Lecture 26: Wh-Movement – 3.

Andrei Antonenko

LIN 311: Syntax

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Outline

Relative Clauses

Relative clauses

Relative clauses: cases of CP inside of an NP.

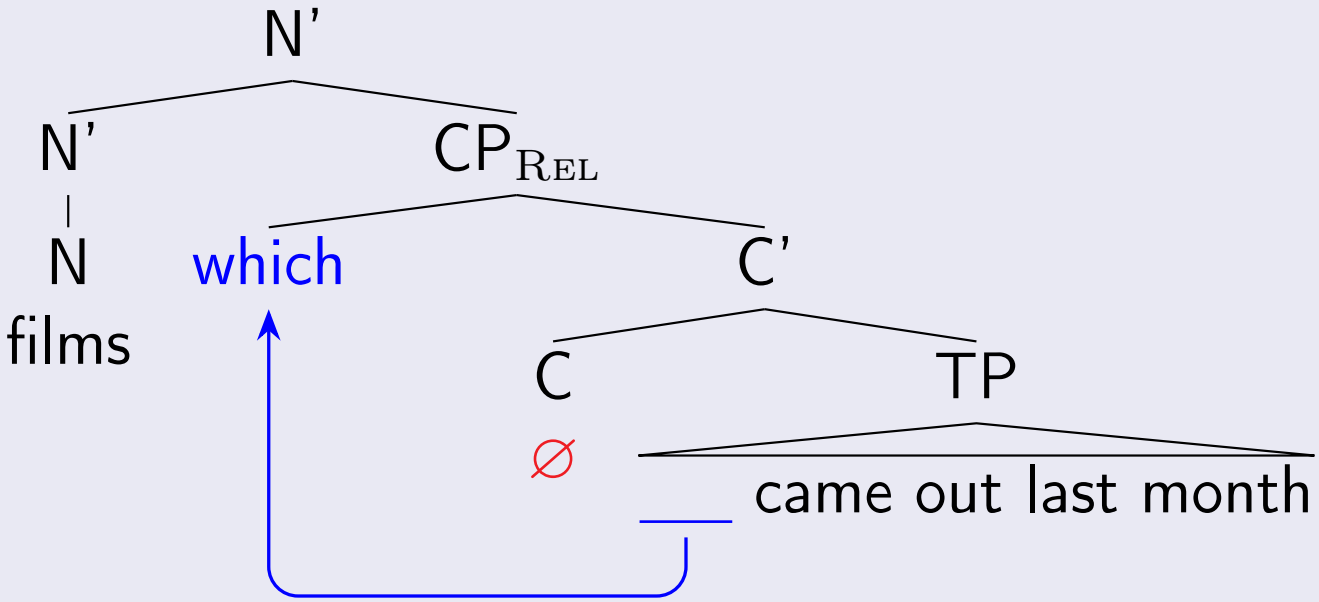
- The entire CP clause is modifying the noun.
- Spec,CP position is filled by the relative pronoun: *which*, *who*, or another *wh*-phrase, such as *where*, *why* etc.
- The complementizer in such relative clauses is ∅ – empty.

(1)
a. films [$_{\text{CP}_{\text{REL}}}$ which ∅ came out last month]
b. the man [$_{\text{CP}_{\text{REL}}}$ whom ∅ John hates]
c. the place [$_{\text{CP}_{\text{REL}}}$ where ∅ John works]
d. the person [$_{\text{CP}_{\text{REL}}}$ who ∅ knows John]

Relative pronouns and *wh*-movement

The relative pronoun undergoes *wh*-movement, just like in case of *wh*-movement.

(2)
a. films [$_{\text{CP}_{\text{REL}}}$ which ∅ [$_{\text{TP}}$ ___ came out last month]]
b. the man [$_{\text{CP}_{\text{REL}}}$ whom ∅ [$_{\text{TP}}$ John hates ___]]
c. the place [$_{\text{CP}_{\text{REL}}}$ where ∅ [$_{\text{TP}}$ John works ___]]
d. the person [$_{\text{CP}_{\text{REL}}}$ who ∅ [$_{\text{TP}}$ ___ knows John]]



Relative clauses and islands

Since relative clause formation involves *wh*-movement, it also respects islands and constraints.

