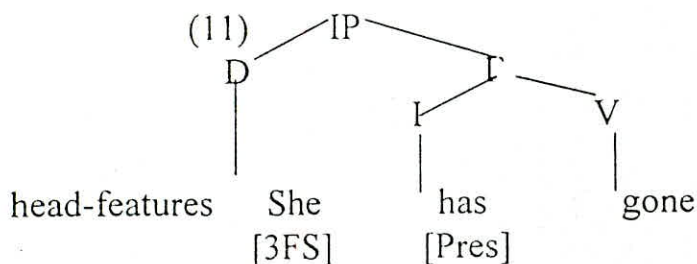


3 = 3rd person, F= feminine , S = singular , Nom= nominative Case. Pres = present tense, +n = *n*- participle ;and blank entries for the specifier and complement features of *She* and *gone* mean that they do not have a specifier and complement. It is also assumed that “only (some) head- features are interpretable ,and that all complement - and specifier -features are uninterpretable (since they have no semantic content).” (A. Radford ,1997:72) The specifier- and complement -features “simply tell us what kind of complement or specifier a given item requires.” (A. Radford

,1997:72) The head-features that are interpretable of *has* are “the person/number/ gender” features of the pronoun because *it* indicates that we have reference to an expression like *girl*, as distinct from an expression like *man*, and its present-tense, distinguishing it from the past tense in *had*. As for the Case feature and the [+n] of the head *has*, both of these head-features are uninterpretable. This is because “all verb inflections other than tense inflections are uninterpretable. Similarly, as the pronouns with different Cases have “the same interpretation” (A. Radford, 1997:71), as shown in *I expect he will win* and *I expect him to win*, the Case feature is also uninterpretable.

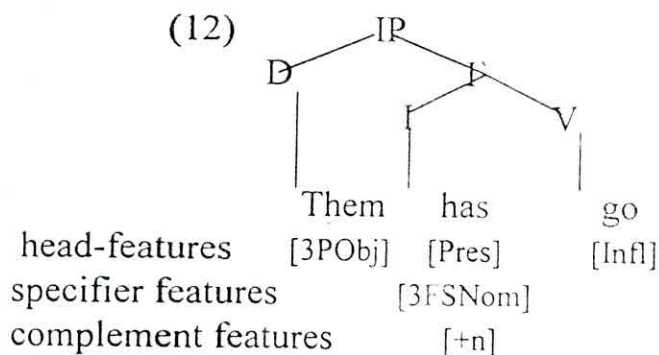
It is also assumed that “the specifier -features of a head must be checked against the head -features of (the head word of) its specifier. “(A. Radford, 1997:72) Likewise, the complement features of a head must be checked against the head -features of (the head word of) its complement. “If there is a match between *checker* and *checked* in respect of any given feature, the relevant specifier- and complement -feature is erased (because specifier- and complement -features are uninterpretable) ,and the corresponding head-feature is erased if it is uninterpretable (but not erased if interpretable).” (A. Radford, 1997:72) If there is a mismatch between *checker* and *checked* in respect of some feature, the relevant feature cannot be erased from either.

After applying this **checking** to --, we have the following structure:



The features [3S] of *has* (the head word) exactly match those of *She* (the specifier) ;but it is the identical features of *has* that are erased, rather on its specifier. This is because these features “play a role in the interpretation of *she* but not in that of *has*.” (A. Radford ,1997:72) As the [Nom] specifier -feature of *has* exactly matches the [Nom] head -feature of *she*, and since Case-features play no role in semantic interpretation, both [Nom] features are erased. Thus, “checking the specifier -features of *has* against the head-features of *she* ...erases all the specifier -features of *has*, together with the nominative Case- feature of *she* ,but leaves the interpretable features [3FS] on *she*.” (A. Radford ,1997:72) Similarly, since “the inflectional properties of nonfinite verbs (like the Case properties of pronouns) play no role in semantic interpretation, both [+n] features will be erased” (A. Radford ,1997:72) from the head and its complement since they match. Therefore, checking means that “the only grammatical features which survive at LF (i.e. the LF representation) are the interpretable head-features.” (A. Radford ,1997:73)

For ungrammatical sentences ,checking breaks down due to the mismatch of the features of its constituent parts.



Since there are numerous (the **bold-printed**) uninterpretable features (i.e. [Obj] Case feature of *them*, [Infl] inflectional feature of

go, the [SNom] specifier-feature of *has*, and the [+n] complement-feature of *has*), "the resulting LF-representation violates the requirement (termed the **principle of full interpretation by Chomsky**) that LF-representations should contain only semantically interpretable features, and the corresponding sentence **Them has go* is ungrammatical." (A. Radford, 1997:74) Note that these features are uninterpretable because they are contradictory. In general, "checking results in the (partial) LF-representation". (A. Radford, 1997:73) It is a "partial because we are concerned here only with grammatical features, and so do not represent purely semantic features." (A. Radford, 1997:73)

Apart from the restrictions of words on their complements and specifiers, there are other types of restrictions ;i.e. structural "restrictions on the binding of anaphors". (A. Radford, 1997:76) The term (reflexive) anaphor is used to describe words like *himself*, which "cannot be used to refer directly to an entity in the outside world, rather must be **bound** by and hence take [its] reference from an **antecedent** elsewhere in the same phrase or sentence," (A. Radford, 1997:74) as shown in (i). This may be illustrated by the following sentences:

(13)

- (i) *He can feel proud of himself.*
- (ii) **She can feel proud of himself.*
- (iii) ***Himself** help me?! *You've got to be kidding!*

Sentence (ii) is ungrammatical because the anaphor is **unbound** (i.e. has no suitable antecedent to bind it). Sentence (iii) is also ungrammatical because "there is no potential antecedent of any kind for the anaphor *himself*, with the result that the anaphor is again unbound (and the sentence ungrammatical)." (A. Radford, 1997:74)

Also, there seems “to be structural restrictions on binding of anaphors by their antecedents ” ,(A. Radford ,1997:74) as illustrated by the following sentences:

(14)

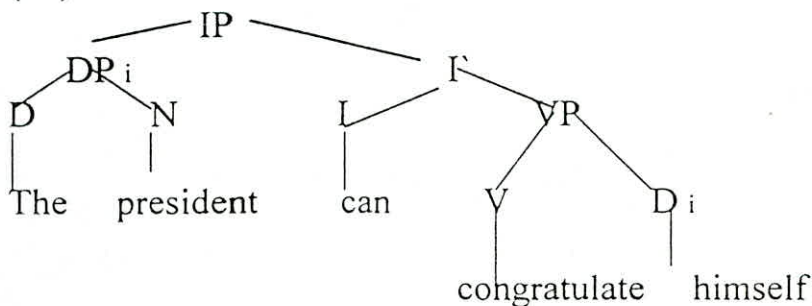
(i) *The president can congratulate himself.*

(ii) * *Supporters of the president can congratulate himself*

In (i) , *himself* “must be bound by a third person masculine singular antecedent like *the president.*” (A. Radford ,1997:75)

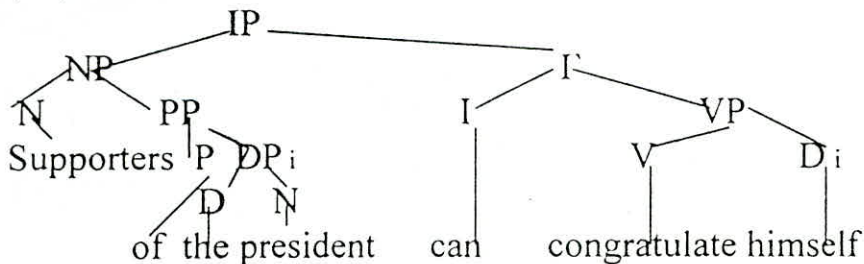
Sentence (i) has the following structure:

(15)



On the other hand, sentence (ii) has the following structure:

(16)



It can be said that **the president** in the first tree diagram is higher up the tree in relation to its anaphor **himself**. This is not the case in the second tree diagram. That is, the antecedent binds its anaphor if it is in the right position, which is when it **c-commands** it. In the first tree structure, *the president* **c-commands** its anaphor (*himself*); but in the second tree structure *the president* does not **c-command** its anaphor (*himself*). Accordingly, (*himself*) in the first sentence is bound; whereas in the second sentence it is unbound, correctly predicted to be ungrammatical. Putting the notion of **c-command** in a nutshell, it is the requirement that "the antecedent should occur higher up in the structure than the constituent which it binds." (A. Radford, 1997:75) Therefore, "the c-command condition on binding" is that "a bound constituent must be c-commanded by an appropriate antecedent." (A. Radford, 1997:75) This means that "restriction on binding is one which crucially involves the structural relation **c-command** -and this relation is defined in terms of the relative structural positions occupied by the anaphor and the antecedent." (A. Radford, 1997:76) It is in this respect that "the binding of anaphors can be given a straightforward characterization in structural terms" (A. Radford, 1997:76); and this, in turn, "provides further support for our claim that sentences have a hierarchical constituent structure." (A. Radford, 1997:76)

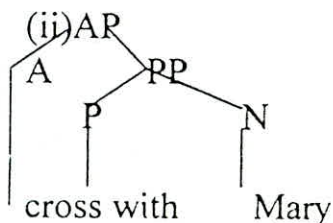
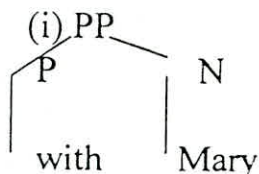
Exercises

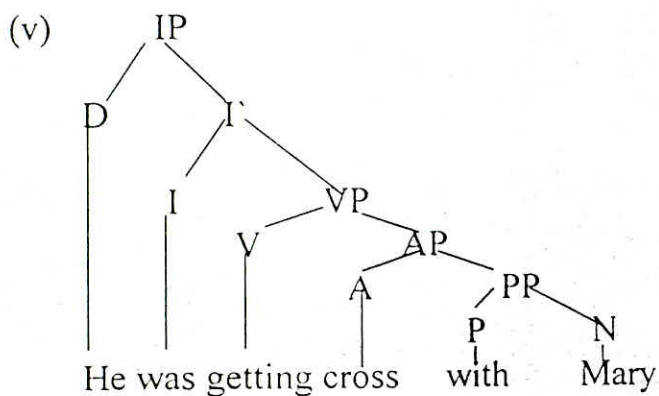
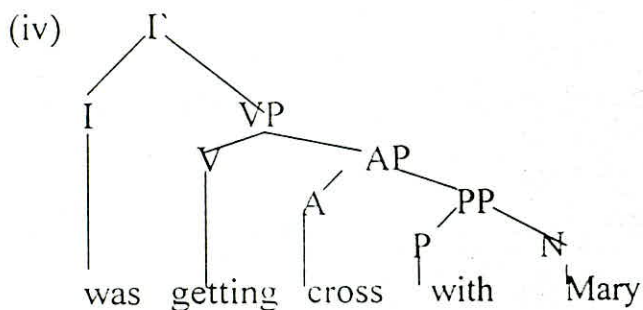
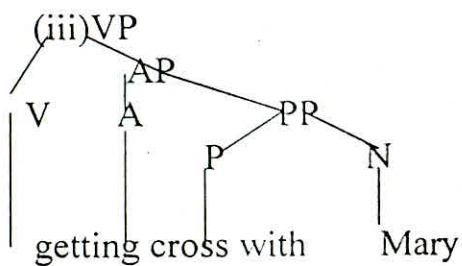
1. Discuss the derivation of the following sentences, showing how their structure is built up in a pairwise fashion by successive merger operations.

- (i) He was getting cross with Mary.
- (ii) You must feel proud of yourself.
- (iii) He may need to ask for help.
- (iv) They are expecting to hear from you.
- (v) You should try to talk to her.
- (vi) I would imagine that they have arrested him.

Model answer for sentence no.(i)

First merge the last two words in the sentence to form a constituent, then merge the constituent thereby formed with the third -from-last word to form an even larger constituent, and so on.





It is to be noted that (iv) is an incomplete phrase as it “cannot stand on its own”. (A. Radford ,1997:78) It is also be noted that “syntactic structures are derived in a *bottom-up* fashion, i.e. by

building up trees in successive layers from bottom to top.” (A. Radford, 1997:79)

Considering now the features carried by each word in (v), and how they are checked. (1) The features of the pronoun *he*:

- Its head-features: a third person masculine singular nominative pronoun

-Its specifier -and -complement -features: does not allow a specifier or complement

(2) The features of *was*:

■ Its head -features :past tense

■ Its specifier-features :require first or third person singular nominative subject. These specifier-features are checked against the head-features of *he*, resulting in the erasure of the specifier features of *was* (since all specifier-features are uninterpretable) and of the nominative Case-feature of *he*. As for third person singular head -features of *he*, these are not erased since they are interpretable.

■ Its complement features (in its use as a progressive auxiliary) :require a complement headed by a verb in the *ing*-participle form.

(3) The complement features of *getting* is a phrase headed by an adjective (its complement-selection properties is categorial in nature) :*cross with Mary*.

(4) The complement features of *cross* is a prepositional phrase headed by the preposition *with* (its complement-selection properties is lexical): *with Mary*.

(5) The complement features of the preposition *with* is that it requires a complement headed by an objective -case feature (e.g. *me*). It is to be noted that the fact that *Mary* can be used as the complement of *with* suggests that *Mary* must carry covert objective Case.

Exercise

“Children generally have more problems in acquiring uninterpretable grammatical features than in acquiring interpretable ones.” (A. Radford, 1997:80) Identify the nature of the errors made by these children, as shown by the following sentences, and discuss their derivation.

- (i) I can building a tower.
- (ii) She didn't goed home.
- (iii) My can make a pie.
- (iv) Mummy is help me.
- (v) Me'll have that.
- (vi) Him don't want it.

The child acquires the interpretable features first; e.g. the singular determiner *a*. But the uninterpretable grammatical features such as the inflectional head-features of nonfinite verbs are not acquired, rather he treats *can* as auxiliary *be* (i.e. taking an *+ing* complement instead of the uninflected infinitive form).

V: Chapter Five : Empty Categories

It is also believed in the Minimalist Program that syntactic structures also have “*empty* (= covert = null) *categories* ;i.e. categories which have no overt phonetic form, and hence inaudible or silent.” (A.Radford,1997: 82) For example, English allows the empty category **PRO** as the subject of infinitive clauses that appear to be subjectless:

(1)

(i) We would like [**PRO** to stay]/ We would like [*you* to stay]

(ii) We don't want [**PRO** to upset them]/ We don't want [*anyone* to upset them]

Given this assumption then both infinitival clauses have “the same structure, except that the bracketed IP has an overt pronominal determiner *you* as its subject” (A.Radford,1997: 82),”but a covert pronominal determiner **PRO** as its subject” (A.Radford,1997: 82) in the second type of the infinitival clauses. Therefore, “we can say that the null subject **PRO**...is **controlled** by (i.e. refers back to) the subject *we* of the matrix (= containing = next highest) clause.” (A.Radford,1997: 83) In other words, “*we* is the **controller** or **antecedent** of **PRO**”; and verbs such as *like*, which allow an infinitive complement with **PRO** as subject, are said to function as **control verbs**.

There are several reasons that motivated the assumption that there is a null **PRO** subject in the above structures.

First, this is in keeping with the notion of an *understood* or *implicit* subject that is found in traditional grammar. This implicit subject of the infinitival clause becomes explicit when the clause is finite *He has promised [to come to my party]/ He has promised [he will come to my party].*

Second, the syntax of reflexive anaphors indicate that there is a *local* antecedent of the reflexive *They want [John to help himself]/ *They want [John to help themselves]*. The notion of a local antecedent means "an antecedent contained within the same [bracketed] clause as the reflexive". (A.Radford,1997: 84) The latter sentence is ungrammatical because the reflexive *themselves* does not have a local antecedent; i.e. its local antecedent is *John*, not *they*.

Third, the agreement between the predicate nominals in copular constructions [linking verbs] (i.e. nominals that are predicated to a subject such as *John became a millionaire*) with the subject of their own clause provides further evidence for the presence of PRO, as shown in (2).

2.

(i) They want [**their son** to become *a millionaire*]/* *millionaires*

(ii) They want [**PRO** to become * *a millionaire*]/ *millionaires*

The word *a millionaire / millionaires* in these sentences agrees with the subject contained within the same [bracketed] clause, and not with the matrix subject. This is why we posit that there is a **PRO** contained within the same [bracketed] clause with which *a millionaire* agrees. Therefore, we conclude that we have overt subject pronominals and covert subject pronominals in apparently subjectless infinitive complements.

However, there is a Case difference between personal pronouns and PRO. "If we assume that it is the defining characteristic of personal pronouns that they carry Case, PRO too must carry Case. Chomsky and Lasnik (1995,:119-20) suggest that PRO carries **null Case**, and that its Case is checked by infinitival *to*." (A.Radford,1997: 85) This means that this infinitival *to* carries a null-Case specifier-feature (indicating that it requires a PRO subject); and this specifier-feature is checked against null-Case head-

feature of PRO on the I constituent *to* of the IP containing PRO. Likewise, the nominative Case carried by *we* is checked by the head I constituent *would* of the IP containing *we* (*We want that he would become a millionaire*). In both cases, “checking involves a spec-head relation—more specifically, a relation between the head I constituent of IP and its specifier.” (A.Radford,1997: 85)

“The Case of a null PRO subject is checked in a different way from the Case of an objective subject.” (A.Radford,1997: 86) That is,” the null Case of a PRO subject is internally checked (from within IP) by the null Case infinitive particle *to* ;but the Case of an objective subject is externally checked (from outside IP) by an immediately preceding transitive verb or transitive complementizer. Since it is exceptional for a subject to have its Case externally checked from outside its containing IP, the relevant phenomenon is generally known as **exceptional Case-marking** (conventionally abbreviated to **ECM**). “(A.Radford,1997: 86) It follows that “an infinitive complement with an objective subject is referred to as an **ECM complement** ;and a verb which selects an infinitive complement with an objective subject is referred to as an **ECM verb**.” (A.Radford,1997: 86)

This has led to the assumption that “ the different ways in which the Case properties of null and objective subjects are checked are reflected in systematic asymmetries between control infinitives with PRO subjects and ECM infinitives objective subjects.” (A.Radford,1997: 86) One such asymmetry relates to the behavior of the relevant complements in active and passive structures. For example, when a verb such as *decide* is used as a control verb ,it allows an infinitival IP complement with a PRO subject :

(3)

(i) *They decided [PRO to postpone the meeting]*

(ii) *It had been decided [PRO to postpone the meeting]*

Thus, "apparently subjectless clauses have an empty PRO subject controlled by an antecedent in a higher clause" (A.Radford,1997: 99) and PRO has null Case ,which is checked by infinitival *to* .

On the other hand, a verb such as *believe* can function as an ECM verb taking an infinitive complement with an infinitive objective subject when it is used actively:

4.

(i) People genuinely *believed* [**him** to be innocent]

(ii) *It was genuinely *believed* [**him** to be innocent]

In 4 (i) ,“the bracketed IP is immediately preceded by the active (and transitive) verb form *believed* (which can check the objective Case of him).” (A.Radford,1997: 87) But in 4 (ii),” the immediately preceding verb is the passive participle form *believed*, and passive participles are intransitive.” (A.Radford,1997: 87) In other words, verbs such as *decide* are control verbs; whereas verbs such as *believe* are of ECM and they exceptionally Case mark when they are in the active voice since they lose their transitivity when in the passive form. That is, “objective infinitive subjects ...have their Case checked by an immediately preceding transitive verb ...or transitive complementizer.” (A.Radford,1997: 99)

“A second asymmetry between control infinitives and ECM infinitives relates to adverb position.” (A.Radford,1997: 87) “An adverb modifying a control verb can be positioned between the control verb and its IP complement” (A.Radford,1997: 87) ;whereas “an adverb modifying an ECM verb cannot be positioned between the ECM verb and its IP”. (A.Radford,1997: 87)

5.

(i)He tried *hard* [**PRO** to convince her]

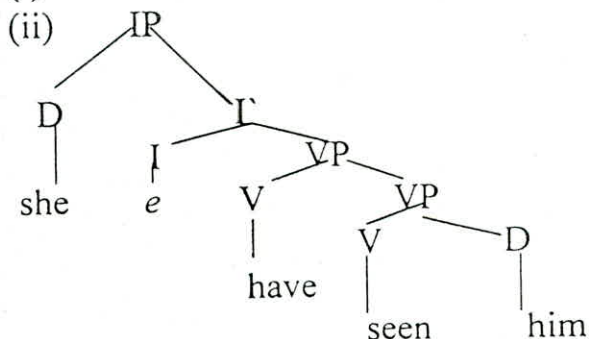
(ii)*She believes *sincerely* [**him** to be innocent]

tried is a control verb in the sense that it does not involve ECM; hence it allows *hard* between it and its IP complement. But *believes* does not because it is an ECM verb. This is because the Case of PRO in control structures is checked by infinitival *to*; therefore, “the adverb positioned between the preceding verb and its IP complement will not prevent the Case of PRO from being checked.” (A.Radford,1997: 88) “By contrast, if we posit that the Case of an objective subject is checked by an immediately preceding transitive verb or transitive complementizer, it follows that the presence of the intervening adverb *sincerely* prevents the transitive verb *believes* from checking the objective Case of the infinitive subject *him*.” (A.Radford,1997: 88)

The IP projection has been regarded as being headed by a finite auxiliary or by infinitival *to*; but it may also be a clause that contains no overt auxiliary. Accordingly, both clauses in the following sentences are IP projections even though the latter clause has no overt auxiliary.

6.

(i) *He could have seen her, or [she have seen him]*



As can be seen from 6(ii), the clause with no overt auxiliary is regarded as an IP in which the “I constituent *could* undergoes head ellipsis (alias gapping).” (A.Radford,1997: 88) Thus, the head I position of IP is filled by an ellipsed auxiliary ;i.e. ellipsis is “a

process by which a constituent ...is given a null phonetic form, but retains its grammatical and semantic properties." In other words, *e* is the silent counterpart of *could* in the first clause in 6(i). This assumption accounts for (i) the fact that the subject has nominative Case (*she*) and the fact that we have the perfective auxiliary in its uninflected form (*have* and not *has*). Having the grammatical properties of *could*, *e* requires a nominative specifier and an uninflected form of the auxiliary *have*.

A further argument for the ellipsed *could* comes from "cliticization (a process by which one word attaches itself in a leechlike fashion to another)". (A.Radford,1997: 89)

7.

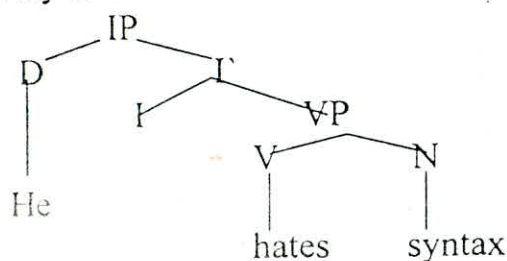
(i) *You've done your duty.*

(ii) *We've seen the Mona Lisa.*

(iii) **He could have seen her, or [she've seen him]*

In English ,the auxiliary *have* cliticizes in sentences 7 (i) and (ii) ; but it cannot cliticize in 7(iii). As *have* "can only cliticize onto an immediately preceding word ending in a vowel or diphthong" , "*have* is blocked from cliticizing onto *she* " because "the presence of the null auxiliary which intervenes between *have* and *she* ." (A.Radford,1997: 90) "Thus, the *null INFL* analysis seems entirely appropriate for elliptical finite clauses." (A.Radford,1997: 90)

Auxiliary finite clauses may also be treated in much the same way as that of IP structures headed by a null I constituent.



“The fact that the INFL node ... contains no overt or covert item is meant to represent the assumption that the head I position of IP is simply *unfilled*” (A.Radford,1997: 90); and we can account for the agreement between *he* and *hates* by assuming that “when INFL is unfilled , the tense and agreement properties of the head V of VP **percolate** up to INFL.” (A.Radford,1997: 90) This assumption is necessary because agreement “typically involves a local (phrase-internal) spec(ifier) -head relation between INFL and its specifier.” (A.Radford,1997: 90) But “ *he* and *hates* are contained within different phrases (*hates* being the head of VP and *he* being the subject of IP), the two are clearly not in a local specifier -head relation.” (A.Radford,1997: 90) “Since *hates* is a third person singular present-tense verb form, the features of INFL (inherited from *hates*) will indicate that it has the features *third person singular present-tense*, and so will require it to have a *third person singular nominative subject*.” (A.Radford,1997: 91)

Pretending that clauses which do not contain auxiliaries actually contain an unfilled auxiliary position has “ the obvious advantage of the IP analysis”, which “ provides a unitary characterization of the syntax of clauses, since it allows us to say that all clauses contain an IP projection ,and that the subject of a clause is always in spec-IP (i.e. always occupies the specifier position within IP) “(A.Radford,1997: 91);and that ” INFL in a finite clause always has a nominative subject, and always agrees with its subject.” (A.Radford,1997: 91)

“A direct consequence of the *unfilled* INFL...of auxiliariless finite clauses is that finite auxiliaries and finite verbs occupy different positions within the clause: finite auxiliaries occupy the head I position of IP, whereas finite nonauxiliary verbs occupy the head V position of VP.” (A.Radford,1997: 91) This may be illustrated by looking at the syntactic behavior of *have* as a perfective auxiliary and *have* as a lexical (i.e. nonauxiliary) verb,

which has the meaning of causative /experimental. It is only the former *have* that may be *cliticized*.

8.

- (i) *They've seen a ghost* (=perfective *have*)
- (ii) * *They've their car serviced regularly* (=causative *have*)
- (iii) * *He'd three students walk out on him* (=experiential *have*)

By assuming "that the finite forms of *have* are positioned in the head I position of IP" (A.Radford,1997: 92) and the perfective *have* is in the head V position of VP and that "*have-cliticization* is subject to an adjacency condition (to the effect that cliticization is only possible when *have* immediately follows the expression to which it cliticizes and is blocked by the presence of an intervening constituent)" (A.Radford,1997: 92), we can account for the ungrammaticality in 9(ii) and (iii). It is only in 9 (i) that *have* "is immediately adjacent to *they*:"

9.

