EGG Intro to Syntax PART 2
Handout 1.
August 6, 2018

A brief history of Phrase Structure

Stage I. 61 years ago (Syntactic Structures 1957), in a tribute to the 40th anniversary of the Russian revolution, Chomsky proposed "Phrase Structure Rules" ("PS Rules") of this form:

1) a. S → NP VP b. NP → (Det) (Adj)* N^0 (PP) c. VP → V^0 (NP)
   d. PP → P^0 NP e. AdjP → Adj^0 (PP) etc.

• what does the arrow mean? _____

• what do parentheses mean (and how do we feel about it)? _____

_____

• what does the asterix mean (and how do we feel about it)?? _____

_____

• using these PS rules, draw a tree of the sentence "The students love generative syntax"

• what is the *motivation* for phase structure rules? _____

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Stage II. X'-theory

• "cross-categorial generalizations" started to emerge:

2)	Bosnian/Croatian/Serbian/	English
a. object of N^0 (+ NP/PP)	knjiga [starog profesora]	book [(of) the old professor]
b. object of P^0 (+ NP)	o [mom bratu]	about [my brother]
c. object of V^0: (+ NP/PP)	pojesti [ukusnu hranu]	to eat [good food]
d. object of A^0: (+ NP)	zadovoljan [novim studentima]	satisfied [with the new students]

3) universality vs language-specifcity:

a. • *the universal part*: heads select their complements. Complements are full phrases (YP)
b. • *the language-specific part*: the linear order of heads and complements varies (stay tuned…)

Functional categroies behave similarly, with heads taking full XP complements:

4)	Bosnian/Croatian/Serbian/	English
a. object of T^0: (+ *v*P)	hoće [pisati knjigu]	will [write a book]
b. object of C^0: (+ S (TP)	da [Jovan voli sintaksu]	that [John loves syntax]
c. object of D^0: (+ NP)	ovi [sretni student]	these [happy students]

• modification occurs on various levels, via **adjunction**

5)	Bosnian/Croatian/Serbian/	English
a. adjunct to NP (on L)	[$_{NP}$ dobri [$_{NP}$ studenti fizike]]	[$_{NP}$ good [$_{NP}$ students of physics]
b. adjunct to NP (on R)	[$_{NP}$ studenti [$_{PP}$ sa dugom kosom]]	[$_{NP}$ students [$_{PP}$ with long hair]]
c. adjunct to VP (on L)	[$_{VP}$ lijepo [$_{VP}$ pjeva bluz]	[$_{VP}$ nicely [$_{VP}$ sing the blues]]
d. adjunct to VP (on R)	[$_{VP}$ [$_{VP}$ pjeva bluz] lijepo]	[$_{VP}$ [$_{VP}$ sing the blues] nicely]

Properties of adjuncts:

• What is their function? _____

• Are they selected by a head? _____

• How many can there be associated with a phrase? _____

• where do they appear within a phrase? _____

• X-bar Theory (see Webelhuth 1995, Intro)
a massive generalization across PS rules of all types

6) a. **XP** → ZP **X'** (introduces ZP, the "specifier", and X', the "bar-level")
b. **X'** → **X^0** YP (introduces X^0, the "head", and YP, the "complement")
c. **XP** → WP **XP** or (introduces WP, the modifier, recursively, on the left)
c'. **XP** → **XP** WP (introduces WP, the modifier, recursively, on the right)

7) All phrases (XP) consist of: • **heads** (X^0)
• **complements** (objects = sisters of the head) (here YP)
• **specifiers** ("subjects" = sisters to X') (here ZP)
• **modifiers** (adjuncts) (see below)

Stage III. Deriving Phrase Structure with a feature system (see Adger ch. 3)

→ *Complement* = object = *sister* of any head (selected by heads)

8) **Heads** a. The head is the most important part of the phrase (in its meaning = SEM)
b. The head determines the distribution of the phrase (selection)
c. Heads **select** their sister. The sister of a head is its **complement**
d. **Headedness:** *The item that projects is the item that selects*

The system of combination using features (based on Adger ch. 3.4-3.6, pp. 73-97)

• Selection. What is the problem with selection in *Syntactic Structures*?

_____

_____

→ What can P combine with? _____ Anything else? _____
We say it has a "selectional N feature"

→ What can V combine with? _____ Anything else? _____ Anything else? _____
• What about specific verbs? *dance*_____ *run* _____ *eat* _____ *devour* _____ *think* _____
We say it has a "selectional X feature" where X is determined by the verb

→ What can N combine with? _____ Anything else? _____
We say it has a "selectional N feature"it might also hve a"selectional P feature"

9) **Merge** (Adger pp. 90-91) ***Merge*** *is a universal linguistic process*

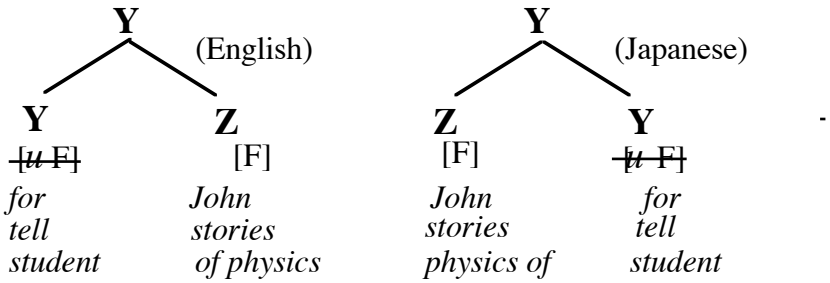
a. **Merge** applies to two syntactic objects (X, Y) to form a new syntactic object
b. The new syntactic object is said to **contain** the original syntactic objects, which are **sisters**
c. Merge only applies to the **root** node of syntactic objects (not a subpart)
d. The resulting phrase is the **projection** of one of the sisters. Which one? **The Head**
e. Merge allows the checking of an uninterpretable selectional feature on a head against its sister

10) **Selection**. Selection is mediated by checking off **uninterpretable features**

11) **Checking Under Sisterhood** (Adger p. 85)

An uninterpretable c-selectional feature F on a syntactic object Y is checked when Y is sister to another syntactic object Z which bears a **matching** feature F.

