Embedding Antecedent-Contained Deletion*

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Abstract
The purpose of this article is to extend on an observation I made while checking the compatibility of the extraposition account for antecedent-contained deletion cases proposed in Fox (2002) and the licensing condition proposed in Takahashi and Fox (2005) (Zobel 2008). The main object of scrutiny are embedded antecedent-contained deletion structures. I show that the account in Fox (2002) has troubles with deriving one type of embedded structures and that other types of embedded structures are not derivable at all. I furthermore show that by adopting ideas from Sauerland (1998) and Sauerland (2004) these troubles can be forgone.

1 Introduction

VP-Ellipsis is a type of elision process that targets the verb phrase of a sentence. The content of the deleted VP, which is also called *the ellipsis site*, has to be recoverable from the discourse - in most cases via an overt antecedent - for the sentence to be interpretable. Example (1a) shows VP-Ellipsis in a coordinated structure. In (1b) the ellipsis site is enclosed by angled brackets and the antecedent by square brackets.

(1) a. Peter likes Mary and Paul does, too.
b. Peter [VP likes Mary] and Paul does <like Mary>, too.

The criteria for well-formedness for a clause such as in (1a) are standardly formulated as a *licensing condition* on ellipsis. Such a condition compares the antecedent and the ellipsis site and either determines whether the ellipsis site is deletable or which part of the meaning of the antecedent fits into the empty VP, depending on whether VP-Ellipsis is seen as PF-deletion or LF-copying (cf. Sag (1976) vs. Williams (1977)). In the present

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article, I only discuss one specific licensing condition that has been proposed recently: *MaxElide* as formulated in Takahashi and Fox (2005).

The main protagonist of this article is called *antecedent-contained deletion*. This construction is a special type of VP-Ellipsis in which the ellipsis site is part of the antecedent. Example (2) illustrates this.

(2) Peter [$_{VP}$ likes every girl Paul does <like>]

Licensing conditions are usually formulated on the basis of coordinated VP-Ellipsis, and therefore require two independent clauses to compare. Since the ellipsis site in antecedent-contained deletion is part of the antecedent, licensing antecedent-contained deletion sentences with the usual conditions for coordinated VP-Ellipsis without “additional rearrangement" is impossible. The result of applying such a condition to a sentence containing antecedent-contained deletion is either simple incomparability or infinite regress, depending on the theory of choice (again cf. Sag (1976) vs. Williams (1977)).

In the current analyses, a suitable structure for sentences with antecedent-contained deletion that is compatible with the licensing conditions is constructed by movement of the quantified DP containing the ellipsis site to a position outside of the matrix clause. The motivation for movement and the landing site of the quantifying expression is different for each analysis. In this article I focus on the extraposition analysis formulated in Fox (2002). The main aim of this article is to extend on an observation I made during the checking of the compatibility of the licensing condition formulated in Takahashi and Fox (2005) and the antecedent-contained deletion resolution analysis proposed in Fox (2002) (Zobel 2008). The main object of scrutiny are embedded antecedent-contained deletion structures. We will show that these constructions pose different problems for the account in Fox (2002).

2 Today's Theory of Choice

For the resolution of antecedent-containment, I look at the extraposition proposal put forth in Fox (2002).

Fox mainly investigates the question how the structure of antecedent- contained deletion sentences has to be reanalyzed when he assumes a copy theory of movement. In his analysis, he revives an idea proposed in Baltin (1987).

Baltin's main point is that antecedent-contained deletion is an illusion: The clause containing the ellipsis site is not part of the matrix clause at surface structure. The quantifying expression is extraposed from the matrix VP resolving the antecedent containment. Fox uses this idea but makes, in fact, the stronger claim that throughout the entire derivation the relative clause containing the ellipsis site is never part of the matrix VP. This claim is forced by Fox's adopted variant of the copy theory of movement where movement of the quantified DP leaves behind a copy of the entire DP. So movement could not remove the ellipsis site from its undesirable position inside the matrix VP, if the relative clause is still assumed to be merged inside the VP.

Fox proposes that the quantified DP is first merged without the relative clause. After the matrix clause has been built up entirely, the quantified DP is extraposed to a position scoping over the entire matrix clause. The last step in the derivation is the late merger of the relative clause to the extraposed quantified DP.

