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Shalom Lappin
IBM T. J. Watson Research Center

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SHALOM LAPPIN

IBM T.J. WATSON RESEARCH CENTER

1. INTRODUCTION

On the syntactic approach to VP ellipsis, ellipsis resolution involves reconstructing an elided VP by associating it with the syntactic structure and lexical content of an antecedent VP. From this perspective, semantic representations are not assigned directly to empty VP constituents. They are derived by first specifying the syntactic structure and lexical content of an elided VP, and then invoking the same procedures of semantic interpretation which apply to fully realized VP's. The accounts of ellipsis proposed in May (1985), Fiengo & May (F&M), (1991a), and (1991b), Lappin and McCord (L&M) (1990), Lappin (1991), Lappin (1992) and Kitagawa (1991) are instances of the syntactically based reconstructionist approach.

The syntactic view stands in contrast to the semantic approach to ellipsis, which holds that VP ellipsis resolution consists in identifying a suitable VP meaning (a property) and assigning it directly to an elided VP. The analyses presented in, for example, Lappin (1984), Dalrymple et al. (1991), and Hardt (1992) are of this type.[2]

[1] I am grateful to the participants of NELS 23, October, 1992 for helpful comments on an earlier version of this paper. I would also like to thank Mark Baltin, Mary Dalrymple, Robert Fiengo, Dan Hardt, Andy Kehler, Ann Lobeck, Robert May, Stuart Shieber, and Mark Steedman for discussion of many of the ideas contained in this paper.

[2] Sag (1976) and Williams (1977) combine elements of both approaches. They treat the representation of an elided VP as a lambda expression which corresponds more or less directly to the property that the VP denotes. However, this expression is characterized as an abstract level of syntactic structure to which certain syntactic constraints apply.

In this paper I will set aside the debate between these two views of ellipsis and focus on a discussion which is internal to the syntactic approach.[3] Specifically, I will take up the question of which level of syntactic representation provides the basis for reconstruction of elided VP's. On the analysis of ellipsis presented in May (1985), and F&M (1991a) and (1991b), reconstruction takes place at LF. On an alternative account proposed in Lappin and McCord (L&M) (1990), Lappin (1991), and Lappin (1992), reconstruction applies at S-structure. I compare these two accounts with respect to the interaction of ellipsis and several syntactic and semantic processes, and I argue that the relevant facts support the S-structure account.

In section 2 I compare the way in which the LF and S-structure accounts of ellipsis deal with antecedent contained (ACD) structures. In section 3 I argue that within the framework of the S-structure analysis proposed here, it is possible to treat ellipsis as a variety of psuedo-gapping. Section 4 is concerned with binding condition effects in elided VP's. In section 5, I discuss the relevance of certain scope phenomena to the level of representation to which reconstruction applies. Finally, in section 6 I present evidence for the S-structure view from the properties of parasitic gaps in ACD structures.

The analysis of ellipsis proposed here has implications for current discussions on the architecture of UG. Chomsky (1992) sketches a model of grammar in which LF and PF are the only defined levels of representation. If ellipsis resolution does, in fact, consist in reconstructing an elided VP by associating it with the lexically anchored S-structure of an antecedent VP, then S-structure cannot be dispensed with. It must also be recognized as a well motivated level of representation.

2. Ellipsis Resolution in ACD Structures

May, and F&M (1991a) and (1991b) cite ACD structures as the primary motivation for the claim that ellipsis resolution applies at LF. May points out that if 1b is the S-structure of 1a, then copying the matrix VP into the elided VP at S-structure will generate an interpretative regress. The empty VP which the matrix VP contains will re-occur in the elided VP when the former is copied into the latter.

1a. Dulles suspected everyone who Angelton did.
b. Dulles $[_{VP}$suspected everyone who Angelton did $[_{VP}\ ]]$

May observes that after QR applies to the quantified NP object of *suspect* in 1b to yield the LF 2a, then the elided VP is no longer contained in the matrix VP. Reconstruction can then apply, producing 2b, which is the desired representation of 1a.

