1   Quantifier Raising

Given that we've got some evidence that wh-movement and quantifier scope can interact, we can now explore the idea that quantifiers move covertly to take scope at LF:

11.   Some congressman lied to every journalist.
       Reading 1: Some particular congressman lied to all the journalists.
       Reading 2: For each journalist, there is a congressman that lied to that journalist
                  (not the same one every time).

(This is the source of the old joke about statistical assertion:
       A: "Every three minutes, an American is hit by a car".
       B: "Oh, that poor man!")

(A's intended reading:
         x: x is a 3-minute interval,   y: y is an American such that a car hits y at x.
B's funny reading:
         y: y is an American s.t.   x: x is a 3-minute interval, a car hits y at x.)

If quantifiers raise and adjoin to CP at LF to take scope, we can account for the two readings for the question "What did everyone bring?", as well as the two readings for "Some congressman lied to every journalist".

Wide scope for "some congressman":
       [$_{IP}$ Some congressman lied to every journalist].
Wide scope for "every journalist"
       [$_{CP}$ Every journalist$_i$ [$_{IP}$ some congressman lied to t_i]

 And…

12.   *"Weak Crossover"*
       a.   Who$_i$ loves his$_i$ mother?
       "Who is the person x such that x loves x's mother?"
       b.   ??Who$_i$ does his$_i$ mother love?
       Who is the person x such that x's mother loves x?
       c.   Every$_i$ boy loves his$_i$ mother.
       For all boys, x, x loves x's mother.
       d.   ??His$_i$ mother loves every$_i$ boy.
       For all boys x, x's mother loves x.

The idea here is that in 12a and 12c, the coindexing of the variable bound by the wh-phrase or the quantifier and the variable represented by the pronoun is fine. Then the question is, why can't the variable represented by the pronoun be bound by wh-phrase in 12b, and why is it hard for the quantifier to bind the pronoun in 12d? In 12 b, we observe, the wh-phrase has

"crossed over" the pronoun on its way to the matrix clause. If the same thing has happened at LF to the quantifier in 12d, and if there's some problem with this configuration, (e.g. the intervening coindexed element blocks the binding of the trace of the wh-phrase), we can have a unified explanation for the poorness of 12b and 12d.

13.   a.   [$_{CP}$ Who$_i$ does [$_{IP}$ his$_i$ mother [$_{VP}$ love t_i]?
        b.   [$_{CP}$ Everyone$_i$ [$_{IP}$ his$_i$ mother [$_{VP}$ loves t_i]

2.   Antecedent-Contained Deletion

1.   Siskel saw the movie *Ghostbusters*. Ebert did, too.

Here, *did* is a pro-form, standing in for the understood VP [*see the movie Ghostbusters*]. It works just like a pronoun, picking up its referent from the discourse. Presumably, at LF, for interpretation, *did* is replaced with the elided VP, *saw the movie Ghostbusters*, copied from the previous sentence. (Actually, more precisely, *did* is inserted to support Tense, as in *do*-support cases, and the VP is simply replaced by a *null* pro-form. *Do*-support is necessary because there's no phonological V for the Tense to glom onto).

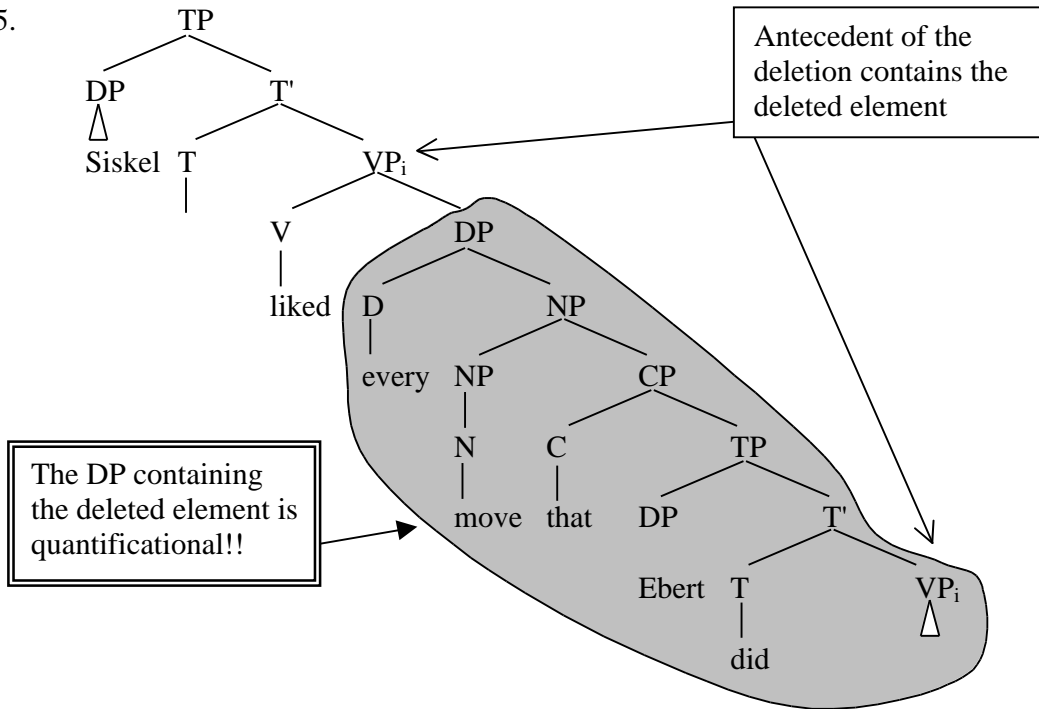2.   Siskel liked every movie that Ebert did.

Here, we noted once before, there's a problem. If you try to replace *did* with the VP that it refers to, at LF, you get the following:

3.   Siskel liked every movie that Ebert [liked every movie that Ebert did].

(3) of course introduces two problems: (a) there's an infinite regress (because you inserted the very pro-form *did* that you were trying to eliminate, and if you try to eliminate *that* pro-form by copying the VP, you'll do it again, and…), and (b) it doesn't make any sense.
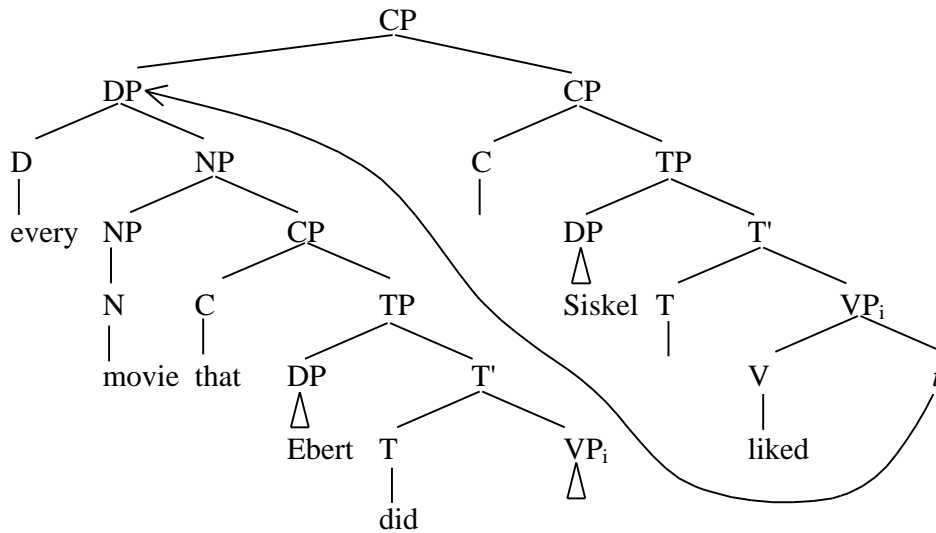
NOTICE, however: the offending *did* is contained within a relative clause that's modifying an NP inside a DP — and that DP is *quantificational*. The structure at Spell-Out of (2) is as in (5):

5.

TP

DP   T'

Siskel   T   VP$_i$

V   DP

liked   D   NP

every   NP   CP

N   C   TP

move   that   DP   T'

Ebert   T   VP$_i$

did

Antecedent of the deletion contains the deleted element

The DP containing the deleted element is quantificational!!
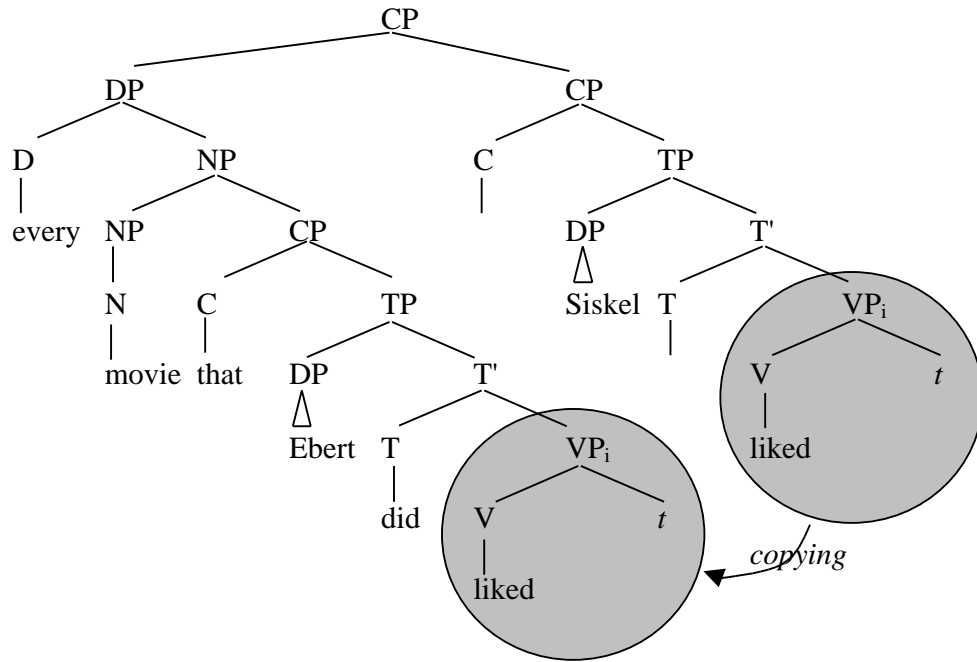
Here is where we can get Quantifier Raising to do some real work. If quantified XPs raise and attach to CP at LF (to get scope, for example), the LF-structure of (2) after QR will be (6):

6.

CP

DP   CP

D   NP   C   TP

every   NP   CP   DP   T'

N   C   TP   Siskel   T   VP$_i$

movie   that   DP   T'   V   *t*

Ebert   T   VP$_i$ liked

did

And *now*, if we copy the antecedent VP into the slot of the deleted VP, we get a structure like this:

7.

```
                                    CP
                  DP                            CP
          D           NP                 C            TP
          |                              |
        every   NP          CP               DP        T'
                 |        /      \           Siskel  T      VP_i
                 N       C       TP                  |      /    \
                 |                                   |     V      t
               movie   that  DP        T'                 |
                             Ebert  T      VP_i          liked
                                    |      /    \
                                   did    V      t
                                          |
                                        liked
```

copying

If the trace left behind by operator movement (wh-movement or quantifier raising) is a *variable*, then this structure has an interpretation equivalent to the following:

8.   x, x a movie such that Ebert liked x, Siskel liked x.

Which is in fact what the sentence *Siskel liked every movie Ebert did* actually means!