- (i)[IP *They* [I *have*] [VP [V *seen*] *a ghost*]]
- (ii) [IP *They* [I ----] [VP [V *had*] *their car serviced regularly*]]
- (iii) [IP *He* [I ----] [VP [V *had*] *three students walk out on him*]]

In 9 (ii) and (iii), *have/had* "is separated from *they/he* by a null INFL constituent." (A.Radford,1997: 92) "Thus, *have-cliticization* facts suggest that finite clauses which lack a finite auxiliary are IPs headed by an unfilled I constituent." (A.Radford,1997: 92)

Another "substantial empirical evidence that auxiliariless finite clauses are IP constituents headed by an unfilled INFL" (A.Radford,1997: 93) comes from *tag questions*. The sentences that have a perfective *have* are tagged by *have*; while the sentences with a causative *have* are tagged by *do*.

10.

(i) *She has gone to Paris ,has'nt/ *doesn't she?*

(ii) *She has her hair styled by Samy Saloon, doesn't she /*has'nt she?*

“Given the I analysis of perfective *have* and the V analysis of causative *have* and the assumption that all clauses are IP constituents” (A.Radford,1997: 93), we can account for this difference between the perfective *have* and the causative *have* if we make the following assumption. “The I constituent which appears in the tag must carry the same semantic and grammatical properties as the I constituent in the main clause.” (A.Radford,1997: 93) Thus, as the head I position of IP in 10(i) is filled by the perfective *have*, the tag question contains a copy of this auxiliary. But as the head I position of IP in 10(ii) is unfilled , it can only be tagged by the meaningless dummy auxiliary *does* (which carries the same present-tense feature as the unfilled I constituent in the main clause). “The assumption that auxiliaries in tags carry the same grammatical properties as the I constituent in the main clause provides us with evidence for positing that the unfilled I constituent ...carries tense-features (since these are copied in the auxiliary in the tag).” (A.Radford,1997: 93) This means that “the relevant tense-features percolate up from V to I when I is unfilled.” (A.Radford,1997: 93) Therefore, “all finite clauses are IPs “;and “since *to* infinitive clauses are also IPs ,we might generalize still further and say that all finite and infinitival clauses are IPs.” (A.Radford,1997: 93)

Furthermore, “it would follow that all infinitive clauses contain an IP headed by *to* or its covert counterpart *O*.” (A.Radford,1997: 93) “We could say that verbs like *know/hear/let/watch/see* ...select an IP complement headed by the null infinitive particle *O* ;whereas

verbs like *expect*, *judge*, *report*, *consider*, *want*, etc. select an IP complement headed by *to*.” (A.Radford,1997: 94)

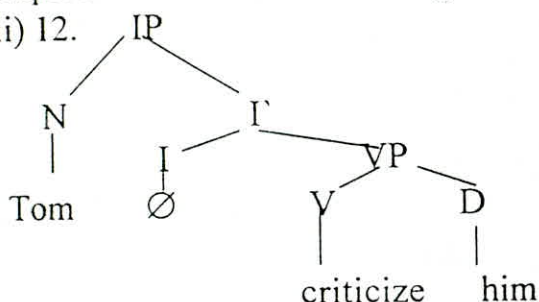
11.

(i) I have never known [Tom *criticize* him]

(ii) I expect [him *to win*]

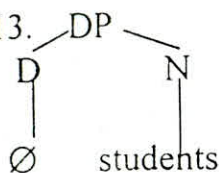
Therefore, verbs like *know/hear/let/watch/see* select IP complements with the following structure:

(iii) 12.



“Having arrived at a unitary characterization of clauses as IPs “(A.Radford,1997: 95), a unitary characterization of the syntax of nominal structures is also aspired. “Nominals are projections of a head D constituent (and hence have the status of D or DP constituents).” (A.Radford,1997: 95) “Bare nominals are DPs headed by an empty determiner” (A.Radford,1997: 96),as shown below:

13.



Thus, “empty categories play just as central a role in the syntax of nominals as they do in the syntax of clauses.” (A.Radford,1997: 96)

However, “the empty determiner has specific semantic and grammatical properties of its own.” (A.Radford,1997: 96)

The semantic properties of the null determiner $\emptyset$ is that it has quantificational properties , person properties and *complement - selection* properties.

14.

(1) Quantificational Properties

(i) Generic properties

(a) *Eggs are fattening.* (i.e. “eggs” in general)

(ii) Existential (=partitive) interpretation

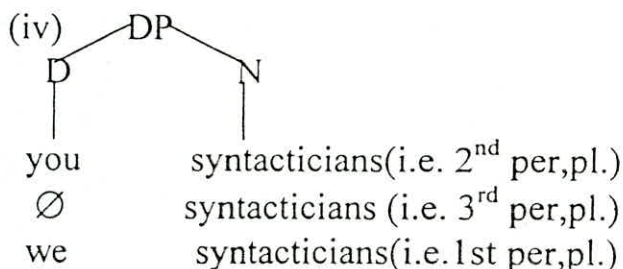
(b) *I had eggs for breakfast.* (i.e. “ some eggs ”)

(2) Person Properties

(i) *You syntacticians take yourselves too seriously, don't you?*

(ii) *Syntacticians take themselves too seriously, don't they?*

(iii) *We syntacticians take ourselves too seriously, don't we?*



Note that the second person expression can only bind a second person reflexive and can only be tagged by the second person pronoun etc. Note also that “the person properties of the DP are determined by those of its head determiner”. (A.Radford,1997: 97)

(3) Complement -selection properties

- (i) *I write poems*
- (ii) *I write poetry*
- (iii) * *I write poem*

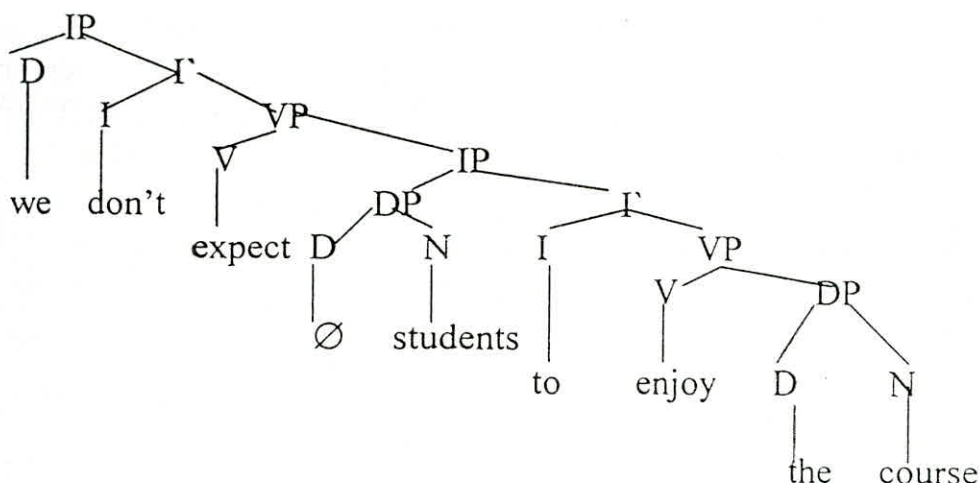
Only if we assume that there is a null determiner $\emptyset$ heading the bold-typed nominals can we account for the ungrammaticality of sentence 14 (3)(iii) since the null determiner only selects a complement that is either a plural count noun such as *poems* or a singular mass noun such as *poetry*. The null determiner seems “to be parallel to those of the overt determiner *enough*”. (A.Radford,1997: 97)

15.

- (i) *I've read enough poems*
- (ii) *I've read enough poetry*
- (iii) * *I've read enough poem*

Therefore, “nominals modified by an overt determiner are DPs, bare nominals are DPs headed by a null determiner and pronouns are determiners without a complement. This means that all nominals and pronominal arguments are projections of an (overt or covert) D constituent”, (A.Radford,1997: 98)(i.e. the DP hypothesis) as shown by 16:

16.



“Just as clauses are projections of an overt or covert I constituent, so too nominals are projections of an overt or covert D constituent. Using the terminology suggested by Jane Grimshaw (1991), we can say that V has an **extended projection** into IP in the same way as N has an **extended projection** into DP.” (A.Radford,1997: 98)

“The parallels between IP and DP may go even further.” (A.Radford,1997: 98) For example, the verb *audit* in sentence 17(i) has a direct projection into the VP *to audit the books*, an extended projection into the IP *the accountants to audit the books*, and a further extended projection into the CP *for the accountants to audit the books*. In sentence 17(ii), the noun *audit* has a direct projection into the NP *audit of the books*, an extended projection into the DP *an audit of the books* and a further extended projection into the PP (prepositional phrase) *for an audit of the books*. Thus, CP and PP might be analyzed as (secondary) extended projections of V and N respectively.” (A.Radford,1997: 99)

17.

- (i) *We can arrange [for the accountants to audit the books]*
- (ii) *We can arrange [for an audit of the books]*

Thus “all clauses are IP constituents, headed by an overt or covert INFL constituent” (A.Radford,1997: 99) and “all nominals are D-projections ,comprising either an overt or covert pronominal determiner (like *he* or *PRO*) used without a complement ,or an overt or covert pronominal determiner(like *the* or $\emptyset$) used with a noun expression as its complement.” (A.Radford,1997: 99) Therefore,” empty categories play a central role in the grammar of English.” (A.Radford,1997: 99)

Exercises

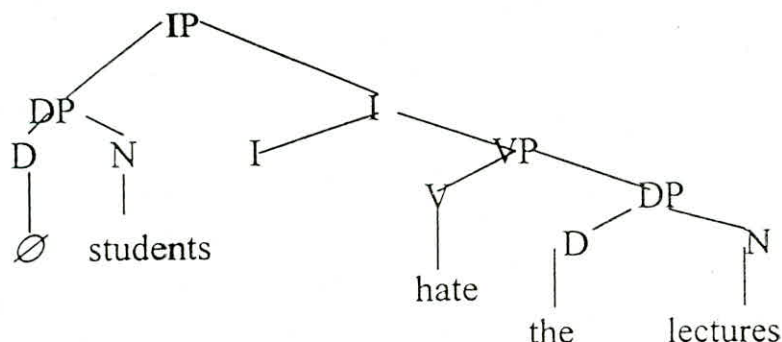
1.Draw tree diagrams to represent the structure of the following sentences, presenting arguments in support of key assumptions made in your analysis. Discuss the features carried by the italicized items, and say how they are checked.

- (i) Students *hate* the lectures.
- (ii) He *had* a car.
- (iii) The suspect denied that he had *stolen* the jewels.
- (iv) I feel sure she will try to come *to* the meeting.
- (v) It is *getting* harder to gain admission to university.

Model answer

In sentence (i), both nominal expressions containing an overt determiner (i.e. *the lectures*) and the bare nominal determiner (i.e. *students*) are determiner phrases ,and they differ only in respect of whether they are headed by the overt third person determiner *the* or the covert third person determiner $\emptyset$. Thus, *the lectures* is a DP formed by merging the determiner *the* with the noun *lectures* , *students* is a DP formed by merging the null determiner $\emptyset$ with the noun *students*. Afterwards, we merge the verb *hate* with the DP *the lectures* to form the VP *hate the lectures*, merging this VP with an

abstract INFL constituent to form the I-bar INFL *hate the lectures* ;and then merging this I-bar with the DP $\emptyset$ *students* to form the IP below:



Evidence in support of positing a null third person determiner $\emptyset$ comes from the fact that a sentence like (i) can only be tagged by a third person pronoun like *they*:

*Students hate the lectures, don't they/ * we/ * you?*

Also, the fact that we use the dummy present-tense auxiliary *don't* in the tag supports the claim the sentence is an IP headed by a null present-tense INFL. The relevant present-tense head -feature percolates up from the verb *hate* to INFL, which must contain a tense-feature in order to be interpretable at LF; i.e. an unfilled INFL *attracts* the tense-feature carried by the head verb of the verb phrase.

The complement-features of the verb *hate* indicate that it requires a complement whose head carries an objective -Case head-feature. The complement of *hate* is the DP *the lectures*, and the head word of this DP is the determiner *the*. Even though determiner *the* does not overtly inflect for Case, it has covert Case -features (indicating that it can be either nominative or objective -e.g. nominative in *The door opened* and objective in *Opened the door*). Therefore, the objective complement-feature of *hate* can be checked against nominative / objective head-feature of *the*, and

both Case -features thereby erased (since Case -features and complement-features are uninterpretable)." (A.Radford,1997: 102)

The specifier-features of *hate* indicate that it requires a specifier whose head is nominative and either first /second person or plural; but as there is no specifier within the VP headed by *hate*, the only way in which *hate* can check its specifier-features is if the relevant features percolate up to INFL (in the same way as the head-features of *hate* do). The specifier of INFL is the DP $\emptyset$ *students*. The head-features of $\emptyset$ satisfy the requirements imposed by specifier-features of INFL (which in turn are inherited from *hate*), so the specifier-features of *hate* can be checked and erased (along with the nominative Case-feature carried by $\emptyset$).

2. Account for the ungrammaticality of the following sentences:

(i) (a) *They had planned to escape.*

(b) **They had planned him to escape* (intended as synonymous with '*They had planned that he should escape*'))

(ii) (a) *We consider him to be right.*

(b)* *We consider to be right* (intended as synonymous with '*We consider ourselves to be right*'))

(iii) (a) *He would like me to retire.*

(b)* *He would like to retire.*

(iv) (a) **He said her to like apples* (intended as synonymous with '*He said she liked apples*'))

(b)* *He said to like apples* (intended as synonymous with '*He said he liked apples*').

(v) (a) *She seems keen for them to participate.*

(b)* *She seems keen for to participate.*

(vi) (a) *He received a request to help the refugees.*

(b)* *He received a request they/them to help the refugees.*

(vii) (a) *He felt himself to be ageing.*

(b)* *He felt himself was ageing.*

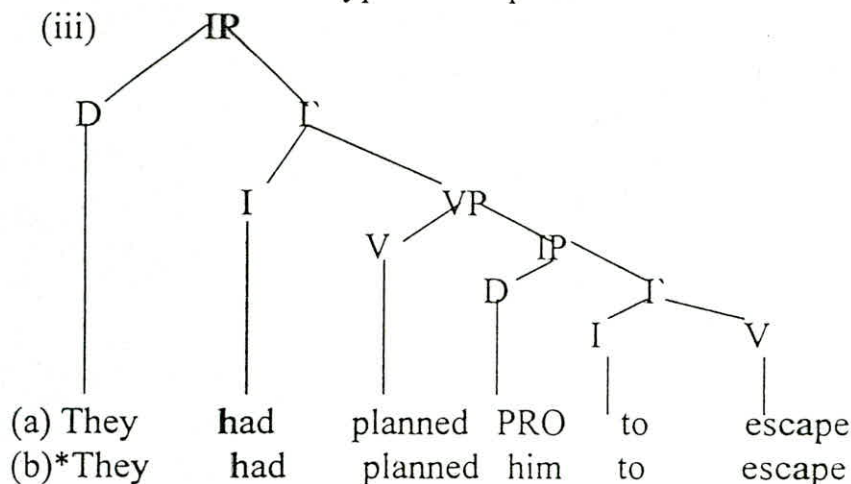
(vii) (a) *You must let yourself have a break.*

(b)* *You must let have a break.* (intended as synonymous with (vii) (a)).

Model Answers for (i) and (ii)

In general, it is clear from the above sentences that different kinds of words select different types of complements, e.g. some select a CP headed by *for*, others select an IP headed by *to*, others select an IP headed by the null infinitive particle 0 (etc.), and others select more than one type of complement.

(iii)



It is assumed that *plan* has a complement feature that makes it take an IP complement headed by infinitival *to*. There is also a specifier-feature of infinitival *to* that can check the null Case of PRO, making this sentence (i.e. sentence (i)(a)) grammatical. And the null -Case head feature carried by PRO is checked by *to*.

In order to account for the ungrammaticality of (i) (b), we could say that the infinitive particle *to* can only check for a null Case. As for the verb *plan*, it is regarded as intransitive in this use, leaving *him* Caseless because it does not check its Case.

Similarly, we can say that *consider* selects an IP complement headed by infinitive *to*, and that *consider* in this use is transitive and

hence can check the objective Case of the infinitive subject *him*, making (ii) (a) grammatical. In accounting for the ungrammaticality of sentence (ii) (b), we could say that *consider* is obligatory transitive when it selects an infinitive IP complement, and hence must check the objective Case-feature which it carries with the objective subject in its infinitive complement, rather than the null-Case PRO subject. A different approach to the same problem would be to say that "there are two different types of infinitive particle (null-Case-*to* and Caseless *to*) and that *consider* selects an infinitive IP complement headed by Caseless *to*, not one headed by null-Case-*to*. If *consider* does not allow an infinitive complement headed by null-Case-*to*, it follows that it does not allow a complement with a null-Case-PRO subject (since if it had a complement with a PRO subject, the Case of PRO could not be checked)." (A.Radford,1997: 105)

VI: Chapter Six : Head Movement

Syntactic structures are not only derived by a series of **merger** operations but also **movement** operations. There are two main types of movement operations that are head movement, which involves “movement from one head position to another.” (A.Radford,1997: 106) The first type “affects auxiliaries in present-day English, and [the] other affected verbs in earlier stages of English.” (A.Radford,1997: 106)

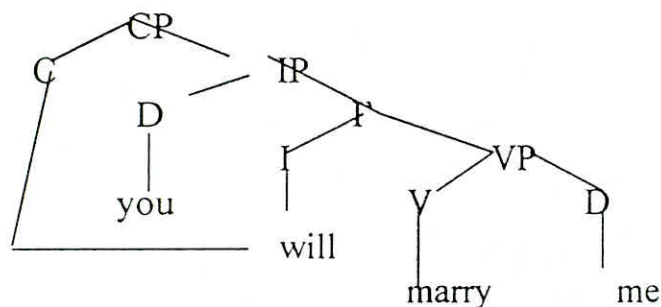
5.1: The Auxiliary -Inversion

Apart from the fact that “complementizers head a separate layer of functional super-structure in clauses, which we termed a complementizer phrase (=CP) with the head C (=COMP) position of CP being filled by complementizers like *that / for/ if* ” (A.Radford,1997: 106), the “inverted auxiliary moves from the head I position in IP into the head C position in CP”. (A.Radford,1997: 107) “The fact that no clause can contain both a complementizer and an inverted auxiliary provides us with strong empirical evidence that inverted auxiliaries occupy the same structural position as complementizers -i.e. that both occupy the head COMP position in CP”. (A.Radford,1997: 107) In other words, they are mutually exclusive ;i.e. “ we can only insert *one* word in a given head position like C ,not *two* words”; (A.Radford,1997: 107)i.e.* [If *will*] you marry me?

“This type of *inversion* operation involves movement of a word from the head position in one phrase into the head position in another phrase (in this case , from the head I position of IP into the

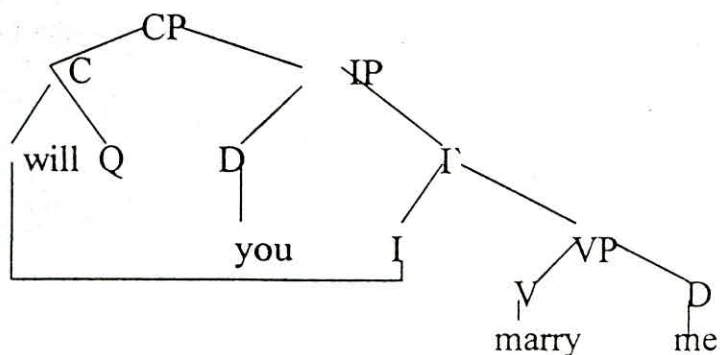
head C of CP) , and so is known more generally as **head-to-head movement** (or **head movement**).” (A.Radford,1997: 108)

1.



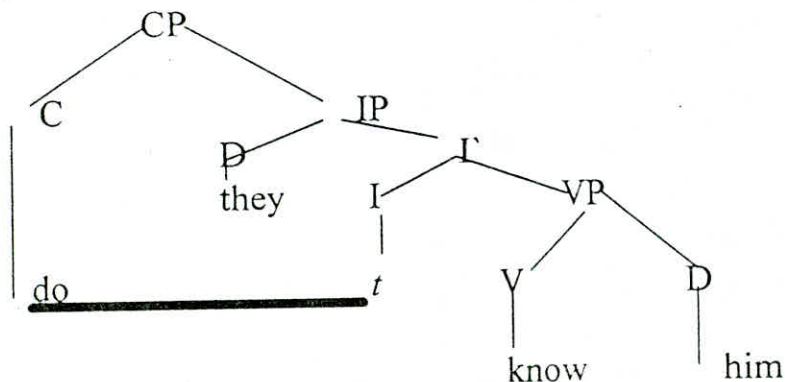
In answering the question as to why auxiliaries undergo inversion in questions, Chomsky (1995) says that “COMP in an interrogative clause is a strong head , and that a strong head has to be filled.” (A.Radford,1997: 108) Moreover, as “ complementizers cannot be used to introduce main clauses in English “(A.Radford,1997: 108) and as the strong COMP node in main-clause questions has to be filled, it is assumed that “a strong COMP node has the power to lure an auxiliary from INFL to COMP.” (A.Radford,1997: 108) In describing what it means to say that COMP has a strong node in questions, Chomsky (1995) says that “COMP in questions contains an abstract question affix Q”. (A.Radford,1997: 108) And “since it is the nature of affixes that they must be affixed (i.e. attached) to an appropriate kind of word” (A.Radford,1997: 108) , it is said that that “ Q must be affixed either to an interrogative complementizer like *if* or to an auxiliary like *will*.” (A.Radford,1997: 108) “The auxiliary *will* moves into COMP in order to satisfy the requirement for the question affix Q to be affixed to an appropriate kind of item.” (A.Radford,1997: 108)

2.



The assumption that “some categories are strong (and conversely others are weak) “(A.Radford,1997: 109) may also be used to account for the questions in English that contain no auxiliary and require “the use of the (dummy or expletive) auxiliary *do*”. (A.Radford,1997: 109) If an interrogative COMP is strong in present-day English and has to be filled, then INFL is weak and does not have to be filled. Moreover, as complementizers cannot be used to fill COMP in main clauses, the only way of filling COMP in interrogative clauses “is to resort to generating the auxiliary *do* in INFL and then raising it from INFL to COMP (to satisfy the requirement for a strong COMP to be filled)”. (A.Radford,1997: 110) The auxiliary *do* cannot be regarded as being entirely generated in COMP “because *do* requires a VP complement , and will only have a VP complement if it originates in INFL”. (A.Radford,1997: 110)

3.



Chomsky (1995) says that “dummy *do* is only used as a **last resort**- i.e. only where needed in order to satisfy some grammatical requirement which would not otherwise be satisfied “ (the relevant requirement here is “the need to fill a strong COMP).” (A.Radford,1997: 110) The “**last resort** condition follows from a more general **economy principle** banning the use of superfluous constituents and operations :from this principle it follows that a dummy item like *do* or an operation like *inversion* are used only when there is no other way of satisfying some grammatical requirement (e.g. the need to fill a strong interrogative COMP).” (A.Radford,1997: 110)

When auxiliaries in questions move from I to C , the vacated head I position in IP remains in place in the form of an **empty category**, which has the same head -features as *will* (i.e. it occupies the head I position of IP) , the same specifier -features (i.e. it requires a nominative specifier ; i.e. *Will she/* her marry me?*), the same complement -features (i.e. it requires the head V constituent of the VP to be in the infinitive form ; i.e. *Will you marry / * marrying me?*) Thus, the empty category is a silent copy of *will*; i.e. a constituent which has the same grammatical properties of *will* (111) but with no phonetic content. This is called a **trace** of *will* since it

has the same grammatical properties. The assumption that moved constituents leave behind a (silent) trace of themselves is the cornerstone of what became known in the 1970 s as **trace theory** , in which a moved constituent is the **antecedent** of its trace (111) with the antecedent of the trace serving as its **binder**; i.e. to determine its properties. Moreover, a moved constituent and its trace together form a (movement) **chain** (111); e.g. C and I form a chain. The moved constituent is the **head** of the chain and the trace is the **foot** ;and they are both two different **links** in the chain.

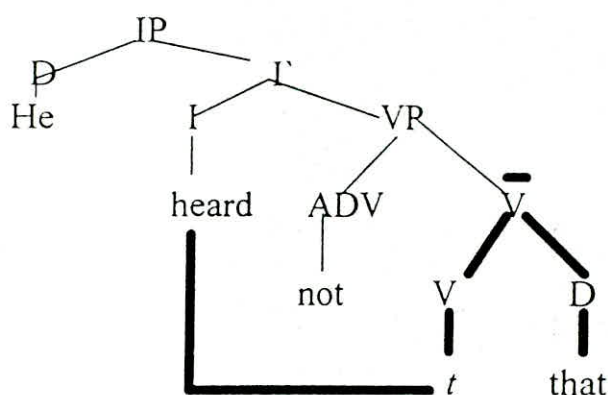
A theoretical argument in support of trace theory (i.e. moved constituents leave behind an invisible empty trace) is the fact that it explains the *upward* nature of movement, which is a direct consequence of the **c-command condition on binding**. If a moved constituent has to bind its trace ,and if a bound constituent has to be c-commanded by its antecedent, it follows that a moved constituent must always move into a position where it c-commands (and hence occurs higher up in the structure than) its trace; hence , movement will always be in an *upwards* direction. (112) A second theoretical argument for the trace theory is the *headedness* of projections; i.e. if all phrases and clauses are projections of a head word category , then IP must be headed by an I constituent ; and if there is no overt I constituent , there must be a *covert* one. (113) In addition to theory -internal considerations such these ,there is also empirical evidence for claiming that a moved constituent leaves behind an empty category trace. Part of this evidence comes from facts about *have*-cliticization ;i.e. *have* cannot cliticize onto the immediately preceding pronoun in inversion structures because the auxiliary moved from I to C leaves behind it an empty category trace *t* in the I position out of which it is moved. This trace prevents the *have*-cliticization in inversion structures due to the **adjacency condition**, which requires the clitic to be immediately adjacent to its host in order for cliticization to be possible. Thus, the sentences *Will we*

have /* *we ve finished the rehearsal?* and *Should I have* /* *I ve called the police?* are ill-formed when there is cliticization of *have* onto the immediately preceding pronoun.

The derivation of sentences (i.e. the way they are formed) is assumed to involve both **merger** and **movement**. As shown earlier, *Will you marry me?* is formed by the merging of *marry* with *me* to form VP ;merging this VP with the auxiliary *will* to form the I-bar *will marry me* ;merging the resulting I-bar with *you* to form the IP *you will marry me*; and finally merging this IP with a C constituent into which the auxiliary *will* moves, forming the CP *Will you marry me*, and leaving a trace behind in I. The derivation of sentences also involves **movement** operations such as **head movement** operation ,which may be simply referred to as **verb movement** or **V movement** since it involves movement of a finite nonauxiliary verb from the head V position of VP into the head I position of IP.

