

Introduction to Linguistics

Syntax 2 (cont'd): Universal syntax

1. Transformations

- **Deletion** = a syntactic rule, whereby a piece of syntactic structure is (built up by the phrase structure rules) is removed, under specified conditions.

VP ellipsis 1) **I teach linguistics, and he does Δ , too.**

Gapping 2) **I teach linguistics, and he Δ physics.**

Constraints on deletion: parallelism (of the two clauses), identity (of deleted stuff and antecedent), subordinate vs coordinate clauses (VP ellipsis vs Gapping), linear order (of deleted stuff and antecedent).

- **Movement** = a syntactic rule for moving a piece of structure within the tree, giving rise to displacement situations where a word or constituent appears in some position other than where we would expect it.

Topicalization 3) **Him I don't like.** (normally, *him*=direct object shows up after the verb)

Tense lowering - actually, all sentences without overt Aux must involve movement
(from Santorini, Beatrice, and Anthony Kroch. 2006. *The syntax of natural language: An online introduction using the Trees program*. <http://www.ling.upenn.edu/~beatrice/syntax-textbook> Chapter 6)

Certain adverbs in English obligatorily precede nonfinite (i.e. untensed) verbs.

- 4) a. **They will { always, never } apply.**
 b. **They have { always, never } applied.** (*applied* here is untensed - it's a participle)
 c. **They are { always, never } applying.**
 d. * **They will apply { always, never. }**
 e. * **They have applied { always, never. }**
 f. * **They are applying { always, never. }**

These adverbs precede the main verb of a sentence even when the verb is finite (i.e. tensed).

- 5) a. **They { always, never } applied.**
 b. * **They applied { always, never. }**

What happens to tense information? - it gets together with the main verb.

What moves - the verb, or the tense?

The ungrammaticality of (5b) means that the verb raising analysis cannot be correct.
So, the tense simply moves to join up with the verb, leaving the adverb in front.

Combining deletion and movement:

Short passive 6) **The thief stole the letter. => The letter was stolen.**

(w.r.t. meaning, *the letter* is still being acted upon, the thief is implicit)

Chomsky's theory: DEEP STRUCTURE => transformations => SURFACE STRUCTURE

Currently, the theory looks quite different, but its three main components are still present:

1. Lexicon
2. Phrase Structure Rules
3. Transformations

We use the phrase-structure rules to derive a basic sentence (deep structure).

Thus, given the rules in the previous handout, we can have the following derivation:

S → **DP AuxP** → **DP Aux VP** → **D NP Aux VP** → **D NP Aux V DP** → **D NP Aux V D NP** →
→ **D N Aux V D N** → **The thief [past] steal the letter**

Then, the tense gets together with the verb: **The thief steal+[past] the letter**

NOTE: activity in the lexicon (morphology!): **steal+[past] → stole**

Then, we apply *the passive transformation*, which **deletes** the subject, and **promotes** the object to subject position, yielding the passive sentence: **The letter was stolen.**

Transformations must be highly constrained: don't want to move anything anywhere!

Recent constraints: all transformations can be formulated in terms of single constituents moving around within the tree, not in terms of, say, phrases swapping places or being added randomly.

Another restriction: constituents only move if they **have to** in order to satisfy a grammatical principle.

One such principle, at least in English, seems to be that all sentences must have a subject:

- 7) **a. It seems that all my friends are sick.** “dummy” meaningless subject
b. *Seems that all my friends are sick.
c. My friends seem to all ___ be sick. *my friends* moved to subject position

● Question formation

Consider questions like these ones:

- 8) **a. Who does John like?** **b. Is John here?**

Who is the object, and must appear in a structural position following the verb.

SAI *Is John here?* is somehow derived from the corresponding declarative *John is here*.

Build the basic sentence: **John is here**

Move ‘is’ to the front of the sentence and generate the question → **Is John here**

This kind of movement is called “subject-auxiliary inversion” (SAI)

Similarly, place “who” in the object position and then move it to the front of the sentence:

- 8) **c. John likes who** Basic sentence
d. Who John likes Move “who” before John
e. Who does John like Insert “do” and place the present-tense “-s” on “do”

One crucial note about movement: *movement leaves traces*.

- These are the place-holders which will not allow any other elements to be put into the position of a moved element.

E.g. you cannot put anything in the object position from which *who* was moved. The position is occupied by a trace of *who*:

- 8) **f. *Who does John like Mary** **g. Who_i does John like t_i**

The index *i* indicates that the trace *t* is a trace of *who* (occupies the place where *who* once was).

ALL MOVEMENT LEAVES TRACES

Why do we think that traces are real?

- 9) **a. Who_i do you want to visit t_i?** - **I want to visit my grandma**

- b. Who_i do you wanna visit t_i
- c. Who_i do you want t_i to visit - I want my grandma to visit (me)
- d. *Who_i do you wanna visit cannot do “wanna” contraction over a trace!

