جامعة الملك فيصل
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اسم المقرر

علم النحو والصرف

MORPHOLOGY and SYNTAX

المسوى السادس – اللغة الإنجليزية

أستاذ المقرر

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Introductory Lecture

CONTENT OF THE LECTURE

- Course description
- Course content
- Course objectives
- Course evaluation
- References
- Contact

1. BRIEF COURSE DESCRIPTION

This course introduces the basic principles of English morphology and syntax from the perspective of generative linguistics.

It covers the different processes of word formation including affixation and compounding.

The syntax part introduces basic constituent structure as well as some simple syntactic processes illustrating the working of the transformational component in the grammar.

2. COURSE CONTENT

MORPHOLOGY

- Words and word structure
- Derivation
- Compounding
- Inflection
- Other morphological phenomena
- Morphophonemics

SYNTAX

- Categories and structure
- Complement options
- Move
- Universal Grammar and parametric variation

3. COURSE OBJECTIVES

By the end of the course, students should be able to:

- Identify the internal structure of English words.
- Distinguish different types of morphemes: derivation vs. Inflection.
- Identify the constituent parts of a sentence: words, phrases and clauses.
- Provide a syntactic representation of constituent types on the basis of X'-theory.
- Provide a syntactic derivation for some common sentence types.

4. Course Evaluation

Total mark is out of 100

1. *30%* of the total mark is assigned to:
   - ✓ Your participation in the Blackboard Forum. (10%)
   - ✓ Your main three assignments. (10%)
   - ✓ Your attendance to live and recorded lectures. (10%)
2. *70%* of the total mark is assigned to the FINAL TEST

The final test consists of a set of multiple choice questions with five options to choose from.
The exact date and time of the final test will be announced later.

5. References

William O'Grady, John Archibald, and Francis Katamba***. Contemporary Linguistics: An Introduction. Pearson Education Limited (2011).***

The content of the course is to be found in Chapters 4 and 5.

http://www.amazon.com/Contemporary-Linguistics-William-OGrady/dp/0312555288/ref=sr_1_fkmr0_1?s=books&ie=UTF8&qid= 1423734206&sr=1-1-fkmr0&keywords=contemporary+linguistics+an+introduction+candle+edition

Part I : MORPHOLOGY
Lecture 1

INTRODUCTION

Words are important: basic units of language, unlike phonemes and syllables, **words** carry **meaning**.
Unlike sentences, which are forgotten soon after we produce them, **words** are **stored** in a speaker's **mental dictionary** or **lexicon**. Words are the fundament building blocks of language.
Native speakers of English know thousands of words such as ***read, language, computer, on***, whose meaning and form cannot be predicted.
However, once they know the meaning of ***phish*** (obtain sensitive information via email fraudulently), they can recognize and construct words such as: ***phished, phisher, phishing,*** and ***unphishable.***
Thus, **MORPHOLOGY** is that component of the grammar which studies the **structure of words** to account for the knowledge that native speakers have about their own language.

Native speakers know how to segment a string of sounds into words when they write, for instance, so then:
What is a word? How can it be defined?
Linguists define the **word** as the **smallest free form** in a language. This means that it can occur alone and in different positions in the sentence as well:

(1) What creatures do children find most fascinating?
Dinosaurs

(2) Paleontologists study **dinosaurs**
Dinosaurs are studied by paleontologists
*** Dinosaur (–s) is extinct. (-s is NOT a free form)**

MORPHEMES

Like syllables and sentences, words have an internal structure which consists of one or more **morphemes**.
A Morpheme is the smallest unit of language that carries meaning. For example: ***Builder*** is made up of ***build****(construct)* and *–er(one who builds)*. ***Houses*** is made up of ***house****(dwelling)* and *–s*(*more than one).*
One-morpheme word is said to be **simple** and two or more morpheme words are said to be **complex**. ***Ex: hunt, hunt-er, hunt-er-s.***

FREE and BOUND MORPHEMES

A morpheme can be either **free,** when it can stand alone, or **bound,** when it must be attached to another one**.**
Ex: boy vs. –s
A free morpheme in English can be bound in a different language**.** ***Ex: head*** and ****fi*** (in Athapaskan, an Amerindian language)**.** In this language**,** this morpheme is **bound**, ***sefi***, meaning ***my head***.
Conversely, a bound morpheme in English can be **free** in other languages. Ex, ***play-ed vs thaan leew*** (eat + past in Thai)

ALLOMORPHS

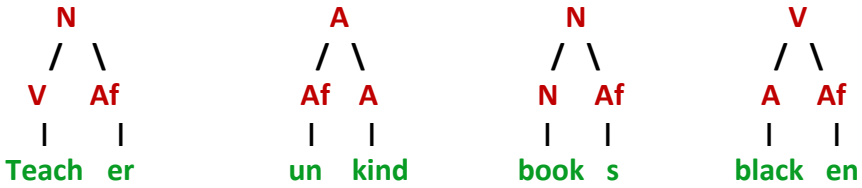
Allomorphs are the variant forms of a morpheme.
Example 1: the indefinite article in English has two variants: ***a*** when preceding a word that begins with a consonant *(**a** book)* and ***an*** when preceding a word that begins with a vowel *(**an** orange)*.
Example 2: The plural morpheme ***–s*** has 3 pronunciations: **[s]** as in cat**s**, **[z]** as in dog**s**, and **[əz]** as in *judge**s***.
Do not confuse spelling changes with allomorphic variation. **Ex** : **e** in create and ride is dropped in creat-ive and rid-ing. On the other hand, there is allomorphy in electri**c** / electri**c**-ity and impre**ss** / impre**ss**ion, where the pronunciation changes but not the spelling. **[k] ➔ [s]** and **[s] ➔ [sh]**

ANALYSING WORD STRUCTURE

To identify the internal structure of words, we need not only to **identify** the component morphemes but also to **classify** them according to their contribution to the **meaning** and **function** of the word.

Roots and affixes: Complex words consist of a **root** morpheme and one or more **affixes**.
The root is the core of the word that carries the major meaning component. Typically, roots are **lexical** categories such as N, V, A, or P. **N**=Noun, **V**=Verb, **A**=Adjective, **P**=Preposition.
Affixes are NOT **lexical** and are ALWAYS **bound** morphemes. For ex, ***-er*** in ***teach-er*** (V+er ➔ N) **Af**=Affix

Below are examples of the internal structure of some words:

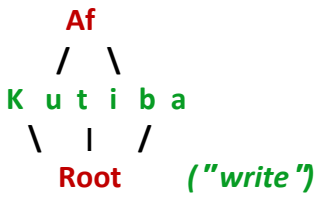


AFFIX TYPES: There are 3 types :

1. A **prefix** is attached to the front of the base. Ex. ***De-activate, re-play, il-legal***
2. A **suffix** is attached to the end of a base**.** Ex. ***Faith-ful, govern-ment, hunt-er***
3. An **infix**, which less common, occurs **within** another morpheme. For example, in Tagalog, (the language spoken in the Philippines), we find: ***bili*** ➔ ***buy***, the past form of which is ***b-in-ili*** ➔ ***bought.***

BEWARE! ***–ish*** in ***boy-ish-ness*** is NOT an infix.

Arabic, and other Semitic languages, has interesting illustrations of infixing. Roots in Arabic are **consonantal**. Various combinations of vowels are added, including in between consonants to mark grammatical contrasts such as: ***Kataba*** ➔ ***wrote, kutiba*** ➔ ***has been written, aktub*** ➔ ***I write/am writing***. One way of representing these facts is by assigning vowels to a different **tier**, level :



PROBLEM CASES

English morphology is said to be **word-based**. Consider the following: ***re-do, treat-ment*****.** Most complex words are like these two**.**
Not all languages are like English, Spanish and Japanese; verbal roots are **ALWAYS** bound and cannot therefore stand alone. Arabic is also like that**.**
English also has a number of bound roots such as ***unkempt*** *(unkempt hair)* which does not break into ***un+kempt***.
Other words such as ***inept*** were **borrowed** into English from Latin ***ineptus*** *(unsuited).* Today, this word cannot be broken up into **** in-ept.***
Another class of borrowed words from Latin via French is represented by the following: ***receive, conceive, perceive, permit, submit*** and ***commit.*** Each potential division of the word does not have a meaning of its own. ***Re-*** ➔ *'again'* but ***–ceive*** ➔ ***?*** Consequently, these words cannot be segmented.

