

Scope Ambiguity in Syntax and Semantics

Ling324

Reading: *Meaning and Grammar*, pg. 142-157

Is Scope Ambiguity Semantically Real?

- (1) Everyone loves someone.
- a. Wide scope reading of universal quantifier:
 $\forall x[\text{person}(x) \rightarrow \exists y[\text{person}(y) \wedge \text{love}(x, y)]]$
 - b. Wide scope reading of existential quantifier:
 $\exists y[\text{person}(y) \wedge \forall x[\text{person}(x) \rightarrow \text{love}(x, y)]]$

Could one semantic representation handle both the readings?

- $\exists y \forall x$ reading entails $\forall x \exists y$ reading.

$\forall x \exists y$ describes a more general situation where everyone has someone who s/he loves, and $\exists y \forall x$ describes a more specific situation where everyone loves the same person.

- Then, couldn't we say that *Everyone loves someone* is associated with the semantic representation that describes the more general reading, and the more specific reading obtains under an appropriate context?

That is, couldn't we say that *Everyone loves someone* is not semantically ambiguous, and its only semantic representation is the following?

$$\forall x[\text{person}(x) \rightarrow \exists y[\text{person}(y) \wedge \text{love}(x, y)]]$$

- After all, this semantic representation reflects the syntax:

In syntax, *everyone* c-commands *someone*.

In semantics, *everyone* scopes over *someone*.

Arguments for Real Scope Ambiguity

- The semantic representation with the scope of quantifiers reflecting the order in which quantifiers occur in a sentence does not always represent the most general reading.
 - (2) a. There was a name tag near every plate.
 - b. A guard is standing in front of every gate.
 - c. A student guide took every visitor to two museums.
- Could we stipulate that when interpreting a sentence, no matter which order the quantifiers occur, always assign wide scope to *every* and narrow scope to *some*, *two*, etc.?

Arguments for Real Scope Ambiguity (cont.)

- But in a negative sentence, $\neg\forall x\exists y$ reading entails $\neg\exists y\forall x$ reading.

(3) Everyone does not love someone.

a. Wide scope reading of universal quantifier:

$$\neg\forall x[\text{person}(x) \rightarrow \exists y[\text{person}(y) \wedge \text{love}(x, y)]]$$

b. Wide scope reading of existential quantifier:

$$\neg\exists y[\text{person}(y) \wedge \forall x[\text{person}(x) \rightarrow \text{love}(x, y)]]$$

Thus, stipulating that *every* always scopes over other quantifiers won't work.

- Intonation can disambiguate scopal interpretation possibilities.

(4) a. Everyone loves SOMEone.

b. EVERYone loves someone.

Each intonational pattern may be a reflection of a certain scopal interpretation.

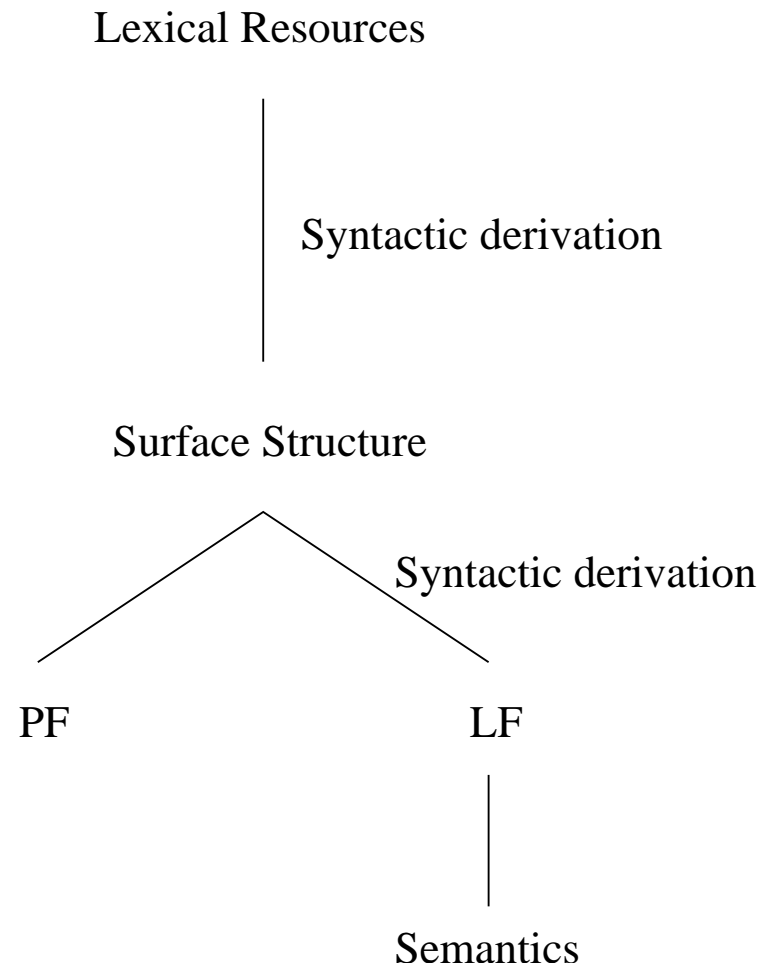
⇒ All these facts lead to the conclusion that scope ambiguity is real and that different scope interpretations need to map onto different semantic representations.