For the structure of the relative clause, Fox adopts Sauerland's matching analysis (Sauerland 1998). The core of the matching analysis is to assume that a relative clause has an internal and an external head. The external head is the noun that gets modified by the relative clause. The internal head originates inside the relative clause VP and is then moved up to the CP of the relative clause where it is deleted under identity with the external head.

Example (3) gives a sample derivation of the structure of *John visits every boy that Mary does* as proposed by Fox (2002).

(3) a. John visits every boy that Mary does.

b. [John visits every boy] $\xrightarrow{\text{DP movement}}$

[John visits every boy] every boy

[that Mary does <visit boy>] $\xrightarrow{\text{movement of internal head}}$

[boy that Mary does <visit boy>] $\xrightarrow{\text{adjunct merger}}$

[John visits every boy] every boy[boy that Mary does <visit boy>]

(Fox 2002:76)

The final structure of the derivation in (3) is depicted in the following simplified figure.[1]

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[1] In figures 1 and 2 some parts are only given schematically to save space. The trees are thus partly unlabelled.

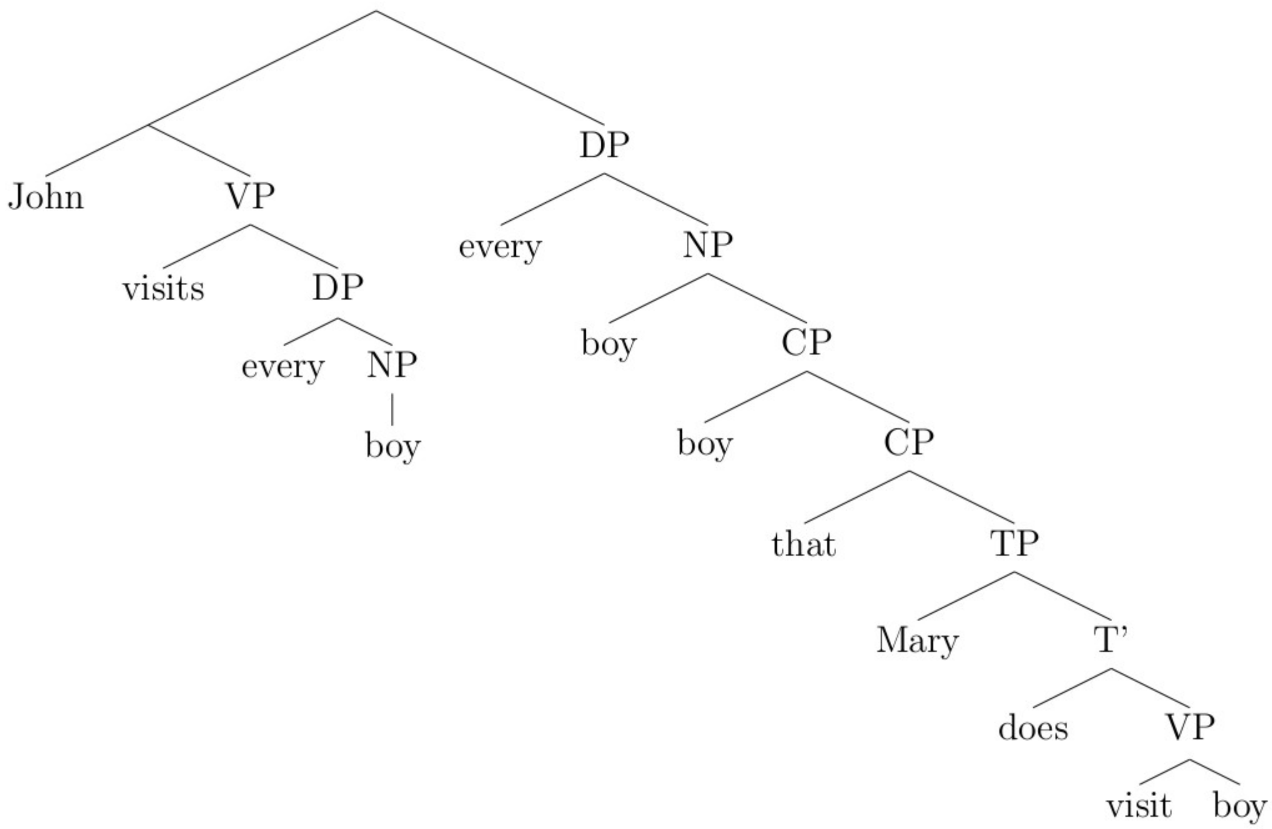

Figure 1: Resolved structure of *John visits every boy that Mary does*.

