SYNTAX

Syntax – the study of the system of rules and categories that underlies sentence formation.

1) **Syntactic categories**
lexical: - words that have meaning (semantic content)
             - words that can be inflected
             - includes **nouns, verbs, adjectives, adverbs, prepositions**

Nonlexical: - words whose meaning is harder to define
             - words that have a grammatical function
             - includes **determiners, auxiliary verbs, degree words, conjuctions**

Ex1. Label the underlined categories.
Pamela's heart <u>beat</u> fast <u>and</u> her hands trembled a lot as <u>she</u> listened <u>to</u> the intermittent knocking on <u>the</u> front <u>door</u> of her shanty, <u>located</u> near the railroad tracks beside a <u>hobo</u> <u>jungle</u>, and she thought, 'That's a <u>bum</u> rap if I ever <u>heard</u> one'.

2) **Phrase** (a unit of sentence structure between a word and sentence)
- Phrases have **heads**. NP has a N, AP has an Adj, VP has a V, PP has a P
- Optional **specifier**.   Det (determiners) specify a Noun (the, a, these, that)
                             Adv (adverbs) specify a Verb (always, often, never)
                             Deg (degree words) specify an Adjective or a Preposition (very, quite, almost)
-Optional **complements.** In English they come after the head.

Ex2. Discuss the structure of the following phrases. Give your own examples as well.
a) the presidents of the USA, very happy with the results, often sings a song, almost in the car

b) the rat, in the barn, really mean, worked at the station, extremely boring, that destruction of the city, never walks to the park, swept the floor, the poem about love

3) **Phrase Structure Tests** – to determine whether a group of words is or is not a syntactic unit.
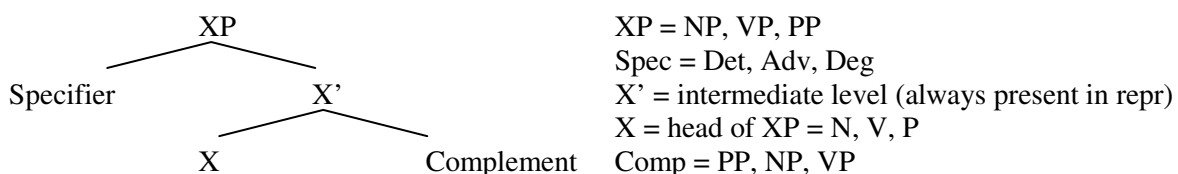- **substitution test** e.g. NP can be substituted with *they, she*, VP can be substituted with *do so*, PP can be substituted with *there*.
Ex3. Try substituting various parts of the sentence: "The boys played in the mud"

- **movement test** e.g. *The children bought candy at the store > <u>At the store</u>, the children bought candy*
cf. also passive voice *Tom opened the book > <u>The book</u> was opened by Tom*

4) **Phrase Structure Trees**

XP = NP, VP, PP
Spec = Det, Adv, Deg
X' = intermediate level (always present in repr)
X = head of XP = N, V, P
Comp = PP, NP, VP

exemplify: a book on Shakespeare
Ex4. Using the phrases from Ex2b and then Ex2a draw Phrase Structure Trees.

Phrase Structure Trees show that a sentence is both a linear string o words and a hierarchical structure with phrases nested in phrases. They show three aspects of speakers' syntactic knowledge:
- a. the linear order of the words in the sentence
- b. the groupings of words into syntactic categories
- c. the hierarchical structure of the syntactic categories

The trees represent in precise notational form the linguistic properties that are part of speakers' mental grammars

5) **Phrase Structure Rules** (as shown in Fromkin and Rodman – early versions)
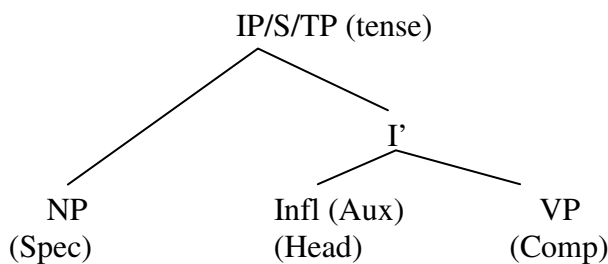
S → NP VP	Any variation possible?
NP → (Art) (Adj)* N (PP)	How many types of NP can you think of?
VP → V (NP) (PP)	How many types of VP can you think of?
PP → P NP	

Ex5. Discuss examples for each option in (5).

6) **Simple Sentence structure**

A **sentence** (IP) is the largest unit of syntactic analysis. Like a phrase, a sentence consists of a specifier, a head, and a complement.

