

CAS LX 522

Syntax I

Week 12b. LF

A word about interpretation

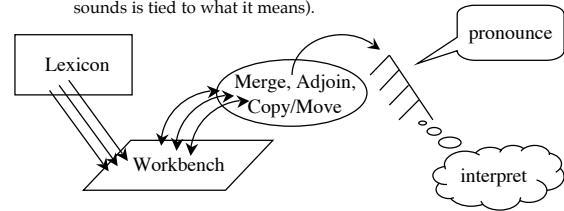
- Let's think for a moment about what a *wh*-question means:
- *Who did Pat meet?*
 $[_{CP} [_{DP} \text{who}]_i I_j + C [_{IP} \text{Pat meet } t_i]]$
- Something like (a 'logical form'):
 Tell me an x such that *Pat met x* is true.

Pronouncing & interpreting

- There are two things we need to do with the lexical items we assemble on the workbench:
 - Pronounce the sentence
 - Interpret the sentence
- We've mainly been concentrating on the pronunciation part (getting the words into the order we hear them), but the structure is also assumed to be the basis for interpreting the sentence as well.

Our model of grammar

- Here again is the little picture of our model of grammar. The structure we end up with is used both to express the logical relations between participants and to pronounce the structure.
 - (And of course it has to be that way, since how a sentence sounds is tied to what it means).



A word about interpretation

- *Who did Pat meet?*
 $[_{CP} [_{DP} \text{who}]_i I_j + C [_{IP} \text{Pat meet } t_i]]$
 Tell me a (person) x such that *Pat met x* .
- If we need to get to a logical structure like *Tell me a (person) x such that Pat met x is true*, then it may well be that *this is what wh-movement is for*. The (original case-checked) trace serves as the x variable, the moved *wh*-phrase sets the domain.
- Suppose that moving a *wh*-phrase (leaving a case-checked trace) is necessary for interpretation as a *wh*-question.

Wh-movement and interpretation

- Who bought what?
- Tell me a (person) x and tell me a (thing) y such that x bought y .
- Who gave what to whom?
- Tell me a (person) x and tell me a (thing) y and tell me a (person) z such that x gave y to z .
- How do we interpret those other *wh*-words?

The *wh*-typology

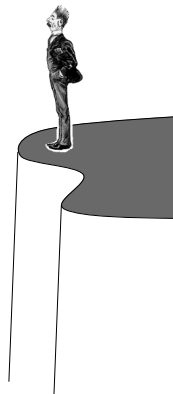
- English: One *wh*-phrase moves to the front.
 - What did Bill give to whom?
- Japanese: No *wh*-words move to the front.
 - Taroo-ga dare-ni nani-o ageta no?
 - T-nom who-to what-acc gave Q
 - 'What did Taroo give to whom?'
- Bulgarian: All *wh*-words move to the front.
 - Kakvo na kogo Ivan dade?
 - what to whom Ivan gave
 - 'What did Ivan give to whom?'

The *wh*-typology

- Yet in all of these languages, the *meaning* of *What did Bill give to whom?* is the same...
- Tell me a (thing) *x* and tell me a (person) *y* such that Bill gave *x* to *y*.
- So, if the 'tell me an *x*...such that...*x*...' meaning arises from *wh*-movement (and, in fact, we can see the *wh*-movement in Bulgarian), it stands to reason that even in English and Japanese there is *wh*-movement for each *wh*-word—we just can't always hear it.

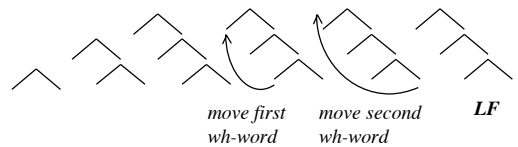
¿Qué?

- Wh*-movement... that you can't hear...
- The next topic (quantifiers) will give us pretty good evidence that there is such a thing as "movement you can't hear." Adopting it *here* allows for a uniform view of meaning and structure across languages, even in the face of the (superficial) differences in *wh*-movement behavior. So, let's provisionally accept it and see where it leads.