Lecture 2
Derivation

INTRODUCTION

Some English derivational affixes

- Complex derivations
- Constraints on derivation

Two classes of derivational affixes compounding:

- Properties of compounds
- Endocentric and exocentric compounds

Derivation is an affixation process that forms a word with a meaning and/or category distinct from that of its base. Ex. ***Sell+er*** ➔ ***sell-er***, ***V+er*** ➔ ***N***, NOT to be confused with ***tall+er*** ➔ ***tall-er***, ***A+er*** ➔***A***. Here ***er*** is **inflectional**.

Fig. 1

Once formed, derived words become independent lexical items and receive their own entry in a speaker's **mental dictionary**. With time, words acquire new meanings. Ex. ***Profession*** means ***'career'*** rather than *'the act of professing*'.

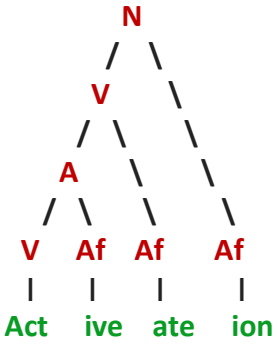
SOME ENGLISH DERIVATIONAL AFFIXES

Examples of derivational suffixes: *fix-**able**, refus-**al**, claim-**ant**, teach-**er**, shoot-**ing**, impress-**ive**, treat-**ment**, king-**dom**, faith-**ful**, presidet-**ial**, arab-**ian**, optimist-**ic**, hospital-**ise**, brain-**less**, poison-**ous**, tall-**ish**, active-**ate**, black-**en**, stupid-**ity**, slow-**ly**, happi-**ness**.*

COMPLEX DERIVATIONS

Some words require multiple levels of word structure as in Fig. 2 below:

Fig.2: A **multilayered internal structure**



This word illustrates a **multilayered internal structure** with the attachment of an **affix** to an appropriate base.

COMPETING ANALYSIS

In some cases, the internal structure of a word is **ambiguous** between two competing analyses.

Ex. ***Unhappiness***

Fig. a.

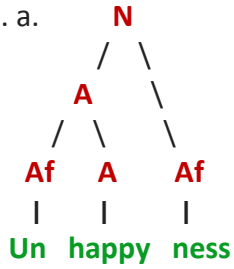


Fig. b.

The **preferred analysis** is the one in (Fig. a). ***Un_*** is more attested as a prefix with **adjectives** than with nouns.

Ex. ***unable***, ***unkind***, ***unhurt*** ***but not *unknowledge, *unhealth, *uninjury.***

CONSTRAINTS ON DERIVATION

Derivation is often subject to **special constraints** and **restrictions**.

For example, the suffix **–ant** can attach to bases of Latin origin such as ***combat-ant***, ***assist-ant***, but not those of English origin such as ****help-ant***, ****fight-ant.***

A derivational affix may attach only to a base with **particular phonological properties**.

For example, the **–en** combines with adjectives to create verbs.

Ex. ***Whiten***, ***soften***, ***madden***, ***quicken***, ***liven***, but not **abstracten, *bluen, *greenen, *angryen, *slowen*.

This suffix can only combine with a monosyllabic base ending in an **obstruent** (stop, fricative or affricate).

TWO CLASSES OF DERIVATIONAL AFFIXES

Class 1:

They trigger changes in the consonant or vowel segment of the base and may affect stress placement. Ex. **–ity** san-**ity** **[ei]** changes to **[i]**, from sane to sanity.

–y democrac-**y** **[t]** changes to **[s]** and stress shifts from **'democra**t to **de'mocra**cy

–ive product-**ive** stress shifts from **pr'oduct** to **pro'ductive.**

–ise public-**ise** shift from **[k]** to **[s]** from **public** to **publicise** .

Class 2:

a) These tend to be phonologically **neutral**, not affecting the segmental makeup of the base.
Ex. ***Prompt-ness***, ***hair-less***, ***hope-ful***, ***quiet-ly***, ***self-ish***, ***defend-er.***

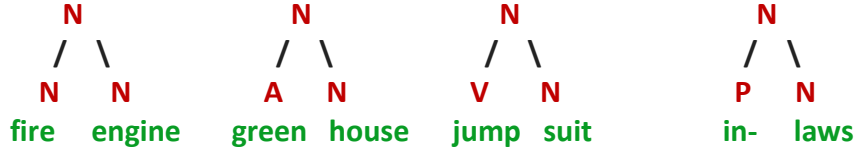
b) These usually cannot intervene between the root and a class 1 affix.
Ex***. Divis-ive-ness***, ***fear-less-ness***, but not ****fear-less-ity.***

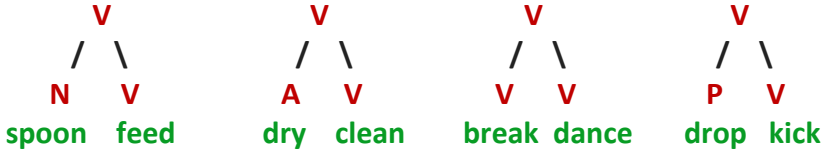
COMPOUNDING

Compounding is a process of word formation in English which consists in **combining existing words to create complex words**.

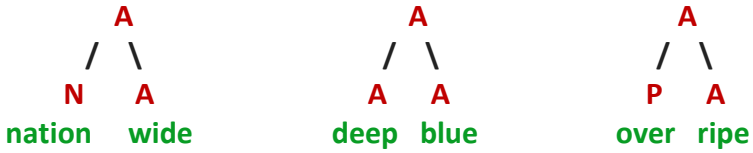
The resulting compound may be a Noun or a Verb or an Adjective. Ex. :

(1)





(2)

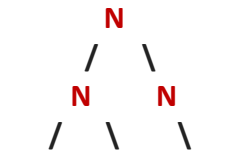


Note that **the rightmost word determines the category of the compound.** Thus**,** ***Greenhouse*** is a **noun** because it ends with the noun ***house.*** ***Spoon-feed*** is a **verb** because it ends with the verb ***feed.***
The morpheme that determines the category of the entire word is called **HEAD.**

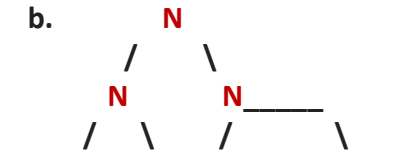
Compounds can combine with other words to create even larger compounds. Ex.

(3)

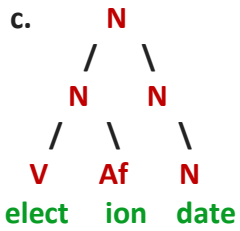
a.



b.



c.



Notice how compounding interacts with derivation in (3c)

PROPERTIES OF COMPOUNDS

English orthography is not consistent in representing compounds. They can be written as **single words,** or **separated by a hyphen,** or simply **separate words.**
As for pronunciation, some facts MUST be noted: **Adj-Noun compounds** are characterized by **more prominence/stress** of the first compound: ***`greenhouse*** ➔ "a glass enclosed garden" *vs.* ***green house*** *"a house painted green", `* ***blackboard*** ➔ *"a chalkboard" vs.* ***black board*** *(a board painted in black).*
Tense and **plural** markers cannot affect the first element in the compound. Ex. * the player *dropped* ***kick*** the ball vs the player ***drop*** *kicked* the ball.