2a. $[_{IP}$[everyone who$_1$ Angelton did]$_1[_{IP}$Dulles suspected $t_1]]$
b. $[_{IP}$[everyone who$_1$ Angelton suspected $t_1]_1$ $[_{IP}$Dulles suspected $t_1]]$

L&M and Lappin (1991) propose an account of VP ellipsis on which reconstruction applies at S-structure rather than LF. On this view, the same procedure of ellipsis resolution applies to fully elided VP's, like the one in the second conjunct of 3a, and partially elided VP's, like the ones in 3b-d.

[3] For a discussion of the debate between the syntactic and semantic approaches to ellipsis and arguments for the syntactic view see Lappin (1992). Additional arguments for the S-structure account are also presented in Lappin (1992).

3a. John sent flowers to Lucy before Max did.
b. John sent flowers to Lucy before Max did chocolates.
c. John sent flowers to Lucy before Max did to Mary.
d. John sent flowers to Lucy before Max did chocolates to Mary.

Reconstruction consists in identifying the head of the antecedent VP with the head of the elided VP, and determining which arguments and adjuncts of the antecedent head are inherited by the elided head. In the case of partially elided VP's, such as those in 3b-d, arguments and adjuncts in the antecedent VP which correspond to constituents realized in the elided VP are not inherited.

May's claim that an interpretive regress arises if reconstruction applies to ACD structures in relative clauses at S-structure holds only if we assume that the antecedent contained VP in 1a is fully elided, as in 1b. However, on the analysis presented in L&M and Lappin (1991), a trace appears in the object position of the elided VP at S-Structure, and so the antecedent contained VP is only partially elided. Given this analysis, the S-structure of 1a is 4.

4. Dulles suspected $[_{NP}[_{N'}$everyone $[_{CP}$who$_1$ Angelton did $[_{VP}[_{V}\ ]\ [_{NP}t_1]]]]]$

Reconstruction of the partially elided VP in 4 involves copying only the head of the antecedent VP, *suspect*, to produce 5, as the object of the elided head is already realized at S-structure as a trace.[4]

5. Dulles suspected $[_{NP}[_{N'}$everyone $[_{CP}$who$_1$ Angelton $[_{VP}[_{V}$suspected $]$ $[_{NP}t_1]]]]]$

3. VP Ellipsis and Pseudo-Gapping

On the S-structure based analysis, VP ellipsis is characterized as a relation between the elided head of a VP and the arguments and adjuncts of this head on one hand, and the head of an antecedent VP and its arguments and adjuncts on the other. The algorithm for VP ellipsis resolution presented in L&M determines a correspondence among the arguments and adjuncts of the antecedent head and those of the elided head. In the course of reconstruction, the elided head inherits those arguments and adjuncts of the antecedent head which correspond to elided constituents in the VP that it heads. When some of the arguments or adjuncts of the elided head are realized in its VP, a pseudo-gapping structure results, as in the partially elided VP's in 3b-c. Full VP ellipsis is the limiting case in which no arguments or adjuncts of the elided VP are realized within this VP.

The S-structure account treats ellipsis in ACD structures like 1a as a species of pseudo-gapping in which a partially elided VP contains a trace as a realized argument (the structure given in 4). As F&M (1992) observe, if pseudo-gapping involves the realization of selected arguments (adjuncts) of an elided head, then this variety of ellipsis would seem to be subject to a locality condition which restricts the set of possible constituents that can

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4 L&M have implemented this procedure for reconstructing elided VP's as an algorithm which applies to the S-structure representations generated by McCord's Slot Grammar parser. For a description of the VP ellipsis resolution algorithm see L&M and McCord et al. (1992). See McCord (1991) and McCord et al. (in press) for descriptions of Slot Grammar.

appear in a partially elided VP to arguments (adjuncts) of the head of the VP. Thus, for example, the elided verb in 6 can take *gave*, but not *claimed* as its antecedent.

