

- **Movement, part 1:
The Inversion rule**

Background reading:

- CL Ch 5, §3, “Move”
- CL Ch 5, Appendix section on “Using Move”

1. Review and context for this discussion

- Syntax is **creative**: humans can produce and understand sentences never seen before
- Linguists want to know: How does this work?
- Goal is to build a syntax **model** that can:
 - Produce only sentences that native speakers find **grammatical**
 - Make the right predictions about which words in a sentence form **constituents** (units, subgroups)
- Building an effective model helps us understand the properties of the actual human mental grammar

1. Review and context for this discussion

- What do we do when we find sentences for which our model is making the **wrong prediction**?
 - Add or change some aspect of our model in order to make the predictions better
- So far, our syntax model (for English) contains:
 - the **X' schema** (how to combine words into phrases)

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 - the **X' schema** (how to combine words into phrases)
 - the **modifier structure** (for 'extra' phrases)
 - > How do we rule out sentences like
**Grover slept the baby* or **Susan devoured* or
**Oscar put the book*?

1. Review and context for this discussion

- What do we do when we find sentences for which our model is making the **wrong prediction**?
 - Add or change some aspect of our model in order to make the predictions better
- So far, our syntax model (for English) contains:
 - the **X' schema** (how to combine words into phrases)
 - the **modifier structure** (for 'extra' phrases)
 - **complement options** (chosen by specific heads), including the **double-complement** structure when needed (for cases like the verb *put*)

2. Extending our model of syntax again

- Is it surprising that this sentence is **grammatical**?

(1) What might the puppy devour?

2. Extending our model of syntax again

- Is it surprising that this sentence is **grammatical**?
(1) What might the puppy devour?
 - Why is the auxiliary *might* on the **left** side of the subject NP?
 - Why is there **no** NP complement in the VP as required by *devour*?
 - What is the **position** of *what*?
- An approach that addresses all these factors: the syntactic **transformation** known as **Move**

3. *Yes-no* questions

- Consider these examples:
 - (2a) *Students will study the lessons.*
 - (2b) *The students will study the lessons.*
 - (2c) *The dedicated students in this class will study the lessons.*
- What does it look like when those sentences are made into **yes-no questions**?
 - Yes-no questions are questions to which the answer would be “yes” or “no”

3. *Yes-no* questions

- What does it look like when those sentences are made into *yes-no* questions?
 - (2a) **Will** [*students*]__ *study the lessons?*
 - (2b) **Will** [*the students*]__ *study the lessons?*
 - (2c) **Will** [*the dedicated students in this class*]__ *study the lessons?*
- The auxiliary *will* moves to a position to the left of the subject
 - What position is it moving to?

3. *Yes-no* questions

(2a) **Will** [*students*] _ *study the lessons*?

- Proposal: **Every TP is inside a CP** (not just embedded TPs)
 - This is independently supported by various facts about languages other than English
- The C of a **matrix clause** (main clause) contains information about whether or not the sentence is a question
 - In a question, the matrix C contains a **+Q** symbol
 - In a non-question, the matrix C does not contain this symbol

3. *Yes-no* questions

(2a) **Will** [*students*] _ *study the lessons*?

- Proposal: The mental grammar for syntax includes **movement rules**
 - Movement rules take words or phrases in an X' tree and move them to some other position
- **How movement rules work** in our model
 - A moved element leaves a **trace** (*t*) in its original position
 - A moved element retains its original category label (under the one it moves into)
 - Any part of the structure of the sentence not affected by the movement rule does not change

3. *Yes-no* questions

(2a) **Will** [*students*] _ *study the lessons*?

- **Inversion** — a movement rule that exists in English (and in some, but not all, other languages):

When the matrix C is +Q, move T to the C position and attach it next to +Q (see *CL*, p 185)

→ We can use the Inversion rule to explain why the auxiliary verb (like *will* above) in a yes-no question appears to the left of the subject

3. *Yes-no* questions

(2a) **Will** [*students*] __ *study the lessons*?

- Step 1: Construct a tree for the **deep structure** of the sentence, using the X' schema as usual

