

Analyzing English Grammar: An Introduction to Feature Theory

A Companion Handbook

Joseph Galasso

California State University, Northridge

2002

Draft May 5

Preface

The past few years have witnessed a shift in reasoning in how traditional grammar should be conceptualized. This shift, I believe, has done well to naturally aid students in achieving a higher and more comprehensive level of language. The aim of this companion handbook is to provide an elementary introduction to recent developments in syntactic theory--particularly working within the framework of Chomsky's 1995 **Minimalist Program**. More specifically, the handbook focuses on a theory called **Feature Theory**, as it has to do with basic levels of grammar. Although Feature Theory is an integral part of Chomsky's overall theory stated within the Minimalist Program, there is nothing inherent in the theory itself which should prevent it from being presented along side, say, other textbooks on the topic of grammar which in fact may correlate to other syntactic theories. In other words, the principles behind Feature Theory as presented herein are understood to be based upon universal characteristics of all languages--characteristics which transcend all common discussion of grammar. For example, recent work on Features has refocused attention on traditional distinctions placed on **Form Class Words vs. Structure Class Words**: (and more specifically, **Lexical vs. Functional Categories**). The core of this text attempts to provide students with a good working knowledge of such features as they have to do with the more formal aspects of functional grammar, and to allow students to utilize this working knowledge to build "syntactic trees" (diagramming) one feature at a time. Ultimately, the hands-on work will provide students with an inside peek at the multi-layered fine structure of grammar--starting with the more primitive, basic foundations of what makes a simple sentence to the unraveling of those finer grained features which form the makings of complex functional grammar.

This companion handbook is intended as a supplemental aid for undergraduate students of English grammar and needn't presuppose any background knowledge of syntactic theory. The materials presented herein should be suitable for any incoming university freshman with a minimal amount of Explicit knowledge of grammar.

I am grateful to Sheryl Thompson director of the PACE program at CSUN for the generous stipend that helped get me started on this project. I would also like to thank Prof. Bob Noreen (Chair of English Dept, California State University, Northridge) as well as Prof. Sharon Klein (Chair of the Linguistic Program) for their ongoing support.

0. Grammar

Grammar is traditionally subdivided into two inter-related studies: **Morphology** and **Syntax**. Morphology is the study of how words are formed out of smaller units called morphemes. For example, **Derivational Morphology** is a word-building process by which we generate (or derive) the Noun *teacher* from out of two smaller morphological segments: the verb stem {teach} + suffix {er}. Syntax, on the other hand, is concerned with how *Words* are strung together to form larger units of expressions such as (partial) @link **Phrases**, @link **Clauses**, and (full) @link **Simple Sentences**. As an example, it is owing to an infringement on syntax (and not morphology) which prevents us from speaking the ill-formed sentence **John likes to teacher (=John likes to teach)*.

(The asterisk “*” throughout indicates an ungrammatical sentence).

Recall, the derivational process sketched out above has taken the main Verb stem {teach} and changed it into a Noun {teacher}. Surely, this change from Verb to Noun has an immediate effect on how we are able to construe the word in a given sentence. In short, (postponing further discussion to later sections), the syntax involved here would be the following:

- (0) [Subject] (*John*) + [Finite Verb] (*like-s*) + (optional) Infinitive verb complements:

Complements ➔

(i) {to}+ verb (*to teach*),

(ii) verb+{ing} (*teaching*),

(iii) bare verb stem verb+∅ (*teach*)

(only in use with modals-- e.g., *John can/will/may teach*).

The syntax doesn't allow the option of an infinitive verb marker {to-} to attach to nouns *[{to} + [Noun]]. It is precisely this infringement that makes the sentence illicit.

The rules of syntax thus generate the full range of possible sentences:

i. John likes to teach. ii. John likes teaching. iii. John can teach.

**John likes to teacher.*

Although all languages have *words*, and the word is typically regarded as the sacred unit of meaning that drives all of language, there is a considerable amount of linguistic material that cannot be neatly packaged into a “layman's” notion of word. For instance, it is argued that one doesn't learn words as isolated word islands. Rather, it seems that one learns words in the following two-prong manner: (i) as words relate to meaning (*lexico-semantics*)--based on a one-to-one

relationship of sound-to-meaning, and (ii) as words relate to word classes (*lexico-syntactic*)--based upon where the word sits within a sentence. So overall, all three linguistic branches of study are ultimately involved with the learning of the basic word: **Phonology** (sound), **Morphology** (meaning), and **Syntax** (class). (See §0.3 for the role of syntax in word learning).

Much of **Feature Theory** is concerned with the “morphology” aspect of grammar; however, as we shall see later on, Features may spill-over or percolate from one word to another thus affecting the overall syntax of a sentence. So, it is appropriate not only to think about the specific features of a word (*per se*), but also how such features contribute to the overall make-up of the sentence. In this sense, we shall talk about specific *Lexical Features* (at the word level itself), as well as how such features take on morphological properties which may affect other neighboring words in ways that bring about a constructing of syntax (putting words together to form phrases, clauses, and sentences). In one sense, the most basic level of morphology is in fact the *word*--in the sense that morphology is defined as the smallest unit of (free) meaning. Clearly, the ‘word’ constituents the smallest unit of meaning--as opposed to the morphological (bound) affixes *-ing* (progressive), *-ed* (past tense), etc. which (i) can’t stand alone, (ii) have no real bearing on meaning and (iii) only serve in some capacity as a function of grammar. What makes the ‘word’ so recognizable is the substantive nature to which the word relates. This relationship is typically referred to as a *one-to-one relation* between *sound* and *meaning* (or concept). For instance, the sound /tri/ equates to the concept of tree as it would be conceptualized in the speaker/listener’s mind. Then, “word” can be defined as a morphological unit that contains some amount of meaning that can be conceptualized: *tree/bush, car/bike, book/paper, walk/run, sleep/wake, fast/slow* , etc.). Such word meanings are referred to as being @link **Lexical** (“word-based”) insofar that they express substantive concepts. A second aspect of morphology contains parts of words which carry no meaning. This latter aspect of morphology functions in such a way as to transmit grammatical information only--information not relevant to the stem-word. This second type of morphology is termed @link **Functional** (“non-word based”) and is represented in words usually as **Inflections**. An easy way to see the apparent distinction between Lexical and Functional aspects of morphology is to consider the following token sentences below.

0.1 The “Sally Experiment”: An Introduction of Lexical vs. Functional Grammar

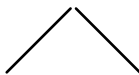
One very nice way to illustrate the essential difference found between **Lexical and Functional grammar** is to call upon an experiment referred to here as the “Sally Experiment” (Galasso 1998, class lectures: Univ. of Essex). The experiment offers us a classic case of how ESL students tend to realize units of grammar (ESL=English as a Second Language). The token ‘Sally’ sentence below illustrates in a very natural way the classic distinction made between what is Lexical vs. Functional--a distinction typically referred to as Substantive vs. Non-substantive units of language. The heart of the experiment relies on the distribution of the /s/ in the sentences below: *Sally wears strange socks*.

- (1) a. Sally wear-*s* strange sock-*s*. (English =L1)
b. Sally wear-*∅* strange sock-*∅* (English =L2)

It should be made obvious in the token sentence pair (one of many presented in the experiment) that the phonological unit (or phoneme) /s/ is what is being examined here. However, when one takes a closer look, there emerges an interesting asymmetry in “*what gets left out where*” in specific ESL contexts (ex. 1b). It should be said that on the phonological level, all /s/’s throughout are relatively the same--that is, they are similarly pronounced (notwithstanding some r-voicing assimilation that changes the /s/ to /z/ in the word *wear-s*). So, an account for the apparent asymmetric distributions of /s/ cannot be made on the grounds of phonology. In the case above, it appears that although ESL students may pronounce correctly and produce 100% mastery of the underlined phoneme /s/, they tend to optionally omit the italic /s/. This forces early-on in our discussion of grammar a further distinction between (i) Phonology, on the one hand, and (ii) Morphology, on the other. For example, if all underlined /s/’s are produced 100% of the time, surely, as expressed above, there is no phonological deficit. The optional omission of final /s/’s here must be attributed to a deficit in morphological. Hence, the two aspects of grammar are addressed simultaneously--*Phonology vs. Morphology and Lexical vs. Functional*: The lexical /s/ being the one underlined and the functional /s/ being the one in italics. These two very distinct aspects of language (and language processing in the brain) introduces us to a very important and seemingly transcendent dichotomy in language--viz., *Lexical vs. Functional Categorical Grammar* (as illustrated below):

(2)

Language Schema

		
Category:	Lexical	Functional
<u>Definitions:</u>	<ul style="list-style-type: none">• <i>Form Class</i>• <i>word meaning</i>• <i>concrete-substantive</i>• <i>associative/memory</i>• <i>conceptual</i>• <i>1-to-1 relation</i>	<ul style="list-style-type: none">• <i>Structure Class</i>• <i>no word meaning</i>• <i>abstract-non-substantive</i>• <i>rule-based/variable</i>• <i>grammatical</i>• <i>1-to-many relation</i>
=====		
<u>Morphology:</u>	<ul style="list-style-type: none">• <i>Derivational</i>	<ul style="list-style-type: none">• <i>Inflectional</i>
=====		
<u>Philosophy:</u>	<ul style="list-style-type: none">• <i>Empirical</i>• <i>Skinner: behaviorism</i>• <i>Cognitive based--learning</i>	<ul style="list-style-type: none">• <i>Rational</i>• <i>Chomsky: innate grammar</i>• <i>Autonomous syntax</i>
=====		
<u>Communication:</u>	<ul style="list-style-type: none">• <i>Animal</i>	<ul style="list-style-type: none">• <i>Species-specific (human) Language</i>
=====		
<u>Area of Brain:</u>	<ul style="list-style-type: none">• <i>posterior, both hemisphere</i>• <i>temporal lobe: motor-strip</i>	<ul style="list-style-type: none">• <i>anterior, left hemisphere</i>• <i>frontal lobe: Broca's area</i>

What we see in the sentence experiment above, and expressed in the diagram in (2), is that the lexical /s/ is never dropped. This phenomena can be accounted for by the fact that the lexical categories--here being a lexical item /s/--are composed of crucial substantive (lexical) information and must be preserved in order to effectively communicate the whole lexical/word meaning. For example, the initial /s/ dropped in *Sally* would give us *ø-ally* /æli/ (in IPA), which would completely

distort the intended meaning. The same problem would arise with *ø-cks* /aks/. In these cases, the /s/ is said to be lexical because it contributes to the overall word meaning: without the full lexical meaning to which the /s/ contributes, the meaning is changed. On the other hand, and in contrast to the lexical /s/, if the functional /s/ is omitted, there occurs no meaning loss. Functional elements of a given sentence can therefore be defined as being “non-crucial” for the actual transmission of communication. Whether or not we say “*wear*” or “*wear-s*” tells nothing of the actual meaning of the word--viz., the /s/ in “*wear-s*” must be present only to carry out an abstract relationship of functional grammatical between (i) *Sally* [Pronoun: 3Person/Singular] and (ii) *wear-s* [Main Verb: 3Person/Singular/Present].

So to recap, if a speaker drops a lexical element--such as an /s/ in the case above--the dictionary entry of the word-meaning (or lexeme) is lost and no communication can be transmitted effectively. On the other hand, if only functional elements are dropped, and all other lexical elements are maintained, then a basic level of communication is retained. As discussed above, what one typically finds among ESL students is that those functional elements which reflect more abstract properties of language are inconsistently produced and often get deleted in the early stages of learning a second language. Only later, and at more mature and sophisticated levels of L2 (second language) formal learning, do speakers eventually master (at close to 90% mastery) the usage of such functional elements. In addition, the same course of development occurs with respect to Pidgin Languages--although, many pidgin speakers may actually fossilize and remain at an immature lexical stage and never grow into the proper functional stage of the L2 grammar. If you listen carefully enough to such (foreign) pidgin speakers, you would discover that indeed it is the functional elements that go missing--notwithstanding other lexical deficits which may enter into the mix such as poor accent and vocabulary usage, etc. (Pidgin example: ‘*Him a di uona. Him tek dem an put dem an dis wie*’ (= He is their owner. He takes them and puts them on the right path (Romaine 1994, p. 175)). Alongside such functional deficits, main lexical stems are always produced rendering that basic form of communication that is so essential in basic daily discourse. In addition to Pidgin, some forms of Black Vernacular English (BVE) would be very similar: e.g. *She go make some grocery. He done bust his lip. He be sick. My brother sick. I’s/They’s/We’s sick.* etc.

0.2 Structure vs. Form Class: “How do you do?”

In addition to the Lexical vs. Functional category distinction at the morphological-inflection level, the same distinction holds at the word level: the distinction is labeled (i) @link **Form Class word** vs. (ii) @link **Structure Class word**. One way of observing this lexical vs. functional distinction at the word-level is by considering the token interrogative sentence “*How do you do?*”, where the obvious double usage of the word “*do*” should stand out. In fact, in some of my years of teaching abroad, I have even had the question posed to me in the following manner--“What does the second “*do*” mean and why do we have to repeat it so”? The question stands to an extent only insofar as it depends on the misunderstanding that--if the two words have identical meaning, then how come the repetitive nature of the phrase. As we shall see later on in this text, the two “*do*’s” are indeed not one in the same (notwithstanding the perceived identical pronunciations). Herein lies the confusion: The first “*do*” is actually functional, containing no meaning whatsoever and only serves some abstract functional purpose--here, it specifically serves to form the grammar of a question (interrogative) sentence (See (ex. 110) and following regarding the Auxiliary Verb and its functional role in grammar). It is only the second “*do*” which is lexical and thus contains very general generic verb meaning (as in the verbs *go* or *feel* in the greetings “*How’s it going?*, *How do you feel?*, etc.). One simple way to uncover this distinction between lexical “*do*” and functional “*do*” is to evoke the **substitution test**--a beloved test of linguists which often helps to get a better handle on the nature and distribution of a particular class or category of words. Consider the substitution test below in (3) where we can see the selective distribution between (i) the first **Functional Auxiliary-Verb** “*do*” (Verb1) and (ii) the second **Lexical Main-Verb** “*do*” (Verb2):

(3) Table: The Substitution Test

Wh-Q + Verb1 + Subject	Verb2
a. How do you	do ?
b. do	know ?
c. do	speak ?
d. do	feel?
e. do	cook ?
* f. How know you	do ?
* g. How speak you	do ?
* h. How feel you	do ?
* i. How do you	ø ?
@j. How ø you	do?

(* marks ungrammatical sentence, @ acceptable in reduced speech, ex. j)

Surely, “* *How speak you do?*” (3g) is an improper, ungrammatical interrogative sentence. This distinction goes to the heart of the issue as discussed above. By misplacing the verbs into the opposing slots, we shatter the syntax and thus the overall meaning of the sentence. More specifically, the lexical “*do*” (which is always positioned in the Verb-2 slot with regards to interrogative sentences) is the main verb and carries the substantive meaning of the verb, whereas the functional

“do” (Verb-1)--sometimes referred to as the “*Dummy-‘do’ insert*”--is merely an Auxiliary verb (void of any verbal meaning) and is inserted between the Wh-Question and the Subject in the capacity of an abstract interrogative marker. (See *Form Class* vs. *Structure Class*). This is precisely why sentences 3f-i are ungrammatical--namely, where we ought to have a substantive main verb carrying out its full verbal meaning in the appropriate slot, we have instead a ‘Dummy-do’ auxiliary verb void of any potential meaning. Returning then to the original question which spawned the above substitution test, we now see that indeed the two seemingly identical “do’s” are not alike--whereas they may be alike on a phonological level /du: /, they are two very different items at a morpho-syntactic/grammatical level. (Note that in fast pronunciation, the first Aux “do” gets reduced to /hau-yə-du/ (IPA) (=How ø you do?).

0.3 Categories and Features

The natural first steps in attempting to systematically categorize language (in general) would be to (i) establish a natural class of word types (e.g., Nouns and Verbs) and (ii) define such word types as containing common word-level and distributional features. Much of this information regarding “word types” is already in the minds of speakers--it’s part of our endowed linguistic knowledge given to us (free) at birth. However, one major contention surrounding this assumed innate source of language knowledge is the hypothesis that the brain, therefore, must house, in isolation, some special (built-in/native) autonomous module for language, disconnected and disassociated from all other modules in the brain which might lead back to general cognitive skills, etc. This school of thought is known as *Special Nativism* (as opposed to *General Nativism* which assumes a Piaget-style language learning process tethered to more general cognitive development). (Return to my language schema diagram in (2)). Let’s take a quick peek into such “built-in” knowledge by considering how native speakers can manipulate novel words in the following sentences below. Consider how a novel word “*Sib*” (Brown, 1957) (a newly created word not part of our English input) takes on appropriate syntactic categorical status:

(4) Table: Word Category & Rule

Token Sentence using “ <i>Sib</i> ”	Category:	Rule:
a. The sib is red.	<i>sib</i> = Noun	[Det+N]
b. The “sibbing” car has broken down again!!	<i>sibbing</i> = Adjective	[Det+Adj+N]
c. Stop (the) sibbing on your pencil! d. John is sibbing on his paper. e. Mary often sibs at night.	<i>sibbing</i> = Noun/Gerund <i>sibbing</i> = Verb/Progressive <i>sibs</i> =Verb 3pres/sing/pres{s}	[Det+N] [Be+V+ing] [V + {s}]
f. John & Mary have sibbed twice. g. The sibbishly dressed man was late.	<i>sibbed</i> =Verb <i>sibbishly</i> = Adverb	Perfect [Have+Verb+Pp] [Adverb+adjective+N]
h. Does Sib like Pizza? i. Sib the door quietly!	<i>Sib</i> =Proper Noun <i>Sib</i> =Verb	Question [Do+S+V(O)] Imperative [ø V+(O)]

Of course, on a *Semantic* level (or word meaning-level) you don’t know what the word *sibbing* actually means (e.g., This ‘*sibbing*’/‘*F*’-ing car!!!) (we can leave telepathy to work here and so any number of suggestions is open to the floor). However, due to *sib*’s syntactic and grammatical distributional properties, one can (i) infer some amount of meaning while (ii) attributing a categorical status simply by tracking the word through the overall sequence of the sentence. In other words, on a basic level of discussion, one could say that we arrive at word meaning via its placement (where it sits in contrast to other words in a sentence). This placement is syntax, and this approach to lexical/word learning is known as *Syntactic Bootstrapping*. It is not too far fetched to assume that the word class to which we have attributed “*sib*” is specified in that word’s lexical entry: [+/-N, +/-Adj].

A grammatical category is thus a class of words which have a common set of grammatical features. The traditional “category” basis for defining words as “parts-of-speech”--namely, Verb/Adverb, Noun/Adjective, Preposition--has been fundamental throughout linguistics. Verbs and Nouns are the two highest profile categories which enter into a wide range of grammatical relations: viz., most *Nouns* enter into a grammatical relationship showing e.g., (i) Definiteness distinction (*A book* vs. *The book*), (ii) Number distinction (Singular vs. Plural) (*A/The Car*, **A/The Car-s*), etc., while *Verbs* enter into a full range of forms termed *Inflection* (or *Tense/Agreement*):

(5) Table: Verb Forms: Inflection & Grammar

Forms of Verbs	Inflection	Grammar
i. John play- <i>s</i>	{s}	3rd singular/present
ii. I play- <i>Ø</i>	{Ø} zero allomorph	1st sing/pres
iii. I play- <i>ed</i>	{ed}	Regular Past Tense
iv. John is play- <i>ing</i>	{ing}	[Be+Verb+ing] Progressive 3rd/sing/pres
v. a. I have play- <i>ed</i> b. She had spok- <i>en</i>	a. irregular {ed} b. regular {en} participle	[Have+Verb+Past participle]: Perfect 1st/sing/pres Perfect 3rd/sing/past
vi. a. These two guitars were play- <i>ed</i> (by John). b. John was see- <i>n</i> .	a. {ed} participle b. {en} participle	[Be+Verb+Past Participle+by]: a. Passive 3rd/plural/past b. Passive 3rd/sing/past

Let us then take as a basic starting point the following criteria for determining a Noun from a verb: the one essential defining and distinguishing factor between, say noun vs. verb is that nouns can take-on plural {-s} (and not verbs), while verbs can take-on past tense {-ed} (and not nouns). This is of course oversimplified, but for the time being it should serve us well.

In addition to the full range of forms Nouns and Verbs receive, at the isolated word level, there are other differences which appear at higher syntactic levels: e.g., (i) @link **Determiners** introduce Nouns, and (ii) @link **Auxiliary/Modals** introduce main Verbs. The aspects of functional categories--in this case Determiners and Auxiliary/Modals--specifically addresses this notion of a Lexical vs. Functional relationship. All Lexical Nouns and Verbs which convey semantic/substantive meaning are “helped” in maintaining their abstract (functional) grammaticality by their own counterpart functional co-host: Nouns by Determiners, and Verbs by Auxiliary/modals. (Note that auxiliary verbs “*Do-Be-Have*“, which must work in conjunction with main lexical verbs, are often called “helping verbs”). Recall, that if lexical categories contain only mere semantic material, and little if any grammatical material, then in order for them to enter into a true grammatical arrangement (syntax), they need to take-on abstract grammatical features derived from their functional counterparts. This duality between Lexical & Functional categories goes to the heart of how abstract grammar emerges (recall the schema in (2)).

While the full range of Functional Features will be spelled out in the ensuing sections, let’s briefly introduce the notion here. Let it suffice for now to say that it’s the Functional Determiner *The* that renders the Noun *book* specific--as opposed to the generic *A book*. This distinction being played out here relates to a specific functional feature that has to do with Def(initeness): namely, a [+Def] Feature carried by the Determiner and thus affecting the counterpart Noun: e.g., *The book* vs. *A book*. (See (48) below for Def-features). Here, it is the binary realization of either a [+/- Def] Feature which can be attributed to the distributions of Definite [+Def] vs. Indefinite [-Def] Determiners (*The* vs. *A* respectively). Consider in (6) below the syntax between lexical nouns & verbs in how they enter into functional relationships between determiners & auxiliary/modals (respectively).

(6) Table: The Syntactic Range of Nouns and Verbs

Determiners Introduce Nouns: [Det+(Adjective)+Noun]	Auxiliary Verbs/Modals Introduce Main Verbs: [Aux “Do-Have-Be”]
<p><u>Det+N</u>: <i>A book, That class, The teacher,</i></p> <p>Det+(<u>adj</u>)/N: <i>My own work, A red shoe, One small kiss</i></p>	<p><u>Modals</u>: <i>I can ’t read a book. We should take the class. They may fire this teacher. Will you pass the tests? They might do well. We could be alone.</i></p>
<p><u>Gerunds: Verbs → Nouns</u></p> <p><i>The-run/walk/dance/jump/fall... The-running/walking/dancing/ cooking/washing/visiting...</i></p>	<p><u>Aux/Question</u>: <i>Do you like Math? Does He? Have you washed? Are you going? Has she seen him?</i></p> <p><u>Aux/Negation</u>: <i>I do not (don ’t) like math. She doesn ’t play. I am not going. We were not talking. They haven ’t seen her</i></p>

A *category based* model of language classifies words according to parts-of-speech. For example, note that a word such as *joke* would take a plural {s} (forming the conjunct *joke-s*) → word category [+Noun/-Verb] (because only nouns can incorporate the plural {s} inflection), but not the word e.g., *jokingly* (**jokingly-s*) (asterisks * marking ungrammaticality). Whereas the former word *joke* is categorized as [+Noun], the latter word *jokingly* is categorized as [-Noun, +Adverb]. Such basic categorization is well and good at one level of investigation; however, as we shall see below, such over-simplified labeling based on pure categorization becomes insufficient and problematic when faced with more subtle distributional properties that accompany words. Although this basic model of representing words (via parts-of-speech) intuitively assumed that there had to be something in the internal make-up of the lexical items (per se) that either allowed or disallowed certain types of inflections, no real attempt was made to account for differing behaviors and distributions of particular words of the same class. In other words, while a category-based model provided a broad description of the bundle of words which made-up a category (N, V, Adj, Adv), it provided no outlet for describing crucial differences found between words within the same category: e.g., traditional notions of *Count* vs. *Non-Count* (*Mass*) Nouns

(Two *book-s* /*teacher-s*/ *home-s*/ **furniture-s*). Here, the word *furniture* surely is grouped and classified as [+Noun] as are the rest; nevertheless, it doesn't take the plural {s} inflection. There seems to be no way to handle the distinction of the two types of nouns short of separating them into a separate dual-category (e.g., [+/-*Mass*] vs. [+/-*Count*]). While this "dual-category approach" would certainly capture this refined difference between the two nouns, it would do so at the expense of abandoning their larger and more important categorical "[+Noun]" class similarity. What seems to be needed in this case are finer grained models which (i) divert lexical analyses somewhat away from the actual word-class item itself (but not at the expense of the class), and rather (ii) examine the possible arrangement of the precise lexical internal features (i.e., sub-categorical features) which factor in such differences between words of the same class.

On the heels of such analyses, a methodological paradigm shift has occurred which defines "Word-bundles" as "Feature-bundles"--using binary notation to express the full range of properties (and feature-matrices) inherent in a given word. This new approach couples (i) the traditional category-based model which sets out to define general parts-of-speech with (ii) the more subtle feature descriptive model. (For further reading on Features, see the paper *Non-count Noun Determiners: Where's the feature?* posted on my web site). (NB. Having said this, it is also important to note that this "Reductionist" view--that traditional syntactic categories can be broken down into smaller parts--shouldn't imply that the "labeled" category is now made redundant. The traditional category, as we have always known it, remains and is not replaced by say a bundle of features. It is perhaps better put by saying that the two go hand and hand.

Both feature classifications--(i) *Category-Features* which seek to maintain some coherency with the traditional "parts-of speech", as well as their more subtle counterpart (ii) *Subcategory-Features*--are typically represented in enclosed brackets [] and may be expressed in binary notation [+/-F] (with (F) indicating the specified feature). For example, a Noun category may be defined by a binary expression denoting intrinsic category features on the one hand--such as [+N, -V], as well as subcategory-features [+Count] on the other. The above notations state that the lexical category Noun has an intrinsic plus N-feature and minus Verb-feature, in addition to having fine-grained functional sub-category plus count-features (number). This now nicely captures the distributional differences found among the words **furniture-s* vs. *book-s* as witnessed above--with the former being notated as [+N/-Count] and the latter [+N/+Count]. (It is worth noting that this functional distinction between Count and Mass Nouns are not fully appreciated by children who may be just entering their Functional-Stage of language development (approx. 2-3 years of age): it's been well documented over the years that children both (i) combine indefinite determiners with mass nouns (e.g., *a dirt*, *a sand*) as well as (ii) over-generate plural {s} on mass nouns (e.g. I have two *furniture-s*, three *sugar-s*, etc. and that some children continue to make such errors of over-generalization up until eight years of age. (see Brown and Bellugi, 1964, Slobin 1966 for an overview).

At the basic level, the four traditional *parts-of-speech* categories can be represented by the following binary notations:

(7) **Sub-categorical Features: Binary Notation**

- a. Verb [+V, -N]
- b. Noun [+N, -V]
- b. Adjectival [+V, +N] (=Adjective [+N], Adverb [+V]).
- c. Preposition [-V, +N]

In addition to these inherent categorical features, their inherent Lexical vs. Functional status might also be notated in a similar way (as shown in (15)).




@0.3.1 Lexical Categories

Lexical Words have specific and idiosyncratic meaning. These words are content-based and can either be readily conceptualized in the mind of the speaker (i.e., semantically-based as with Nouns & Verbs) or can come to be manipulate upon in logical terms (i.e., logical *no*, *and* , and *if/or*) and/or potentially take-on opposite meanings (e.g. Adjective *cold*>*hot*, Adverb *slow*>*fast*, Verbs *sleep*>*wake*, etc.) The list of lexical categories is given in the table below:

(8) Table: Lexical Categories

Lexical Categories:	
•Nouns	•Adjective
•Verbs	•Adverbs
•Preposition	

These categories are expressions of lexical items--“Lexical” here simply means “Word” (as would be found in a dictionary with an assigned substantive-meaning definition). All lexical words share a common property of being content driven--that is, the word is anchored by some substantive meaning. In this sense, the speaker should be able to conceptualize the properties of a given lexical word--whether it be Noun (adjective) or Verb (adverb) (and to some extent Prepositions contain meaning albeit via a relatively positional relationship). (But see Preposition as Functional Category in §2.4 (161) below). In other words, the speaker should be able to construct some form of a mental image of say, *folder*, *mailbox*, *ball*, etc. (for nouns), or a mental action of say, *dance*, *run*, *eat*, etc. (for verbs). In a basic sense, we could assign some sort of meaningful iconic representation to the sound-meaning associations in the following nouns in (9). (Although verbs are to a large degree less salient in concrete terms (tangibles, etc.), they nevertheless contain meaningful conceptual information that is related to states or actions).

- (9) a. folder  b. mailbox  c. ball 

Notwithstanding the abstract and less salient nature of Main Verbs as expressed above--viz., the traditional notion that Nouns represent more readily accessible conceptual notions of *person/place/thing*--out of all the lexical categories, the *Preposition Class* is perhaps the most abstract when attempting to form a stable mental image. However, its substantive nature does make itself available to us via *location* and *manner*. Clearly, words such as *between*, *below*, *in*, *with*, *under*, etc. have some conceptual value in relation to structural, locative meaning. (See §2.4 regarding functional features of Prepositions).

Another interesting aspect of lexical category words is that they are the first type of words to be spoken by children in their earliest stages of speech. This stage-1 is typically referred to as the lexical-stage of language development. (See relevant papers on language acquisition posted on my web site).

@Form Class Words Lexical words are often defined as **Form Class Words**. Lexical Nouns, Verbs, Adjectives, Adverbs are labeled as *Form Class* words because members of each class (parts-of-speech) share the ability to change their forms--either by (i) *Derivational Morphology*, or by (ii) *Inflectional Morphology*. (The term ‘Form’ simply refers to the shape of the word. For example, if we start with a verb, say “go”, we would say that the form of the verb changes once we add the inflection [3person/present/singular +{s}] to the

verb stem yielding “go-es”). We can extend this same analogy to the full range of Form-class words. So, as part of our working definition, we can say that ‘Lexical words’ are also Form-class words because their forms can be manipulated and changed. This clearly contrasts with functional *Structure-class* words such as Determiners (*the/my...*) and Aux/Modals (*can/should...*) which are strictly prohibited from changing forms via an inflection--e.g., **She can-s / should-ed* or **The-s / my-s* (see §0.3.2 below). (Again, there are plenty of data in child first language acquisition showing that children do not initially get this class distinction right).