(114) It is assumed that when INFL is not filled by an auxiliary the verb moves out of the head V position in VP into the head I position in IP. (114) This assumption accounts for sentences such *He heard not that* (Julia, Two Gentlemen of Verona ,IV ,ii) in Early Modern English when Shakespeare was writing (around the year 1600) This sentence is assumed to have the following structure:

4.

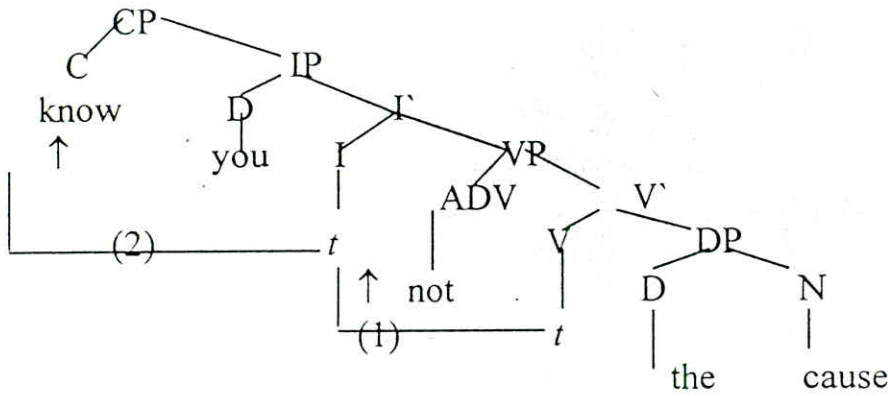


Thus, in the sentence *Saw you my master?* (Speed, *Two Gentlemen of Verona*, I, i) the verb *saw* moves from V to I and then from I to C. This is called two successive applications of head movement, which apply in a successive fashion. The verb first moves into INFL, then into COMP.

There are significant parallels between V-to-I movement and I-to-C movement. In both cases, movement is from one head position to another, representing the general operation of **head movement**, and movement is from a *lower* to a *higher* position, satisfying the c-command condition on binding and allowing the moved head to c-command its trace. In both cases, the moved head can move across an intervening nonhead constituent such as its specifier or an adverb. Both operations are also local operations, reflecting some principle of Universal Grammar. Lisa Travis (1984) suggested that the relevant principle is a **head movement constraint** (=HMC) to the effect that a head can only move from the head position in one phrase to the head position in the immediately containing (i.e. next highest) phrase in the structure.

(117) Therefore, given our assumption "that inversion involves movement from I to C" "questions in E(arly) M(odern) E(nglish) involve the same *inversion* operation as in M(odern) S(andard) E(nglish), which involves movement from I to C." (117) Accordingly, we have an E(arly) M(odern) E(nglish) question as *Know you not the cause?* (*Tranio, Taming of the Shrew, IV, ii*)

5.



“Head movement is said to apply in a **successive cyclic fashion**, moving the verb *know* (in successive steps) first into INFL, then into COMP. Each separate movement operation is local (in that it moves *know* only into the head position in the next highest phrase containing it in the tree).” (118)

In order to account for the fact that “it was possible for finite (nonauxiliary) verbs to move to INFL in EME, but this is no longer possible in MSE” (118) Chomsky makes use of the “strength metaphor ,which allows us to make the assumption “that finite verbs carried *strong* agreement -features (i.e. strong person,/number specifier features in EME, whereas their counterparts in MSE carry *weak* agreement -features). And we might further suppose that only verbs which carry *strong* agreement -features are strong enough to move to INFL- hence that verbs carrying *weak* agreement -features are too weak to move into INFL.” (118) In accounting for the question as to what determines whether finite verbs carry strong or weak agreement features, Radford (1997) says that in accordance with Chomsky (1995) “a plausible answer is that this is correlated with the relative richness of the agreement inflections carried by finite verbs”. (Radford ,1997:119) In other words, “finite verbs have strong agreement features in languages in which they carry rich agreement inflections ,and weak agreement features in

languages in which they carry relatively impoverished agreement inflections.” (119) Radford (1997) draws our attention to the fact that “the third person singular +s is the only regular agreement inflection found on (present -tense) verbs in MSE, in Shakespearean English we find three present -tense inflections, viz. second person singular +st and third person singular +th and +s.” (119)

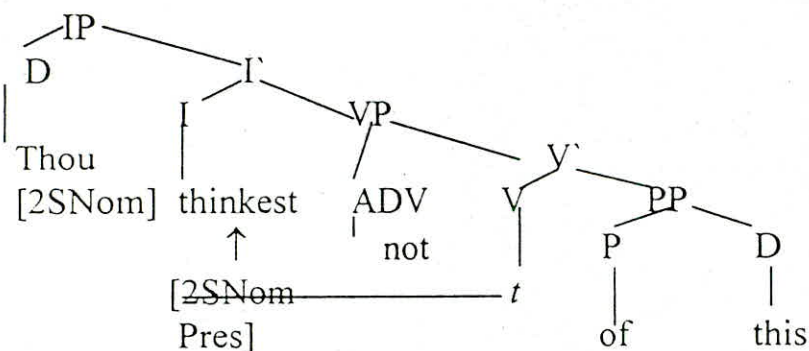
In discussing the difference of strength in the agreement features carried by finite verbs, Radford (1997) cites the difference between EME and MSE, saying that the former was a **null subject language**, as illustrated by *Hast any more of this?* (*Trinculo, The Tempest, II, ii*). Since this sentence has a missing subject (i.e. *you* in *Have you any of this?* as in MSE), it is believed that it has a null subject. But as this null subject occurs in a nominative position (by virtue of being the subject of a finite clause), “it has different case properties from the PRO of infinitives (which has null case).” (120) Hence, this null subject “is generally taken to be a different kind of null subject conventionally designated as **pro** (affectionately known as *little pro*, whereas its big brother is affectionately known as *big PRO*).” (120) By contrast, MSE is a **non- null subject language**.

Therefore, “finite verbs can have a null *pro* subject in a language like EME where they carry strong agreement-features, but not in a language like MSE where they carry weak agreement-features. This difference is because in a language with a rich system of agreement inflections, the agreement inflections on the verb serve to **identify** the null subject” (120) (e.g. the +st on *hast* is a second person singular inflection, and hence allows us to identify the null subject as a second person singular subject with the same properties as *thou*). On the other hand, the agreement morphology of MSE “is too impoverished to allow identification of a null *pro* subject “ (e.g. if we asked * *Can help?*, there is no of telling from the agreementless form *Can* whether the missing subject is *I, you, he, they* or whatever. In other words, “there is parametric variation

across languages in respect of whether finite verbs carry strong or weak agreement-features, and that the relative strength of these features determines whether nonauxiliary verbs can raise to INFL, and whether null subjects are permitted or not.” (120)

As for the reason why finite verbs should raise out of V into I in languages such as EME where they carry strong agreement features, this is provided by **checking theory**. As finite verbs in EME carry strong agreement features, they raise to INFL in order to check their strong agreement features (i.e. its person/number specifier features) against those of the subject occupying the specifier position within IP. This is because “movement checks strong features which would otherwise remain unchecked.” (120) This is illustrated by the analysis of the sentence *Thou thinkest not of this now* (Launce, *Two Gentlemen of Verona* IV, iv) :

6.



Since *thinkest* has strong agreement features and since subject-verb agreement involves a local checking relation between INFL and its specifier, *thinkest* (i.e. V) raises to INFL (i.e. I). This way *thinkest* can check its [2SNom] specifier-features against the corresponding [2SNom] head-features of *Thou*; and as the two sets match, the specifier-features of *thinkest* are erased along with the nominative case-feature of *Thou* because it is uninterpretable. Thus, the movement of *thinkest* ensures that the derivation does not crash and

that INFL carries a tense-feature (viz. the present -tense head-feature of *thinkst*) , "thereby ensuring that INFL will be interpretable at the level of logical form (if we assume that INFL must carry a tense-feature in order to be interpretable at LF)." (121)

In MSE ,on the other hand, feature checking of the nonauxiliary finite verb is by means of **attraction**, rather than movement. For example, the specifier -features of nonauxiliary finite verbs **percolates** from V to INFL in order to satisfy the requirement that INFL carry a tense-feature (in order to be interpretable at the level of LF) and to enable specifier -features of the verb to be checked. This process of feature -percolation is referred to by Chomsky as **attraction**. Thus, verbs with strong agreement features undergo movement; but verbs with weak agreement features involve attraction. The reason why verbs with strong agreement features undergo movement ,which may be described as "movement of a word" (123); but verbs with weak agreement features involve attraction ,which may be described as "movement of a set of features" (123), is because the former involves movement of the complete set of features that compose a word be they *phonetic, grammatical and semantic features*. On the other hand, the latter operation (i.e. "attraction) affects only the grammatical features carried by an item." (123) Thus, weak grammatical features "can be moved on their own" ;but strong grammatical features require the movement of the whole word with all its features : *phonetic, grammatical and semantic*. "In consequence of the **economy principle** only the minimal set of features needed to satisfy some grammatical requirement undergo movement in a given structure". (123) In turn, when there are weak grammatical features , they can be moved on their own; and it is only when there are strong grammatical features that the whole item has to be moved with the required grammatical feature. Therefore," attraction is more economical than movement" (123) ;and "the economy principle will

ensure that attraction will be preferred to movement wherever possible." (124)

Both **I movement** (e.g. auxiliaries move to COMP because an interrogative COMP is strong and a strong head must be filled) and **V movement** (i.e. movement of V to INFL) are "two different reflexes of a general head movement operation," (124) which is "subject to a strict locality constraint (the **head movement constraint**)." (124) Strong agreement features of finite verbs in EME were checked by movement of the verb (along with its features) from V to INFL ;whereas weak agreement features of finite verbs in MSE are checked by attraction (i.e. percolation) of the relevant agreement features from V to INFL (with the verb itself remaining *in situ* in the head V position of VP)." (124)

Exercises

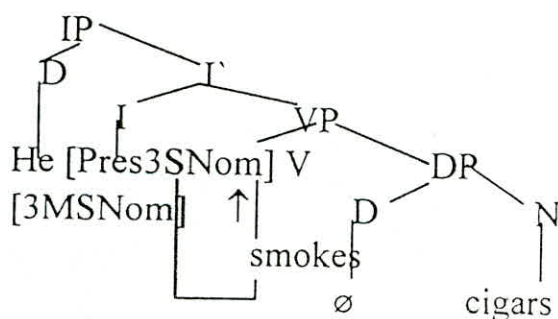
I: Discuss the derivation of each of the following (adult) sentences, drawing a tree diagram to represent the structure of the overall sentence and saying why the relevant derivation crashes or converges.

1. He smokes cigars
2. *Smoke he cigars?
3. *If he smokes cigars?
4. Does he smoke cigars?

In addition, discuss the derivation of each of the following child sentences produced by children aged 2-4 years, and identify the nature of the child's error in each case:

5. Is the clock is working?
6. Did we went to somebody's house?
7. Does it opens?

Model answer for 1



This tree is made by the merging of the $\emptyset$ determiner with noun *cigars* to form a DP; then merging this DP with the verb *smokes* to

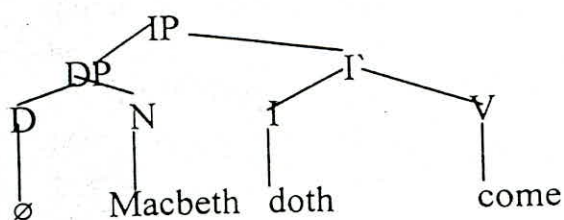
form the VP *smokes* $\emptyset$ *cigars*; then merging this VP with a null INFL to form the I-bar INFL *smokes* $\emptyset$ *cigars*, which in turn is merged with the pronoun *he* to form the IP above. The pronoun *he* carries the head -features [3MSNom] indicating that it is third person masculine singular nominative. The verb *smoke* carries the head -feature [Pres] indicating that it is a present -tense form. This feature is attracted to INFL, in order to ensure that INFL will be interpretable at LF (by virtue of carrying a tense-feature). The verb *smoke* also carries the specifier -feature [3MSNom], indicating that it requires a third person masculine singular nominative subject. But since the specifier-features of a head can only be checked in relation to the specifier of the phrase containing the head, we cannot check the specifier-features of *smokes* against the head-features of *he* because the two are contained in different phrases (*smokes* is the head of VP; and *he* is the specifier of IP). And since finite verbs in MSE carry weak agreement-features (as indicated from the fact that null subjects are not allowed), the verb cannot move from V to INFL. Therefore, the weak agreement-features carried by the verb *smokes* are checked by **percolation(attraction)** to INFL. The [3MSNom] specifier-features of INFL can then be checked against the corresponding [3MSNom] person/number/ case head-features of *he*, and thereby erased (along with the uninterpretable nominative -case head-feature of *he*). This analysis correctly predicts that since INFL in this sentence contains no overt item (it only carries a present -tense head-feature), it may be tagged by a present-tense form of the dummy auxiliary *do* ;(i.e. *He smokes cigars ,does he?* /**smokes he?* Or *He smokes cigars ,doesn't he?*)

II: Exercise

Discuss the derivation of the following Shakespearean sentences:

1. Macbeth doth come. (Third Witch, Macbeth, III, ii)
2. He loves not you. (Lysander, Midsummer Night's Dream, III, ii)
3. Wrong I mine enemies? (Brutus, Julius Caesar, IV, ii)

Model answer for 1



Note that bare nominals even proper ones are DPs headed by $\emptyset$. Some languages actually have an overt determiner ;e.g. /ʔalhamdaan/ in Arabic.

VII : Chapter Seven : Operator movement

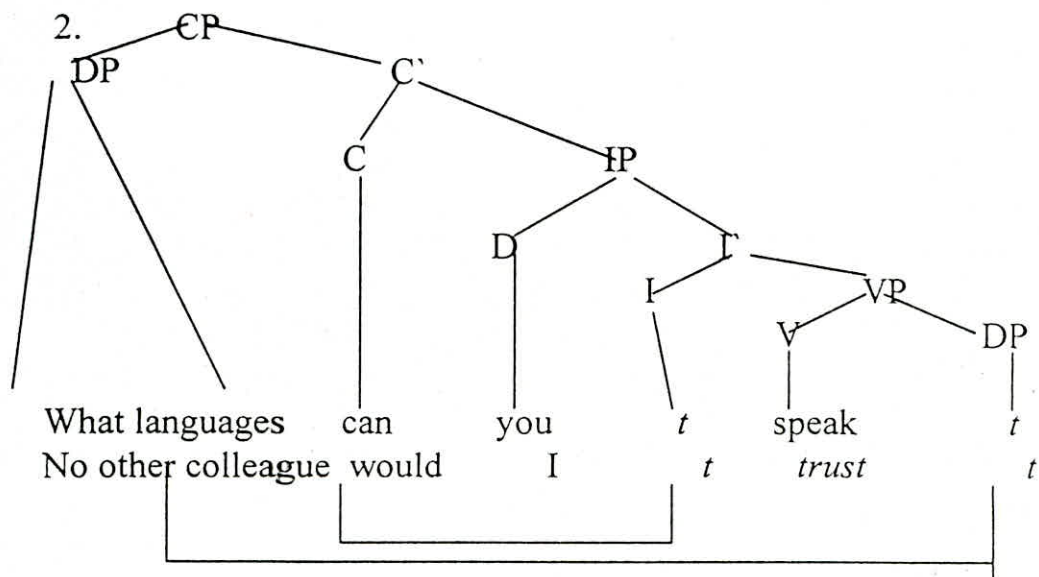
Operator movement “applies to expressions which contain an (e.g. interrogative or negative) **operator** of some kind.”(130) “CP comprises a head C constituent (which is filled by a complementizer in some structures and a preposed auxiliary in others) and an IP complement.” (130) But as regards the position of the bold-printed pre- auxiliary constituents in the following sentences ,these “are moved into some position preceding the inverted auxiliary.” (131)

1.

(i) **What languages** *can* you speak?

(ii) **No other colleague** *would* I trust.

If inverted auxiliaries occupy the head C position of CP, then the preposed operator phrases are moved into some prehead position within CP . And if specifiers are positioned before heads, then these operator phrases occupy the **specifiers position within CP(i.e. spec-CP)**.



Note that *what* and *no* in the operator phrases are regarded as determiners. Whereas the head movement is from I to C ; the **operator movement** or **O movement** is to spec-CP and referred to as wh-movement when it applies to expressions containing an operator beginning wh- such as *who* ,*what* ,*which* ,*when* etc. Both the moved head and the moved operator leave behind them a trace in their *extraction site*. The operator expression originally functions as the complement of the verb; this is verified by the fact that *echo* questions have the *wh-in-situ*; and the fact that the negative operator originates as the complement of the verb.

3.

(i) *You can speak what languages?*

(ii) *I would trust no other colleague.*

The *wanna-contraction* also provides us with the fact that these operators leave behind them a trace in the position out of which they have been extracted. In colloquial English ,the string *want to* can sometimes be contracted to *wanna*, as in sentence 4(i).

4.

(i) *I want to go home/ I wanna go home.*

(ii) *Who would you want to help you?/ * Who would you wanna help you?*

wanna-contraction is not possible in 4(ii) because *who*, which has been moved from its underlying spec-IP of *to help* to the spec-CP position at the front of the clause, has left behind a trace in spec-IP. It is the presence of the trace that prevents *wanna* contraction, which is a process of cliticization which is subject to an adjacency condition, requiring that the two words be immediately adjacent. This assumption is verified by the echo question *You'd want who to help you?*

Another argument for the fact that these operators leave behind them a trace in the position out of which they have been extracted comes from the facts about *have*-cliticization: "the perfective auxiliary form *have* has a clitic variant /v/ and can cliticize to an immediately preceding word which ends in a vowel or diphthong." (133) *Have* in sentence 5(i) cannot be cliticized, as shown by the ill-formedness of sentence 5(iii), because *which students* is the subject of *have* in the echo question counterpart, as shown in sentence 5(ii). And if we assume that the moved phrase *which students* leaves behind it a trace, we have 5(iv).

5.

(i) *Which students would you say have got most out of the course?*

(ii) *You would say which students have got most out of the course?*

(iii)* *Which students would you say've got most out of the course?*

(iv) *Which students would you say t have got most out of the course?*

On the other hand, *have*-cliticization is possible in sentence 6 (ii) because the trace of *who* does not intervene between *who* and *say*, as shown in 6 (iii):

6.

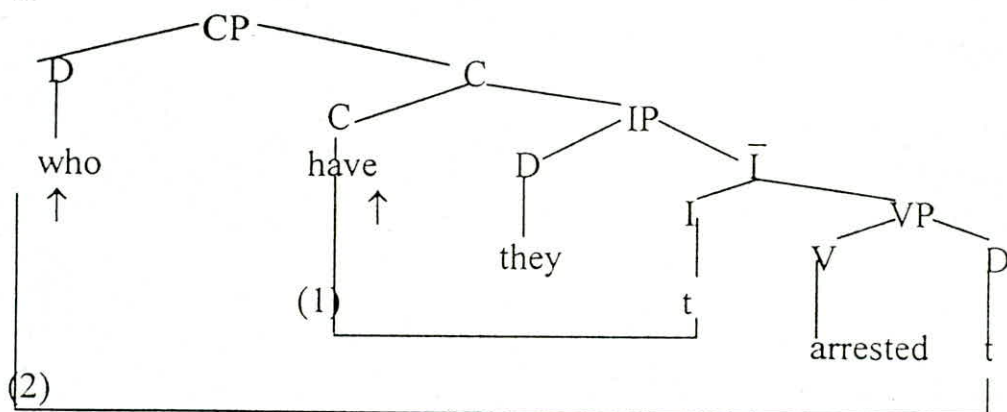
(i) *Who* have they arrested?

(ii) *Who* 've they arrested?

(iii) *Who* 've they arrested *t*?

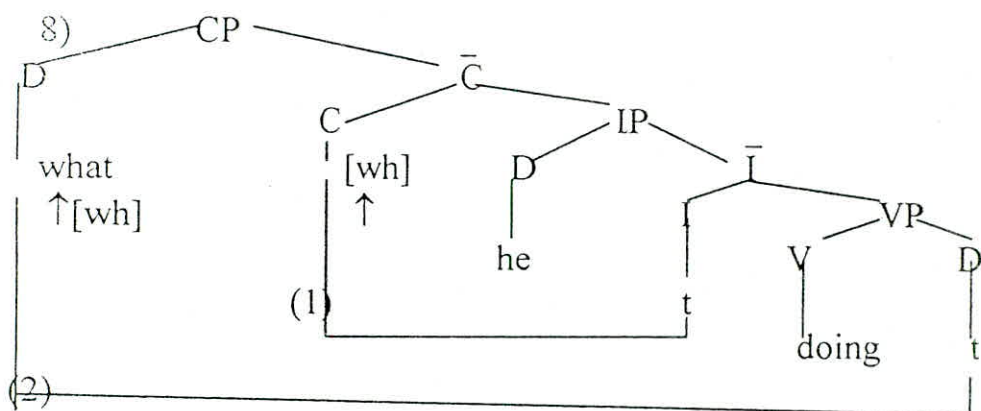
Sentences 6 also provide evidence of the fact that “preposed operators move into spec-CP and inverted auxiliaries move to COMP” (134), as shown by 7. And since *who* is immediately adjacent to *have*, as shown in 7, *have* can be able to cliticize onto *who* and the fact that sentence 6 (iii) is grammatical provides further evidence that the position spec-CP is the **landing site** for preposed operator expressions.

7.



A. Radford (1997) says that since “the ultimate goal is explanation, an important question to ask is why interrogative operator expressions should move to spec-CP. The answer is that

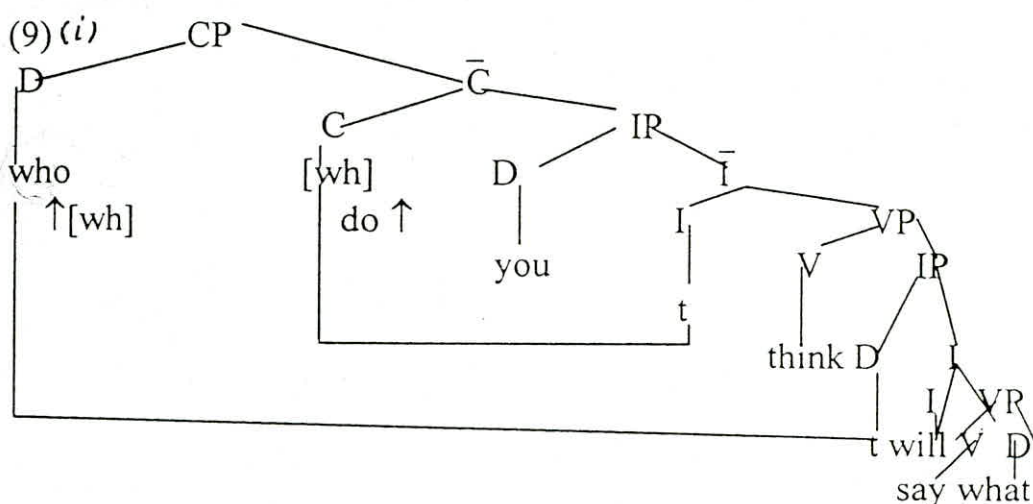
operator movement is driven by Lasnik's (1995) principle of **enlightened self-interest** (which specifies that constituents move in order to check features carried by other constituents, so that movement is motivated by a form of **altruism**).” (134) In such a case , it is assumed that the “head COMP constituent of CP (in questions) carries an interrogative specifier feature, and that (correspondingly) wh-operators like *who* carry an interrogative head feature.” (135) Thus, “ wh-operators move to spec-CP in order to check the interrogative specifier feature carried by COMP (which needs to be checked and erased ,since specifier features are uninterpretable).” (135) For example, the interrogative in sentence *What was he doing?* “the inverted auxiliary *was* originates in INFL ,and the pronominal determiner *What* originates as the complement of *doing* -as in the corresponding echo question *He was doing what?*.” (135) This movement of the auxiliary , which is from INFL to COMP , is also necessary because it is assumed that “COMP in questions is a strong (perhaps affixal) head.” (135) As for the movement of *What*, it is also because “an interrogative COMP carries a [wh] specifier feature”. (135)



“Since *What* and COMP are contained within the same CP projection ,as shown in 8, [wh] specifier feature of COMP can be

checked against the $[wh]$ head feature of its specifier *What* “(135) because checking “involves a local spec-head relation between a wh-COMP and its wh-specifier”, (135)resulting “in erasure of the specifier feature of COMP “(135) This is because the specifier features are uninterpretable ; but “the $[wh]$ head-feature of *What* is interpretable at LF (since the fact that *what* is an interrogative operator plays a role in determining the semantic interpretation of the sentence) and so is not erased.” (135)

“Checking theory provides a neat account of why only one wh-operator is preposed in multiple wh-questions in English.” (136) In other words, the assumption that wh-movement is motivated by the need to check the $[wh]$ specifier -feature of COMP in questions provides an interesting account of why in multiple wh-questions only one wh-operator can be preposed”, as shown in (9).



(9ii) **Who** do you think will say *what*?

(9iii) **What* **who** do you think will say?

As to the question of why *who* is able to move to spec-CP but not *what* can be accounted for by the suggestion that “*who* is closer to

COMP than *what*, and the **economy considerations** or **condition** favor shorter movements than longer ones." (137) That is, "COMP lures the *nearest* wh-operator into spec-CP." (137) This condition "is known as the principle of **shortest movement**" or the **minimal link condition** (**the minimality condition**) since it favors the formation of movement chains with **minimal links**. It is to be noted that the head movement constraint also subsumes the **minimality condition**; i. e. "a head can only move into the next highest head position in the structure containing it." (137)

It is also to be noted that the whole DP, rather than simply the D, is moved into spec-CP by **pied piping** with the wh-operator, as shown in 10.

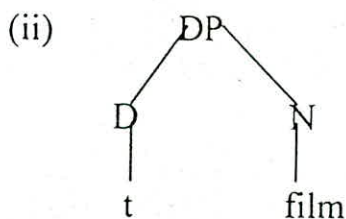
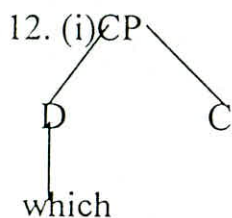
10. (i) *Which film* did you see?
 (ii)* *Which* did you see *film*?