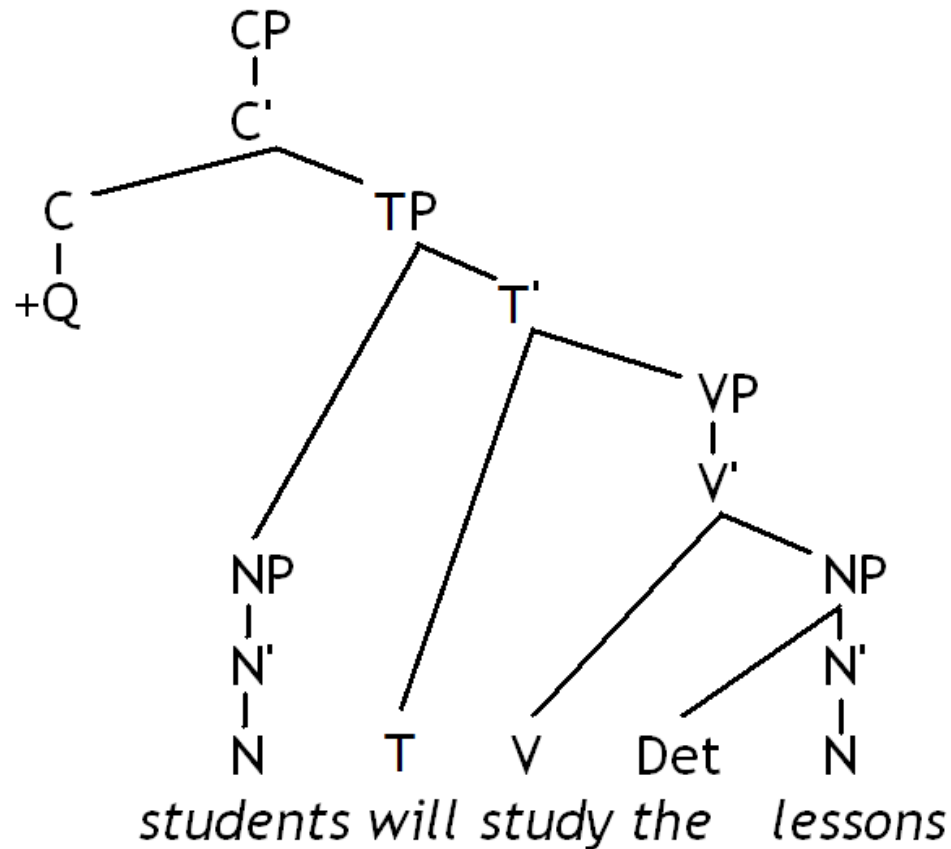
+Q students will study the lessons

- **Deep structure** refers to the structure built according to the X' schema, **before** any other syntactic rules (such as movement rules) have applied
- What a speaker actually says, after all the syntactic rules have applied, is the **surface structure**
- **+Q is present** (in the C position) here, because this sentence has the meaning of a question — this **triggers Inversion**

3. *Yes-no* questions

(2a) **Will** [*students*] _ *study the lessons*?

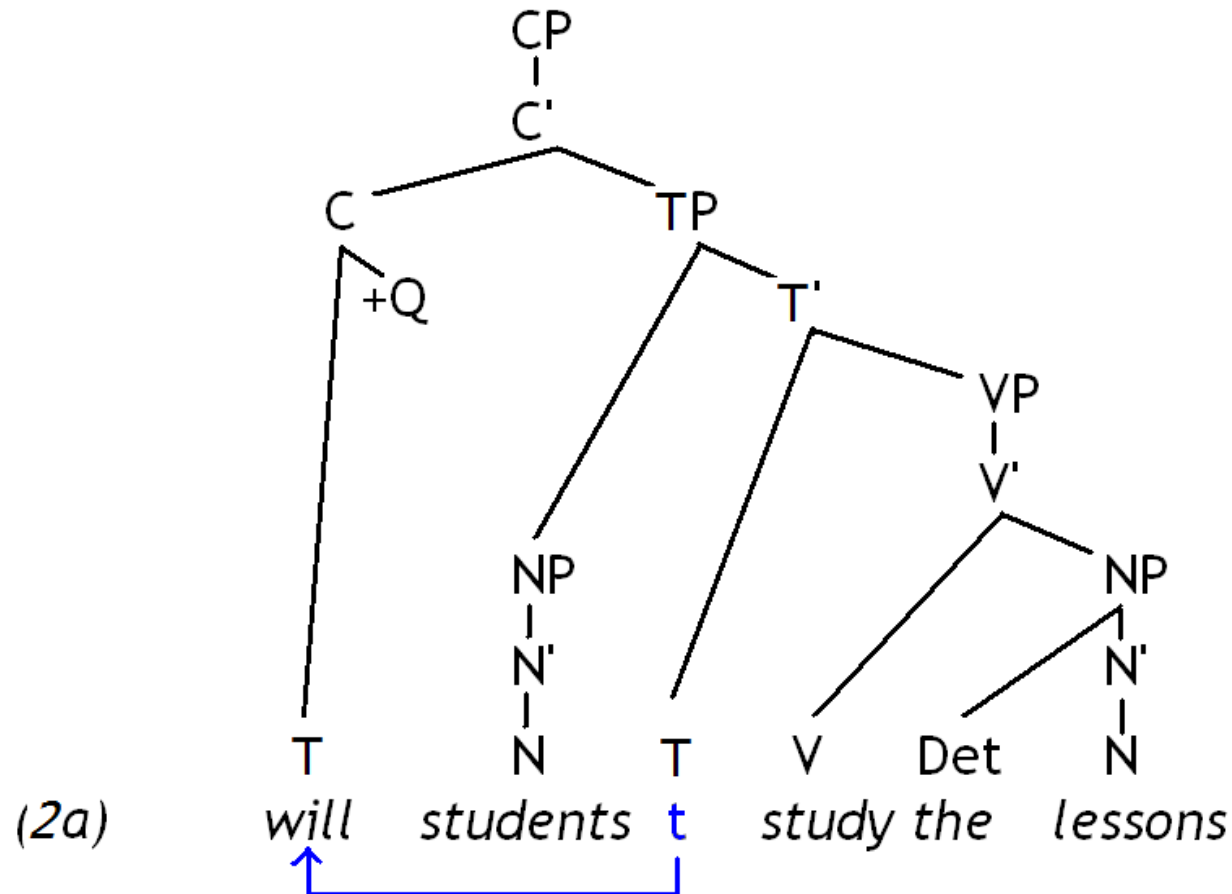
- Step 1: Construct the **deep structure** (+Q is in C)



3. *Yes-no* questions

(2a) **Will** [*students*] _ *study the lessons*?