Consider the examples in Table (10) below of how the word-stem forms of our four main lexical categories change via Inflectional and Derivational Morphology:

(10) Table: Form Class Lexical Words: Inflection & Derivation

Form Class / Lexical Words:	Inflection:	Derivation:
Noun: book, friend, table	[Plural +{s}]:book-s, friend-s, table-s	→ <u>Adjective</u> {ish}: book-ish, {ly}: friend-ly → <u>Verb</u> {be-}: befriend,
Verb: study, teach, speak	[3pres/sing {s}]: stud-i-es, teach-es, speak-s	→ <u>Adjective</u> {ous}: stud-i-ous → <u>Adverb</u> {wise}: stud-i-wise → <u>Noun</u> {er}: teach-er, speak-er
Adjective: red, sick, sharp	[superlative {est}]: red-est, sick-est, sharp-est	→ <u>Adjective</u> {ish, ly}: red-ish, sick-ly, → <u>Adverb</u> {ly}: sharp-ly → <u>Noun</u> [Plural {s}]: “the red-s”
Adverb: quick-ly, best, well	comparative {er}]: quick-er bett-er,	→ <u>Noun</u> {ness}: quick- ness, → <u>Adjective</u> [# change]: good

For further exercise, analyze the English derivation morphology in the following words in Table (11) below. Try to identify the root-stem lexical word, along with the function of each derivational affix (creating the derived word):

(11) Table: Exercise in English Derivational Morphology

absorbent	arrival	childish	counterexample
defamation	employee	employment	encircle
freedom	generative	grammarian	greenish
lady-like	lioness	manhood	Marxist
mishear	motorist	Protestant	purify
unaware	undo	vaccinate	Vietnamese

(Examples taken from Radford et al. 1999, p. 177)

What will be of interest to us in the following sections is the idea that Form-class *Lexical words* can take-on inflection whereas Structure-class *Functional words* cannot (see §0.3.2 and (157) on Modals). This distinction will later become a major theme in our overall grammar--in the sense that in order for “meaningful” lexical words to contain more “abstract” levels of grammar, they must allow their forms to change and be affected via Functional Inflection--this Inflectional Process, which is so much a part of what we understand (functional) grammar to be, will be more fully fleshed out in subsequent sections and chapters.

@0.3.2 Functional Categories

In contrast to lexical categories, which contain meaning, *Functional Categories (or features)* are a class of Words (*or inflections*) which have no substantive meaning, and are thus inserted into a sentence not to transmit tangible information, but rather to serve some abstract grammatical purpose--functional words or items (inflection) are usually utilized in some capacity to form a grammatical relationship with a counterpart lexical item. (For example, go to the DP (Determiner Phrase) example to see how a Functional Determiner “The” might work alongside a Lexical Noun “car”: @link **DP**). In a sense, what we shall later see is that functional categories assist lexical categories in carrying out grammar.

A list of the major Functional Categories is as follows:

(12) Table: Functional Categories

Functional Categories:
<ul style="list-style-type: none">• Determiner (D) • Pronouns (Prn)• Auxiliary (Aux) • Modals (M)• Infinitive (Inf)• Complementizer (C)• Qualifiers (Q)
<u>Morphology:</u> • Agreement (Agr)
<ul style="list-style-type: none">• Tense (T)• Case: Nom (subject) Acc (object)
Nominative (e.g. I, He, She) Accusative (e.g. me, him, her)

Showing the contrast between the two categories, we could say that lexical categories have descriptive content, whereas functional categories have no descriptive content. For instance, whereas the noun “dog” (in the phrase *The dog*) can be easily conceptualized in the mind of a speaker, the determiner “The” cannot be so readily conceptualized. In fact, there is actually no meaningful content to the word *the*. For instance, just try to make an image in your mind of what *the* might look like (shape, size, color, action, etc.)--as you quickly discover, it is an empty search. This is because lexical words are stored in your mental-lexicon (a sort of memory file of words) in such a way as being labeled, associated and indexed to meaning--this is what is behind the notion of a 1-to-1 association (sound-to-meaning association or indexing (cf. Skinner)).

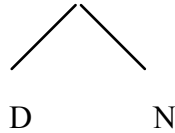
Though we shall more closely examine the roles of the major categories in later sections, let's briefly look at two main functional categories as listed above: D & Aux. The Determiner (D) class is a functional (or Structure Class) group of words which specifically work in conjunction with counterpart Nouns. Such

prototypical members include: **Articles** (*a, an, & the*), **Demonstratives** (*this, that, these, those*), **Possessive or Genitives** (*my, your, his, her, our, their, its*), **Indefinites** (*some, any, no, many*), **Cardinal Numbers** (*one, two, three...*), and **Ordinal Numbers** (*first, second, third...*). What is important here to capture is that all the above words work in conjunction with Nouns--forming a functional/lexical relationship: e.g., [D *A/The/This/My/One*] + [N *car*]. Whereas all determiners share in this common relationship (D+N), specific determiner words also maintain their own special properties. The most common property of all is that (D)-words serve to introduce Nouns--plainly speaking, Determiners signal that a Noun is fast approaching within the phrase. In fact, except for very special grammatical conditions where it is possible to dispense with the Determiner--e.g., when the noun contains general, generic information as in the sentence *Ø Girls just want to have fun*” showing no overt sign of a D-word (Ø) to introduce the plural general class noun *Girls*--it is seldom possible to have a noun without a D-word introduction: e.g., **I like car/She is friend/Where are toys/This is not book/How do you like weather?/You need to study for test*, etc. etc. (* marks ungrammaticality). And more to the point, it is never possible to have a D-word without a Noun: e.g., **I like the/She is my/Where are these?/This is not a/How do you like our ?/You need to study for your*, etc. etc. (NB. There is a class of ‘Determiner-like’ counterparts that serve as **pronominals** and must stand alone. For example, consider the following possessive-determiner/(pre)pro-nominal paradigm: *my/mine, your/yours, her/hers/, our/ours*. For example, contrast the following--*This is my book, This is mine* Ø vs. **This is my* Ø, **This is mine book. Those are our books, Those are ours* Ø vs. **Those are our* Ø. **Those are ours books*. The D-words *my/our* here are considered to be **pronominal** in that they are required to come before nouns, while their counterparts *mine/our* are pronominal (non-determiners) and thus must be used in the manner of a (Pro)noun). If we wish to maintain the condition pronounced earlier that Determiners hold a structure dependency in that they must introduce Nouns, then such Pronominals as cited above can’t be classified as Determiners--their distributional properties, as well as their syntactic behavior, hold the status of [+Pronoun]).

Returning to their special properties, consider the determiner “*my*”. Not only does this D-word (*my*) signal the presence of an ensuing Noun [My + N], it also expresses a special grammatical property of ownership or possession: as in the possessor + possession relation [D *My*] + [N *car*] (respectively)--“Hey, that car belongs to me--*my car*!” (as opposed to a generic, proto-class reference to “*car*” (e.g., “*The/A/Some car*”). So, it’s easy to see the contrast between the two determiners *my* & *the*--although, on one level, they both introduce nouns, their grammatical properties are indeed very different. We will more closely examine the full range of specific features related to determiners below. For the moment, the most important aspect of the D-word is that it works hand-in-hand with nouns. One trivial way to put it would be to say that the (oddball) determiner is to the (common) noun what “Dr. Jeckle” was to “Mr. Hyde”--in a sense, both are two sides of the same coin.

Consider the diagram of a [D+N] below:

(13) DP (=Determiner Phrase)



a). Article: A/The.....car

b). *Possessive: My.....car

c). Demonstrative: This/That....car

d). Cardinal number: One.....car

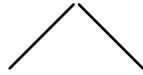
e). Indefinite: Any.....car

(* Using binary notation, the possessive D-word could be specified by a finer-grained [+Gen] feature that resides in the overall Determiner category rendering a (Gen)itive Possessive Determiner. See §2.1 (57) on Genitive Determiners).

@Structure Class Words Similar to the determiner, the *Auxiliary* (Aux) functional word (or Aux-word) introduces the Main Verb in a sentence. Likewise--as discussed above regarding Determiners--whereas you may have a main verb without an (overt) Aux-word present, (as in the sentence “*She likes candy*”), an Aux-word can never be present without a Main Verb: as seen in the ill-formed “**How do you ∅?*” question presented earlier in Table 3 ex. j) or with such examples “**She can the car/*I will the book/*We should the jacket*, etc. Similarly, since functional words are defined as ‘structure-class’ words which can’t change forms, all inflection is banned from surfacing on functional stems--e.g., **She can-s/can-ed*, **The-s/My-s cars*. etc. (See also Modals (157) as structure-class words). The Aux-word or Modal renders the Main Verb replete with abstract grammatical properties. Then in a like-minded fashion, the Aux-word/Modal does for the Verb what the D-word does for the Noun--viz., both functional category words D & Aux provide their lexical counterparts N & V (respectively) with essential grammatical properties. The specific task of spelling out the full range of functional features to lexical words will come in later sections. For the time being, it is enough to understand that Aux/Modals work in conjunction with Main verbs. Consider the tree diagram below:

(14) **MVP (Main Verb Phrase)**

MVP (Main Verb Phrase)



Modal

MV

Grammar: Rule: Sentence:

a. can speak *modal-ability* [modal+ V] *She can speak.*

b. will speak *modal-future* [modal+ V] *I will speak.*

1

1

Aux

MV

c. do speak *request* [Do+V] *Do speak softly.*

d. be speak-ing *progressive* [Be +V +ing] *I am speaking*

e. have spok-en *perfect* [Have+V+{en}] *I have spoken.*

0.4 Feature Recap

As introduced above, the entire range of lexical and functional categories can (more or less) be presented by a binary notation in which specific sub-categorical features and properties are indicated. The feature [+/-N] serves to cross-classify categories in a similar way--it implies that all [+N]-words (nouns) share a common property and thus form a super-category or class called *Noun* which differentiates the class from say [-N] words (such as Verbs, Prepositions). Likewise, we can use this same notation to account for the intricate Functional-to-Lexical inter-relations as noted above. It was noted that each Functional category closely works alongside a corresponding Lexical category: e.g., Determiner + Noun, and Aux/Modal +Verb. Consider the notation of the functional categories below where [+F] shows (Functional category).

(15) Table: Word Category & Features

Category:	Features:	Phrase:	Example:
a. Determiner (D)	[+N, -V, +F]	D + N	: the book
b. Auxiliary (Aux)	[-N, +V, +F]	Aux+V (+Main Verb)	: has studi-ed
c. Modal (M)	[-N, +V, +F]	M+V (+Main Verb)	: can study
d. Noun (N) e. Verb (V)	[+N, -V, -F] [-N, +V, -F]	N V+[D+N] (non-main verb)	: book : (to) read books
f. Adjective (Adj) g. Adverb(Adv) h. Preposition (P)	[+N, -V, -F] [-N, +V, -F] [-N, -V, -F]	Adj+N Adv+V P+[D+N]	: linguistic book : carefully studied : with the book

Recall that determiners may indeed precede a Verb--hence turning it into a Noun (=Gerund) (as shown in (16) below):

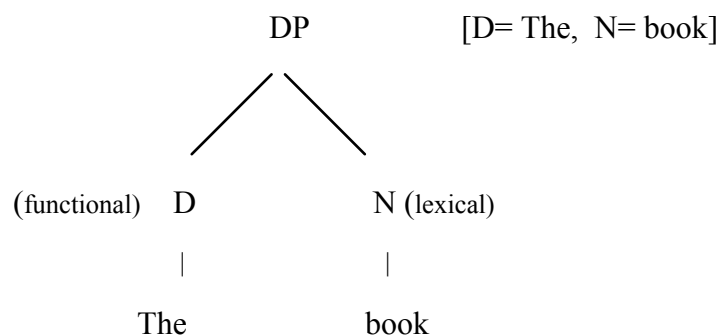
(16) Table: Gerund Constructions

Verbs: ➔ Noun via [D+N]	
(a) walk	➔ <i>The walk</i> was fun.
(b) study	➔ <i>The study</i> has been reviewed.
(c) write	➔ <i>The write-up</i> was copied.
Gerunds [V+ing]: ➔ Noun via [D+N]	
(d) <i>The walking</i>	around the campus was nice.
(e) <i>The studying</i>	for the grammar exam was tiring.
(f) <i>The writing</i>	was carefully proof-read.

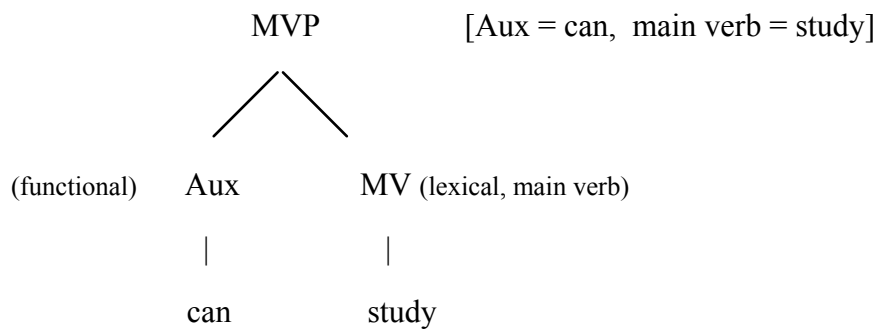
Gerund's particular use of {+ing} forms may create Noun counterparts to DP-Subjects/Objects, as well as modifying Adjectives as in e.g., My *sleeping/white* cat is fine. As stated above, the lexical/substantive categories--which provide meaning--have a functional categorical counterpart. The diagrams below help to illustrate this specific inter-relationship between the categories of three fundamental phrases: (DP, MVP, PP):

(17) DP, MVP, and PP Phrase Diagrams

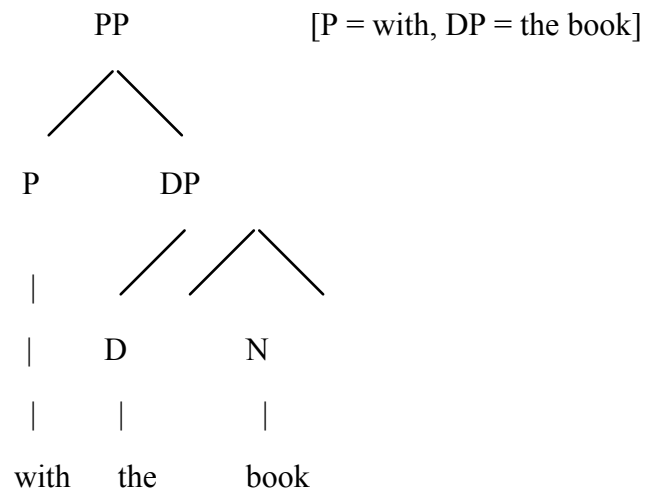
a). Determiner + Nouns ➔ Determiner Phrase (DP)



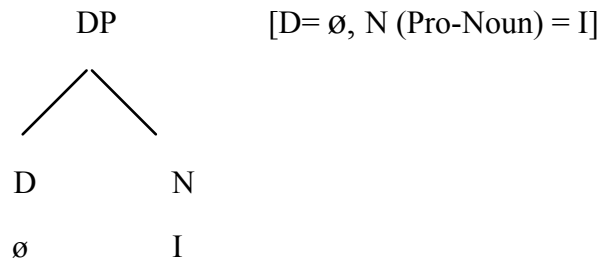
b). Auxiliary + Verb ➔ Auxiliary, or Main Verb Phrase (MVP)



c). Preposition + [DP] ➔ Preposition Phrase (PP)



d). Determiner + Pronoun → Determiner Phrase (DP)



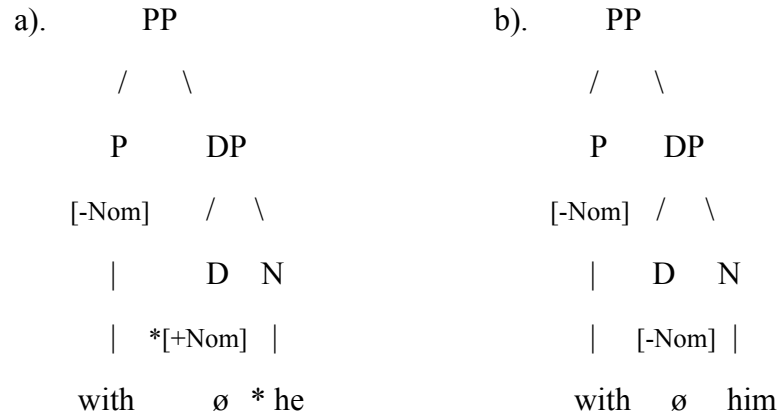
As was mentioned earlier, the preposition (PP= Prepositional Phrase) seems to be a lexical category in the sense that it contains substantive meaning regarding the situation (Place & Manner) of an object. However, a caveat is in order here. The preposition also contains more abstract functional categorical features in the following way:

(i). First, similar to the determiner class, prepositions too share in the capacity to function as a structure-class word--whereas Determiners serve to introduce Nouns (D+N), Prepositions serve to introduce Determiner Phrases (P+DP). This notion that prepositions signal the subsequent appearance of a DP is tantamount to saying that some functional relationship will hold between the (P) and the subsequent (N) which is embedded in the DP. One fall out from this functional structure-class distinction of the preposition is the established prescriptive rule banning preposition standing--that is, leaving a preposition at the end of a sentence without its required introduction of a DP (e.g., **Who(m) does she want to speak to?* (=prep standing), > *To whom does she want to speak?*).

(ii) Second, Prepositions may contain at least one **Functional Feature** regarding **Case**--viz., DPs that follow (transitive) PPs require Accusative (Acc) (Oblique) [-Nom] Case. This requirement of Case is an aspect of functional and not lexical grammar. For the time being, simply consider the Case marking differences regarding the objects (**he* vs. *him*) within the two PPs below:

(18) Case & Prepositions

Example. John wants to go...*[PP with *he*] / [PP with *him*]



The specific features associated with the given functional / structure-class words and phrases will be more fully fleshed out in subsequent sections. What is important to understand here is the inter-relationship between lexical and functional categories--namely, that functional categories provide their lexical counter-parts with abstract grammatical material: (e.g., D-to- N, Aux/Modal-to-V, P-to-N, etc.). (Note that within our adopted binary notation of Case, [-Nom] (minus nominative), by default, automatically equates to [+Acc] Accusative Case).

(19) Table: The “Four Parts-of-Speech” Categories--Lexical vs. Functional Status

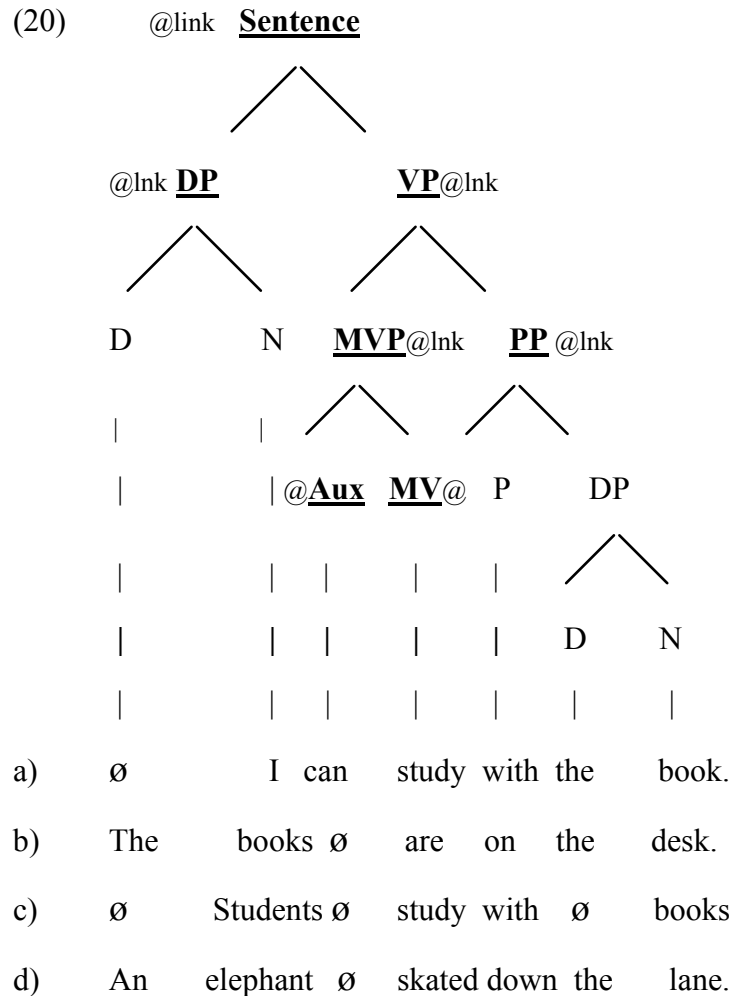
Category:	<u>Noun</u>	<u>Verb</u>	<u>Adjective</u> / <u>Adverb</u>	<u>Prepositio</u> <u>n</u>
Features:	[+N, -V]	[+V, -N]	[+N] Adjective [+V] Adverb	[-V, +N]
•Lexical	all class of main nouns	all class of main verbs	a lexical category	-----
•Functional	Pronouns: I, You, S/he, We, They, etc. Determiners: a/the, this, my, his, some, one, many, etc	Auxiliary: be, have, do Modals: can, will, might, should, etc.	-----	

0.5 Summary

- Grammar is sub-divided into two inter-related studies: *Morphology* and *Syntax*.
- **Morphology** is the study of how words are formed from out of smaller units (called morphemes). For example, the word “book-s” here would have two morphemes--(i) the root/stem “book”, and (ii) the inflectional morpheme {s} showing number [+Plural]. Morphemes that must attach to the main verb stem are referred to as being **Bound Morphemes** (e.g., {-s}, {-en}, {-ed}, {-ing} {-er}) whereas **Free Morphemes** such as e.g., {act} in {re}-{en}-act-{ment} can stand alone .
- **Syntax** is the broader study of how words are strung together to form (Partial) *Phrases*, *Clauses*, and (full) *Sentences*. For example, as presented above, the Determiner Phrase (DP) is formed from out of the string D+N.
- **Lexical vs. Functional Grammar** defines and separates by category what is content-driven from what is abstract. The *lexical categories* (or Form Class words) come to include: Nouns, Verbs, Adjectives, and Adverbs (with some discussion of how prepositions might straddle the functional category), while *functional categories* (or Structure Class words) come to include Determiners, Auxiliary/Modals, Pronouns, Complementizers, and Qualifiers.
- The Lexical vs. Functional distinction was illustrated by our “Sally Experiment” which showed a disparity between omitted functional /S/s and salient lexical /S/s-- the latter is crucial for word recognition and meaning whereas the former’s non-salient quality is brought about by abstract, functional properties.
- Super-categorical features were presented: e.g., Noun = [+N, -V], Verb= [-N, +V] etc. showing a binary notation of features [+/-F].
- Basic phrases were introduced showing a basic lexical to functional relationship.

1. @ The Sentence

(insert links)



Sentence By definition, the term ‘sentence’ denotes a free standing @linkclause which is not contained within some larger expression. In other words, the term ‘sentence’ denotes nothing more than an independent syntactic expression with its full meaning being self contained--i.e., a complete and independent thought. We noted earlier that regarding morphology, the word is the most easiest recognizable unit. Well, regarding syntax, a larger unit of linguistic expression, the sentence is the most recognizable unit. It is perhaps best to conceptualize the sentence in terms of its structure. At the sentence level, the largest units which can be easily divided into two--and thus maintain *Binary Structure*--are called the **Subject** and **Predicate**. This simple binary structure of subject + predicate is the basic template from which all sentences are generated.

In fact, English, like all languages, can provide a potentially infinite number of sentences. The simple fact that we can even come to speak/understand the vast amount of sentences never spoken/heard before is a testament to the fact that they are all based and generated from a commonly perceived template: the subject + predicate template. For instance, consider the sentences below:

- (21)
- a. Yesterday, I saw a pink and yellow elephant roller-skating down flower lane.
 - b. Tomorrow, we might visit the home of the jolly-green-giant if we are not first gobbled-up by his pet gold fish.

- (22) (Lexical gibberish with syntactic meaning)
- a. Today, I *toslaked a blevish zimperstopen manikoning* down flower lane.
 - b. English parse:
 - (i) *toslaked* ➔ main verb [+Tense], past tense inflection {-ed}
 - (ii) *blevish* ➔ adjective, inflection {-ish}
 - (iii) *manikoning* ➔ verb [-Tense], participle inflection {-ing}

These non-sense words could easily be syntactically slotted and thus spun into English counterpart parts-of-speech: *toslaked* (=saw), *blevish* (=pink), *zimperstopen* (=elephant), *manikoning* (=skating), etc. etc.

➔ Today, I saw a pink elephant skating down flower lane.

The two sentences in (21a, b) are correct English expressions I have never spoken/heard before. The completely made-up sentence in (22) is also correct on pure syntactic grounds even though the individual words have no lexical sound-to-meaning relation in English. I doubt you have heard either of the sentences in (21a, b) uttered before in this exact wording--not to mention the completely gibberish sentence in (22) above. Nevertheless, I believe we can all agree that (21a, b) are indeed English sentences which project a certain meaning--albeit a meaning that might be better served in a fairy-tale novel. The fact that the gibberish in (22) can likewise be syntactically parsed as a possible English sentence immediately begs the following question: What is it exactly that allows

one to process and perceive a given sentence? Just think about it--a sentence never heard/spoken before can instantly be comprehended without difficulty. Well, the magic of it all generally has to do with the sentence structure template and the ability of such a template to string certain words of word-classes together (Noun, Verb, Adjective, etc.) to form the subject & predicate. The fact that I can creatively generate these random sentences--seemingly stringing one word after another and with full comprehension on your part--is based on the fact that they are buttressed by an underlying common structure. It is owing to this structure that we come to an accepted comprehension--perhaps even more so the structure than the actual individual words that make-up its structure. So, returning to the issue of language providing a potentially infinite set of sentences (by which an infinite amount of words can be randomly shifted), we are in fact merely noting the myriad of possible word combinations: The term 'sentence' is more than just the total added value of the string of words put together, but rather something much more. (The sum is greater than the parts). A sentence is a very specific 'arrangement' of linguistic structure--the individual words simply serve to fill in the 'slots' (so to speak) of this structure.

If--as earlier schools of thought might have had us believe (viz., Behaviorism)--grammar analyses relied on a simple collection of all possible sentence configurations, including all token sentence types with all possible word arrangements, etc. (sifting correct from incorrect types), just the task of simply sorting through the memorized data itself would have brought a break-down in our mental abilities. Such a heavy burden would leave very little computational room (mental capacity) for the actual subsequent processing of the arrived sentence. In fact, trying to process (*parse*) language word-by-word would put such a strain on short term memory that we would ultimately never be able to comprehend those more abstract or complex sentence. We can understand the sentences above because the overall structure is consistent with English sentence structure/grammar and the words themselves (although 'fairy-tale-like' or nonsensical) are positioned in the appropriate 'slots'. If, on the other hand, we were to arrange the same words in (21a), say in any random order, then the slots would not map onto the accepted fixed structure and the sentence--even with the identical words--would not make any sense to us.

Consider the new rendition of the 'elephant sentence' in (23) below now with an altered arrangement of the very same twelve words:

- (23) * Pink yellow and yesterday lane I flower a saw elephant down
 roller-skating.

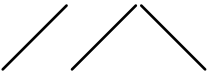
As we see, the expression makes no sense: even the gibberish but parsed

sentence in (22) makes more sense to us. Having now convinced you (I hope) that general Sentence and Phrase structure counts, let's now consider what the exact structure looks like--carrying over the labor of dividing and subdividing Sentence and Phrase Structure onto the remaining relevant sections of the text. (See *Phrase* for a full phrase analysis of the 'elephant sentence' (43)). The first thing we must understand is that the 'elephant sentence'--like any English sentence--is divided into two larger segments: (i) the subject and (ii) the predicate.

Subject-Predicate

Before we can even begin our discussion of the simple sentence and the range of different sentence types, we must first flesh out the very heart of what makes up a sentence. While some of the more detailed aspects of this topic will be postponed to latter sections dealing with *Sentence Structure*, it is incumbent upon us to understand actually what formulates a basic sentence structure. It is now clear, after a number of psychological and linguistic investigations, that we process speech input streams by chunks or constituents rather than by individual words one at a time. This style of linguistic processing (termed *parsing*) suggests that we divide information first into larger meaningful parts, and then consequently into smaller segments. This hierarchical processing reflects what we believe to be a species-specific, (Human) endowed syntactic module in the brain of the type that allows one to conceptualize and compartmentalize language by syntactic rules and not by mere memory: (hence, a kind of scaffolding is involved). The very nature of binary division is said to be reflected in much of biology. Furthermore, the linguistic division of information into two parts seems likewise to reflect a universal property in human perception--generically speaking, the two parts are composed of 'the thing' & 'the action' of the discourse. Thus, much of our segmenting will be done in the form of *binary branching*--i.e., where segments tend to be broken down into two parts. At the very largest sentence level, this binary divide occurs between the (i) **Subject** (*Topic*) and (ii) **Predicate** (*Comment*). The working definitions here are quite straight forward and seem to represent what is an innate and universal trait of human perception: the Subject is composed of a *Determiner* (*Article*) + *Noun* sequence (=DP) which states the topic of the sentence. This is typically the event, thing corresponding to the *Who/What* of the discourse. In addition to this essential Subject/Topic of the discourse, some further information must ensue which allows us to comment on the topic by way of rich description--typically asking the follow-up question: "so what about the topic"? In other words, it just isn't not enough to provide noun material by saying "[*The boy in the yard*]" without this innate inquisitive follow-up question which natural leads to verb material "*so what about the boy in the yard*" → Subject/Noun: "[*The boy in the yard*] + Predicate/Verb [*is playing*]" (*S* → "*The boy in the yard is playing*"). Regarding the segmental processing discussed above, we know that the subject equates to the whole string "*The boy in the yard*" because we can apply what linguists call the *substitution test* and substitute the whole string with the pronoun

“He”: e.g., *The boy in the yard_i--He_i is my friend* (where the co-indexing of *He* relates back to *The boy in the yard*). It is this natural inclination to secure additional information about the topic that is termed Predicate/Comment. The most important aspect of the predicate is that it must include a Finite [+Tensed] Verb. Without such a verb, there can be no sentence. Consider the Subject + Predicate structure of the basic SV (subject + verb) sentences below:

(24)	S (→ sentence)	Rule: S → Noun/DP + Verb/VP
		
	<u>Subject/Topic</u>	<u>Predicate/Comment</u>
	• Noun material	• Main Verb: Tense
	• DP	• VP
		<u>Token Examples</u>
		a. [<i>S John</i>] [<i>V sleeps</i>]
		b. [<i>S Elephant</i>] [<i>V roller-skates</i>]

On the topic of “Sentence“, what we also must recognize is that there is an order of different *Sentence Types*--all of which preserve the overall essence of “sentence” (*per se*, as a class type), but an order which also bears to light some fundamental differences regarding more subtle *Features* of structure. (Regarding features, one could say that the “selectional requirements” for a V(erb) <x> to select a specific type of Object <y> or a Non-object <z> in its predicate is determined by the verb’s feature setting: e.g., [V: +/-object]). The sections below spell-out the major sentence types of English. The Latter sections (§§. 3, 4) will deal with matters regarding *Complex Sentence*, *Sentence Structure and Movement*.

