

## Assignment 9 (2 pages; due Wednesday, November 18 in class)

### The syntax of overt vs. covert movement

If quantificational DPs undergo Quantifier Raising (QR) during the derivation from Spell-Out to Logical Form (LF), then we expect such covert movement to obey the same constraints that limit overt movement of DPs. For instance, it is well-known that overt *wh*-movement out of a relative clause is prohibited—in other words, relative clauses constitute ‘islands’ for *wh*-movement:

- (1) \*<sub>[DP Which class]<sub>2</sub> did no student [<sub>CP who<sub>1</sub> t<sub>1</sub> failed t<sub>2</sub>]</sub> graduate?</sub>
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- The diagram shows a long horizontal line starting from the DP *Which class*<sub>2</sub> and ending at *t*<sub>2</sub>. An arrow points from *t*<sub>2</sub> up to the DP. A shorter horizontal line starts from *t*<sub>1</sub> and ends at *who*<sub>1</sub>. An arrow points from *t*<sub>1</sub> up to *who*<sub>1</sub>.

(Compare (1) to **No student [<sub>CP who<sub>1</sub> t<sub>1</sub> failed Intro to Linguistics]</sub> graduated.**)

Is covert movement of quantificational DPs out of a relative clause similarly prohibited? To answer this question, we should consider examples like (2).

- (2) No student [<sub>CP who<sub>1</sub> t<sub>1</sub> failed at least two classes]</sub> graduated.
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- The diagram shows a horizontal line starting from *t*<sub>1</sub> and ending at *who*<sub>1</sub>. An arrow points from *t*<sub>1</sub> up to *who*<sub>1</sub>.

- A. An unconstrained rule of QR would allow us to derive two distinct LF structures for (2), which differ in the structural position of the quantificational DP **at least two classes**. Provide these two LFs.

In particular, both of the LF structures that you identify should result from the application of QR to the DP **at least two classes**. So, you should ignore the possibility that QR simply does not apply to this DP (which would result in a type mismatch, or else require a “flexible types” denotation for the DP). You should also ignore the possibility that QR applies to the entire subject DP **No student who<sub>1</sub> t<sub>1</sub> failed at least two classes**; although we have seen cases where quantificational DP subjects undergo QR, recognizing this possibility here would only introduce needless complexity.

What this means is that you need to identify two different ways of applying QR to the DP at least two classes. Our current description of QR states that this rule re-attaches a quantificational DP to some structurally higher S node. (For the purposes of this problem, you should continue to assume that QR only targets S, and not VP.) If you think a bit about the structure of (2), you should see that there are in fact two different ways of applying QR to **at least two classes** that meet this description.

- B.** Give informal but unambiguous paraphrases of the truth-conditional meanings that our compositional theory assigns to the LF structures that you identified in Part A. (You need not provide step-by-step calculations for these meanings, though you are of course welcome to.) Then, describe a scenario in which the the two LF structures would denote different truth values.

Here's a tip for thinking about the truth-conditional meanings that our compositional theory will assign to an LF structure. Remember that QR triggers the insertion of a trace and a co-indexed relative pronoun, e.g.,

**John not recognized one person**  $\Rightarrow$  [one person] [wh<sub>1</sub> John not recognized t<sub>1</sub>]  
**One nurse visited every patient**  $\Rightarrow$  [every patient] [wh<sub>1</sub> one nurse visited t<sub>1</sub>]

An easy way to think about the denotations of these resulting constituents is to replace **wh<sub>1</sub>** with  $\lambda x \in D_e$  and **t<sub>1</sub>** with  $x$ . So,

[[ **wh<sub>1</sub> John not recognized t<sub>1</sub>** ]]  
=  $\lambda x \in D_e$  . John didn't recognize  $x$

[[ **wh<sub>1</sub> one nurse visited t<sub>1</sub>** ]]  
=  $\lambda x \in D_e$  . one nurse visited  $x$   
=  $\lambda x \in D_e$  . there is one  $y \in D_e$  s.t.  $y$  is a nurse and  $y$  visited  $x$

For the purposes of this assignment, you are welcome to use this "quick and dirty" way of thinking about the truth-conditional meanings that our theory assigns to your LF structures from Part A.

- C.** Do the distinct truth conditions that you described in Part B correspond to interpretations that are actually available for (2)? What does this correspondence (or lack thereof) show us about the syntactic rule of QR?