6. Max claimed that he gave Lucy flowers before John did chocolates.

If a strict locality condition of this kind does apply to pseudo-gapping, then the S-structure account will have difficulties with ACD cases like 7, where both the matrix and the complement verbs are possible antecedents for the head of the elided VP in the relative clause.

7. Mary promised to read everything which Rosa did.

On the LF account, both 1a and 7 are analyzed as instances of full VP ellipsis, and so this problem does not arise.

In fact, the locality condition which applies to pseudo-gapping is not as restrictive as F&M suggest. In the following examples of pseudo-gappping, the higher matrix verb can serve as the antecedent of the elided head of a VP in which an argument is realized.

8a. John will agree to complete his paper before Bill will his book.
b. Mary hoped to win the race more fervently than John did the baseball game.

Both *agree* and *complete* are possible antecedents for the elided verb in 8a, and *hoped* is the preferred antecedent in 8b.

F&M (1992) argue that non-restrictive relatives like those in 9 are best analyzed as cases of pseudo-gapping, given that the NP's in which they are contained are not subject to QR.

9a. John spoke to Mary, who Max did too.
b. Bill visited London, which Lucy didn't.

The most natural antecedents for the elided verbs in 10 are the matrix verbs, although the embedded verbs are also possible candidates.

10a. John wanted to speak to Mary, who Max did too.
b. Bill insisted on visiting London, which Lucy didn't.

The absence of tense in the complements of the matrix verbs in 8 and 10 appears to be the factor which permits the head of the partially elided VP to take the matrix verb as its antecedent. When the complement is tensed, only the embedded verb is a possible antecedent.[5]

11a. John promised that he read everything which Bill did.
b. Mary agreed that she completed her paper before Lucy did her book.
c. John claimed that he spoke to Mary, who Max did too.

[5] I have tested 11a on a variety of speakers, and all of them except for one agree that *promised* is not a possible antecedent for the elided verb. Interestingly, the speaker who does accept ellipsis resolution with *promised* in 11a also allows *claimed* to be the antecedent of the elided verb in 11c. It appears that, for this speaker, pseudo-gapping is exempt from any locality condition.

A possible explanation for the fact that pseudo-gapping is possible with antecedent matrix verbs of untensed complements is that in these structures, the untensed complement verb and the matrix verb are reanalyzed as combining to form a single relational predicate of which the realized constituent is an argument. Thus, for example, *agree to complete* in 8a and *want to speak to* in 10a are construed as single complex heads which take *his book* and a trace respectively, as arguments. Tense appears to act as a barrier to the combination of a matrix and a complement verb into a single predicate head, and so pseudo-gapping is excluded in 11a-c. In any case, 8 and 10 indicate that the locality condition on psudeo-gapping must be modified to permit matrix verb antecedents for the heads of partially elided VP's when the complements of these verbs are untensed, and so it is possible to sustain the analysis of 8 as an instance of pseudo-gapping.

Another case which might be thought to cause problems for the analysis of ACD ellipsis as pseudo-gapping is the contrast which F&M (1991b) note between 12a and 12b.

12a.*Dulles believed everyone that Angelton did is a spy.
b. Dulles believed everyone that Angelton did to be a spy.

If *believed* takes a sentential complement in both 12a and 12b, then the trace which a psuedo-gapping account posits in the elided VP will not be an argument of the elided head. F&M explain the contrast between these sentences by assuming that the trace left by QR is sensitive to ECP type constraints. When QR applies to the quantified NP containing the elided VP in 12b, the trace of this NP is properly governed by *believed*. Therefore, the resulting LF is well formed, and the elided VP can be reconstructed in a manner analogous to 2b. However, if QR is applied to the quantified NP subject of the tensed complement of *believed* in 12a, the subject trace is not properly governed, and therefore it is not possible to derive a well formed LF from this structure as the input to reconstruction.