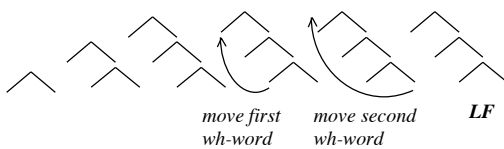
Derivations

- The structures are built in *steps*, Merging things together, Adjoining things to other things, "Moving" (copying and Merging) things from within things. Some things happen before other things.



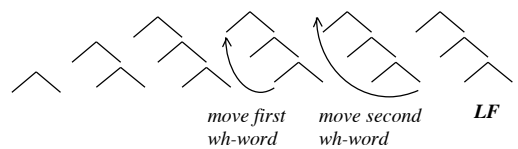
Derivations

- The last step, prior to interpretation, goes by the name LF (stands for "Logical Form"). At the LF structure, all of the movements have been accomplished and its ready to be interpreted.



Spellout

- On this view, languages can differ on which step of the derivation they focus on for interpretation. The point in the derivation that a language focuses on is the point of **Spellout**.



Derivations

- This allows us a fairly uniform view of languages.
- Across languages, the underlying structure is basically the same (theta requirements, functional projections).
- Across languages, the LF is basically the same (meanings, scope, etc.).
- This means that across languages, the *movements* that happen between DS and LF are basically the same.
- What differs is the *timing of Spellout*—whether the movements happen before or after Spellout.

Selection and scope

- Something of an aside: There are many verbs that can take CP complements.
- Some can take only declaratives (*regret, depend on*)
 - *I regret who left.
 - I regret that Pat left.
- Some can take only questions... (*wonder, ask*)
 - I wonder who left.
 - *I wonder that Pat left.
- Many can take either... (*guess, know, hear, say*)
 - I know who left.
 - I know that Pat left.

Selection

- We can think of this in terms of *complement features* of the V (the verb “selects” for certain kinds of complements).
 - *Regret* has a [-Q] complement feature.
 - *Wonder* has a [+Q] complement feature
 - *Know* has neither.

Scope

- When we move a *wh*-word into SpecCP, we say that it “takes scope” at that clause. What this means is that its domain of influence (its c-command domain) is limited to that CP.
- I know what Pat said she bought.
- I know [_{CP} what_i C [_{IP} Pat said [_{CP} t'_i C [_{IP} she bought t_j]]]]

Scope

- A *wh*-word can only take scope at a [+WH] clause, and at least one *wh*-word must take scope at each [+WH] clause.
- *I regret [_{CP} who_i C [_{IP} t_i left]]
- [_{CP} who_i t_i said [_{CP} what_j Pat bought t_j]]
- [_{CP} who_i t_i said [_{CP} Pat bought what]]
 - LF: [_{CP} who_i what_j t_i said [_{CP} t'_j Pat bought t_j]]
- *What_j do you wonder [_{CP} t'_j Pat bought t_j]

Pair-list readings

- When you have two *wh*-words that take the same scope, you generally have an interpretation of a “list of pairs”:
 - I know [_{CP} who_i t_i bought what]
 - LF: I know [_{CP} who_i what_j [_{IP} t_i bought t_j]]
- Who_i t_i knows [_{CP} what_j Pat bought t_j]

Superiority

- Who did Bill persuade to buy what?
 - (Bill persuaded Mary to buy a book, he persuaded Larry to buy a coffee table, he persuaded Sue to buy a futon, ...)
- Pick the x , pick the y , such that Bill persuaded x to buy y .
- So both wh -words (*who* and *what*) take scope at the matrix clause SpecCP.

Superiority

- Who did Bill persuade to buy what?
- *What did Bill persuade who to buy?
- It seems that we can't just choose just any wh -word to move to SpecCP—one works, one doesn't. What's the difference between the two?

Superiority

- Superiority: The shortest wh -movements have to happen first. (Wh -movement isn't possible if there was a shorter one).
- Who _{i} did Bill persuade t_i to buy what?
- *What _{i} did Bill persuade who to buy t_i ?

Superiority

- There is often also a strict ordering for languages where all wh -words move to the front. We take this to also be due to Superiority:
 - cine ce a vazut Romanian
who whom has seen
'Who saw whom?'
 - *ce cine a vazut
whom who has seen
'Whom did who see?'
- The higher wh -word has to move first (by Superiority) and shows up first.

Where have all the wh -words gone?