Coordinate Structure Constraint:

(3) a. Henry plays the lute and sings madrigals.

b. *The lute [$_{\text{CP}_{\text{REL}}}$ which Henry plays ___ and sings madrigals] is warped.

c. *The madrigals [$_{\text{CP}_{\text{REL}}}$ which Henry plays the lute and sings ___] sound lousy.

(4) a. The nurse polished her trombone and the plumber computed my tax.

b. *The plumber [$_{\text{CP}_{\text{REL}}}$ who the nurse polished her trombone and ___ computed my tax] was a hefty fellow.

Relative clauses and islands

The Complex NP Constraint:

(5) a. Phineas knows [$_{DP}$ a girl who is jealous of the plumber].

b. *The plumber [$_{CP_{REL}}$ who Phineas knows [$_{DP}$ a girl who is jealous of ___]] is an idiot.

(6) a. I believed [$_{DP}$ the claim that Otto was wearing this hat].

b. *The hat [$_{CP_{REL}}$ which I believed [$_{DP}$ the claim that Otto was wearing ___]] is red.

Relative clauses and islands

The Sentential Subject Constraint:

(7) a. [$_{CP}$ That the principal would fire some teacher] was expected by the reporters.

b. *The teacher [$_{CP_{REL}}$ who [$_{CP}$ that the principal would fire ___] was expected by the reporters] is a crusty old battleax.

Relative clauses and islands

The *Wh*-Island:

(8) a. John asked [$_{CP}$ who Mary had spoken to ___ about the book].

b. *The book [$_{CP_{REL}}$ which John asked [$_{CP}$ who Mary had spoken to ___ about ___]] is very boring.

Relative clauses with complementizer

Some relative clauses have a complementizer instead of a *wh*-element:

(9) a. the book [$_{\text{CP}_{\text{REL}}}$ that [$_{\text{TP}}$ John bought ___]].
b. the book [$_{\text{CP}_{\text{REL}}}$ that [$_{\text{TP}}$ ___ is on the table]].

Wh-phrase and *that* have different properties:

(10) a. the Senator [$_{\text{CP}_{\text{REL}}}$ for whom [$_{\text{TP}}$ I'm working ___]].
b. *the Senator [$_{\text{CP}_{\text{REL}}}$ for that [$_{\text{TP}}$ I'm working ___]].

- *that* is what we know it to be: a complementizer, and is located in C, and not in Spec,CP.

Operator movement

Is there a movement in complementizer relative clauses?

- We assume that there is an empty element, called operator, Op_{REL} which starts in the base position and moves to Spec,CP, exactly like a *wh*-phrase.

(11) a. the book [$_{\text{CP}_{\text{REL}}}$ OP_{REL} that [$_{\text{TP}}$ John bought ___]].
b. the book [$_{\text{CP}_{\text{REL}}}$ OP_{REL} that [$_{\text{TP}}$ ___ is on the table]].

What is OP_{REL}?

This operator OP_{REL} is just an unpronounced (phonologically null) version of regular *wh*-words *who* and *which*.

Operator movement

Support for this analysis comes from the fact that relative clauses with complementizer *that* (without *wh*-phrases) are still islands:

- *Wh*-movement is not allowed out of any relative clauses.
- In *wh*-relative clauses, *wh*-phrase blocks the movement.
- In complementizer relative clauses, OP_{REL} blocks the movement.

(12) a. They caught [$_{\text{DP}}$ the man [$_{\text{CP}_{\text{REL}}}$ who [$_{\text{TP}}$ ___ stole money]]].

b. *What did they catch [$_{\text{DP}}$ the man [$_{\text{CP}_{\text{REL}}}$ who [$_{\text{TP}}$ ___ stole ___]]]?