- This suggests that a trace has “psychological reality”
- The trace is just as real as any other overt (pronounced) element. It occupies a structural position and though it is not pronounced, it is syntactically present. You cannot do a “wanna” contraction over a trace much like you cannot do it over any other NP:

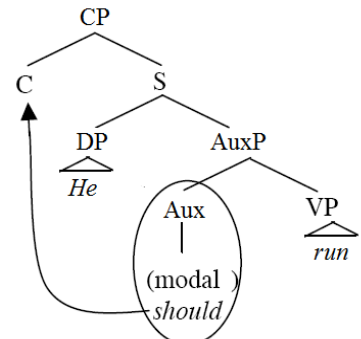
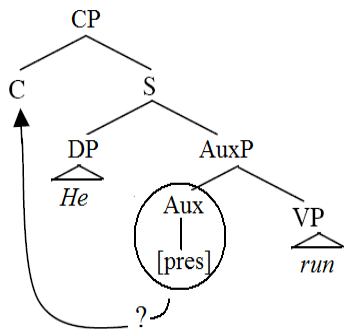
- 9) e. I wanna visit John f. I want to visit John
 g. *I wanna john visit cannot contract “want + to” into “wanna” over an NP “John”
 h. I want John to visit

SAI = Tense to C move. In a tree for a sentence that has SAI (10a), where does the auxiliary “land”?

- 10) a. He should run. b. Should he run?

What happens when there is no overt auxiliary, as in (11)?

- 11) a. He runs. b. Does he run?

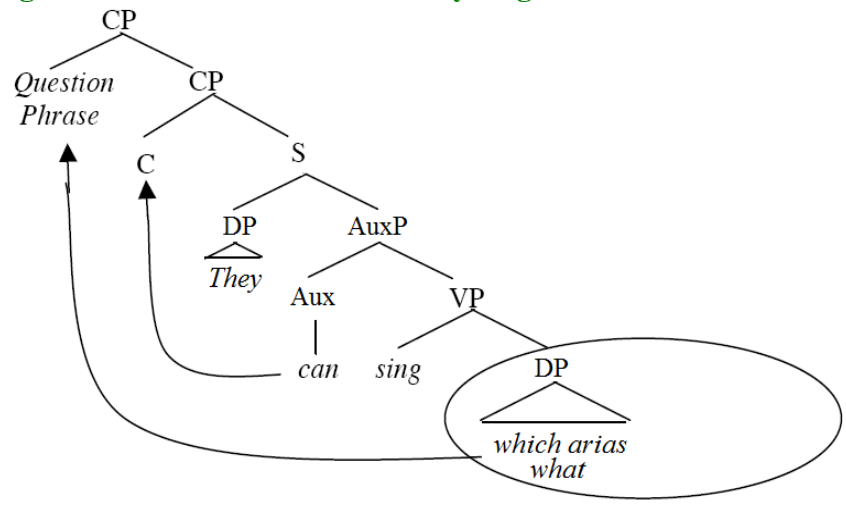


Do-support: The verb *do* is added to support an unsupported tense

- when T raises to C to form a question
- when the sentence is emphatic
- when the sentence is negated

Finally, in wh-questions (information questions), where does the wh-phrase (question word/phrase) move to? Since we're using C already, let us use the Spec of C:

- 12) a. They can sing these arias b. What can they sing? c. Which arias can they sing?



2. Non-Chomskyan approaches to syntax

While Chomsky is the most influential syntactician and has been for 50 years or so, and while more theoretical linguists work more or less within his theories than anyone else's, I do not wish to give the impression that his ideas are universally accepted, or that alternatives do not exist.

Indeed, he is criticized as much as he is praised, and there are a number of non-Chomskyan and even anti-Chomskyan movements out there. It is not possible to do them justice in an Intro to linguistics class, or even to mention all of the important theories, in part because to a certain extent the issues on which the various theories disagree are rather technical.

If you're interested, you can get a sense of what a few other contemporary approaches to syntax are like, by browsing their web sites:

- **Tree-adjoining grammar (TAG):** <http://www.cis.upenn.edu/~xtag>
- **Head-driven phrase structure grammar (HPSG):** <http://hpsg.stanford.edu>
- **Lexical functional grammar (LFG):** <http://www.essex.ac.uk/linguistics/LFG/>
- **Combinatory Categorical Grammar (CCG):** <http://groups.inf.ed.ac.uk/ccg/>

3. Cross-linguistic variation.

The theory of Universal Grammar has two components:

- **Principles: UG contains a set of absolute universals, notions and principles that do not vary from one language to the next.** For instance, every language
 - builds its sentences according to the general phrase-structure principles repeated below,
 - from phrases headed by nouns, verbs, etc., and
 - transforms them using movement operation, leaving behind traces.
 - has recursion (Haegeman's "embedding principle").... etc.