It is not at all clear that the assignment of quantifier scope is restricted by ECP type conditions. In 13 the subject NP's of the embedded complements permit wide scope readings with respect to *believed*.

13a. Dulles believed each person was a spy before Angelton did.
b. Dulles believed most people in the Department were spies before Angelton did.
c. Dulles believed someone in the Department was a spy before Angelton did.

On the LF account, the possibility of wide scope assignment indicates that QR can adjoin the NP which receives wide scope to the matrix VP or IP. However, the sentences which are derived by substituting the quantified NP's in 13 for the embedded subject NP in 12a remain ill-formed.

14a.*Dulles believed each person that Angelton did is a spy.
b.*Dulles believed most people in the Department that Angelton did are spies.
c.*Dulles believed someone in the Department that Angelton did is a spy.

This indicates that the contrast between 12a and 12b is not due to the fact that QR can apply to the subject of the complement clause in the latter sentence but not in the former.

In fact, a pseudo-gapping analysis of 12b does seem well motivated, given the contrast between 15a and 15b.

15a.*John believes Mary is as competent as he does Lucy.
b. John believes Mary to be as competent as he does Lucy.

The fact that *Lucy* can be realized as the argument of the elided verb in 15b, suggests that 12b is a case of pseudo-gapping. We can can account for the contrast in 15 if we analyze *believes* in 15b as taking not an infinitival IP complement with a lexical subject, but an NP object and an infinitival IP complement with a PRO subject controlled by this object. On this analysis, *Lucy* and *Mary* are corresponding arguments in the elided and antecedent VP's, respectively. Reconstruction consists in assigning *believes* to the head of the elided VP and *PRO to be competent* to its infinitival IP argument. In 15a, *believes* takes only a tensed complement, and so pseudo-gapping with a realized NP object in the elided VP is ruled out.

Applying this analysis to 12, the S-structure of 12b is 16a. Reconstruction involves assigning *believes*, the head of the antecedent VP, to the head of the partially elided VP, and the infinitival IP complement of the antecedent verb to the IP complement of the elided verb. This yields 16b, which gives the desired interpretation of 12b.

16a. Dulles believes $[_{NP}$everyone $[_{CP}O_1$ that Hoover did $[_{VP}[_V\ ]\ t_1$ $[_{IP}\ ]]]]\ [_{IP}$PRO to be a spy]
b. Dulles believes $[_{NP}$everyone $[_{CP}O_1$ that Hoover $[_{VP}[_V$believes] t_1 $[_{IP}$PRO to be a spy]]]] $[_{IP}$PRO to be a spy]

17 is the S-structure of 12a.

17. Dulles believes $[_{CP}[_{IP}[_{NP}$everyone $[_{CP}O_1$ that Hoover did $[_{VP}[_V\ ]\ [_{CP}[_{IP}t_1\ [_{VP}\ ]]]]]][_{VP}$is a spy]]]

This structure is ruled out as an input to reconstruction because neither the trace nor the elided VP in the CP are arguments of the elided verb, and so psuedo-gapping is not possible in this case.

Rather than posing a problem for the S-structure account of VP ellipsis, the contrast between 12a and 12b provides motivation for preferring this account to the LF based approach. The former provides an explanation for this contrast while the latter does not.

4. Binding Condition Effects in Ellipsis

On the syntactic view of ellipsis, the syntactic structure of an antecedent VP is assigned to an elided VP. This entails that the syntactic conditions which define well-formed structures for fully realized sentences also apply to sentences containing elided VP's. Cases like 18a and 18b indicate that the binding conditions apply within elided VP's.

18a.*John met $Mary_1$, and she_1 did too.
b.*Max wants to see $Bill_1$ before he_1 will.

However, F&M (1991a) and (1991b) observe that some elliptical structures permit what appears to be violations of condition C of the binding theory. 19a is acceptable, although reconstruction of the elided VP in the second conjunct yields 19b.