The most important aspect of the final structure given in figure 1 is that the CP of the relative clause *boy that Mary does* is not part of the matrix clause *John visits every boy.* The ellipsis site is not even contained inside the antecedent as a copy and therefore no further measures are needed to create an structure compatible with the proposed licensing conditions.

To make the final structure in example (3) completely interpretable and ready for the level of phonological form (PF), Fox has to say something about the interpretation and the phonological visibility of copies. In the latter case, he adopts a PF-Theory of movement, meaning that the choice which element is in the end spelled out is made on the branch of grammar towards PF (cf. Fox and Nissenbaum (1999)). For the interpretation of traces, i.e. the copies that are not spelled out, he introduces the rule of Trace Conversion[2].

(4) Trace Conversion:

a. Variable Insertion: (Det) Pred → (Det)[Pred λy(y=x)]

b. Determiner Replacement: (Det)[Pred λy(y=x)] → the [Pred λy(y=x)]

(Fox 2002:67)

[2]Since Trace Conversion is a red rag for many linguists, the effect of the rule can also be packed into a semantic interpretation rule for copies. The semantic rule of course doesn't solve any of the inherent problems of introducing a definite article into the interpretation. For alternative takes on interpreting copies and antecedent-contained deletion see Furukawa (2006), Johnson (2007) and others.

Trace Conversion has two steps. First, a variable is introduced that is equated with the argument of the nominal predicate and then any possibly existing determiner is substituted with *the*. The last structure in the rule, *the [Pred λy(y=x)]*, is abbreviated in formulas as *the Pred x*.

The final LF structure Fox proposes for (5) is (6), the result of deleting the internal relative clause head, relative clause interpretation and Trace Conversion.

(5) [[John visits every boy] every boy [boy that Mary does <visit boy>]]
(Fox 2002:76)

(6) [every boy λx.Mary does <visit the boy x>] λy.John visits the boy y

Is (6) a valid LF structure, i.e. is VP-Ellipsis licensed according to the adopted theory? To answer this question, one first needs to decide on a licensing condition for VP-Ellipsis. I adopt the licensing condition from Takahashi and Fox (2005) which is a reformulated version of Rooth's proposal based on his work on focus interpretation (Rooth 1992b).

Takahashi and Fox formulate *MaxElide*, as a general condition on deletion.

(7) Elide the biggest deletable constituent reflexively dominated by the parallelism domain.
(Takahashi and Fox 2005:229)

We will focus on the meaning of “parallelism domain” and the additional parallelism condition given in (8).

(8) a. VP-Ellipsis is licensed if there is a constituent (the parallelism domain PD), which reflexively dominates the elided constituent and satisfies the parallelism condition.
b. Parallelism:
PD satisfies the parallelism condition if PD is semantically identical to an antecedent constituent AC, modulo focus marked constituents.[3]
(Takahashi and Fox 2005:229)

[3] This means that the antecedent is an element of the set of focus alternatives of the PD in the sense of Rooth (1992a). For example, the set of focus alternatives for $Peter_F$ likes Mary, is {λx. x likes Mary|$x \in D_e$}.

The fact that Fox (2002) and Takahashi and Fox (2005) are compatible for simple antecedent-contained deletion cases was shown in Zobel (2008). As a short example, let us show this for the LF-representation of the sentence *John visits every boy that Mary does* in (6). For the sentence to be licensed, we need to find a suitable constituent that can serve as parallelism domain. If *λx.Mary*$_F$ *does <visit the boy x>* is chosen as parallelism domain, the parallelism condition is satisfied: the antecedent, *λy.John visits the boy y*, is an element of the set of focus alternatives as required. Thus, ellipsis is licensed and the sentence is correctly predicted to be grammatical.

3 Embedding Structure No. 1

The combined account in section 2 seems quite promising. While checking the compatibility with *MaxElide* for all LF-representations given in Fox (2002), I noticed one type of antecedent-contained deletion for which the proposed representations were not detailed enough to be licensed correctly. I repeat and extend the discussion of these sentences given in Zobel (2008).

The problematic antecedent-contained deletion cases in Fox (2002) are those in which the ellipsis site is contained in the lowest CP of a multi-clausal relative clause.

(9) a. You sent him [the letter that John expected you would].
b. You introduced him to [everyone John wanted you to].
c. I reported him to [every cop John was afraid I would].
(Fox (2002:84) with brackets added)

Let us concentrate on the first example. The LF-representation Fox proposes is given in (10).

