SYNTAX: THE ANALYSIS OF SENTENCE STRUCTURE

Syntax is the study of sentence formation; it is a system of categories and rules that allow words to form sentences.

Grammatical sentences: the native speakers of a language judge them as *possible* utterances.

...”The fundamental aim in the linguistic analysis of a language L is to separate the grammatical sentences which are sentences of L from the ungrammatical sentences which are not sentences of L, and to study the structure of grammatical sentences.” N. Chomsky. 1957. *Syntactic Structures*.

> *Sylvia wanted George to go.*
> **Sylvia George go want.*

Grammaticality does *not* depend on whether:

1.   The utterance has been heard before

       A pigeon-toed sloth won the beauty contest wearing a purple tutu.

2.   The utterance is false

       My horse is a professor of mathematics.

3.   Semantically it does not make any sense

       Colourless green ideas sleep furiously.

> ALL THE ABOVE SENTENCES ARE GRAMMATICAL!

CATEGORIES AND STRUCTURE

The shared characteristics of words allow us to organize them into a relatively small number of groups, called SYNTACTIC CATEGORIES:

Lexical categories   Non-lexical categories

LEXICAL CATEGORIES:

NOUN   (N)   *John, box, girl, truth*

VERB   (V)   *come, see, receive*

ADJECTIVE   (A)   *nice, red, cheap, big*

PREPOSITION   (P)   *of, by, to, on*

ADVERB   (Adv)   *slowly, now, cleverly*

NON-LEXICAL CATEGORIES   (=functional categories):

DETERMINER (Det)   *the, a, this*

DEGREE WORD (Deg)   *very, so, more*

QUALIFIER (Qual)   *perhaps, almost*

AUXILIARY (Aux)   *may, have, will*

CONJUNCTION (Con)   *and, but, or*

STUDY *Table 5.1* on p. 168

How can we determine a word's category?

There are *three criteria* that help to identify the syntactic category of a word:

1. **MEANING**

   Nouns → entities such as individuals (*John, Mary*),
                        objects (*book, knife*), etc.
   Verbs → designate actions (*walk, speak*),   sensations (*feel, hurt*), and states
             (*remain, be*)

   Adjectives → they designate properties or attributes of nouns (*small*,
                                        white)

Adverbs → they designate properties of verbs (*slowly, loudly*)

Problems: the meaning does not always have a direct relationship to the category of the word, for example:

    a.   abstract nouns (*kindness, likelihood* etc.) do not represent entities in the sense presented above

    b.   some verbs can be used as nouns (*call, push* etc.)

    c.   words of similar meaning may belong to different categories:
        like (V) *fond of* (A).

2.   **INFLECTION**

Inflection is associated with a certain lexical category, see *Table 5.2* (p. 170).

Problem: inflection does not always reveal the category, for example:
not all adjectives in English can take Comparative or Superlative suffixes (**beautifulest*);
some nouns may not normally take the Plural suffix (*bravery, thoughtfulness*)

3.   **DISTRIBUTION**

John saw -----------

    a.   the girl

    b.   the boy with the puppy

    c.   runs

    d.   had a drink

    e.   the accident

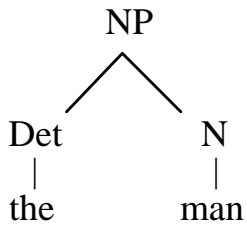(a), (b) and (e) belong to the same category: they can be substituted for one another without loss of grammaticality.

> *MEANING*, *INFLECTION* AND *DISTRIBUTION* TOGETHER HELP TO IDENTIFY THE SYNTACTIC CATEGORY OF A WORD.
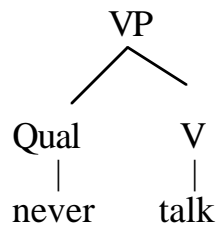
PHRASE STRUCTURE

Sentences have a hierarchical structure in which words are grouped into successively larger structures.

Members of each lexical category share certain combinational properties: they form larger units (=phrases) with certain types of words.
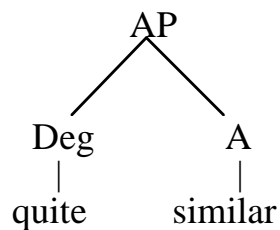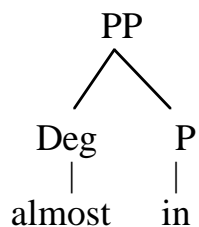
NOUN PHRASE (NP):

```
          NP
         /  \
      Det     N
       |      |
      the     man
```

VERB PHRASE (VP):

```
         VP
        /  \
    Qual     V
      |      |
    never   talk
```

ADJECTIVE PHRASE (AP):

```
          AP
         /  \
     Deg      A
      |       |
    quite   similar
```

PREPOSITIONAL PHRASE (PP):

```
           PP
          /  \
      Deg      P
       |       |
     almost    in
```

HEADS: each phrase is built around a lexical category:

> NP: around N
> VP: around V
> etc.

The lexical category around which the phrase is built: HEAD of the phrase. It is not possible to have a VP without a V, a NP without a N, etc.

However, it is possible to have a phrase in which only the HEAD position is filled:

```
                    NP
                    |
                    N
                    |
   (she loves)     cats

                    VP
                    |
                    V
                    |
   (babies)        cry

                    AP
                    |
                    A
                    |
   (I am)          hot

                    PP
                    |
                    P
                    |
   (he walked)     out
```

SPECIFIERS: in addition to the HEAD, phrases may include a second word with a special semantic or syntactic role (determiners, qualifiers and degree words).

