

Assignment 9 (due Thursday, May 2 in class)

I. Ambiguities involving quantified arguments (2 pages)

We've seen that sentences containing more than one quantified argument can be semantically ambiguous:

- (1) Some student will feed every puppy in this room.

Interpretation #1: 'For every puppy in this room, there is a (possibly different) student who will feed that puppy.'

Interpretation #2: 'There is one (particular) student who will feed every puppy in this room.'

Representing this semantic ambiguity with restricted quantifiers turns out to be quite simple. The logical formulas that represent the two interpretations for (1) differ only in the relative order of the restricted quantifiers corresponding to *some student* and *every puppy in this room*:

- a. $[\forall x_1: \text{PUPPY}(x_1) \ \& \ \text{IN}(x_1, r)] [\exists x_2: \text{STUDENT}(x_2)] \text{FEED}(x_2, x_1)$
'For every puppy x_1 that is in this room, there is a student x_2 such that x_2 will feed x_1 .'
- b. $[\exists x_2: \text{STUDENT}(x_2)] [\forall x_1: \text{PUPPY}(x_1) \ \& \ \text{IN}(x_1, r)] \text{FEED}(x_2, x_1)$
'There is a student x_2 such that for every puppy x_1 that is in this room, x_2 will feed x_1 .'

A. The following sentences also contain more than one quantified argument, and are also semantically ambiguous. For each sentence, first provide unambiguous paraphrases for its two possible interpretations. Then, use restricted quantifiers to construct the logical formulas corresponding to the two interpretations that you identified.

- (2) Most linguists in this room speak two languages.
(You may translate *this room* with an individual constant, e.g., r .)
- (3) Three researchers described a new technique.
- (4) Nobody noticed more than one policeman.

I. Ambiguities involving quantified arguments (continued)

B. The sentence in (5) is semantically ambiguous in a now familiar way:

(5) Every professor talked to two of Paul's students.

Provide unambiguous paraphrases for the two possible interpretations of (5). Then, use restricted quantifiers to construct the logical formulas corresponding to these two interpretations.

(Hint: should *students* in (5) be translated with a 1- or 2- place predicate constant?)

Now consider (6), under the interpretation where *his* is understood to be linked to *every professor*. (That is, **ignore** any interpretations where the pronoun is taken to refer to some other salient male individual in the utterance context.)

(6) Every professor talked to two of his students.

On this interpretation of the pronoun *his*, (6) is not ambiguous in the same way as (5). Say which interpretation is present, and which is absent. Does our system for logically representing the (im)possible interpretations of (5) and (6) provide an explanation for this difference between the two sentences?

In answering this part of the question, you will need to make some assumptions about how to translate the pronoun *his* on the interpretation where it is linked to the quantified argument *every professor*. Be sure to state your assumptions explicitly.

II. *Few* vs. *A Few*

In this problem, you will determine whether there are any semantic differences between the closely-related quantificational determiners *few* and *a few*:

- (1) [Few students] left. (2) [A few students] left.
- A. For both *few* and *a few*, determine whether the NP in sentences of the form [Det NP] VP is an upward-entailing or a downward-entailing environment. Provide any necessary test sentences/discussion to support your conclusions.
- B. For both *few* and *a few*, determine whether the VP in sentences of the form [Det NP] VP is an upward-entailing or a downward-entailing environment. Provide any necessary test sentences/discussion to support your conclusions.
- C. Now consider the following sentences, in which *few* and *a few* occur with the negative polarity items (NPI) *ever*. Which of these sentences sound acceptable to you? Which ones sound unacceptable?
- (3) [Few tourists who **ever** visit the Taj Mahal] leave without taking a picture.
- (4) [A few tourists who **ever** visit the Taj Mahal] leave without taking a picture.
- (5) [Few climbers] **ever** reach the top of Mount Everest.
- (6) [A few climbers] **ever** reach the top of Mount Everest.
- D. Compare your results from Parts A and B with those from Part C. Taken together, do they support our hypothesis from last week's lectures concerning the distribution of negative polarity items? Explain your answer.

III. Aspectual Classes of Verb Phrases

For each of the following verb phrases:

ride a bicycle
want a BMW

eat an apple
get promoted

first determine whether the VP is stative or eventive. If the VP is eventive, then determine whether it is an activity, or whether it describes a bounded event. If the VP describes a bounded event, then determine whether it is an accomplishment or an achievement. Each of your conclusions should be supported with the results of **at least one** of the tests that we discussed in class for distinguishing amongst members of the different aspectual classes.