LIN1145H1S -Semantics
Midterm Assignment
Due Monday, February 23, 2004, in class

1. For each of the following phrases or sentences:
   a. Draw its syntactic structure (Note: As in class you may omit syntactic category labels and non-branching nodes. If you wish, you may label the branching nodes with numbers for ease of reference.)
   b. Label each node with its semantic type (<e>, <e,t> etc.)
   c. Compute the denotation or truth conditions of the phrase or sentences. (In the case of sentences, give truth conditions; otherwise give denotations.) At each step, indicate what step you are taking (subsitution of lexical entry, predicate modification, functional application, substitution of an argument for a variable introduced by λ, predicate abstraction, etc.) Assume the lexical entries given.

      (1) Ann saw the blue car.
      (2) The blue house in the valley is big.
      (3) the big blue house near the river in the valley (Note: this is structurally ambiguous. Give two syntactic structures and the denotation for each one.)
      (4) Ann is fond of the gray cat.
      (5) Ann saw the car which the cat is fond of.

      ⟦Ann⟧ = ANN
      ⟦car⟧ = $\lambda x_{\in De}$. x IS A CAR
      ⟦blue⟧ = $\lambda x_{\in De}$. x IS BLUE
      ⟦big⟧ = $\lambda x_{\in De}$. x'S SIZE IS ABOVE C, WHERE C IS THE SIZE STANDARD MADE SALIENT BY THE UTTERANCE CONTEXT. (Note: you may abbreviate this as [$\lambda x_{\in De}$. x IS BIG] if you wish.)
      ⟦house⟧ = $\lambda x_{\in De}$. x IS A HOUSE
      ⟦valley⟧ = $\lambda x_{\in De}$. x IS A VALLEY
      ⟦river⟧ = $\lambda x_{\in De}$. x IS A RIVER
      ⟦gray⟧ = $\lambda x_{\in De}$. x IS GRAY
      ⟦cat⟧ = $\lambda x_{\in De}$. x IS A CAT
      ⟦saw⟧ = $\lambda x_{\in De}$. $\lambda y_{\in De}$. y SAW x
      ⟦in⟧ = $\lambda x_{\in De}$. [$\lambda y_{\in De}$. y IS IN x]
      ⟦near⟧ = $\lambda x_{\in De}$. [$\lambda y_{\in De}$. y IS NEAR x]
      ⟦fond⟧ = $\lambda x_{\in De}$. [$\lambda y_{\in De}$. y IS FOND OF x]
      ⟦the⟧ = λf: $f \in D_{<e,t>}$ & $\exists!x[f(x)=1]$. ιy [f(y) = 1]
      'is' and 'of' are taken to be semantically null.

2. Heim & Kratzer treat intransitive verbs as <e,t>, transitives as <e,<e,t>>, and ditransitives like 'introduce' as <e,<e,<e,t>>>, with the preposition 'to' being semantically null. These semantic types are **lexical** properties of the various verbs. They also argue in chapter 3 against the need for a separate level of argument structure, or for anything like the theta-criterion, deriving the effects of these things from the structure of the denotation and from a principle of interpretation.

   Your job is to discuss problems raised for such a view by data such as the sentences in (1)-(4). What difficulties do you think the Heim & Kratzer approach would run into? Once you have discussed the problems, **outline** at least two possible solutions -- or approaches to solutions. In your answer, be sure to discuss possible lexical entries for all the verbs in the data. The whole thing (part 2 that is) shouldn't be longer than about 5 pages, not counting diagrams and data. Remember to ignore tense.

   (1) a. The ice melted.
   b. The sun melted the ice.

   (2) a. Mary ran.
   b. Mary ran three kilometers.
   c. Mary ran the first race.

   (3) a. We ate the apples at noon.
   b. We ate at noon.

   (4) a. They provided the students with pencils.
   b. They provided pencils to the students.
   c. They provided pencils.

   (5) a. We gave the books to the children.
   b. We gave the children the books.