1.1 Intransitive Sentence

The first type of sentence, and most basic type, is the Intransitive Sentence. This Type of sentence structure contains a certain class of Main Verb (MV) that doesn’t necessarily need to have an accompanying Object (in the predicate) to serve as its complement. As we shall see in the latter examples, it’s the Main Verb that delegates and projects whatever type of information is required for the predicate: e.g., whether or not one object, two objects or no objects are required. Consider the following examples below:

(25) Table: Intransitive Sentences

Subject:	Main Verb:
a). Fish b). A telephone c). Jan d). The customer e). Carla f). I	swim. is ringing. snores loudly. complained persistently. must have enrolled early. study /swim/snore/complain/enroll...

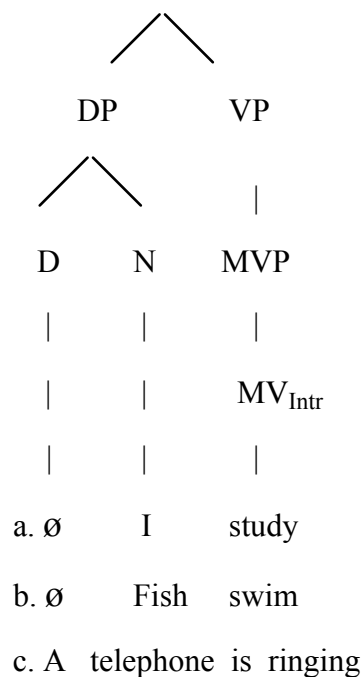
What's important to note here with regards to the above sentences is that the mere projection of (i) a Subject and (ii) a Main Verb is sufficient in satisfying the requirements for a properly formed sentence: these requirements for a well formed sentence are governed by the semantic properties of the Intransitive Verb. Although we may wish at anytime to combine additional (Adverbial) material to the predicate--such as in the sentence e.g., "(Fish swim (*fast/ under the sea*))" etc.,--what is important to understand is that this additional material, here, taking the forms of an (i) Adverbial and (ii) Prepositional Phrase (respectively), is not an essential requirement of the verb. In other words, the verb "*swim*", being an **Intransitive Verb**, doesn't look leftward to its predicate (or complement) seeking assistance in maintaining the meaning of the expression--the verb is able to stand alone contributing 100% of its predicate (semantic) information directly back to the subject "*Fish*". Clearly, there is no aspect whatsoever of the semantics of "*swim*" which could refer to anything but the subject "*Fish*". We could expression this Intransitive property in the following logical expression: swim(Fish). When we say "*Fish swim*", 100% of all meaningful material is associated right back to the subject. In our example in (20a) above, "*I (can) study [with the book]*", the main verb "*study*" directly links back 100% to the subject without seeking out any additional support from an object. As stated above, the fact that we do have additional predicate material--in the form of a Prepositional Phrase (PP)--is superfluous to the nature of the verb "*study*", and is simply affording us with extra linguistic material that could otherwise be forgone. Of course, we could very well stop with the sentence "*I study*" without jeopardizing the verb's integrity.

Another example of Intransitivity would be the verb "sleep"--as in *John*

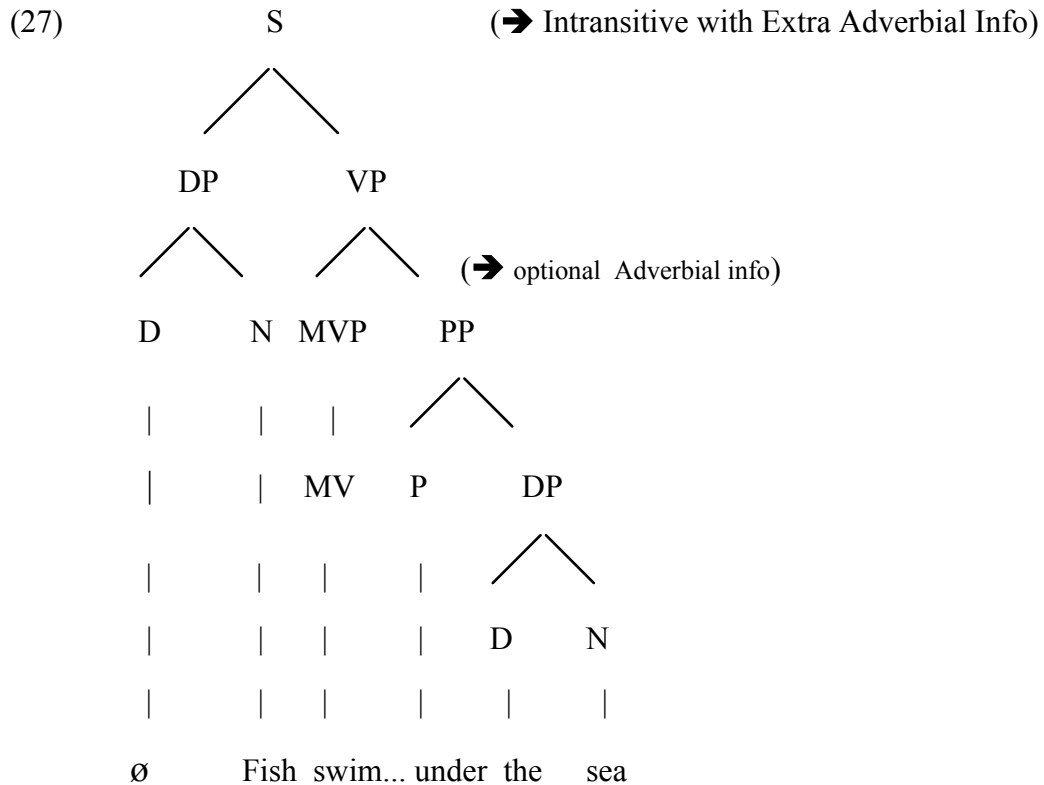
sleeps. No sense can be derived from **John sleeps Mary* (=SVO). This malformed sentence arises because the verb ‘sleep’ must contribute 100% of its total meaning back onto its subject--i.e., the verb’s meaning has absolutely nothing to say about any possible interceding object. However, note the well formed counter-example *The general bedded the soldiers* (‘to bed’ here meaning to supply bedding). The nature of the verb ‘bed’ requires an object--one receiving bedding.

Consider how (25) above would look (and be diagrammed) without such extra material in its predicate:

(26) S (→ Intransitive) Rule: [S =DP + MVP_{intr}]



how an Intransitive type structure would be Tree-Diagrammed below:



1.2 Transitive Sentence: Copular Linking Verbs

In contrast to what we have observed above with Intransitive type sentences, Transitive Copular sentences do require additional Adverbial information in the shape of either e.g., a Prepositional or an Adverbial/Adjectival Phrase (to is left in the predicate) in order to keep the meaning of the copular verb stable. Consider the following type of sentences below:

(28) Table: Copular Transitive Sentences

Subject	Copular Verb “Be”	Tense
a). John	<i>is</i> outside	• Present
b). Her job interviews	<i>were</i> yesterday	• Past
c). Mary’s notebook	must have <i>been</i> on the desk	• Pres/Perfect
d). The party	will <i>be</i> in the yard	• Future/modal
e). She	must <i>be</i> a teacher	• Present
f). John	<i>was</i> tired	• Past

By looking at the separate predicate constituents of the sentences above, you will see that they contain not only a main verb (=copular “Be”), but that they also must contain some kind of an obligatory *Adverbial Phrase*. What we mean by “Adverbial” is that the phrase supplies essential additional information to the verb (modifying the copular verb so to speak)--and so the label adverbial. The obligatory adverbial complement information is the following: *outside, yesterday, on the desk, in the yard, a teacher, tired* (respectively). Note that we are referring to the Prepositional Phrases (PP) here (*on the desk, etc.*) as being somewhat adverbial in nature. In the above sense, such PPs are not optional (as in Intransitive structures), but rather are required. In other words, if the adverbial complement were dropped, the copular transitive verb would not be stable enough to transmit meaning. Consider how such ill-formed copular structures would look without their adverbial complements: (**John is* \emptyset /*Her job interviews were* \emptyset /*Mary’s notebook must have been* \emptyset /*The part will be* \emptyset). As you quickly discover, the copular verb “Be” cannot stand alone in the predicate but must be supported by other adverbial material. Such supporting adverbial complements provide information regarding *Place, Time or Manner/Mode*: e.g., *John is... in the class/late/tired* (respectively). These copular verbs {*Be--is/are/was/were*} are called **Linking Verbs** due to the fact that they directly link-up the adverbial information to the subject: [Subject + Linking Verb]--i.e., 100% of the adverbial material directly reflects back to the Subject (Noun), making all such (linking) adverbial material in the predicate quasi-adjectival in nature. To a certain degree, linking verbs function in a quasi adjectival manner--describing or modifying the nominal (Noun) subject. When one says “*John_i is a teacher_i*” (*John=teacher*), the DP-object [a teacher] directly co-indexes and refers back to the DP-subject [John] (as indicated by the subscript index \subscript{i})--much in the same way as an adjective reflects back onto the Noun it is modifying. Such Linking verb constructs with co-

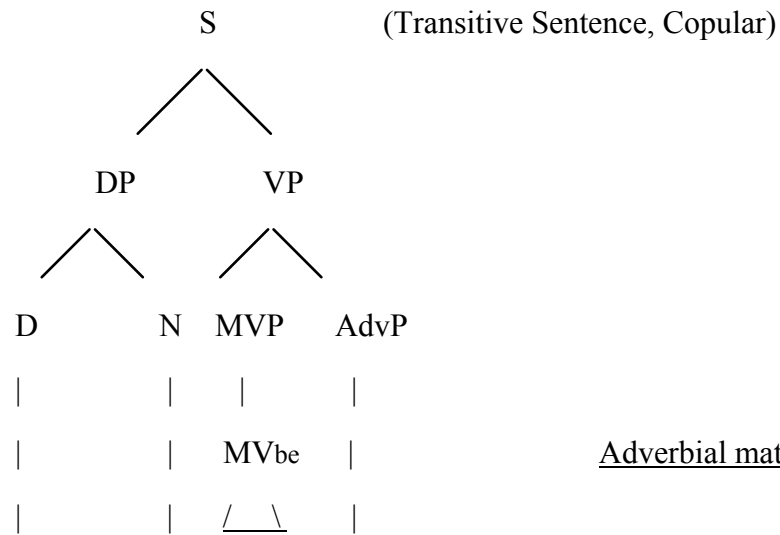
indexed complement are often termed “Nominal Subject Complements”. (See (31) below for structure). This is because the complement/object functions as a quasi-reflexive in conjunction with the nominal/subject. In fact, this modifying quality of the copular “Be” becomes even more apparent when copular structures are inverted as an Adjective Phrase:

- (29) a). Pat is a postman: [DP [Dø] [N *Pat*]] is the *postman* ➔
b). Postman Pat is here: [[DP ø] [AdjP [Adj *Postman*] [N *Pat*]]] is here,

(NB. This verb form of nominal modification will become important when we come to examine how copular linking verbs of sense are modified not as verbs (*par excellence*), but rather as nouns). (See section (33) below).

Consider the Copular “Be” tree structures below showing adverbial material in the complement slot positions:

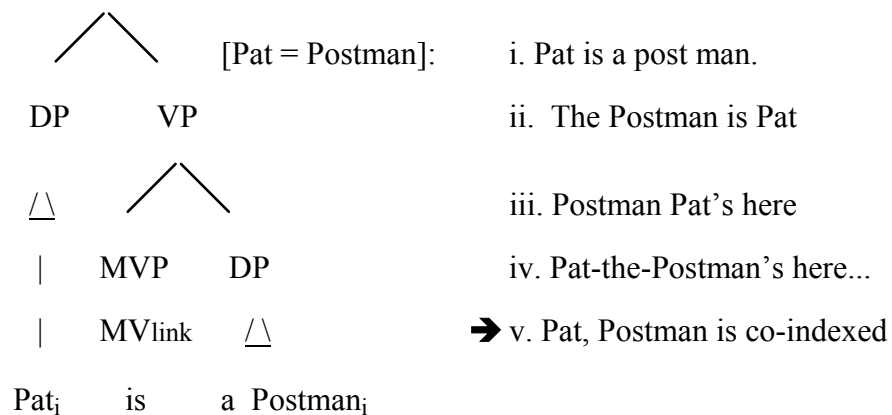
(30) **Copular “Be”** **Rule: [DP + Copular + Adv]**



Adverbial material:

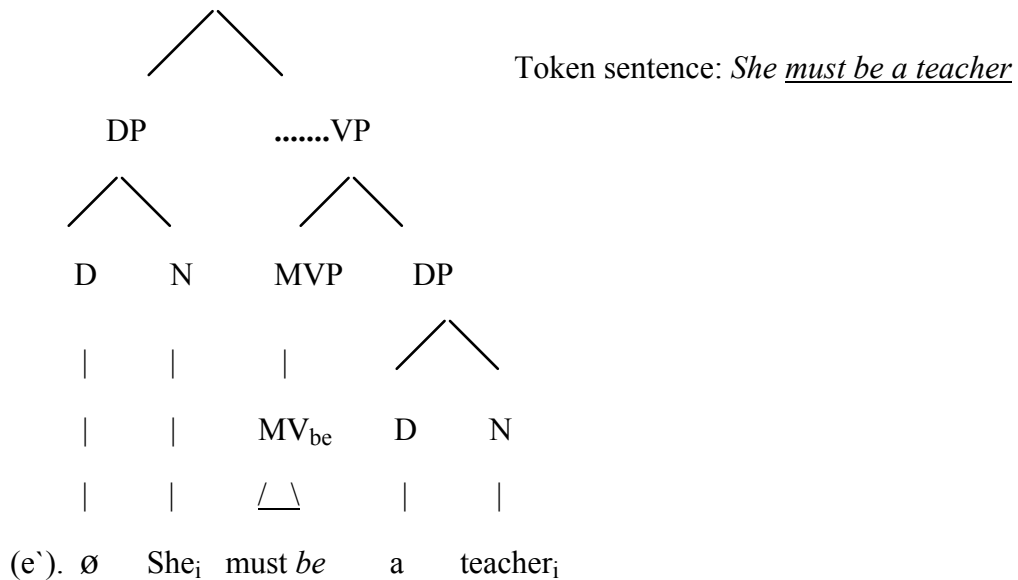
- a). \emptyset John *is* outside (→ Adv: place)
- b). \emptyset John *was* tired (→ Adj: description)
- c). The party *will be* in the yard (→ PP: place)
- d). Her interviews *were* yesterday (→ Adv: time)
- e). \emptyset She *must be* a teacher (→ DP: nominal subject)

(31) **S (→ Nominal Subject Complements)**

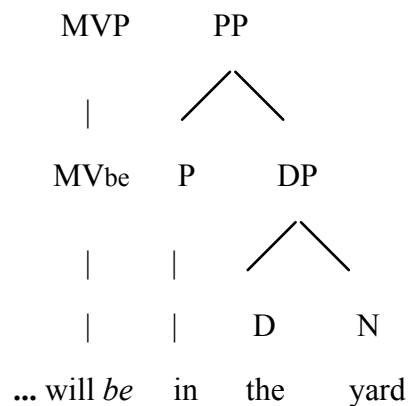


Token Sentences (30e, c) above capture this generic Adverbial material--the object of the copular verb--by either projecting a more accurate Prepositional Phrase (ex. c) or a Determiner Phrase (ex. e) in the adverbial complement slots of the verb. Consider the revised complement phrasal projections below:

(32) S (→ Transitive Sentence) Rule: [DP_i + Copular + DP_i]



(c'). ..VP Token sentence: *The party will be in the yard*



Let's now turn to the issue of how other (copular) linking verbs function as quasi nouns--in terms of how they get modified. Verbs of *sense* are frequently used as linking verbs as in the following examples:

(33) **Token Sentence**

Structure Rule: [DP +LinkV+Adj]

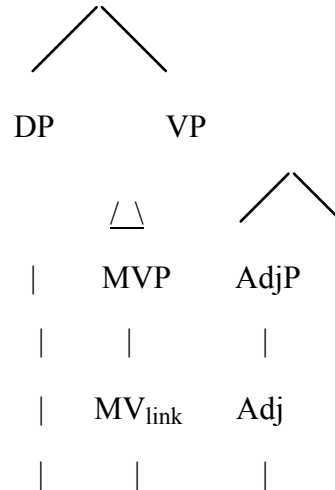
a). The milk *tastes* sweet / *sweetly.

S (→Transitive linking MV)

b). That music *sounds* loud / *loudly.

c). The tissue *looks* soft / *softly.

d). I *feel* bad / *badly for him.



a') The milk *tastes* sweet

b') That music *sounds* loud

c') The tissue *looks* soft

d') \emptyset I *feel* bad

What is interesting about the sentences above is that the typical adverb modification of a verb--i.e., the grammatical structure of [Verb + Adverb], has become replaced by the structure [Verb + Adjective]. Note that the adverbial counterparts to the modification are incorrect: e.g., **The milk tastes sweetly* is something you would never say on an intuitive basis. What we are suggesting here is that both copular "Be" verbs as well as Linking Verbs of the *Senses* take on a certain amount of Nominal (noun) qualities--so much so that when they enter into a modification structure, it is the adjective (a noun modifier) which wins out over the adverb (a verb modifier). The overall structure of modification suggests that copular as well as linking verbs get their lexical/substantive properties directly from the Subject (Noun)--hence, the notion of "linking": verbs that

directly “link” the Subject to the Predicate (Object or Modifier). (See also (153) Copular/Main Verb “Be” vs. Auxiliary “Be” for further discussion).

1.3 Transitive Sentences--Main Verbs

The last type of sentence discussed here is called the Transitive Sentence--Main Verb. Consider the token sentences below:

(34) Table: Transitive Sentences--Main Verbs

Subject	Main Verb	Object-Predicate
a). John	hit	Bill
b). Mary	kissed	John
c). The students	took	the class
d). The man	bought	a cake

What is interesting about these sentences above is that they appear very much like the copular/linking verb examples in the sense that they need to have an overt complement--namely, they need to have in its complement slot some kind of object. Moreover, such sentences contrast with what was said regarding Intransitive Sentence Types provided in (§1.1) above. Recall that in Intransitive types, predicate objects weren't required (and could optionally project)--e.g., *Fish swim* \emptyset . With this latter Transitive sentence type, objects must project--e.g., *John hit Bill* (*Bill=object*). There is no sense in which we could say the utterance *John hit* \emptyset without specifying what or whom John hit--in this example, the *Whom/object* = *Bill*). The reason for the "Main Verb" heading of such transitive types is to capture the fact that here the *transitivity feature* is the inherent property of the Main Verb (as opposed to the copular/linking verb "Be") which requires an accompanying object-predicate. As stated above in the example of the verb [*hit*], one could say that there's an embedded feature in the semantics of this Action verb itself which requires (i) one who hits (the Agent/Subject of action), and (ii) one who gets hit (the Recipient/Object of action). Such semantic features can be expressed as a Predicate Logic proposition (shown below): (*J*)*ohn hit* (*B*)*ill*:

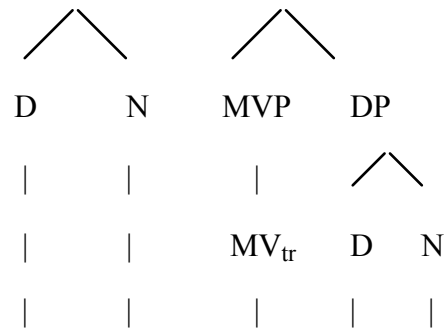
(35) Predicate logic: *hit*(J, B) {arguments: John = subject, Bill = object}

In other words, one could roughly say that 50% of the verb's material reflects the action of the subject, while the remaining 50% must reflect and indicate the result of the *hit*. As stated above, there is no notion in which transitive verbs reflect back onto the subject all of its 100%'s worth of verbal meaning: viz., **John hit/kissed/bought/made/* \emptyset . The ill-formed expression *"*John hit*" (*hit*(J)) is thus accounted for by the stipulation that its predicate logic requires both arguments (Subject and Object): viz., the [+Intransitive] feature requires both [+Subject/+Object] settings. Consider the token Transitive sentences along with the Structures below:

Rule: [DP+MV+DP]

S (\Rightarrow Transitive MV)

DP VP



a'). \emptyset John hit \emptyset Bill

b'). \emptyset Mary kissed \emptyset John

c'). The students took the class

Three-Place Predicates There is one additional structure we need to note regarding Transitive Types. There appears to be a certain class of verbs in English that requires not only one object, but rather two DP objects in its predicate place (= *ditransitive predicates*)--counting the required subject as one argument, this then makes the structure a “three-place predicate“. The rule for such structures could be spelled-out as follows:

(37) Rule: Three-place predicate → [DP+MVP+DP+(PP)/DP].

Consider the following token sentences below which have ‘optional’ three-place predicates, as compared to the sentences with the verb e.g., “*put*” that in fact ‘requires’ the third object:

(38) **Token Sentences** **Structure Rule: [DP+MVP+DP+(PP)/DP]**

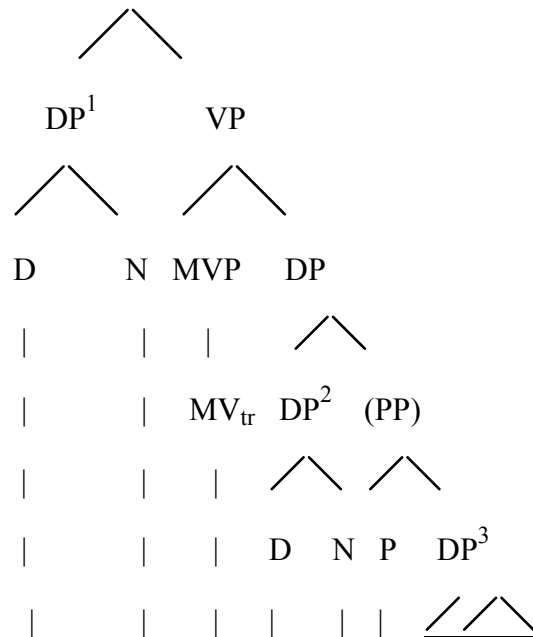
a. John *rolled* the ball (down the hill).

S

b. Mary *broke* the vase (into pieces).

c. They *put* the book on the table.

d. We *gave* the teacher a gift.



- | | | | | | | |
|----|---|------|---------------|-------------|----------|------------|
| a. | ∅ | John | <i>rolled</i> | the ball | down the | hill |
| b. | ∅ | Mary | <i>broke</i> | the vase | into | pieces |
| c. | ∅ | They | <i>put</i> | the book | on | the table. |
| d. | ∅ | We | <i>gave</i> | the teacher | a | gift |

There are a number of verbs in this class which seem to overlap and/or extend their semantic range of meaning--in other words, typical transitive verbs share common semantic cores. For instance, the verb ‘*roll*’ requires by definition of the very action (i) an *Agent* argument (=actor/subject, *John*) and (ii) a *Theme* argument (=undergoing action/object, *ball*). It seems that this same characterization of semantic/argument roles overlap in similar verbs--e.g., *kick*, *hit*, *touch*, *punch*, *throw*, *caught*, *deliver*, and [three-place predicate verbs *place*, *put*, etc.]--noting the special consideration we have placed on the last two di-

transitive verbs, *place* and *put*. In order 'to kick', there must be an Agent 'kicker' and a theme--a person or thing being kicked. There is no sense in the notion of an Intransitive verb 'kick' e.g., **John kicked*, just as there would be no notion of a mono-transitive verb 'put' e.g., **John put the book*. There seems to be something in the semantics (=meaning) of the verbs which requires one to ask for (i) an additional DP for support--e.g., kicked + DP-what/who? (for mono-transitive verbs) or (ii) an additional couplet of DPs---e.g., put + DP-what + (PP)/DP-where? (for di-transitive verbs) (respectively).

1.4 Summary

In sum, we can define a simple English sentence by putting down the following stipulations on the Subject/Predicate--all simple (declarative) sentences require at the very least (i) a subject position (=DP), and (ii) a Main Verb position (=MVP). This simple SV (Subject Verb) construct defines an Intransitive Type sentence by the following rule:

(39)

1. Intransitive Type: [DP+MVP] *a. Fish swim. b. A telephone is ringing*

This basic SV Intransitive sentence expresses the very bare minimum of what is required to maintain a full sentence. In addition to this bare minimum SV sequence, optional adverbial material can be projected in the predicate--e.g., *Fish swim...in the pond*. In this example, the optional material is expressed by the Preposition Phrase (PP) (*in the pond*).

Second order types then stipulate that Object(s) (or second, third arguments) are required. This simple SVO construct defines a Transitive Type sentence by the following rule:

2. Transitive Type-linking [DP+MVP+AdvP]: *a. Mary is outside b. John is tired*

3. Transitive Type-linking [DP+MVP+AdjP]: *a. The music is loud b. I feel bad*

4. Transitive Type-link [DP+MVP+DP]: *a. She is a teacher b. Pat is a postman*

5. Transitive Type-non-link [DP+MVP+DP]: *a. John hit the ball b. I kissed Mary*

6. Di-Transitive Type [DP+MVP+DP+(PP)/DP]: *a. They put the book on the table*

2. @ The Phrase

In this section, we turn our attention to the Phrase level of language.

The 'Elephant Sentence'

One of the reasons we are able to recognize (=parse) the novel 'elephant sentence' in (21a)--and conversely, why we can't for (23)--is that certain words need to 'link-up' together to form larger strings called phrases. For example, as soon as one says the (indefinite) article 'A', our mind is set-up to perceive the following word as a Noun (or Adjective+Noun frame). In fact, using here as an example the (definite) article 'The', any word that follows 'The' will instantly be construed as a Noun--even, as we saw with a made-up novel sentence, made-up novel words can become highly productive nouns: e.g., *The 'pringle' was put on the table* (pringle → some kind of noun/object that could be handled, say like a book), etc. Now, 'pringle' here is a novel made-up word, yet in the configuration of the string, it projects a word-class distinction (Noun). In fact, verbs are often turned into nouns by this very process. Consider the Verb→Noun formulation as found with Gerunds:

(40)

<u>Verb</u>	→ <u>Noun</u>
a. To walk	The walking
b. To cook	The cooking

This same novel word could likewise be construed as a Verb--e.g., *John was pringling all day. Mary can pringle in the morning.* etc. One thing that can be said here, and will be further developed in latter sections, is that (i) the role of the Determiner/article (A/The) is to introduce a Noun, while (ii) the role of an Auxiliary/modal is to introduce a Verb. This productive and highly creative aspect of language stems from our innate necessity to think of language not in terms of individually memorized and isolated words, but rather to think of words as strings, chunks or phrases which build-up specific constituencies.

There are a couple of main points we can now address regarding phrases here--they are outlined below.

1. **Determiners (DP)** (Articles, a/the; Demonstratives, this/that/these/those; Genitives my/our/your/their, etc.) precede Nouns: e.g., The book, A car, This pen, etc. This type of phrase is referred to as a Determiner Phrase since the determiner (the first word of the phrase) heads and projects the phrase. (NB. We use DP throughout in the place of the otherwise prosaic Noun Phrase (NP) since theory internal considerations demand that all Nouns must have at least an abstract functional Determiner).

2. **Adjectives (AdjP)** (modifiers of Nouns e.g., red, good, fast, etc.) precede and generally describe nouns [(Det)+Adj+N]--(e.g., (The) red shoes, (A) good boy, (My) fast car, etc.). Attributive Adjectives which modify following Nouns are best understood as being embedded within larger DPs since such adjectives must accompany Nouns. On the other hand, there are Predicative Adjectives which need not accompany a noun (e.g., The man is *tall/big/fat*). These Adjectives are not embedded in larger DPs and are thus diagrammed as AdjPs. Their modifications tend to be antecedent to the subject of the linking verb.

3. **Main Verbs (MVP)** (Tensed Verbs such as goes/went, walks/walked, keeps/kept, etc.) typically follow the subject of declarative sentences (adhering to the English SVO--Subject-Verb-Object word order). Tensed (=Finite) verbs serve to introduce the overall predicate of a sentence. In fact, part of the requirements for a complete sentence is to have a Tensed Main Verb housed in the predicate as they generate the predicate information of the subject.

4. **Auxiliary/Modals (AuxP)** serve to introduce Main Verbs (MVPs). All functional features associated with Verbs {Tense, and Agreement features of Person/Number} are borne out of the Aux. The Aux also houses any inflection that might be derived onto a verb stem such as past tense inflections {-ed}, participles {-en}, {-ing} as well as housing the usual class of auxiliary elements themselves (e.g., Do/Be/Have and Modals can/will/shall, etc.).

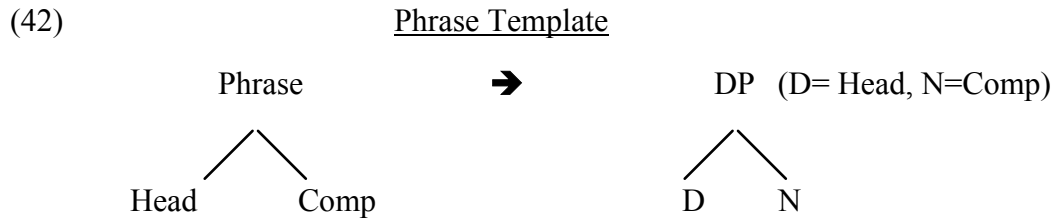
5. **Verb Phrase (VP)** (Infinitive Phrase) unlike the MVP is a Non-Tensed Verb Phrase. Such VPs tend to project after an already positioned MVP. These phrases include all three Infinitive types/forms--e.g., I like--to cook (=Infinitive 'to'), I like-cooking (Infinitive 'ing'), I can cook (Infinitive 'bare verb stem').

6. **Adverb Phrase (AdvP)**, like adjectives for nouns, modifies verbs--e.g, softly touched, quickly ran, etc., (Adv+V).

7. **SVO/Head Initial Phrase:** In addition to English being an SVO word order, English stipulates that the Head of a Phrase must be in the first initial position within the phrase (i.e., that word which labels the phrase--such as Determiner, Adjective, Main Verb, etc.--must come first in forming the phrase, and not last (moving left to right). The word being introduced serves as the Complement of

the Head (or Comp).

