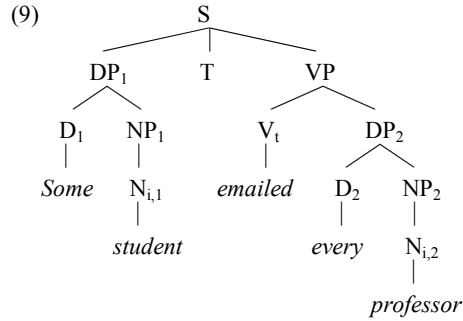


Ling 320: Assignment 9. Solution.

The following sentence is ambiguous:



The two readings can be paraphrased as follows:

- a. There is at least one student who emailed every professor.
- b. Every professor was emailed by at least one student, not necessarily the same student for each professor.

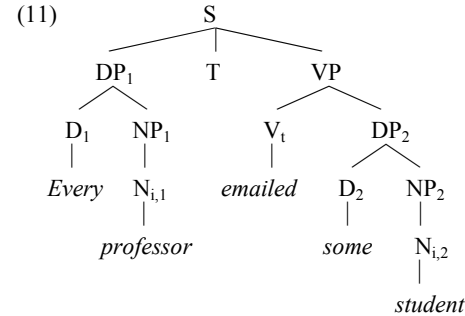
(i) The truth conditions for (9) can be derived as follows:

- For any s , $[[S]]^s = 1$ iff
- $[[VP]]^s \in [[DP_1]]^s$ (a)
 - $[[VP]]^s \in \{A \mid \langle [NP_1]^s, A \rangle \in [[D_1]]^s\}$ (g)
 - $\langle [NP_1]^s, [VP]^s \rangle \in [some]^s$ (b)
 - $[[NP_1]]^s \cap [VP]^s \neq \emptyset$ (c), (b)
 - $[[NP_1]]^s \cap \{x \mid \{y \mid \langle x, y \rangle \in [emailed]^s\} \in [[DP_2]]^s\} \neq \emptyset$ (f), (b)
 - $[[NP_1]]^s \cap \{x \mid \{y \mid x \text{ emailed } y \text{ in } s\} \in [[DP_2]]^s\} \neq \emptyset$ (c), (b)
 - $[[NP_1]]^s \cap \{x \mid \{y \mid x \text{ emailed } y \text{ in } s\} \in \{A \mid \langle [NP_2]^s, A \rangle \in [[D_2]]^s\}\} \neq \emptyset$ (g)
 - $[[NP_1]]^s \cap \{x \mid \langle [NP_2]^s, \{y \mid x \text{ emailed } y \text{ in } s\} \rangle \in [[D_2]]^s\} \neq \emptyset$ (b)
 - $[[NP_1]]^s \cap \{x \mid \langle [NP_2]^s, \{y \mid x \text{ emailed } y \text{ in } s\} \rangle \in [every]^s\} \neq \emptyset$ (b)
 - $[[NP_1]]^s \cap \{x \mid [NP_2]^s \subseteq \{y \mid x \text{ emailed } y \text{ in } s\}\} \neq \emptyset$ (c), (b)
 - $[student]^s \cap \{x \mid [prof]^s \subseteq \{y \mid x \text{ emailed } y \text{ in } s\}\} \neq \emptyset$ (b) x 4
 - $\{x \mid x \text{ is a student in } s\} \cap \{x \mid \{y \mid y \text{ is a prof in } s\} \subseteq \{y \mid x \text{ emailed } y \text{ in } s\}\} \neq \emptyset$ (c) x 2

Optional Extra Credit.

(ii) The truth conditions derived by the revised rule (f) only characterize reading (a).

(iii) (11) is like (9), only *every professor* and *some student* have switched positions:



(11) also seems to be ambiguous, having the following two readings:

- a. Every professor emailed at least one student, not necessarily the same student for each professor.
- b. There is at least one student such that every professor emailed him/her.

The truth-conditions for (11) can be derived as follows:

For any s , $[[S]]^s = 1$ iff

- $[[VP]]^s \in [[DP_1]]^s$ (a)
 $[[VP]]^s \in \{A \mid \langle [[NP_1]]^s, A \rangle \in [[D_1]]^s\}$ (g)
 $\langle [[NP_1]]^s, [[VP]]^s \rangle \in [[every]]^s$ $\in, (b)$
 $[[NP_1]]^s \subseteq [[VP]]^s$ (c), \in
 $[[NP_1]]^s \subseteq \{x \mid \{y \mid \langle x, y \rangle \in [[emailed]]^s\} \in [[DP_2]]^s\}$ (f), (b)
 $[[NP_1]]^s \subseteq \{x \mid \{y \mid x \text{ emailed } y \text{ in } s\} \in [[DP_2]]^s\}$ (c), \in
 $[[NP_1]]^s \subseteq \{x \mid \{y \mid x \text{ emailed } y \text{ in } s\} \in \{A \mid \langle [[NP_2]]^s, A \rangle \in [[D_2]]^s\}\}$ (g)
 $[[NP_1]]^s \subseteq \{x \mid \langle [[NP_2]]^s, \{y \mid x \text{ emailed } y \text{ in } s\} \rangle \in [[D_2]]^s\}$ \in
 $[[NP_1]]^s \subseteq \{x \mid \langle [[NP_2]]^s, \{y \mid x \text{ emailed } y \text{ in } s\} \rangle \in [[some]]^s\}$ (b)
 $[[NP_1]]^s \subseteq \{x \mid [[NP_2]]^s \cap \{y \mid x \text{ emailed } y \text{ in } s\} \neq \emptyset\}$ (c), \in
 $[[prof]]^s \subseteq \{x \mid [[stud]]^s \cap \{y \mid x \text{ emailed } y \text{ in } s\} \neq \emptyset\}$ (b) x 4
 $\{x \mid x \text{ is a prof in } s\} \subseteq \{x \mid \{y \mid y \text{ is a student in } s\} \cap \{y \mid x \text{ emailed } y \text{ in } s\} \neq \emptyset\}$
(c) x 2

(iv) These truth-conditions only characterize reading (a).

(v) Can you make a general claim for both (9) and (11) about the kind of reading the revised (f) derives, and the kind of reading it does not?

The subject DP always has scope over the object DP.