ENDOCENTRIC AND EXOCENTRIC COMPOUNDS

In most cases, a compound denotes a sub-type of the meaning/concept **denoted** by the **head/rightmost element in the compound**.
Ex.:

steamboat ➔ a boat powered by steam.
airfield ➔ a field where airplanes land.
fire drill ➔ practice in case of fire.

Such compounds are said to be **endocentric.**

In a smaller number of cases, the meaning of the compound **does not follow from the meaning of its compounds.**
Ex.

redhead ➔ a person with red hair.
redneck ➔ a person, not a neck.

Such compounds are said to be **exocentric.**

Exocentric compounds allow the suffixation of **–s** to irregular plurals, the **endocentric** ones do NOT.
Ex.

Endocentric:
wisdom teeth, policemen, oak leaves.
Exocentric:
bigfoots *(mythical creatures),* ***watchmans*** *(a type of portable TV).*

Lecture3
INFLECTION

What is INFLECTION?

It is a change or modification in the form of a word **to mark grammatical**. For examples, languages contrast plural and singular nouns by the addition of a plural affix such as **–s** in English as in **book ~ book-s**. (The base form to which an inflectional affix is added is also called **a stem**.

INFLECTION IN ENGLISH

With only 8 inflectional affixes, English is not a highly inflected language.

English inflectional affixes:

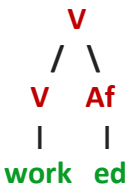
- **Nouns: Plural –s** as in ***books*** ; **Possessive** (genitive) **–s** as in ***John's book.***
- **Adjectives: Comparative –er** ➔ the ***smaller*** one, **Superlative –est** ➔ the ***smallest*** one.
- **Verbs:** 3Person simg. **Non-past –s** ➔ He ***reads*** well. Prog. **–ing**➔ He is **working**.
  past tense –ed ➔ He worked; **past participle –en/ed** ➔ He has **eaten**/**worked**.

INFLECTION VERSUS DERIVATION

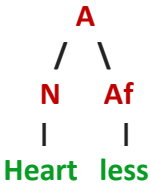
4 criteria are often used to distinguish between inflection and derivation affixes.

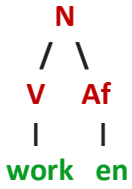
(1) Category change:

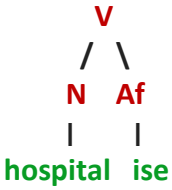
Inflection **does not change the grammatical category of the meaning** of its host.

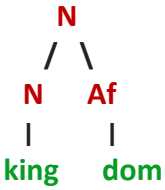


Derivational affixes **do change the category and meaning** of their host.

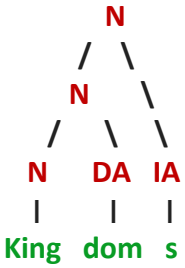


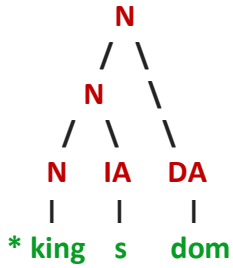






(2) Order: A derivational affix (DA) **must combine** with the base before an inflectional affix (IA); i.e., **Inflection applies to the output of derivation**.





(3) Productivity:

IAs have few exceptions, comparatively. DAs typically apply to restricted classes of bases. Ex. *modernize vs *new-**ise** ; legal-**ise** vs * lawful-**ise** ;* Confine **–ment**; align-**ment**; treat-**ment**; * arrest-**ment**; * straighten-**ment**, etc.

(4) Semantic transparency :

IAs **contribute transparent and consistent meaning** to their host**.**

Ex. ***books, trees, cats*** **or** ***walked, played, talked,*** **etc.**

DAs do not contribute **consistent meaning.**

Often it is not possible to predict the word's meaning from its parts.

Ex. ***Actor*** is someone who ***acts*** but a ***professor*** is not so who ***professes***. ***Government*** can mean ***institution*** as in ***government's program*** but it can also mean ***act of governing*** as in ***government by the people.***

OTHER INFLECTIONAL PHENOMENA

CASE: It is a change a word's form to mark change in its grammatical function (subject, direct object, indirect object, and so on). English does not mark case on noun, but it does on pronouns; ex, ***he*** vs ***him***, ***he met him*** vs **** him met he***.

Standard Arabic marks Case on nouns: **(nominative, accusative, and genitive**)

*Akala Omar-***u** *t-tuffaahat-***a** *fi l-maktab-* **i**

Ate Omar-**nom** apple**-acc** in the-office**-gen**

'Omar ate the apple in the office. '

AGREEMENT: Occurs when a word is inflected to match certain grammatical properties of another word ***(t-taTaabuq*****).** In English, it is limited to the third person singular of the simple present; ex, He work**-s** very hard.

PROCESSES RELATED TO INFLECTION

Internal Change:

A process that substitutes a non-morphemic segment to mark a grammatical contrast.

Ex. ***sink ~ sank*** **(ablaut*); goose ~ gee***se (**umlaut).** The change explained historically is as follows:

a. Old English form : /go:s/ **d.** Loss of the plural suffix / gœ:s/

b. Old plural form: /go:s-i/ **e**. Other change /ge:s/ then /gi:s/

c. umlaut / gœ:s-i/

Note that internal change is NOT infixing. There is no base form {sg}, {sk}. Infixing and internal change show that morphology is not always **concatenative**, meaning that affixation does not always apply **sequentially.**

Suppletion: it **occurs when a morpheme is replaced by another which is extremely different to mark a grammatical contrast.** Ex. ***Go ` ~ went*** and ***was ~ were*****.**

Sometimes it is difficult to distinguish between suppletion and Internal Change. Ex. ***Think ~ thought, seek ~ sought.*** Often, it is treated as an extreme form of internal change or as **partial suppletion.**

Reduplication: it involves the repetition of the base form or some part of it.

Ex. In Turkish**,** ***iji*** ➔ ***well,*** while ***iji iji*** ➔ ***very well*** **(full doubling of the base form).**

In Tagalog**,** ***takbo*** ➔ ***run*****,** while ***tatakbo*** ➔ ***will run*** **(partial doubling of the base).**

Tone placement : Tone is used in some languages to mark grammatical contrast. Ex, In Mini-Bili, a language spoken in the Congo, we find the following contrasts: ***zí*** ➔ ***ate*****,** while ***zì*** ➔ ***will eat***.

Conversion: Often considered to be a type of derivation, it involves a change in meaning and category. It is also called **zero derivation**. **Ex.,** ***the poor, the rich, the sublime,*** (Noun ~ Adjective), ***up the price*** (preposition ~ verb), **dirty** (verb to Adj), ***run*** (verb ~ noun), ***butter*** (noun ~ to verb).

Conversion in two syllable words is often marked by a shift in stress. Ex., ***`implant (N) ~ im`plant, `import ~ im`port, `present ~ pre`sent.***

Clipping: A process whereby a polysyllabic word is shortened by deleting one or more syllables. Ex., Names, Ron ~ Ronald, Liz ~ Elisabeth. In casual speech, ***prof ~ professor***, ***phys-ed ~ physical education.*** Other forms are much more widely spread: ***ad, lab, demo, etc.*** Recently, we find internet-inspired creations such as ***blog*** (website log of events).

Blends: They are words that are formed by blending non-morphemic parts of two already existing words. Ex**.,** ***brunch = breakfast +lunch***, ***smoke = smoke + smog, infomercial = information +commercial, ginormous = gigantic + enormou***s, ***bit = binary digit, modem = modulator + demodulator,*** etc.

