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 ∆, too.

Gapping  2) I teach linguistics, and he ∆ 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

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:

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:

\[ S \rightarrow DP \text{ AuxP} \rightarrow DP \text{ Aux VP} \rightarrow D \text{ NP Aux VP} \rightarrow D \text{ NP Aux V DP} \rightarrow D \text{ NP Aux V D NP} \rightarrow D \text{ N Aux V D N} \rightarrow \text{The thief [past] steal the letter} \]

Then, the tense gets together with the verb: \text{The thief steal+[past] the letter}

NOTE: activity in the lexicon (morphology!): \text{steal+[past]} \rightarrow \text{stole}

Then, we apply the passive transformation, which deletes the subject, and promotes the object to subject position, yielding the passive sentence: \text{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.  \text{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 \text{John is here.}

Build the basic sentence: \text{John is here}
Move ‘is’ to the front of the sentence and generate the question→ \text{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: \text{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 \text{who} was moved. The position is occupied by a trace of \text{who}:

8) f. *Who does John like Mary    g. Who, does John like t,

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

ALL MOVEMENT LEAVES TRACES     Why do we think that traces are real?
9) a. Who, do you want to visit t?  I want to visit my grandma
b. Who do you wanna visit?  
c. Who do you want to visit?  - I want my grandma to visit (me)  
d. *Who 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](http://www.cis.upenn.edu/~xtag)
- **Head-driven phrase structure grammar (HPSG):** [http://hpsg.stanford.edu](http://hpsg.stanford.edu)
- **Lexical functional grammar (LFG):** [http://www.essex.ac.uk/linguistics/LFG/](http://www.essex.ac.uk/linguistics/LFG/)
- **Combinatory Categorial Grammar (CCG):** [http://groups.inf.ed.ac.uk/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.

  $XP \rightarrow X (W_1P) (W_2P)$

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

  $GP \rightarrow (YP) XP$

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

  $XP \rightarrow XP (ZP)$ or $XP \rightarrow ZP XP$

- **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 $\Rightarrow$ 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

\[
\begin{array}{c}
\text{XP} \\
\text{X} \\
\text{WP}
\end{array}
\]

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

\[
\begin{array}{c}
\text{XP} \\
\text{WP} \\
\text{X}
\end{array}
\]

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

13) a. dass sie \text{VP [DP ihr \ Ziel ] verfolgten]} \text{VP}
that they \text{their objective pursued} 'that they pursued their objective'
\text{NP \ V}

b. diese \text{[N\ Treue [PP zu seinen Prinzipien ]]} \text{PP}
this \text{loyalty to his principles} 'this loyalty to his principles'
\text{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. \url{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 \textbf{boldface}), rather than follow it.

14) a. Elle va \text{à peine travaille} trois heures.
\text{she} \text{goes} \text{hardly} \text{work} \text{three hours} 'She is going to hardly work three hours.'

b. Mon ami va \text{complètement perdre} la tête.
\text{my friend} \text{goes} \text{completely} \text{lose} \text{the head} 'My friend is going to completely lose his head.'

c. Je vais \text{presque oublie} mon nom.
\text{I} \text{go} \text{almost forget} \text{my name} 'I'm going to almost forget my name.'

d. * Elle va \text{travailler à peine} trois heures.
\text{e.} * Mon ami va \text{perdre} complètement la tête.
\text{f.} * Je vais \text{oublié} presque mon nom.
\text{g.} * Elle va \text{travailler} trois heures à peine.
\text{h.} * Mon ami va \text{perdre} la tête complètement.
\text{i.} * Je vais \text{oublié} 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).

\text{(h) * perdre la tête complètement}
\text{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 \text{à peine travaillé} trois heures.
\text{she} \text{had} \text{hardly worked} \text{three hours} 'She had hardly worked three hours.'

b. Mon ami \text{a complètement perdu} la tête.
\text{my friend has completely lost} \text{the head} 'My friend completely lost his head.'

c. J'avais \text{presque oublie} mon nom.
\text{I had} \text{almost forgotten} \text{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 main verb of the sentence is finite, the adverb-verb order that is obligatory with infinitives and participles is ungrammatical.

    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'oublier 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 oublier 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 "personal" subject pronouns cannot be null
b. *Are here

Compare this with Italian:

18) Italian
c. Sono arrivati "personal" subject pronouns can be null
   Are arrived ‘They arrived'
This pronoun-dropping correlates with other properties of the two languages:

Possibility of post-verbal subject:
19) a.*Has arrived John.  b. È arrivato Gianni.
   is arrived John  ‘John arrived’

   Possibility of complementizer “that” with moved subject:
20)a. *Who do you think that has called? b. Chi credi che abbia telefonato?
   who believe.2sg that have.subjunc called
   ‘Who do you think has called?’

   Obligatory “dummy” subjects vs. Prohibition against dummy subjects:
21) a. It seems that John is here  b. *Ciò sembra che Gianni è arrivato
   it seems that John is arrived

   b. *Seems John is here  b. Sembra che Gianni è arrivato
   seems that John is arrived
   c. It’s raining
   d. *Raining
   c. *Ciò piove
   d. Piove
   rains.3sg

All of these properties cluster together: why?
- In English, sentences must have pronounced subjects, which can only occur pre-verbally (18a)
- In Italian, the only time you have a pronominal subject is when there is a contrast (18b):
  o so, no dummy pronouns (21) vs (22)
- In both English and Italian, there is a prohibition on traces immediately to the right of a complementizer; in both languages, it’s ok to move post-verbal material to the front:
23) a. Who do you think that John will invite?  b. Chi credi che Gianni inviterà?
   o So, it’s ok to move the post-verbal subject to the front (20a) vs (20b)

An extra wrinkle/refinement in the null subject parameter: impersonals
24) Overall null subject pattern:
   English:
   “personal” subject pronouns cannot be null
   “dummy” subject pronouns must be used
   a. They speak English in America
   “impersonal” subject pronouns cannot be null
   Russian:
   b. Oni idut
   They are.coming ‘They are coming’
   c. *Idut
   Are.coming
d. Kazhets’a chto on prishel
   seems that he arrived ‘It seems that he arrived’
e. V Amerike govor’at po-anglijski
   “impersonal” subject pronouns can/must be null
   In America speak.3pl in-English ‘They speak English in America’
   Italian
   “personal” subject pronouns can be null
   “dummy” subject pronouns must be omitted
   f. In America parlano inglese
   “impersonal” subject pronouns must be null
   In America speak.3pl English ‘They speak English in America’