Having laid out some of these general principles, let's consider what the template of an English Phrase looks like, and then turn our attention to the real matter at hand--to see just how we were able to process (parse) our now infamous "Elephant Sentence":

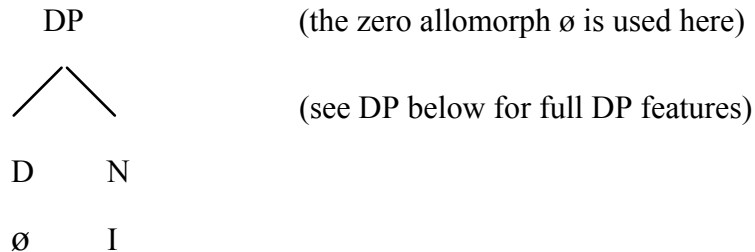


Consider the series of phrases which build-up the structure of the "Elephant Sentence" (restated below):

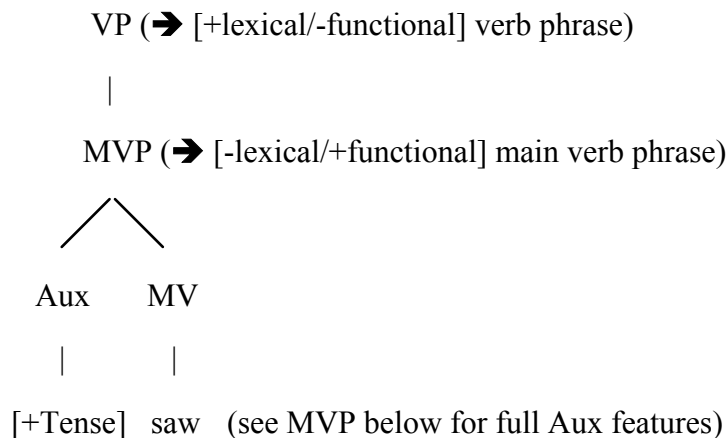
(43) "Yesterday, I saw a pink and yellow elephant roller-skating down flower lane"

(43.a) < *Yesterday* > Although *yesterday* is the first word of the sentence, and since we have said that English is an SVO word order language, at first blush our intuitions might have us say that 'Yesterday' is therefore the subject. But as it turns out, it indeed is not. Two things must be pointed out here. Firstly, proto-type subjects must be Nouns--of the traditional 'Person-Place-Thing' sort. *Yesterday* simply functions here as a time reference (adverbial element) in giving additional (Time) information regarding the predicate. Secondly, *Yesterday* doesn't originate in the first position in any event--it has, in fact, moved from out of the very last position of the sentence and has positioned itself sentence-initially (sometimes referred to as fronting--see **Movement** in §4 below). If you read the sentence above, *yesterday* naturally fits in the finally position (the comma here shows the actual movement).

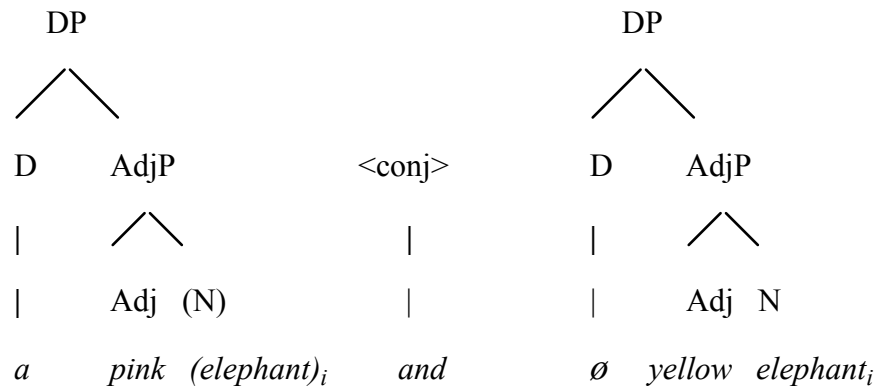
(43.b) < *I* > *I* is in fact the subject of the sentence (the person) and takes the form of a Pronoun. So, having returned the adverb (*yesterday*) to its original place (final position), the Subject or Topic naturally surfaces as the first word of the sentence--preserving our SVO order. The phrase “I” would be spelled out as a DP since I is a ProNoun and all nouns must be introduced by a structure-class functional determiner--yielding a DP:



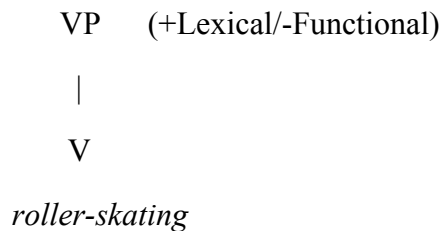
(43.c) < *saw* > *Saw* functions as the Main Verb (MVP) due to the fact that it wields [+ Tense]: the two morphological inflection markers of English Tense being (i) the present 3Person Singular {-s}, and (ii) the regular past tense marker {-ed}. English has only two grammatical Tenses: Present and Past. An optional future mode is not available as a grammatical tense marker and so doesn't form from out of a main verb--being taken up instead by the modals *will/may/could* etc: e.g., *John starts next Monday*, *The President speaks tomorrow tonight*, (= Present tense marker {s} is opted though with future interpretation) vs. *John will start next Monday*, *The President may speak tomorrow night* (= Modal is opted). (See (158) regarding Tense & Modals). Given that *saw* is the main verb, all other subsequent material is said to form the predicate (verb included)--devising the subject + predicate template. The Main Verb Phrase is created below:



(43.d) <*a pink and (a) yellow elephant*> are twin DP expressions each with an embedded Adjective Phrase (for color). The two DPs are then joined by a simple conjunctive element <*and*> as diagrammed in isolation below:



(43.e) <*roller-skating*> We have now come up against a second-order verb type in this sentence. *Roller-skating* is certainly a verb here taking on the role of some action; however, there seems to be no clear Tense indicated on the verb. Well, rightly so--for there should be at all times only one grammatical Tensed verb per clause/simple-sentence and the first-order [+Tense] main verb <*see*> has already been marked for Tense. For now, this second-order verb type will be referred to here as an “ing- infinitive” (present participle) verb (whereas participles don’t maintain tense). It should not be understood as a gerund since gerunds are typically referred to as (i) Verbs with an “ing” inflection that (ii) occupy a noun slot (e.g., [DP The *shopping*] was fun, etc.). Here, the “ing” verb remains a verb albeit without tense--hence, the label Infinitive Verb. (See 3-Types of Infinitive Verbs in (86) below). This verb exemplifies the distinction spelled out above (in 43c) between [+Lexical/-Functional] VPs--where there are no functional features of which to speak--and [-Lexical/+Functional] MVPs--where there are functional features as carried out by the Aux. Clearly, second-order Infinitive verbs wield none of the typical functional features associated with a Main Verb [Person/Number/Tense] and could be simply diagrammed as a prosaic VP:

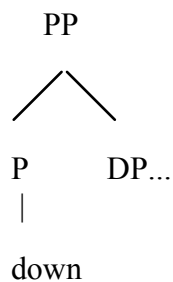


One further implication here is that the VP (roller-skating) could actually be substituted--again, calling on our favored linguistic substitution test--as a **Progressive** aspect of an **Elliptical Clause**:

(a) I saw the elephant roller-skating...

→ (b) I saw the elephant: <it <was roller-skating>>...

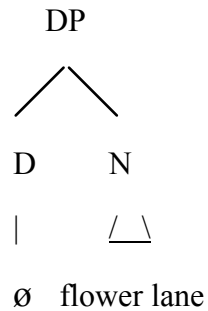
(43.f). <down> Heads a straightforward Prepositional Phrase:



One very important aspect of the Preposition is that it must always introduce a DP (in prescribed grammar). This notion is what is behind the often ‘prescribed rule’ of “preposition stranding”--mandating never to leave a preposition standing at the end of a sentence (see §2.4 for Prep). Though, I must say that there are plenty of occasions when one can only save a sentence by otherwise standing a preposition: e.g.,

- (44) (a) This is the man *for* whom my son works.
 (b) This is the man (who) my son works *for*
 (c) This is the man (-) my son works *for*
 (d) *This is the man *for* who my son works
 (e) *This is the man *for* (-) my son works

(43.g) <flower lane> brings us to the close of our beloved “elephant sentence”. The Phrase can be drawn as a Proper Noun DP with all the typical trappings of a DP:



As an exercise, you should now be able to link all the isolated phrases above into one completely diagrammed sentence--starting with the DP <I> and ending with the DP <flower lane> (recall that <yesterday> serves as an adverbial adjunct which can either be joined at the beginning or at the end of the sentence).

In the ensuing sections, we will be turning our attention to more detailed analyses of specific functional features having to do with DPs (§2.1), MVPs (§2.3) and to some extent PPs (§2.4).

2.1 @ Determiner Phrase (DP)

(45) Table: Determiners

Summary of Determiners	
Articles:	a/an, the
Demonstratives:	this, that, these, those
Possessives:	my, your, his, her, its, our, their
Indefinites:	some, any, no, every, other, another, many, more, most, enough, few, less, much, either, neither, several, all, both, each,
Cardinal Numbers:	one, two, three, four,...
Ordinal Numbers:	first, second, third,...last
Definition: A Determiner is a functional structure-class word that precedes and modifies a Noun.	
Features:	Definiteness, Case, Person, Number, (Gender)
Phrase Structure: D + N → DP	

There are a number of facts we need to spell out about the DP. Firstly, it must be said that a lively debate still persists among linguists regarding whether or not a DP even exists. For a number of purely theoretical reasons, mostly being driven by theory internal factors, we take it that DPs do exist: the alternative view--and a view mostly in line with traditional grammar pedagogy--is that they are simply Noun Phrases (NPs) with a determiner modifier at the Head of the Phrase. However, as has been unfolding throughout this text, our story is crafted around the idea of Lexical vs. Functional Grammar and how such Lexical items (Nouns, Verbs) might merge with Functional formal features. In order to capture this story to its fullest extent possible, we must classify (all) NPs as DPs. There are a number of reasons for doing this. Let's flesh them out below.

First, there is a natural, and I think quite elegant notion behind lexical vs. functional grammar. However, in order to conceptualize the clear distinctions,

they must manifest at the Phrase-level. It's not enough to simply say the some words are born with more formal meanings than others. The question must be how does such formal grammar get onto the lexical items themselves. Such an oversimplified lexicon analysis would not go far enough in accounting for the syntactic phenomena. In other words, although lexical item distinctions are part of what is behind the labeling of lexical vs. functional grammar, more is needed in order to capture where and how such distinctions take place. Our first line of reasoning is that for every Lexical item, there is some Functional counterpart. The relationships are by no means perfect and there are interceding gaps, but for all intents and purposes, a partnership of "Functional-to-Lexical" does emerge (in that order). The most basic partnerships--as presented in the first sections--are between (i) (D)eterminer and (N)oun and between (ii) (Aux)iliary and (V)erb. Whenever there is a Verb, there must be an Aux in order to deliver the appropriate functional/formal grammar onto that Verb. Likewise, for the Noun: whenever there is a Noun, there must be a Determiner to deliver the appropriate functional/formal features onto that Noun. Hence the most basic four square partnerships are: D → N (D introduces N) and Aux → V (Aux introduces V). Prepositions too have some sort of partnership. In this section, let's spell out in more detail the exact functional features for D → N (DP).

(46) **Functional Features:** The standard class of Functional Features having to do with $D \rightarrow N$ are the following:

(a) Definiteness [+/-Def] ([+Def] *The book* vs. [-Def] *A book*)

(b) Case (i) [+/-Nom] (Nominative *I/she/they/* vs. Accusative *me/her/them*)

(ii) [+Gen] (Genitive *my/her/their*)

(c) Person [1,2,3P] (I=1P, you=2P, she/he/it=3P)

(d) Number [+/-Plural] (I/she [-Pl], we/they [+Pl], book [-Pl], books [+Pl])

(e) Gender (+/-Fem) (He vs. She)

(NB. Interestingly, the Gender feature for DPs in English only seems to reflect 3P Pronouns and a handful of lexical nouns--e.g., actor vs. actress, etc. In Romance languages (e.g., Spanish), this Gender feature is more prevalent where agreement between the D and N must take place).

What is important to realize here is that every Noun must select and host all relevant functional features in order to ensure a proper projection of the phrase. (When a phrase doesn't properly project, it is said that the features Crash--but we'll return to that a little later on). To make matters more concrete, let's draw-up some differing examples of DPs along the lines of the features spelled out above and see just where and how the relevant features project.

[Def]-Feature Clearly, the two phrases below hold an important grammatical difference that must be stated both in the semantics (meaning) as well as in the syntax:

- (47) (a) John has finally written [DP [D the] [N book]]. ➔ [+Def]
 (b) John has finally written [DP [D a] [N book]]. ➔ [-Def]

The above examples pin down two very different meanings of the “book”: the first sentence reveals that John has finally written “the” book that we all expected him to write. It is a very specific book--hence, one of its features must mark for [+Def]. The nature of this “book” is a very different concept than the generic book in (b)--e.g., we all know John could write a book (any book) and so he has finally done it--he has succeeded in writing a book. The general nature of “a book” highlights the task of writing the book only, it doesn’t specify the actual book itself. This conceptual difference is captured in functional grammar--viz., the D in sentence (a) is marked for [+Def] while the D in sentence (b) marks for [-Def].



Another interesting Definiteness phenomenon found at the syntactic level is the following pair of sentences:

- | (48) | <u>Def affecting number on Verb</u> | <u>D-feature</u> | <u>Aux-</u> |
|------|--|------------------|---------------|
| | <u>feature</u> | | |
| (a) | <u>A</u> number of students *is/ <u>are</u> ... | (D: [-Def]) ➔ | (Aux: [+Pl]) |
| (b) | <u>The</u> number of students <u>is</u> /*are... | (D: [+Def]) ➔ | (Aux: [-Pl]) |

(NB. Adverbials can have a [+Def] pragmatic effect. Consider the following distributions marking [+/-Def] on the DP-object--e.g., *John has never read a book* (‘a book’ = [-Def]) (*and he never will read it) (no expletive “it” insert) vs. *John read a book yesterday* (and he enjoyed “it”) (‘a book’ = [+Def] and can be replaced by a [-Pl] expletive “it”).

What we find here is that the definiteness feature on the D (marking for specificity) holds an agreement relationship with its Aux (MVP) so that when a D is [+Def], the verb must be singular (or minus plural [-Pl]) and vice versa. One number, “The number“, say 2 or 200 is specific and thus constitutes a singular matching verb, whereas “A number” more or less constitutes a non-specific group--hence, plural verb: (e.g., The number of students enrolling in Grammar is dropping/has dropped from 200 to 180.) Also note that *students*, (the complement of the genitive particle *of*) is plural. Many people are too quick to assume that this plural noun acts as a defunct subject, and so plural agreement of the verb *are* must

(49)

(a)	DP	(b)	DP
			
	D N		D N
Feature:	[-Def]		[+Def]
	A number...are		The number...is

(50) Table: Case--Personal Pronouns

Nominative (Subject) Case			Accusative (Object) Case		
	Singular:	Plural:		Singular:	Plural:
First Person:	I	we	First Person:	me	us
Second Person:	you	you	Second Person:	you	you
Third Person:	he/she/it	they	Third Person:	him/her/it	them

Perhaps the most important aspect of Case to understand is that it is **Structural--** meaning, that Case is recognized dependent upon where the pronoun sits in the sentence: viz., if subject, then Nominative [Nom], if object then Accusative [Acc]. In English, Case is confined to the Personal Pronoun. In Latin, for instance, Case

was crucial in determining whether or not a Pronoun was a subject or an object--this was owing to the fact that Latin was somewhat of a free word order language where words could have a relatively mixed arrangement. In order to distinguish if a Noun (Pronoun) was a subject or not, one had to look to the Case of the word (marked as an Inflection). English too has remnants of this type of Case Inflection: (e.g., the inflection {-m} has a similar Latin-based history in that it marked Accusative (Object) case as in e.g., he vs. hi-m, they vs. the-m). (Note in Latin the noun "love" "*amor*"--Nominative case *amor-ø*, Accusative case *amor-em*, Genitive case *amor-is*). Case no longer indicates word order for English--English has secured for some time now an SVO (Subject-Verb-Object) order (parting from an earlier Germanic mix of SOV & SVO), so that functional case is no longer a crucial grammatical marker of word order. (NB. We have seen in our own lifetime the approaching abandonment in standard English of the use of *who* vs. *whom*--where the former marks for Subject Case and the latter for Object Case: noting the {-m} inflection once again). In addition, part of this overzealous Latin bias for Case is still with us today. For instance, consider Pronoun case confusion below:

- | | | |
|------|-----------------|------------------|
| (51) | Formal: | Informal: |
| | (a) It is I | (c) It's me |
| | (b) This is she | (d) This is her |

The pressure from Latin-based schooling has succeeded in making us at least more self-conscious toward the Latin style of Case; however, given that this pressure must be externally reinforced (by prescribed grammarians having their roots in the 19th century), from time to time our own English intuitions win out. Note the following problems with (51) above:

Latin is a Pro-drop (pronoun drop) language (meaning that the subject, like in Spanish/Italian) can go missing. English is not a Pro-drop language. However French, which too is a Latin based language, is also not a Pro-drop language and must resort to the English equivalent "It is me" (*C'est moi*). In addition, the Latin based paradigm seems to falter in the following examples:

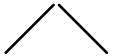
There is you,...There is I,... but one never seems to say **?There is we...*

The problems of choosing the correct Case can at times be affected by something as small as a conjunctive *and*. For instance, the sentence *My dog and I went for a walk* may have alternative case values for some of us whereas the Nom Case *I* becomes Acc Case *me*--e.g., **My dog and me...* Of course, while the latter is 'grammatically incorrect', the instability, nevertheless, demonstrates just how abstract Case can be. Recall, the substitution test can always help you find your way in these matters: by substituting '*My dog and I*' we get the Pronoun *We* (=Nom Case): *We went for a walk (my dog and I)*. Another important syntactic fact regarding case has to do with Preposition (see PP §2.4). It seems that Prepositions specify for Acc case for its complement. In other words, when a Pronoun-DP follows a Prep, it must always be marked for Acc (object) Case.

This also may give us some trouble. Take the Prep *between*, if a pronoun follows, it must have Acc case: e.g., *Between you and me*,... vs. **Between you and I*,... The latter version is a very popular error of Case marking. Take other Prepositions for example, one would never say e.g., *I want to sit near/with/next-to* **she/he/they*... Clearly, these pronouns occupy the object position of the sentence and so must reflect Acc case. A very simplistic picture now emerges with the Case paradigm captured in the following exchange:

- | | | | | |
|------|-----------------------|----------|----------|--------------------------------|
| (52) | S | V | O | (word order) |
| (a) | John | kissed | Mary | (proper names not case marked) |
| (b) | He | kissed | her | (Nom + V + Acc) |
| (c) | She was kissed by him | | | (passive voice) |

Let's now turn to see how we can incorporate Case as a Feature of D within a DP. By starting with the simple Pronoun exchange *I* & *me* in a DP, we can begin to employ the two D-features examined above (Def and Case).

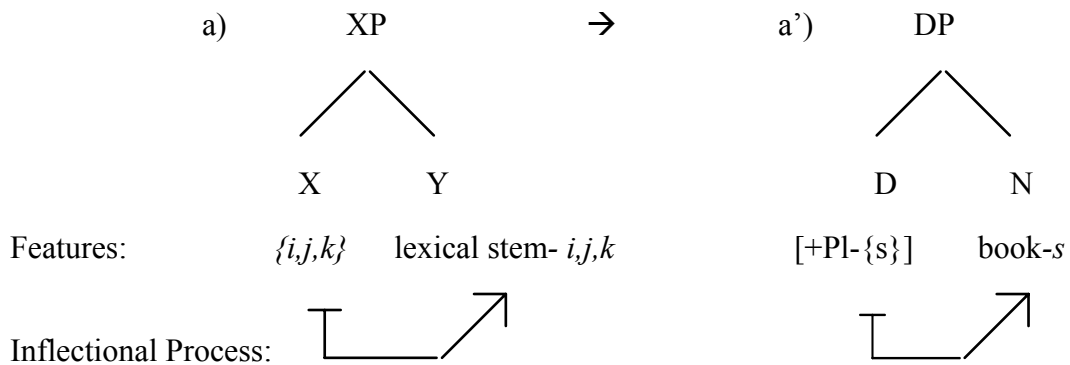
- (53)
- | | Phrase: | Token Sentence: |
|-----------|---|----------------------|
| | DP (= DP-subject) | <i>I</i> kissed Mary |
| |  | |
| features: | [+Def] | |
| | [+Nom] | |
| | I.....kissed Mary | |

(54)	Phrase	Token Sentence
	DP (= DP-object)	Mary kissed <i>me</i>
	<pre> graph TD DP --> D DP --> N D --> empty[∅] N --> pipe[] </pre>	
features:	[+Def]	
	[-Nom]	
	Mary kissed.....	me

Binary notation: Note that we are marking Accusative (object) Case in a binary manner as [-Nom]. As stated earlier, Feature Theory makes good use of Binary Notation via +/- (plus or minus value settings). E.g., [-Nom] is the same as stating [+Acc]. It is common practice in binary code, whenever possible, to share one common denominator and simply place a [+/-] setting to its value. This is done throughout the theory--hence, [-Pl] marks for singular, [-Nom] marks for Accusative, [-Def] marks for Indefiniteness, etc.

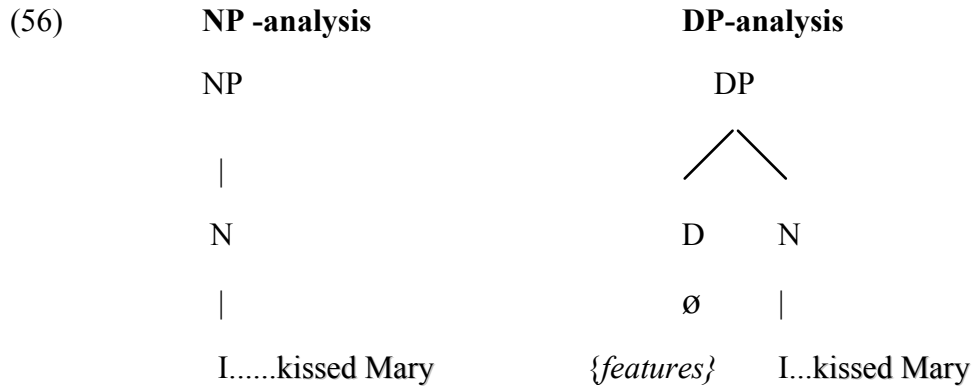
Zero allomorph This is as good a place as any to digress and examine the role of the zero allomorph {∅} found in our DPs above. First of all, the question should come up--why do we need it if it is simply zero or has a zero value? Good point! We could just as well return to our more prosaic version of an NP as eluded to above and omit all this superfluous abstract material. Right you say, let's keep it as simple as possible. Well, while your heart may be in the right place, the theory mandates that we have Functional projections alongside lexical ones--remember? If it weren't for our little D, there would be no place to house all that abstract functional grammar in the first place. It's crucial to remember that lexical items (Nouns, Verbs, etc.) can't house functional features--while lexical items may take them on as inflections to their stems, these inflections are *born* from out of the (functional) D/Aux and are then *delivered* onto the (lexical) N/V (respectively). I think our 'born & deliver service' makes for a nice movement analogy here: formal features (usually in the guise of inflection) are born from the functional projection <x> (of a proto-type functional XP) and are then delivered onto their lexical counterpart <y> (using variables <x> to mark the Head and <y> to mark its Complement). (See §2.3 for a similar discussion of Inflectional Movement regarding verb features such as Tense and Participle Inflection). For example, a)-prime below shows the inflectional process of plural number [+Pl] onto the Noun stem [N+{s}].

(55) *Inflection: Born & Delivery*



The zero allomorph more than anything else serves as a kind of (theory internal) place holder in keeping the D projection active--much like zero place holders serve us in mathematics e.g., 1, 10, 100...

Although there is no phonological reality to it, the zero place holder allows us to maintain our D-projection. This idea of a grammatical placeholder for otherwise non-existent phonological material is similar to what we find in the Pro-drop languages cited above--Spanish being one of them. Consider the Pro-drop effect of the following Spanish sentence *Ø habl-o ingles* (= *(I) speak English*). Certainly, notwithstanding the fact that there is no audible subject (at the phonological level), we would still want to have a DP-subject here in order to trigger the {-o} verb inflection for the features [1Person, -Pl, +Def, +Nom] of the pronoun *I*. The zero allomorph is a sort of safety valve: its role is to secure this grammatical level of representation in the event of a lack of any overt phonological material. Returning to the NP analogy, one would be hard pressed to account for the whereabouts of functional features given that an NP can't manifest or house such formal material. Consider what goes wrong with an NP-analysis below:



Clearly, in theory, there would be no place to house the functional features in the NP-analysis. There is a bit more to it than I am making out here, but for our purposes, and in keeping with the spirit of our theory, the problem is indeed real for the NP-analysis.

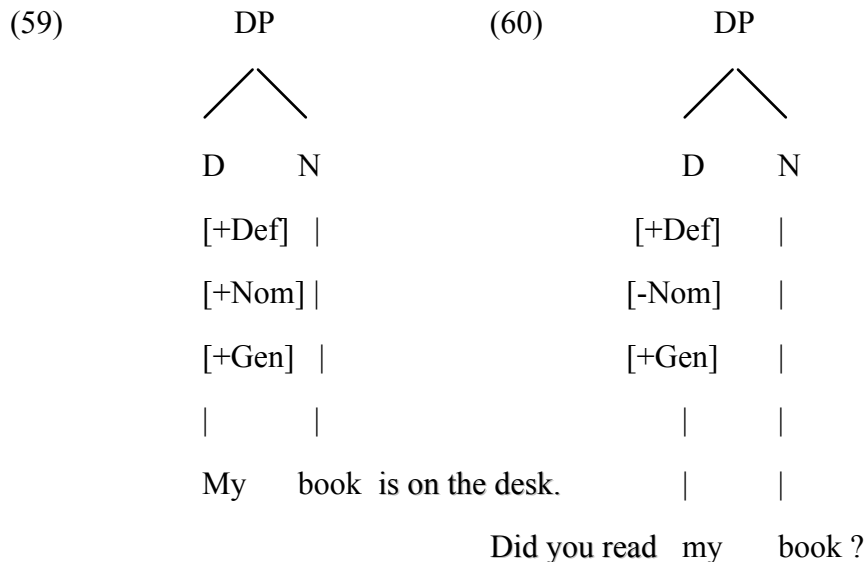
Genitive Case

(57) Table: Genitive Case (DP)

<p>‘Singular’</p> <p>Person:</p> <ol style="list-style-type: none"> 1. my 2. your 3. his, her, its
<p>‘Plural’</p> <p>Person:</p> <ol style="list-style-type: none"> 1. our 2. your 3. their
<p>whose, John’s, (see §2.2.2 for DP structure)</p>

The Genitive (or Possessive Case) is another Case marker that functions via a DP. Consider the tree diagram and sentences below incorporating the features presented thus far:

- (58) (a) *My/the book* is on the desk. ➔ *My/the book*.....= subject [+Nom]
 (b) Did you read *my/the book*? ➔*my/the book*. = object [-Nom]



Notice that the Subject/Object [+/-Nom] features are preserved alongside the additional feature of possessiveness [+Gen]. Also, note that in both sentences, the [+Def] features is spelled out since all Genitive Determiners are specific and mark for definiteness.

One notational confusion however does emerge when we try to consider the Person Feature (see below). How should we notate the Genitive feature alongside the Person feature--for instance, should the [+Gen] Determiner *My* in “My book” be marked as First Person [1P]? One might say “My” certainly reflects first person (me). In a manner of speaking, you are right. However, again if we utilize our beloved substitution test and throw in a pronoun (for good measure), one would see right away that “My book” gets reduced to a third person pronoun “it” e.g., (*Did you read it?* where “it” refers to “my book”). So, how should we mark Person on Genitive DPs? In this sense, one could claim the [Gen] feature serves as a special overlap unlike any other Case marker. Namely, whereas it is theoretically assumed that no pronoun can carry two positive case

features (viz., pronouns in their formal sense cannot be both [+Gen] and [+Nom]), once a Gen Determiner is reduced to a pronoun (via our substitution), its [+/-Nom] feature reappears. Hence, some dual marking seems to be warranted here and I propose that Gen DPs mark both for [+Gen] and [+/-Nom] dependent upon where the Gen DP sits in the sentence. So, after all is said and done, perhaps the best way to settle the Person/Genitive issue is by compromise: (i) if only the Determiner (and not the DP) is marked for person, then [1Per] could be maintained since “My” refers to “I” (First Person). Noting that a sole D can’t be reduced to a pronoun in a substitution test: (“my” doesn’t reduce to “it”). However, we are not considering the D in isolation here, and once we analyze the DP as a complete phrase, the pronoun substitution mandates that it be Third Person [3P] (reducible to “it”). And since we are analyzing the complete DP and not just the D, there seems to be some support in marking it [3P], but clearly, as you can see for yourself, much of argument here is largely centered on a notation quibbles (trivial sticking points that more often than not succeed in forming a wedge between some of our finest linguists).

Since the Person Feature has caused such a commotion here, let’s address it next.

Person

(61) Table: Person

Number: Case:	Singular: Nom-Acc	Plural: Nom-Acc
1st [1P]	I-me	we-us
2nd [2P]	you-you	you-you
3rd [3P]	he/she/it-him/her/it	they-them

In traditional grammar, English is said to have three grammatical *persons*: *first*, *second* and *third*. The first person [1P] expression (*I-we*) denotes the person(s) speaking. The second person [2P] (*you*) denotes the person(s) being spoken to (addressed) by the first person. The third person [3P] (*he/she/it/-they*) denotes the person(s) outside the immediate circle of speech activity and who becomes a referent excluded from the first and second person--the [3P] refers to someone other than the speaker(s) or addressee(s). We take it that this defining property between speaker and addressee is (i) real in the pragmatics of language discourse, and (ii) constitutes a formal abstraction in the syntax worthy of having the status of a formal functional feature.

Number Number [+/-Pl] (plus or minus Plural) is an additional functional feature which denotes the contrast between “grammatical” singular and plural forms. Note that we use “grammatical” here as a way of showing that such seemingly inherently real notions as say number may not maintain true values as say, in real numbers of math--for instance, the noun “family” denotes an inherently plural notion (in the sense that “family” means more than one person making up a nuclear social unit), however, it is grammatically marked as being singular in number (cf., *My family is/*are*). (Likewise, for instance, “Hair” in French (“Cheveux”) is grammatically marked as plural whereas in English it is grammatically singular.) In Adjectival constructions utilizing Number, often Plural inflection gets omitted--e.g., *He is six-foot-five* (**six-feet-five*), *two-car garage* (**two-cars-garage*), *a three-storey house* (**a three-storeys house*), etc. Surely, in the above examples, our notion of ‘plural number’ holds notwithstanding the fact that no grammatical plural inflection surfaces on the noun. In real terms then, there is no real logical notion of number other than some abstract grammatical property that maintains itself as a formal functional feature.