Backformation: Creates a new word by removing part of an existing word. Ex., *Resurrection* ➔ *resurrect, donation* ➔ *donate, enthusiasm* ➔ *enthuse, etc.* Ex of new recent such creations are: *liaison* ➔ *liaise, allegation* ➔ *allegate, administration* ➔ *administrate, aggression* ➔ *aggress.*

Acronyms: They are formed by keeping the initial letters of some or all the words in a phrase and pronouncing them as ONE word. Ex., ***UNICEF*** ➔ ***U****nited* ***N****ations* ***I****nternational* ***C****hildren's* ***E****mergency* ***F****und,* ***NATO*** ➔ ***N****orth* ***A****tlantic* ***T****reaty* ***O****rganisation, etc.*

Word coinage: Common for names of products. Ex., ***Kodak, Teflon.***

MORPH0PHONEMICS

Morphemes and their allomorphs

Is every morpheme pronounced the same in all contexts? The answer is **NO**. Many morphemes have two or more pronunciations, called **allomorphs.** The choice between them is determined by **the phonological context.**

Examples 1 : **The plural in English**

How is the plural morpheme in English formed?

Answer, by adding **-s** to the singular form. Consider: ***cats, dogs, horses***. As is well known, English spelling does not reflect pronunciation.

This suffix has three allomorphs: **[s]** as in ***cats, lamps,*** **[z]** as *in* ***dogs, days,*** and **[iz]** or **[əz]** as in ***horses*** or ***judges*****. The pronunciation is predictable on the basis of the phonological context :**

- **Sibilants** (hissing sounds) such as ***horse, rose, bush, church, judge,*** call for **[iz]**
- Otherwise, when preceded by a **voiceless consonant**, **[s]** is used as in ***cat, rock, cup.***
- Otherwise, when preceded by a **voiced consonant**, **[z]** is used as in ***dogs, days, birds.***

Example 2: How is the past morpheme ***–ed*** realized phonologically? [t], [əd], and [id] or [əd]

Is Allomorphy a matter of phonological conditioning only?

Yes, as in the cases above, but NO for others.

Consider the word ***lie***. It ends in a vowel, a voiced sound and therefore forms its plural **lies** with **[z]**. However, if we replace **[z]** with **[s]**, we get an actual word ***lice***, the plural of ***louse***.

Grammar also accounts for allomorphy in English.

Consider ***cliff*** and ***laugh***. Both form their plural with **[s]**, ***cliffs*** and ***laughs***, but ***wife*** and ***loaf*** do not, ****wifes***, ****loafs*** are ill-formed. Their plural is ***wives*** and ***loaves***.

Similar words that change their voiceless consonants ***f, s, th*** to voiced counterparts ***v, z, dh*** are : ***knife ~ knives, life ~ lives, path ~ paths*****.**

Notice that the change is restricted to the plural morpheme: "my ***wife's*** *car*" **does NOT** undergo any change.

Lecture 4
MORPHOLOGY PRACTICE

***EXERCISE 1*: Circle the correct answer in the following multiple choice questions:**

1. Morphology is the level of grammar concerned with the ……

a. Structure of words
b. Stricture of words
c. Status of words
d. Structure of worlds

2. The association between most words and their meanings is purely …….

a. Controversial
b. Conditional
c. Central
d. Conventional

3. When we derive one word from another, we ……

a. Change its class, for example, from Verb to Noun
b. Change its tense, for example, from Past to Present
c. Both of the above
d. None of the above

4. Roots are …….

a. NOT always free
b. Always free
c. Both of the above
d. None of the above

5. A compound is a word that contains ……

a. One prefix and one word
b. One suffix and one word
c. Two root morphemes and one word
d. Two free standing forms

6. …… is a morpheme that makes the most significant contribution to a word's meaning.

a. The phoneme
b. The derivational morpheme
c. The inflectional morpheme
d. The root

7. ……. is some kind of resemblance between the sound of a word and what it denotes/means.

a. Idiom
b. Proverbs
c. Onomatopoeia
d. None of the above

8. Suppletion occurs when a word is represented by two or more …… roots.

a. Different
b. Similar
c. Both a and b
d. None of the above

9. Choose the group of words that result from derivation

a. Cry, cries, cried, crying
b. Kind, unkind, kindness, kindly
c. Tooth, teeth
d. None of the above

***EXERCISE 2*: Divide the following words into morphemes and morphs.**

Examples: (i) truth **morphemes: {true} {th}**
(ii) barefoot **morphemes: {bare} {foot}**

(1)

a. research {re} {search}
b. butterfly {butter} {fly}
c. holiday {holi} {day}
d. morpheme {morph} {eme}
e. phonology {phono} {logy}

***EXERCISE 3:* Some words in (2) contain suffixes. Identify the suffixes by circling them.**

(2)

a. happiness
b. freedom
c. flowers
e. brother
e. blackboard

***EXECISE 3*: Some words in (3) contain prefixes. Identify the prefixes by circling them.**

(3)

a. unable
b. discourage
c. establish
d. receive
e. strawberry

***EXERCISE 4*: For each word below, indicate whether the word is morphologically simple (S) or complex (C), or includes an inflectional affix (IA), or includes a derivational affix (DA) by circling the relevant answer. S => simple, C => Complex, IA => infl. Affix, DA=> Deriv. Aff.**

a. rider	S	C	IA	DA
b. colder	S	C	IA	DA
c. silver	S	C	IA	DA
d. lens	S	C	IA	DA
e. legs	S	C	IA	DA

***EXERCISE 5*: (i) Identify the root in the words below by underlining it; (ii) State the syntactic category it belongs to**. **Example: friendly: friend (Noun)**

a. lamps lamp (Noun)
b. kindness kind (Adjective)
c. hinted hint (Noun)
d. players pray (Verb)
e. grandfathers grandfather (Noun)

Lecture 5
Part II : SYNTAX
The Analysis of Sentence Structure

What is GRAMMAR?

It is a theory of language which attempts to characterize the structure of language.

All languages have a grammar:

- All grammars are equal because ALL languages are acquired unconsciously by all children and at an early age. Indeed, a child is capable of learning any language. In other words, humans are endowed with a Language Faculty, an initial and universal program, that enables them to acquire any language.
- All grammars are alike in basic ways ➔ **UNIVERSAL GRAMMAR.**
- A grammar is the characterization of the tacit **TACIT/IMPLICIT/UNCONSCIOUS** knowledge that native speakers have of their own language.

The Organization of the Transformation Generative Grammar

A Grammar in this sense is essentially an **INPUT/OUTPUT system.** It consists of:

- **LEXICON:** a **mental dictionary** (information on words: pronunciation, form, and meaning).
- **COMPUTATIONAL SYSTEM:** operations that combine and arrange words in particular ways. Two main modes of operation/structure building: **MERGE and MOVE.**

  Merge is operated on the basis of information from the Lexicon and a theory of phrase structure known as "X" theory.

  As for **Move**, it is the operation of displacing elements around in a structure.

CATEGORIES AND STRUCTURE

Words can be grouped into a small number of classes called **syntactic categories.**

This classification is based on their **meaning, type affixes** they associated with and the **structures** in which they occur.

CATEGORIES OF WORDS

Categories of words are classified as either **LEXICAL** or **FUNCTIONAL**.

- The **Lexical** categories are **Nouns**(N), **Verbs**(V), **Adjectives**(A), **Prepositions**(P) and **Adverbs**(Adv)**.** Ex. **N:** *John*, *Ali*, *courage*, *book*; **V:** *come*, *go*, *discuss*; **A:** *good*, *bad*, *tall*; **Adv:** *badly*, *quickly*, *hard*.
- The **Functional** categories are **Determiners**(DET), **Degree Words**(DEG), **Auxiliary Verbs**(AUX), **Conjuctions**(CONJ), etc. Ex. **DET:** *a, the, this*; **DEG:** *too, so, very, more, quite*; **AUX(Modal):** *will, would, could*; **AUX(non-Modal):** *be, have*; **CONJ:** *and, or, but*.

One Source of confusion is that one word can belong to more than one category. Ex. ***Near*** and ***Comb.***

1. The boy stood *near***(P)** the fence.
2. The runners *neared***(V)** the finish line.
3. The end is *nearer***(Adv)** than you think.
4. The woman found a *comb***(N)**.
5. The boy should *comb***(V)** his hair.