Specifiers make the meaning of the HEAD more precise: semantic role!

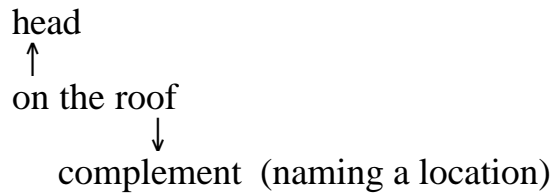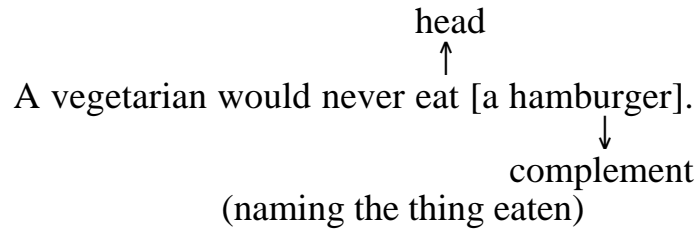Specifiers mark a phrase boundary. In English, specifiers occur at the left boundary of the phrase.

> *the cats*   (NP)
> *very fast*   (AP)
> *almost in* (PP)

the, very, almost : SPECIFIERS

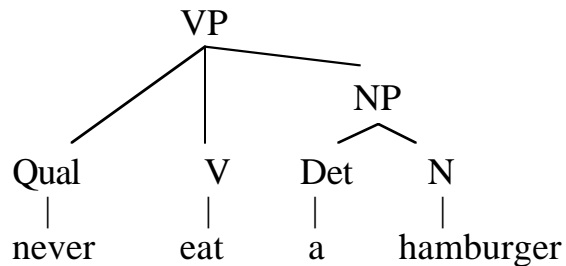## COMPLEMENTS

Complements provide information about entities and locations whose existence is implied by the meaning of the head.

```
                                          head
                                           ↑
              A vegetarian would never eat [a hamburger].
                                               ↓
                                         complement
                                   (naming the thing eaten)
```
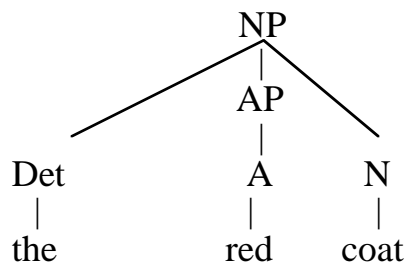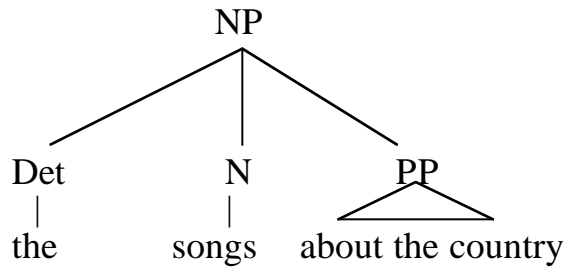
```
head
 ↑
on the roof
         ↓
     complement  (naming a location)
```

Complements are attached to the right of the head in English.

```
              VP
          ╱   │   ╲
                      NP
                     ╱  ╲
       Qual      V    Det    N
        |        |     |     |
      never     eat    a   hamburger
```

DIRECT OBJECT: The NP that is the complement of VP (*a hamburger* in this example).

```
          PP
       ╱  │  ╲
     Deg    P    NP
      |     |    △
   almost   on  the roof
```
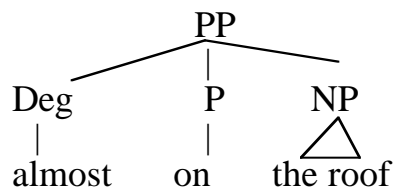
(Triangle: the internal structure of the phrase is not specified ⇢ space saving!)

```
                    NP
                  /  |  \
                /    |    \
             Det     N     PP
              |      |     /\
             the   songs  /  \
                         about the country
```

```
               NP
             /  |
           /    AP
         /     / \
       Det    A    N
        |     |    |
       the   red  coat
```

PHRASE STRUCTURE RULES: *a special grammatical device for ensuring that specifiers, heads and complements occupy the correct position in the phrase structure.*

- the arrow means "consists of" or 'branches into"

- The parentheses indicate optionality

NP → (Det) (AP) N (PP)
VP → (Qual) V (NP) (PP)
AP → (Deg) A (PP)
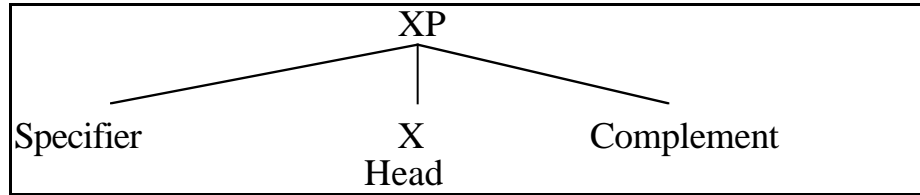PP → (Deg) P (NP)

Generalizing the rules:

The structural similarities between NPs, VPs, APs, and PPs:
       Specifier: left of the head
       Complement: right of the head

X = N, V, A or P

```
                        XP
            _____/|_____
           /            |            \
      Specifier         X         Complement
                       Head
```

↑

The Phrase Structure Template

The XP Rule:

XP → (Specifier) X (Complement)