Pied piping of the complement of the wh-operator (i.e. *film*) is necessary due to Chomsky's (1995) constraint on chains, as stated in 11.

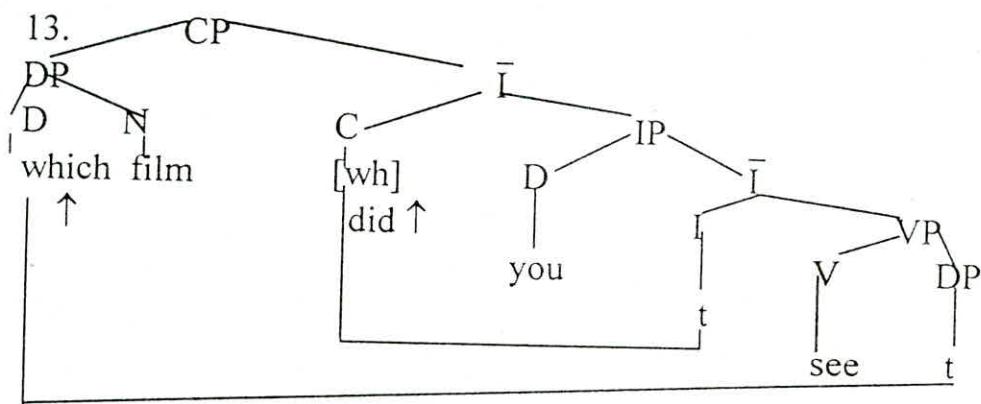
11.Chain Uniformity Principle

A chain must be uniform with regard to phrase structure status

Accordingly, the ungrammaticality of sentence 10(ii) is the result of "a nonuniform chain whose head (= the preposed wh-word) is a maximal projection; but whose foot (= the trace of the wh-word) is not" (139), as shown by 12.



In 12(i) “the D node containing *which* is a maximal projection (i.e. it is the largest category headed by *which*)”; whereas in 12(ii), “the D node containing the trace *t* is not a maximal projection since the maximal projection of the D node containing the trace *t* is the DP *t film*.” (139) On the other hand, if the whole DP is preposed, we have the configuration in 13.

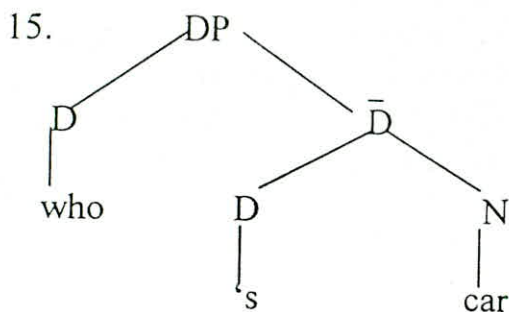


The chain in (13) is uniform “since its head is the DP *which film* (which is a maximal projection) and its foot is a DP-trace (hence also a maximal projection).” (139) Therefore, “operator movement moves a D alone wherever possible “ but “ moves a DP when movement of D alone would violate the **chain uniformity principle**.” (140) “The more general principle which this suggests is that movement operations move only the *minimal* (i.e. the smallest) constituent required to satisfy UG principles : this can be argued to be a particular instance of the more general **economy principle** , which in effect tells us to move features rather than constituents whenever possible , and (when moving constituents) to move the smallest constituent possible the smallest distance possible.” (140)

This **economy principle** is still shown to be active in the sentences in (14).

- 14 (i) *Whose car* did you borrow?
 (ii)* *Whose* did you borrow *car*?
 (iii) * *Who* did you borrow '*s car*?

Despite the **economy principle**, which requires that when we do move constituents, we move the smallest constituent possible the smallest distance possible sentences (14) (ii) and (iii) are ungrammatical. Following a suggestion attributed to Richard Larson in Abney (1987), the genitive 's in English is assumed to be a "head determiner which takes a D projection as its specifier, and an N projection as its complement" (140), making *whose car* have the structure in (15).



It is assumed that " 's attaches to *who*, forming *who 's*, written as *whose*." (140) Accordingly, *who* on its own cannot be preposed "since this will result in the suffix 's being stranded ('s is unable to attach to *who*, since *who* has been moved to the front of the sentence and is no longer adjacent to 's)." (140) Also, *who 's*, written as *whose*, cannot move since it is not constituent, as shown in (15); and only "constituents can undergo movement operations". (140) "So the minimal constituent which can be preposed is the whole DP *whose car* " (140), as shown in (14).

The **economy principle** also holds in sentences (16); but it is the **constraint against preposition stranding**, which holds in formal English (and many other languages -e.g. French, Italian,

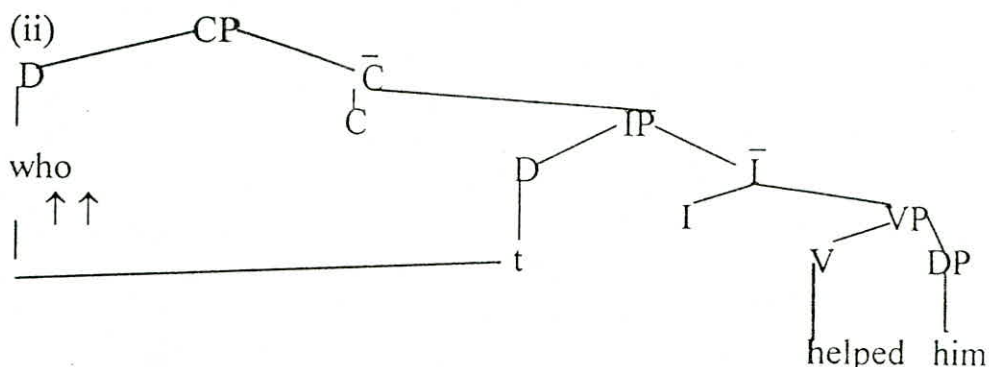
Spanish ,etc., but not in colloquial English) , that makes sentence (16) (i) ungrammatical. **Preposition stranding** is the separation of the preposition from its complement.

- (16) (i) ***Whom** were you talking to ?
 (ii) **To whom** were you talking ?
 (iii)* **Talking to whom** were you?

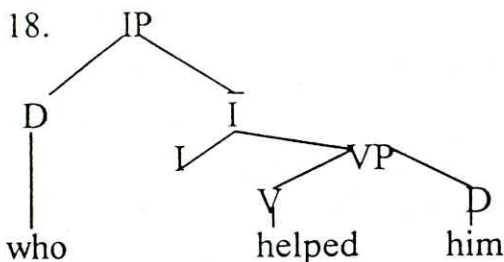
As for the ungrammaticality of (16) (iii), this is due to the **economy principle** “(which requires that only the *minimal* constituent required to ensure that the [wh] specifier-feature of COMP can be checked should be preposed).” (142)

The assumption that the defining characteristics of wh-questions is that they contain a wh-specifier (i.e. a wh-operator in spec-CP) is called into question in sentence (17)(i) with its derivation in (17)(ii) since it does not trigger auxiliary inversion.

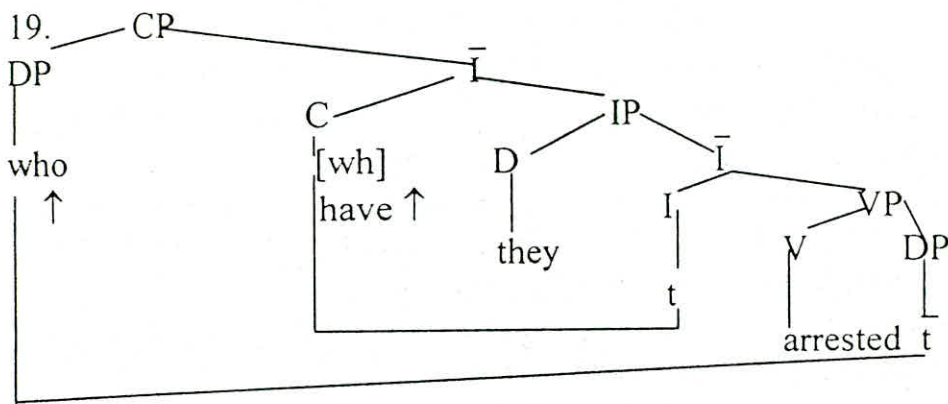
(17)(i) Who helped him?



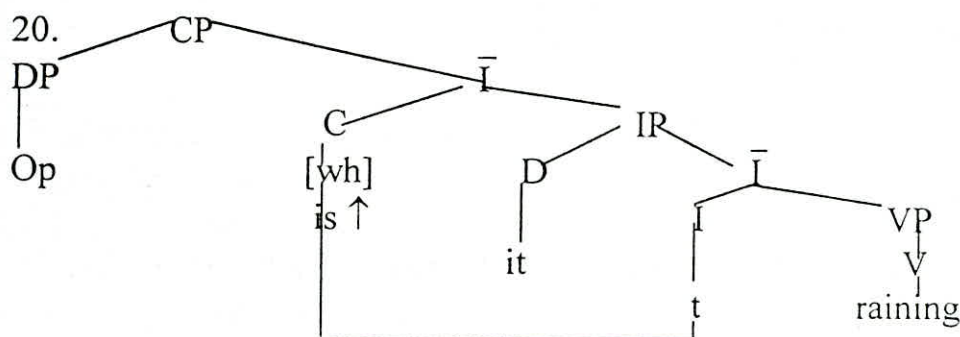
Accordingly , following Grimshaw (1993) sentence (17)(i) is simply an IP since *who* does not move to spec-CP, as shown in (18).



“This would mean that interrogative clauses with interrogative subjects have the status of IPs...but other types of interrogative clauses have the status of CP.” (144) The requirement for a question to have an interrogative specifier is satisfied in this case by simply projecting the clause as far as IP “since the relevant IP has the interrogative operator *who* as its specifier.” (144) It is, therefore, “interpretable as a question at LF without the need to project the structure any further.” (144) But in *Who have they arrested?* (144) “the clause has to project beyond IP to CP (and the operator *who* move into spec-CP) in order to generate a structure containing an interrogative operator as its specifier (i.e. a structure which is interpretable as a question at LF).” (144)



As regards yes-no questions , they contain (as suggested by Grimshaw 1993) “ an abstract question operator ...which is directly generated in spec-CP(i.e. which is positioned in spec-CP by merger rather than movement),” (145)as shown in (20).



“**Op** denotes a null yes-no question operator which is merged with the C-bar *is raining* to form the CP *Op is it raining?*” (145) “Given the null operator analysis , we could posit that yes-no questions have essentially the same syntax in present-day English as in Early Modern English , save that yes-no questions could be introduced by the overt operator *whether* in Early Modern English, but are introduced by a covert operator *Op* in present-day English.” (145) For example, in Early Modern English we have *Whether had you rather lead mine eyes or eye your master's?* (Mrs. Page, *Merry Wives of Windsor*, III, ii) In present-day English , on the other hand, yes-no questions are only introduced by *whether* when they are transposed into reported speech ;e.g. *He asked whether I was feeling better* from *Are you feeling better?*, *he asked*. Finally, the assumption that yes-no question CPs contain an abstract null yes-no question operator in spec-CP makes the “hypothesis that a clause is only interpretable as a question at LF if it contains an interrogative specifier ...all the more plausible.” (146) “A clause can only be interpreted as an interrogative if it contains an interrogative

specifier" (147) be that specifier in spec-IP ,as in *Who said that ?*,
or in spec-CP ,as in *What did he say ?*

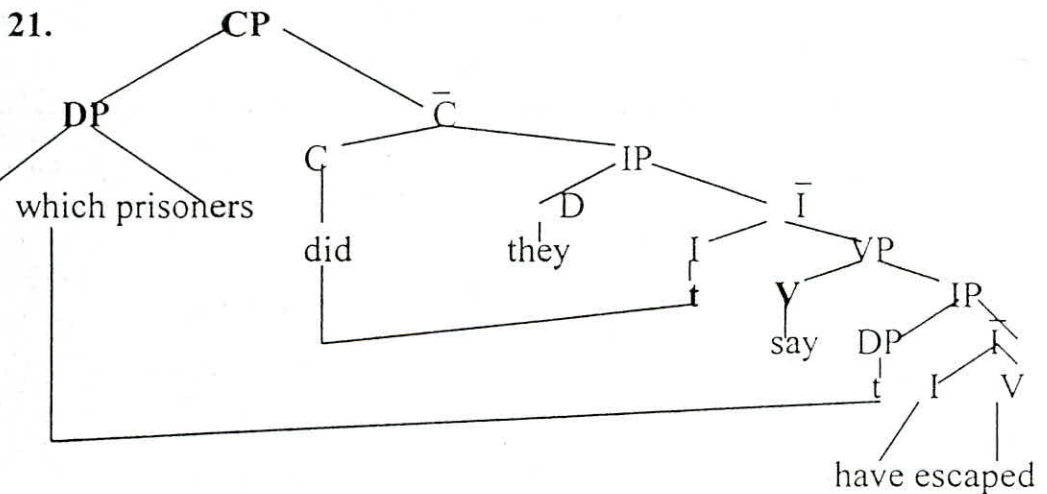
Exercise

I. Account for the (un)grammaticality of the following sentences in Modern Standard English

1. Which prisoners did they say have escaped?
2. * Which prisoners did they say 've escaped?
3. What color did you choose?
4. * What did you choose color?
5. What did he think would happen to who?
6. * Who did he think what would happen to?

Model answer for 1

That the DP *which prisoners* functions as the subject of *have escaped* is shown by its position in the corresponding echo question *They said which prisoners have escaped?*; therefore sentence no.1 has the derivation.



Since COMP is strong in an interrogative clause, the dummy auxiliary *did* is generated in INFL and then moved to COMP as a last resort, thereby satisfying this requirement of filling a strong COMP. The wh-operator *which* moves into spec-CP in order to check the [wh] specifier -feature carried by an interrogative COMP; i.e. in order to ensure that the clause has an interrogative specifier so that it can be interpreted as a question at LF. But *which* cannot move on its own because this will lead to a violation of the **chain uniformity principle** since it results in a chain whose head (*which*?) is a maximal projection but whose tail (the trace of *which*?) is a minimal projection. Thus, the noun *prisoners* is pied piped along with the wh-operator *which* and the whole DP *which prisoners* is moved into spec-CP by **operator movement**. And since a moved constituent leaves behind a trace, it is the trace intervening between *say* and *have* that blocks *have* from cliticizing onto *say*, making sentence (2) ungrammatical.

VIII : Chapter Eight : Subjects

It was previously assumed that “subjects occupy the specifier position within IP” (151); but it will be shown that “subjects originate in the specifier position within VP, and are subsequently raised to spec-IP for checking purposes by a movement operation known as (subject) raising.” (151)

Looking first at the structure of *expletive* sentences with the *expletive there* (i.e. a *dummy* or *pleonastic* constituent), we find that “*expletive there* seems to have the categorial status of a pronominal determiner since like other pronominal determiners (i.e. personal pronouns as *he/she/it*), it can occur in sentence tags.

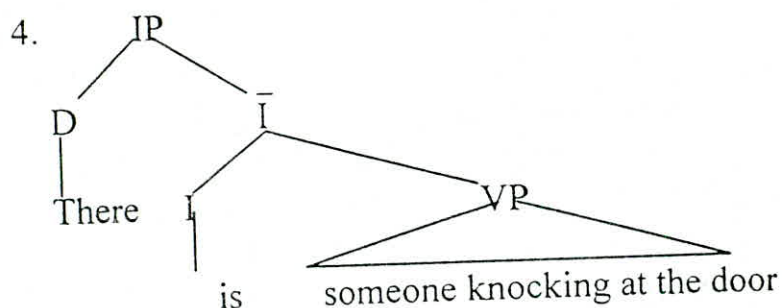
1. (i) *There* is nobody living *there*.
(ii) *There* is someone knocking at the door.
(iii) *There* are several patients waiting to see the doctor.
- 2.(i) *There* is nobody living *there*, is *there*?
(ii) *There* are several patients waiting to see the doctor, aren't *there*?

It is to be noted that in sentence (1) (i), there are two different occurrences of *there*. The second occurrence is a locative pronoun; but the first occurrence is an *expletive* (i.e. a *dummy* or *pleonastic*) constituent. It has an unstressed vowel /ð/ and does not have a locative interpretation. It also has no intrinsic reference.

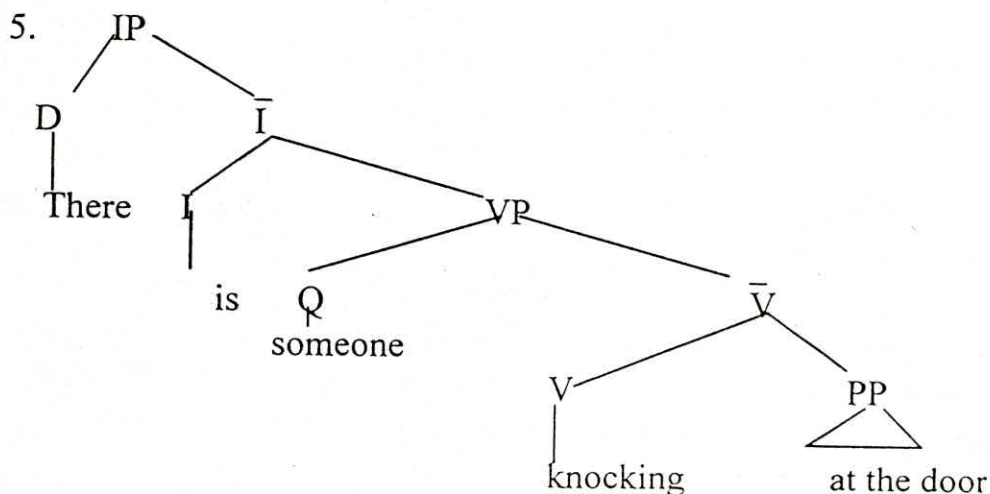
Evidence that the pronoun *there* occupies the specifier position in IP is provided by the claim that the auxiliary *is/are* can be moved in front of it (into COMP) in yes-no structures.

- 3.(i) Is *there* nobody living there?
(ii) Are *there* several patients waiting to see the doctor?

Is / are originate in the head I position of IP and move across the *expletive there*, which occupies the specifier position in IP, into the head C position of CP. Moreover, the fact that the auxiliary *is / are* move across the *expletive there* in getting to the head C position of CP suggests that *expletive there* must be in spec-IP. Also, given that auxiliaries select a VP complement, then it is in the head I of IP. This in turn accounts for the fact that the progressive auxiliary *be* selects a complement headed by a verb in the +ing form.



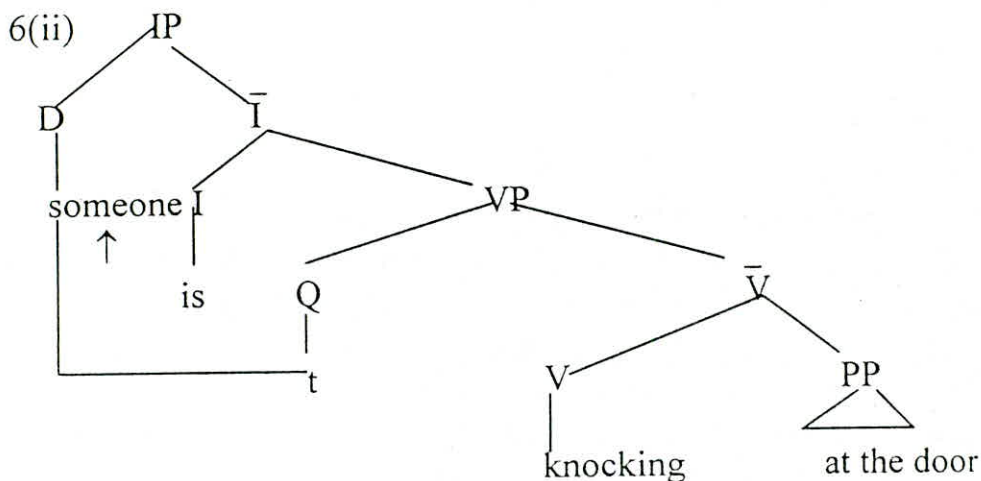
As regards the structure of the VP itself, we may regard that *someone* in this VP is the subject once we have made the plausible assumption that "the subject of a particular constituent is the specifier position within the relevant projection"(152), as shown (5):



The head V constituent (=knocking) of the VP merges with its PP complement (=at the door) to form a verbal expression which is conventionally termed a $\bar{V}$ ($V' = V$ -bar) *knocking at the door*, which is predicated to the pronominal quantifier *someone*, so forming the overall VP *someone knocking at the door*.

However, in a sentence such as 6(i), we assume that *someone* originates in spec-VP but “**raised** into spec-IP “ because it is a “nonexpletive structure.”(153) This is in keeping with the assumption “that constituents can *move* from a lower to a higher position within the sentence containing them” (153) (e.g. auxiliaries can move from I to C ,and operator expressions can move from VP -complement position to CP -specifier position). Thus, *someone* originates in spec-VP and remains *in situ* in expletive structures; but in nonexpletive structures ,it is raised, as shown in 6(ii):

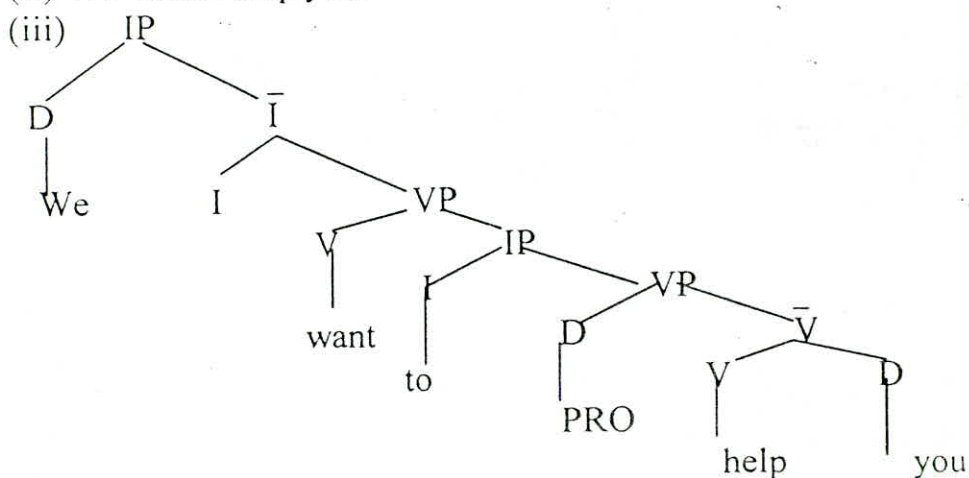
6(i) *Someone* is knocking at the door.



This movement operation raises *someone* from being the subject of VP to become the subject of IP; therefore, it is called **subject-to-subject raising** (abbreviated as **subject raising** and generally known as **the VP-internal subject hypothesis**). The core assumption of the VP-internal subject hypothesis is that subjects originate in spec-VP and remain there in expletive structures, as in (4) and (5), and in control structures, as in 7.

7(i) We want to help you.

(ii) We wanna help you.



If we assume that "PRO subjects originate (and remain) in spec-VP"(155) (see Baltin 1995,p.244 for details) , as shown 7(iii), then "there is no (overt or covert) category intervening between *want* and *to*." (155) ; accordingly, we can account for the fact that *to* can cliticize onto *want*, as shown in 7(ii). This analysis requires that we assume that the null case carried by PRO " is checked from outside its containing VP by infinitival *to*, in much the same way as in exceptional case-marking structures like *We expect him to resign*, the case of *him* is checked from outside its containing phrase by the verb *expect*." (156)

Further evidence for positing that moved subjects leave behind traces in spec-VP comes from the syntax of reflexives, which "generally require a local c-commanding antecedent within the phrase containing them." (156) For example, in (8) (i) the subject originates in spec-VP as the subject of *defeated*, and is then raised into IP ,where it becomes the subject of *has* -leaving a trace *t* behind in the spec-VP position which it vacates, as shown in (8) (ii).

(8) (i) John has certainly defeated *himself*/* *themselves* this time.

(ii) [_{IP} John [_I has [_{VP} _t certainly defeated *himself*/* *themselves*


this time

Following Chomsky (1995) that " a trace is a *silent* copy of the relevant moved constituent , it follows that traces will have the same syntactic and semantic properties as their antecedents , and will differ from their antecedents only in that they have no overt phonetic form". (157) It ,accordingly , follows that the trace in (ii)

has the same *third person masculine singular* features that its antecedent *he* has, making the reflexive pronoun *themselves* ungrammatical in this structure. This analysis can also account for the sentences in (9).

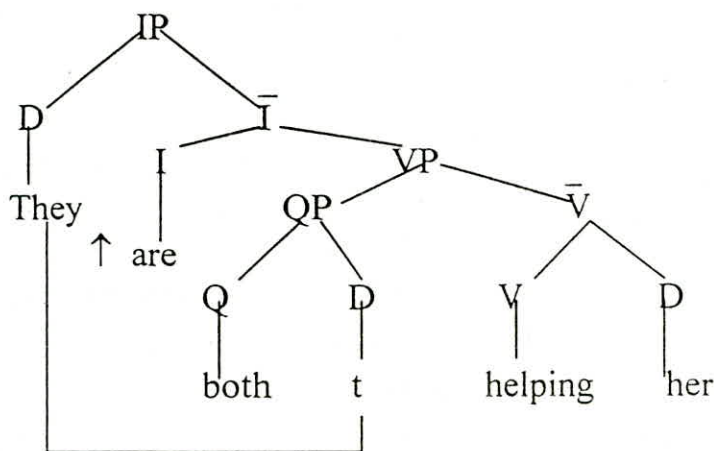
- 9.(i) *They* probably will [*t* become *millionaires* /* *millionaire*]
 (ii) *We* /* *I* never would [*t* hurt *each other*]
 (iii) *They* / *He* really shouldn't [*t* live *together*]

In each case, there is "an expression which requires a local antecedent, and which will only have a local antecedent if we assume that subjects originate in spec-VP and hence raise to spec-IP, leaving behind a trace in spec-VP which can bind the expression requiring a local antecedent." (158)

"The assumption that subjects originate in spec-VP and raise to spec-IP provides us with an interesting account of how quantifiers come to be separated from the subject expressions which they quantify." (159) It is assumed that *they* in (10) (i) originates "as the complement of *both* (in much the same way as *of them* seems to function as the complement of *both* in an expression such as *both of them*)"; and this is demonstrated by (10) (ii).

- (10) (i) **They** are *both* helping her.

