Background

Ling 406/802; Spring 2005

Stuff to recall from Ling 324

Model-theoretic, Denotational, Truth-conditional Semantics

- Linguistic meaning is an association between a linguistic expression and an object in a MODEL/WORLD.

  We will say that the object in the model/world with which a linguistic expression is associated is its DENOTATION.

  We can also say that a linguistic expression DENOTES an object in the model/world.

- An important part of what is involved in knowing the meaning of a sentence is to know what situation it describes. That is, given a situation, if you know the meaning of a sentence, you know whether it describes the situation truthfully or not.

  In order to capture this semantic knowledge, the study of linguistic meaning (semantics) must account for TRUTH CONDITIONS of sentences, the conditions that must be met in order for the sentence to be true.

  The truth conditions of sentences must be arrived at on the basis of the denotations of their simpler parts: lexical items and phrases.

Principle of Compositionality: Fregean Program

- The meaning of a complex linguistic expression is determined by the meaning of its parts and the way those parts are combined.

  We understand the meaning of a sentence because we know what the words in it mean and we have an algorithm of some kind for combining them.

  With this algorithm, by combining individual word meanings, a phrase meaning is produced, and by combining phrase meanings, the meaning of a bigger phrase is produced, and so on, ultimately producing the sentence meaning.

- Interpretation is done on a syntactically analyzed linguistic object, not on a string of words.

  Semantics is fed directly by syntax and syntactic constituents (at some level) are units for purposes of semantic composition.

  (1) It is not the case that Bilbo finds the ring or Frodo destroys the ring.