(10) [the letter λx.John expected you would$_F$ <send him the letter x>]
λy.you sent him the letter y
(Fox 2002:84)

The variables *x* and *y* in the two verb phrases are bound from two structurally different positions. Thus if we try to apply the licensing condition of Takahashi and Fox (2005), the sentence is expected be evaluated as ungrammatical. To check this expectation, I need to show that I can not find a proper parallelism domain that obeys the parallelism condition in

(8b).

The only possible parallelism domain for the LF-representation (10) is

(11) λx. John expected you would <send him the letter x>,

since all variables in the VP need to be bound. The constituent in (11) does not have an antecedent, though. The rest of the matrix clause,

(12) λy. you sent him the letter y,

is only mono-clausal and therefore too small to be a valid antecedent for the bi-clausal parallelism domain. Hence, *MaxElide* does not license this structure and the sentence should be ungrammatical. The other two examples in (9) are assigned analogous structures and hence pose the same problem.

Since the three sentences in (9) are grammatical, either the licensing condition is too strict or the LF-representations are inadequate and need tweaking. I propose to keep the licensing condition as it is, and assume the latter to be the case.

As the only possible parallelism domain in (10) is too large to have an antecedent in the matrix clause, a possibility to generate a smaller λ-expression is needed. I propose that successive-cyclic movement[4] of the internal relative clause head has to be assumed to generate an adequate LF-representation (Zobel 2008).[5] For the bi-clausal relative clause in (10), this means that the internal head moves through the lower CP of the relative clause before moving up to the upper SpecCP to be deleted against the external head.

The syntactic structure and the LF-representation that are generated by cyclically moving the internal relative clause head for the sentence *You sent him the letter that John expected you would* is thus as in (13).

(13) a. [You sent the letter]
the letter [letter John expected [[letter][you would send letter]]]
b. [the letter λx.John expected [λy.you would send the letter y](the letter x)]
λz.you sent the letter z

[4] The term “successive-cyclic movement” is used for the kind of movement where a lexical item has to move in multiple steps to reach its final landing site. In those cases where successive-cyclic movement is required, usually movement in one step to the desired landing site is forbidden by locality constraints (cf. Ross (1967) and Rizzi (1990))

[5] See Sauerland (1998) for arguments for successive-cyclic movement of the relative clause head.

It is easy to see that the LF representations (10) and (13b) lead to identical truth conditions: The structures that Trace Conversion substitutes the copies with, i.e. *the [Pred λy(y=x)],* are nothing more than variables restricted to the set of entities given by the noun. Therefore, variables restricted by the same predicate can be substituted for each other when applying β -reduction[6] during the computation of the truth condition of the sentence.
For (13b) this means, that *letter λy(y=x)* is true for a variable *x* that can only take references from the set of letters. The definite article adds a uniqueness presupposition and outputs the one entity that is a letter and equal to *x*. The variable *x* is also bound by a λ-operator higher up in the structure. By β-reduction, the inner predicate

(14) [λy.you would send the letter y](the letter x)

is equal to

(15) you would send the entity y which is a letter and equal to the entity which is a letter and equal to x.

Since both variables *x* and *y* have the same restricting predicate, this reduces to

(16) you would send the entity which is a letter and equal to x

which can be paraphrased again thanks to the abbreviation introduced in section 2 as

(17) you would send the letter x.

Plugging this derived expression back into the bigger λ-expression gives

(18) λx. John expected you would send the letter x

which is the LF-representation of the relative clause in example (10).
The new LF-representation (13b) now provides the right parallelism domain for the licensing condition to evaluate the sentence as grammatical; as a result of cyclic movement, the relative clause offers two λ-expressions. The smaller expression

[6] β-reduction is one form of syntactic reduction (or conversion) defined for typed and untyped λ-calculus.
(i) ((λ*V*.*E*) *E'*) :<=> *E*[*V*:= *E'*]
For details, please see Barendregt (1985). For an introduction to the use of typed λ-calculus in Formal Semantics cf. Heim and Kratzer (1998).

(19) λy.you would$_F$ send the letter y

is a proper parallelism domain for which we can find an antecedent in the matrix clause. The λ-expression

(20) λz.you sent the letter z

is a focus alternative of (19). Thus *MaxElide* correctly licenses this occurrence of ellipsis. So, successive-cyclic movement of the internal head of the relative clause provides the right structure for antecedent-contained deletion sentences with multi-clausal relative clauses inside the matrix clause such as in example (9).
Now the following questions present themselves: What about the other logical possibilities? Are there examples of antecedent-contained deletion sentences with multi-clausal relative clauses that are further embedded in the matrix clause? Are there cases of antecedent-contained deletion sentences with mono-clausal relative clauses that are further embedded in the matrix clause?[7]
There are examples for both of the remaining possibilities. In the following section, I take a closer look at sentences with multi-clausal relative clauses that are further embedded in the matrix clause. From the discussion of this second case, the discussion of the third possible case follows immediately.

4 Another Embedding Structure

The second embedding antecedent-contained deletion structure I want to look at is taken from examples discussed in Fox (1999) and Sauerland (2004). These examples feature a bi-clausal relative clause inside a clause which is itself embedded in the matrix clause. Consider example (21).

(21) a. I expected John to buy [everything that he thought I did].
b. I asked him to teach [the book of Irene's that David wanted me to].
(Fox (1999:185) and Sauerland (2004:106) with brackets added)

[7] Antecedent-contained deletion sentences with mono-clausal relative clauses inside the matrix clause are of course the classic antecedent-contained deletion cases as in (2).

Let us look at the more interesting first example (21a). Fox (1999) argues that this sentence is ambiguous since the universal quantifier can either take scope higher or lower than *expect* and the deleted VP can either be interpreted as the matrix VP, *I did expect John to buy the thing*, or the embedded VP, *I did buy the thing*. Combinatorially, the sentence should have four readings. The reading with lower scope of the universal quantifier and the matrix VP as antecedent is ruled out by the licensing condition, since the relative clause is still part of the matrix VP.

As an illustration, I give the four different structures that Fox presents for (21a) in (22).[8]

(22) a. *I expected
[everything he thought I did expect him[9] to buy t] John to buy t
b. I expected
[everything he thought I did buy t] John to buy t
c. [everything he thought I did expect him to buy t] I expected John to buy t
d. [everything he thought I did buy t] I expected John to buy t
(Fox 1999:186)

The ungrammatical example in (22a) is ruled out as already stated above since the antecedent-containment is not yet resolved. The other three structures are grammatical, but are not given in the form that would be generated by the extraposition analysis, which Fox does not assume in his 1999 article.

Let us take a look at the reading in the third example, (22c), where the universal quantifier scopes over expect and the deleted VP is understood as the matrix VP, i.e. *expected John to buy t*. For this reading, I propose the LF-representation in (23).

(23) [everything λx.he thought
[λy.I did <expect [λw.John to buy the thing w](the thing y)>](the thing x)]
λz.I expected [λv.John to buy the thing v](the thing z)

Since narrow scope of the universal quantifier under expect is possible, I assume that *everything* raises up in two steps, leaving a copy in the embedded CP that is afterwards trace converted (remember that the relative clause is late merged). The representation of the relative clause is derived in the same way as proposed for the problematic structures

[8] Note, that these readings differ with respect to intonation patterns.
[9] The change of John to him is a result of Vehicle Change as proposed in Fiengo and May (1994).

in section 3.

The λ-expressions

(24) λy.I did <expect [λw.him to buy the thing w](the thing y)>

and

(25) λz.I expected [λv.John to buy the thing v](the thing z)

are the parallelism domain and the antecedent needed for the licensing condition to evaluate the sentence as grammatical. So the LF-representation I propose works from the point of view of the licensing condition. This LF-representation, however, is not derivable in our chosen system. I will discuss this step by step.

At first, *everything* is merged in the lower VP without the relative clause containing the ellipsis site. Then, *everything* is extraposed, which results in the structure in (26).

(26) [John to buy everything] everything

Since at surface structure the relative clause is to the right of the quantifying expression, it has to be late merged at this point to the extraposed *everything*. The structure generated up until this point is then embedded in the matrix clause. This produces the following structure in (27).

(27) I expected
[[John to buy everything] everything [thing he thought thing I did <expect thing him to buy thing>]]

The quantifier *everything* is at this point in the lower scope position. The next step is to get the quantifying expression with the relative clause to the higher scope position. This could be done via ordinary Quantifier Raising[10]. The problem that presents itself after raising the DP to a higher position is that the relative clause is not removed from the position it was late merged in, see (28) and the corresponding figure 2.