(ii)



This has been called *floating quantifiers* or *stranded quantifiers* since *both* and *they* have been separated ;but this analysis allows the quantifier *both* to modify the trace of the moved pronoun *they* after this movement has left the quantifier *both* stranded within QP. This analysis also correctly accounts for the fact that *both* superficially occupies an intermediate position between *are* and *helping*.

Another syntactic argument in support of the VP -internal subject hypothesis pertains to the syntax of *idioms* , which may be defined as expressions “which have an idiosyncratic meaning that is not a purely componential function of the meaning of their individual parts ” (159) and as “ a string of words which forms a unitary constituent with an idiosyncratic interpretation.” (159) As such expressions must subsume to “a constraint that only a string of words which forms a unitary *constituent* can be an idiom” (159), we may have idioms that are “of the form *verb + complement* “ (159) since “ the verb and its complement form a unitary constituent (a *V-bar*)” (159), as shown in (11).

11.

- (i) Let's have a couple of drinks to *break the ice*.
- (ii) He'll *hit the roof* when you tell him.

We may also *clausal* idioms since the clause is a unitary constituent and the meaning of such sentences, as shown in (12), is not a purely componential function of the meaning of their individual parts.

12.

- (i) All hell broke loose.
- (ii) The chickens came home to roost.

It is obvious that the choice of all three constituents (subject, verb and complement) in sentences (12) is fixed. Thus, if we try to replace the (subject, verb or complement by near synonyms, we get ungrammatical sentences, as shown in (13).

13.

- (i) *The whole inferno broke free.
- (ii) *The hens returned to nest.

However, what is puzzling about clausal idioms is that "auxiliaries can freely be inserted between the subject and the verb" (160), as shown in (14).

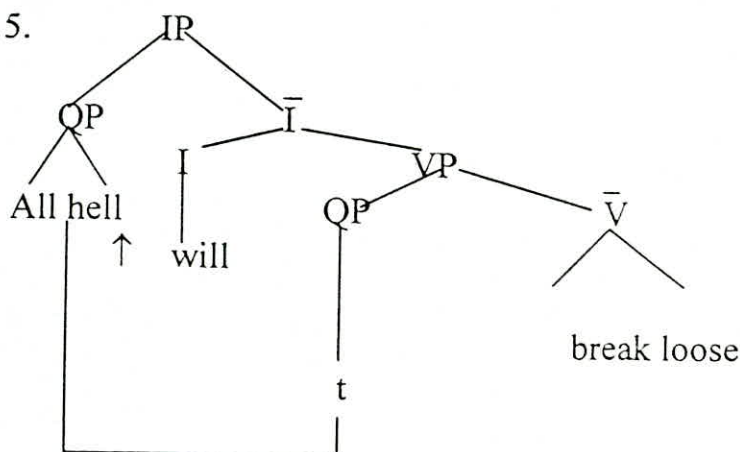
14.

- (i) All hell will break loose.
- (ii) All hell has broken loose.
- (iii) All hell could have broken loose.

How then can we account for this freedom of the auxiliaries despite the fact that the choice of the subject, verb, and complement is

fixed? A *movement* analysis for the subjects of auxiliaries provides a straightforward answer, as shown in (15).

(ii) 15.



Therefore, clausal idioms, as shown above, are VP idioms which require a fixed choice of head, complement and specifier in the VP containing them. (160) This VP requires the specific verb *break* as its head, the specific adjective *loose* as its complement, and the specific quantifier phrase *all hell* as its subject/specifier. And by assuming that “the QP originates in spec-VP as the subject of the V-bar constituent *break loose*” and that it has been raised across the auxiliary *will* into spec-IP (161), we can account for the fact that the subject *all hell* and its predicate *break loose* come to be separated from each other across an intervening auxiliary like *will*.

Apart from the above syntactic evidence for the VP-internal subject hypothesis, there are also strong semantic evidence, relating to **argument structure**, in favor of the VP-internal subject hypothesis. Traditional work in predicate “logic maintains that **propositions** (which can be thought of as the semantic counterpart of simple clauses) comprise a **predicate** and a set of **arguments**. “A **predicate** is an expression denoting (for example) an activity or event, and an **argument** is an expression denoting a participant in

the relevant activity or event.” (161) **Arguments** are different from **adjuncts** ; the arguments of a verb are its subject and complement. They are participants in the activity or event ,denoted by that verb. On the other hand, **adjuncts** “provide additional information about the event”. (162) This is illustrated by sentences (16).

16.

- (i) [One student] failed.
- (ii) [The police] arrested [the man].
- (iii) [The police] arrested [the man] **on Sunday**.

In (16) (iii) , **on Sunday** provides additional information about the event ,specifying the day on which the arrest took place. But the arguments [**The police**] and [**the man**] are participants in that event. But the argument which is the complement of the verb differs from that which is its subject. The former is called an **internal argument** ;while the latter is called an **external argument**. This difference is because the internal argument (being the complement of the verb) “ is positioned inside V-bar “; whereas the external argument (being the subject) “is positioned outside V-bar”. (162) Predicates that require both an internal argument and an external argument are called **two-place predicates**, as shown in (16) (ii) and (iii). But predicates that require only one argument ,as shown in (16) (i), are called **one-place predicates**.

Any adequate account of argument structure also provides a proper description “of the *semantic role* which each argument plays with respect to its predicate.” (163) “In research over the past three decades- beginning with the pioneering work of Gruber (1965), Fillmore (1968) and Jackendoff (1972)- linguists have attempted to devise a universal typology of the semantic roles played by arguments in relation to their predicates.” (163) In (17) , there is a list of some of the terms traditionally used to describe a range of different roles, and for each role there is an informal gloss.

17.

- (i) THEME(or PATIENT) = entity undergoing the effect of some action (*Mary fell over*).
- (ii) AGENT/CAUSER = instigator of some action (*John killed Tom*)
- (iii) EXPERIENCER = entity experiencing some psychological state (*John was sad*).
- (iv) RECIPIENT/ POSSESSOR = entity receiving/ possessing some entity (*John got Mary a present*)
- (v) GOAL =entity towards which something moves. (*John went home*)

The semantic roles fulfilled by arguments , as described in (17), may be illustrated by the sentences in (18):

18.

- (i) [The police] arrested [him].
[AGENT] [THEME]
- (ii) [Mary] received [her certificate].
[RECIPIENT] [THEME]
- (iii) [The audience] enjoyed [the play].
[EXPERIENCER] [THEME]
- (iv) [The president] went to [Alex].
[THEME] [GOAL]

It has become customary over the past two decades to refer to the relevant semantic roles as **thematic roles** or **θ - role**. It is also to be noted that the THEME thematic role is the central one and that the "thematic role played by a given argument in relation to its

predicate determines the range of expressions which can fulfill the relevant argument function", (164) as illustrated by the increasing degrees of anomaly represented by the symbols ? and ! as shown in sentences (19).

19.

- (i) *Her mother* has finally realized that she is a lousy cook.
- (ii) ? *Her dog* has finally realized that she is a lousy cook.
- (iii) ! *Her frying pan* has finally realized that she is a lousy cook.

These restrictions depend on the semantic properties of the predicate, on the one hand, and on the semantic (= thematic) role played by the argument on the other. In sentences (18), the EXPERIENCER argument (i.e. the subject) of a cognitive predicate like *realize* has to be an expression denoting a *rational* entity.

As for how the theta-roles are assigned to arguments, the thematic role of the complement in the V-bar constituents of the form verb + complement is determined by the semantic properties of the verb. In other words, it is the verb that directly assigns a theta-role to its internal argument(s). As for the theta-role assigned to the external argument, it is the whole V-bar constituent (i.e. the verb + complement) as a whole that determines its theta-role; and this is called indirect theta marking (see Marantz (1984, pp.23 ff) and Chomsky (1986 a, pp. 59-60)). This may be illustrated by sentences (20).

20.

- (i) John threw a ball.
- (ii) John threw a fit.

The verb + complement *threw a ball* requires the theta-role AGENT; while the verb + complement *threw a fit* requires the theta-role EXPERIENCER.

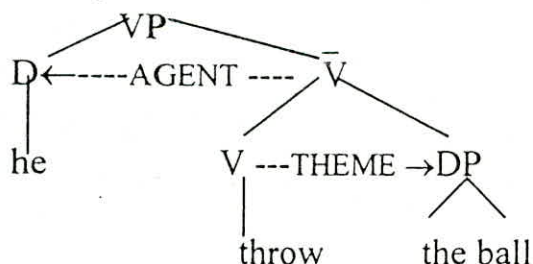
Having glossed briefly the notion of having semantic roles played by arguments in relation to their predicates, we find that "auxiliaries seem to play no part in determining the assignment of theta roles to subjects" (165); and this is because auxiliaries are regarded as **functional categories** and play no role in theta-marking. This is demonstrated by sentences (21).

21.

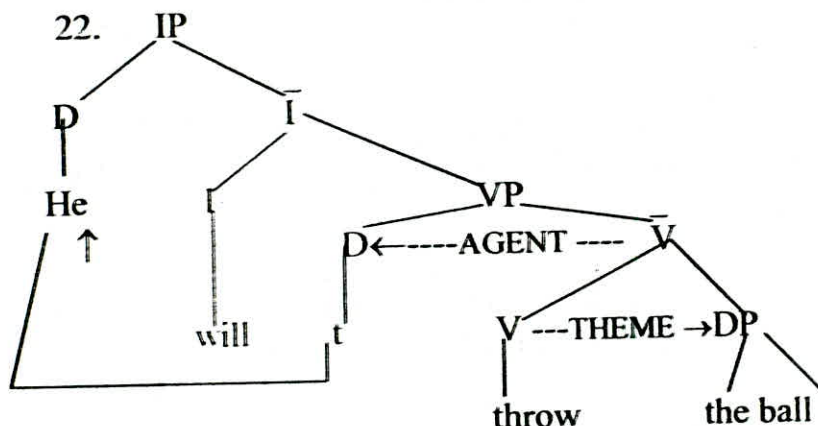
- (i) He *will* throw a ball / a fit.
- (ii) He *was* throwing a ball / a fit.
- (iii) He *has been* throwing a ball / a fit.
- (iv) He *might have been* throwing a ball / a fit.

Theta -roles are only assigned by **lexical categories** (i.e. contentives categories); i.e. arguments are assigned theta roles via the process of **merger with a lexical category**. Thus, the verb *throw* will be merged with the DP *the ball* (which is itself formed by the merging of *ball* with *the*) to form the V-bar *throw the ball*. As a result of this merger operation, the DP *the ball* is assigned the theta -role of THEME argument of *throw*. The V-bar *throw the ball* is in turn merged with the pronominal determiner *he*; and as a result of this merger operation *he* is assigned the role AGENT argument of *throw the ball*. This is demonstrated in (22).

22.



Then, when VP is merged with an I constituent containing an auxiliary such as *will*, we form the I-bar *will throw the ball* with the subject *he* moving to spec-IP, as shown in (23).



Therefore, the **VP-internal subject hypothesis** helps account for “the fact that the thematic role of the subject is determined solely by V-bar” and for the fact that “auxiliaries play no role in the theta marking of subjects” (167), as previously shown in clausal idioms. It provides us with “a principled account for theta-marking, whereby arguments are theta-marked by merger with a lexical (θ - assigning) category.” (167) Similarly, according to Rothstein’s (1995) **predication principle**, syntactic predicates (i.e. constituents such as I-bar) should have subjects; but these subjects originate in Spec-VP and raise to spec-IP. The **checking theory** accounts for this subject raising in a different way. It assumes that INFL in English has strong specifier-features; and therefore requires a subject in spec-IP to check its specifier-features. It may also assume that subjects (other than PRO) carry strong case-features, and must raise to spec-IP to check these features.

Exercise

1.

- (i) Both the men were watching him.
- (ii) The men were both watching him.

2.

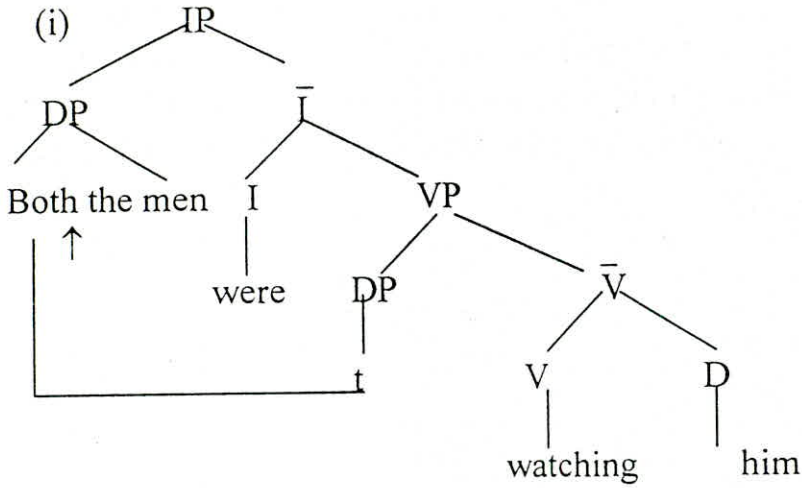
- (i) They were both watching him.
- (ii) *Both they were both watching him.

3.

- (i) Both of you were both watching him.
- (ii) *You were both watching him.

Quantifiers like *all* or *both* have two different uses. They can function as the specifier of a DP headed by a determiner like *the*. They can also function as heads taking a complement, but are intransitive and so cannot directly check the case of their complements. This means that the complement must either be introduced by a *dummy* transitive preposition like *of*, or it must move to a position where it can check its case. Therefore, sentences (1)(i) of the exercise has the structure in (4).

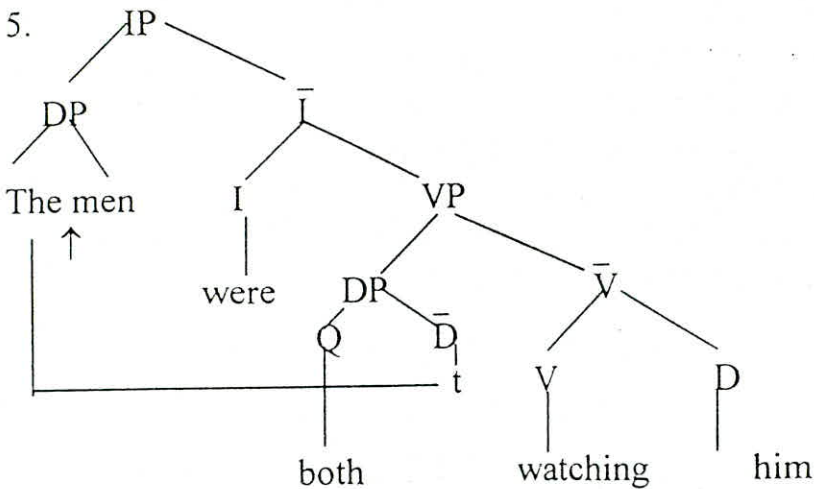
4.



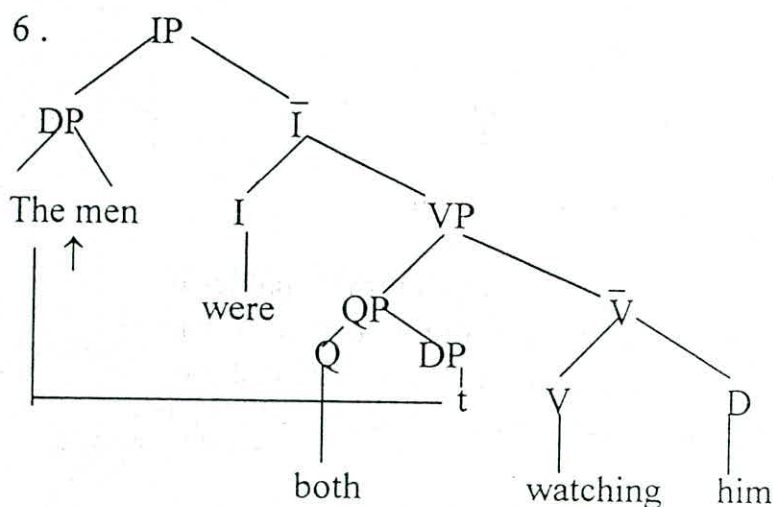
It is the fact that *both the men* originates in spec-VP that enables it to receive its AGENT theta -role by merging with the V-bar *watching him* before it raises to spec-IP for reasons of **greed** ;i.e. "to check the strong nominative- case head -feature which it carries."(171)

As regards sentence (1)(ii) of the exercise, the **chain uniformity principle** prevents its derivation from a similar structure to that in (4), as shown in (5).

5.



This is because the head of the chain is a maximal projection ;but the trace at the foot of the chain is a nonmaximal projection(since it is a D-bar projecting into a a larger DP containing *both*). On the other hand, the structure in (6) subsumes to **chain uniformity principle**.



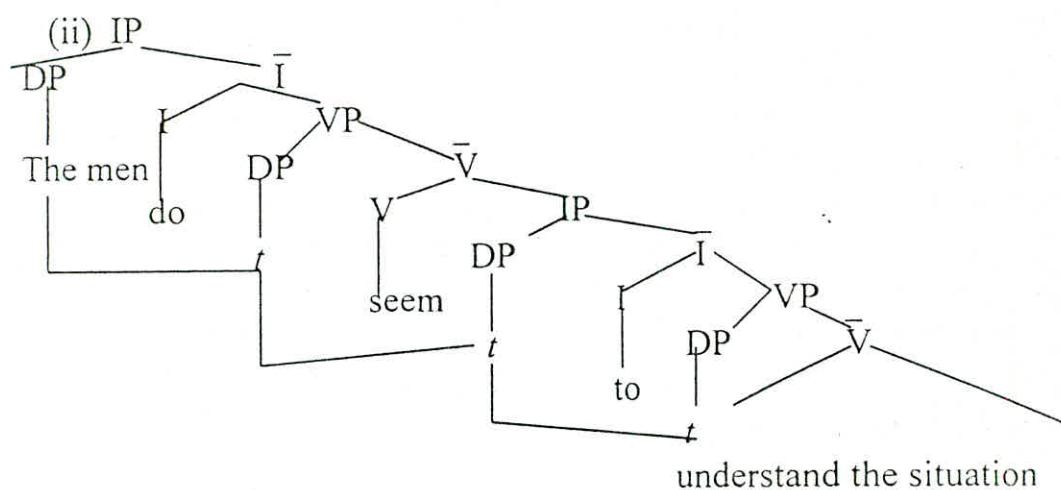
We have to then assume that *both* is intransitive ,leaving *the men* occupying a caseless position and requiring it to move to a case position in order to check its case ;i.e. to spec-IP, where its nominative case and agreement properties are checked against the specifier properties of *were* (which requires a plural or second person nominative subject). The chain in (6) is uniform since both the DP *the men* at the head of the chain and its trace *t* at the foot are maximal (DP) projections. Also, “movement of the DP *the men* is motivated by **greed** -i.e. the need to move *the men* into a position where it can check its nominative case.

IX: Chapter Nine : A-movement

In the previous chapter, we argued that subjects originate in a theta -marked specifier position within VP and that it moved into a case-marked specifier position within IP by application of raising. In this chapter, it will be shown that “raising and passivization are two different variants of the same **A-movement** (=argument movement) operation.”(175) In sentence (1)(i) , the “italicized nominal originates as the subject of the complement clause and is then raised up to become the matrix clause subject by application of (subject to- subject) **raising**, leaving behind an empty category trace as the subject of the complement clause.” (176) This successive cyclic movement is illustrated by the tree in (1)(ii).

1.

(i) *The men do seem to understand the situation*



Assuming that “floating quantifiers modify traces of moved subjects” (178) , we can say that it is only when the floating

quantifier modifies the specifier of the complement of a finite INFL is the sentence fully grammatical, as shown in sentences (2).

2.

- (i) The men do *all* seem to understand the situation.
- (ii) ? The men do seem *all* to understand the situation.
- (iii) ?? The men do seem to *all* understand the situation.

Therefore, nonauxiliary verbs like *seem* resemble auxiliaries in that they do not theta mark their subjects (192), according to which they are called raising predicates. Likewise, “**raising verbs** like *seem* take an infinitive complement with a trace subject “.(178)

Raising predicates differ from **control verbs** like *try*, which take an infinitive complement with a PRO subject, as shown in (3).

3. *She* will try [to **PRO** help him]

Thematic considerations differentiate between **control verbs** and **raising verbs** : it is a thematic property of verbs like *try* that they assign the thematic role AGENT to their subjects, requiring an expression denoting a rational being. In other words, verbs which theta -mark their subjects (i.e. **control verbs**) impose restrictions on their choice of subject. But as verbs like *seem* do not theta mark their subjects, they may have an expletive *there*. This is illustrated by sentences (4).

4.

- (i) There **seemed** / * **tried** to be no milk left in the fridge.
- (ii) John tried to understand the problem.
- (iii) ? My goldfish tried to escape.
- (iv) ! My goldfish tried to understand the problem.

(v) John seemed to understand the problem.

(vi) My goldfish seems to have escaped.

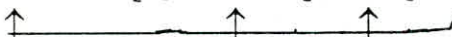
It is essential in this respect to show how the thematic roles that are assigned to arguments are constrained by a UG principle called **θ -criterion**.

5. θ -criterion

Each argument bears one and only one θ -role, and each θ -role is assigned to one and only one argument. (Chomsky, 1981:36)

The **θ -criterion** determines that verbs like *try* θ -mark their subjects whereas, verbs like *seem* do not. This is demonstrated by (6).

6.

(i) [_{IP} He does [_{VP} *t* seem [_{IP} *t* to [_{VP} *t* enjoy syntax]]]]


(ii) * [_{IP} He does [_{VP} try [_{IP} *t* to [_{VP} *t* enjoy syntax]]]]

(iii) [_{IP} He does [_{VP} *t* try [_{IP} to [_{VP} *PRO* enjoy syntax]]]]

Given the assumption that auxiliaries, infinitival *to* and raising predicates do not θ -mark their subjects, the only θ -role assigned to the pronoun *he* in (6(i)) will be that of EXPERIENCER argument of *enjoy*; therefore the **θ -criterion** will be satisfied. But the pronoun *he* has to raise to become the subject of *does* for reasons of **greed** (i.e. to check its nominative case). It also has to raise in a cyclic fashion in order to satisfy the **shortest movement principle**. In (6(ii)), on the other hand, the pronoun *he* "ends up with two different θ -roles" (182): as the EXPERIENCER argument of *enjoy* and AGENT argument of *try*; and this leads to a violation of the θ -

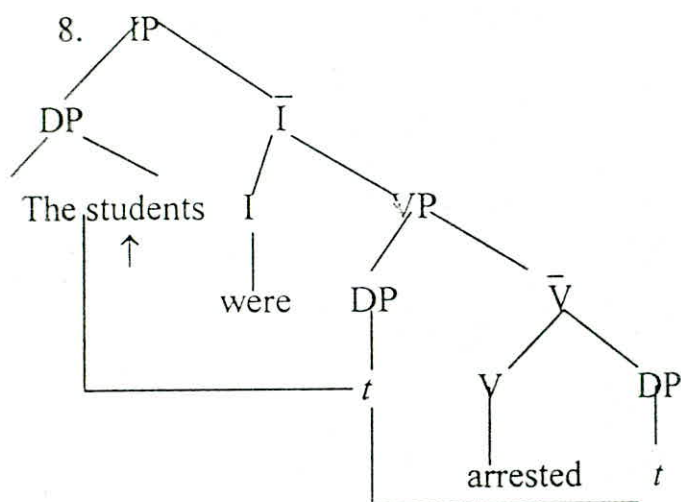
criterion, making this derivation not plausible. But in (6(iii)) the pronoun *he* will originate as the subject of *try* (i.e. *AGENT* argument) and will control the PRO subject of *enjoy syntax* (i.e. the *EXPERIENCER* argument) ;and since *he* and PRO are each assigned a θ -role of their respective predicates , the θ -**criterion** is satisfied.

Having looked briefly at the syntax of *raising* predicates , showing how they differ from *control* predicates , we will now show that “raising and passivization are two different manifestations of a single **A movement** whereby an argument moves from a subject or complement position into a higher subject position.”(193) Let us first look at the four main properties that differentiate passive sentences in English from their active counterparts. The first one is that passive sentences generally require the auxiliary *be*. The second one is that the lexical verb in passive sentences is in the *n* -participle form (i.e. the passive participle form). The third is that passive sentences may (though need not) contain a *by* -phrase in which “the complement of *by* seems to play essentially the same thematic role as the subject in the corresponding active sentence.” (183) Evidence of this comes from the fact that the two are subject to the same restrictions on the choice of the expression which can fulfill the relevant argument function, demonstrated by the sentences in (7)(? and ! mark increasing degrees of pragmatic anomaly).

7.
 - (i) The students /? The camels /? The flowers /!The ideas were arrested.
 - (ii) They arrested the students /? the camels /? the flowers /!the ideas.

Therefore, “there is a uniform mapping between thematic structure and syntactic structure “(184);and this has been called the **uniform theta assignment hypothesis** /**UTAH** by Baker (1988). This

uniformity implies that the two arguments which fulfill the same thematic function with respect to a given type of predicate must occupy the same underlying position in the syntax. Thus, "passive subjects must originate in the same position as active complements" (184), as shown in (8).

