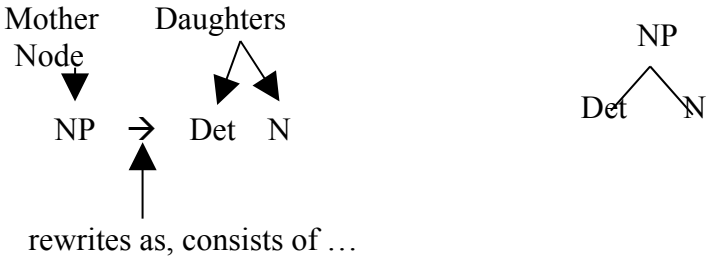
Introduction to English Linguistics

Syntax: The sentence patterns of language 2

Phrase Structure Rules

- set of rules associated with the grammar of a language
- provide instructions for how to build a sentence and the associated tree structure

(1)



- This is the rule necessary to generate (= make) phrases such as *the dog*, *a boy*, etc.
- more complex structures, involving complements, require more complex rules:

(2) NP → Det N PP

- this rule requires a prepositional phrase as a complement
- to simplify the rules we may combine them, making the PP optional by using parentheses around optional parts

(3) NP → (Det) N (PP)

- this rule actually represents the following possibilities:

(4)

NP → N	(dogs, people, etc.)
NP → Det N	(the dog, the people, etc.)
NP → N PP	(dogs in the house, friends of Mary, etc.)
NP → Det N PP	(the dog in the park, a friend of mine, etc.)

- note that N is obligatory and appears in all of these
- it is not permitted to have a rule where all daughters are optional, e.g. * NP → (Det) (N) (PP)
- rules for the VP (verb phrase):

(5) VP → V (NP) (PP)

- this will account for:

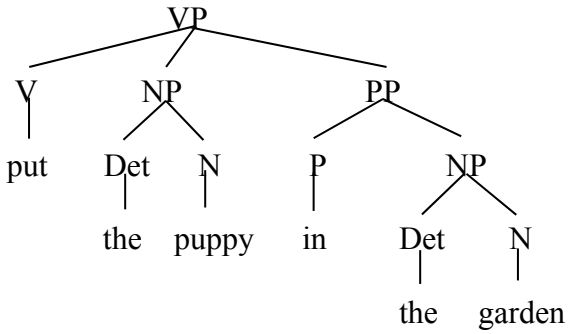
intransitive verbs such as *sleep, die*, etc. (VP → V)

transitive verbs such as *make, eat*, etc. (VP → V NP)

transitive verbs with PP complements like *put*, *place*, etc. (VP → V NP PP)

- the rule is then spelled out as follows:

(6)



• Notice that this tree involves all of the following rules:

(7) VP → V NP PP

NP → Det N

PP → P NP

• once we know that the VP contains NP and PP and that NP contains Det and N and PP contains P and NP, then we know what the structure of the tree will be

Growing Trees

• this is not sufficient for all the rules of English, so there must be further rules
• one of these deals with sentences:

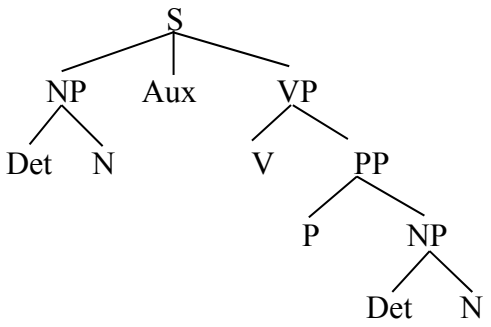
(8) S → NP Aux VP

• alternatively: IP → NP I VP (this shows more clearly that I is the head of the sentence)
• building the tree starts at the top, that is the 'root' or highest mother node, S or IP

(9)

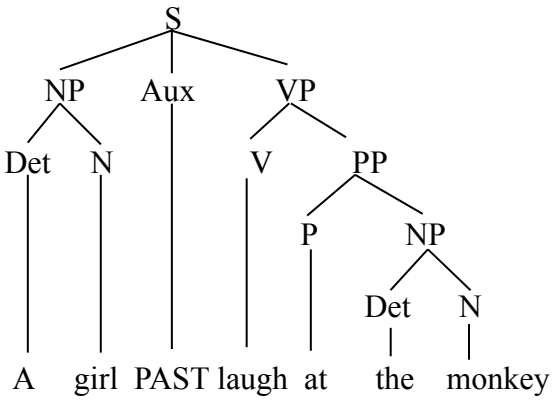
• then the daughters of the root node are 'decomposed' following the phrase structure rules