How can we determine a word's category?

By considering its **meaning**, its **inflections**, and its **distribution**.

MEANING:

- **Nouns** name or denote **entities**; Ex. people (*Ali*, *John*) and things (*book*, *desk*).
- **Verbs** denote **actions** (*run*, *jump*), **sensations** (*feel*, *hurt*), and **states** (*be*, *remain*).
- **Adjectives** designate a **property** or an **attribute** of the **entities** denoted by the noun, as in *tall building*, *tall man*.
- **Adverbs** designate **properties** and **attributes** for **actions**, **sensations** and **states** denoted by verbs. Ex. ***Manner*** Janet left ***quickly.*** Janet left ***early.***

However, meaning cannot always determine a word's category.
Words such as difficulty, truth, likehood; do not refer to entities in the strict sense. Similarly a noun such as ***push*** may denote an action in ***"give someone a push".*** Further problems arise with **different categories having the same meaning** such as ***like***(V) and ***fond***(A) Mice like/are fond of cheese.

INFLECTION:

- **Nouns** are inflect for plural **-s** and possessive **-'s** ; Ex. ***books, John's***.
- **Verbs** inflect past tense **-ed,** progressive **-ing** and 3d singular **-s** ; Ex. ***Arrived, arriving, arrives***.
- **Adjectives** inflect for the comparative **-er** and superlative **-est** ; ***taller, tallest, faster, fastest***.

However, even infection fails to provide a word's category in some cases such as: **intelligenter, *beautifulest*.
Also some nouns cannot be used in the plural such as: **moistures*, **braveries*, **knowledges*.

DISTRIBUTION:

A more reliable criterion for determining a category type involves its distribution, meaning what elements (especially functional categories it can co-occur with). For example, **Nouns appear with DET, Verbs with an AUX, Adjectives with DEG**; Ex. ***A car***, ***the book*** ; ***has gone***, ***will saty*** ; ***very rich***, ***too big***. Of course, we can also predict that the following combinations are not possible: *******the destroy*(V+DET),
*******very arrive*(DEG+V), *******will destruction*(AUX+N).

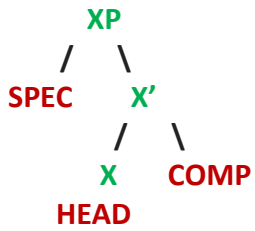
PHRASE STRUCTURE

Sentences are simply formed by **juxtaposing words** like beads on a necklace. Rather, they are a **hierarchical** design/structure in which words are grouped into larger units called **phrases**. In a sentence like: ***The doctor examined the patient***. The words ***the*** and ***doctor*** form a noun phrase**(NP)** and the words ***examined*** and ***the patient*** form another verb phrase**(VP)**. [***the*** + ***doctor***], [***arrived*** + ***quickly***].
The traditional syntactic analysis ***the doctor*** is the **Subject** and ***arrived quickly*** is the **Predicate**.

X' SCHEMA

A phrase can be broken down to 3 parts: a **HEAD**, a SPECIFIER**(SPEC)**, and a COMPLEMENT**(COMP)**.
Arranged as in the schema below:

Fig. 1; X' Schema



The schema above captures the following generalizations:

1. All phrases have a **tree-level structure** (X, X', XP).
2. All phrases **contain a HEAD, X**.
3. If there is a **COMPLEMENT**, it is **attached at the intermediate X' level**, as a sister of the HEAD.
4. If there is a **SPECIFIER**, it is **attached at the XP**, as a sister of X'.

Lecture 6

HEADS

The head is the **obligatory nucleus** around which a phrase is built. X in the schema above can be N, V, A, or P. A head can form a phrase just by itself.

Fig. 2: ***Phrases consisting just of a head***

NP	VP	AP	PP
N'	V'	A'	P'
He likes books	all animals eat	she is certain	he went in

SPECIFIERS

The type of Spec in a phrase depends on the category of the Head. Det serves as Spec of Ns, preverbal adverbs serve as Spec of Vs and Deg as spec of As.

- **Det** ➔ Spec of **N** ; eg: ***a***, ***those***, ***my***, ***no***, etc.
- **Adv** ➔ Spec of **V**; eg: ***never***, ***perhaps***, ***often***, ***always***.
- **Deg** ➔ Spec of **A**; eg: ***very***, ***quite***, ***so***
- **Deg** ➔ Spec of **P**; eg: ***almost***

Syntactically, Spec mark the boundary of a phrase. In English, they occupy the leftmost position in a phrase.
Semantically, Spec make the meaning of the head more precise.

NP	VP	AP	PP
Det N'	Adv V'	Deg A'	Deg P'
the books	never overat	quite certain	almost in

COMPLEMENTS

Consider the following more complex phrases:

a. [***a picture of the ocean***] - **NP**
b. [***never trust a rumour***] - **VP**
c. [***quite certain about Mary***] - **AP**
d. [***almost in the house***] - **PP**

In addition to the Specifiers and the underlined heads, these examples contain **COMPLEMENTS**. These are phrases which complete the meaning of the heads. Complements are **semantically selected** by their heads. **Syntactically, they are sisters** of the selecting head. The 4 examples above conform and illustrate the X'-schema given above. Ex (a) is given below. *(Try to draw a tree diagram for the others.)*

NP	
DET	N'
	N PP
a	picture of the ocean

THE MERGE OPERATION

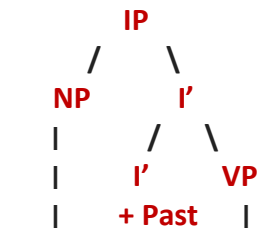
We can formulate the following operation for sentence building:

MERGE: Combine words in a manner compatible with the X' schema.

The merger operation follows **a mode of application which is bottom up and right to left**.

SENTENCES

The largest unit of syntactic analysis is the **sentence**. Typically, sentences are made up of an NP (the subject) and a VP (the Predicate). These two phrases are grouped together by **Inflection**. **I** (for short) is **the syntactic head of a sentence**. It stands for the Tense element of the sentence. On the other hand, because of its central role in determining the meaning of a sentence, the **verb** is said to be the **semantic head** of S. A simple sentence structure is provided below:



(Notice that the verb's ending and the tense feature do match)

- Advantage of this abstract analysis is that sentences have the same internal structure as phrases.
- As a head, I is obligatory and this accounts for sentences being necessarily tensed.
- I is a natural locus (position) for Modals, i.e. In between the subject and the VP.
- Reduces the burden of language acquisition.

TESTS FOR PHRASE STRUCTURE

Words are grouped into **constituents**. However, how can we sure of the correctness of a particular grouping. There are syntactic tests to confirm constituent structure. These are:

❖ **The Substitution Test**

Replacement of the entire constituent by ONE word such as ***they, it, there, do so.*** In the example below, ***THEY*** replaces the **NP children** and ***DO SO*** replaces the **VP stop at the corner** .

[***The children***] will [***stop at the corner***] if they see us do so

The **PP *at the corner*** can also be replaced by one word namely ***THERE***.

*They will stop **there** if they see us do so.*

❖ **The Movement Test**

The **PP *at the corner*** can be shown to be a constituent by moving it all to a different position in the sentence. ➔ Movement test

They stopped [***at the corner***] ➔ **AT THE CORNER**, ***they stopped***. **But not** * at the, they stopped corner

❖ **The Coordination Test**

A group of words forms a constituent if it can be joined to another group of words by a coordinating conjunction such ***and, or, but.***

The children *[**went to the playground***] and *[**stayed there all day**]* (The coordinated structure is **VP**).

Lecture 7

PRACTICE EXERCISES

EXERCISE 1: Some of the sentences below are ungrammatical. Can you figure out what makes them ungrammatical ?