(62) **The Grammatical Rule for Number**

(a) N+ { \emptyset } ➔ singular e.g., The car, The book, An exam...

(b) N + {s} ➔ plural e.g., The cars, The books, These exams...

Note that we are demonstrating the regular rule here for number. Irregular grammatical number manifests in a variety of ways.

(63) Some Irregular Number inflections:

- (a) vowel change (tooth>teeth, goose>geese)
- (b) {en}-suffix (child>children, ox>oxen),
- (c) No change zero allomorph { \emptyset } (fish>fish- \emptyset , sheep>sheep- \emptyset)

Also, some nouns have an inherent singular feature and thus can't be marked for number. These are called *Mass Nouns*--e.g., *salt, milk, butter, sand, furniture*: (**The furniture-s*).

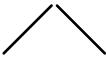
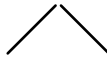
We have now exhausted the main class of formal features associated with the DP--let's now list them all together below as well as spell them out in real DP circumstances:

Summary of DP features and their projections

(64) Table: Main DP-features

- | |
|---|
| 1. Definiteness [\pm -Def]
2. Case [\pm -Nom] [\pm Gen]
3. Person [1/2/3P]
4. Number [\pm -Pl] |
| |

Definiteness & Case contrast:

(65)	DP			(66)	DP	
						
	D	N			D	N
<i>features</i>	[+Def]		vs.		[-Def]	
	[+Nom]		vs.		[-Nom]	
	[3P]				[3P]	
	[+Pl]				[+Pl]	
	The	books are on the desk.				
					Have you read	any books?

Above, there are two important feature distinctions at play: (i) the determiners *the* vs. *any* bear contrast between definiteness and Indefiniteness, and (ii) the [3P,+Pl] Noun *books* bears either subject nominative case [+Nom] or object accusative case [-Nom].

Let's exam another pair of DPs wielding contrasts between person and number features:




Person & Number contrast

(67)	DP			(68)	DP	
	D	N			D	N
<i>features</i>	[+Def]				[+Def]	
	[+Nom]				[-Nom]	
	[1P]		vs.	a) >	[2P]	
	[+Pl]		vs.	b) >	[3P, -Fem]	
					[-Pl]	
	∅	We read the book				
	a') >	I gave the book to			∅	you
	b') >	I gave the book to			∅	him

Above, the feature contrasts are between Person and Number (as well as Case). The two Pronoun DPs (*We and You*) are both manifestations of these features in that “we” marks first person [1P] and Plural (number) [+Pl] while “you” marks second person [2P] and singular [-Pl] (though, in the 2nd person paradigm it is impossible to tell whether or not “you” is singular or plural since both lexical items are homomorphous e.g., *I told you* [-Pl] vs. *I told you (guys)* [+Pl]). Examples (b) and (b- prime) show Third Person, Masculine Gender [3P, -Fem] “him”.

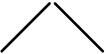
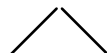
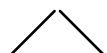
Other DP types

As an exercise, consider some other types of DPs:

(69)	DP	DP	DP
			
	D N	D N	D N
	[+Def]	[-Def]	[+Def]
	[-Nom] [+Gen]	[+Nom]	[+Nom]
	[3P, Fm] [+Pl]	[3P] [+Pl]	[3P] [-Pl]
(a)	I bought her books	∅	(c) The student reads
		(b) Papers are good to write	

(d) Recursive DPs

(See (97b) for Recursive VPs)

	DP
	
	D DP
	
	D DP
	
	D N
(i)	My first two years were hard.....but,
(ii)	the last three years were wonderful

(70) **Reflective Pronouns**

Lastly, in rounding off our DP study, let's see how Reflexive Pronouns get incorporated into a DP-analysis. Perhaps the most crucial aspect of Reflexives to understand is that they involve an **anaphoric** structure--that is, there is a structural relationship between the subject and the object of a reflexive DP. This relationship can be notated via a *co-indexing* which **binds** the reflexive Object-DP back to its **antecedent** Subject-DP. Consider the sentences below:

- (71)
- (a) She_{*i*} hurt herself_{*i*}
 - (b) The children_{*i*} did it for themselves_{*i*}
 - (c) Our President_{*i*} should feel proud of himself_{*i*}
 - (d) I_{*i*} mailed the letter to myself_{*i*}

In all four examples, the reflexive object cannot be used to refer directly to an entity in the outside world, but rather must be bound by an antecedent subject within the same phrase or sentence. In other words, "herself" is bound to "She" in ex. (a), "themselves" to "The children" in ex. (b), "himself" to "Our President" in ex.(c), and "myself" to "I" in ex. (d). This very close structural and grammatical relationship is denoted by the co-indexing $\{i\}$ subscript found below both the Subject and Object Pronouns (and is notated in tree diagrams just below the DP).

Consider the anaphoric DP diagrams below (showing only the relevant isolated DP binding and co-indexing with no other feature spell-outs):

(72) **Reflexive- DP co-indexing and binding**

	$\begin{array}{c} DP_i \\ \swarrow \quad \searrow \\ D \quad N \end{array}$				$\begin{array}{c} DP_i \\ \swarrow \quad \searrow \\ D \quad N \end{array}$		
			<u>MVP</u>		<u>PP</u>		
(a)	∅	She	hurt			∅	herself
(b)	The	children	did it	for	∅		themselves
(c)	Our	President	should feel proud	of	∅		himself
(d)	∅	I	mailed the letter	to	∅		myself

Closing this section on Lexical Nouns and Functional DPs, let's now turn our attention to the next main lexical category of the sentence--the Verb Phrase. But before we tackle its lexical-functional relation via the Main Verb Phrase (MVP), let's simply exam in more detail the inner working of the Lexical Verb Phrase in isolation saving its more abstract functional MVP counterpart for the subsequent section (§2.3).

2.2 @ Verb Phrase (VP) [-Fin]

There is much we can initially talk about regarding the Non-Finite [-Fin] Verb well before we start to muddle our way through its functional nature (MVP). First of all, let's clear up the issue of linear order--where do we find this non-finite [-Fin] Verb in a sentence? The short answer is: the [-Fin] VP always follows the functional Main Verb Phrase--keeping to its functional-to-lexical structural relationship. So, using a certain terminology, we could say the [-Fin] verbs are always verb-second within the predicate--that is, they always occupy the second verb slot of a sentence [functional MVP, lexical VP]. (Recall, this same functional-to-lexical relationship holds for D to N as presented above). Relegating the [-F] Verb to second fiddle (since it holds no functional feature values), however, doesn't mean that the verb can't provide an array of interesting distributional displays. The prosaic VP can be quite dynamic, wielding an embarrassing wealth of different projections and distribution. Of course, the VP's main task (void of its functional features) is to establish the Predicate of the sentence--providing the

essential information about the topic or Subject of the sentence. This core information is seen as real referential meaning, tethered to aspects of the real outside world. So, in a sense, the lexical Verb along with the lexical Noun bear a certain flavor of truth--whereas the Noun introduces the “who/what” of a sentence, the Verb returns and asks “So, what about it?”. Clearly, when all is said and done, we could “all just get along” (to use a certain phrase) with little else, and this was what the main topics were concerned with in our introductions of Lexical Grammar.

Moving onward from the sole verb, let’s consider this diverse class of Verb Phrase projections below.

(73) Three Infinitive Verb Forms

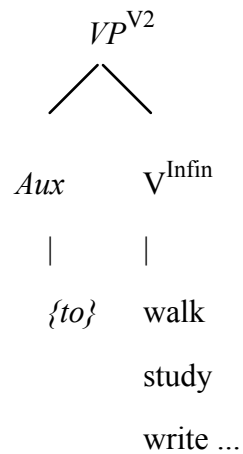
The Infinitive “To” Form The proto-type Infin(itive) Verb Form in English is the so called “to” infinitive which bears an infinitive {to} inflectional quasi-prefix marker (coming off a preceding MVP functional phrase): e.g., *to walk/to study/to write*, etc. Such infinitives are to be found in the second verb slot following the MVP. Consider some token infinitives below:

(74) Token Infinitive {to} Verb: Structure: [MVP^{V1} + *Infin Verb*^{V2}]

- | | |
|----------------------------------|----------------------------------|
| (a) I liked <i>to walk</i> . | (a’) like{d} + <i>to walk</i> |
| (b) John needs <i>to study</i> . | (b’) need{s} + <i>to study</i> |
| (c) I prefer <i>to write</i> . | (c’) prefer{∅} + <i>to write</i> |

One crucial underlying syntactic structure to note here is that all verb functional material is to be found in the V1 MVP slot, the V2 *Infin Verb* serves a sole lexical role. Any notion of Tense and Agreement of Person or Number (see §2.3 below) has to be attributed to the first Main Verb of each structure--in this case, to *like*, *need*, *prefer* (respectively). Consider below what the tree diagram would look like focusing in, for the time being, on the Infinitive Verb only. (See (97b) below for: (i) a separate treatment of subjectless infinitive clauses as derived sentences as well as for (ii) couplet [+Fin] & [-Fin] projections):

(75) Tree diagram of Infinitive {to} Verb:

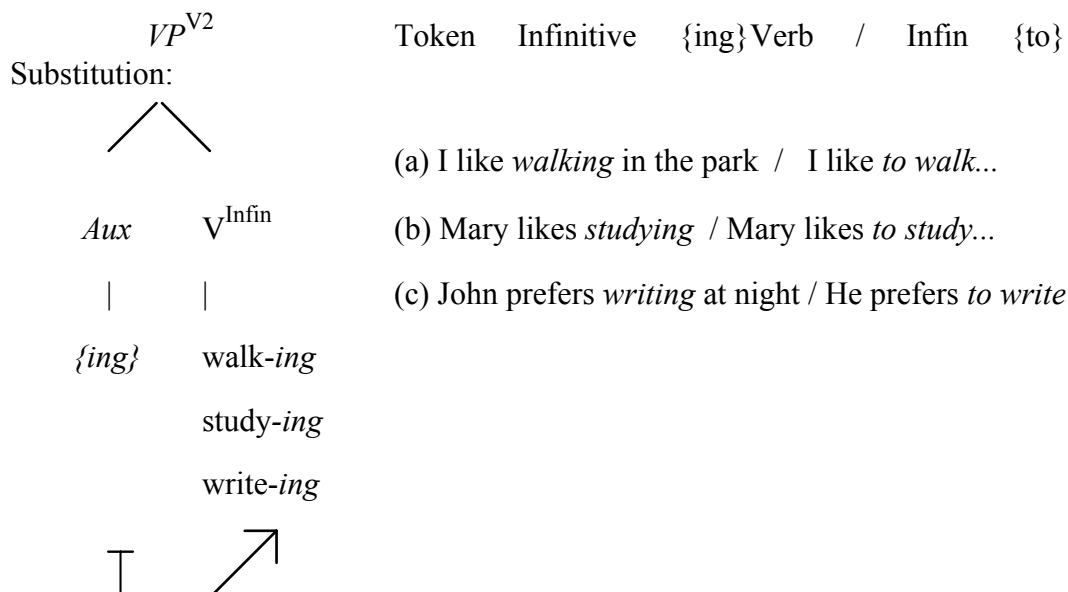


Since the [-Fin] marker $\{to\}$ is a (functional) Inflection marker of sorts, and, as argued throughout, must be housed in a Functional Phrase, we include here a Functional Auxiliary node adjacent to the Lexical Verb. This Aux(iliary) node allows us to establish a place from which we can host and project functional material--via Inflection onto the verb. Similar to what was suggested above in (55) regarding the DP “Born & Deliver” (service) of Inflection, the MVP likewise goes through its own Inflectional process--albeit, a process that doesn’t directly bear the moved inflected element or morpheme onto the stem--(like what we find with verb inflection of Tense: $V+\{ed\} \rightarrow walked$). Nonetheless, the [-Fin] $\{to\}$ marker is inflectional (as a quasi-prefix marker) and so does need to be housed in the verb’s counterpart functional node. In one sense, unlike (55) above regarding the DP inflection, there is no reason to suspect any movement here--at least of the overt type, since the infinitive $\{to\}$ marker remains detached from the stem (and never acts as a clitic e.g., * I need $t'go/t'study/t'write$...If anything, an argument could be made that it seems at times to act as clitic (“wanna” contraction) to the preceding first verb--as with the negative ‘not’ in Aux+Negative+Verb constructions: e.g., *I don’t work* (Neg. do not) and *I wanna work* (Infin: ‘want-to’ work). (Also, see movement section below on the “wanna contraction”).

The Infinitive “ing’ Form

A second form of Infinitive Verb is the so called $\{ing\}$ Infinitive since the inflectional $\{ing\}$ marker is posed via movement onto the main verb stem. In this case, there is overt morphological movement inflection. Consider the tree diagram below noting that an “exchange” (substitution test) of inflections $\{ing\}$ with $\{to\}$ is possible:

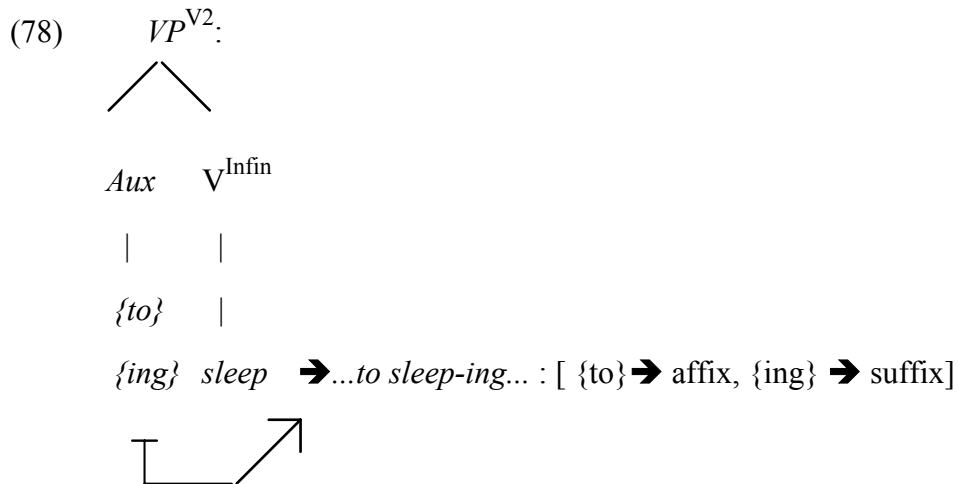
(76) Tree diagram of Infinitive {ing} Verb:



The above {ing} Infinitive verbs are quite special and some generative grammarians opt to give them an extraordinary place in our grammar outside of its typical dual role: (viz., on one hand, {ing}-verbs can serve as a progressive/imperfective suffix e.g., He *is smoking* a cigar, and on the other a DP-gerund e.g., [DP *His smoking*] is going to kill him.). In any event, the {ing}-verb form might not be viewed here as a “gerund” since a gerund is traditionally defined as a Verb that takes on the role of a Noun. There is no reason to believe that the above {ing} verbs cannot be interpreted as true verbs--as witnessed in our substitution test. (The typical driving force behind treating them as gerunds has to do with the fact that {ing}-verbs and their phrases adhere to another substitution test that permits an exchange of a *gerund* by a pronoun *it*--e.g., *I like 'reading this book'* ➔ *I like 'it'* (where *it* = *reading this book*). However, this test might be too strong in light of the fact that the same substitution seems to hold (for some linguists anyway) for the Infinitive {to} verb form as well (a non gerund)-- e.g., *I love 'to dance' in the morning* = ?*I love 'it' in the morning*, where *'it'* = *'to dance'*.)

Moreover, there appear to be times when both inflections {to} and {ing} may surface simultaneously on/with the same verb (as in (77b)--e.g.,

- (77) I am accustomed: (a). *to sleep* with the window down.
 (b). *to sleeping* with the window down.



Similarly, main verbs such as *intend/suppose/believe*, etc. can either be followed by an Infinitive $\{to\}$ verb or an Infinitive $\{ing\}$ verb with no change in meaning--e.g.,

- (79) I intend: (a). *to go* to the meeting.
 (b). *going* to the meeting.

Moreover, much of what is behind the selective nature of the distribution seems to be affected by grammatical constraints: for instance, (i) Active vs. Passive voice, or (ii) Auxiliary vs. Main Verb. Consider the selective nature of the Main Verb *advise* and Aux/Main Verb *need*--e.g.,

- (80) (a). (i) John advised *buying* a house. (Active voice)
 (ii) John advised *to buy* a house.
 (b). John advised me **buying* a house / *to buy* a house. ('me' object)
 (c). I was advised (by John) **buying* a house / *to buy* a house.
 (Passive voice)

- (81) (a) Need we *follow* the course? (*need* = Aux)
 (b) Yes. You need *to follow* the course (*need* = Main Verb)

It would also seem that inherent properties of the two infinitive verb types can also affect the semantics of the preceding main verb--consider the following sentences:

(82)

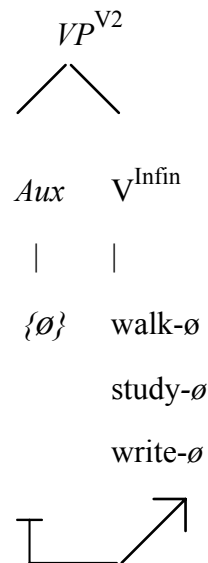
- The verb: <*stop*> (a) I stopped *to talk* to him → (stopped in order to talk)
 (b) I stopped *talking* to him → (quite talking)
 The verb: <*start*> (c) I started *to talk* to him → (began conversation)
 (d) I started *talking* to him → (same as (c))

In (80b), it would not be too far off the mark to suppose that the pronoun Object-DP *me* in selects (specifies) an Infinitive {to}-verb as its complement (as opposed to the {ing}-verb) in the same way that the Aux verb in (81a) selects for a Bare Verb.

Notwithstanding our ungainly meandering through a myriad of gerund formations and definitions, in any event, let's consider such {ing} verbs for now as having the flavor of true verbs with their own unique distributional qualities and features and leave the debate on gerunds for the time being. Some aspects of this discussion will reappear in the section of *Infinitive Verb Types* mentioned below.

The Bare Infinitive Form The third and final infinitive verb form to consider is the so called *Bare Infinitive*. It is referred to as 'Bare' simply due to the fact that it hosts no such overt inflection--these bare shape verb forms are what we find as verb entries in our dictionary: e.g., *go, visit, listen, speak, eat, drink, sleep, return...* Consider the tree diagram of such Bare [-Fin] Verbs:

(83) Tree diagram of Bare Infinitive Verb:



Token Bare Infinitive Sentences:

(a) I might *walk* in the park.

(b) Mary should *study* today.

(c) John can *write* at night.

As you might now be aware, there are some very specific distributions that accompany these three Infinitive Verb Forms. Let's flesh the distributions out in the paradigm below and then discuss them one at a time.

(84) Table: Infinitive Verb Distributions & Phrases

<u>Infinitive Verb Form:</u>	<u>Token sentence [Main Verb¹ + [-fin] Verb²]:</u>
(i) {to} Verbs	I <i>like/want/need/ *can</i> <u>to</u> read this book.
(ii) {ing} Verbs	I <i>like/ *want/*need/*can</i> <u>reading</u> this book.
(iii) Bare {∅} Verbs	I <i>*like/*want/*need/ can</i> <u>read</u> this book.
(iv) Infinitive with subject	We believe him to be innocent.
---	We believe [X], [X] ➔ He is innocent.
(v) Infinitive without subject	She wants to be alone.
(vi) Infinitive preceded by <i>for</i>	They are eager for him to win.
(vii) Infinitive without <i>to</i>	We heard him open the door

First, the Infinitive {to} form along with the {ing} form seem to be able to cross over and serve as complements to the main verb *like* rendering (*I like to read/reading*). (NB. The distribution seems to hold with other verbs that share a common semantico-grammatical relation of belief, desire or volition: e.g., feel, believe, love, hate, prefer, etc.).

Second, whereas a verb like *like* can have as its complement either {ing} or {to} verb type, a verb like *want* cannot and must select a {to} infinitive verb.

Finally, modals (*can, could, will, would, etc.*), like all other structure-class words, can bear no inflection whatsoever (either as a prefix or suffix) and so must select a 'Bare infinitive verb'. Occasionally, Bare or {ing} forms (which are reduced from a Finite Main Verb carrying Tense) surface after an accusative pronoun in what could be analyzed as an embedded or small clause:

(85) (a) Did you see Mary/(her) *leave/leaving* the book on the desk?

→ reduced from

(b) Did you see Mary/(her) <(while)> She *left* the book on the desk?

All of these distributions as cited above--and they by no means make-up an exhausted list--are very interesting from a syntactic perspectives and reflect inherent semantico-grammatical relations internal to the verb's make-up (pertaining to sub-categorical features). One in a handful of such internal sub-categorical features helps to determiner whether or not a verb can select a certain Infinitive Form as its complement.

(86) **Three Infinitive Verbs Types**

In conjunction with the three elaborate infinitive verb forms presented above, let's briefly talk about the three Infinitive Verb Types.

Adjectival Infinitives Adjectival Infinitives have the distinct quality of an adjective embedded in the form of an infinitive verb. One way to see through this adjectival quality is to note that they can be restated as relative clauses. Consider the examples given below:

(87)

(a) John is building a table *to fit* into the corner

(b) John is building a table that will fit into the corner (relative clause).

(c) John is building a “corner table” (Adj + N]

In (87a) above, the infinitive verb *to fit* is considered to have adjectival qualities in that it can modify the Noun that precedes it--i.e., it describes (as an adjective) the kind of table being built (a ‘corner-table’).

Adverbial Infinitives Adverbial infinitives can either be turned into a Wh-question (by using *why*) or be paraphrased with *in order to*...

(88) (a) Mary first needs to have completed Grammar 302 *to take* this class.

(b) In order *to take* this class, Mary needs to complete Grammar 302.

(c) *Why* does Mary need to take this class?

Clearly, the above examples are not adjectival--one couldn't say a “completed Grammar 302 class” like one would be able to say a “corner table”. These adverbial Infinitives speak more closely to the action or state of the verb than to the substantive qualities of the noun.

Nominal Infinitives Nominal Infinitives are interesting because once again, our substitution test can make claims about the sort of modification taking place. Consider the token sentences below:

(89) (a) She wants *to ski* in Italy during her winter break.

(b) She wants <x>, (<x> to ski, equates to the pronoun ‘it’ or *something*)

(c) Mary likes *to clean* glasses at her work at the café

(d) Mary doesn't mind doing ‘it’ (it = to clean glasses).

So, on top of the three *Infinitive Forms* talked about earlier, there are three *Infinitive Types* as well--all entering into very sophisticated distributional schemes that could only be accounted for by means of a very elaborate matrix of lexical sub-categorical features.

Having examined many of the roles Non-finite [-Fin] Infinitive verbs play in a sentence, let's now turn our attention to the Verb's functional counterpart---the **Main Verb Phrase**.

2.3 @ Main Verb Phrase MVP [+Fin]

The (functional) MVP plays a critical role in shaping the sentence. Above all, what we must realize is that the first verb in a SVO ordered sentence automatically takes on the responsibility of projecting functional features. Recall that with the Noun, the functional counterpart is the Determiner and it is the Determiner that spells out and ultimately projects all the *functional features* onto the Noun (via Inflectional) (see 55 above). And so the functional-to-lexical relationship holds between D & N. Well, regarding the Verb Phrase, the verb's functional counterpart is labeled as a MVP and, embedded in this MVP, the verb forces an Aux to surface in order to fulfill its own unique functional-to-lexical counterpart (Aux & V). So, using a certain syntactic terminology...

- (90) (a) What the _{functional} D is to the _{lexical} N ➔ [D + N],
(b) the _{functional} Aux is to the _{lexical} V ➔ [Aux + V].

But before we talk about the Aux, and flesh out all of its functional features in connection to the VP, let's spot exactly where the MVP occurs in a typical SVO sentence. As we have noted earlier in our introduction, English is an SVO language--meaning that the Main Verb comes after the DP-Subject, hence, SV (or more accurately, S+MVP). So, one of the easier things to remember here is that the first verb in an SVO sentence is going to be responsible for whatever functional material is going to be found for that sentence. Having said this however, there may be times when what appears to be some form of an Infinitive Verb [-Fin] first surfaces in the sequence of a sentence and you might ask yourself: what is going on here? Well, first consider some token sentences below showing such first verbs as Non-finite [-Fin] verbs (and not [+Fin] MVPs)--e.g.,

(91) <u>Non-Finite Verbs</u>	<u>Moved element</u>	<u>Order</u>
(a) <i>To be</i> or not to be, that is the question.	(Infin Topic)	V _i , S _i VO
(b) <i>Studying</i> all day makes Jack a very unhappy boy.	(Gerund Subj)	SVO
(c) <i>To get</i> a student loan, you must keep your grades up.	(Infin VP-move)	V, SVO
(d) <i>Running</i> for the bus, Mary fell and bruised her leg.	(elliptical clause) *d.c.,	SVO
(e) <i>Drink</i> all day and night, I would never.	(Bare VP-move)	V, S*m

(* d.c. = depended clause.) (* m = modal)

(92) (a') The question <i>is</i> to be or not to be.	SVO
(b') The studying <i>makes</i> Jack unhappy.	SVO
(c') You <i>must</i> keep your grades up to get a student loan.	SVO
(d') Mary <i>fell</i> while running for the bus ➔	SVO
(Mary fell while she was running for the bus)	
SVO	
(e') I <i>would</i> never drink all day and night.	SVO

(NB. We have omitted here important distinctions between certain aspects of the predicate to facilitate illustration: e.g., Predicate Infinitive Phrase, Direct/Indirect Objects, complex sentences.)

What one immediately sees from the above examples in (91) is that they are not core un-derived sentences with basic SVO orders, but rather are instances where certain phrase constituencies have been uprooted and moved (or fronted) from out of the back of the sentence and into the front position--making it appear that we have lost altogether our core SVO structure. This up-rooting of phrases from the basic SVO order is called **Movement** (see movement in §4 below). There will be more to say about this later. For now, however, suffice it to say that whenever a core SVO order is maintained, the *First Verb/Aux-Modal* (shown in *italics* above) of that sequence serves its proper role in fulfilling the functional requirements of the sentence--it is these requirements as in terms of features that will be the topic of our next section.

Main Verb Features

Recall, as a recap, that the main functional features regarding the DP were *Definiteness, Case, Number, Person, (Gender)*. Well, regarding the MVP the most important features that will be on the table here include the following: **Agreement features** (having to do with Person & Number), and **Tense**. There may be arguments for more elaborate MVP features such as Mood--e.g., imperative, indicative, subjunctive--as well as Aspect, etc., but for the time being, let's keep to the most obvious functional features. That's right--you've guessed it: there indeed is some overlap of D-features onto MVP features having to do with Agr(eement). By the way, that's what the term 'agreement' is all about--an agreeing relation of features between the DP and the MVP. The Agr-features between the DP-Subject and the MVP are Person and Number. Let's restate these features:

(93) Table: DP Person & Number: A Recap

<u>Number:</u>	Singular:	Plural:
<u>Person:</u>		
1st [1P]	I	we
2nd [2P]	you	you
3rd [3P]	he/she/it	they

Recall, that (any and all) DPs can be restated as a *reduced pronoun* capturing all inherent features of that pronoun--actually, this is just another version of our beloved “substitution test”--e.g.,

(94) Reduced Pronoun Substitution

My body/self (=I), *Your body/self* (=You), *The boy/girl/dog* (= He/She/it),
John and I (=We), *You guys/two* (=You), *The children* (=They) , etc...

Let’s see how a strict agreement relation holds features between a DP and a MVP:

- (95) (a) [DP *We*] [MVP *is/are linguistic students]
 (b) [DP *The children*] [MVP *plays/play in the park]
 (c) [DP *John*] [MVP *take/takes the exam]

In the above sentences, note that there exists a Person & Number Agr(eement) between DP-subjects and MVPs. For example, since *We* in (95a) has the DP features of [1P, +Pl] (first person, plural), the agreeing main verb must also cast the same features of [1P, +Pl] in order to save the projection (in this sense, “save” refers to keeping the projection grammatical). So how is it that we must project *are* and not *is* for sentence (95a)? In order to explain the correct verb choice here, we must have a parallel Person & Number paradigm for the Main Verb as well:

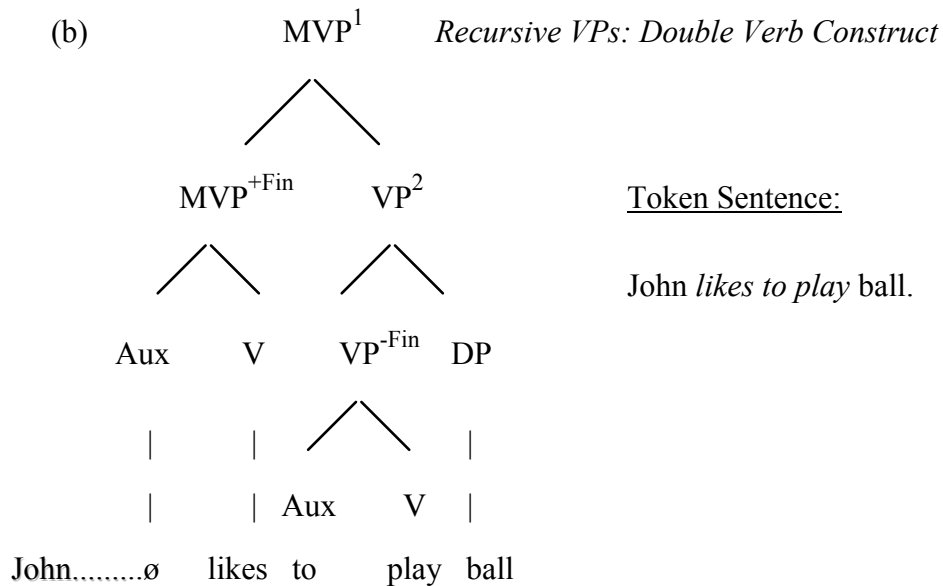
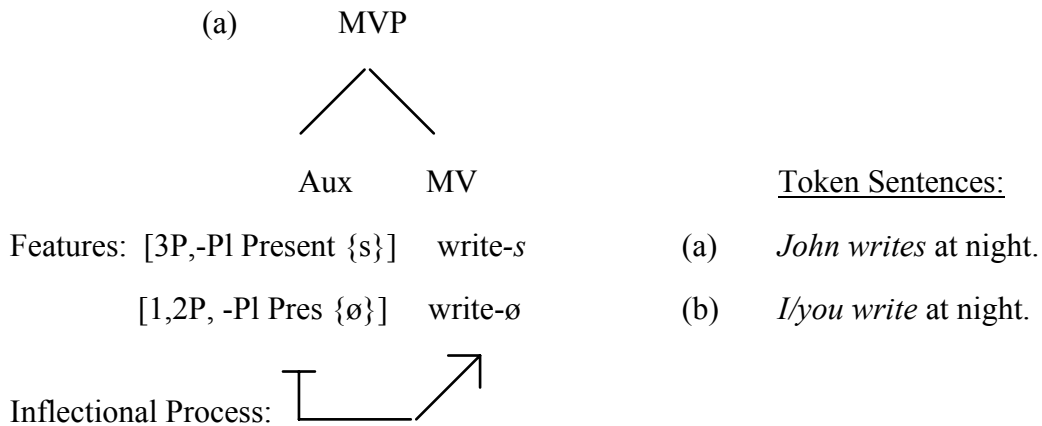
(96) Table: MV/Copular Person & Number

<u>Number:</u>	<u>Singular:</u>	<u>Plural:</u>
<u>Person:</u>		
<u>Verb “write”</u>		
1st [1P]	(I) write- \emptyset	(we) write- \emptyset
2nd [2P]	(you) write- \emptyset	(you) write- \emptyset
3rd [3P]	(he/she) write-s	(they) write- \emptyset
<u>Copular “be”</u>		
1st [1P]	(I) am	(we) are
2nd [2P]	(you) are	(you) are
3rd [3P]	(he/she/it) is	(they) are

To make matters more concrete, the reason sentence (95a) doesn't grammatically project with the copular verb *is* (and must project the copular *are*) has to do with the DP features of *We*. As shown above, the DP *We* contains a [3P] feature along with a [+PI] feature. The copular verb with the same corresponding (agreeing) features must be *are*--being that *are* also contains [3P] and [+PI] MV features. Regarding Main Verbs, the only overt morphological inflection that surfaces due to Agr-features is the *third person/singular/present tense* {s}--e.g., *she talk-s/ swim-s/ sleep-s/ work-s*, etc. etc. (See Tense below for our brief discussion of {s} as a tense inflection marker). Note that all other verb forms take a verbal zero allomorph { \emptyset } similar to what we find at times under the D. This zero allomorph allows us to maintain our inflectional 'delivery process' of functional to lexical despite the fact that no overt marker is realized in the phonology (cf., 83).