19a. Mary spoke to $John_1$, and he_1 hopes that Lucy will $[_{VP}\ ]$ too
b. Mary spoke to $John_1$, and he_1 hopes that Lucy will $[_{VP}$speak to $John_1]$ too

To solve this problem F&M propose that when a referring NP occurs in a VP antecedent, reconstruction can abstract from the lexical content of this NP and substitute a pronoun for it. They refer to this procedure of substituting a pronoun for a referring NP in the reconstruction of an elided VP as *vehicle change*. Applying vehicle change to *John* in the first conjunct of 19a results in 20, which satisfies the binding conditions.

20. Mary spoke to $John_1$, and he_1 hopes that Lucy will $[_{VP}$speak to $him_1\ ]$ too

In fact, permitting vehicle change under ellipsis is compatible with the S-structure as well as the LF account.

F&M argue that reconstruction must apply at LF in order for the binding conditions to give the correct results. They point out that while 21a satisfies the binding conditions, 21b does not.

21a. Mary introduced him_1 to everyone that $John_1$ wanted her to.
b.*Mary introduced him_1 to everyone that she wanted $John_1$ to.

They claim that the non-elided sentences which correspond to 21a,b, are both unacceptable.

22a. Mary introduced him_1 to everyone that $John_1$ wanted her to introduce him_1 to.
b. Mary introduced him_1 to everyone that she wanted $John_1$ to introduce him_1 to.

If this is the case, then reconstruction at S-structure does not capture the distinction between 21a and 21b, as it will produce representations for these cases which are analogous to 22a and 22b.

If reconstruction applies to the structures produced by QR, then the reconstructed representations for 22a,b are 23a,b, respectively.

23a. [everyone that $John_1$ wanted her to [introduce him_1 to t]][Mary introduced him_1 to t]
b. [everyone that she wanted $John_1$ to [introduce him_1 to t]][Mary introduced him_1 to t]

While 23a satisfies the binding conditions, 23b violates condition B, and so the distinction between 21a and 21b is captured in these post-reconstruction LF's.

In fact, it is not all clear that 22a and 22b are both ill-formed. I have presented the pairs of sentences in 21 and 22 to numerous speakers, and while they all agree that 21b and 23b are both unacceptable, they find 22a to be at least as good as 21a.

If we assume that it is possible to define distinct A-chains which contain common sub-chains, where each chain satisfies the binding conditions, then we can explain the fact

that many speakers find 22a, but not 22b acceptable.[6] In 22a, an A chain containing both occurrences of *him* and an A chain containing *John* and the second occurrence of *him* are each individually possible. In 22b, on the other hand, the two occurrences of *him* can form a chain, but *John* cannot be coindexed with either of these pronouns. 24a,b illustrate these distinct binding possibilities for 22a and 22b, respectively.

24a. Mary introduced him$_1$ to everyone that John$_1$ wanted her to introduce him$_1$ to.

b. Mary introduced him$_1$ to everyone that she wanted John$_1$ to introduce him$_1$ to.

25a and 25b exhibit a similar distinction in binding possibilities, except that in 25b, a single A chain is ruled out by condition C.

25a. Mary asked him$_1$ to deliver the manuscript which John$_1$ had promised that he$_1$ would give her.

b.*Mary asked him$_1$ to deliver the manuscript which John$_1$ had promised to complete.

It seems, then, that the empirical basis for F&M's argument is questionable.

There are, however, binding condition effects in ellipsis which support the view that reconstruction applies at S-structure rather than LF. 26 is ill-formed due to a condition C violation.

26.*he$_1$ completed his$_1$ paper before John$_1$ expected to [$_{VP}$]

The indexing in 26 can only be evaluated after reconstruction, as part of this indexing is available only after ellipsis resolution. When QR and reconstruction apply to the PP adjunct in 26 (as in Larson (1987)), a possible (post-reconstruction) LF for this sentence is 27.