Representing Scope Ambiguity in Syntax

- In general, a sentence that is semantically ambiguous is also syntactically ambiguous.
 - (5) a. John saw a man with a pair of binoculars.
 - b. Competent women and men hold all the good jobs in the firm.
- What about sentences with scope ambiguity? Those sentences do not seem to be syntactically ambiguous.
 - (6) a. Everyone loves someone.
 - b. A professor talked to every student.

Representing Scope Ambiguity in Syntax (cont.)

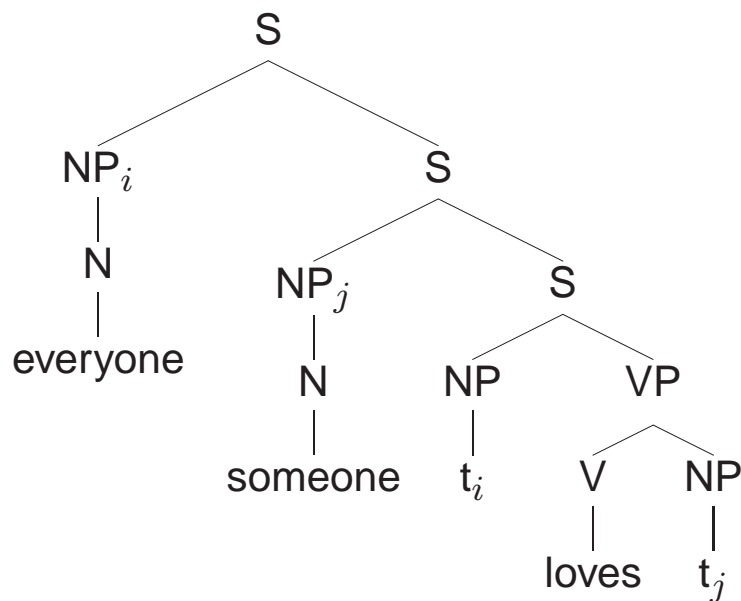
- Model of the grammar



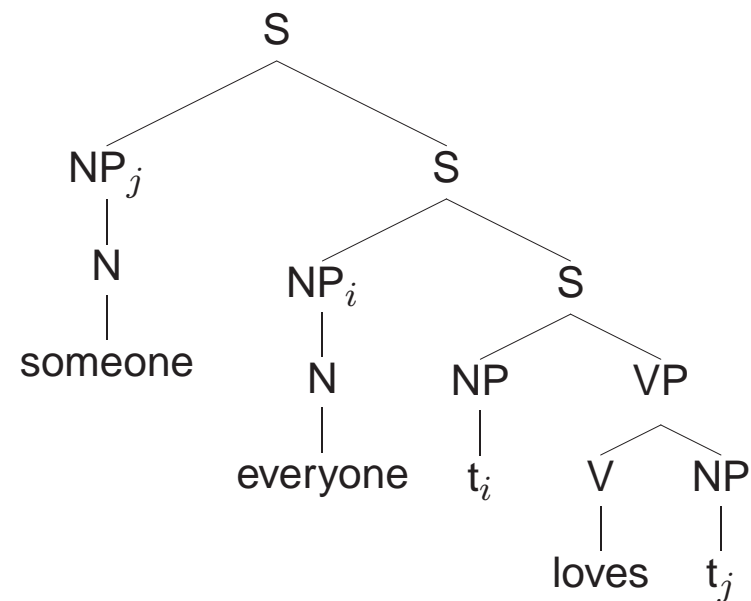
Representing Scope Ambiguity in Syntax (cont.)

- Syntactic movement takes place at LF, as well as at S-structure. S-structure movement is overt, and LF movement is covert.
- In sentences with quantifiers, the quantified expressions move at LF. This movement is called Quantifier Raising (QR).

QR allows for sentences with scope ambiguity to have ambiguous syntactic structure at LF.



$\forall x[\text{person}(x) \rightarrow \exists y[\text{person}(y) \wedge \text{love}(x, y)]]$



$\exists y[\text{person}(y) \wedge \forall x[\text{person}(x) \rightarrow \text{love}(x, y)]]$