LING 130:
Sample Quiz 2

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1. Anaphora and Discourse Representation Theory

Give the full DRS for the discourse below.

(1) Fred went to the pond. He saw a fish eating the worm he used.

Answer: Consider the first sentence. Assume that the contextually salient pond can be referenced by the discourse reference p. The variable introducing the pond in the expression itself is u, while Fred is represented as f. So, we have:

f, p, u
Fred′(f)
go_to′(f,u)
Pond′(u)
u= p

Now consider the subsequent sentence in the discourse. We need to bind the pronoun *he* to *Fred*; then, we introduce a fish, along with a contextually salient worm. This results in the complete DRS shown below.

f, p, u, x, y, v, q, z, w
Fred′(f)
go_to′(f,u)
Pond′(u)
u = p
see′(x,y)
x = f
Fish′(y)
eat′(y,v)
Worm′(v)
v = w
use′(q,z)
q = x
z = w

2. Temporal Logic

Give the temporal logical forms for the following English sentences, using the operators P, F, G, and H. Remember that P and F are existential operators, stating that there is a specific time before (P) and after (F) the present, at which the proposition is evaluated.

(2) a. Every student took a linguistics class.
Answer: $\forall x[student(x) \rightarrow \mathrm{P}\exists y[ling\_class(y) \wedge take(x,y)]]$
This means that there were possibly different times in the past for each student and class.
b. There was a linguistics class that every student took at the same time.
Answer: $\mathrm{P}\exists y[ling\_class(y) \wedge \forall x[student(x) \rightarrow take(x,y)]]$
This means that there is one past time at which all students took the same class.

3. Event Theory

Give the correct event classification for each predicative expression below. Justify your answer.

(3) a. *swim*:
Answer: activity/process. Goes with durative adverbials (Mary swam for an hour); does not have a natural culmination, and passes the subinterval test (Mary is swimming $\rightarrow$ Mary has swum).
b. *sing the National Anthem*:
Answer: accomplishment. Goes with frame adverbials (Mary sang the N.A. in 30 seconds); has a natural culmination (Mary finished singing the N.A.), and does not pass subinterval test (Mary is singing the N.A. $\nrightarrow$ Mary has sung the N.A.)
c. *die*:
Answer: achievement. Goes with point adverbials (Mary died at noon); doesn't go with duratives (*Mary died for 20 minutes); does not pass subinterval test (Mary is dying $\nrightarrow$ Mary has died)

4. Tense and Events in DRT

a. Give the DRS with events and times for the following sentence:

(4) Fred has left the classroom.

Answer:

f, c, u, e, t, n, r
Fred′(f)
leave′(e,f,u)
Classroom′(u)
u = c
$t < n$
$e \subseteq t$
$r = n$

b. Give a full DRS with tense and event variables for the following discourse.

(5) Max had left Boston before Sophie went to the airport.

Answer: Here's how things work: each predicate introduces an event variable; Max, Boston, and Sophie each introduce a discourse referent; the airport is contextually salient, so there's the prior referent, a, and the one introduced in the sentence, u. There is a speech time, n, an event time, t, a reference time, r, and the ordering constraints between them. Here is the complete DRS:

$m, b, s, a, e_1, e_2, n, r, t, u$
Max'(m)
Sophie'(s)
Boston'(b)
leave'(e_1,m,b)
go_to'(e_2,s,u)
Airport'(u)
u = a
t < n
$e_1 \subseteq$ t
t < r
r < n
$e_2 \subseteq$ r