- This brings up an interesting question which we haven't addressed yet—if all of the wh -words are moving (in all languages, some overtly like in Bulgarian and Romanian), where are they going?
- English moves its one wh -word to SpecCP.
- There is only one SpecCP.
- Are the other wh -words not moving to SpecCP?

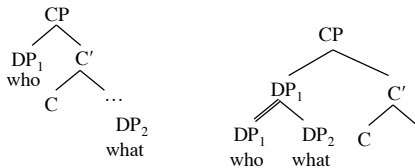
Where have all the wh -words gone?

- Following an influential proposal by Rudin (1988), many people assume that the other wh -phrases move up and *adjoin to the wh -phrase already in the specifier*.



Where have all the *wh*-words gone?

- This way, there is still *one* specifier of SpecCP, but the *wh*-words are still all in the specifier of SpecCP, attached to one another. (Note: *right-adjoined*, cf. Bulgarian)
 - (Things are actually more complicated than this, but this is a good approximation of how one class of languages works—cf. Syntax III!)



Subjacency revisited

- Who knows where we bought what?
 - (Bill does—he knows all about things bought and places those things were bought from).
 - (Bill knows where we bought the coffee table, Mary knows where we bought the futon, ...)
- The second reading presents a problem. Both *who* and *what* are paired up together in the main clause's SpecCP. What's the problem?

Subjacency revisited

- The same as the problem with
- ??What_i does Bill know where we bought *t*_i?
- Moving *what* here to the matrix SpecCP violates Subjacency, so the sentence sounds somewhat off. Yet:
- Who knows where we bought what?
- ...sounds fine, even on the "list" reading.

Subjacency revisited

- What's different? Why is the reading with *what* associated with (moved to) the matrix SpecCP allowed in one case and not the other?
- ??What_i does Bill know where we bought *t*_i?
- Who knows where we bought what?

Subjacency revisited

- These sentences would suggest that covert *wh*-movement is not sensitive to *wh*-islands. A very widely adopted assumption about Subjacency is made to explain this:
- Subjacency only holds for overt movement.
- Because *what* in *Who knows where we bought what?* moves covertly, it is no longer subject to Subjacency and can just move directly into the matrix SpecCP.

Wh-in-situ languages

- Ni xiang-zhidao [shei mai-le sheme]?
you wonder who bought what
'What do you wonder who bought?'
- Mary-wa [John-ni nani-o ageta hito]-ni atta no?
M-top J-to what-acc gave man-to met Q
'What did Mary meet [the man who gave *t* to John]?'
 - These are sentences which are possible in Chinese, Japanese, but not in English. They have *wh*-words inside islands.


WCO

- There is an interesting property of the kind of operator-variable formation that we can see in *wh*-movement.
- Who likes his roommate?
- Pick the x such that x likes x 's roommate.
- Who_i [_{TP} t_i likes his_i roommate]
- Notice that it is possible to have a pronoun bound by a *wh*-word.

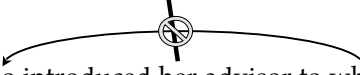

WCO

- But now consider this:
- Who does his roommate like?
- Can this mean the same thing as *Whose roommate likes him?*
- $*\text{Who}_i$ does his_i roommate like t_i ?
- How is this different from
- $\text{Who}_i t_i$ likes his_i roommate?

WCO

- 
- $*\text{Who}_i$ does his_i roommate like t_i ?
 - $\text{Who}_i t_i$ likes his_i roommate?
 - The difference lies in the fact that the *wh*-phrase had to *cross over* the coindexed pronoun on its way to SpecCP. This appears to be impossible, and we can state this as follows:
 - Weak Crossover (WCO): A coindexed pronoun cannot intervene between an operator and its variable.

WCO

- We can also see this effect with *wh*-in-situ:
- 
- Who introduced her advisor to whom?
 - Who introduced whom to her advisor?
- 
- Which girl told his parents to visit which boy?
 - Which girl told whose parents to visit him?

To recap

- Derivations go from the underlying (initially Merged) representation in steps up to the LF representation (where the structure is interpreted).
- Spellout focuses on a particular step in the derivation for pronunciation, differs between languages.
- All *wh*-words have moved to their scope position by LF.
- *Wh*-movement that occurs beyond the point of Spellout seems to be immune to islands.