(13) a. They caught [$_{\text{DP}}$ the man [$_{\text{CP}_{\text{REL}}}$ OP_{REL} that [$_{\text{TP}}$ ___ stole money]]].

b. *What did they catch [$_{\text{DP}}$ the man [$_{\text{CP}_{\text{REL}}}$ OP_{REL} that [$_{\text{TP}}$ ___ stole ___]]?

Operator movement

Operator movement is also possible when the complementizer is missing (or phonologically null):

(14) a. the person $[_{\text{CP}_{\text{REL}}}$ who ∅ $[_{\text{TP}}$ I invited ___]]
b. the person $[_{\text{CP}_{\text{REL}}}$ OP_{REL} that $[_{\text{TP}}$ I invited ___]]
c. the person $[_{\text{CP}_{\text{REL}}}$ OP_{REL} ∅ $[_{\text{TP}}$ I invited ___]]

Summary:

- If C is *that*, then we need operator movement.
- If C is ∅, then we can have either a *wh*-phrase or an operator.
- **English** does not like having both Spec,CP and C positions occupied with pronounced material at the same time — language-specific rule (Doubly-filled Comp Filter[a])!

[a] Another unfortunate (but historically motivated) name in syntax...

Operator movement

Notice that this operator cannot substitute complex *wh*-phrases, consisting of more than just a *wh*-word:

(15)
a. the chair [$_{\text{CP}_{\text{REL}}}$ in which ∅ [$_{\text{TP}}$ I was sitting ___]]
b. *the chair [$_{\text{CP}_{\text{REL}}}$ OP_{REL} that [$_{\text{TP}}$ I was sitting ___]]
c. *the chair [$_{\text{CP}_{\text{REL}}}$ OP_{REL} ∅ [$_{\text{TP}}$ I was sitting ___]]

Multiple *Wh*-Questions

Multiple *wh*-questions

- Sometimes the sentence has two or more *wh*-phrases.
- In this case, in English only one of them moves to Spec,CP, and the other stays *in-situ*.

(16) a. Who ___ bought what?
b. *What did who buy ___?

(17) a. Who did you persuade ___ to read what?
b. *What did you persuade whom to read ___?

(18) a. Who did John talk to ___ about what?
b. *What did John talk to whom about ___?

- Which *wh*-phrase moves to Spec,CP?

Superiority

Which *wh*-phrase moves to Spec,CP?

- The *wh*-phrase closest to C moves to Spec,CP.
- This is called **superiority**.
- This can be explained by the principle called **Attract Closest**:

Attract Closest: When a head attracts a phrase with a particular property to its specifier, it picks the closest phrase with that property.

- In *wh*-movement, $C_{[+wh]}$ attracts a *wh*-phrase to Spec,CP.
- It can only attract the closest one!

Multiple *wh*-fronting

In some languages (Slavic), all *wh*-phrases must move in multiple *wh*-questions:

(19) a. Ko šta gdje kupuje? Serbo-Croatian
who$_{\text{NOM}}$ what$_{\text{ACC}}$ where buys
'Who bought what where?'

b. *Ko kupuje šta gdje?

c. *Ko šta kupuje gdje?

d. *Ko gdje kupuje šta?

Two types of multiple *wh*-fronting

There are two types of languages with multiple *wh*-fronting:

1. Obey superiority: Bulgarian, Romanian — (20)
2. Do not obey superiority: Serbo-Croatian, Polish — (21)

(20) **Bulgarian**

a. Koj kogo e vidjal?
who$_{\text{NOM}}$ whom$_{\text{ACC}}$ AUX seen

b. *Kogo koj e vidjal?
whom$_{\text{ACC}}$ who$_{\text{NOM}}$ AUX seen

c. Koj kak udaril Ivan?
who$_{\text{NOM}}$ how hit Ivan

d. *Kak koj udaril Ivan?
how who$_{\text{NOM}}$ hit Ivan

(21) **Serbo-Croatian**

a. Ko je kogo video?
who$_{\text{NOM}}$ AUX whom$_{\text{ACC}}$ seen

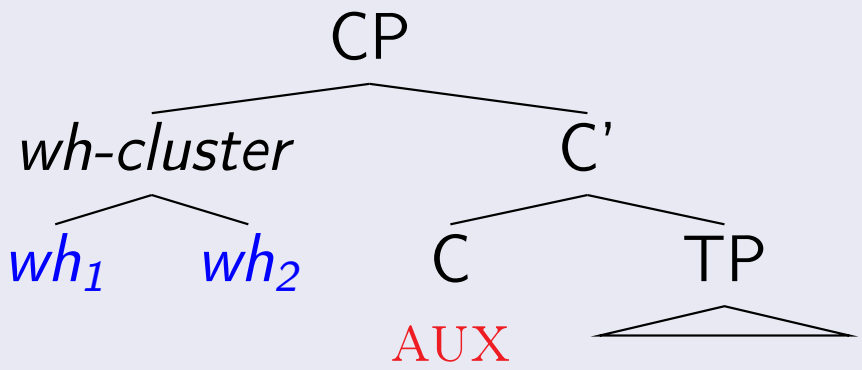
b. Kogo je ko video?
whom$_{\text{ACC}}$ AUX who$_{\text{NOM}}$ seen

c. Ko kako udara Ivana?
who$_{\text{NOM}}$ how hit Ivan

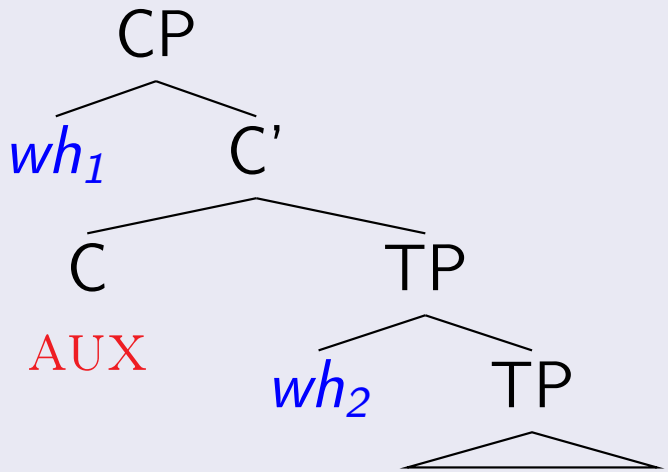
d. Kako ko udara Ivana?
how who$_{\text{NOM}}$ hit Ivan

Two types of multiple *wh*-fronting

- **Type 1:** Languages that obey superiority (Bulgarian, Romanian):



- **Type 2:** Languages that do not obey superiority (Serbo-Croatian, Polish):



- These structures also explain the position of auxiliaries, if we assume T-to-C movement (i.e. AUX is in C):
  - **Type 1:** Auxiliary follows all *wh*-phrases.
  - **Type 2:** Auxiliary follows the first *wh*-phrase.

Multiple *wh*-fronting and features

Wh-movement is triggered by a *wh*-feature on C:

- $C_{[+wh]}$ (with a *wh*-feature) looks for a closest *wh*-phrase (with a matching *wh*-feature).
- They Agree.
- Some type of an EPP feature on C pulls the *wh*-phrase to Spec,CP.

In multiple *wh*-fronting languages:

- $C_{[+wh]}$ keeps probing until it finds all *wh*-phrases, and pulls them all up.

Now, is it possible that EPP feature is missing on $C_{[+wh]}$?

Wh-in-situ

Wh-in-situ

If the EPP feature is missing on $C_{[+wh]}$, we would expect *wh*-phrases not to move to Spec,CP at all.

- ***wh*-in-situ languages**: Chinese, Japanese, etc.
- $C_{[+wh]}$ still must probe a *wh*-phrase, but the lack of EPP results in no (visible) movement.

Chinese

(22) a. Ni shuo Zhangsan qule nali (-ne)
you say Zhangsan went where Q-PART
'Where did you say Zhangsan went?'

b. *Nali ni shuo Zhangsan qule ___ (-ne)
where you say Zhangsan went Q-PART
'Where did you say Zhangsan went?'

Wh-in-situ: Is there movement?