(1)

a. **The instructor told the students to study.**
b. *** The instructor suggested the student to study.**
c. **The customer asked for a hot chocolate.**
d. *** the customer requested for a hot chocolate.**

(2)

a. **The pilot landed the plane.**
b. **The plane landed A journalist.**
c. **A journalist wrote the article.**
d. *** The article wrote.**
e. **Jerome is tired of her job.**
f. *** Jerome is satisfied of her job.**

EXERCISE 2: Indicate the category of each word in the following sentences:

a. **The glass broke.**
b. **These tall trees are blocking the road.**
c. **The peaches never appear quite ripe.**
d. **I will see you when I finish.**
e. **I don't like that.**
f. **Some students always complain.**

EXERCISE 3: Each of the following phrases consists of a Spec and a Head. Build a tree for each one complying with the X'-schema.

a. **The zoo**
b. **This house**
c. **so witty**
d. **Quite cheap**
e. **always try**
f. **never surrender**
g. **Less bleak**
h. **very competent**

EXERCISE 4: Each of the following phrases consists of a Head and a Complement. Build a tree structure for each one of them following the X'-schema.

a. **Into the zoo**
b. **Full of mistakes**
c. **Fixed the telephone**
d. **study this material**
e. **Arguments about the elections**
f. **Success of the program**

Full Trees

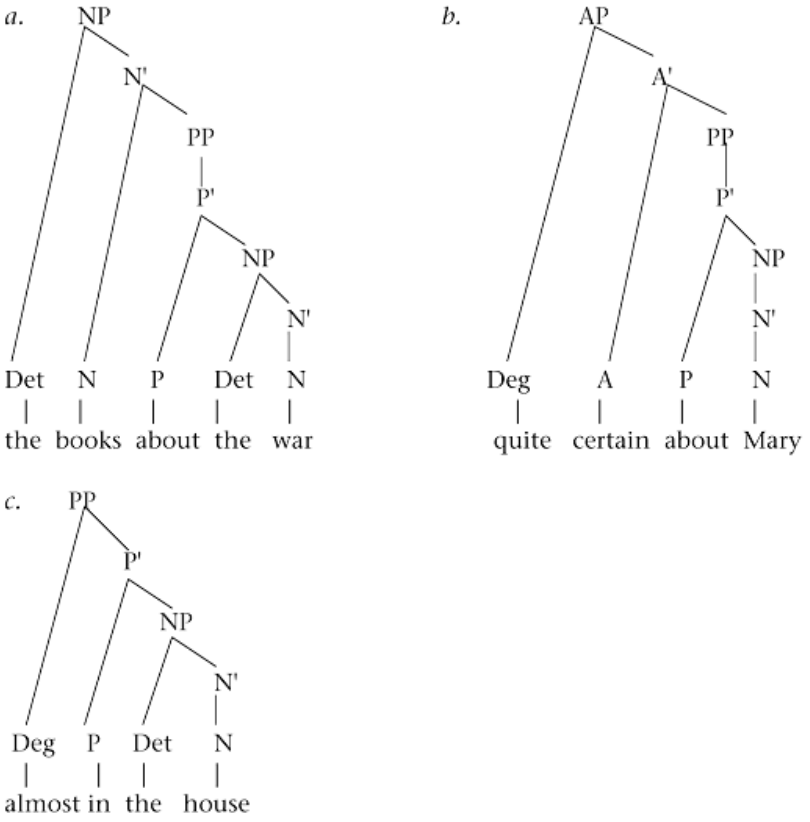


Figure 1 Other phrases consisting of a specifier, a head, and a complement

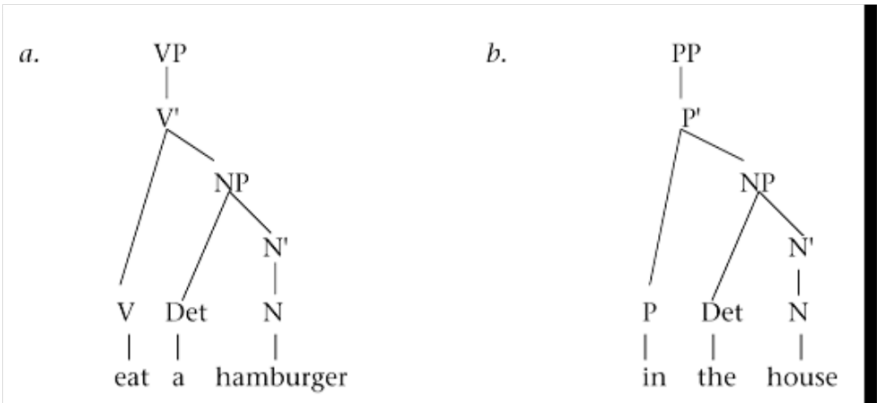


Figure 2 Phrases consisting of a head and a complement

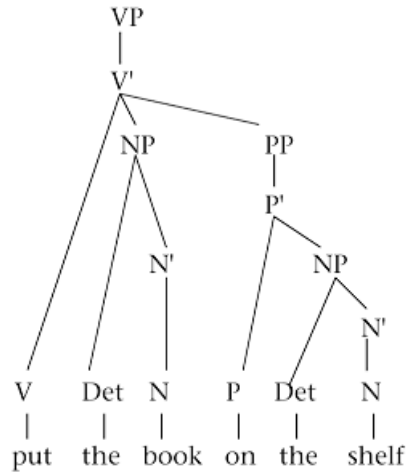


Figure 3 A verb with two complements

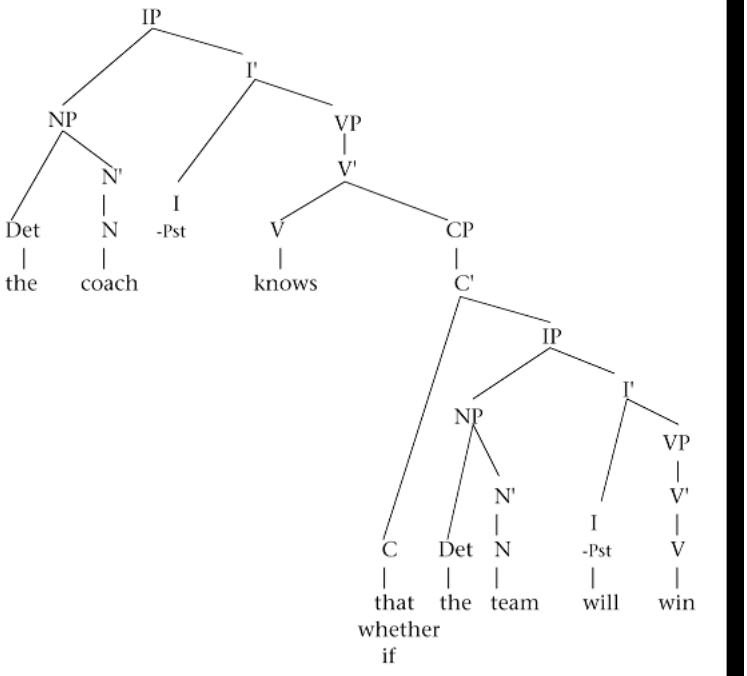
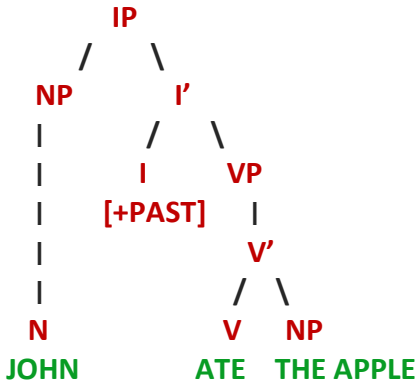


Figure 4 The structure of a sentence with an embedded CP

FIGURE 5: The structure of a simple sentence:



NOTE:

- The **SYNTACTIC head** of **I** is the **abstract morpheme [+PAST]**. As a **tense morpheme**, it must be **associated with a verb**, hence the **complement status of VP**.
- The **SEMANTIC head** of the sentence is the **verb *EAT***. It is the verb that selects a subject that can indeed perform the action of eating and the Object Apple, which can be eaten. Indeed, a sentence such as : ***The tree ate the sea*** **perfectly grammatical** but it is **SEMANTICALLY anomalous**, to say the least.

