

Ling 320: Semantics. Exam 2. Partial Solution.

Part 3. Quantifiers in Object Position.

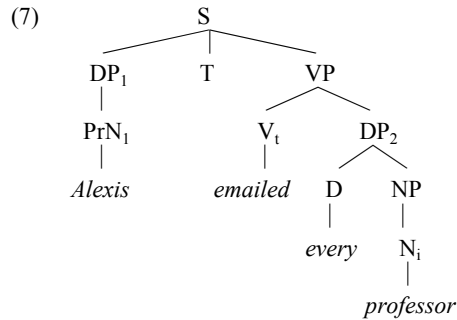
So far, our grammar only accounts for quantificational DPs in subject position:

(5) Every professor emailed Alexis.

As we've seen already, (5) is true just in case the set of professors (the NP) is a subset of the set of individuals that emailed Alexis (the VP):

(6) $\{x \mid x \text{ is a professor in } s\} \subseteq \{x \mid x \text{ emailed Alexis in } s\}$

Our grammar does not yet account for quantificational DPs in object position, e.g.:



In this case, we again find that the sentence is true just in case two sets are in the subset relation:

(8) $\{x \mid x \text{ is a professor in } s\} \subseteq \{x \mid \text{Alexis emailed } x \text{ in } s\}$

However, to derive these truth-conditions, we need a new rule (f) to calculate VP. In class, we considered the following revised rule:

(f) $\llbracket [_{VP} Y_t ZP] \rrbracket^s = \{x \mid \{y \mid \langle x, y \rangle \in \llbracket [Y_t] \rrbracket^s\} \in \llbracket [ZP] \rrbracket^s\}$

Derive the truth-conditions for (7) using this revised rule (f) to calculate VP.

Use rule (g) to calculate DP₂.

If you've done the derivation correctly, you'll end up with the truth-conditions in (8).

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

$\llbracket [VP] \rrbracket^s \in \llbracket [DP_1] \rrbracket^s$ (a)

$\llbracket [VP] \rrbracket^s \in \{A \mid \llbracket [PrN_1] \rrbracket^s \in A\}$ (h)

$\llbracket [PrN_1] \rrbracket^s \in \llbracket [VP] \rrbracket^s$ ∈

$\llbracket [Alexis] \rrbracket^s \in \llbracket [VP] \rrbracket^s$ (b)

Alexis $\in \llbracket [VP] \rrbracket^s$ (c)

Alexis $\in \{x \mid \{y \mid \langle x, y \rangle \in \llbracket [V_t] \rrbracket^s\} \in \llbracket [DP_2] \rrbracket^s\}$ (f)

$\{y \mid \langle \text{Alexis}, y \rangle \in \llbracket [V_t] \rrbracket^s\} \in \llbracket [DP_2] \rrbracket^s$ ∈

$\{y \mid \langle \text{Alexis}, y \rangle \in \llbracket [emailed] \rrbracket^s\} \in \llbracket [DP_2] \rrbracket^s$ (b)

$\{y \mid \langle \text{Alexis}, y \rangle \in \{\langle x, z \rangle \mid x \text{ emailed } z \text{ in } s\}\} \in \llbracket [DP_2] \rrbracket^s$ (c)

$\{y \mid \text{Alexis emailed } y \text{ in } s\} \in \llbracket [DP_2] \rrbracket^s$ ∈

$\{y \mid \text{Alexis emailed } y \text{ in } s\} \in \{A \mid \langle A, A \rangle \in \llbracket [D] \rrbracket^s\}$ (g)

$\langle \llbracket [NP] \rrbracket^s, \{y \mid \text{Alexis emailed } y \text{ in } s\} \rangle \in \llbracket [D] \rrbracket^s$ ∈

$\langle \llbracket [NP] \rrbracket^s, \{y \mid \text{Alexis emailed } y \text{ in } s\} \rangle \in \llbracket [every] \rrbracket^s$ (b)

$\langle \llbracket [NP] \rrbracket^s, \{y \mid \text{Alexis emailed } y \text{ in } s\} \rangle \in \{\langle A, B \rangle \mid A \subseteq B\}$ (c)

$\llbracket [NP] \rrbracket^s \subseteq \{y \mid \text{Alexis emailed } y \text{ in } s\}$ ∈

$\llbracket [N_i] \rrbracket^s \subseteq \{y \mid \text{Alexis emailed } y \text{ in } s\}$ (b)

$\llbracket [prof] \rrbracket^s \subseteq \{y \mid \text{Alexis emailed } y \text{ in } s\}$ (b)

$\{x \mid x \text{ is a prof in } s\} \subseteq \{y \mid \text{Alexis emailed } y \text{ in } s\}$ (c)

This is equivalent to (8).