- In Japanese, *wh*-phrase stays in-situ in both main questions, (23), and with embedded clauses, (24):

(23) a. John-ga Mary-ni nani-o ageta no?
J.-NOM M.-DAT what-ACC gave Q
'What did John give to Mary?'
b. John-ga naze kubi-ni natta no?
J.-NOM why was fired Q
'Why was John fired?'

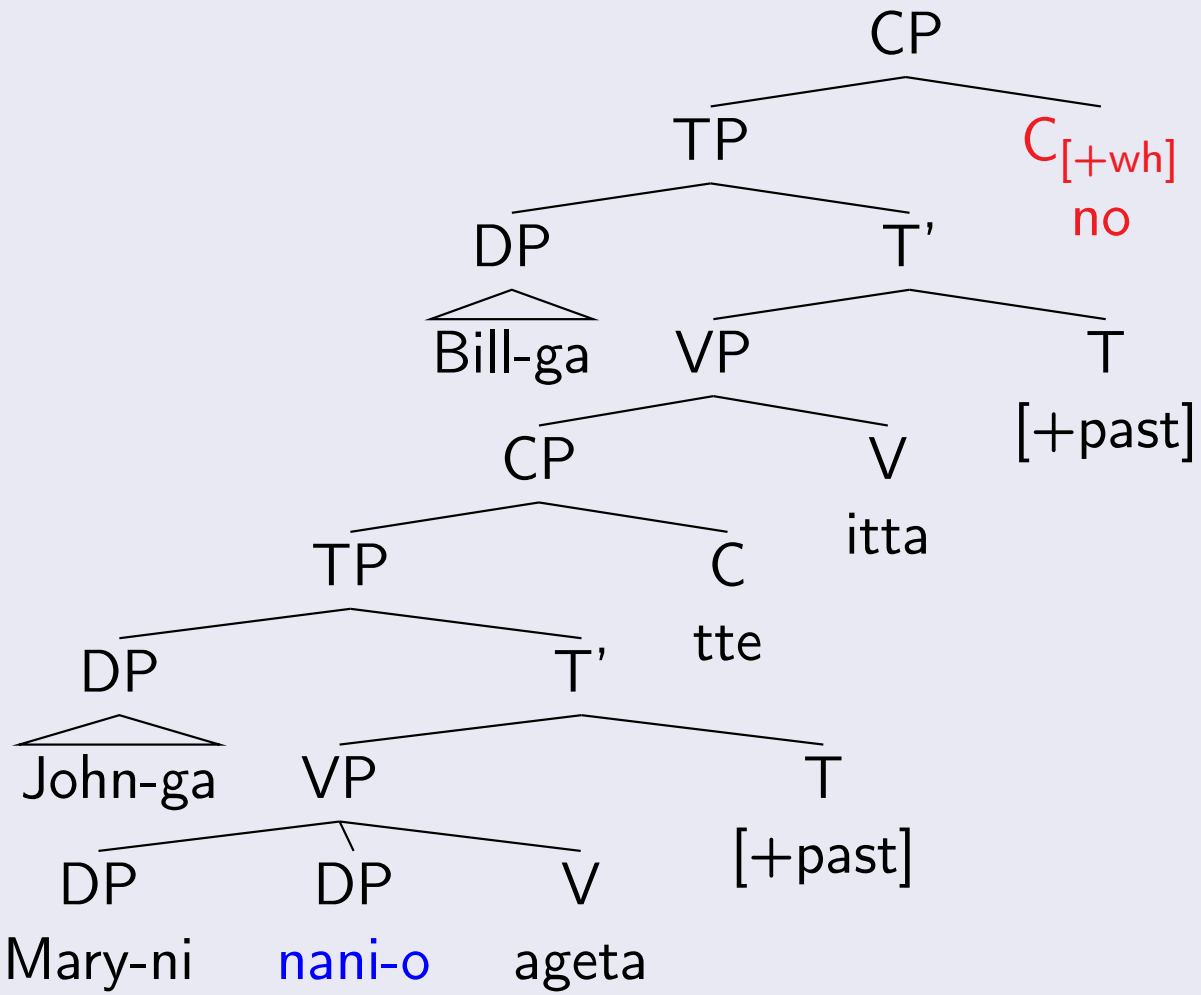
(24) a. Bill-ga [$_{CP}$ John-ga Mary-ni nani-o ageta tte] itta no?
B.-NOM J.-NOM M.-DAT what-ACC gave C said Q
'What did Bill say [that John gave ___ to Mary]?'
b. Bill-ga [$_{CP}$ John-ga naze kubi-ni natta tte] itta no?
B.-NOM J.-NOM why was fired C said Q
'Why did Bill say [that John was fired ___]?'