(10) NP → Det N VP → V PP PP → P NP



• finally, there is lexical insertion, that is the inserting of lexical items (= words)

(11)



Structural Ambiguities

• just like structural ambiguities in morphology (e.g. un-do-able), there are structural ambiguities in syntax
• 'the boy saw the man with the telescope' = a. 'the boy *used a telescope* to see the man'
OR: b. 'the boy saw the man *who had a telescope*'
• in the (a) meaning, 'with a telescope' is a complement of the V = V NP PP
• in the (b) reading, 'with a telescope' is a modifier of 'the man' = Det N PP

Trees that won't grow

• ungrammatical sentences may result from impossible rules of the grammar
• In English, * NP → N Det is impossible: no sentence containing this structure will be grammatical
• In Ditidaht, this is the required order: ɬ'apats 'canoe' + 'aq Det → ɬ'apts'aq
• so in Ditidaht the rule is NP → N Det

More Phrase Structure Rules

(12) NP → (Det) (AP) N (PP)

VP → V (NP) (PP) (Adv)

AP → Adj (PP)

• note that inclusion of an optional adverb (Adv) in the VP

Adverb Placement

• the placement of adverbs is tricky and requires additional rules

(13) a. The wind blew softly.

*The wind softly blew.

b. The wind swept through the trees noisily.

The wind noisily swept through the trees.

c. The wind swept noisily through the trees.

The wind rattled the windows violently.

The wind violently rattled the windows.

? The wind rattled violently the windows.

d. The wind forced the boat into the water suddenly.

The wind suddenly forced the boat into the water.

*The wind forced suddenly the boat into the water.

Suddenly the wind forced the boat into the water.

Coordinate Structures

• may occur at all levels of the phrase structure

(14) NP → NP CONJ NP

VP → VP CONJ VP

AP → AP CONJ AP

• in general, coordination may be dealt with as: X CONJ X

Embedded Clauses

• a sentence or clause may be embedded (= placed inside) inside a phrase
• this requires additional phrase structure rules:

VP → V CP

CP → Comp IP

(15) a. The teacher believes the student knows the answer.
b. The teacher believes *that* the student knows the answer.

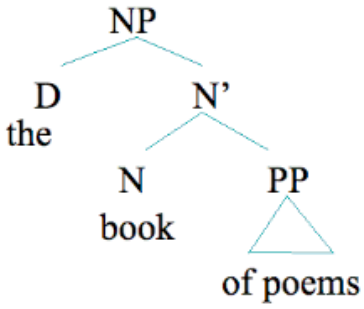
• words like *that, if, whether* are known as ***complementizers***
• usually obligatory, but sometimes optional as in (15)

Concerning page 146:

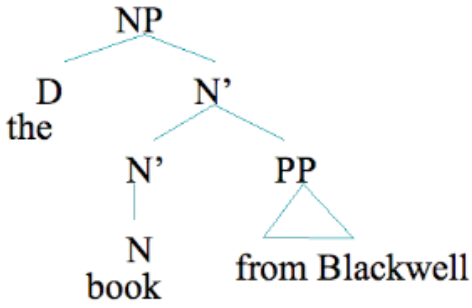
• I don't think the analysis on page 146 is satisfactory: neither do most syntacticians

• below is an explanation of the usual way of representing NPs that contain PPs taken from a lecture by Mark Gawron (http:www-rohan.sdsu.edu/~gawron/syntax/course_core/slides/Slides5.2.ppt) :

(16) a. The book of poems



b. The book from Blackwell



Gawron discusses "a quick way to distinguish complements and adjuncts in NPs (doesn't work for other categories). Complements of N are marked with the preposition 'of'. All other prepositions mark adjuncts. (This is not fool-proof!)"

• Note that 'book of poems' is a ***complement*** while 'book from Blackwell' (a publisher) is an ***adjunct***.

• under this analysis, number 1 on page 146 would be basically the same, but number 2 would look like this: