HW5

Meili Liu

October 2022

1 Question 3

(a) i. $\lambda x\ loves(Mary, x)$
ii. $loves(Mary)$

(b) $loves(obj)(subj)$ currying

(c) i.$f = \lambda y\ \forall x\ women(x) \Rightarrow loves(x, y)$
ii. f: the argument loves all women
f(John): John loves all women

(d) i. $f = (\lambda v\ (\lambda x\ Obviously(v(x))))$
ii. $f(\lambda x(Mary, x))(Sue)$

(e) $f = (\lambda x\ \lambda y\ \lambda e\ act(e, loving), lovee(e, x), lover(e, y))$

(f) $g = (\lambda v\ \lambda y\ \lambda e\ v(y)(e), manner(e, passionate))$

(g) i. $f = \lambda p\ \forall y\ woman(y) \Rightarrow p(y)$
ii. meaning of $f(\lambda x\ loves(Mary, x))$: all woman love Mary
meaning of $(\lambda x\ loves(Mary, x))$: the argument x loves Mary
meaning of f: all woman have the function p

(h) i. g = $(\lambda w\ \lambda p\ \forall y\ w(y) \Rightarrow p(y))$
$ii.gmeansall$

$(i)i.f = (\lambda v\ v(Papa))$
$ii.meaningof$f$(\lambda x\ loves(Mary, x))$: Papa loves Mary
meaning of $(\lambda x\ loves(Mary, x))$: the argument x loves Mary
meaning of f: Papa has a function
if just use sem = Papa, then Papa can only works like an argument, and only applied in this way $(\lambda x\ loves(Mary, x))(Papa)$
but if we would use this interesting semantics, then Papa can work like a function, and receive another function as an argument, like $(\lambda v\ v(Papa))(\lambda x\ loves(Mary, x))$, which is similar with the women function in g

2 Question 4

1. ROOT: Papa eat -ed every bonbon with a spoon .
$Attributes : head = eatsem = Assert(Speaker, Past(eat(all(\%xbonbon(x)^{w}ith(some(spoon), x)), Papa)))$
The parse says that bonbon has the spoon, but probably the author means that "Papa eat a bonbon using a spoon"

2. ROOT: Jill say -s that Joe might sleep on the floor !
Attributes: head=say sem=Exclaim(Speaker, Pres(on(the(floor),say(might(sleep(Joe)), Jill))))
The parse interpret that "Jill on the floor", but it should be "Joe sleep on the floor"

3. ROOT: every sandwich was go -ing to have been delicious .
Attributes: head=be sem=Assert(Speaker, Past(Prog(Will(Perf(delicious(all(sandwich))))))))
This sentence seems ungrammatical because the combination of 4 different tense, and should not have parse.

4. ROOT: the fine and blue woman and every man must have eat -ed two sandwich -s and sleep -ed on the floor .
$Attributes : sem = Assert(Speaker, must(on(the(floor), Perf(eat(two(sandwich), and(the(\%xwoman(x)$
and
Again, the sentence's meaning should be "sleep on the floor", rather than "have on the floor"

3 Question 5

For ungrammatical sentence: 1. ROOT: Papa sleep -s with a caviar .
No consistent way to assign attributes! (Maybe another parse?)

2. ROOT: Papa sleep -s every caviar with a spoon .
No consistent way to assign attributes! (Maybe another parse?)

3. ROOT: all caviar on the spoon entice -0 .
No consistent way to assign attributes! (Maybe another parse?)

4. ROOT: the caviar -s on the spoon entice -0 .
No consistent way to assign attributes! (Maybe another parse?)

For grammatical sentence:

1. ROOT: Papa eat -ed the caviar with a spoon .
Attributes: head=eat sem=Assert(Speaker,Past(with(some(spoon),eat(the_mass(caviar),Papa))))

2. ROOT: Papa eat -ed his caviar with a spoon .
Attributes: head=eat sem=Assert(Speaker, Past(with(some(spoon),eat(the_mass(%x caviar(x)p̂ossess(x,him)),Papa))))

3. ROOT: all caviar on the spoon entice -s .
Attributes: sem=Assert(Speaker, Pres(entice(SOMETHING,all(%x caviar(x) ôn(the(spoon),x))))) head=entice

4 Question 6

a.1. For determiner two, its semantic attributes is sem="%dom %pred E%first E%second [first!=second d̂om(first)d̂om(second)] p̂red(first) p̂red(second)"

Explanation: For the example of "eat two sandwiches", dom is the domain, namely sandwich. pred is the predicate, namely eat. The quantifier "two" says we have two argument, the first one doesn't equal to the second one, and both of them belong to the certain domain (sandwich) and satisfy a particular predicate (eat).

a.2. For singular the, its semantic attribute is sem="%dom %pred E%t [dom(t) Â%u [dom(u) û!=t ==¿ salience(u) ¡ salience(t)]] p̂red(t)"

Explanation: for the example of "the spoon", dom is the domain, namely spoon. The meaning of the semantic is that there is a "t", which belongs to the domain (spoon), and a set of "u",which also belongs to the domain, we assert that "t" is not in "u", and t is more salient than every element in "u" for the hearer, and the predicate applies to "t"

a.3. For plural the, its semantic attribute is sem="%dom %pred E%T [subset(T,dom) ¯̂T—¿one Â%U [subset(U,dom) ¯̂U—¿one Û!=T ==¿ salience(U) ¡ salience(T)]] p̂red(T)"] the

Explanation: for the example "the bonbons", we have a set of object T, T are all in the domain (bonbon) and there are more than one object in T. we also have another set of object U, U are all in the domain and the size of U is bigger than 1, and U is not equal to T. we assert that T is more salient than u for the hearer and the predicate applies to T

b.the answer is "1(obj)(%obj 2(3))"

explanation: $1 = \%obj\ \%pred\ \%subj\ want(pred(obj), subj)$
$2 = \%pred\ pred(him)$
$3 = \%subj\ E\%b\ [pickle(b)]\ \hat{}eat(b, subj)$
$2(3) = E\%b\ [pickle(b)]\ \hat{}eat(b, him)$
$1(obj) = \%pred\ \%subj\ want(pred(obj), subj)$
$1(obj)(\%obj\ 2(3)) = \%subj\ want(E\%b\ [pickle(b)]\ \hat{}eat(b, him), subj)$, obj is canceled off