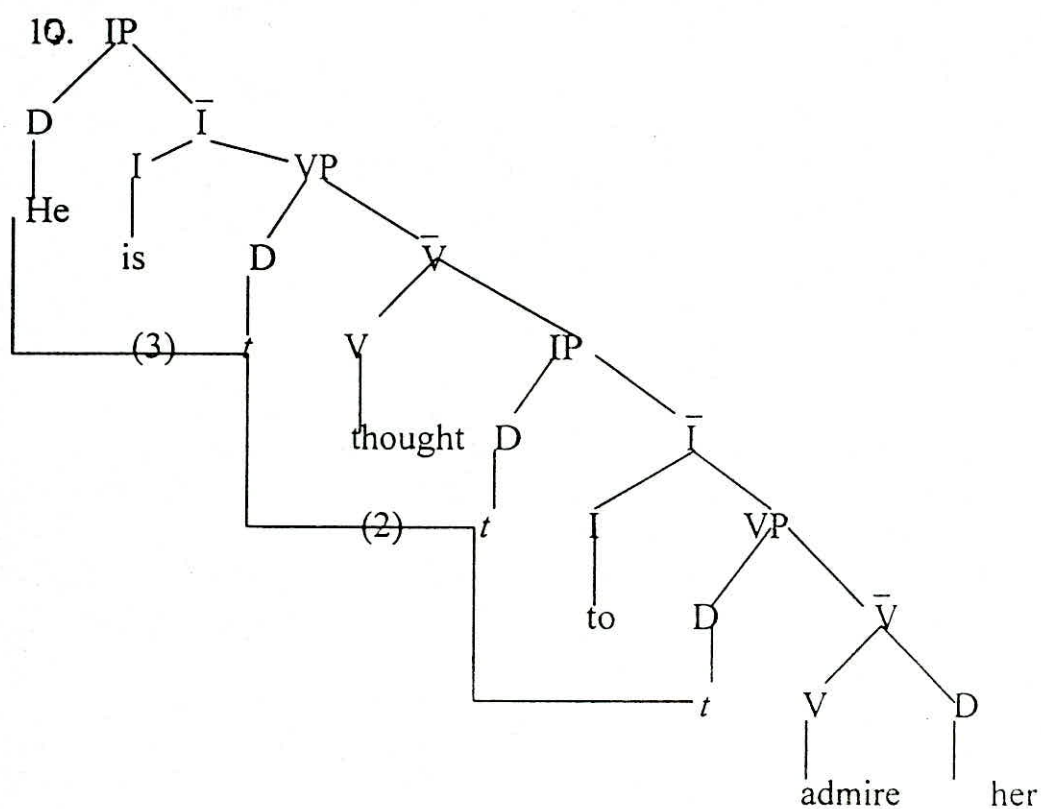


Thus, the fourth difference is that the expression which serves as the complement of an active verb surfaces as the subject in the corresponding passive construction.

However, there are passive sentences that "involve movement from one subject position to another" (186), as shown in (9) and (10).

9.

- (i) He is thought [to admire her].
- (ii) Several prisoners are believed [to have escaped].



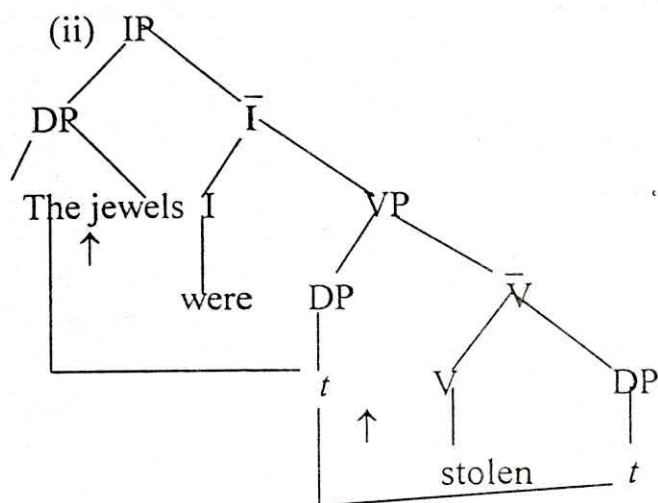
A-movement involves movement to a higher *specifier* position, never to a higher complement position because “a complement position can only be created by *merger* with a head (not by

movement) whereas a specifier position can be created either by *merger* or by *movement*. “ (188) Movement should always be from lower to higher position because of the “**trace theory** which requires that a moved constituent leaves behind a trace which must be bound by its antecedent”. (188) It is also because of the **c-command condition on binding** “ which requires a bound constituent to be c-commanded by its binder (i.e. its antecedent)”. (188) That is , in (10) the trace of the subject of *admire* is c-commanded by and bound by the trace of *to*, which in turn is c-commanded by and bound by the trace of the subject of *thought*, which in turn is c-commanded by and bound by the *he* subject of *is*.

This movement to a higher *specifier* position is also always in a successive cyclic fashion due to the principle of UG called the **shortest movement principle**, which “ requires that each application of A-movement should move the relevant constituent into the *next-highest subject position* in its containing structure.” (188) Likewise, this movement is constrained by the **θ -criterion**; i.e. it plays an important role not only in the syntax of raising but also in the syntax of passivization. For example, the verb *steal* is a two -place predicate which (in active uses) requires an AGENT subject and a THEME complement ; and if the complement of *steal* is assigned the θ -role of THEME argument and then acquires the θ -role of AGENT argument by virtue of its moving into spec-VP , the **θ -criterion** is violated since the same argument is assigned two different θ -roles. This demonstrated by (11).

11.

- (i) The jewels were stolen.



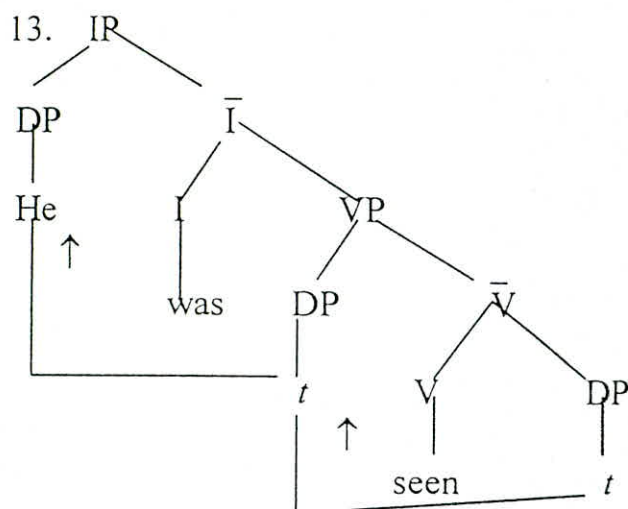
But if we assume (following Chomsky , 1981: 124-7) that “passive participles θ - mark their complements but not their subjects , it follows that the **θ -criterion** will not prevent DP *The jewels* from moving through spec-VP into spec-IP where it nonetheless has only one θ -role. That is, the passive participle suffix **+n** absorbs the subject θ -role, thereby **dethematizing** the passive subject position - it removes the ability of the passive participle to θ - mark its subject. Moreover, this movement is made “*necessary* by the principle of **greed**-i.e. by the need for constituents to selfishly satisfy their own morphological requirements”. (190) Assuming that (pro)nominal arguments have intrinsic properties such as *he* (unlike *him*) has nominative case and that this property has to be checked at some stage in the derivation ,then it (i. e. *he*) has to occupy a nominative position at some stage in the derivation. This is achieved by its movement to spec-IP ,specially as in English passive participles are inherently intransitive ,as shown by (12).

12.

- (i) *It was seen him
- (ii) They saw him

(iii) He was seen.

Thus, we can account for the fact that transitive verbs allow objective complements when used actively but not passively. Sentence (12) (ii) is ungrammatical because the passive participle +*n* inflection on *seen* absorbs the ability of the transitive verb like *see* to check objective case (191), **detransitivizing** it. But sentence (12)(iii) is grammatical as the pronoun *he* has nominative case, indicating that it has been moved to a nominative position where its case is checked at some stage in the derivation, as illustrated in (13).



On this account, **greed** triggers passivization (i.e. the requirement for *he* to move into a position where it can check its nominative case- feature). (192)

One consequence of the greed analysis is that a constituent will move no further than it needs in order to satisfy its morphological requirements ;and this is why sentence (14) (i) is ungrammatical.

14.

(i) *He is said [has lied to Parliament].

(ii) He is said [to have lied to Parliament].

In sentence (14) (ii) , *he* has to be moved to spec-IP because the verb *have* is in the infinitival form ,thereby acquiring its nominative case. But sentence (14) (i) is ungrammatical because *he* has been moved from a position that already checks nominative case since the verb *have* is in the finite form. Therefore, greed does not require to move *he* in sentence (14) (i) to the subject position of the verb *say* ;and the **economy principle** makes that it cannot move into another nominative position. (192)

Exercise

1.State whether the italicized verbs in the sentences below function as **raising** and / or **control** predicates , and discuss the derivation of each sentence, giving arguments in support of your answer.

- (i) Power *tends* to corrupt people.
- (ii) Tom has *decided* to resign.
- (iii) You *have* to obey me.
- (iv) He *came* to understand her point of view.
- (v) He *failed* to achieve their objectives.
- (vi) They *appear* to have misunderstood me.

Model answer for 1

There are three reasons for suggesting that *tend* functions as a raising predicate when it takes an infinitive complement. The first is that it allows a nonthematic subject like *there* , as shown below.

There *tends* to be a lot of confusion about syntax.

Secondly, it also seems to impose no restrictions on its choice of subject:

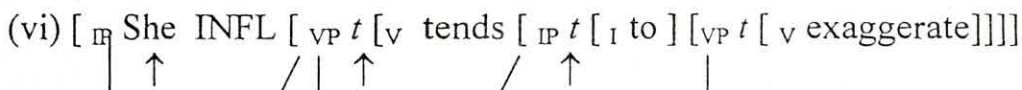
- (i) She tends to exaggerate.
- (ii) Her goldfish tends to eat too much.
- (iii) His theory tends to confuse people.

Both of these reasons indicate that *tends* does not theta-mark its subject, thereby functioning as a raising predicate.

The third piece of evidence that *tends* functions as a raising predicate comes from the fact that it can have an idiomatic subject.

- (iv) All hell *tends* to break loose.
 (v) The chickens *tend* to come home to roost.

Assuming that *tend* is a raising predicate , we could say that sentence (i) has the following structure:



The relevant derivation satisfies the **θ- criterion** (i.e. one θ- role is assigned to *She*). It also satisfies the **shortest movement principle** because movement applies in a successive cyclic fashion. It also satisfies the principle of **greed** in that the subject moves only the minimal distance required in order to get into a position where it can check its nominative case (i.e. specifier of the INFL constituent in the main clause). In this position (i.e. main clause INFL), the *present-tense* head features and *third person nominative singular* specifier -features of *tends* are attracted.

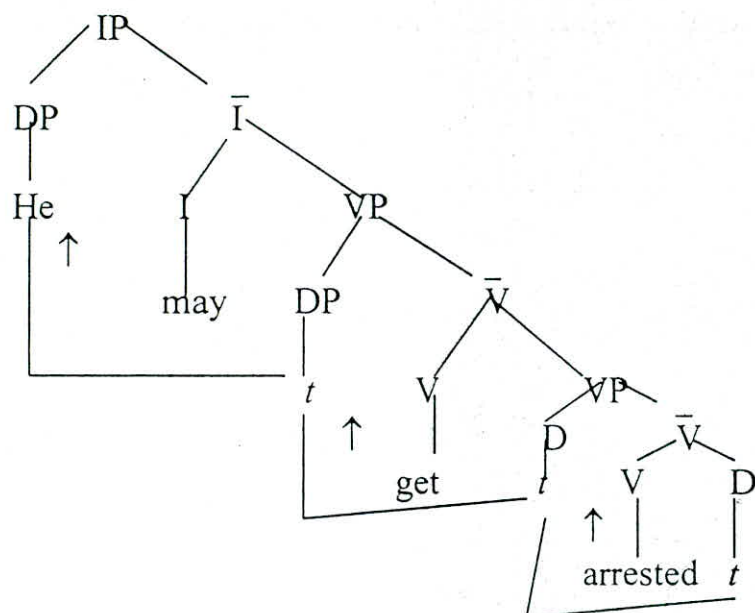
2. Discuss the derivation of the following sentences:

- (i) He may get arrested.
 (ii) They do not seem to like syntax.
 (iii) The prisoners were thought to be planning to escape from jail.
 (iv) Nobody was intended to get hurt.

Model answer for 2

He in sentence (i) is the PATIENT argument of *arrested* (i.e. representing the person taken away for questioning) ;therefore, it originates as the complement of *arrested*. It is then raised in the successive cyclic fashion to become the first subject of *arrested*,

then the subject of *get arrested*, and finally subject of *may get arrested*, as shown below.



The above “derivation satisfies the **c-command condition on binding** by virtue of the fact that the rightmost trace is c-commanded (and bound) by the middle trace, which in turn is c-commanded (and bound) by the leftmost trace, which itself is c-commanded (and bound) by the the moved pronoun *he*. The derivation also satisfies the **shortest movement principle** by virtue of the fact that each movement of *he* takes it into the next -highest subject position in the structure. The **principle of greed** is also satisfied since *he* moves from (and through) a series of positions in which it cannot check its nominative case into its ultimate position as subject of *may* (where it can check its case against the *nominative* specifier-feature of *may*) Also, the grammaticality of this sentence indicates that the θ -criterion is satisfied: the passive participle (*i.e. arrested*) dethematizes it subject, *get* (being a

raising predicate) also does not theta mark its subject, and *may* also does not theta mark its subject because it is an auxiliary (i.e. functional categories are not θ - markers). Thus, there is only one θ -role assigned to the argument of the verb *assigned* (i.e. PATIENT), satisfying the θ -criterion.

X: Chapter Ten : VP shells .

It is argued in this chapter that VPs have a complex structure, comprising of an inner VP and an outer vp and that some (e.g. AGENT) arguments originate within the outer vp shell ;while other (e.g. THEME) arguments originate within the inner VP shell. In the discussion of the syntax of ergative verbs , there are many of these verbs that may have a single complement , as shown in sentence (1)(v) or may be three -place predicates, as shown in sentences (1)(i) and (ii).

1.

(i) We *rolled* [the ball] [down the hill]. (transitive: three -place predicates)

(ii) He *filled* [the bath] [with water].

(iii) *He *rolled* [the ball].

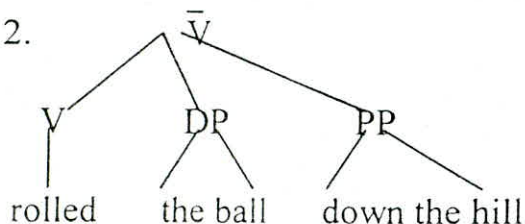
(iv) *He *filled* [the bath]. (intransitive use)

(v) The ball *rolled* [down the hill].

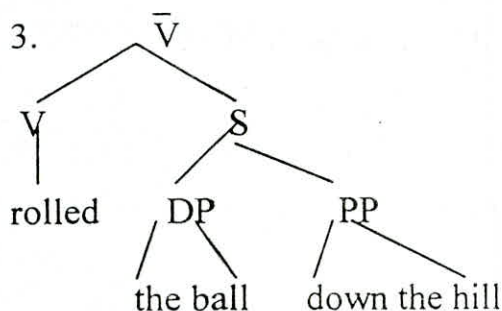
In sentences (1)(i) and (ii), the subject is the first , the object is the second , and the PPs are the third; and if we delete the PP in any of these sentences , this leads to ungrammaticality ,as shown by sentences (1) (iii) and (iv).

In the merger operation which forms phrases in an inherently binary operation ,combining constituents in a *pairwise* fashion, we cannot accept (2) as the structure of the $\bar{V}$ in (1)(i).

2.



On the other hand, the assumption that the string *the ball down the hill* is a clausal constituent with *the ball* functioning as the subject of the clause and *down the hill* as the complement of the of the clause, as shown in (3), is consistent with the merger operation.

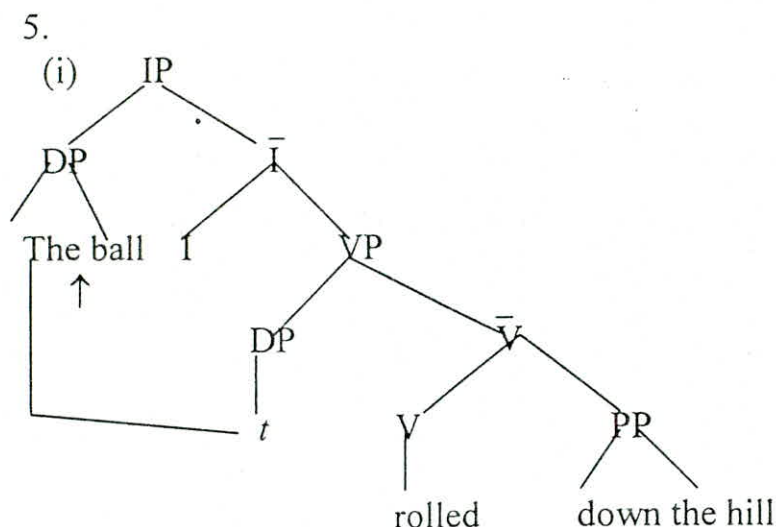


Such an assumption is not implausible since such three -place predicates like *roll* can function as two -place predicates, in which case the DP that immediately follows the verb functions as the subject, as demonstrated by the sentences in (4).

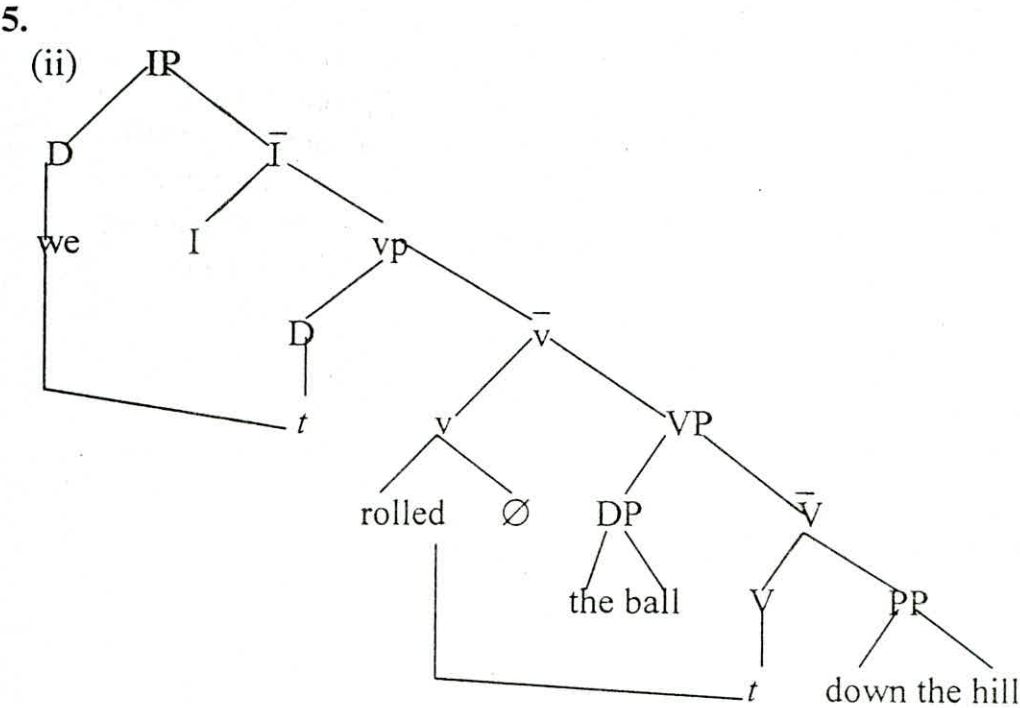
- 4.
- (i) The ball *rolled* [down the hill].
 - (ii) The bath *filled* [with water].
 - (iii) The vase *broke* [into pieces]/ They *broke* [the vase] [into pieces].
 - (iv) The store *closed down*/ They *closed down* [the store].

These types of verbs which may either be used as “three or two-place predicates are sometimes referred to as ergative verbs”.(199) Whether these verbs are used as three or two-place predicates, the DPs *the ball*, *the bath*, *the vase*, and *the store* have the same thematic roll. For example, *the ball* is the THEME argument in both cases; and in accordance with Baker’s (1988) **uniform theta assignment hypothesis /UTAH** “two arguments which fulfill the same thematic function with respect to a given predicate must occupy the same underlying position in the syntax”.(200)

Accordingly, the framework adopted here assumes that the verb moves from its original position (postverbal) position after *the ball* into a higher verb position to the left of *the ball*, thereby forming “complex double -VP structures which comprise an outer VP shell with an inner VP core embedded within it”. (200) (See Larson (1988,1990), Hale and Kayser (1991,1993, 1994) and Chomsky (1995)) Therefore, sentence (4) (i) would have the structure in (5) (i); while sentence (1) (ii) would have the structure in (5) (ii).



(5)(i) illustrates that the V *rolled* is merged with its PP *down the hill* and then this V-bar is merged with the DP *the ball*, forming the VP. Then ,this VP is merged with a null INFL constituent to form an I-bar INFL and the subject *the ball* is raised to spec-IP by A-movement.



Sentence (5)(ii) is formed of the same VP structure as in (5(i) except that this VP “is merged with an abstract causative **light verb** Ø- i.e. a **null verb** with much the same causative interpretation as a verb like **make**.” (201) This is why *We rolled the ball down the hill* has a similar interpretation to *We made the ball roll down the hill*. Also, assuming that the “causative light verb is affixal in nature (and so a strong head), the verb *rolled*, accordingly raises to adjoin to it. Then ,this resulting V-bar is merged with the subject *we*,

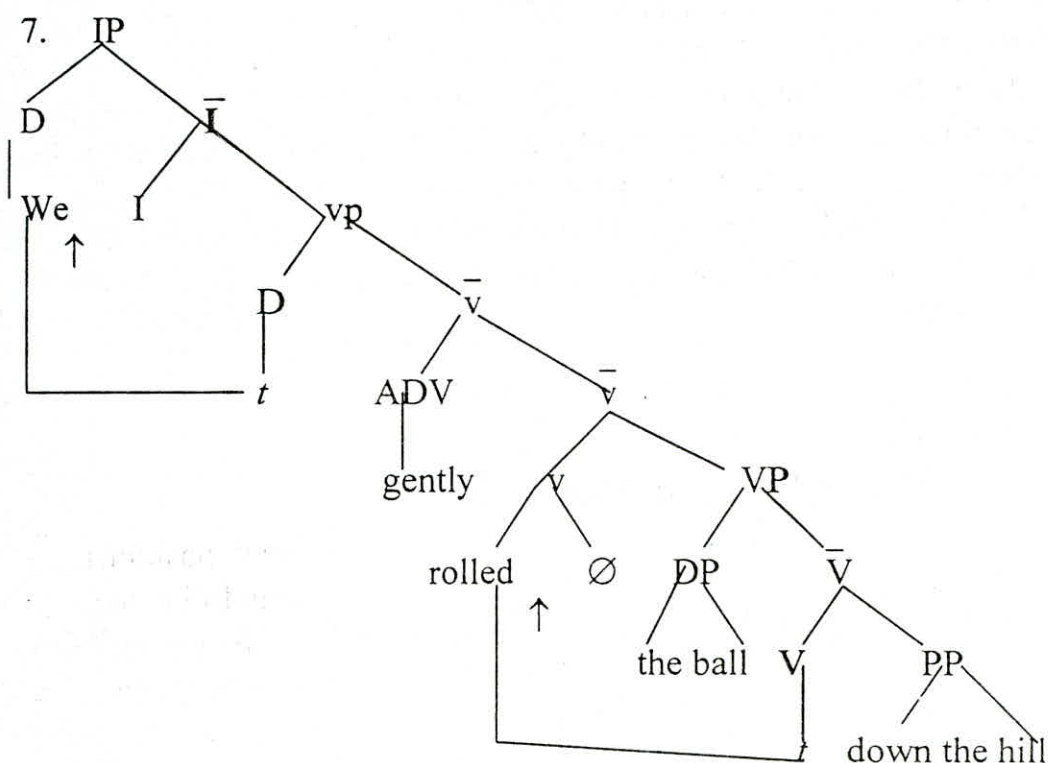
which is assigned the theta role AGENT by the causative light verb. Finally, the causative light verb (i.e. the vp) merges with an abstract INFL to form I-bar, and the subject *we* raises into spec-IP to check its nominative case. And by assuming that the agentive light verb is transitive, it can check the objective case carried by the DP *the ball*.

The VP shell analysis can account for the fact that adverbs such as *gently* can be positioned either before or after *the ball*, as shown in sentences (6).

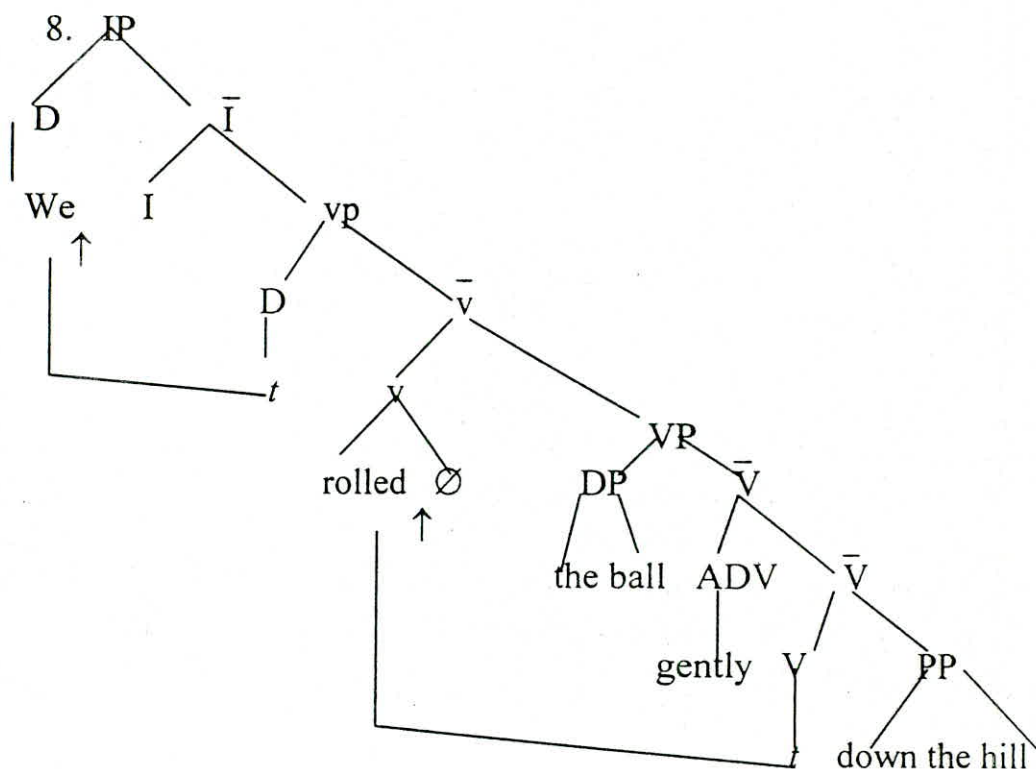
6.

- (i) We *gently* rolled the ball down the hill.
- (ii) We rolled the ball *gently* down the hill.

The sentences of (6) (i) and (ii), with the different positions occupied by the adverb *gently* reflect a subtle meaning difference: the former "means that the action of initiating the rolling motion was gentle" (204); while the latter sentence "means that the rolling motion itself was gentle." (204) This semantic difference is reflected by their difference in derivation, as shown in (7) and (8).