- **NP.** The Noun Phrase is typically referred to as the subject. The subject is the specifier of I
- **I (Infl)** is the head of the sentence, and it is used to refer to inflection. There are two possibilities for I: **+Pst** and **–Pst**. +Pst = sentences in Past Tense, –Pst = present or future.
- **VP**. Typically referred to as the predicate. VP functions as a complement of I.

```
                IP/S/TP (tense)
               /          \
                            I'
                          /    \
   NP              Infl (Aux)      VP
  (Spec)            (Head)       (Comp)
```

The children   read   a   book

7) **Auxiliary Verbs**
- **modal** auxiliary verbs occupy the I position (will, would, can, could, should, must, might, may)
- **Nonmodal** auxiliary verbs occupy a V position in VP, and take VP as a complement (have, be)

Exemplify: *The children will read a book* and *The children are reading a book*

Ex6. In pairs, draw tree diagrams for:
- Students often write exams
- A penguin walked into the room
- Dogs should always go for a walk
- Those monsters were hiding under the bed

8) **Complement options** or **Subcategorization**

The **lexicon** must contain more syntactic information than merely the lexical category of each word. (syntactic category + usage)

        a. The boy found the ball
        b. *The boy found quickly   cf. *walked*
        c. *The boy found in the house cf. *slept*
        d. The boy found the ball in the house

<u>*find*</u>: transitive, must be followed by an NP, its direct object. This additional information is called **subcategorisation** and must be included in the lexical entry of each word.

Subcategorisation accounts for the ungrammaticality of:

    a. **John put the milk,*
        <u>put</u> is a <u>ditransitive</u>, requires direct and indirect object, i.e. NP and PP. Cf. *John put the milk in the fridge.*
    b. **Disa slept the baby*
        <u>sleep</u> <u>intransitive</u>, so it cannot be followed by an NP

   c. **<u>belief</u>**   a. *The belief in freedom of speech*
               b. *The belief that freedom of speech is a basic right*
    -must be subcategorised for PP and S (IP)

   d. **<u>sympathy</u>**   - subcategorised for PP but not for S
          a. *their sympathy for the victims*
          b. **their sympathy that the victims are so poor*

9) **A fragment of the lexicon**

put, V, _____ NP PP	*put* is a Verb and must be followed by both an NP and a PP within the Verb Phrase
find, V, _____ NP	*find* is a Verb, must be followed by an NP within VP
sleep, V, _____	*sleep* is a Verb and must not be followed by any category within the Verb Phrase
belief, N, _____ (PP), ____ (S)	*belief* is a Noun and may be followed by either a PP or an S within the Noun Phrase
sympathy, N, ____ (PP)	*sympathy* is a Noun and may be followed by a PP within the Noun Phrase

10) **More lexical differences** – different syntactic patterns of verbs: ***want, force, try***

    a. The conductor ***wanted*** the passengers to leave
        The conductor ***forced*** the passengers to leave
        *The conductor ***tried*** the passengers to leave

    b. The conductor ***wanted*** to leave
        *The conductor ***forced*** to leave
        The conductor ***tried*** to leave

11) **Similar patterns**
   want: expect, need, wish
   force: allow, order, persuade
   try: condescend, decide, manage

Q: What do you think about this statement: *If you know your lexicon you do not need to know Phrase Structue Rules.*
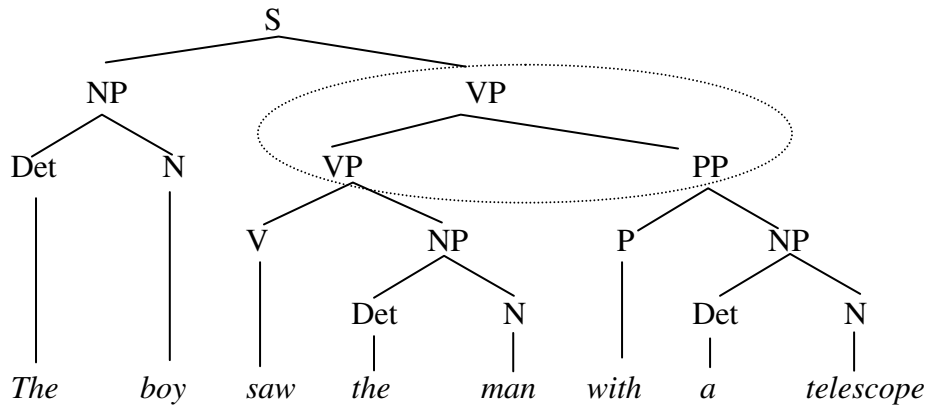
12) **Structural Ambiguity** – Linear order vs. hierarchy / mental architecture
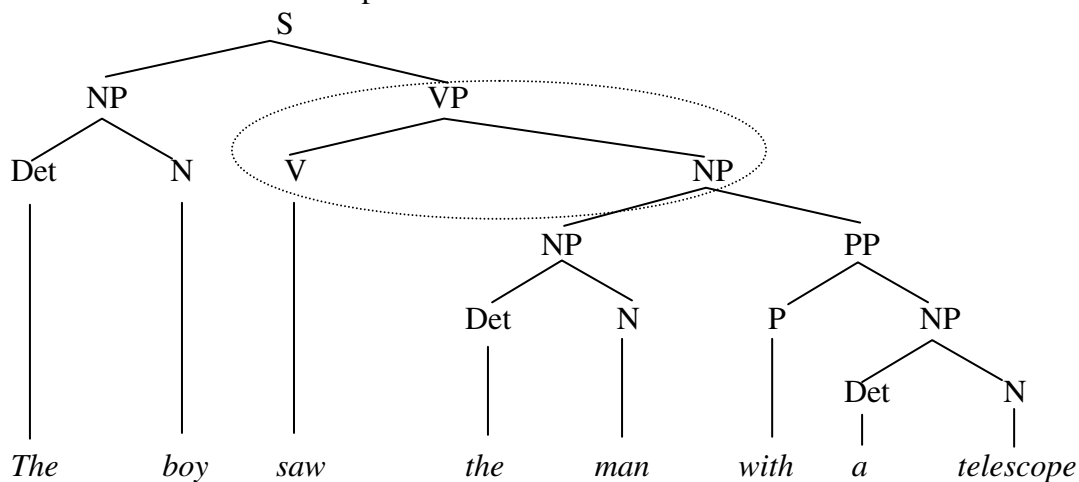   Remember *war time machine*? [[war time] machine] vs. [war [time machine]] Morphology!
   Cf. *Visiting professors can be interesting*