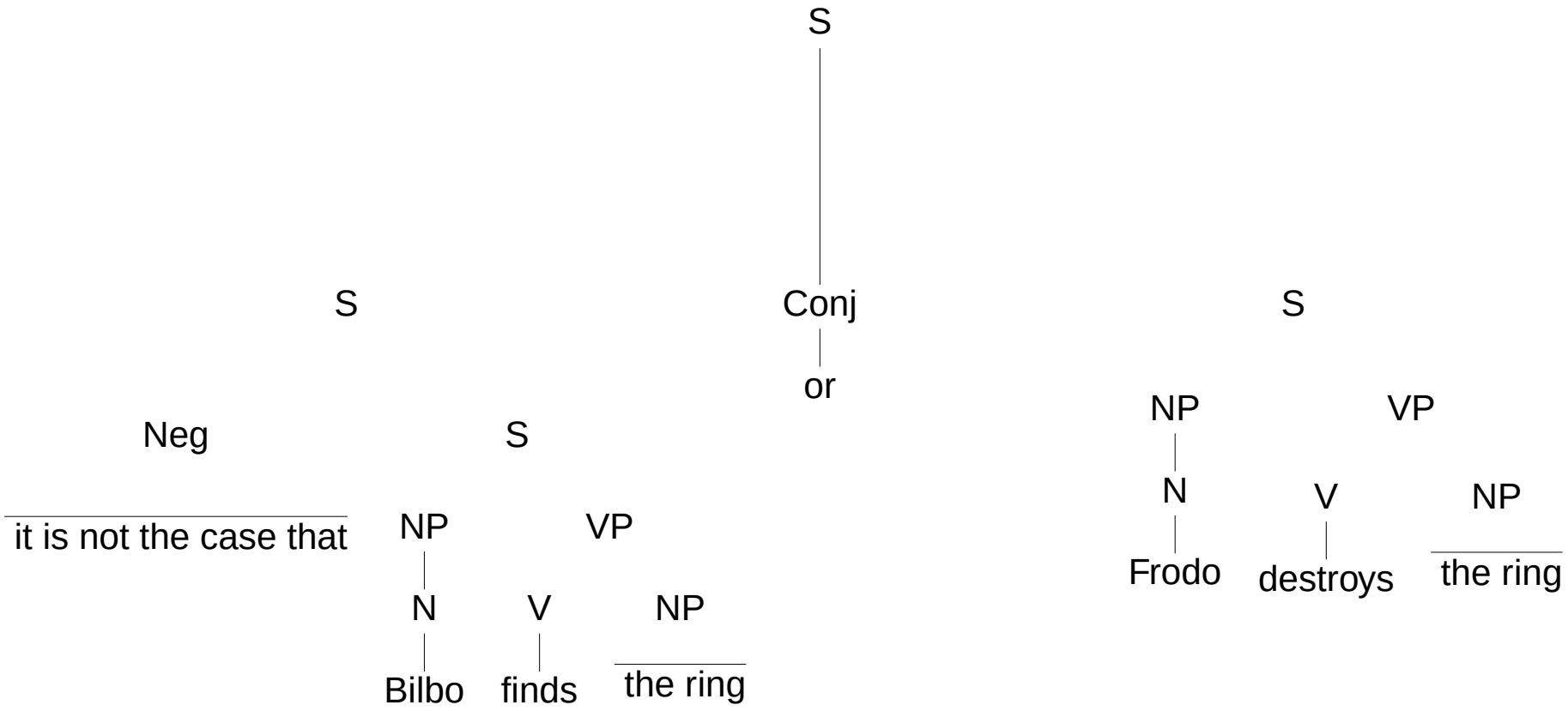
Extension

- The object that a linguistic expression denotes in a given circumstance is called the *referent*, *referential value*, or *extension* of the expression.

  Assume the circumstance in *Lord of the Rings*.

	Expression	Extension
Category	Referential NP	Individual
Example	Frodo	*Frodo*
	the ring-bearer	*Frodo*
Category	VP	Set of individuals
Example	belongs to the fellowship of the ring	{*Frodo, Sam, Aragorn, Legolas, ...*}
	finds the ring	{*Bilbo*}
Category	Transitive Verb	Set of pairs of individuals
Example	finds	{<*Gimli, the axe*>, <*Legolas, the bow*>, <*Bilbo, the ring*>, ...}
Category	S	True or False
Example	Legolas is an elf.	True

Exercise in Compositional Semantics



Meaning Relations

- Entailment

  ϕ entails ψ iff whenever ϕ is true, ψ is true.

  Entailments cannot be cancelled.

  (2) a. This is a yellow car. $\Rightarrow$ This is a car.
  b. # This is a yellow car, but it is not a car.

- Implicature

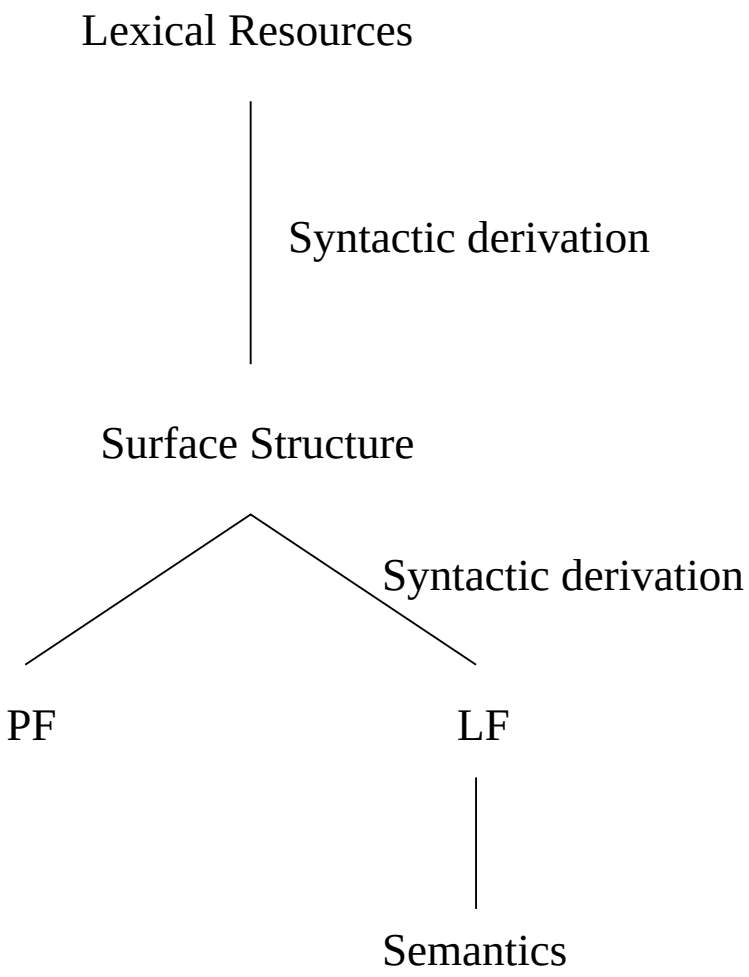
  An implicature of an utterance arises because of a particular features of the utterance context, and the expectations of language use that speakers have of one another.

  Implicatures can be cancelled.

  (3) a. Mary used to ski everyday. $\Rightarrow$ Mary doesn't ski anymore.
  b. Mary used to ski everyday. And she still does.

- Our semantic analysis must capture our intuitions about meaning relations.

