

Intro to Linguistics

Syntax 2: A more perfect Tree-Building Machine

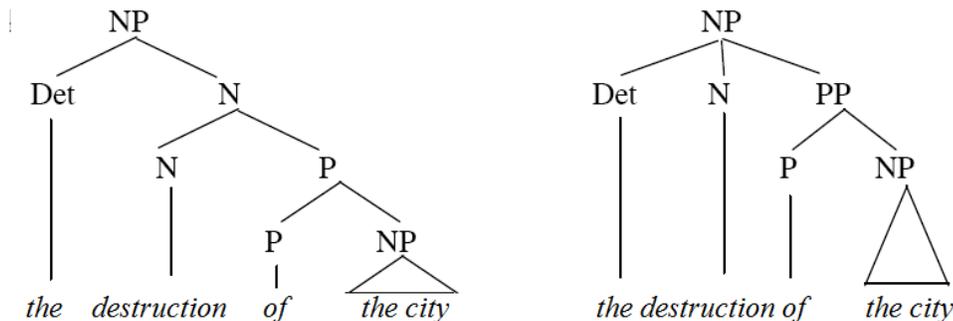
1. Refining our phrase-structure rules

Rules we have so far (similar to the worksheet, compare with previous handout):

- a. $S \rightarrow NP VP$
- b. $NP \rightarrow (D) AdjP^* N PP^*$
- c. $VP \rightarrow (AdvP) V (NP) PP^*$
- d. $PP \rightarrow P NP$
- e. $AP \rightarrow (Deg) A$
- f. $AdvP \rightarrow (Deg) Adv$

- **More about Noun Phrases**

Last week I drew trees for NPs that were different from those in the book for *the destruction of the city*



- What is the difference between the two theories of NP? Which one corresponds to the rule (b)?
- What does the left theory claim that the right theory does not claim?
- Which is closer to reality? How did can we test it?

On a related note: how many meanings does *one* have?

- 1) John saw a large pink plastic balloon, and I saw one, too.

Let us improve our NP-rule:

- b.

- **CP = Complementizer Phrase**

Sometimes we get a sentence inside another sentence:

Tenors from Odessa know that sopranos from Boston sing songs of glory.

We need to have a new rule to build a sentence that can serve as a complement of a verb, where C complementizer is "that", "whether", "if" or it could be silent (unpronounced).

- g. $CP \rightarrow C S$

We should also improve our rule (c) to be like the one below.

- c. $VP \rightarrow (AdvP) V (NP) PP^* (CP)$ (says CP can co-occur with NP or PP)

Practice: Can you draw all the trees in (2) using the amended rules?

- 2)
 - a. Residents of Boston hear sopranos of renown at dusk.
 - b. Tenors from Odessa know that sopranos from Boston sing songs.
 - c. Colonists from Boston think about revolution.
 - d. Colonists from Boston think that revolution brings significant improvement
 - g. Colonists from Boston very swiftly eat fish.
 - f. *Birds from Boston eat that John left

Why not this rule instead of the new (c)?

c'. i. $VP \rightarrow V (NP) (PP)$ (says CP can't co-occur with NP or VP)

ii. $VP \rightarrow V CP$

- 2) g. James said that Joan was a soprano.
h. James told Luciano that Joan was a soprano.
i. James said to the media that Joan was a soprano.

Practice: Draw trees of (2h) and (2i):

Actually, it looks like our VP-rule can also be improved in the same way as the NP-rule:

3) Homer swiftly ate dessert with a fork in the kitchen at night, and Bart did too.

So, the "split" VP-rule should be:

c.

• **More about Adjective Phrases:**

- 4) a. The sopranos are beautiful. b. The night is young.
c. The Behaviorists are obviously very wrong. d. Prescriptive grammar is totally uncool.

New addition to the VP rule:

A change to the AP rule:

Practice: Draw trees of sentences in (4c and 4d)

• **Inflection or Tense**

Auxiliaries in English don't behave like other verbs: they're often used in addition to regular verbs, to carry information about tense or modality:

- 5) a. Horses can run. b. Horses will run. c. Horses didn't run d. Horses should run.

In fact, auxiliaries pattern as a single class in their syntactic properties: for instance, they uniformly take VPs as complements. As another example, auxiliaries often serve as a kind of "VP pronoun" – something non-auxiliaries cannot do.

- 6) a. Who ran 4 miles yesterday? John did! did = ran 4 miles yesterday
b. John gave Mary a book, and Bill did, too. did = gave Mary a book
c. People who eat peanuts live longer than people who don't eat.

So, we'll have a special category just for them: the book has **Aux**.

Do we want a new S rule or a new VP rule? How can we tell?