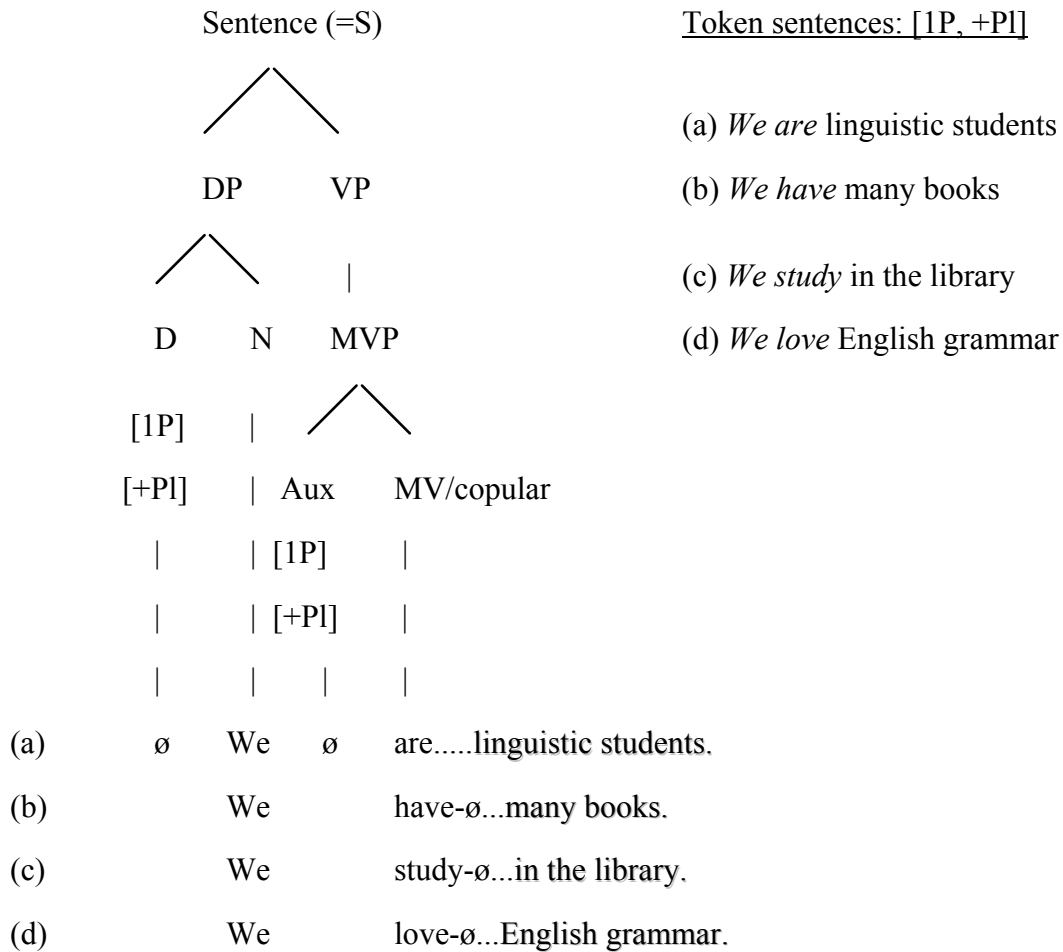
For a recap, the *born & delivery service of Inflection* found in (55 & 83) is restated here. (More will be said about the inflection of Pres(ent) Tense and Agreement later on). 97b below shows a Recursive VP Structure [+Fin] & [-Fin].

(97) *Inflection: Born & Delivery*



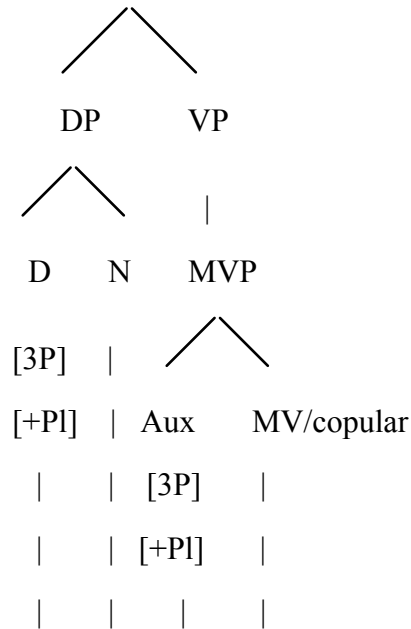
Let's follow this up more closely by diagramming this very interesting relationship between DP and MVP below:

(98) **Tree diagram: DP & MVP Agreement of Features**



(Note that we are only diagramming the DP and MVP Agr-features [Person & Number] of the sentence, excluding all other relevant Predicate material such as DP-Object, Preposition, or secondary Infinitive Verb).

(99) Sentence (=S) {3P, +Pl} feature projections

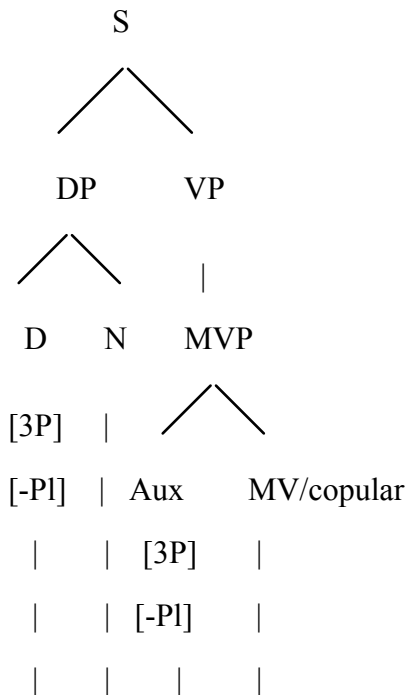


- (a) The children \emptyset play- \emptyset ...in the park.
- (b) My students \emptyset are...taking their exams.
- (c) We linguists \emptyset have- \emptyset ...little time to socialize
- (d) \emptyset Girls \emptyset want- \emptyset ...to have fun.
- *(e) *Our friends \emptyset play-s / is /has /want-s...

In the above examples, the DP and MVP Agr-features of [3P, +Pl] must correspond--example *(e) contains a feature mismatch (termed **Feature Crash**) between the [3P,+Pl] DP (*friends*) and the [3P, [-Pl] MV (*play-s*) and thus cannot project. Even though the Person feature is preserved [3P], the number feature is misspelled causing a feature crash. Note that in *(e), the morpheme {s} shows up both on the D for plural (*friends*), and on the MV for [3P,-Pl Present] (*play-s*). (Don't forget that the morpheme {s} serves actually three distinct grammatical functions in English: (i) *the possessive* {s}, (ii) *the plural* {s}, and (iii) the *3Person/singular/present Tense* {s}. Although the S's may look (and sometimes sound alike), it is important to understand that they play very different grammatical roles).

Below, consider a proto-type [3P, -Pl] construction:

(100)



Token sentences [3P, -Pl]

(a) *He read-s* at night.

(b) *She believe-s* in him.

(c) *John speak-s* French.

(d) *It is* very cold outside.

(a) \emptyset He \emptyset read-s...at night.

(b) \emptyset She \emptyset believe-s...in him.

(c) \emptyset John \emptyset speak-s...French.

(d) \emptyset It \emptyset is...very cold outside.

For further exercise, try to construct your own trees using the complete paradigm of Person & Number features (as presented above).

Tense

Along with Agreement of Person & Number--making-up the classic Subject Verb Agreement analogy--Tense is the next Main Verb feature in need of discussion. Unlike Agreement features that are shared by both Verb and Noun, the Tense feature is an exclusive Verb feature. However, there still is some debate over whether or not the verb {s} inflection marks only Present Tense or both T(ense) and Agr(eement) of [3P -Pl]. This debate is strictly theoretical in nature and need not concern us here--for ease of exposition, we shall take it that verbal {s} marks for both present tense and agreement. Consider the Tense/Agreement paradigm below--noting that the *zero allomorph* non-inflection{ \emptyset } surfaces in all but the 3P

singular Present (where an overt {s} inflection surfaces):

(101) Table: MV/Copular Tense & Agreement

E.g., Verbs “*Walk*” and Copular “*Be*”

<u>Number:</u>	<u>Singular:</u>	<u>Plural:</u>
<u>Person:</u>	<u>Present</u> <u>Past</u>	<u>Present</u> <u>Past</u>
[1P] (I)	walk-∅ walk-ed	(we) walk-∅ walk-ed
[2P] (you)	walk-∅ walk-ed	(you) walk-∅ walk-ed
[3P] (he/she)	walk-s walk-ed	(they) walk-∅ walk-ed
	<u>Present</u> <u>Past</u>	<u>Present</u> <u>Past</u>
[1P] (I)	am was	(we) are were
[2P] (you)	are were	(you) are were
[3P] (he/she/it)	is was	(they) are were

(Note that we are using regular verbs here marked with past tense {-ed}. See section on irregular tense below).

In the table above, the two well known inflectional suffixes for Tense are established: the 3P Present {s} and the Past Tense {ed}. These two inflectional markers are motivated by a grammatical rule (a rule that is an abstraction of possible variables):

(102) **The Grammatical Rules for Tense:**

(a) Present Tense Rule = [V + {s}] for [3P -Pl] → e.g. She walk-s.

(b) Past Tense Rule = [V + {ed}] for all regular verbs → e.g. She walk-ed.

The rules should be understood as an algebraic equation in the sense that a variable makes-up the classification of Verb--in theory, any word can insert into a verb slot, hence, rendering any word a verb. This was what was behind our early discussion on the fabricated novel word “*Sib*” found in (4). Also, the over-generalization of rules is witnessed by children acquiring their first language--e.g., *He writed, falled, goed* etc.

How many Tenses does English Have? This is an interesting question on a number of fronts. Firstly, it digresses our discussion back to the notion of *Prescriptive* vs. *Descriptive* linguistics--remember, we opted for the latter. For example, linguists shouldn't be too concerned about authoritative prescriptive argumentation that seeks to uncover language relics, say, of ancient Roman civilization and try to attribute them to modern English. In other words, we must be particularly careful not to take formal categories of Latin and attempt to apply them to modern English (as was practiced in 19th c. Grammar). English is not Latin (and it never was). (Recall our discussion of prescriptive Case (e.g., “*It is I*” vs. “*It is me*”) in (51) above). Rather, what we must surely do is keep vigil in attending to empirical observations about the here and now of linguistic matters. Secondly, gut intuition about grammatically correct English sentences can't be nicely packaged and memorized from out of a leather-bound manual--language simply doesn't work that way (it is much too messy). In a very real sense, we are our own authors of our dictionaries, and besides, language is in constant flux. It is rather disheartening to find that there remains--in traditional (prescriptive) English Grammar classrooms--a seemingly endless regurgitation about how English has maintained their three proper grammatical Tenses. It has not! The English language, unlike its close relative “Romance” has only two Tenses--Present and Past (or more specifically, using binary notation [+/-Past]).

Let's examine more closely this common misconception about a possible future tense for English. First of all, it is crucial to understand that grammatical Tense is a functional feature that can only be borne from an Aux and inflected onto a V. In other words, only main Verbs in English can carry Tense as an inflection. I'll even take it one step further: Only Main Verbs can establish Tense. The old story goes that English has Future tense via the modal “*will*”--as in the example, *I will see you tomorrow. She will take the class next term. The president will talk on the economy this evening.* etc. These are indeed all good English sentences, and there is a flavor of truth in that they constitute some notion of a Future time. However, *notion* of time and *grammatical* time are two very different entities. For instance, consider how readily accessible it is to say a mere lexical word such as *Yesterday* or *Tomorrow* (*lexical/form class* in that it has semantic meaning, as opposed to *functional/structure class*) without any discourse to Grammatical Tense on the main verb and still make out the notion that the event took place in the past or future (respectively)? (This is an aspect of speech common both in Child Language and Pidgin: e.g., *Yesterday, I go there. Tomorrow, I talk to him*). The argument that English has Future Tense relies on a confusion about (i) notion of referential time/tense as compared to (ii) grammatical time/tense--the former belonging to semantics (and perhaps pragmatics) while the latter exclusively

belongs to the functional category of tense morphology [+/-Past]. The idea that modal verbs can project tense would mean that all modals would be able to project tense--as a category of 'part-of-speech'. Language is not structure independent, nor is it piece meal with isolating words taking on structure independent tasks. Rather, language is rule driven and if we attribute a class of words with a grammatical role, then we must look very carefully at assigning that role to the entire class of words. Morphologically, English has two tenses only--e.g.,

(103) *He likes/ He liked, He takes/He took.* [+/-Past]

It may be that other verbal categories assign other forms of time--aspect, progressive, perfect--notwithstanding these complex constructions formulated with Auxiliary verbs, tense is still reduced to being either present or past. (See Aux and their Grammar in the section below). As stated, if we establish the modal "will" as a future marker, then we ought to establish other modals as well--e.g., *can, should, may, etc.* There is no sense to be made in taking such modals as tensed: token elliptical sentences e.g., *I should... today, I should...tomorrow, I should have... yesterday* seem to skirt the full tense paradigm with little problem. Moreover, the proposed future modal "will" is mostly used for functions other than time reference. Consider the examples in (104) below:

- (104) (a) I *will* come, if you want me to → (willingness)
 (b) She *will (would)* typically study all night → (habit)
 (c) (door bell) Right, that *would* be John → (probability / expectance)
 (d) We *will* surely all die one day → (truth)

Most important of all, there seems to be no shortage of ways to express the notion of 'future' even in full absence of a so-called proper tense inflection. Consider some creative means below:

(105) **Example of future time reference without future tense**

- (a) "going to": I'm going to talk (tomorrow).
 (b) Progressive: I am driving to Cambridge tomorrow morning.
 (c) Simple Present: John starts work Monday. Mary speaks at noon.
 We leave tonight. I am cooking for lunch. etc.

All of the above examples make it very hard to justify any real rule formation of a future tense in English. Quite the contrary, the examples show that grammatical present tense verbs can equally pertain to future references of time. On the other hand, just imagine trying to find a way out of saying past tense rule [add {ed}] for a regular past tense verb reference--e.g., **Yesterday, I walk/talk/visit...* As you quickly discover, one can't simply break the add {ed} rule, and if one can (as in the examples above of future without "will"), then there was no rule to begin with.

Note that the example in (105a) can phonologically reduce to / gənə / e.g., *I'm gonna talk* (tomorrow) → (I will talk). But also note that a seemingly similar progressive aux construction e.g., *I'm going to class* cannot be phonologically reduced in the same manner (**I'm gonna class*). This might demonstrate that this "gonna" expression has developed into a quasi-mode marker of future time reference (but not grammatical tense). (Also, see "wanna" contraction in (236)). In addition, it seems that some Romance languages like Spanish, Italian, French can opt for a similar future marker using the verb "go". This is note worthy since the three aforementioned languages all have available proper future tense morphologies that inflect on main verbs.

A word needs to be offered here regarding general morphological inflection on Modals (tense or otherwise). In short, modals can't take inflection in any way, shape or form. Part of their unique intrinsic feature value (sub-categorization) is that they, as a class, (i) select to have no inflection onto their stems, and that they (ii) allow no inflected morphology on an adjacent stem positioned as their complement. (Recall, this was shown in table (84) above regarding infinitive verb distributions): e.g., (i) **She can-s, can-ed/ may-s, may-ed/*, (ii) **She can "to" play/play-"ing" ...* etc. There are a number of reasons for this--the main one being that modals are functional/structure class words, so if you attribute some reference of tense to them, that still doesn't buy you any meaning. And it goes without saying that Tense without a meaningful stem carries very little proposition worth. Having cleared up some common misconceptions about *grammatical tense* vs. *referential tense*, let's proceed in examining how one should go about drawing tree diagrams that incorporate the three features of T(ense)/Agr(eement) as presented above (see 108)--first pausing to take note of the inherent problems associated with Irregular Tense.

Irregular Tense

As an alternative to a “Rule-Based” grammatical tense, English affords a variety of means for establishing past tense. This second order course to grammatical tense is termed Irregular Past Tense since the regular rules are not being applied. In English, these irregular verb constructions for past tense come in a variety of forms. Consider the irregular constructions below (ordered from ‘most common’ in frequency to ‘most rare’):

(106)

Irregular Grammar:

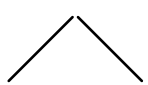
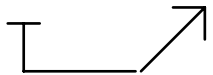
Token sentence:

- | | |
|------------------|--|
| (a) Vowel Change | sing > sang >, see > saw, take > took, write > wrote |
| (b) Word change | be > was > were, go > went, bring > brought, buy > bought |
| (c) No change | put > put, set > set, cut > cut, bid > bid, hit > hit, split > split |

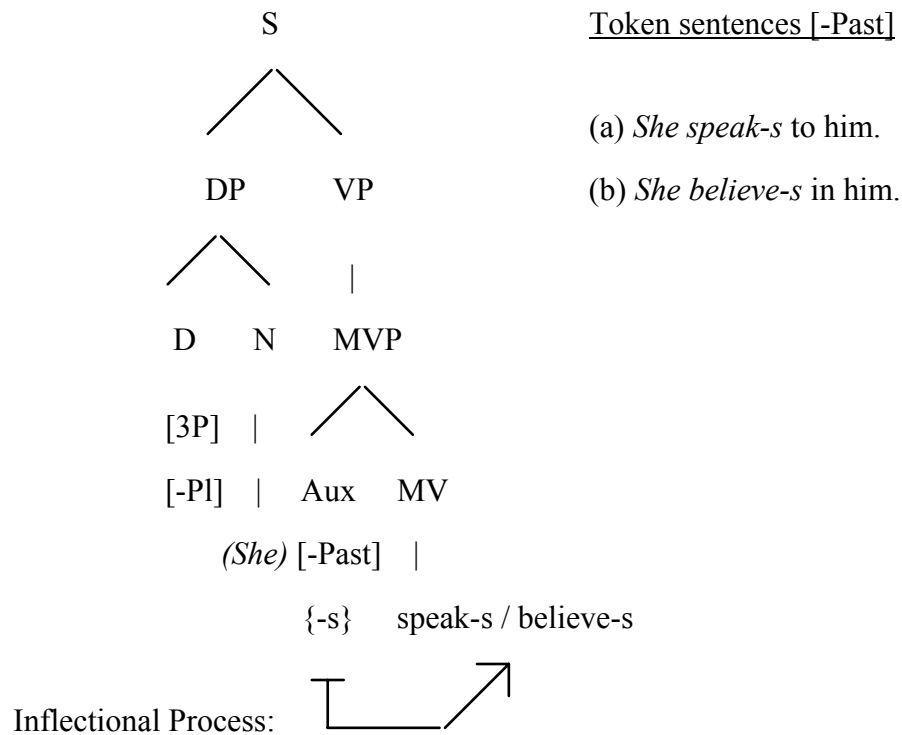
What is important to realize here is that even irregular construction must enter into an Inflectional process. The vowel change can be viewed as a form of inflectional morphology in itself--a kind of *infix* (where infix here means a morphological item internally put inside the stem as opposed to in front of (affix) or at the end of (suffix) e.g., sp-*ea*-k > sp-*o*-ke. (A similar vowel change process shows up in Spanish verb morphology for present vs. past--e.g., habl-*o* > habl-*e*). In one sense, we could postulate that the stem of “speak” (without a morphological infix) is the radical root $\sqrt{\text{sp-k}}$.

At any rate, a similar process is at work in delivering irregular inflection. On the other hand, for the examples which include *word change* and/or *no change*, arguments for inflectional processes are harder to defend: it seems that such irregular formations derive neither from any patterning (as in sound patterning of e.g., sing > sang, ring > rang, drink > drank, etc.) nor from semi-rule construction, but are rather instances of lexical memorization--such constructions simply must be memorized. And as a note, children clearly prefer rules over memorization (both processes occupy different parts of the brain (see (2)). This is the reason we find such over-generalizations of regular rules for Tense and Number: e.g., *I goed, I wented, I singed, I seed, I eated, I nevered, I have two tooths/ teeths, two fishes, two furnitures* (=mass noun), etc.

(107) **Inflection of Irregular Vowel Change**

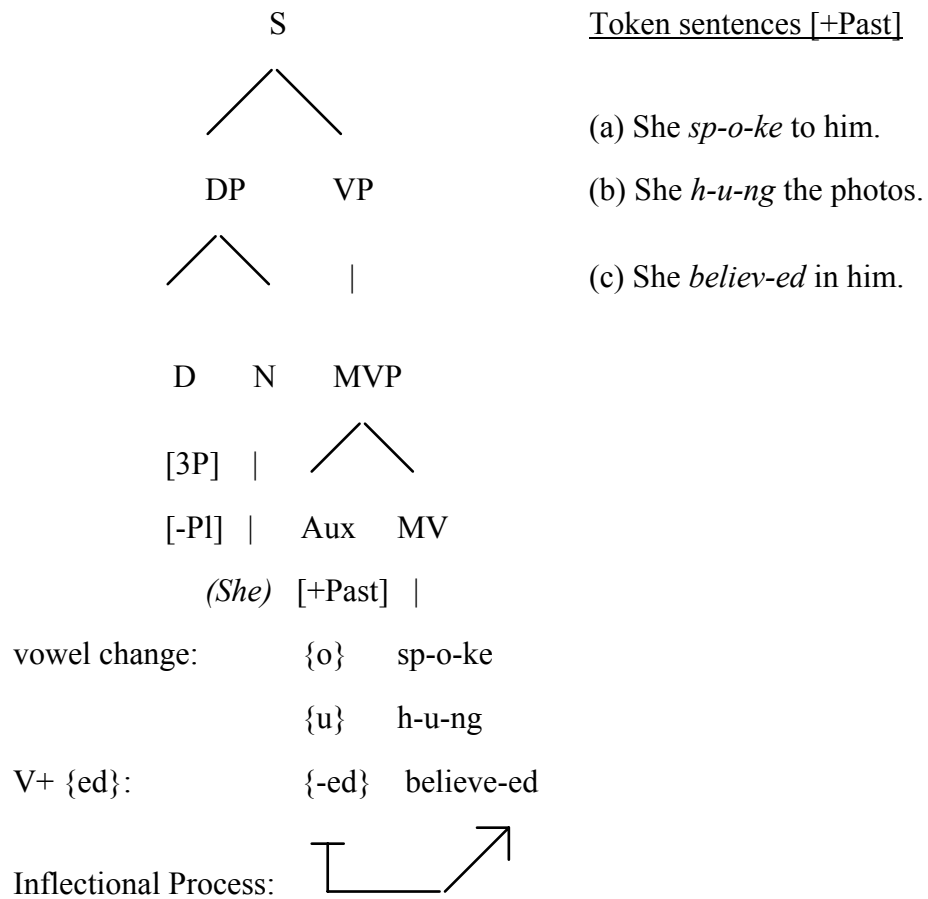
		MVP		
				
Features:		[3P,-Pl +Past]		
Irreg vowel changes	(a) :	{o}	<i>wr-o-te, sp-o-ke</i>	<u>Verbs: write speak sing ring</u> (a) <i>John wrote/spoke...</i>
	(b) :	{a}	<i>s-a-ng, r-a-ng</i>	(b) <i>Mary sang/rang...</i>
	(c):	{u}	<i>h-u-ng, r-u-n</i>	(c) <i>They hung/run...</i>
Inflectional Process:				

(108) MVP Tree diagram showing Present Tense Inflection



Again, it is ever so important to stress that it is the functional **Aux(iliary)** node of the MVP (a [+Fin] Phrase) that generates Tense (as well as Agreement features) and then proceeds to carry the morphological element onto the lexical verb stem via inflection. Recall, that both D and Aux play similar roles in that they generate functional features for their respective lexical counterparts: [D to N, Aux to V]. As a recap, the abstract morphological Aux features thus far presented include (i) Person & Number features (Subject-Verb Agreement) as well as (ii) Tense. Later on in subsequent sections, we'll come to discuss an array of other Aux elements and features that can overtly project under Aux.

(109) MVP Tree diagrams showing Past Tense Inflection



Although most of the time the Aux is “empty” of an overt phonological item--during such times as when it simply houses the abstract functional features of T/Agr (zero allomorph) as shown above--there are times, however, when the Aux slot will be occupied by either an actual Auxiliary Verb (=Do, Be, Have), Modal (=can, will, may, etc.) or a combination of both (e.g., I will/should/must be going).

The following section examines the Auxiliary and Modal Grammars.

2.3.1 @ Auxiliaries, Modals and their Grammars

(110) Auxiliary Verb

The Auxiliary Verbs “*Do-Be-Have*” each play a particular role and have individual tasks in English Grammar. In addition to their *specific grammatical tasks* of *Do*--simple, *Be*--progressive/passive, *Have*--perfect, all three auxiliaries (as well as modals here) may serve out two *general tasks* of providing operations that include (i) supporting *Question* formation, and (ii) supporting *Negation* formation. Taking Question formations first, there are two types of question operations that need to be discussed:

(111) Questions

(a) (Yes-No Question): *Does* Mary like pizza?

(requires a Yes/No response)

(b) (Wh-Question): ‘*What*’ does Mary like to eat?

(requires a stated response to ‘what’--e.g., pizza.)

Yes-No Questions A “Yes-No” question is obviously defined by the way it elicits a response of ‘Yes’ or ‘No’ to the question.. If we first examine the kernel original word order of the ‘Yes-No’ question in (111a)--maintaining our basic (kernel) SVO order--we would find (112a’) to read as follows:

(112) <u>Token Sentence</u>	<u>Word order</u>	<u>Grammar</u>
(a’) Mary does like pizza?	(SvVO)	➔ Kernel Interrogative.
(b) Does Mary like pizza?	(vSVO)*	➔ Derived Interrogative
(c) Mary likes pizza.	(SVO)	➔ (no “Dummy-Do” aux insertion)
* (v = aux ‘do’)		➔ Declarative (Non-interrogative)

Note that in order to form a proper ‘Yes-No’ Question in English, some movement has to ensue. (Also see the discussion of Movement in §4 below). Specifically, the moved element we are on about here is the Auxiliary “do”. By restating the interrogative sentence in its original core SVO order, we quickly come to realize that in fact the Aux “do” has been up-rooted from its original sentence internal position (positioned after the Subject) and has subsequently been

moved across the subject to a pre-subject frontal position--the precise movement is indicated and recorded with a *trace-(t)* subscript intended to mark (i) the moved element, and (ii) the position from which it was moved. It is especially noteworthy here to mention that only functional structure-class Auxiliary verbs (and Modals) in English can undergo such abstract movement--the abstract qualities of the functional categories *auxiliary* and *modal* serve us well here in accounting for such possible movement. The fact that main verbs can't undergo movement operations creates a tidy account for the classifications of structure vs. form class words and such operations provide interesting theoretical analyses. However, not all languages abide by the same tidy parameters. It seems that it is enough for some languages to simply move the main verb from out of the second position (=SV) and into the front position rendering a Non-Auxiliary (V, S) word order--e.g.,

(113)

(a) *Hablamos nosotros inglés bien?* Spanish : (Speak we English well?)

(*Do we speak English well?*),

(b) *Estudia usted las reglas?*

Spanish : (Study you the rules?)

(*Do you study the rules?*)

English, in any case, minimally requires an Auxiliary Do insertion (called “Dummy-Do” by linguists since it carries no real semantic meaning) to be positioned in front of the subject--creating the token sentences below:

(114) ‘Dummy-Do’ Insert for Questions and Movement “t” Trace marker

(a) Does_i Mary *t_i* like Pizza? ‘t’ stands for trace of a moved item.