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

- **Parameters: There are properties which are not fully determined by UG, but which vary cross-linguistically. UG provides "multiple choice" options for these properties.**
 - Should not assume that each difference between languages corresponds to one parameter
 - Useful linguistic typologies => properties with respect to which languages vary come in clusters of characteristics. Linguists try to explain each such cluster of properties that go together by using a single parameter.
 - Surface vs. Deep parameters

3.1 Headedness - parameter or tendency? word order in basic sentences.

Head-initial languages – e.g., English Complement Rule **XP**

X WP

Head-final languages – e.g., Korean, Japanese Complement Rule **XP**

WP X

A problem: mixed languages? – e.g., German

- 13) a. *dass sie* [VP [DP *ihr Ziel*] *verfolgten*] **VP**
 that they their objective pursued
 'that they pursued their objective' **NP V**
- b. *diese* [N' *Treue* [PP *zu seinen Prinzipien*]] **PP**
 this loyalty to his principles
 'this loyalty to his principles' **P NP**

3.2 Verb Raising Parameter

(from Santorini, Beatrice, and Anthony Kroch. 2006. *The syntax of natural language: An online introduction using the Trees program*. <http://www.ling.upenn.edu/~beatrice/syntax-textbook> Chapter 6)

As illustrated in (14), there are certain adverbs in French (in *italics*) that must ordinarily precede the main (nonfinite, untensed) verb of a sentence (in **boldface**), rather than follow it.

- 14) a. Elle va *à peine* **travailler** trois heures.
 she goes *hardly* **work** three hours 'She is going to hardly work three hours.'
- b. Mon ami va *complètement* **perdre** la tête.
 my friend goes *completely* **lose** the head 'My friend is going to completely lose his head.'
- c. Je vais *presque* **oublier** mon nom.
 I go *almost* **forget** my name 'I'm going to almost forget my name.'
- d. * Elle va **travailler** *à peine* trois heures.
- e. * Mon ami va **perdre** *complètement* la tête.
- f. * Je vais **oublier** *presque* mon nom.
- g. * Elle va **travailler** trois heures *à peine*.
- h. * Mon ami va **perdre** la tête *complètement*.
- i. * Je vais **oublier** mon nom *presque*.

Focus on the French grammaticality judgments, especially in (g-i). Adverbs don't necessarily behave syntactically like their translations; e.g. note the grammaticality contrast in (h).

- (h) * **perdre** la tête *complètement*
 ok **lose** one's head *completely*

(14) reflects the fact that these adverbs must adjoin to the left of VP, rather than to the right.

Participles behave analogously to infinitives, as shown in (15).

- 15) a. Elle avait *à peine* **travaillé** trois heures.
 she had *hardly* **worked** three hours 'She had hardly worked three hours.'
- b. Mon ami a *complètement* **perdu** la tête.
 my friend has *completely* **lost** the head 'My friend completely lost his head.'
- c. J'avais *presque* **oublié** mon nom.
 I had *almost* **forgotten** my name 'I had almost forgotten my name.'

- d. * Elle avait **travaillé** *à peine* trois heures.
- e. * Mon ami a **perdu** *complètement* la tête.
- f. * J'avais **oublié** *presque* mon nom.
- g. * Elle avait **travaillé** trois heures *à peine*.
- h. * Mon ami a **perdu** la tête *complètement*.
- i. * J'avais **oublié** mon nom *presque*.

However, when the the main verb of the sentence is finite, the adverb-verb order that is obligatory with infinitives and participles is ungrammatical.

- 16) a. * Elle *à peine* **travaillera** trois heures.
 she *hardly* **work.fut** three hours 'She will hardly work three hours.'
- b. * Mon ami *complètement* **perdra** la tête.
 my friend *completely* **lose.fut** the head 'My friend will completely lose his head.'
- c. * Je *presque* **oublierai** mon nom.
 I *almost* **forget.fut** my name 'I will almost forget my name.'

Instead, the adverb must follow the verb, although it still cannot follow the entire VP.

- 16) d. Elle **travaillera** *à peine* trois heures.
- e. Mon ami **perdra** *complètement* la tête.
- f. **J'oublierai** *presque* mon nom.
- g. * Elle **travaillera** trois heures *à peine*.
- h. * Mon ami **perdra** la tête *complètement*.
- i. * **J'oublierai** mon nom *presque*.

This means that, unlike in English, instead of the Aux (tense) moving down to merge with the verb, it is the finite verb that raises to merge with the tense morpheme. **Compare with (4,5)!**

As (17) shows, the facts for other simple tenses in French are parallel to those for the future tense.

- 17) a. Elle **travaillait** *à peine* trois heures.
 she **work.imperf** *hardly* three hours 'She used to hardly work three hours.'
- b. Mon ami **perd** *complètement* la tête.
 my friend **lose.pres** *completely* the head 'My friend completely loses his head.'
- c. J' **oublie** *presque* mon nom.
 I **forget.pres** *almost* my name 'I am almost forgetting my name.'
- d. * Elle *à peine* **travaillait** trois heures.
- e. * Mon ami *complètement* **perd** la tête.
- f. * Je *presque* **oublie** mon nom.

On the strength of this evidence, we extend the verb raising analysis to these other tenses as well.

3.3 Null subject parameter = Pro-drop parameter.

Recall: English (declarative) sentences must have a subject:

18) English

- a. **They are here**
- b. ***Are here**

“personal” subject pronouns cannot be null

Compare this with Italian:

18) Italian

- c. **Sono arrivati**

“personal” subject pronouns can be null

Are arrived ‘They arrived’