27. [$_{IP'}$[$_{PP_2}$before [$_{IP'}$John [$_{VP}$expected to complete his$_1$ paper [$_{PP_2}$e]]]]
[$_{IP}$he$_1$ [$_{VP}$completed his$_1$ paper [$_{PP_2}$e]]]]

But 27 satisfies the binding conditions, and, in fact, it is analogous to the S-structure of the well-formed sentence in 28.

28. Before John$_1$ expected to complete his$_1$ paper, he$_1$ completed his$_1$ paper.

Therefore, it is unclear how 26 is ruled out if reconstruction applies at LF.

The S-structure account avoids this problem. Reconstruction of the elided VP at S-structure yields 29, which violates condition C.

[6] Clearly it is necessary to formalize the notion of distinct A chains with non-null intersections and investigate its consequences for the binding theory. Exploring this question fully is beyond the scope of this paper. I propose this idea only as a possible explanation of the contrast which many speakers find between the a and b cases in 22 and 25. The fact that this contrast corresponds to the difference between 21a and 21b is sufficient to show that F&M's argument does not go through.

29.*He$_1$ completed his$_1$ paper before John$_1$ expected to [$_{VP}$complete his$_1$ paper]

5. Ellipsis and Scope

Cases like 30 (from Dalrymple et al.) pose a problem for the S-structure approach.

30. Mary spoke to everyone after Bill did.

30 permits both a narrow scope and a wide scope reading. In the former, Mary spoke to everyone after Bill spoke to everyone. On the latter, every person is such that Mary spoke to him/her after Bill spoke to him/her. Reconstruction at S-structure gives 31, which corresponds to the narrow scope reading.

31. Mary spoke to everyone after Bill [$_{VP}$ spoke to everyone]

F&M (1991b) permit non-contiguous constituents of an antecedent LF to be reconstructed in a sentence containing an elliptical VP. On this view, *everyone*$_1$....*saw* e_1 can be copied from the first conjunct of 32a into the second conjunct, creating a post-reconstruction LF which specifies the narrow scope reading of 30.[7] When only the VP of the first conjunct is reconstructed in the second conjunct, the resulting LF is 32b, which expresses the wide scope reading of 30.

32a. [$_{IP}$everyone$_1$ [$_{IP}$ Mary [$_{VP}$spoke to e_1]]] [$_{PP}$after [$_{IP}$everyone$_2$ [$_{IP}$Bill [$_{VP}$spoke to e_2]]]]

b. [$_{IP}$everyone$_1$ [$_{IP}$ Mary [$_{VP}$spoke to e_1]]] [$_{PP}$after [$_{IP}$Bill [$_{VP}$spoke to e_1]]]

The question remains as to how reconstruction at S-structure can generate a representation of the wide scope reading of 30. A possible solution to this problem is to allow quantified NP's to undergo vehicle change. Given that on the generalized quantifier view of the semantics of NP's, quantified and non-quantified NP's are assigned the same syntactic category and semantic type, there is motivation for this extension of vehicle change. In particular, on this approach, quantified NP's are referring expressions of the the same kind as proper names and definite descriptions.[8] Reconstruction at S-structure with vehicle change applied to *everyone* produces 33, which expresses the wide scope reading.[9]

33. Mary spoke to everyone$_1$ after Bill [$_{VP}$ spoke to him$_1$]

Let us consider a case in which intersentential ellipsis interacts with quantifier scope. F&M (1991b), following Sag (1976) and Williams (1977), point out that only a wide scope reading of *some student* relative to *everyone* seems possible in 34.

34. Some student saw everyone, and Max did too.

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7 F&M refer to this mode of copying as a "scattered reconstruction".

8 See Barwise and Cooper (1981) for an introduction to generalized quantifier theory. Lappin (1991) adopts the generalized quantifier analysis of NP's within the framework of a model of grammar in which S-structure rather than LF provides the input to rules of model theoretic semantic interpretation.