12) Samples of **Merge**: (F=any feature, here selectional)



13) **Full Interpretation** The structure to which the semantic rules apply must contain no uninterpretable features (therefore they must be checked off)

14) **Maximal Projection (XP):**

Any object with no more categorial selectional features to be checked

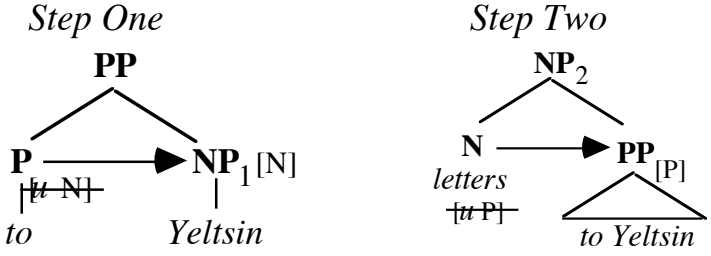
• How would a maximal projection have been defined in 1957? In X'-theory (1981)?

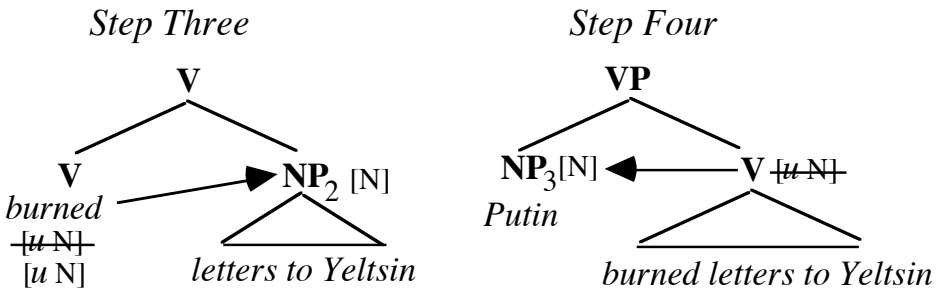
15) **Argument Structure** (traditionally: "valence"):

a. A predicate requires anywhere from 0-3 **arguments**.
b. These are represented by **thematic-roles** (theta-roles)
c. Which theta-role is required is part of the lexical information ("theta-grid")
d. Each theta-role is associated with an uninterpretable selectional feature

16) **Example:** *Putin burned letters to Yeltsin.*

a. Step One: Merge P and NP_1 (forming PP)
b. Step Two: Merge N and PP (forming NP_2)
c. Step Three: Merge V and NP_2 (extending V)
d. Step Four: Merge V projection and NP_3 (forming VP)





Structural Relations

17) Structural relationships we can now define:

a. **Head**: The lexical items which selects something to merge with (and then projects)
b. **Complement**: The first merged (selected) phrase. Always sister to a head X^0 (either side)
c. **Specifier**: The second merged (selected) phrase. Always daughter of XP (on the left)
d. **Direct Object:** Complement of the verb
e. **Subject**: Specifier of V/*v* projection

18) **ADJUNCTS** adjuncts are modifiers (adj, adv, PP) all elements that are not selected.

a. Because they are not selected, adjuncts do not merge with a head
b. Because they do not merge, adjuncts do not create a new object
c. Therefore we need an operation **ADJOIN**

19) **Adjoin**: *attaches a phrasal object to another phrasal object at its outermost level*

20) Structure of adjuncts:

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Subordinate clauses

Consider (21)-(24):

21) a. Putin knows Obama. b. Putin knows [that Obama is a kickboxer].
22) a. Putin heard Obama. b. Putin heard [that Obama is a kickboxer].
23) a. Putin believes Obama. b. Putin believes [that Obama is a kickboxer].
24) a. Putin tricked Obama. b. *Putin tricked that Obama is a kickboxer0.

• [that Obama is a kickboxer] is a "subordinate" or "embedded" clause.

• Is [*that Obama is a kickboxer*] a constituent? _____ How can we tell?

25) a. [That Obama is a kickboxer] everybody knows
b. John denies [that Obama is a kickboxer] but everyone knows **it** is true

• More embedded clauses:

26) a. Anya knows [that Fred works for the CIA].
b. Anya thinks [that Fred works for the CIA].
c. Anya wondered [if Fred works for the CIA].
d. Anya asked her friends [if Fred works for the CIA].

27) a. *Anya eats [that Fred works for the CIA].
b. *Anya chased Gorbachev [that Fred works for the CIA].
c. *Anya gave Natasha the cat [that Fred works for the CIA].
d. *Anya put the book on the table [that Fred works for the CIA].

• What do we need to do now? _____

→ We need new PS rules to generate subordinate clauses.

• Internal structure of embedded clauses: (C^0 = "complementizer", CP = "complementizer phrase"

28) a. CP → C^0 S (S = TP)
b. C^0: *that, if, …*

• Where does CP get *introduced* into the structure? (What does it depend on?)

_____

29) a. VP --> V (NP)
b. VP --> V CP

PRACTICE! Draw trees of these sentences:

30) a. Mary doubts that syntax rules the world.
b. The students understand that Mary doubts that syntax rules the world.
c. I know that the students understand that Mary doubts that syntax rules the world.

• Can you think of evidence that CP is inside VP, as claimed in (29)b)? (Remember (24)!)

• Can you think of other places where CP occurs other than inside VP?