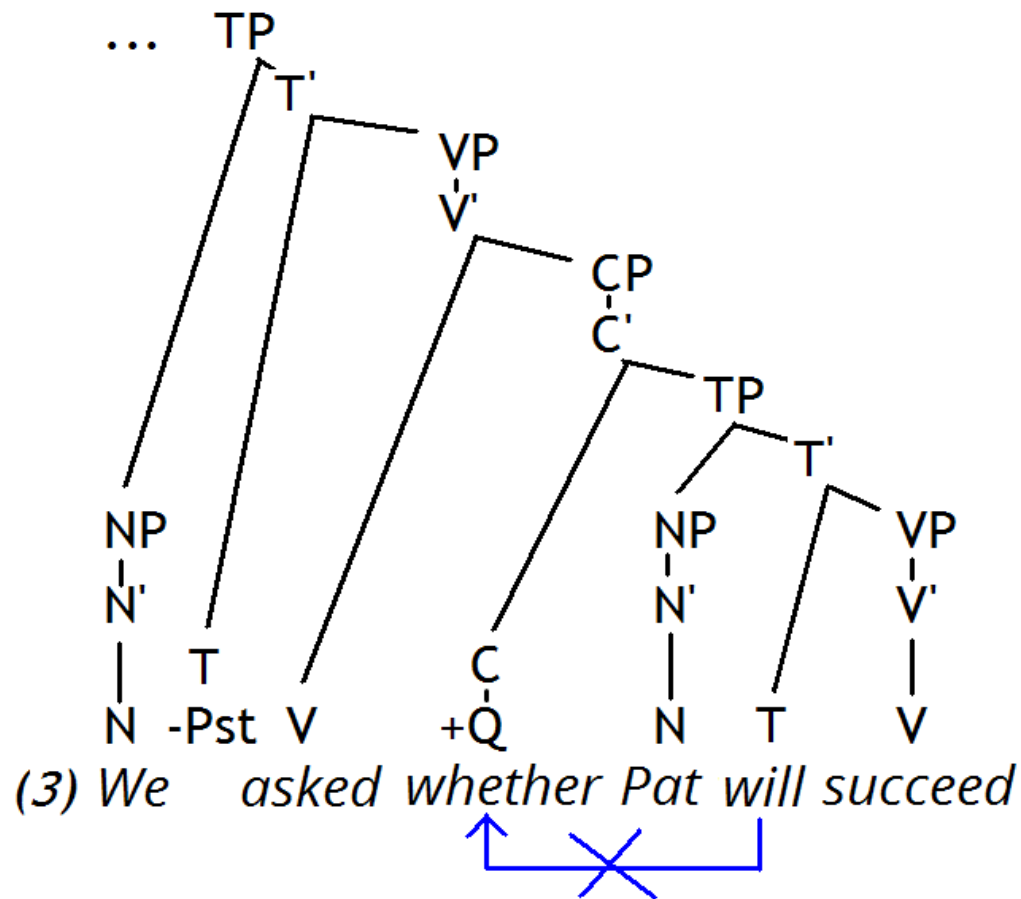
- Step 2: **Inversion** applies: *will* moves to C, leaving *t*



3. *Yes-no* questions

- Can we find evidence to support the proposal that the fronted auxiliary has moved to C?
- Consider: Does this proposal explain why it is only the **matrix auxiliary** that moves?
 - Compare an **embedded question**:
(3) *We asked whether Pat will succeed.*
 - What is the structure of the embedded CP?
 - Can we explain why the auxiliary doesn't move into the embedded C position?

3. Yes-no questions



- If the C position is where the fronted auxiliary moves to, we can explain why the auxiliary doesn't move in an embedded question: **C is already occupied**

3. *Yes-no* questions

- Does this imply that every matrix (main-clause) TP is inside a CP, even if it's not a question?
 - Actually, yes!
 - But we sometimes take a shortcut by omitting the topmost CP from our tree diagram, in a sentence where this CP contains no overt C head and no overt specifier

4. Progress report

- Is it surprising that this sentence is **grammatical**?

(1) *What might the puppy devour?*

- Why is the auxiliary *might* on the **left** side of the subject NP? | **Inversion has applied**
- Why is there **no** NP complement in the VP as required by *devour*?
- What is the **position** of *what*?

→ The last two questions are the topic of the next slide set