Question Particles

Many languages with *wh*-in-situ mark questions with question particles, such as *no* in (23) and (24) in Japanese.

- These particles are $C_{[+wh]}$ – *wh*-complementizers, that are empty in English, but pronounced in, say, Japanese.
- They also probe *wh*-phrases, but in *wh*-in-situ languages, lack an EPP feature, so *wh*-phrases do not raise.
- The tree on the next slide is simplified: the subjects *Bill-ga* and *John-ga* are supposed to raise to Spec,TP from Spec,VP position.

(25) Bill-ga [$_{CP}$ John-ga Mary-ni nani-o ageta tte] itta no?
B.-NOM J.-NOM M.-DAT what-ACC gave C said Q
'What did Bill say [that John gave ___ to Mary]?'



Wh-in-situ: Is there movement?

If *wh*-phrase stays in-situ, how can there be movement and how can we even test that?

- Island effects!

Complex NP Constraint:

(26) %Mary-ga [$_{DP}$ [$_{CP}$ John-ni nani-o ageta] hito-ni] atta-no?
M.-NOM J.-DAT what-ACC gave man-DAT met-Q
'What did Mary meet [the man who gave ___ to John]?'

CED – Adjunct Island:

(27) %Mary-ga [John-ga nani-o yomu mae-ni] dekaketa-no?
M.-NOM J.-NOM what-ACC read before left-Q
'What did Mary leave [before John read ___]?'

Wh-in-situ: Is there movement?

- Actually, island effects are not very strong in Japanese, and some speakers are ok with these sentences (% on the previous slide!).
- But they are strong with *naze 'why'* (when it modifies the embedded verb):

Complex NP Constraint:

(28) *Mary-ga [$_{DP}$ [$_{CP}$ John-ni naze hon-o ageta] hito-ni] atta-no?
M.-NOM J.-DAT why book-ACC gave man-DAT met-Q
'Why did Mary meet [the man who gave a book ___ to John]?'

CED – Adjunct Island:

(29) *Mary-ga [John-ga naze hon-o yomu mae-ni] dekaketa-no?
M.-NOM J.-NOM why book-ACC read before left-Q
'Why did Mary leave [before John read a book ___]?'

Wh-in-situ: Is there movement?

Japanese islands

How can one account for the islands in Japanese?

- There are proposals (by Akira Watanabe) that Japanese indeed has a movement of a null-element, or an operator, similar to what we saw in relative clauses.

Chinese

Unlike Japanese, Chinese does not respect islands.

- Chinese is also a wh-in-situ language.
- What is the difference between Japanese and Chinese?
- We will leave it unresolved for now...
  - *But if you are really interested, Chinese possibly has movement which occurs after the sentence is pronounces: Logical Form movement, or LF-movement.*

Wh-movement: summary

Wh-movement: summary

- *wh*-questions are formed by using a $C_{[+wh]}$ with a *wh*-feature that probes for *wh*-phrases (with a matching *wh*-feature).
- If $C_{[+wh]}$ has an EPP feature, one or more *wh*-phrases will move to Spec,CP; otherwise, they stay in-situ.
- If only one *wh*-phrase moves to Spec,CP, it must be the closest to C: Attract Closest principle.
- Long-distance *wh*-movement does not proceed in one big jump: *wh*-phrases move through each intermediate Spec,CP position.
- *Wh*-movement respects islands: certain structures out of which *wh*-phrases cannot move.