[10] Quantifier Raising was first introduced by May (1977) in his dissertation. Originally, it was introduced as a transformational rule that moves a quantifier or a quantifying expression to the leftmost position at logical form, i.e. the highest scope position. In modern generative grammar, the term Quantifier Raising is used for all types of operator movement to a high(er) scopal position (see e.g. Heim and Kratzer (1998)).

(28) everything [thing he thought thing I did <expect thing him to buy thing>] I expected [[John to buy everything]
everything [thing he thought thing I did <expect thing him to buy thing>]]

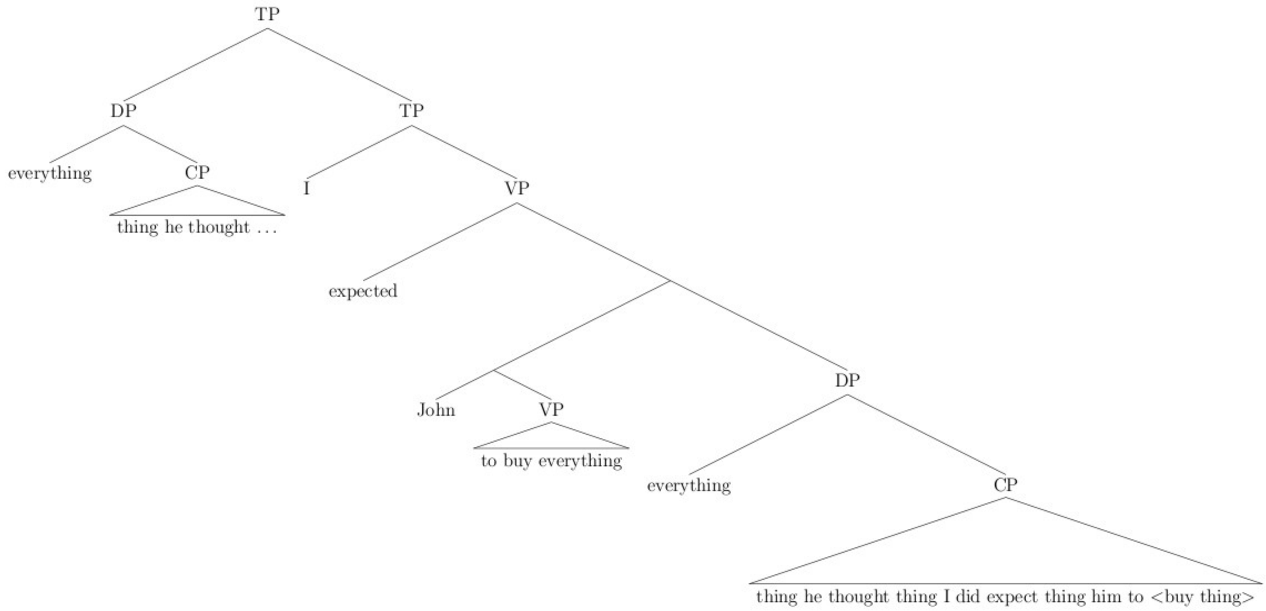

Figure 2: The problematic structure of (28)

As can be seen in figure 2, Quantifier Raising has duplicated the ellipsis site. The two DPs in the tree are identical copies which both contain the ellipsis site, <*buy thing*>. So the structure ended up with gratuitous material and two ellipsis sites. Apart from the unwanted duplication however, Quantifier Raising did not even solve the original problem. For the copy of the ellipsis site that is left behind in the lower DP, the antecedent-containment has not been resolved. The lower quantified DP still sits below the matrix TP.

Could the desired structure in (23) be derived differently? One possibility is to try to late merge the relative clause later on in the derivation. Since the relative clause has to occur to the right of the quantifying expression in surface order and has to be merged as its adjunct, *everything* can only be moved further upwards to the right. This means that *everything* has to be extraposed further after the first extraposition. Extraposition, however, has to obey the *Right Roof Constraint* (Ross 1967), and thus further rightward movement of *everything* is blocked.[11] The lower extraposition position in which *everything*

[11] Right Roof Constraint: An element cannot move rightward out of the clause in which it originates. (Ross 1967)

sits in in example (27) (the lower DP in figure 2) is in fact the highest position to which it can be extraposed. Consequently to get the right surface structure, the relative clause has to be late merged at the latest (!) after *everything* was extraposed as it was done in the derivation step leading to structure (27).
So there is effectively no way to remove the relative clause completely from the matrix clause in the chosen system, and hence (23) is not derivable.
I now return to the remaining two readings (22b) and (22d) which are repeated in (29).