- 7) a. Fish from Boston should swim beautifully and **so do I**
(means 'I also swim beautifully.' Does NOT mean *'I also should swim beautifully')
b. Fish from Boston should swim beautifully and so should I.
c. [Sing beautifully] John should. d. *[Should sing beautifully] John

The auxiliaries *should, would, could, might, will*, etc are OUTSIDE VP

So, we should change the S rule, breaking it into two parts: part (a) introduces the subject and the predicate AuxP, while part (h) tells us about the complements of Aux.

- a. $S \rightarrow NP \text{ AuxP}$ h. $\text{AuxP} \rightarrow \text{Aux VP}$

For sentences without auxiliaries, we'll think of **Aux** as still containing information about **tense**, which then somehow glums onto the verb in the shape of inflectional morphology:

- 8) a. John [past] run => John ran b. John [present] run => John runs

- **Determiners**

There are several big differences between nouns and pronouns.

Singular count nouns require determiners before they can serve as subjects or complements, whereas pronouns don't need anything else.

Phrases build around nouns can have adjectives and other modifiers in them, but not pronouns.

Some pronouns can appear by themselves, or replace a determiner in an NP:

personal	possessive	demonstrative
<i>we Americans / we</i>	<i>our possessions / ours</i>	<i>this object / this</i>

So, just like auxiliaries (which can serve as VP pro-forms) are in a category by themselves (Aux, not V), we can distinguish pronouns into a category separate from nouns.

Proposal: this category will be D (= Determiner).

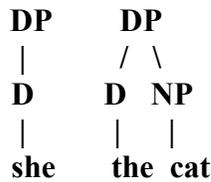
Like a lot of other categories, Det will be able to appear without any complement:

- 9) a. She is beautiful. b. We'll get ours. c. I like this!

or with an NP complement:

- 10) a. The lady spoke to our leaders. b. We linguists like this class!

Phrases build around determiners are DPs = Determiner Phrases:



All of our rules that had whole phrases as "noun", now would call those phrases, logically, NPs = Noun Phrases.

But what about plural and mass NPs?

- 11) Birds sing. They don't need a determiner to appear as subjects or complements!

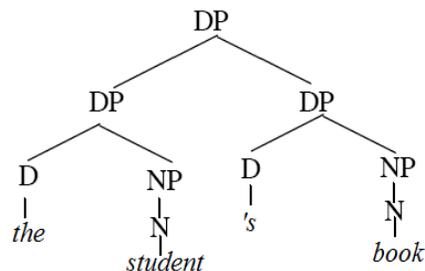
In this case, we will assume that, like C, a determiner can be silent (unpronounced), and that plurals and mass nouns appear with such a silent D.

So, we revise our phrase structure rules to reflect these new categories:

- | | | | |
|------------------|----------------------------|----------------|-------------|
| a. S → DP AuxP | b. i. NP → AdjP NP | ii. NP → NP PP | iii. NP → N |
| g. CP → C S | c. i. VP → AdvP VP | ii. VP → VP PP | |
| h. AuxP → Aux VP | iii. VP → V (DP) (PP) (CP) | | |
| j. DP → D (NP) | d. PP → P DP | | |
| | e. AP → (AdvP) (Deg) A | | |
| | f. AdvP → (Deg) Adv | | |

In fact, there are even Ds which have specifiers ("subjects" of their own):

- | | |
|--|---------------------|
| 12) a. John's book | d. *John's the book |
| b. The man from Australia's coat | e. *A student's it |
| c. The very hungry linguistic student's book | |



2. Universal syntax.

No need for language specific & phrase-specific rules.

(13) General & universal phrase-structure principles:

1. **Head rule:** Every phrase XP has a head X that it's built around
2. **Complement rule:** Depending on subcategorization of the head, the phrase may have zero, one, or more complements. Complements are always full phrases, not single words.

XP → **X (W₁P) (W₂P)**

3. **Specifier rule:** A phrase may also have a specifier ("subject"). Specifiers, like complements, are full phrases. YP is the specifier (Spec) of X

GP → **(YP) XP**

4. **Adjunct (Modifier) rule:** A phrase XP may be modified by a modifier phrase YP, creating two levels of XP, for instance NP => AdjP NP (red leaf) NP => NP PP (room with a view)

XP → **XP (ZP)** or **XP** → **ZP XP**

Terminology: we say *X* is a daughter of *XP*; *ZP* is a sister of *XP*; *X* is a sister of *WP*

Fill in the lines in the tree:

(1) The old lady could see it

S

	DP		AuxP		
	D	NP			
the	AP	NP	Aux	VP	
	old	lady	could		
				V	DP
				see	it

(2) John said that the old lady could see it

S

	DP		AuxP		
John		Aux	VP		
	[past]	V	CP		
		say	C	S	
		that	DP	AuxP	
		D	NP		
		the	AP	NP	Aux
			old	lady	could
					V
					see
					DP
					it