(b) Mary “does” like pizza! (emphatic)

Without this auxiliary movement (=Auxiliary Inversion), it is impossible to formulate a question operation. Consider the following improper outcomes when no Auxiliary is provided for a question operation: (a) *Like Pizza John? (b) *What John likes? Note that this same ‘Yes-No’ Question construction can be posed with the other two Auxiliary verbs--“Be” and “Have”. (See (149) below for a summary table of Aux grammars):

(115) Yes-No Question with Aux. “Be” (Progressive)

<u>Token sentence</u>	<u>Word Order</u>	<u>Grammar</u>
(a) Is Mary eating pizza?	(vSVO)	➔ Interrogative /Progressive
(a’) Mary is eating pizza.	(SvVO)	➔ Declarative/Progressive
(b) Are the students studying?	(vSV)	➔
Interrogative/Progressive		
(b’) The students are studying.	(SvV)	➔ Declarative/Progressive

(116) Yes-No Question with Aux. “Have” (Perfect)

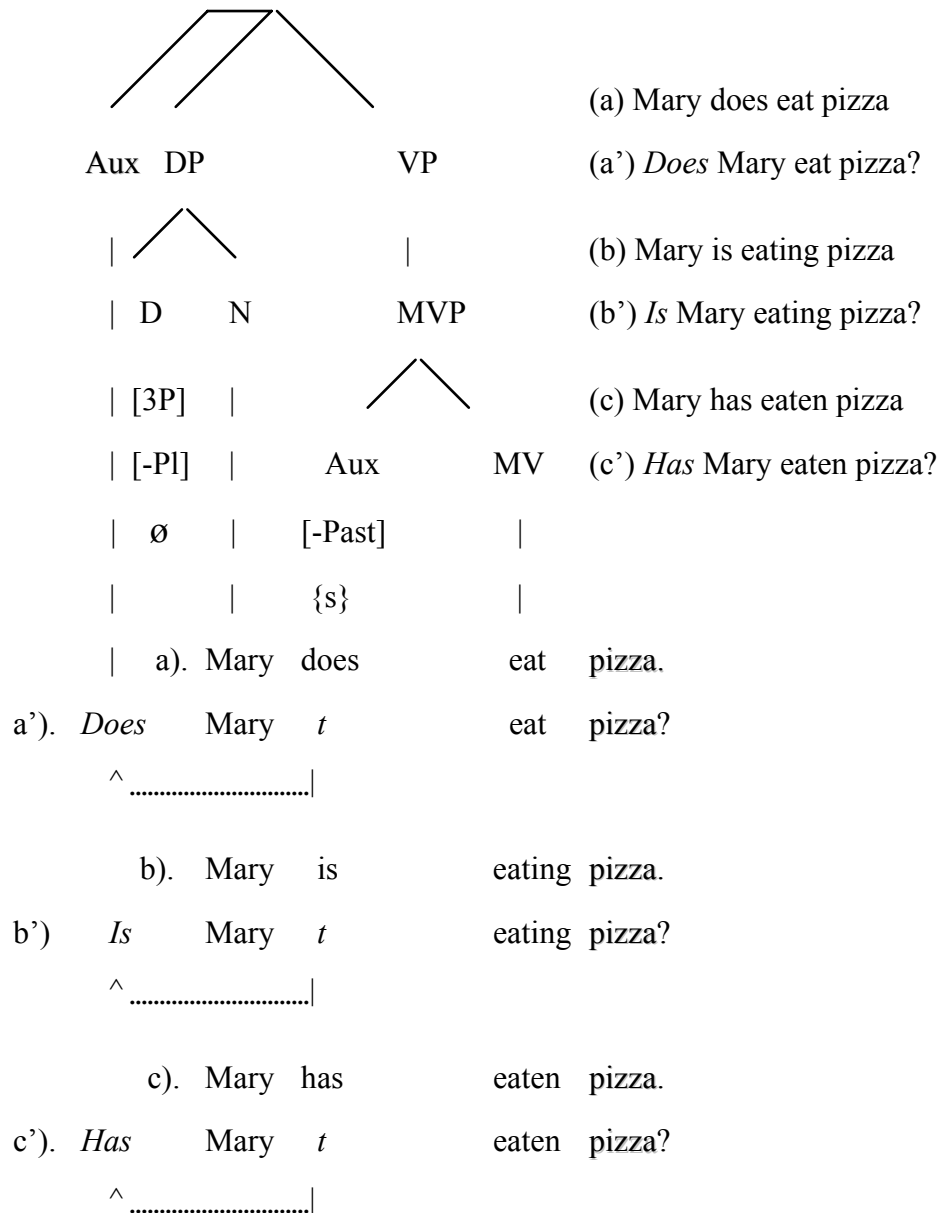
<u>Token sentence</u>	<u>Word Order</u>	<u>Grammar</u>
(a) Has Mary eaten pizza?	(vSVO)	➔ Interrogative/Perfect
(a’) Mary has eaten pizza.	(SvVO)	➔ Declarative/Perfect
(b) Have the students studied?	(vSVO)	➔ Interrogative/Perfect
(b’) The students have studied.	(SvV)	➔ Declarative/Perfect

Let's pause here to see just how we can accommodate an overt Auxiliary word into the MVP of our previous tree diagrams. (See appendix on tree diagrams).

(117) MVP Tree diagrams showing Auxiliary Question Operation

(with Aux Inversion) ➔ S

Token Sentences



Wh-Questions Wh-Q(uestions) are exactly that--question that are formulated by a variety of Wh-words: (*Who, What, Where, When, Why, Which, and How*). The Wh-Question is identical to the above Yes-No formation except for the one additional element of the Wh-word. Whereas Yes-No questions entailed only one movement operation as such, with Wh-Q, we now entertain two movement operations which breach the SVO word pattern--(i) the Auxiliary

Inversion (= *Aux-move*), and (ii) The Wh-word movement (= *Wh-move*). Let's consider below some token examples of Wh-Q by examining first their kernel (original word order), and then examine the moved elements making up the Wh-Q derivation.

(118) Wh-Questions using “Simple” Grammar: “Do”

<u>Token Sentence</u>	<u>Word order</u>	<u>Grammar</u>
(a) Mary does like what?	(SvVO)	➔ Kernel Interrogative
(b) What does Mary like ?	(OvSV)*	➔ Derived Interrogative
(c) Mary likes what?.	(SVO)	➔ (no “Dummy-Do” aux insertion)
* (v = aux ‘do’, O = wh-word)		➔ Declarative (Non-interrogative)

(119) Wh-Question using Progressive Grammar: “Be”

<u>Token Sentence</u>	<u>Word order</u>	<u>Grammar</u>
(a) Mary is eating what?	(SvVO)	➔ Kernel Interrogative
(b) What is Mary eating?	(OvSV)	➔ Derived Interrogative
(c) Mary eats what?	(SVO)	➔ (no Aux insert / simple grammar)

(120) Wh-Question using Perfect Grammar: “Have”

<u>Token Sentence</u>	<u>Word order</u>	<u>Grammar</u>
(a) Mary has eaten what?	(SvVO)	➔ Kernel Interrogative
(b) What has Mary eaten?	(OvSV)	➔ Derived Interrogative
(c) Mary eats what?	(SVO)	➔ (no Aux insert / simple grammar)

(See (§4, 215) for Wh-diagramming)

In addition to Question Operation, the three Auxiliary Verbs also enter into a second functional operation having to do with **Negation**. The Negation operation in English must involve the Auxiliaries--unlike other languages like e.g., Spanish which can negate the Main Verb of a sentence with a simple pre-verbal “no”/“non”. Compare the two languages English vs. Spanish with regards to Negation operation:

(121) **Negation**

<u>English Negation</u>	vs.	<u>Spanish Negation</u>
(a) I <i>do</i> not/don't like...		(a') No me gusta... (= <i>no me like</i>)
(b) They <i>do</i> not buy...		(b') No compran nada... (= <i>(They) no buy nothing</i>)
(c) <i>Don't</i> open them!		(c') No los abran ustedes (= <i>(You) no open them!</i>)
(d) We <i>don't</i> study much.		(d') No estudiamos mucho (= <i>(We) no study much</i>)

Consider what would go wrong if, in English, we followed the Spanish functional grammar of Negation:

(122) Examples of Erroneous Negation without Aux

- | | |
|-------------------------|------------------------|
| (a) *I no like pizza. | (c) *No open the door! |
| (b) *They no buy books. | (d) *We no study much. |

The above examples indicate that English has a functional grammar--a grammar whose parameters cannot be violated--that follows from a particular Rule:

(123) **English Negation Rule** ➔ [Subject + Auxiliary + “not” + MVP]

Whereas “do” is the Aux element *par excellence* functioning in most cases exclusive to simple grammar, the other two Aux verbs also can negate--dependent upon whether or not their specific grammars are engaged (e.g.,

Progressive/Passive and Perfect). Consider below examples of negative formations formed by auxiliaries “Be” and “Have”:

(124) **Aux Be:** Progressive Negation

- (a) John isn't writing a book.
- (b) Mary is not reading the paper.

Passive Negation

- (c) The book wasn't written by him.
- (d) The paper was not read by her.

(125) **Aux Have:** Present Perfect

- (a) The students have not prepared.
- (b) She has not slept well.

Past Perfect

- (c) John hadn't smoked for years.
- (d) Mary had not been well.

In the following section, let's turn our attention to the specific grammars associated with each Auxiliary Verb--making up the *Simple*, *Progressive*, *Passive* and *Present/Past Perfect* Grammars.

(126) **Auxiliary Grammar: The “Do-Be-Have’s” of English Grammar**

(127) **Do** The Auxiliary “Do” is responsible for carrying out the *Questions* and *Negation* formations as presented above in the absence of any other complex grammar. In other words, in the absence of the complex grammars Progressive/Passive/Perfect, the Aux. “do”, by default, inserts into the simple grammar construction in order to instigate the Question/Negation operation. That's is what is behind the term “Dummy-Do”: “do” does nothing in the way of any real grammar--unlike its Be/Have counterparts--and basically inserts as a quasi filler for no more important reason than to separate the Subject from the negative element “not”. This line of reasoning, by extension, could also account for a seemingly adjacency condition placed on Wh-word operations as well--specifically speaking, “do” could also be seen as inserting between the Wh-word and the Subject. (It may be that English subjects simply do not like to sit in adjacent juxtaposition to the lexical operator items.

(128) Adjacency Condition of operator words:

<u>Wh-words</u>	<u>Negative “not”</u>
(a) What does he like?	(b) He does not like math.
(a') *What he likes?	(b') *He not likes math.

So, in a real sense, the Aux *Do*'s main role is to preserve the surface order of--

- (129) (i) [Wh-word + Aux + Subject + MVP] (for Wh-formation), and
(ii) [Subject + Aux + Not +MVP] (for Negation formation).

With regards to a possible Adjacency Condition as cited above, let's pause for a moment to reflect on some interesting clitic formations having to do with the *Negative Question* clitic {n't} moved along by Aux word inversion.

(130) **Negative Question**

Clitic {n't} [+Movement] vs. Non clitic “not” [-Movement] *Non-standard

- | | | |
|--|--------------------------------------|-----------------------|
| (a) Don <u>t</u> you speak French? | (a') Do you <u>not</u> speak French? | a'' *Do not you...? |
| (b) Can <u>t</u> he work alone? | (b') Can he <u>not</u> work alone? | b'' *Can not he...? |
| (c) Won <u>t</u> she come? | (c') Will she <u>not</u> come? | c'' *Will not she...? |
| (d) Isn <u>t</u> he working? | (d') Is he <u>not</u> working? | d'' * Is not he...? |
| (e) Haven <u>t</u> they (already) eaten? | (e') Have they <u>not</u> eaten | e'' *Have not they..? |

As the above examples show, there also seems to be an Adjacency Condition placed on clitics. (A clitic is defined here as a word-like element (morpheme) having the property that it must attach itself (cliticize) to another word. Also, see “wanna” contraction as a clitic in (236) below). It also must be noted that clitics are deficient on at least two grammatical levels: (i) at the Phonological Level, the clitic {n't} cannot maintain its full phonological infrastructure (syllabic stress, etc.), and (ii) at the Morphological Level, the clitic has certainly lost its lexical form--e.g., {n't} cannot stand alone as a free morpheme and be uttered in

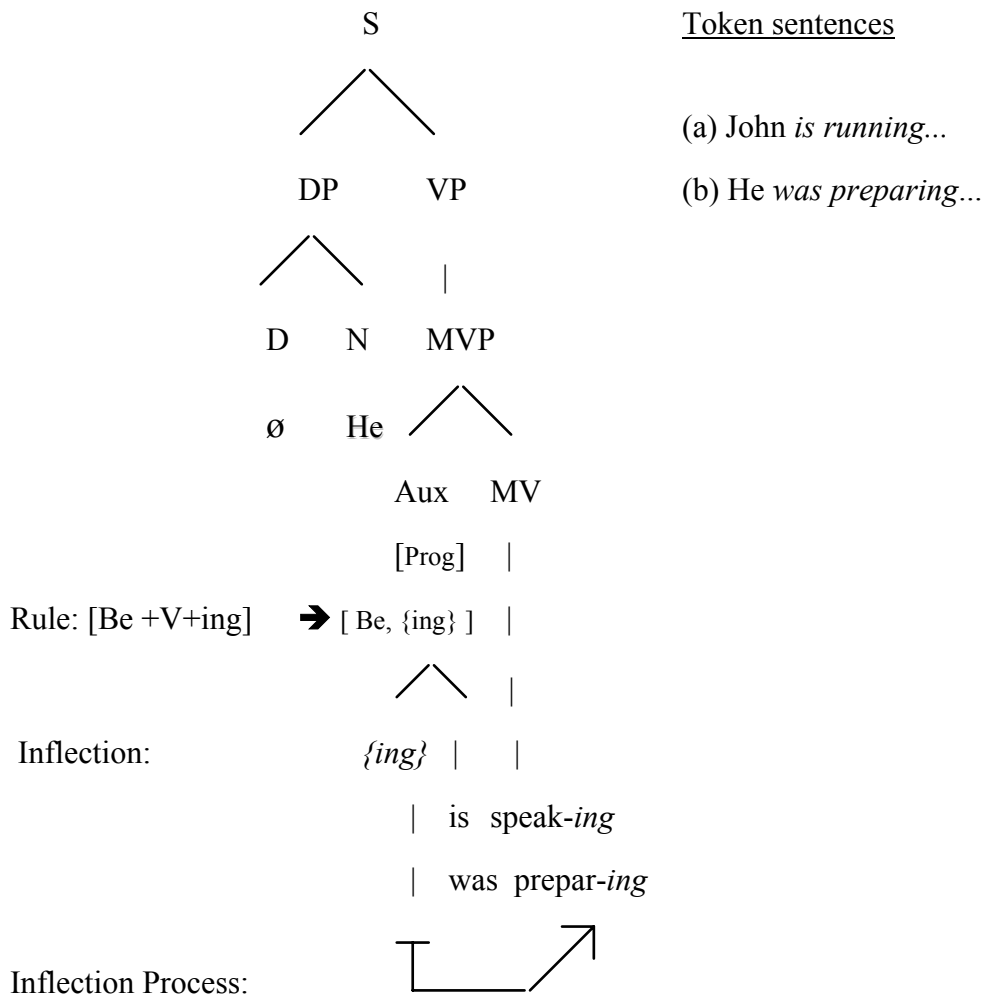
isolation and still maintain its lexical meaning (as opposed to “not”). For instance, in the clitic “will + not“, the form changes to “won’t”--clearly, this apparent change of stem from *will* to *won* is not a productive stem and is rather viewed as a phonological adaption. Conversely, sometimes inherent grammatical considerations work in shaping the outcomes of clitics--as in the “gonna” contraction sited above in our discussions of Tense (105).

(131) **Be** The Auxiliary *Be*, outside of its scope in formulating question and negation, has the task of providing (i) the **Progressive Aspect** as well as (ii) the **Passive Voice**. Rules and tree diagrams to the two functional grammars are stated below:

(132) **Progressive Rule** ➔ [Be + Verb + {ing}]

- (a) John is running on the track. [is + run + {ing}]
- (b) I was preparing for the track meet. [was + prepare + {ing}]
- (c) The freshmen were using the long jump. [were + use + {ing}]
- (d) I am looking at our times [am + look + {ing}]

(133) Tree diagrams showing Auxiliary: Progressive



(The tree above has been reduced of all its formal features only showing the Aux progressive grammar procedure)

Note that the Inflectional process of moving the {-ing} Bound Morpheme onto the Verb Stem invokes the identical process of Inflection presented throughout. The Aux node now reflects all the components of the functional Progressive Grammar: *Be* and {ing}. Also note that while *Be* (here, inflected in its finite form of “*is/was*”) stays put under the Aux node--since it is the actual Aux word--the bound morpheme {ing} is obliged to “move” from out of its mother Aux-node and position onto the main verb stem via inflection. Recall, that since the {ing} morpheme is bound, by definition it must attach onto another word (much like what happens to clitics). As a rule, only Lexical Form-Class Words (i.e., Nouns and Main Verbs) can take Inflection. Of course, all other features

apply as well for the structure regarding Tense and Agreement (T/Agr).

(134) **Passive Voice Rule** ➔ [Be + Verb + Past Participle + by]

The Passive voice is also carried out by Aux “Be”. One of the properties of the Passive Voice is that it allows the Object of an otherwise Active sentence to become the Subject of a Passive sentence. This is particularly handy when one wants to emphasis or put focus onto the object for discourse reasons. Consider the contrast between the active vs. passive voice in the paradigm below noting that the Subject of an Active Sentence becomes the Object of a Passive (and vice versa).:

(135) Table: Active vs. Passive Voice

Active vs. Passive Voice	<u>SVO Word Order</u>	<u>OVS Derived Word Order</u> Rule [Be + Verb + Past Part.+(by)]
Active:	<i>The thieves stole the jewels</i>
Passive:	The jewels were stolen... (by <i>the thieves</i>).

(136) Passive sentences:

Active / Declarative counterparts:

(a) Mary *was kissed* by John.

➔ (a') John kissed Mary.

(b) The ball *was kicked* by Jim.

➔ (b') Jim kicked the ball.

(c) The package *was sent* by Royal Mail.

➔ (c') Royal mail sent the package.

(d) A letter *was stamped* by Post-Man Pat.

➔ (d') Post-Man Pat stamped a letter.

In all the above examples, the Passive Rule [Be+Verb+Past Part.+by] applies. Passive (OVS) constructions can then be said to originate from out of Declarative (SVO) sentences. In other words, a passive construction is formed via the following procedure: (i) a Declarative (SVO) sentence + (ii) Passive rule ➔ passive sentence. The passive rule entails movement of a sort here in that the Subjects and Objects reverse their positions. This movement could be viewed as existing at a Sentence Level since the whole sentence has been up-rooted (as

opposed to just a word or phrase). (For a summary of movement, see §4 below.)

Perhaps the most complicated part of the Passive Rule is the **Past Participle** (Past Part.) component plus “**by**”. For starters, the “by” is not a prepositional “by” since it cannot be substituted by any other preposition: e.g., **Mary was kissed under John*, *The ball was kick between Jim and Fred*, etc.. Of course, these prepositions are indeed available to be used as prepositions in derived passive sentences, the matter here is that they in no way serve as a replacement for the “by” component of the passive rule--e.g., *Mary was kissed under John* by Jim, *The ball was kicked between Jim and Fred* by John, etc. The “by” component of the passive rule should be thought of as actually that, part of the rule--it is a lexical item projecting an Adverbial Phrase (AdvP) that is invariably fixed and doesn’t in any way come to represent a class of words, say ‘preposition’. One other note here that needs to be mentioned is that the “by” component can get and often gets deleted: the derived passive *Mary was kissed* is fine enough a sentence without any mention of the culprit (= the one doing the kissing). In fact, passives quite often go without any overt object of which to speak (i.e., their intrinsic subject gets omitted). Such elliptical sentence structure places the heavy burden of understanding on pragmatics and/or context. For instance, *The boy was arrested* implies that *The police* arrested him → (*by the police*), *President Clinton was impeached* implies that *Congress* impeached him → (*by congress*), etc.

The *Past Participle* morphology surfaces as an Inflection onto the Main Verb of the sentence. Recall, that this Past Part. inflection in no way denotes grammatical tense since, by rule, only the first Main Verb of a sentence takes on the role of projecting Tense via Inflection: 3P, Sing/Present {s} and Regular Past {ed}. Rather, the past participle should be viewed as a *Particle* whose Inflection beings about some change in Aspect--a time referential of *Duration* with a non-grammatical [-Tense] status (much in the same manner as how the Infinitive/Particle “to” / “ing” maintains a [-Tense] status). The table below shows Past Participle Inflections:

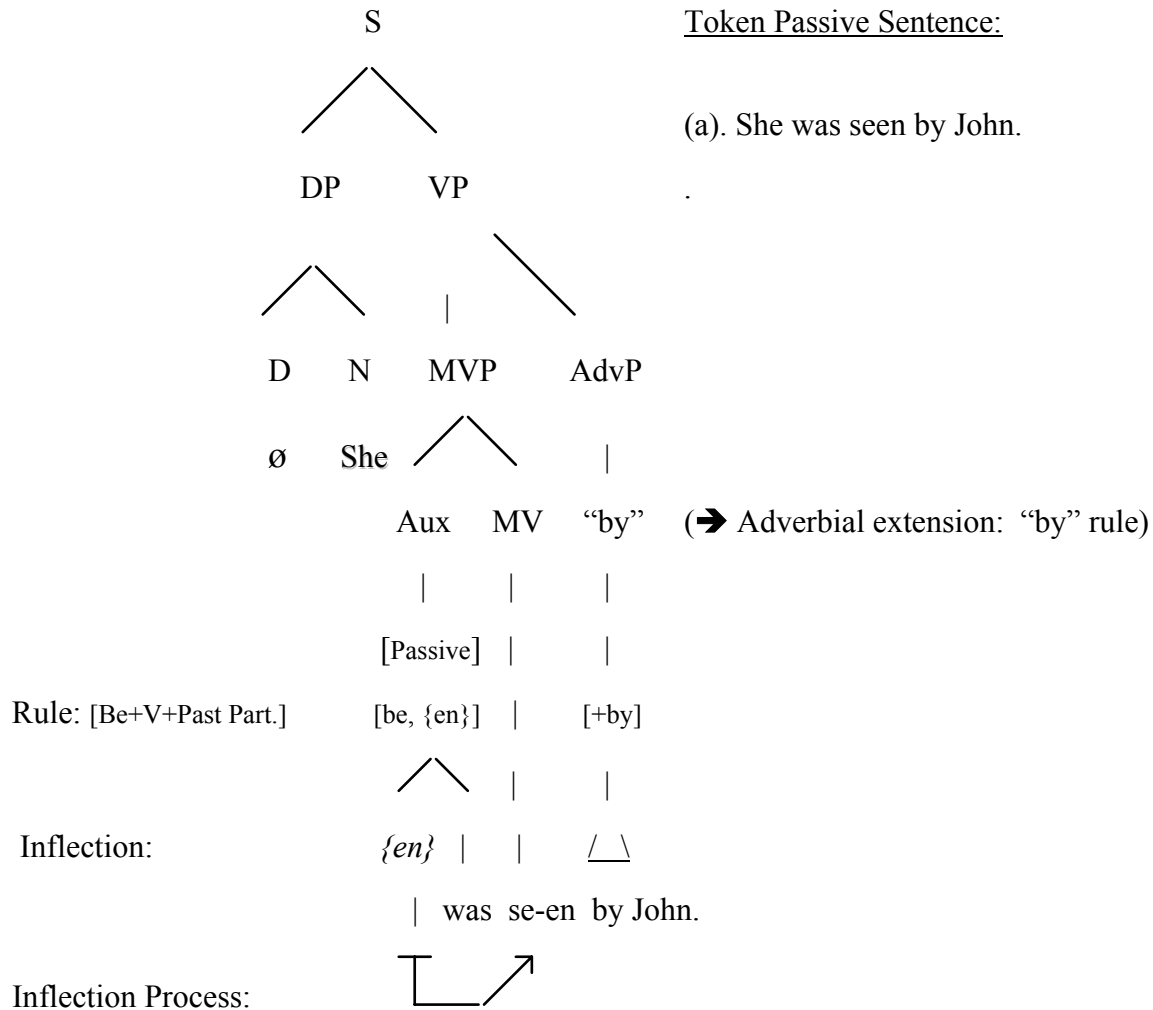
(137) Table: Past Participle Inflections

Past Participle Inflection:	Token Sentence: Be+ V+ {en}: Rule:
Regular {en}:	Mary <i>was seen</i> with Jim (by John). <i>was se-en</i> This paper <i>is written</i> by a student. <i>is writ-en</i> The test should <i>be taken</i> by students. <i>be tak-en</i>
Irregular {ed}:	The exams <i>were graded</i> by Mary. <i>were grad-ed</i>
Irregular {vowel change}: {vowel change} + {en}:	A song will <i>be sung</i> by Maria. <i>be s-u-ng</i> The window <i>was broken</i> by the wind. <i>was br-o-k-en</i>
Irregular {no change}:	The book <i>was put</i> on the desk by John. <i>was put-ø</i>

(Note that for clarity, the Regular Past Participle morphology is labeled herein as the {en} suffix, so that there lies no confusion between (i) regular past tense {ed} and (ii) past participle {ed}--the former being regular while the latter is irregular).

Consider the tree diagramming of passive constructions below showing Passive Rule functional Features/Inflection:

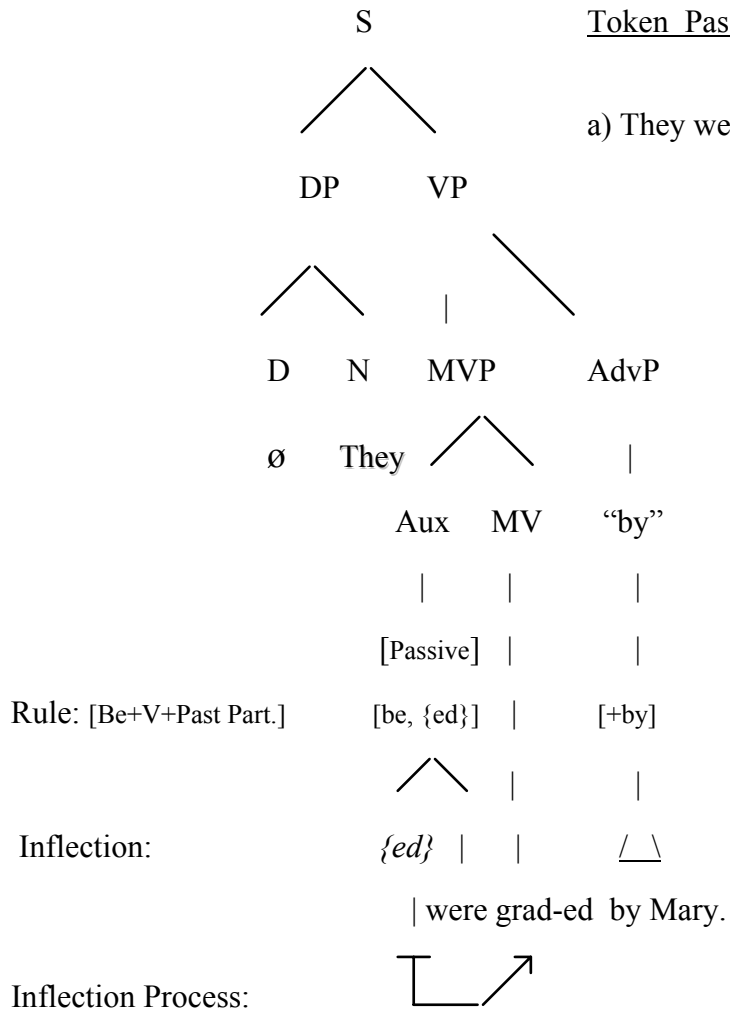
(138) **Tree diagrams showing Auxiliary: Passive {en} Inflection**



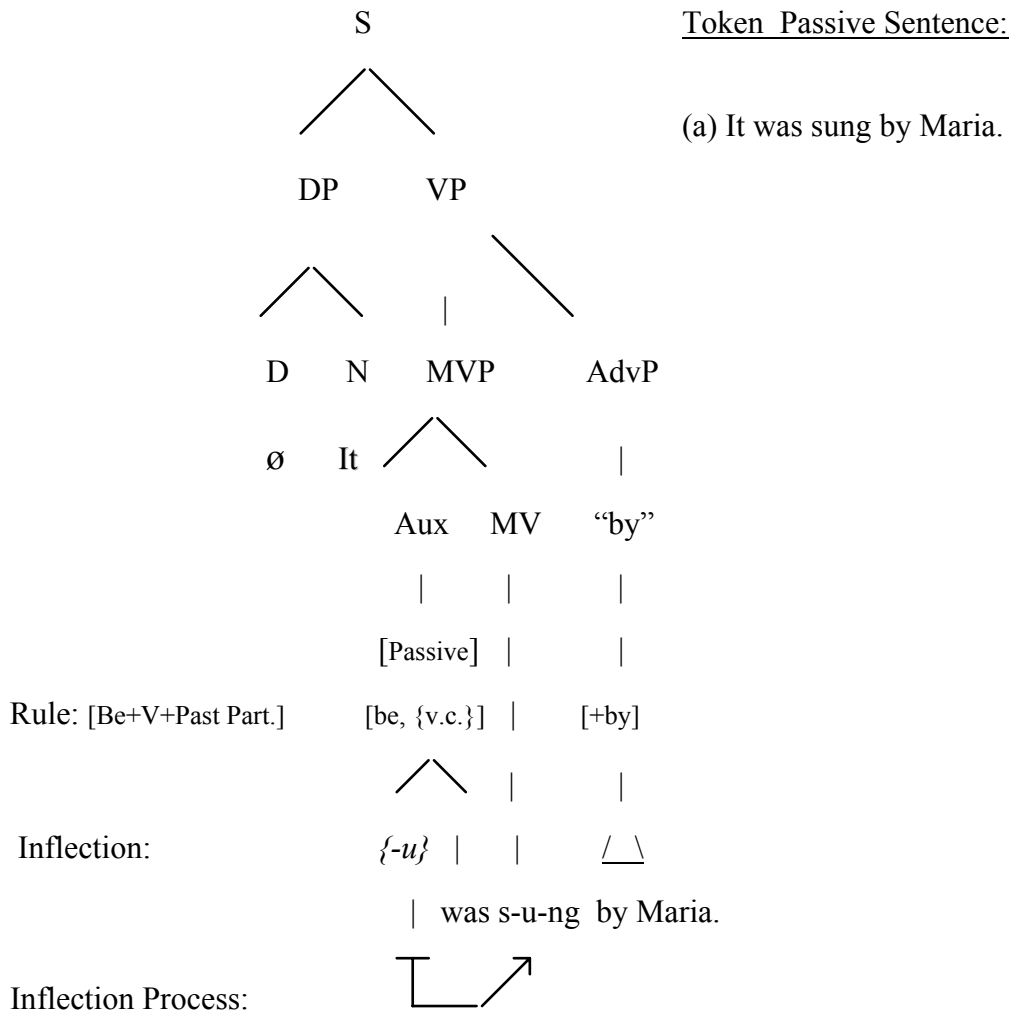
(139) **Passive {ed} Inflection**

Token Passive Sentence:

a) They were graded by Mary.



(140) **Passive {vowel change (v.c.)} Inflection**



(141) **Have** The Auxiliary “Have” is responsible for forming the **Perfect** or *Past Participle* constructions. This type of grammatical construction often gives one the impression of having a dual tense since it is possible to denote a quasi present-past or past-past reference to grammatical time. However, what is important to realize here, as a grammatical rule, is that only the First Main Verb of a sentences gets the task of representing grammatical Tense/Time--or, as the

saying goes-- “*The first verb gets the Time*”. So, even though it may appear that a second verb (positioned in the second verb slot) has an easily identifiable tense inflection e.g., such as a past tense inflection {-ed}, this second verb’s inflection doesn’t represent the grammatical tense for the sentence, but rather only marks this second order grammatical function of Past Participle/Perfect **Aspect**. The Perfect aspect is very similar in nature to the Progressive (imperfect) aspect in the sense that the role of *Aspect* is not to mark tense (*per se*), but merely to denote the “time” and “manner” of duration of the activity described by the verb: viz., the Progressive aspect denotes continuity of action, a sort of present participle (showing that some action is not yet completed), while Perfect denotes a kind of completion of action.