(29) a. I expected
[everything he thought I did buy t] John to buy t
b. [everything he thought I did buy t] I expected John to buy t
(Fox 1999:186)

It was already implicitly shown in the above discussion that a LF-representation for (29a) is derivable. The structure in (27) only has to be changed minimally to the structure in (30).

(30) I expected
[[John to buy everything] everything [thing he thought thing I did <buy thing>]]

After Trace Conversion and relative clause interpretation the LF-representation of (29a) is (31).

(31) I expected
everything [λx. he thought the thing x [λy. I did <buy the thing y>]]
λz. John to buy the thing z

By the choice of *λy.I did buy the thing y* as parallelism domain and *λz. John to buy the thing z* as antecedent, (31) is licensed.
Also the reading (29b) is derivable albeit in a very complicated and slightly redundant way. Even though we do not run into the problem of not being able to resolve the antecedent-containment, the relative clause is also duplicated during the derivation of (29b). By the same derivational steps outlined above for the third ultimately underivable reading, (22c), we arrive at the structure in (32).

(32) everything [thing he thought thing I did <buy thing>]
I expected [[John to buy everything]
everything [thing he thought thing I did <buy thing>]]

The LF-representation that is derived from (32) is (33).

(33) everything [λx. he thought the thing x [λy. I did <buy the thing y>]]
[λz. I expected [λw. John to buy the thing w]
(the thing z [λu. he thought the thing u [λv. I did <buy the thing v>]]])]

The structure is licensed for both of the ellipsis sites. The meaning of the LF-representation in (33) is indeed that of the fourth reading, since the lower copy of the relative clause

(34) λu. he thought the thing u [λv. I did <buy the thing v>]

only repeats the restriction for the entities the universal quantifier quantifies over which is already for the first time introduced by the upper copy of the relative clause

(35) λx. he thought the thing x [λy. I did <buy the thing y>]

There is a more elegant way to derive this reading, though, by adopting Sauerland's treatment of copies which will be discussed in section 6.

5 The Last Embedding

The last combinatorial possibility - a mono-clausal relative clause that is further embedded in the matrix clause - is just given to complete the picture. It is a less complex variant of the example in (21a).

(36) Peter believes I bought [every book Paul did].

Analogously to the four readings given for example (21a) in (22), there are four logically possible readings for (36): *every book* scopes either above or below *believes* and the deleted VP is either interpreted as *Peter believes I bought the book* or *I bought the book*. The discussion of the four cases can be adopted nearly verbatim from the previous

section.
The same problems for the derivation and the licensing condition arise.

6 A Solution

Since for the desired structure (23) the underivability in the current system was shown in section 4, a possible step is to rethink the assumptions that were made at the beginning. I propose to discard Fox's (2002) notion of copy theory of movement and adopt the version of copy theory in Sauerland (2004). For each DP, Sauerland defines what he calls the *core NP*.

(37) The *core NP* is the phrase consisting of the head noun N of the NP that is the complement of the determiner heading the DP and all arguments to N.
(Sauerland 2004:66)

Movement, he proposes, only leaves behind a copy of the *core NP* instead of the entire DP.[12] For the problem at hand, the adoption of the notion of *core NP* provides an easy and immediate solution. Since relative clauses are usually analyzed as being adjuncts, they are not part of the *core NP* and are therefore not left behind by movement. Thus, in the derivation of (23), Quantifier Raising can be analyzed to only leave behind the *core NP*, *everything,* without the relative clause that contains the ellipsis site.
Adopting Sauerland's treatment of copies, however, also eliminates Fox's main reason to assume extraposition of the quantifying expression. The entire extraposition analysis is forced by the assumption that movement leaves behind a copy of everything that has been moved. Since in the new view of things the relative clause is not part of the *core NP*, it is removed by movement and can thus be easily merged inside the antecedent VP without causing any problems. Simple Quantifier Raising[13] of the quantifying expression from the antecedent VP then suffices to resolve the basic antecedent-containment and to generate the right LF-representation without recourse to extraposition or late merger.
Let us show this for the example (21b), repeated here as (38).

[12] Sauerland's account is in fact a bit more complicated. He proposes that the *core NP* left behind by movement is the argument of an indexed definite determiner which is interpreted as a variable restricted to the set of entities specified by the *core NP*. For the specifics cf. Sauerland (2004).