Model of the Grammar



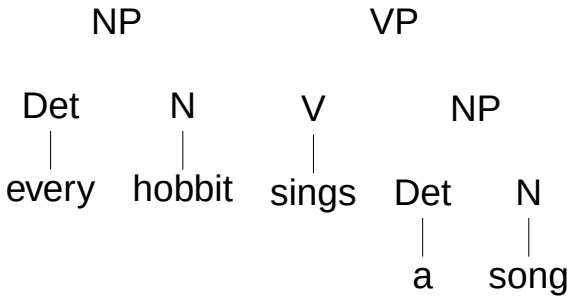
Quantifier Raising

(4) Every hobbit sings a song.

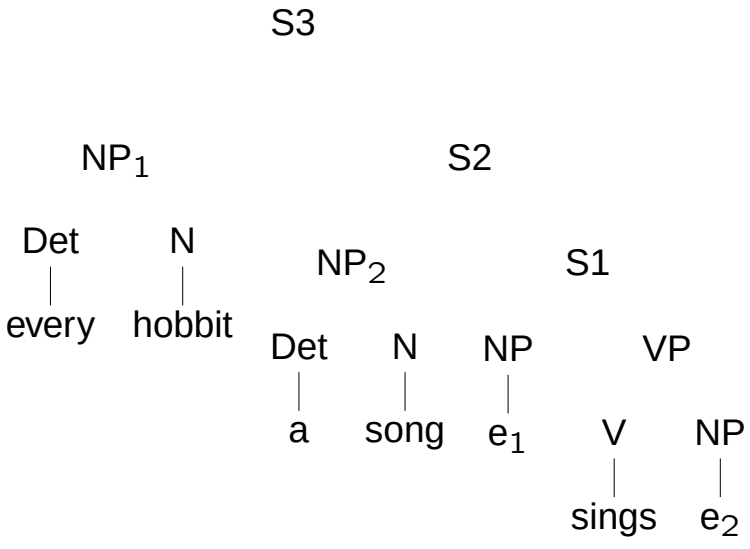
a. $\forall x$[hobbit(x) $\rightarrow$ $\exists y$[song(y) $\wedge$ sings(x, y)]]

b. $\exists y$[song(y) $\wedge$ $\forall x$[hobbit(x) $\rightarrow$ sings(x, y)]]

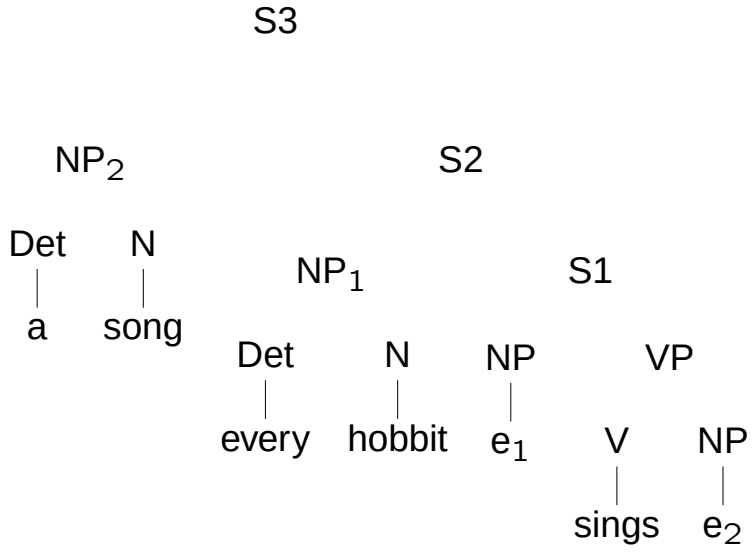
S-structure:



LF 1: $\forall > \exists$



LF 2: $\exists > \forall$



Free and Bound Variables/Pronouns

- An occurrence of a variable x is *bound* if it occurs in the scope of $\forall x$ or $\exists x$. A variable is *free* if it is not bound.

  Syntactically, an occurrence of x is bound by a lowest c-commanding quantifier Qx.

  (5) a. $\forall x$ [$\exists x$R(x) $\vee$P(x, y)]
  b. $\exists x$ [H(x)$\vee$ L(x,j)]
  c. [$\exists x$H(x)] $\vee$ L(x,j)

- Free pronouns

  (6) a. John likes **her**.
  b. **He** talked to **her**.
  c. **She** thinks that every student is hard-working.

- Bound pronouns

  (7) a. Every boy loves **his** mother.
  b. Every linguist thinks **he** is smart.
  c. Every man likes **himself**.