The merging of the VP is as in (1) and the merging of the vp is as in (5)(ii). The resulting $\bar{v}$ (i.e. v-bar) merges with the adverb *gently* to form the extended v-bar, which in turn merges with the subject *we* to form the vp *We gently rolled the ball down the hill*. Then this vp merges with an abstract INFL constituent, forming an I-bar and the subject *we* raises to spec-IP forming the IP in (7). Furthermore, according to this analysis all that is needed to derive sentence (6) (ii) (i.e. *We rolled the ball gently down the hill*) is to assume that *gently* merges with the V-bar *rolled the ball down the hill*, forming the extended V-bar *gently rolled the ball down the hill*. This V-bar merges with its subject *We*, forming the VP shown in (8). The resulting VP is merged with a causative light verb $\emptyset$ to which the verb adjoins, forming the v-bar *rolled the ball gently down the hill*. Then this v-bar is merged in the usual way, as shown earlier and demonstrated in (8).



The light verb analysis can also account for the ungrammaticality of sentence (9) (ii).

9.

- (i) He had *deliberately* rolled the ball *gently* down the hill.
- (ii) * He had *gently* rolled the ball *deliberately* down the hill.

By virtue of its meaning, *deliberately* can only be an adjunct to a projection of an agentive verb (i.e. a verb whose subject has the thematic role AGENT). And assuming that the "light verb $\emptyset$ is a causative verb with an agentive subject" (204), then sentence (9) (i) is grammatical because *deliberately* is contained within a vp headed by the agentive causative light verb $\emptyset$. But sentence (9)

(ii) is ungrammatical because *deliberately* is contained within a VP headed by the nonagentive verb *roll*, which has the θ -role THEME. Thus, adverbs like *deliberately* are strictly vp adverbs. On the other hand, it follows that there are adverbs that are VP adverbs such as *perfectly*, as shown in the sentences of (10).

10.

- (i) Mary jumped the horse *perfectly* over the last fence.
- (ii) * Mary *perfectly* jumped the horse over the last fence.

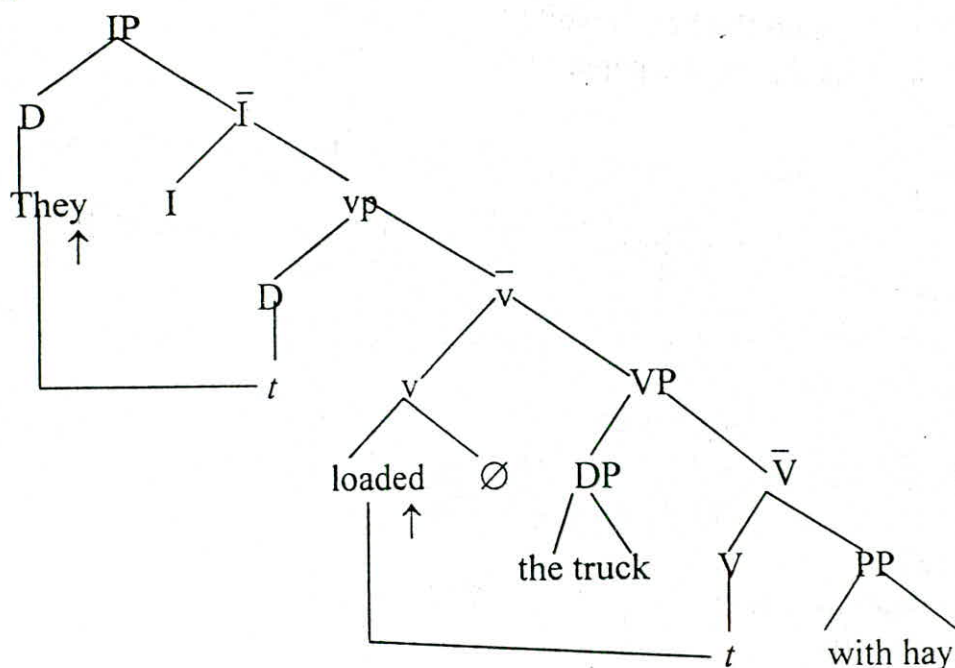
The VP shell analysis not only applies to verbs that appear to have two complements and have intransitive counterparts (e.g. *We rolled the ball down the hill* / *The ball rolled down the hill*) but also applies to verbs that appear to have two complements and do not have intransitive counterparts, as shown by (11).

11.

- (i) They loaded [the truck] [with hay].
- (ii) He gave [no explanation] [to his friends].
- (iii) They took [everything] [from her].
- (iv) * The truck loaded [with hay].
- (v) * No explanation gave [to his friends].
- (vi) * Everything took [from her].

Therefore, verbs of this type are assumed to have the structure in (12), which is similar to the above discussed ergative verbs (see the structures in (5)):

12.



Likewise, these verbs may be assumed to have the adverb *carefully* either adjoined to v-bar or to V-bar, as shown by sentences (13).

13.

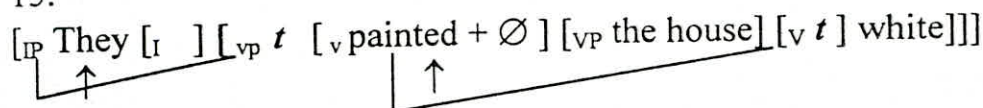
- (i) They *carefully* loaded the truck with hay.
- (ii) They loaded the truck *carefully* with hay.

The VP shell analysis can be extended from predicates which have a prepositional argument to so-called **resultative** predicates which have an adjectival argument, as shown in (14) and (15).

14.

- (i) They painted the house white.
- (ii) The acid turned the paper blue.

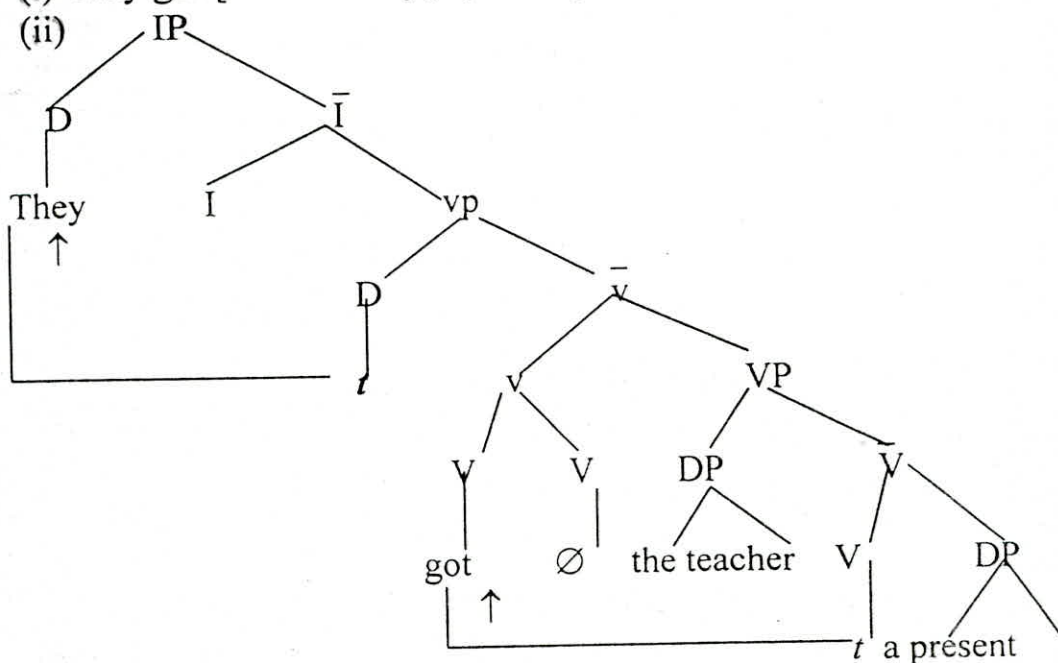
15.



The VP shell analysis can also be extended to the double-object structures, as shown in (16).

16.

- (i) They got [the teacher] [a present].
- (ii)



Thus, *got* originates as the head of V of VP (with *the teacher* as its subject and *a present* as its complement), then *got* raises up to adjoin to the strong causative light verb $\emptyset$ heading vp. The subject *they* would accordingly originate in spec-vp, where it is assigned the θ -role AGENT by the causative light verb $\emptyset$. Then, *they* would raise to spec-IP to check its strong nominative case-feature.

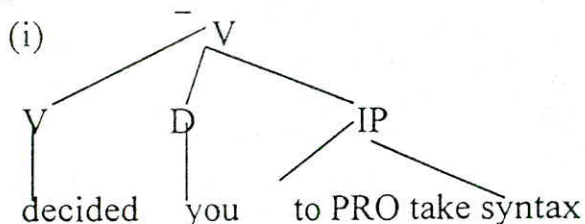
The VP shell analysis also provides an interesting solution to the problems posed by the so-called **object-control predicates**, as shown in (17) (i) and (ii).

17.

- (i) What decided you to take syntax?
- (ii) [What] decided [you] [to PRO take syntax] ?
- (iii) He decided to PRO take syntax.

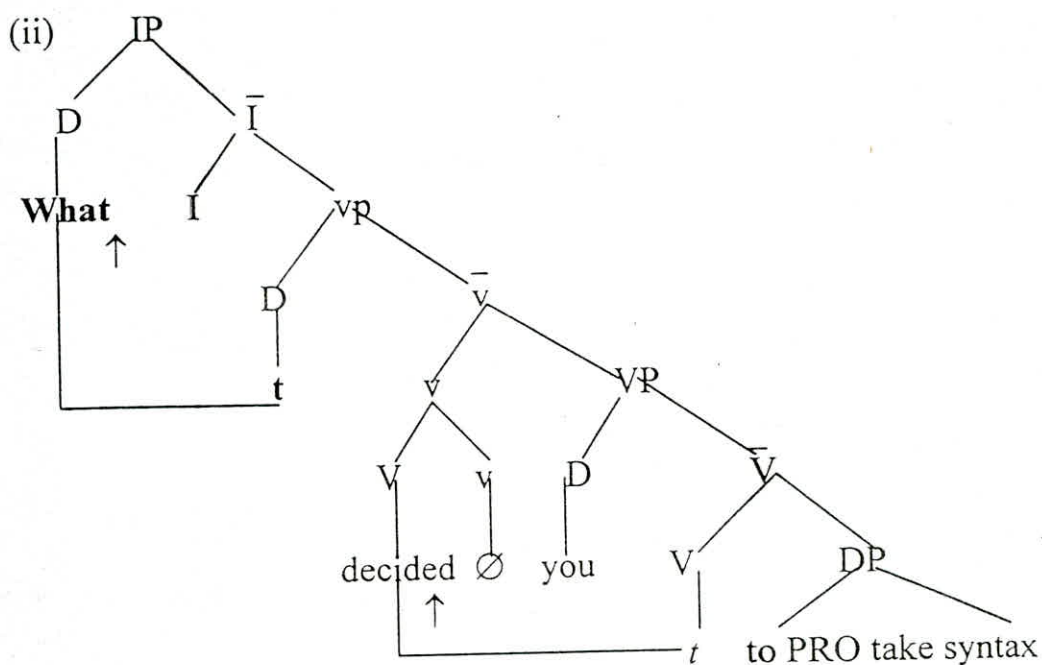
It may be assumed that since PRO here is controlled by the object *you* , then the verb *decide* in this use functions as an **object-control predicate**. This means that it has two complements (i.e. the pronoun *you* and the infinitive *to take syntax*), leading to the traditional assumption that “complements are sisters to the verb which θ -marks them”, (208) as shown in (18).

18.



But the trenary-branching , as in (18), is incompatible with the core assumption of this theory , which maintains that the merger

operation forms phrases in an intrinsically binary fashion; therefore (18) (ii) is compatible with the merger operation.



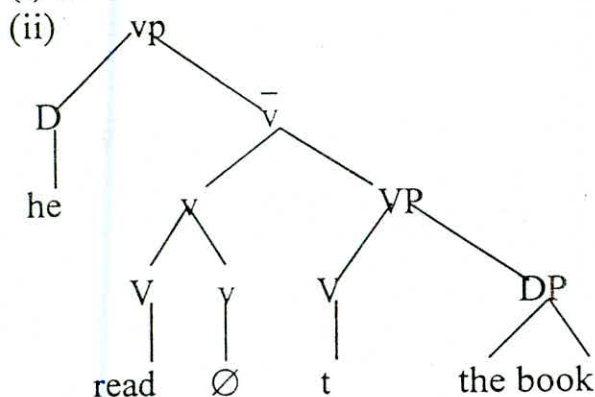
Structure (18) (ii) is not only consistent with the merger operation (which is dependent on binary- branching only) but it also “enables us to attain a more unitary theory of control under which the controller of PRO is always a *subject*, never an *object*” (209) (i.e. PRO is controlled by *you*, and *you* is the subject of the VP which was originally headed by the verb *decided*) In this respect, sentence (17) (i) is similar to that of (17) (iii), in which it is obvious that the verb *decide* is clearly a subject control-verb.

The above *VP shell analysis* has dealt with the complements of three-place transitive predicates; and we shall now look at the complements of two-place transitives (i.e. transitive verbs used with a single complement). Chomsky (1995) proposes a light verb analysis of simple transitive structures, as shown in (19) (prior to merger with INFL), in which the verb is adjoined “to a null

agentive light verb $\emptyset$ which has a performative sense" (209) i.e. *he performed the action of book-reading*).

19.

(i) He read the book.



Chomsky's light verb analysis of two -place transitive predicates may be extended to account for the syntax of the class of verbs called **unergative predicates**, "which have agentive subjects, but which appear to have no complements" (209), as shown in (20).

20.

(i) They are lunching.

(ii) He was lying.

(iii) Don't fuss!

Such verbs obviously pose problems to the assumption that subjects originate in spec-VP and merge with a V-bar which is itself formed by merger of a verb with its complements. However, **unergative** verbs "have close paraphrases involving an overt light verb (i.e. a verb such as *have*, *make* etc. which

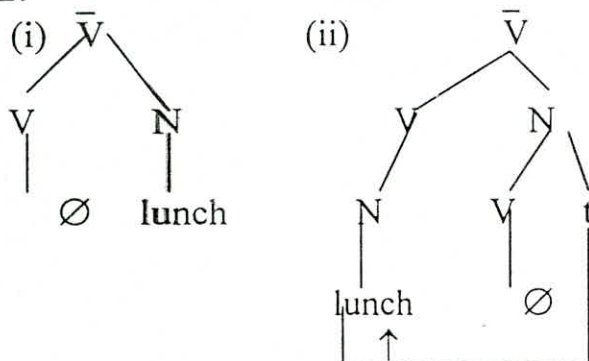
have little semantic content) and a nominal complement
 ”(210), as shown in (21).

21.

- (i) They are having lunch.
- (ii) He was telling lies.
- (iii) Don't make a fuss!

Accordingly, Baker (1988) and Hale and Keyser (1993) assume “**unergative** verbs are formed by incorporation of a complement into an abstract agentive light verb”(Radford, 1997 : 210) , as shown in (22).

22.



“On this view , unergative predicates are not intransitive at all - rather , they are implicitly transitive.” (Radford, 1997 : 210)

Unlike the unergative verbs (which have AGENT subjects but no overt objects), **unaccusative verbs** are a special class of verbs “which can have postverbal subjects ” (Radford, 1997 : 212), as shown in (23).

23.

- (i) There arose *an unfortunate misunderstanding*.
- (ii) There came *a cry of anguish* from inside the house.

(iii) In front of the house, there stands *a statue*.

(iv) There (but for the grace of God) go I.

That the italicized arguments are subjects (despite the fact that they are postverbal) is indicated by the agreement between the argument *a statue* in (23(iii)) and its verb form *stands*. This may also be indicated by the case of these postverbal arguments in languages that have overt case in nouns and the more archaic forms of English , as shown (23(iv)).

Another difference between **unaccusative predicates** and others is that "**unaccusative** verbs resemble passive participles" (Radford, 1997 : 213) (i.e. in their adjectival use of their perfective participle forms) ,as shown in (24).

24.

(i) They arrested a business man recently *returned* from Thailand.

(ii) Several facts recently *come* to light point to his guilt.

(iii) A number of objects *gone* from the church were found in his room.

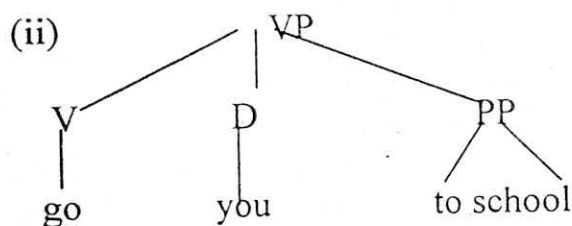
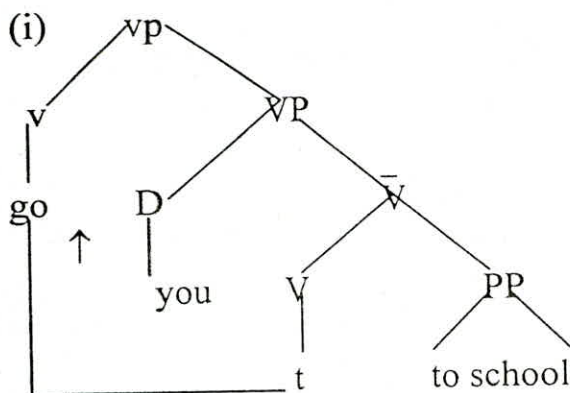
(iv) *The man *committed* suicide was a neighbor of mine.

(v) * The thief *stolen* the jewels was never captured.

Sentences (24) (i) -(iii) are grammatical because the italicized perfective participle forms are **unaccusative** verbs ;whereas (24) (iv) -(v) are ungrammatical because the italicized perfective participle forms are transitive or unergative verbs. Thus, **unaccusative** subjects behave differently from the subjects of other verbs (i.e. transitive or unergative verbs) because the subjects of **unaccusative** verbs do not originate as the subjects of these verbs, rather they originate as their complements, allowing these postverbal arguments to remain *in situ* in VP complement position.

But as the assumption that the **unaccusative** subjects are underlying complements is problematic in this theory which assumes binary phrases (rather than ternary branching) (25) (i) is preferred over (25) (ii) for the imperative structures of Belfast English, which provide further difference between unaccusative verbs and others (i.e. only unaccusative verbs can be used in such imperative structures in Belfast English).

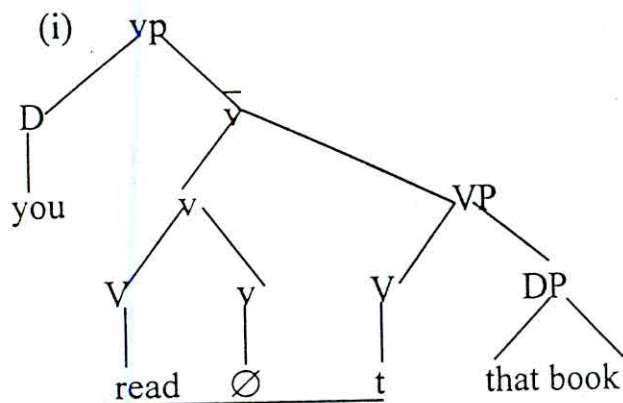
25.



In (25) (i), *v* is regarded as “strong because it contains an affixal eventive light verb -i.e. a light verb denoting an event- which has much the same sense as *happen*”. (215) This way we can account for the fact that subjects are postverbal in these imperative verbs, which are unaccusatives.

As for the preverbal subjects of transitive verbs and unergative verbs, these have structure (26).

26.



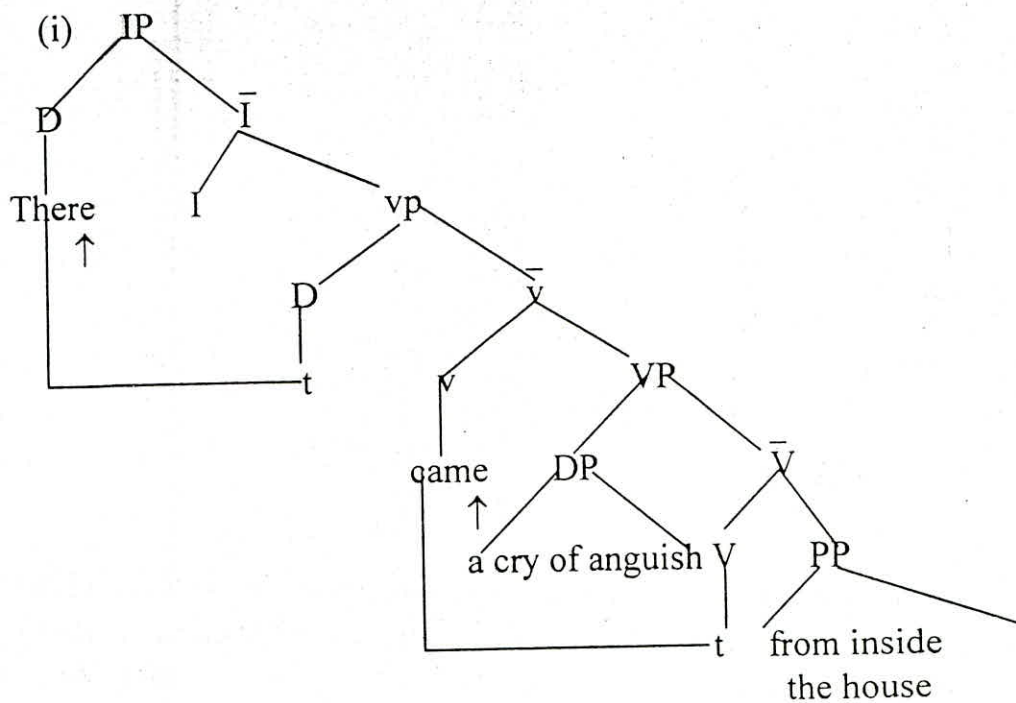
According to the above analysis , it could be said that the basic “difference between unaccusative subjects and transitive/unergative subjects is that unaccusative subjects originate in spec-VP (as the subject of a lexical verb) ;whereas transitive/unergative subjects originate in spec-vp (as the subject of an agentive light verb).”(216) By assuming that verb phrases contain an outer vp shell headed by a strong v(e.g. a light verb) and an inner VP core headed by a lexical verb and that lexical verbs raise from V to v , the postverbal position of unaccusative subjects can be accounted for (i.e. we posit that the subject remains *in situ* in such structures).

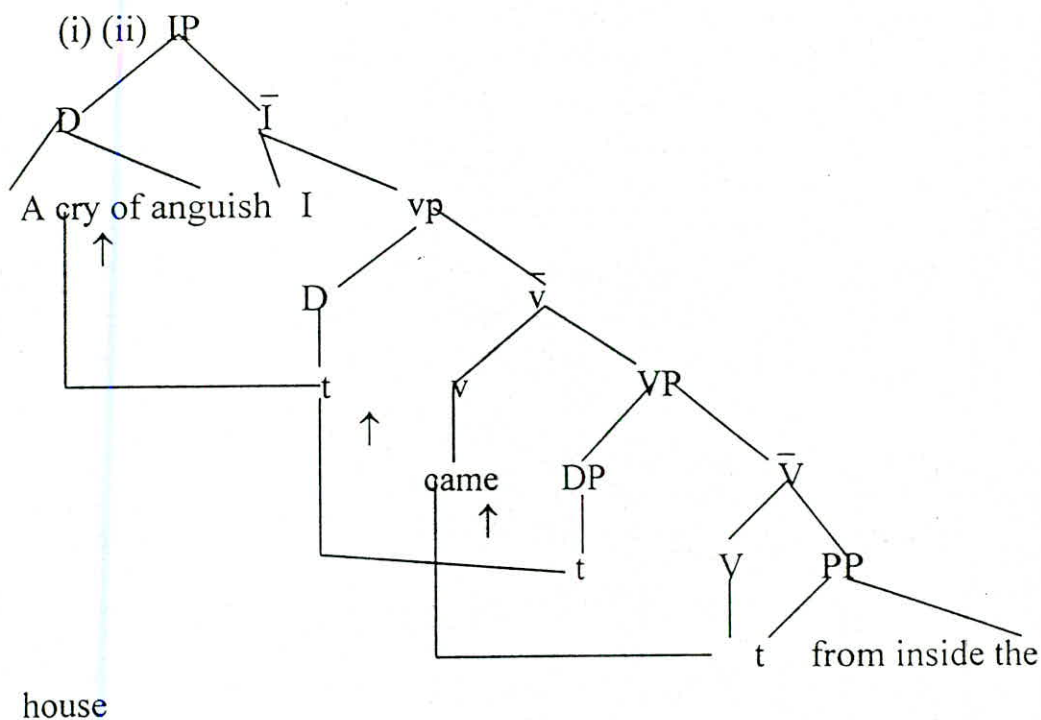
Finally, it is necessary to account for the fact that sometimes the subjects of unaccusative verbs may be preverbal in addition to its capacity to be postverbal, as shown in (27) and their structures in (28).

27.

- (i) There came *a cry of anguish* from inside the house.
- (ii) *A cry of anguish* came from inside the house

28.





Therefore, the subject of the unaccusative verb remains *in situ* in expletive structures i.e. in spec-VP ;but it raises in non- expletive structures with unaccusative verbs, as shown in (28) (ii).

Exercises

1. Discuss the syntax of the following sentences, giving arguments in support of your analysis:

- (i) He had reduced his speed to 30 mph.
- (ii) She woke him up.
- (iii) They kept the food warm.