Consider the Perfect rule below:

(142) **Perfect Rule** ➔ [Have + Verb + Past Participle {en}]

Token Example	<u>Have/Tense</u>	<u>Verb</u>	<u>Past Participle</u>
(a) John <i>has run</i> on the track.	[have/present + run	+ {ø}]	: irregular
(b) He <i>has put</i> the track meet on hold	[have/present + put	+ {ø}]	
(c) The freshmen <i>had used</i> the long jump	[have/past+ use	+ {ed}]	
(d) The team <i>had swum</i> its lap.	[have/past	+swim + {vowel change}	
(e) She <i>has written</i> down our times.	[have/present + write+ {en}]	: regular	

The standard form of the Past Participle Rule is: [Verb➔ add {-en}] (as in *has writt-en*). However, the rule, just like its Past Tense rule counterpart (Verb➔ add {-ed}), has its irregular forms as well. Consider the *regular* and *irregular* forms below with the rule [Verb➔ add {-ed}] defined as the “Irregular rule” if only to separate it from the “Regular” Past Tense rule [Verb➔ add {ed}]. In any case, the inflection {-en} should be properly thought of as the regular form of the Perfect construction: [Verb + {en}].

(143) Regular Perfect

Token Examples:

Rule: Verb → add {en}

John has written/spoken/seen/eaten/taken...

(144) Irregular Perfect

Token Examples:

(i) Rule: Verb → add {ed}

John has recorded/talked/visited/cooked/...

(ii) Rule: Verb → add {ø} (no change)

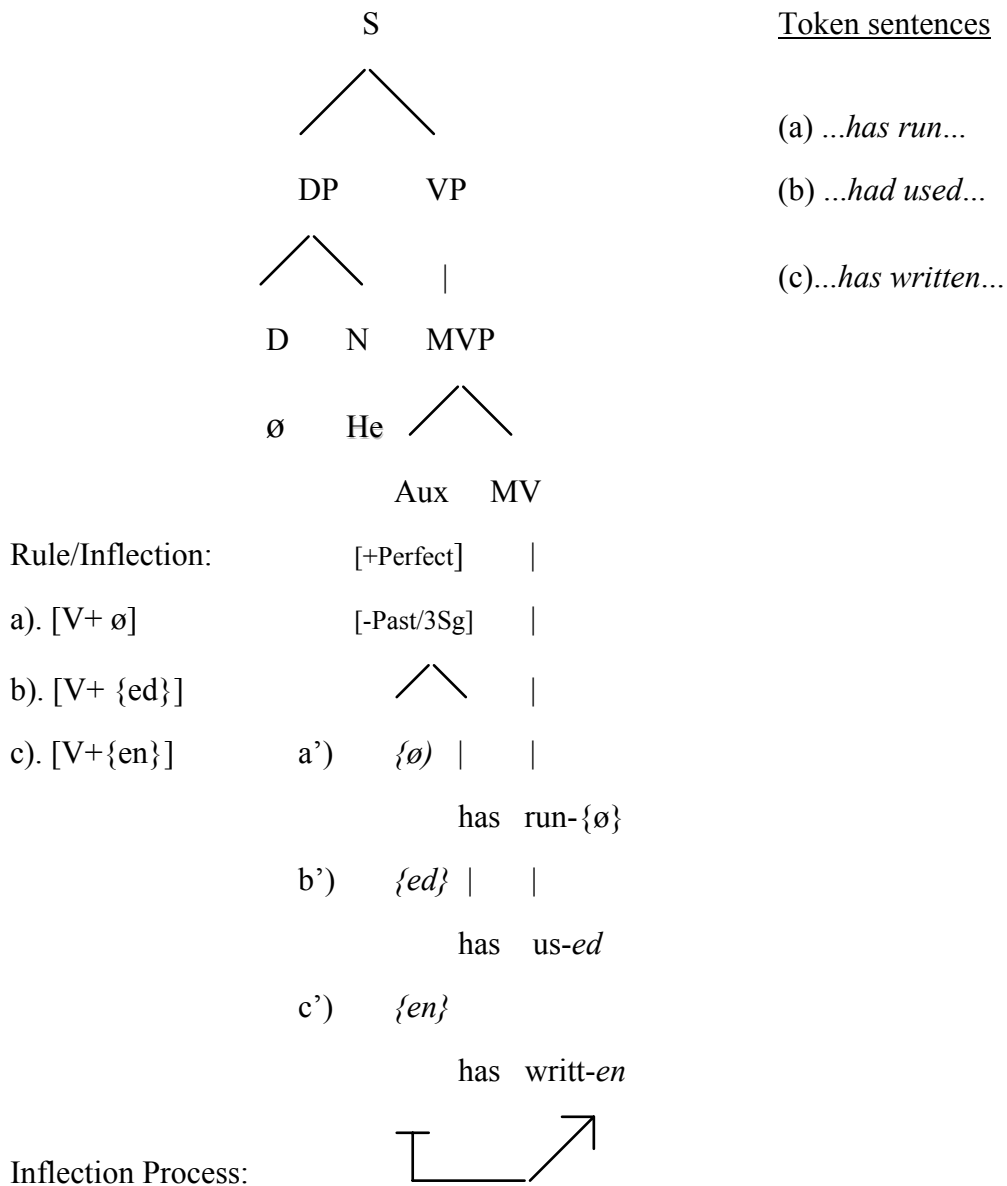
John has put/cut/set/...

(iii) Rule Verb → add (vowel change)

John has drunk/sung/rung/swum...

Included among the pattern of steady rules, there is some overlap of irregular forms: e.g., *got/gotten*, *dived/dove*, *knelled/kneeled*, etc. and in particular, whenever an irregular verb is used in a novel setting, the regular rule process kicks in and acts as the default: e.g., *He has driven* (vs. *driven*) *the ball over the fence* (U.S. baseball), *The man was hanged* (vs. *hung*) etc. The {-ed} form is overextended on such verbs. (NB. This same process is observed with the N+{s} default rule as well--e.g., *I need two computer mouses* / **mice*). In this sense, the {-ed} forms for both regular (past) and irregular (perfect) seem to be the default inflection. In addition to the {-en} inflection of regular, the Perfect also entertains a host of Irregular inflections including (i) *no change* (or zero allomorph) put>put>put, and (ii) *vowel change* sing<sang>sung.

(145) Tree diagrams showing Perfect



Tense Of course, by simply changing a Present (=Pres(ent) 3 (Person) Sing(ular)) inflection to a Past Inflection [+Past] (a feature selection as controlled by the Tense node under Aux) we would get *had run/used/written* (respectively). Note that the Participle inflections don't change with the changing of tense from present to past--"only the first verb gets the time" so only the first Auxiliary/verb

changes tense. The examples below show how a Main Verb (in second position--V2) and an Auxiliary Verb (in first position--V1) may show up as non-contrasting homophones (cf., 146, 148) though with distinct grammatical roles.

(146) The double “Had” (homophone): Lexical verb (Have)

- (a) I *had had* a bad day today.
- (b) She *had had* many boyfriends before her divorce.
- (c) The President *had had* one too many slips of the tongue.

(147) The Double “Be”(non-homophone): Lexical verb (Be)

- (a) I *am be-ing* bad today.
- (b) She *was be-ing* too open with other boys.
- (c) The President *is be-ing* too lazy with his word choice.

(148) The Double “Do”(homophone): Lexical verb (Do)

- (a) I *do do* the wash at home! (! =emphatic usage)
- (b) We *do do* the chores around the house!
- (c) They *do do* many things!

Recall that these examples typify the dual status of “Do-Be-Have” as belonging both to a Main Verb class and an Auxiliary class--depending on its role and structure within the given sentence.

(149) A Recap: The Three Auxiliary Verbs and their Grammars

Aux Verb	Grammar	Token Example
Do	<u>Simple</u> [Do + Subj + Verb] → Q Subj [Do + Neg + Verb] → Neg	<i>Do</i> you like Pizza? I <i>do</i> not like pizza (She <i>does</i> speak French) (Emphatic)
Be	(i) <u>Progressive</u> [Be + Verb + ing] [Neg]	She <i>is</i> cooking pizza <i>Is</i> she cooking pizza? She <i>is</i> not cooking pizza
Be	(ii) <u>Passive</u> [Be + Verb + Past Participle + by] [Neg]	She <i>was</i> kissed by John <i>Was</i> she kissed by John? She <i>was</i> not kissed by John
Have	<u>Perfect</u> [Have + Verb + Past Participle]	She <i>has</i> spoken to him {-en} (Past Part) She <i>has</i> talked to him {-ed} (Past Part) <i>Has</i> she spoken to him? She <i>has</i> not talked to him

Using a reduced tree notation, you may think of the hierarchical syntactic structure for the three Aux verbs as follows (Reduced Tree Representation for Declaratives):

(150)

(a) **Simple:** **Do** (Neg)ation: (i) [Do + Not + Verb]

The diagram shows a horizontal line with three segments. The first segment is connected to a vertical line that goes down and then right to the second segment. The second segment is connected to a vertical line that goes down and then right to the third segment. This represents a hierarchical structure where 'Do' and 'Not' are grouped together, and then 'Verb' is added.

Do (Question): (ii) [Do + Subject + Verb]

The diagram shows a horizontal line with three segments. The first segment is connected to a vertical line that goes down and then right to the second segment. The second segment is connected to a vertical line that goes down and then right to the third segment. This represents a hierarchical structure where 'Do' and 'Subject' are grouped together, and then 'Verb' is added.

(b) **Progressive:** **Be** [Be + Verb + ing]

The diagram shows a horizontal line with three segments. The first segment is connected to a vertical line that goes down and then right to the second segment. The second segment is connected to a vertical line that goes down and then right to the third segment. This represents a hierarchical structure where 'Be' and 'Verb' are grouped together, and then 'ing' is added.

(c) **Passive:** **Be** [Be + Verb + Past Participle + by]

The diagram shows a horizontal line with four segments. The first segment is connected to a vertical line that goes down and then right to the second segment. The second segment is connected to a vertical line that goes down and then right to the third segment. The third segment is connected to a vertical line that goes down and then right to the fourth segment. This represents a hierarchical structure where 'Be' and 'Verb' are grouped together, then 'Past Participle' is added, and finally 'by' is added.

(d) **Perfect:** **Have** [Have + Verb + Past Participle]

The diagram shows a horizontal line with three segments. The first segment is connected to a vertical line that goes down and then right to the second segment. The second segment is connected to a vertical line that goes down and then right to the third segment. This represents a hierarchical structure where 'Have' and 'Verb' are grouped together, and then 'Past Participle' is added.

Note that for all configurations, the Auxiliary Inversion rule (as shown in (a, ii) as well as the Negation rule applies.

(151) Combinations of Auxiliary Constructions “Be” & “Have”

Keeping to our now reduced syntactic trees (as drawn above), we see how the latter two Aux Verbs (Be & Have), which form complex grammars (as opposed to the simple grammar of Aux “Do”), can merge to form *Auxiliary Combinations*:

A Rule of thumb on Combination orders:

(i) Perfect always before Progressive/Passive

(ii) Progressive always before Passive

(a) Perfect Aux “Have” with Progressive Aux “Be”

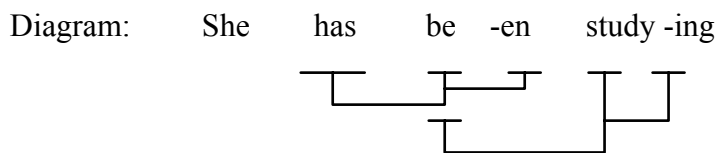
i. [Have + V + Past Part] ➔ [has + be + {en}]

ii. [Be + V + ing] ➔ [be + study + {ing}]

Examples: She *has been studying* English for two years.

Has she been studying English for two years? (Aux. Inversion)

She *has not been studying* English for two years. (Negation)



(NB. Note that while the verb “Be” serves as a Lexical Main Verb for the first diagram (a, i)--since it occupies the verb-slot of the structure--it, at the same time, also serves as true functional Aux. Verb for the second diagram (a, ii)--since it occupies the Auxiliary slot. Recall, that since Verbs “Do-Be-Have” hold a dual status as functioning either in

the capacity of a Main Verb or Aux Verb (depending on the structure or slot the verb occupies), “recycling” might be a nice way to think about their ‘switching’ of roles here. Also see (153) below for differences between Aux and Main verbs--recalling that “*be*”/“*have*” can function as a linking/main verb (respectively) in the sentences (*She is a teacher* vs. *she has been very good* & *She has my book* vs. *she has had a bad day*, etc.). This same style of recycling applies across the board for all merged combinations of Auxiliary construction. Also note that the rules of Aux. Inversion and negation continue to apply.)

(b) Progressive Aux “Be” with Passive Aux “Be”

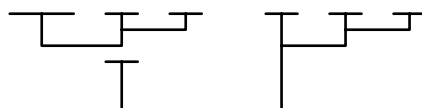
- i. [Be + V + ing] ➔ [was + be + {ing}]
- ii. [Be + V + Past Part + by] ➔ [be + kiss + {ed} + by]

Examples: She *was being kissed* by John.

Was she being kissed by John? (Aux. Inversion)

She *was not being* kissed by John. (Negation)

Diagram: She [was be -ing kiss -ed by] John



(c) Perfect Aux “Have” with Passive Aux “Be”

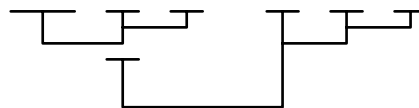
- i. [Have + V + Past Part] ➔ [has + be + {en}]
ii. [Be + V + Past Part + by] ➔ [be + take + {en} + by]

Examples: She *has been taken (for a ride) by* John.

Has she been taken (for a ride) by John? (Aux. Inversion)

She has not been taken (for a ride) by John. (Negation)

Diagram: She [has be -en take -en by] John



As an exercise, see if you can diagram the following three tier Aux construction (you should notice that the structure involves the recycling of two Aux/Main Verbs “be”):

e.g., !? *She [has been being beaten by] her husband for several years.*

Why not toss in a modal for good measure?:

e.g., !? *She [could have been being beaten by] her husband for several years*

We must address one last note before we leave the Auxiliary constructions behind. One interesting way to show that the Aux class reflects a functional highly abstract class *par excellence* is to see what happens to it in colloquial English. The abstract nature of Aux shows up in colloquial English in ways that suggest it may form a general proto-class of its own. For instance, consider how the Negative form “*ain’t*” can overlap as a general abstract verb to cover both

“*Be*” and “*Have*” counterparts. I believe this demonstrates more than anything the non-concrete (non-substantive) nature of the Aux. verb.

(152) Usage if “Ain’t”

(a) It ain’t my fault (ain’t = *be* + *not*)

➔ (It is not/isn’t my fault)

(b) He ain’t got money (ain’t = *have* + *not*).

➔ (He has not/hasn’t got any money)

In other words, “Ain’t” in the above cases seems to serve as a sort of prototype formal/functional category that makes use of an overlapping category--say, [+Aux] with two spell-out forms: *Be* and *Have*. The rule might look something like the following: “*ain’t*” = [Be or Have + (n’t)].

(153) A Recap: Differences between Auxiliary and Main Verbs “DO-BE-HAVE”

As a nice recap, perhaps the easiest way to understand the inherent differences between the *homophones* (same-sounding, but grammatically different) Auxiliary/Main Verbs is to consider the logic behind the three forms of propositions below:

(154) *Do* (a) I do the wash.

<do> ➔ Transitive Main Verb [logic: do(I, the wash)]

(I do x, x = the wash)

(b) I *do* do it / I do not do it (also see (114) on ‘Do-insert’)

<do> ➔ Aux. Verb: [-logic] [+grammatical, emphatic/negative]

(155) *Be* (a) Mary is the teacher

<is> ➔ Copular/linking Verb [logic: is (Mary, the teacher)]

Mary = the teacher (*Mary equals the teacher*)

(i) I need to see Mary (ii) I need to see The teacher

(b) Mary *is* smoking (lexical verb: smoke)

<is> ➔ Aux Verb [-logic] [+grammar, progressive]

Mary is ~~smoking~~ (*Mary doesn’t equal smoking*)

(i) Mary is a girl who smokes

(156) *Have* (a) I have a coin

<have> ➔ Transitive Main Verb [logic: have(I, a coin)]

(b) I *have* spoken (lexical verb: speak)

<have> ➔ Aux. Verb [-logic] [+grammar, perfect]

(157) **Modals**

On the heels of the Auxiliary Verb, we have a class of verb-like items called modals (or modality verbs). While these verb are also functional (and hence somewhat abstract) like their Auxiliary verb counterparts, they however cannot

take on Verbal INFlection such as Tense and/or Agreement. For example, consider the ungrammaticality of the sentences below:

(158)

<u>No INFL on Modals:</u>	<u>No INFL on adjacent [-Fin] Verb</u>	<u>Correct grammar</u>
(a) *She can- <i>s</i> do it.	(a') *She can <u>to do</u> it	(a'') She can do it.
(b) *He may- <i>ed</i> a drink.	(b') *He may <u>to drink</u>	(b'') He may drink.
(c) *John will- <i>s</i> the car	(c') *John will <u>to wash</u> the car.	(c'') John will wash..

The class of modals tends to denote abstract states such as--e.g., the giving of advice (*should*), possibility (*might/may*), potential (*can*), non-grammatical future time reference (*will*) etc. We shouldn't think of modal "will" being our Future tense in English since, as a grammatical rule, only the verbs (not Modals) take on Tense and Inflection (see (102) above). Besides, "will" seems to be used for a number of possible modalities aside from our commonly conceived future reference--e.g. (cited from Palmer 1984: p. 198):

- (159)
- | | |
|--|--------------------------|
| i. <i>I'll come if you want me to.</i> | (modality =willingness) |
| ii. <i>She'll sit for hours.</i> | (modality = habit) |
| iii. <i>That'll be John.</i> | (modality = probability) |

Recollecting our badly conceived notion that modal "will" provided English with a future grammatical Tense, consider the counter examples below which similarly provide future reference with or without the modal "will".

- iv. *John will start/work/talk Monday* (modality = future reference)
v. *John starts/works/talks Monday* (main verb = future reference)

The overall syntactic functions of the Aux/Modal is that they introduce Verbs. Recall, in our earlier discussions, that Auxiliaries are viewed as playing a functional/grammatical role in that they introduce Lexical Verbs, [Aux ➔ V] and that Determiners are said to function in a similar way in that they introduce Lexical Nouns [Det ➔ N]. So, here we have gone full circle in expressing the roles of the two functional items. One side note is in order here. Since Modals seem to have their own word classification, they are entitled to link-up with their Auxiliary counterparts to form two types of modality expressions:

(160) Modality Structures

- (a) [Modal + Auxiliary]
- (i) She *might be sleeping* at this early hour.
 - (ii) This book *should not have been written* by John.
 - (iii) *Will* Mary *have studied* for ten years.

In example (i), the modal *might* expresses possibility within a progressive grammar. In (ii), *should* expresses advice within a (Negative) Perfect Passive structure. And (iii) expresses a future reference within a Interrogative (Question) Perfect structure--denoting that idea that the action of the verb “studying” will be completed (marking a ten year span, perfect grammar) at some future date. Also note that the same rules apply to Modals as they do to Aux Verbs regarding Inversion (for Questions) and Negative “*not*” (for Negation).

2.4 @ Prepositional Phrase (PP)

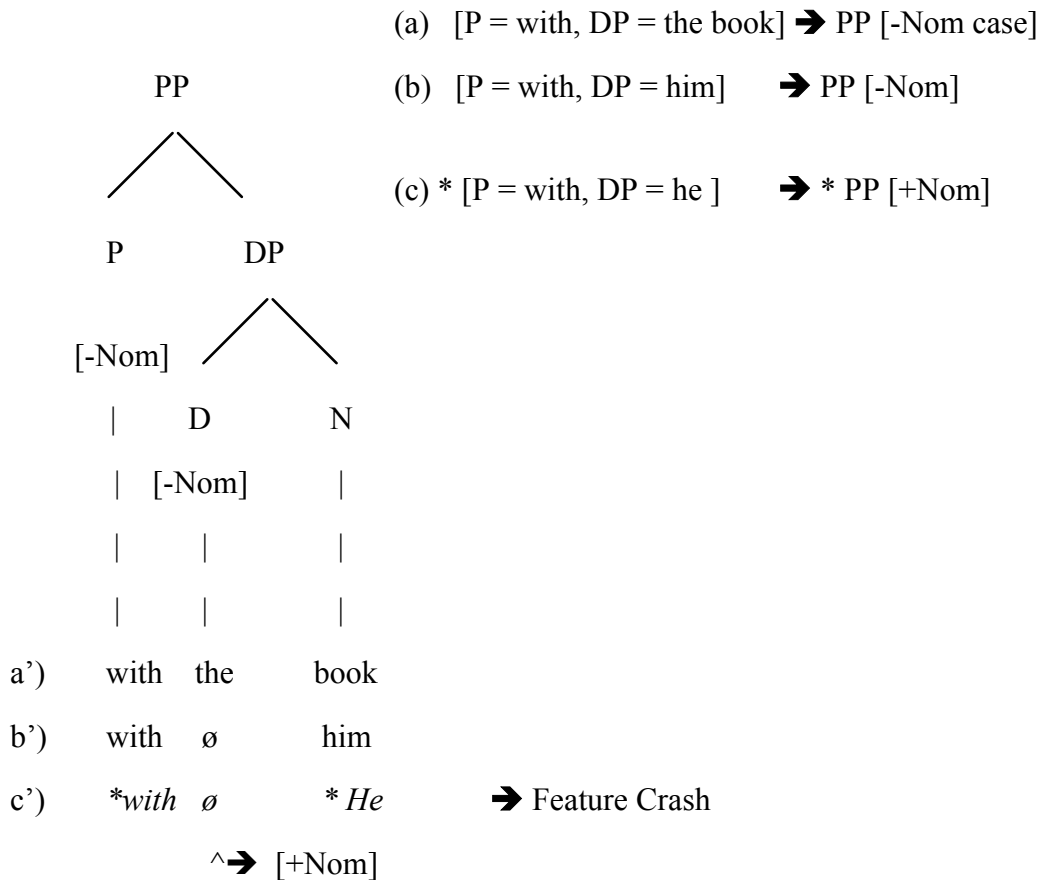
(161) Table: Prepositions

Some Common Prepositions			
about above across after along among as at against before below beside between beyond by despite down during except for from in including inside into near of off on onto out over round since though to towards underneath until up via with			
Some Phrasal Prepositions			
according } due owing in addition in regard	} to because by means by reason by way	along side } down across away aside	} of apart } from along } with accordance together connection associated

Earlier on in this text, we had tentatively established the word-class of Preposition as having a Lexical Categorical status. One argument in favor of a lexical status could be based on the fact that since (at times) Prep(ositions) formulate opposites, there must be a certain amount of inherent meaning involved--since only proper meaningful properties could ever hope to derive opposites--e.g., *on-top* vs. *under*, *on* vs. *off*, *for* vs. *from*, etc. However, as it turns out, this keen and somewhat intuitive observation regarding semantics is often what is at the heart of our misguided analyses of Prep as a lexical category. In fact, there are a number of good reasons for considering Prepositions as having a functional status (and not a lexical status). One reason has to do with this quasi inherent meaning. It is indeed true that Prepositions do communicate a certain amount of meaning, but at a closer look, one discovers that all derived ‘meaning’ is rather dependent on structure (an element pointing more to a functional status): clearly, there is no sense of meaning in the words *with/in/on/between/etc.* except that they establish a structural relationship with the preceding nominal (DP-subject) and the following Determiner Phrase (DP-object) as in *J(ohn) walks with M(ary)* [walk(J & M)] showing that the DP-subject *John* and the DP-object *Mary* are conjoined in the act of *walking*. As was presented earlier in our discussion of lexical/substantive

words (lexical categories: Nouns, Verbs, and Adjectives), Prepositions carry very little in the way of substantive/conceptual meaning. Ask yourself the following question: what does--(i) *Car* [+N], or (ii) *Red car* [+Adj, +N], or (iii) *Red cars go fast* look like in your mental eye? Certainly, you can formulate some type of mental substantive description of the word categories that make up the sentence above. Now, ask yourself what a preposition would look like in your mind's eye--say, "*with*" in the sentence below: *Girls "with" red cars drive fast*. While all other words bear and contribute a fair amount of substantive meaning, the preposition "*with*" lacks any sort of meaning and is inserted into the structure in order to maintain an abstract structural/grammatical relation (expressing location or manner) to the substantive words. In a more finer-grained analysis of Feature Theory however, the level of functional abstraction becomes obvious. Recall that our earlier discussion of Functional categories brought us to the topic of lexical counterparts--recapping, we stated that Functional Determiners work alongside their Lexical Noun counterparts (merging into a DP) in providing formal abstract functional material for purposes of feature checking, and that the Functional Auxiliaries work alongside their Lexical Verb counterparts apparently for the same reasons. Well, it seems that Prepositions likewise enter into a functional partnership--viz., Preps introduce DPs [Prep → DP-object]. That is, whenever you find a Preposition, a following DP-Object shouldn't be far behind. Again, as stated earlier, this is what's behind the notion of preposition standing--you can never leave a Prep standing alone without it properly introducing a DP. Feature Theory nicely captures this PP to DP relation by stipulating that Prepositions are indeed functional in that they hold at least one functional feature that must be checked by its adjacent DP. The feature to be considered here involves *Case*. Recall, Case is a grammatical realization of a given Pronoun and/or Prenominal forming the following paradigm: Nominative/Subject "I" vs. Accusative/Object "me" vs. Genitive "my"(+ N) etc. (See (50) above for a recap of the full Case paradigm). What we are on about here is that Preps hold at least one functional feature specific to Case, and that this one feature forces the two Phrases (PP & DP) to merge together (for reasons having to do with formal feature checking). Since Preps hold this functional feature, we must now reanalyze the whole class of Prepositions as a Functional Category. Considered the PP projections below showing both proper and erroneous feature spell-outs:

(162) PP with Feature Checking



As we see in (162c)-prime above, a feature crash occurs because the Prep's obliged [-Nom] feature crashes with an improper projected [+Nom] DP (a DP which instead should have a [-Nom] Accusative status). This one feature projection originating in the Preposition of a Prepositional Phrase accounts for the ungrammaticality of the sentences below:

(163) PP Feature Mismatch

- (a) [PP because] [DP you and *I/ (= me)] (d) [PP with] [DP you and *she/ (=her)]
- (b) [PP like] [DP you and *I/ (= me)] (e) [PP alongside] [DP *we (=us)]
- (c) [PP before] [DP Mary and *he (= him)] (f) [PP between] [DP you and *I/ (= me)]

Preposition Phrases

Prepositional Phrases can function in one of two ways--(i) Adverbial, or (ii) Adjectivally. When Preps function Adverbially, they are called *adverbial modifiers*, and when they function Adjectivally, they are called *adjectival modifiers*. One must keep in mind, however, that the word class "Preposition" doesn't change under these circumstances: viz., there are no hybrid

word classes such as Adj(ective)-Prep or Adv(erb)-Prep (respectively). Perhaps a better way to think about it is to say that the Prep changes are not systematic, but rather have to do with bringing about a certain flavor of modification--something Preps are not typically associated with. Recall that the classic functional definition of Prep more or less involves the expression of *manner* or *location* between the two associated DPs. The notion behind any form of modification is not an inherent feature of Preposition; nonetheless, Preps do seem to enter into such modification. Consider the examples of Adj/Adv-Prep modification below:

(164) **Adjectival Prepositional Phrases: The modification of a DP/Noun**

(a) The Professor often teaches *classes full of Freshmen*. (Adjectival)

➔ Freshmen classes

[DP [D ø] [Adj Freshmen] [N classes]]



Adj-modification

(b) The President owns *a boat with a red, white, and blue sail*. (Adjectival)

➔ A red/white and blue sailed boat

[DP [D A] [Adj red-white-blue sailed] [N boat]]



Adj-modification

(c) The dinner *after school* was fun. (Adjectival)

➔ The after school dinner

[DP [D The] [Adj after school] [N dinner]]

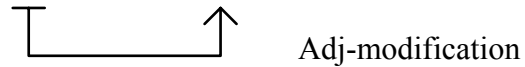


Adj-modification

(d) The car *with an electric motor* was too expensive. (Adjectival)

➔ The electric motor car

[DP [D The] [Adj electric motor] [N car]]



(165) **Adverbial Prepositional Phrases: The modification of a VP/Verb**

(a) John and Mary *walked along* the beach (Adverbial: Place)

➔ walked along

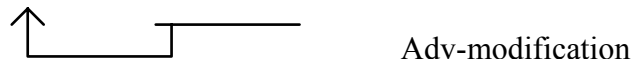
[VP [V walked] [Adv along]]



(b) The lecture *began after lunch (and) without* interruption

➔ began after (&) ➔ began without (Adv Time & Manner)

[VP [V began] [Adv after] [Adv without]]



2.5 Summary of Features

In summary, having now Spelled-Out a certain amount of Functional Features in the pages above, what we can conclude are the following points:

(166)

(0) The most general observation that can be drawn here is that there exist two types of words:

(i) *Lexical Words* (=Noun, Verbs, Adjective, and Adverb)—these words are substantive in nature and thus contribute to a full range of meaning; and

(ii) *Functional Words* (=Determiners, Auxiliary/Modal, Preposition)--these words are not substantive, but rather abstract in meaning and thus contribute only abstract grammatical relations.

(1) There seems to arise a general grammatical framework that stipulates what kinds of words can sit amongst other words. So, for all intents and purposes, what has been presented in the pages above is more or less a theory which stipulates a general adjacency condition. This condition is said to apply to Functional words as they work alongside their Lexical word counterparts--a kind of *Structure Class-to-Form Class* syntactic co-operation. In fact, one of the ways we were able to determine functional vs. lexical word class distinctions was to see if an adjacency condition applied. This test later allowed us to reconsider the status of the word class "Preposition" and to adjust its status from lexical to functional--since its own adjacency condition called for it to precede a DP-Object.

(2) D→N One of the first class of Functional features looked at was the class of DP-features. This class included the following specific DP-features: *Definiteness, Person, Number, and Case*. These four main DP-features contributed to an abstract (formal) grammatical relation reflecting how substantive Nouns get interpreted in the grammar.

(3) Aux→V Another class of functional features we looked at involved how an Auxiliary verb worked alongside a Main Verb. The class included the following specific AUX-features: *Tense, and Person & Number (=Agreement)*.