EXERCISE 5

***Instructions*: Use at least two tests to show the constituent status of the following bracketed strings:**

1. **We ate our lunch [near the river bank]**
2. **The [computer was very] expensive**
3. **John loves [peanut butter and bacon sandwiches]**

EXERCISE 6

***Instructions*: Provide a syntactic representation for the following NPs. Justify the Complement or Modifier status of each of the NP- internal. Justify the Complement or Modifier status of each of the NP- internal.**

1. **A specialist in fibre optics from Paris**
2. **The girl on stage in jeans**
3. **The failure of the program in recent years**

Lecture 8
COMPLEMENTS

COMPLEMENTS

- **Complements are obligatory constituents that are selected by a given head**. This head can be a Verb, Noun, an Adjective, or a Preposition.
- **Complement selection is both semantic and syntactic**. When it is syntactic, it is termed **SUBCATEGORIZATION**. Such information is encoded in the form of lexical entries / subcategorization frames that include phonological, semantic and syntactic properties of lexical heads as in (1):

DEVOUR: **Cat V**
/divauə/
'EAT HUNGRILY'
[_____ NP]
[+ edible]

We thus predict the contrast in (2) in which 2a does not include the NP direct object of the verb:
a. The boy devoured the sandwich
b. * The boy devoured.

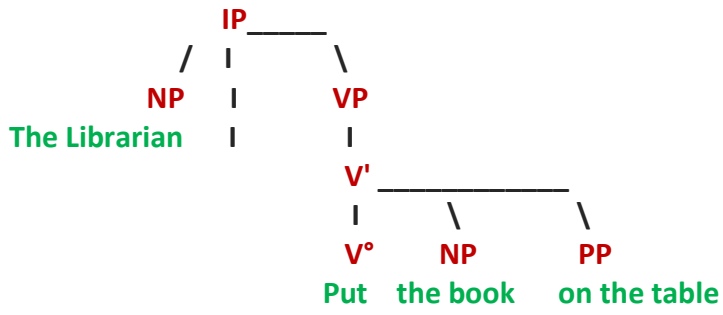
1. Complements options for the verb

As a verb can take more than one complement, our XP rule needs to be revised as in (3):

XP ➔ (SPEC) X'
X' ➔ X° (COMPL*)

a. The librarian put [the book] [on the table]
b. * The librarian put on the table
c. * The librarian put the book

By rules (3 and 4, above), (5a) has the following structure:



Some more examples of verb complements

COMPLEMENT OPTION	VERBS	EXAMPLE
Φ	arrive, die	The rabbit vanished
NP	cut, prove	The professor proved the theorem
AP	be, become	The man became very angry
PP	dash , talk	John talked to his daughter
NP NP	hand, give	She handed the man a map
NP PP	hand, give	She gave the map to the man
NP PP *loc*	put, place	He put the book on the table
PP *to* PP *about*	talk, speak	I talked to the doctor about Sue
NP PP *for* PP *with*	open, fix	He opened the door for Andy with a knife

2. Complements of other lexical categories

Complementation is not a property of verbs alone. Other lexical categories, namely nouns, adjectives and prepositions, also subcategorize for specific complements.

COMPLEMENT OPTION	NOUNS	EXAMPLE
Φ	car, boy	The car is new
PP *of*	memory, failure	The memory of a friend
PP *of* PP *to*	presentation, donation	The presentation of a medal to the winner
PP *with* PP *about*	argument, discussion	an argument with Stella about politics

COMPLEMENT OPTION	ADJECTIVES	EXAMPLE
Φ	tall, green, smart	He is very tall
PP *about*	curious, glad	I am curious about China
PP *to*	apparent, obvious	It is obvious to the teacher
PP *of*	fond, tired	She is fond of chocolate

COMPLEMENT OPTION	PREPOSITIONS	EXAMPLE
Φ	away, down	He walked away
NP	in, on , near	on the table
PP	down , up, out	down into the cellar

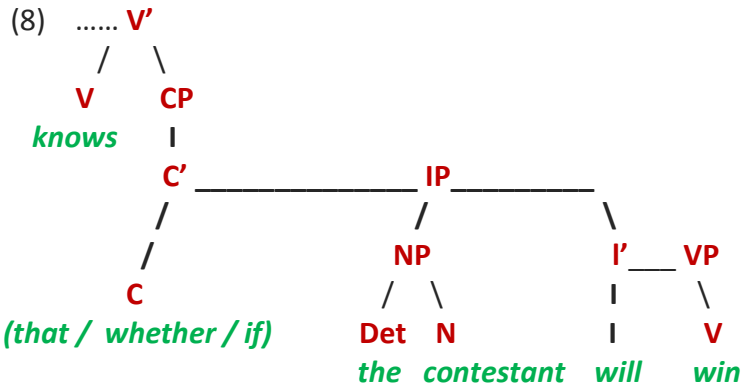
Subcategorisation, also referred to as **C (onstituent)-selection**, ensures that only the right complement type is entered into the tree structure. This information is stored in the Lexicon.

3. Complement clauses

Clauses, which are larger units than phrases, can also function as complements:

*The psychic knows **[that / whether / if the contestant will win]***

The bracketed phrase in (6) is called a **complement clause** while the larger constituent is called **matrix clause**. **that / whether / if** are called **complementisers (Cs).** Their role is to introduce (head) complement clauses, thus forming Complement Clauses which are represented as Syntactic **Complement Phrases (CPs)**.



Verbs taking CP complements

There are different types of verbs taking complement clauses. Some of these are given below:

(9) a. They believe that Eric left. [V, ____ CP]
b. They told Mary that Eric left [V, ____ NP CP]
c. They admitted to Mary that Eric left. [V, ____ PP CP]

THERE IS NO LIMIT ON THE NUMBER OF EMBEDDED CLAUSES THAT CAN OCCUR IN A SENTENCE, as exemplified in (10) below:

EXAMPLE: ***A man thought*** {***that a woman said*** [***that Sue reported*** (***that Mary believed*** .....)]}

At the level of competence, a sentence can be **infinitely** long. This is accounted for in our grammar by the **recursive nature of the X' schema**. This is made possible by the fact that the same rule schema is used with the all the constituent types.

Other categories with CP complements

As the examples below show, a CP may serve as a complement for a N, A, or a P.

a. **CP complement of N**

NP
I
N' ____
**I **
N° CP

Proof that Eric left

b. **CP complement of A**

AP
I
A' __
**I **
A° CP

certain that Eric left

C. **CP complement of P**

PP
I
P'__
**I **
P° CP

(talk) about whether Eric left

It is easy to see, at least for nouns and adjectives, that the complement clause attested with the verb form is also attested with the noun and adjective forms. We thus have:

Prove \ ***that the theorem is false***
Proof /

ascertain \ ***that the theorem is false***
certain /

Lecture 9
TRANSFORMATIONS (I)

1. Deep and Surface Structure

The grammar that we have developed so far consists of a **LEXICON and a set of Phrase Structure Rules (PSRs) constrained by the X'-schema** . The combined work of these two components generates simple structures, be they phrases or clauses of a varying degree of complexity. The central element in a phrase is the HEAD, an Xº, while all its dependents (Complement, Modifier, or Specifier) are XPs.

However, these components cannot account for variation in linguistic structure as represented by the following examples in a straightforward way:

(1) a. The Inspector will come tomorrow. — ***Declarative***
b. Will the Inspector _____ come tomorrow? — ***Yes-No Interrogative***

(2) a. John bought a car — ***Declarative***
b. WHAT did John buy _____? — ***WH-Interrogative***

(3) a. John ate an apple — ***Active***
b. An apple was eaten _____ by John — ***Passive***

Native speakers of English 'know', tacitly of course, that these sentences are both syntactically and semantically related, although they all express different modes of communication. This relatedness cannot be accounted for if we rely on the Lexicon and PSRs alone. At best, these two components will treat them as unrelated structures and thus will fail to capture the fact that the sentences in (b) are **DERIVED** from the sentences in (a).

