

# Movement

## 1 Relative clauses

(1) Every book which is good is expensive.

Example (1) can be easily given a truth-conditionally-equivalent paraphrase without a relative clause, as in (2):

(2) Every [good book] is expensive.

The relative clause *which is good* must be part of the *restrictor* (first argument) of *every*.

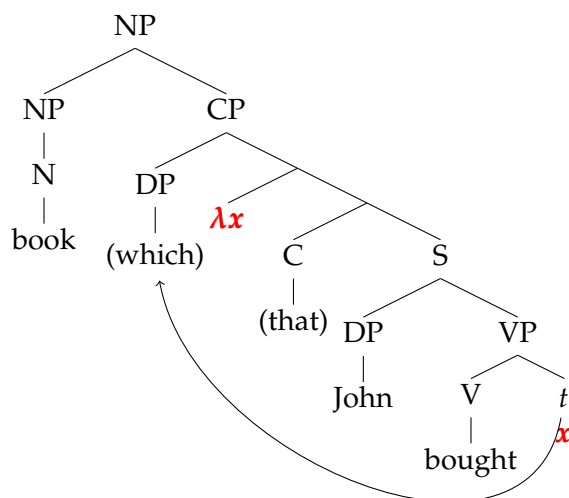
But in general, most relative clauses cannot be rewritten with adjectives in this way:

(3) Every [book that John bought] is expensive.

Notice that the relative clause *has a gap*.

“...the peculiar genius of the relative clause is that it creates from a sentence ‘...x...’ a complex adjective summing up what that sentence says about *x*.” (Quine, 1960: §23)

Relative clauses always involve *movement* of the relative pronoun (for example *which*) from the *gap* position to Spec,CP (Chomsky, 1977, and many others).



**Exercise:** Compute this NP *book that John bought*. Assume  $\llbracket \text{that} \rrbracket = \text{Id}$  and  $\llbracket \text{which} \rrbracket = \text{Id}$ .

Syntax notes: We assume that, syntactically, the complementizer *that* (C) triggers movement of the relative pronoun to Spec,CP. They are both optionally pronounced, and they cannot both be pronounced at the same time:

- (4)
- a. the book John bought \_\_\_\_
  - b. the book which John bought \_\_\_\_
  - c. the book that John bought \_\_\_\_
  - d. \* the book which that John bought \_\_\_\_

Following Chomsky and Lasnik (1977), we assume a “Doubly Filled COMP Filter” that states that both positions cannot be pronounced at the same time, explaining (4d). Subject relatives, like (1), require *that* to be pronounced if the relative pronoun is not pronounced.

## 2 Logical Form

We have opened up the possibility that *what we pronounce* is different than *what we interpret*.

- (5) Structure is built in Syntax. Syntax has two outputs:
- a. *Phonological Form (PF)*: what is pronounced
  - b. *Logical Form (LF)*: what is interpreted

Additional operators may take place at these “interfaces”; for example, covert movement (like QR) may take place at LF.

A hypothesis developed by May (1977), Huang (1982), and others is that operations at LF are *syntactic* operations, (generally) subject to the same constraints as overt syntax. Here is one argument for this. Consider example (6):

- (6) **A sentence with a scope ambiguity:** (ex from Fox, 2003)
- A (different) student likes every professor.
- a.  $\exists x [\text{Student}(x) \wedge \forall y [\text{Professor}(y) \rightarrow \text{Like}(x, y)]]$
  - b.  $\forall y [\text{Professor}(y) \rightarrow \exists x [\text{Student}(x) \wedge \text{Like}(x, y)]]$

Suppose the second reading in (6) is the result of covert movement (QR) of *every professor* to a position higher than *a student* at LF:

- (7) LF: [every professor]  $\lambda x$  a student likes  $x$
- ↑\_\_\_\_\_↓

Now note that *overt* movement is subject to the Coordinate Structure Constraint (8):

(8) **The Coordinate Structure Constraint (Ross, 1967):**

- a. Which professor does John like \_\_\_?
- b. \* Which professor does John [[like \_\_\_] and [hate the dean]]?

(9) **Embedding within a conjunction blocks wide scope of every professor:**

A (#different) student [[likes every professor] and [hates the dean]]. (ex from Fox, 2003)

- a.  $\checkmark \exists x [\text{Student}(x) \wedge \forall y [\text{Professor}(y) \rightarrow [\text{Like}(x, y)]] \wedge \text{Hate}(x, d)]$  ( $d = \text{the Dean}$ )
- b. \*  $\forall y [\text{Professor}(y) \rightarrow \exists x [\text{Student}(x) \wedge [\text{Like}(x, y) \wedge \text{Hate}(x, d)]]]$

## References

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