[13] Already Sag (1976) and Williams (1977) assume a Quantifier Raising account to resolve antecedent-contained deletion. Quantifier Raising is in fact the standard resolution method proposed for antecedent-contained deletion.

(38) I asked him to teach [the book of Irene's that David wanted me to Δ.]

The Δ can be interpreted two ways, as *ask him to teach* (matrix VP) or just *teach* (embedded VP). Let us derive the first reading by the extraposition account of Fox (2002) with the assumption of Sauerland's version of the copy theory and then compare it to the simple Quantifier Raising account with the assumption of Sauerland's version of the copy theory.

First, *the book of Irene's* is extraposed from the embedded VP.

(39) [PRO to teach the book of Irene's] the book of Irene's

Then the relative clause is late merged and the sentence is further embedded.

(40) I asked him [[PRO to teach the book of Irene's]
the book of Irene's [book of Irene's that David wanted book of Irene's me to ask him book of Irene's PRO to teach book of Irene's]]

As the last step, the extraposed DP is raised to scope over the matrix clause. Since the relative clause is not part of the *core NP*, it is not left behind in the copy.

(41) the book of Irene's [book of Irene's that David wanted book of Irene's me to ask him book of Irene's PRO to teach book of Irene's]
I asked him [[PRO to teach the book of Irene's] the book of Irene's]

After Trace Conversion and relative clause interpretation, the LF-representation of (41) is as in (42).

(42) the book of Irene's
[λx.David wanted [λy.me to ask him [[λv.PRO to teach the book of Irene's v](the book of Irene's y)]](the book of Irene's x)]
λz.I asked him [[λu.PRO to teach the book of Irene's u](the book of Irene's z)]

This representation is licensed. The parallelism domain and the corresponding antecedent are given in (43).

(43) a. λy.me to <ask him [[λv.PRO to teach the book of Irene’s v]
(the book of Irene’s y)]>
b. λz.I asked him [[λu.PRO to teach the book of Irene’s u]
(the book of Irene’s z)]

The assumption of copying only the *core NP* prevented the ellipsis site to be duplicated. With this assumption the simple Quantifier Raising account can also derive an adequate LF-representation. The derivation is in fact even more straightforward, since the relative clause can be merged together with the quantifying expression in the matrix VP. This is the structure in (44a). Quantifier Raising then removes the ellipsis site from its antecedent-contained position, see (44b).

(44) a. I asked him to teach
[the book of Irene’s [book of Irene’s that David wanted book of Irene’s me to ask him PRO to teach book of Irene’s]]
b. [the book of Irene’s [book of Irene’s that David wanted book of Irene’s me to ask him PRO to teach book of Irene’s]]
I asked him to teach the book of Irene’s

The LF-representation derivable from (44b) is then as follows.

(45) the book of Irene’s
[λx.David wanted [λy.me to ask him [PRO to teach the book of Irene’s y]]
(the book of Irene’s x)]
λz.I asked him PRO to teach the book of Irene’s z]

The representation in (45) is also licensed by our licensing condition and was derived without extraposition or late merger, the two core ingredients of Fox's (2002) analysis.

7 Conclusion

It was shown that to provide an adequate structure for cases of antecedent-contained deletion where the ellipsis site is embedded in a multi-clausal relative clause, successive-cyclic movement of the internal relative clause head has to be assumed. With this additional assumption, the mechanism proposed for run of the mill antecedent-contained deletion can be retained without changes (Fox (2002) and Takahashi and Fox (2005)).

Furthermore, I discussed examples of all other logically possible embedded antecedent-contained deletion cases. I showed that for cases of antecedent-contained deletion with multi- and mono-clausal relative clauses with two special characteristics - a) the ellipsis site is inside the lowest embedded VP and b) the quantifying expression is part of a clause that is further embedded in the matrix clause - the resolution analysis given in Fox (2002) is inadequate. By exchanging the assumed copy theory of movement with the treatment of copies proposed in Sauerland (2004), all of the arising problems disappear. The adoption of this new treatment of copies however does away with one of the main reasons for Fox (2002) to adopt the extraposition account in the first place.

List of Abbreviations

VP	verb phrase
DP	determiner phrase
CP	complementizer phrase
SpecCP	specifier of CP
TP	tense phrase
NP	noun phrase
PF	phonological form
LF	logical form

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