HYPOTHESIS: *The sentences in (b) are **derived** from the ones in (a) **by movement.***
The (a) sentences are generated directly by the Lexicon and the PSRs. They represent a level of linguistic representation called **DEEP STUCTURE** while the (b) sentences represent a level of linguistic representation called **SURFACE STRUCTURE**. The two levels of linguistic representation are mediated by a set of rules called **TRANSFORMATIONS**. The work of the Transformational Component is at the centre of the Computational System in the Grammar.

We will further assume that there are 2 types of movement:

- **Xº movement (movement of a head)**
- **XP movement (movement of a phrase)**

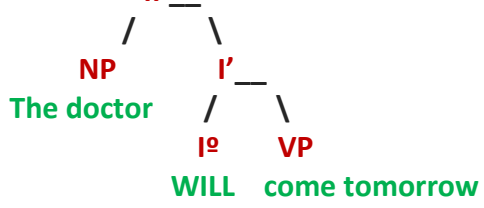
2. Transformations

2.1. Head movement: YES/NO Inversion or I -to- C

The sentences in (1) above, reproduced below in (4) instantiate the operation of head or Xº movement. The structure of (4a) is given in (5a).

(4) a. The doctor will come tomorrow. — ***Declarative***
b. Will the doctor _____ come tomorrow? — ***Yes-No Interrogative***

(5) a.

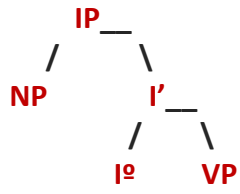


- D(eep) Structure

We apply the transformational rule — ***- Yes/no Inversion***

We derive the S(urface) Structure:

(5) b.



- S(urface) Structure

WILL The docctor ----- come tomorrow - Y/N inversion

↑_____/

By **Yes/No Inversion** we front the auxiliary **WILL** in **I** to a pre subject position.

The transformational analysis has two advantages :

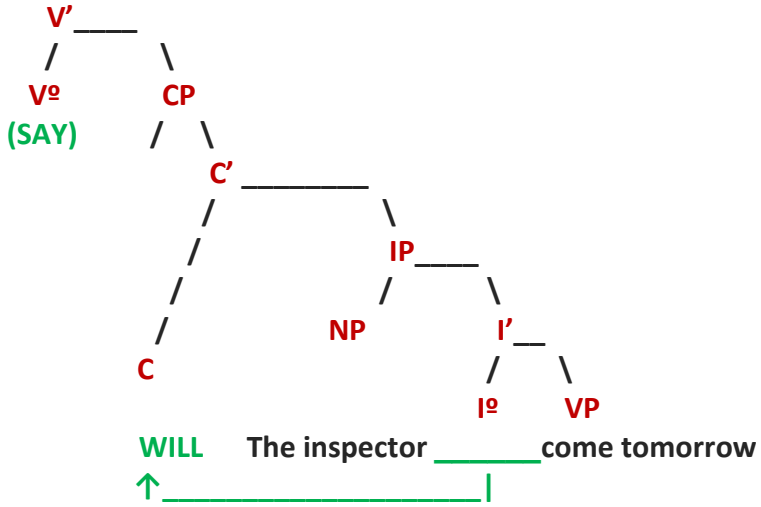
- We do not have to say that there are two types of Aux in English, one that occurs before the verb and one after it.
- Relatedness of the Declarative/Interrogative is also captured by the movement analysis.

One question remains, however: **Where does the Aux element move?**
Recall from the previous lecture that phrase structure rules are **recursive** in nature. This means that it is possible to assume that every independent clause is in fact the complement of a verb of **SAYING/BELIEVING/THINKING**, etc. Thus, we will assume that sentence (4a) is complement to a silent verb such as in (6):

(6) a. I SAY: *the doctor will come tomorrow*

Syntactically, (6a) has the structure in (6b):

(6) b.



WILL The inspector _____come tomorrow

↑_____|

The relatedness of 6a and 6b is maintained through the fact that the movement of I leaves behind ***a trace***, thus forming a movement chain. Thus, **I** moves to **C**, ONLY when the latter is empty.

A simple test for this analysis is provided by the contrast in (7):

(7) a. I wonder IF/WHETHER [the doctor will come tomorrow]

IP

b. * I wonder IF/WHETHER WILL [the Inspector _____ come tomorrow]

↑_____ X _____|

I –to-C is blocked

The verb ***WONDER*** subcategorises for a CP complement. Thus, the C position is filled by either ***IF*** or ***WHETHER***. When I to C applies, the Aux ***WILL*** moves to the position that is already filled by ***IF*** or ***WHETHER***. A Complementiser and an Aux cannot occupy the same position. This explains the ungrammaticality of (7b). Conversely, if the Comp position is empty, I –to – C movement is possible as shown in (8):

(8) I wonder: *will the Inspector come tomorrow*

EXERCISES: How does YES/NO inversion account for:

*** played the boys football yesterday?**

Did the boys play football yesterday?

2.2. XP movement: Move WH to SPEC CP

Another instance of a movement rule is provided by so-called **Wh-movement**. This illustrated by example (2) above reproduced by below in (9):

(9) a. John bought a car ***Declarative***

b. WHAT did John buy _____? ***WH-Interrogative***

The Wh word in (9b) substitutes for the complement of the verb ***BUY*** in (8a). The Deep structure for 8b should be as in (10):

(10) John did buy WHAT?

To derive the S-tructure (9b), we need to apply two transformations, namely:

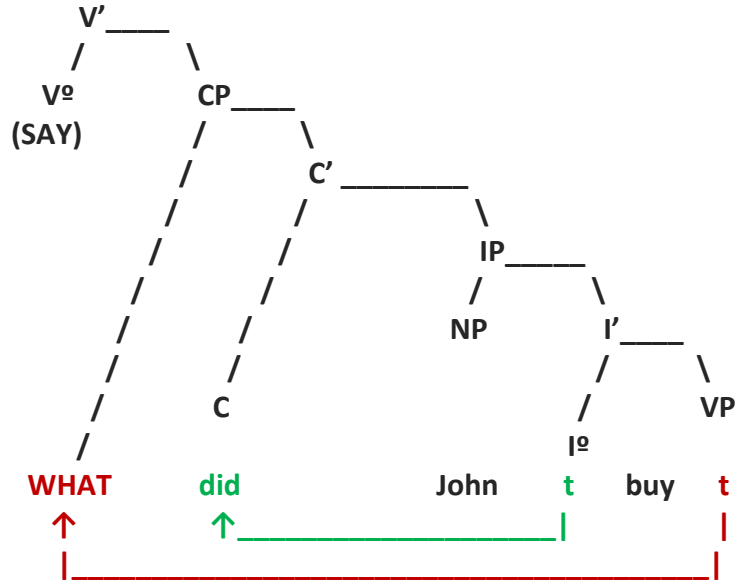
TRANS 1: Subject Aux Inversion ========➔ **did John buy WHAT?**

TRANS 2: WH-movement ============➔ **WHAT did John ----- buy ----- ?**

We know from the previous subsection that **the Aux element moves to C**. We also saw that it was an instance of Xº movement. How about the Wh-word? Where does it move?

Let us assume that the Wh word moves to [SPEC, CP]. We thus have the following tree structure for (9b):

(11).



In this lecture, we have introduced and illustrated the working of the **Transformational** component of the Grammar.

- Transformations are needed to account for structures that involve the displacement/movement of some constituent
- Two types of transformations have been illustrated: Xº movement in the case of Yes/No questions and XP movement in the case of WH-movement.