13) **The boy saw the man with a telescope**
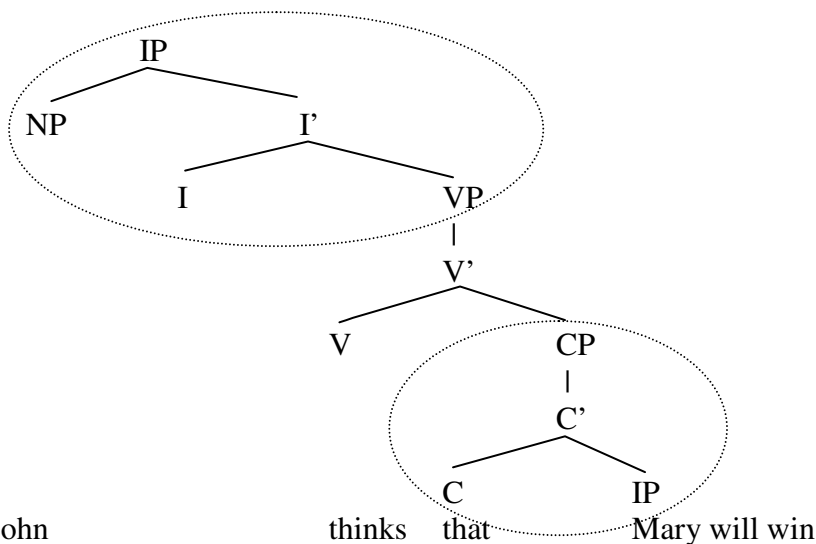   a. used a telescope to see him

```
                        S
           ┌────────────┴──────────────────┐
          NP                               VP
        ┌──┴──┐              ┌──────────────┴──────┐
       Det    N            VP                      PP
        │     │         ┌───┴────┐            ┌─────┴─────┐
        │     │         V        NP           P          NP
        │     │         │     ┌──┴──┐         │       ┌───┴───┐
        │     │         │    Det    N         │      Det      N
        │     │         │     │     │         │       │       │
      The    boy      saw   the    man      with      a    telescope
```

   b. the man had a telescope

```
                        S
           ┌────────────┴──────────────┐
          NP                           VP
        ┌──┴──┐            ┌────────────┴────────┐
       Det    N           V                      NP
        │     │           │          ┌───────────┴──────┐
        │     │           │         NP                  PP
        │     │           │      ┌───┴───┐          ┌────┴────┐
        │     │           │     Det      N          P        NP
        │     │           │      │       │          │     ┌───┴───┐
        │     │           │      │       │          │    Det      N
        │     │           │      │       │          │     │       │
      The    boy        saw     the     man       with    a    telescope
```

Ex7. Make 13a and 13b passive. Topicalize PP. Ask questions about 13a and 13b.

