Syntax 1 - The sentence patterns of language

Properties of Syntax

- infinite possible number of sentences
  the man who knows my friend who knows the brother of the president ….
- possible sentences based on the grammar of the language
- certain universal properties of language contribute to syntactic structure in all languages

Grammatical or Ungrammatical?

- some sentences are well-formed = grammatical
- others are ill-formed = ungrammatical (*)
- grammaticality is based on the rules of the grammar of a language
- different kinds of rules:
  1. word order rules
  2. subcategorization restrictions: transitive vs. intransitive, etc.
  3. hierarchical structure

Grammaticality

- Grammaticality is **not** based on:
  - prior knowledge
  - meaning
  - truth of the utterance

What else do we know about syntax?

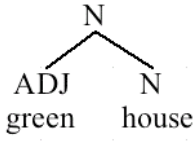
- structural ambiguity also possible in syntax, just as we discussed for *unlockable*, etc. in morphology
- examples: a. flying planes can be dangerous
  b. visiting relatives can be boring
- tree structures in syntax just as in morphology
- syntactic categories similar to morphological categories

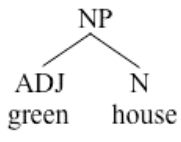
Syntactic Rules

- Syntactic rules account for:
  - grammaticality of sentences
  - word order
  - hierarchical structure (phrases)
  - grammatical relations (subject, object, etc.)
  - structural ambiguity
  - creativity

Sentence Structure

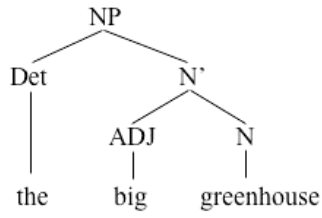
- tree diagrams
- similar to morphological structure
- deals with words in a sentence instead of morphemes in a word





Compounds in the syntax

- compounds can be used as elements in the syntax, e.g.



Syntactic Categories

- trees group together *constituents*
- different elements make up the constituents, such as the + child, in + the + garden, etc.
- Noun (N), Verb (V), Adjective (ADJ), Preposition (P), etc. are basic syntactic categories
- higher level categories: Noun phrases (NPs), Verb Phrases (VPs), Prepositional Phrases (PPs)
- these are universal, occur in all languages

Phrase Structure Trees

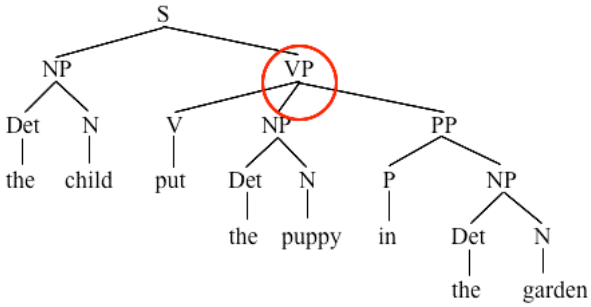
- similar to word structure trees, but the categories involve higher levels, such as the *phrase* and *sentence*
- just as with morphological trees, there are mothers and daughters
- also, trees are *usually* binary branching, that is two daughters for each mother

Properties of PS Trees

- three types of information that a speaker has about the syntax are represented in the tree:
- linear order of elements of the sentence (linear precedence)
- grouping of words (constituency)
- hierarchical structure (immediate dominance)
- categories dominated by the same (mother) node are *sisters* of each other and *daughters* of the higher node

Subcategorization

- in some cases there may be more branches, e.g. when a verb has two complements:



- the VP in such a case has three branches because the verb 'put' requires two complements, that is
  put [something] [somewhere]
- this will depend on the verb; compare: give, pass, etc. vs. sleep, sneeze, etc.
- this requirement is referred to as *subcategorization*

Heads and Complements

- the head of a phrase is the element that determines the structure and what may occur in the phrase
- nouns are the heads of NPs and decide what elements may co-occur with them inside the phrase, verbs are the heads of VPs and decide what other elements must appear in the VP, etc.
- the elements that co-occur with the head inside a phrase are complements
- in the sentence 'put the puppy in the garden', the verb *put* has two complements:
  1. the puppy and 2. in the garden
- remember that these are *required* by the verb *put*
- this property of requiring certain types of complements is referred to as *selection*
- conditions on selection are called *selectional restrictions*

Selectional Restrictions

- verbs that have only a subject are referred to as *intransitive:*
  examples: sleep, snore, die, etc.
- verbs that take one object, the direct object, are called *transitive:*
  examples: kick, eat, see, etc.
- verbs that take two objects are called *ditransitive*:
  examples: give, feed, put, etc.
- other verbs may require different kinds of complements:
  example: wonder, think, etc.

Head of the Sentence

- S (sentence) is headed by Aux(iliary)
- alternatively, we can refer to S as IP (Inflectional Phrase) and Aux as INFL(ection)
- this is the same inflection that we discussed in morphology
- involves syntactic inflection, including modal verbs & endings like 3rd person singular present tense /-s/

The Infiniteness of Language

- based on sentences being built up from smaller units into increasingly larger units
- referred to as *recursion and* allows the repetition of categories that are contained in other categories
- thus, NP → Det N PP PP → P NP
- therefore: NP → Det N PP
  P NP
  Det N PP
  P NP … etc.