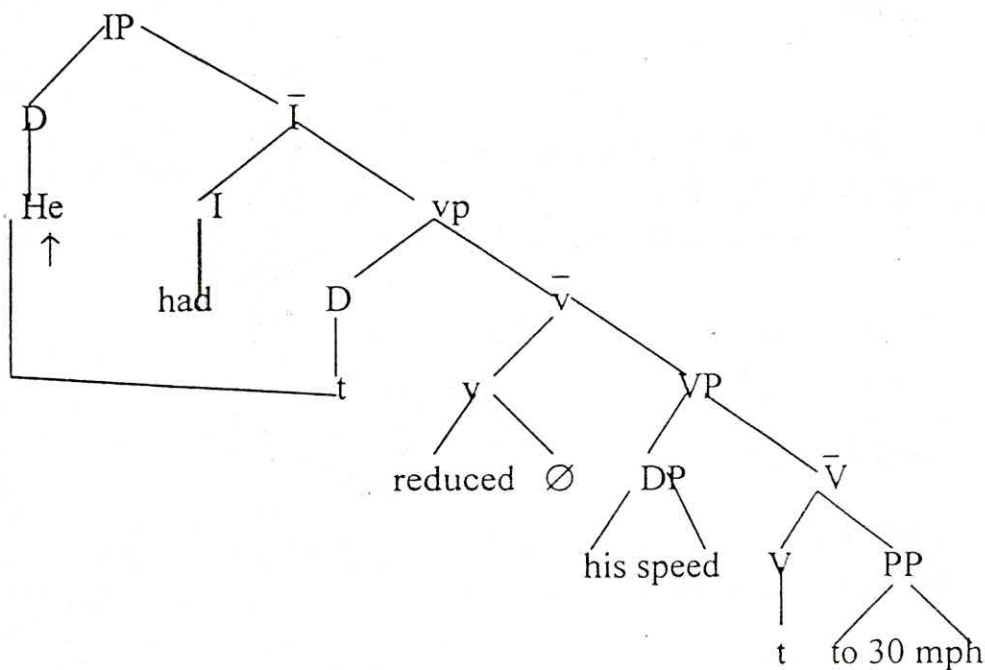
- (iv) It made him angry.
- (v) He put his feet on the table.
- (vi) She reminded him to close the windows.
- (vii) A face appeared at the window.

Model answer for 1

Reduce may be regarded as an ergative verb (i.e. like *roll*) since it may be used not only as transitive, as shown in sentence (1), but may also be used as intransitive, as shown below.

His speed reduced to 30 mph.

Sentence (1) is assumed to be derived as shown in the structure below:



Evidence in support of the light verb analysis comes from the two different positions of *gradually* in the following sentences:

- (i) He had *gradually* reduced his speed to 30 mph.
- (ii) He had reduced his speed *gradually* to 30 mph.

In the first sentence, *gradually* is an adjunct that merges with v-bar; but in the second sentence, *gradually* is an adjunct that merges with V-bar.

XI: Chapter Eleven : Agreement Projections

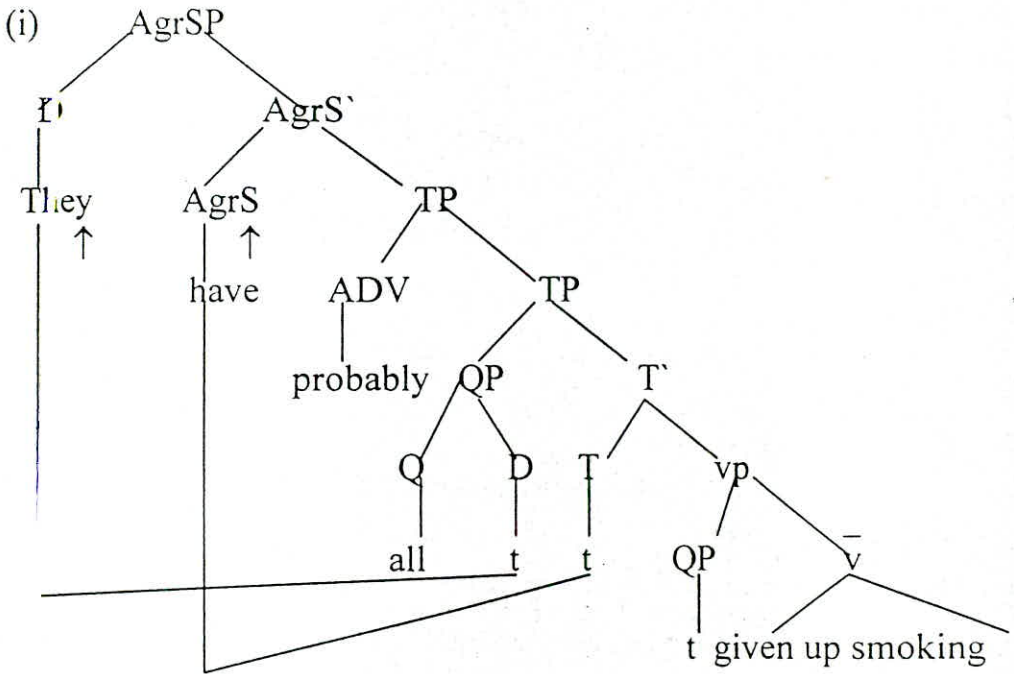
The traditional assumption is that “languages contain movement rules which **adjoin** one constituent to another “(223) , according to which this is called **adjunction**. In the analysis of adverbs like *probably* and the quantifier *all* in sentences (1), it is assumed in this chapter that *probably* is adjoined to *vp* , whereby adjuncts are adjoined to “ maximal projections ,rather than (as assumed in the previous chapter) to intermediate projections ”(223). The adjunct **completely**, on the other hand, cannot be freely ordered, as shown by the ungrammaticality of sentence (1) (iv). Therefore, *probably* is regarded as “an IP adverb -i.e. an adverb which merges with an IP to form an extended IP.”(224)

1.

- (i) They have *probably* **all** given up smoking.
- (ii) They *probably* **all** have given up smoking.
- (iii) They have *probably* **completely** given up smoking.
- (iv) * They have **completely** *probably* given up smoking.

Maintaining the **split INFL hypothesis** ,sentence (1) (i) may be assumed to have the structure in (2) (i) .

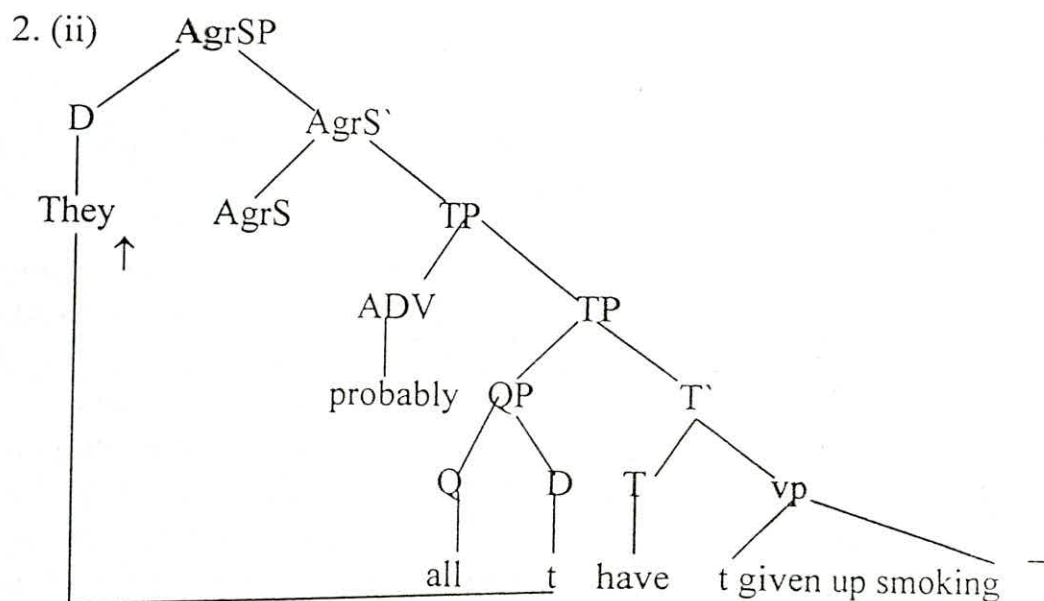
2.



According to the analysis in (2)(i) , it is assumed that there are “two different auxiliary positions between CP and vp, with *they* serving as the subject of one of them ,and the QP containing the stranded quantifier *all* as the subject of the other. And since auxiliaries like *have/ be* typically inflect for **tense** and **agreement** , one suggestion which has been made (cf. Pollock (1989), Belletti (1990) ,and Chomsky (1993)) is to suppose that (rather than containing a single INFL head) finite clauses contain separate **tense** and **agreement** heads, each of which projects into a separate phrasal projection - tense into a **tense phrase** and agreement into an **agreement phrase**. It is also assumed here following Belletti (1990) ,and Chomsky (1993) that the **agreement head** occupies a higher position than the **tense** head and that auxiliaries are generated in the tense position and from there can move into the separate agreement position , and that nominative subjects raise

from spec-*vp* to the specifier position in the agreement phrase, to check their case features. That is, the **INFL** head has been split into a **T head** and **AgrS head**. Therefore, (1) (i) is derived with *they* originating in spec-*vp* (as the subject of *given up smoking*), and from there raises up into spec-TP and the adverb *probably* adjoins to TP. Since there are two functional projections above *vp* (i.e. AgrS and TP) , it follows that there are two different subject positions outside VP, one of which (= spec- AgrSP) houses the subject pronoun *they* ,and the other of which (= spec- TP) houses the QP containing the stranded quantifier *all*.

Also, maintaining the **split INFL hypothesis** , sentence (1) (ii) has the structure in (2) (ii).



Whereas *have* has moved to AgrS in (2) (i), it remains in the head of the T position of TP in (2) (ii). It has been assumed here following Boškovic(1995 :22) that “finite auxiliaries in English can have either strong or weak agreement -features , and raise to AgrS when they have strong agreement -features , but remain in T

when they have weak agreement -features.”(Radford,1997: 227) Furthermore, “if we assume AgrS has strong specifier -features in English , it follows that subjects will always raise to spec- AgrSP.” (Radford,1997: 227)

In order to account for the agreementless finite verbs and the auxiliaries that have objective subjects and do not allow subject inversion in Belfast English (BE) (e.g. *I/we/you/he/she /they hates syntax*), we maintain that since AgrS may have weak or strong head features , if it has weak head features ,then it also has weak specifier features, thereby its subject only raises as far as spec-TP, where it is checked objective case by default. That is, since the subject needs to be case-checked but is unable to raise to raise to spec-AgrSP to check nominative case, the subject checks objective case in spec-TP as a last resort . Thus, we maintain that all finite clauses contain an AgrSP projection in addition to (and *on top of*) a TP projection. (230)

A different kind of argument in favor of the split IP hypothesis is found in the phenomenon called **scrambling**, which is traditionally analyzed as involving adjunction of the moved constituent to a maximal projection higher up in the structure. (227) For example, in Early Modern English the complement of a verb could be scrambled -i.e. moved out of its underlying position as a complement of the verb into some position higher up in the clause *Thy physics I will try t* (King, *All s Well that Ends Well*, II i) . *Thy physics* is adjoined to the left of the IP headed by *will*.

Just as recent work has argued in favor of splitting IP into two different projections (a subject agreement phrase and a tense phrase), so too it has been argued that the verb phrase should similarly be split into a number of different projections including one headed by an **object agreement** constituent (designated as AgrC). (231) The object agreement phrase (=AgrOP) is

positioned between the two different verbal projections *vp* and *VP*. (231) (known as the split **VP hypothesis** cf. Bobaljik 1995, Carnie 1995, Harley 1995, and Koizumi 1995) The core assumption underlying this analysis is that just as nominative DPs raise to *spec-AgrSP* in order to check their nominative case so too objective DPs raise to *spec-AgrOP* in order to check their objective case-feature and (in languages in which verbs inflect for agreement with their objects) their object-agreement features under *spec-head* agreement with *AgrO*. (231) In both cases, agreement features are checked under a *spec-head* relation between a functional head and its specifier. (231)

One argument that objective DPs move in order to check their case comes from systematic differences between the position of *CP* complements and *DP* complements. (231) By assuming the **uniform theta-assignment hypothesis**, the *DP* complement *robbery*, in (3), must originate in the same position as the *CP* complement *that there had been a robbery* since they both have the thematic role *THEME* argument of *reported*.

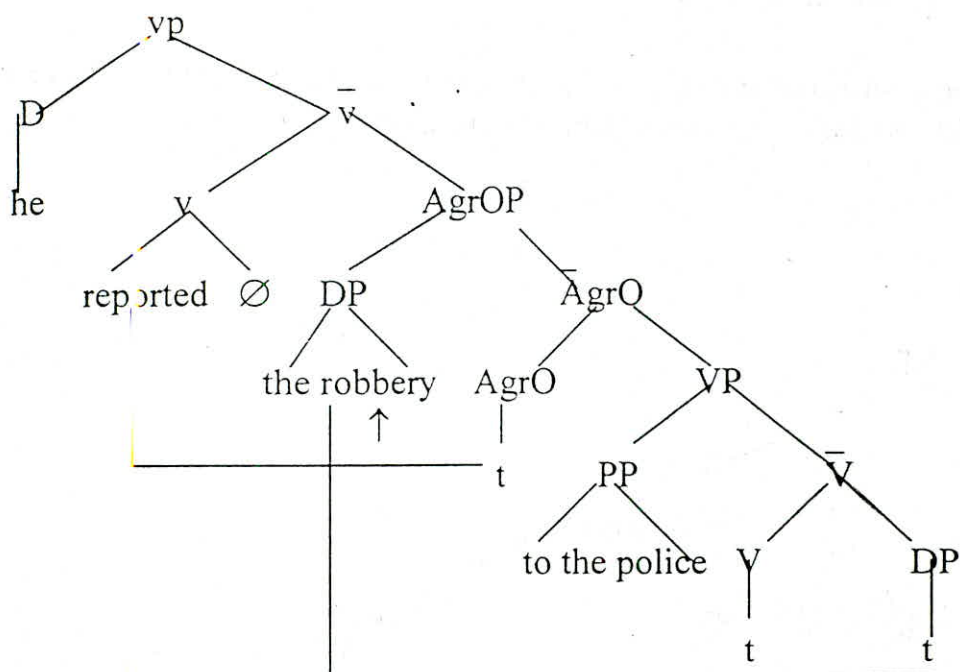
(3)

- (i) He reported to the police *that there had been a robbery*.
- (ii) He reported *the robbery* to the police.
- (iii) * I was sure *of that she would come*.
- (iv) I was sure *of the robbery*.

However, they have different underlying structures with the assumption that *that*-clauses do not take objective case as they cannot occur as complements of transitive prepositions, as shown in (3) (iii). Accordingly, they do not move for checking purposes: this is why they are clause final. The *DPs*, on the other hand, are postverbal ;i.e. as they carry objective case, they have to raise to *spec-AgrOP* for case-checking. Accordingly, the **economy**

principle determines that clauses which have no DP **object** do not contain an AgrOP projection at all (234); but clauses which have a DP **object** do contain an AgrOP, as shown in (4).

4.



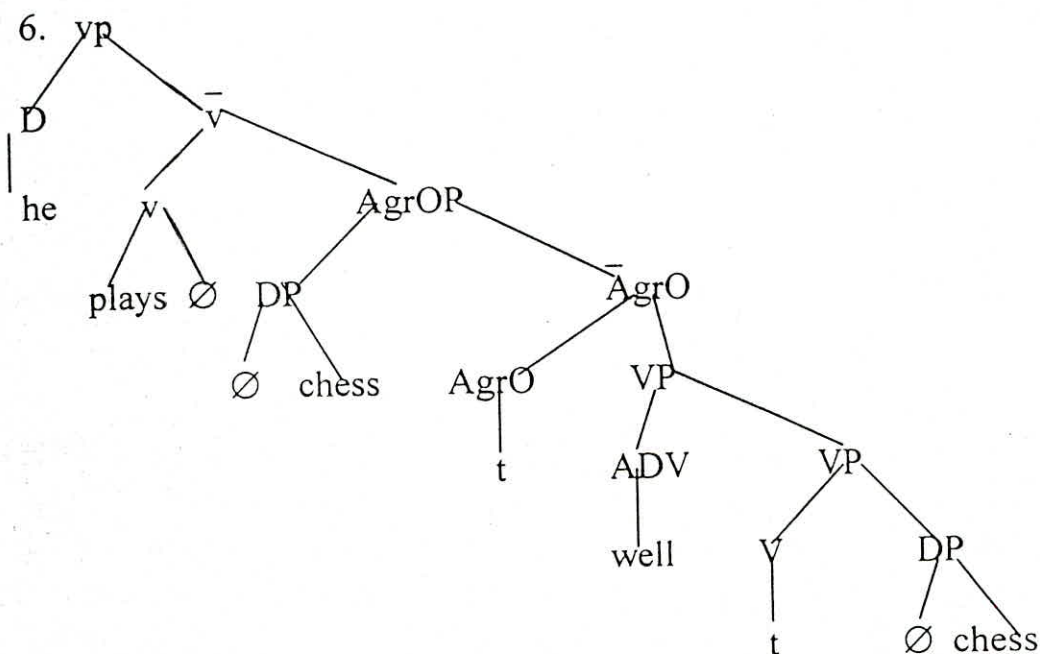
After the verb has been raised to the light verb and the DP object has been raised to the spec- AgrOP for the case-checking of its objective case, the subject DP (*He*) raises through spec- TP to spec- AgrSP to check its nominative case. This analysis eliminates the possibility that head-complement relations are involved in checking, rather a head can only check its features against those of its specifier. (234) Thus, in English nominative and objective DPs carry strong case-features, requiring them to raise, as shown above.

A different kind of argument in support of the claim that DP objects move to spec-AgrOP for case-checking purposes comes by looking at the position of adverbs, as shown in (5).

5.

- (i) *He plays chess well.*
- (ii) * *He plays well chess.*
- (iii) * *He well plays chess.*

The traditional assumption is that *well* is a VP adverb (i.e. it merges with the maximal projection VP, as shown in (6)).



The assumption in (6) is that both verbs and objective DPs raise **across** VP adverbs (236), thereby predicting the ungrammaticality

of sentences (5) (ii) and (iii). Such an analysis also accounts for the fact that verbs in English are immediately adjacent to their objects (236) and cannot be separated from them by intervening adverbials. Adverbs are also traditionally regarded as having the capacity to modify projections whose heads have specific semantic content. Accordingly, they may be adjoined to projections of V, v or T but not to agreement heads because the latter group has a purely formal function, rather than a semantic function. On the other hand, V contains a lexical verb with its own semantic properties, v contains an abstract light verb which has a specific - e.g. causative or performative -sense, and T has temporal properties. (236)

The fact that all DPs in English have to check their case by moving to the specifier position within an AgrP projection (240) may be extended to the analysis of double-object structures, as shown in (7).

7.

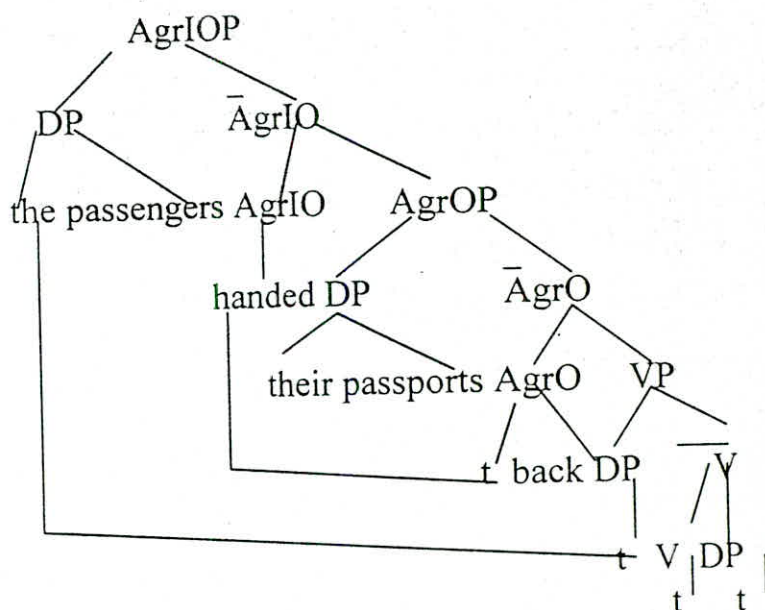
- (i) *The crew handed back the passengers their passports.*
- (ii) *The crew handed the passengers back their passports.*
- (iii) *The crew handed the passengers their passports back.*

Sentence (7)(i) is assumed to have the structure in (8) (i) , sentence (7)(ii) is assumed to have the structure in (8) (ii), and sentence (7)(iii) is assumed to have the structure in (8) (iii).

(i)



(iii)



Thus, the fact that indirect object DPs raise to spec-AgrIOP in order to check their dative case provides us with a principled account of the syntax of double object particles. (244) That is, when we have a *verb+particle* complex, the particle may either be pied - piped along with the verb when it is raised; or left stranded from the raised verb. All DPs check their case by raising to the specifier position within an appropriate agreement phrase (nominative DPs raising to spec-AgrSP, objectives to spec-AgrOP and datives to spec-AgrIOP). (244) It must be noted that Chomsky (1995) questions the need for positing any agreement projections in any language, suggesting that only constituents with intrinsic semantic content can serve as heads projecting into phrases (246); but a considerable amount of the relevant research work presupposes some variant of the highly articulated AgrSP / TP / ν_P / AgrIOP / AgrOP / VP clause structure. (246) Furthermore, some work goes to posit the existence of **aspect phrase, voice**

phrase and **modal phrase** projections as well (cf. Ouhalla 1991 and Cinque 1995).

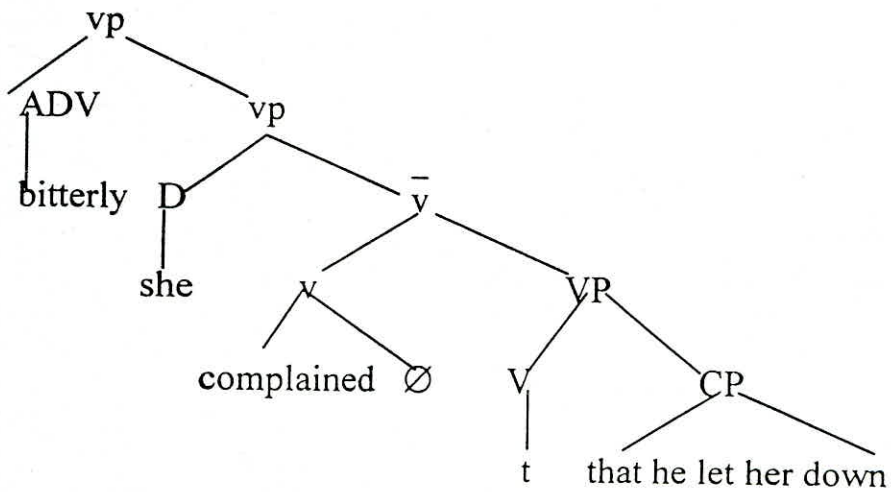
Exercises

1. Discuss the syntax of the following sentences:

- (i) (a) She complained bitterly that he let her down.
(b) She bitterly complained that he let her down.
(c) *She complained that he let her down bitterly.
- (ii) (a) He recommended to her that she should try the restaurant.
(b) He recommended the restaurant to her.
(c) * He recommended that she should try the restaurant to her.
- (iii) (a) She warmly congratulated the winner.
(b) * She congratulated warmly the winner.
(c) She congratulated the winner warmly.
- (iv) (a) They definitely have proved that he is innocent.
(b) They have definitely proved that he is innocent.
(c) * They have proved definitely that he is innocent.

Model for answer 1

Assuming that *bitterly* can modify a verbal projection and so serve as a VP/vp adverb and that adverbial modifiers are adjoined to the left of the constituent they modify, we have the structure below and the ungrammaticality of (i) (c) is attributed to the fact that the adverb *bitterly* is in VP or vp -final position. But as sentence (i) (a) has *bitterly* in a VP -initial position and sentence (i) (b) has *bitterly* in a vp -initial position, they are grammatical.



References

- Akmajian, Adrian; Demers, Richard A.; and Harnish, Robert M. (1979) *Linguistics: An Introduction to Language and Communication*. Cambridge, Mass.: MIT Press.
- Aronoff, Mark. (1962) *Word - Formation in Generative Grammar*. Cambridge , Mass.: MIT Press.
- - Akmajian, Adrian, and Henry, Frank. (1975) *An Introduction to the Principles of Transformational Syntax* . Cambridge, Mass.: MIT Press.
- Bach, Emmon. (1974) *Syntactic Theory*. New York: Holt.
- Bloomfield, Leonard. (1933) *Language*. New York: Holt, Rinehart and Winston,.
- -Bolinger, Dwight. (1968) *Aspects of Language*. New York: Harcourt.
- - Chomsky, Noam. (1957) *Syntactic Structures*. The Hague: Mouton
- - Chomsky, Noam. (1965) *Aspects of the Theory of Syntax*. Cambridge, Mass.: MIT Press.
- -Chomsky, Noam. (1966) *Cartesian Linguistics*. London: Swan, Scnnenschein.
- -Chomsky, Noam. (1982) *Lectures on Government and Binding :The Pisa Lectures*. Dordrecht: Foris Publications,.
- Chomsky ,N. (1995) *The Minimalist Program*, Cambridge ,Mass: MIT Press.
- Culicover, Peter W. (1976) *Syntax*. New York: Academic Press.
- Fillmore , C.J. (1968) "The case for case" , in E. Bach and R.T. Harms (eds.) *Universals in Linguistic Theory*, Holt Rinehart and Winston, New York, pp.1-88.

- Gleason, Henry A. (1961) *An Introduction to Descriptive Linguistics*. Rev. ed. New York: Holt, Rinehart and Winston.
- Grimshaw, J. (1990) *Argument Structure*, MIT Press, Cambridge, Mass.
- Gruber, J. S. (1965) "Studies in lexical relations", PhD diss., MIT.
- Haegeman, L. (1994) *Introduction to Government and Binding Theory*, 2nd edn, Blackwell, Oxford.
- Harris, Zellig. (1951) *Structural Linguistics*. Chicago: The University of Chicago Press.
- Jackendoff, R. S. (1972) *Semantic Interpretation in Generative Grammar*, MIT Press, Cambridge, Mass.
- Jacobs, Roderick A., and Rosenbaum, Peter S. (1968) *English Transformational Grammar*. Waltham, Mass.: Blaisdell.
- -Jespersen, Otto. (1964) *Essentials of English Grammar*. (Reprint) Montgomery, Alabama: University of Alabama Press.
- Keyser, S.J. and T. Roeper (1992) "Re: the abstract clitic hypothesis", *Linguistic Inquiry* 23:89-125
- - Matthews, Peter H. (1976) *Morphology: An Introduction to the Theory of Word Structure*. Cambridge: Cambridge University Press.
- Nida, Eugene A. (1956) *Morphology: The Descriptive Analysis of Words*. 2nd. ed. Ann Arbor: University of Michigan Press.
- Radford, A. (1989) *Transformational Grammar*, Cambridge: Cambridge University Press.
- Radford, A. (1997) *Syntactic Theory and the Structure of English: A Minimalist Approach*, Cambridge: Cambridge University Press.

Radford, A. (1997) *Syntax: A Minimalist Introduction*,
Cambridge: Cambridge University Press.