14) **Sentences with Complement Clauses (CP)**
   Like other syntactic units, a CP consists of a head, a specifier, and a complement. The head of a
CP is a **complementizer (C)**. Complementizers include words such as *that, if, whether*. The
complement of a complementizer is an IP, a sentence.

```
              IP
          ┌───┴────┐
         NP        I'
              ┌────┴─────┐
              I          VP
                         │
                         V'
                     ┌───┴────┐
                     V        CP
                              │
                              C'
                           ┌──┴───┐
                           C      IP

John           thinks    that          Mary will win
```

Ex8. Diagram the following: Nancy believes that aliens exist, Sailors know that the ship could sink

15) **Recursion** – one reason for the creativity / infinite number of sentences

Remember recursion in compounds? *coffee table repair shop assistant position...*

16) **Q: What makes this recursion possible?**
This is the boy that kicked the dog that frightened the cat that ate the mouse that loved the rat that...

17) **Q: What makes this recursion possible?**
The girl with the feather on the ribbon on the brim of the hat...
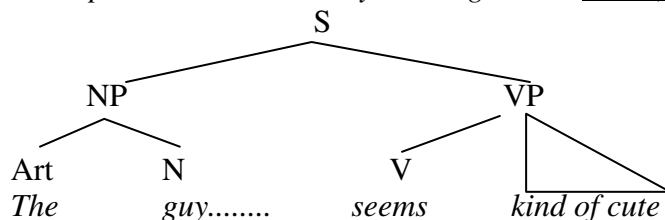
18) **Q: What makes this recursion possible?**
The girl walked down the street over the hill through the woods...

19) **Long distance relationships** – subject – verb agreement is possible due to the hierarchical structure of sentences.
    a. The <u>guy</u> <u>*seems*</u> kind of cute
    b. The <u>guy</u> we met at the party next door <u>*seems*</u> kind of cute
    c. Thee <u>guys</u> we met at the party next door <u>*seem*</u> kind of cute

There seems to be no limit on the distance...
    The <u>guys (guy)</u> we met at the party next door that lasted until three a.m. and was finally broken up by the cops who were called by the neighbours <u>seem (seems)</u> kind of cute.


```
                        S
              ┌─────────┴─────────┐
             NP                   VP
           ┌──┴──┐            ┌────┴────┐
          Art    N            V        (triangle)
          The   guy........  seems    kind of cute
```

Agreement depends on sentence structure not on the linear order of words, and occurs between the Noun head of the NP immediately below S, and the Verb head of the VP immediately below S, that is, between the Subject NP and the Main Verb of the S – They are sisters.

20) RECAP:
    The syntactic trees represent in precise notational form the linguistic properties that are part of speakers' mental grammars. They account for:
   • **the linear order of the words in the sentence (Word Order)**
      • **the groupings of words into syntactic categories (Functional Groups)**
      • **the hierarchical structure of the syntactic categories, which lead to**
         i)   *structural ambiguity*
         ii)   *creativity / infinitude (recursiveness)*
         iii)   *agreement relationships*
         iv)   *syntactic movement / manipulation of fragments of sentences as in* **passivization, PP preposing (topicalization), question formation***, etc***.

21) **Transformations** – structure modifications that capture the relationship between eg. declarative sentences and yes-no questions, active and passive, etc.

In some syntactic approaches **Move** is an operation that transforms one structure into another type of structure, e.g. statement > question. Move does this by transporting elements from one position in a sentence to another. Moved elements leave **traces**.

22) Every sentence includes a CP. Auxiliaries move to C. Wh phrases move to the specifier position of C. If C contains +Q, the structure is a question. If C is empty, it is a statement.
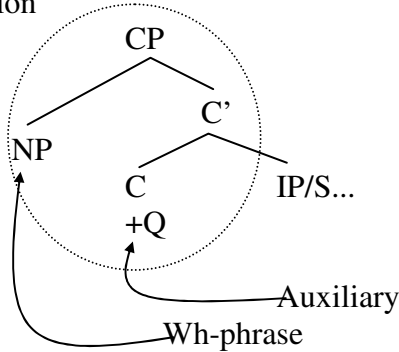
a. question   b. statement
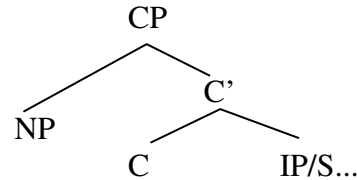
23) Yes-No question – **Inversion** – Move auxiliary:
   *Will Mary **t** leave? < +Q Mary will leave?*

24) Wh question – **Inversion and Wh movement**
   *What **should** George **t** buy t? < +Q George should buy what?*

Ex9. Diagram the Deep and the Surface structures for: Can a dog bark?, What must Megan do?

25) **Other transformations**

   Verb raising: *Mary is leaving > Is Mary leaving? (is goes from V to I before moving to C)*

   Do-insertion: *Mary left > Did Mary leave? (do inserted into I before moving to C)*

   NP Movement (passivization):   *The chef prepared the meal >*
                                       The meal was prepared by the chef.

   PP preposing: *With a telescope, the boy saw the man*