

Problem Set 7

Due October 16, 23:59. Submit PDF on Luminus > Files > Student Submission > PS7.

1. **Scope ambiguity exercise:** The following sentence has a scope ambiguity. Two different truth conditions are given below:

(1) Sarah did not read every book.

$$\text{a. } \neg[\forall x[\text{Book}(x) \rightarrow \text{Read}(\text{Sarah}, x)]] \quad (\neg > \forall)$$

$$\text{b. } \forall x[\text{Book}(x) \rightarrow \neg[\text{Read}(\text{Sarah}, x)]] \quad (\forall > \neg)$$

For each of these readings, draw the LF tree and compute the truth conditions, step by step. For every node, give types, denotations, and the rule used.

For reading (a): Do not try to change the scope of negation by moving it. Hint: Where does the object *every book* need to QR to in order to take scope below negation?

2. **Bound variables and quantifier scope:**

Consider example (2), which is multiply ambiguous.

(2) A friend of his upset every boy.

There is a scope ambiguity between the two quantifiers — *a friend of his* (\exists) and *every boy* (\forall). The pronoun *his* could be free or bound by *every boy*. Because the sentence is ambiguous in these two ways, we might expect $2 \times 2 = 4$ readings. But instead, only 3 are possible:

	$\exists > \forall$	$\forall > \exists$
<i>his</i> free	○	○
<i>his</i> bound	×	○

- (a) Give truth conditions for the three available readings that this sentence has.
(b) Explain why the fourth reading is unavailable (×).