9 L&M (1990b) generate wide scope readings for sentences like 30 by permitting reconstruction to apply to semantically interpreted structures. This gives rise to a model of ellipsis resolution in which operations of reconstruction are freely interpolated with semantic interpretation. The analysis proposed here preserves the strictly syntactic character of the representations which reconstruction assigns to elided VP's. Therefore it sustains a more constrained model of VP ellipsis resolution than the one proposed in L&M (1990b).

F&M invoke their concepts of *indexical dependency* (ID) and *i-copy* to explain the scope properties of 34. An ID for a given phrase marker P is an ordered triple $<(c_1,...,c_n),I,SD>$. The first element of this triple is the sequence of constituents which bear the index I (the second element), and the third element is an n-ary linear factorization f of a structure in P containing the the sequence of constituents which is the first element of the triple. This factorization is minimal in that there is no factorization f′ consisting of the sequence of indexed constituents in the first element of ID which has fewer factors than f. The sequence of constituents in an ID contains a unique member which has an independent, or α occurrence of the index of the ID, and the remaining members have dependent, or β occurrences of this index.[10] Thus, for example, the ID corresponding to 35a is given in 35b.

35a. John$_1$ loves his$_1^{\beta}$ mother.
b. $<$(John,his),1,$<$ NP,V,NP,N$>>$

F&M stipulate that when a constituent with an α occurrence of an index is reconstructed in an elided VP, both the type (α) and the value (the integer) of its index are preserved. In the case of a constituent with a β occurrence of its index, the index type (β) remains constant under reconstruction, but the index value may change if the ID which is created through reconstruction is identical to the corresponding ID in the antecedent up to the value of their respective indices. F&M refer to distinct ID's which satisfy this identity condition as *i-copies* of each other.

If reconstruction applies to the LF of 34 on which *some student* receives wide scope, the resulting structure is 36.

36. [$_{IP'}$some student$_1$ [$_{IP}$ e$_1^{\beta}$ [$_{VP'}$everyone$_2$ [$_{VP'}$ saw e$_2^{\beta}$]]]], and
[$_{IP}$Max [$_{VP'}$everyone$_3$ [$_{VP'}$ saw e$_3^{\beta}$]]]

The ID's headed by the occurrences of *everyone* in the first and second conjuncts of 36 are 37a and 37b, respectively.

37a. $<$(everyone,e),2,$<$ NP,V,NP$>>$
b. $<$(everyone,e),3,$<$ NP,V,NP$>>$

These ID's are i-copies, and so 36 is a well formed reconstruction.

The two post-reconstruction LF's which permit a wide scope reading of *everyone* in 34 are 38a,b.

38a. [$_{IP'}$everyone$_2$ [$_{IP'}$some student$_1$ [$_{IP}$e$_1^{\beta}$ saw e$_2^{\beta}$]]], and [$_{IP'}$everyone$_3$ [$_{IP}$Max saw e$_3^{\beta}$]]
b. [$_{IP'}$everyone$_2$ [$_{IP'}$some student$_1$ [$_{IP}$e$_1^{\beta}$ saw e$_2^{\beta}$]]], and
[$_{IP}$Max [$_{VP'}$everyone$_3$ [$_{VP}$saw e$_3^{\beta}$]]]

The ID's headed by the two occurrences of *everyone* in 38a are 39a,b, and those for the occurrences of *everyone* in 38b are 40a,b.

[10] In general, A′ bound traces and pronouns which are interpreted as bound variables have β occurrences of their indices, while NP's which refer independently (names, definite descriptions, and pronouns which are not taken as bound variables) bear α type indices.

39a. < (everyone,e),2, < NP,NP,NP,V,NP > >
b. < (everyone,e),3, < NP,NP,V,NP > >

40a. < (everyone,e),2, < NP,NP,NP,V,NP > >
b. < (everyone,e),3, < NP,V,NP > >

In each of these pairs, the factorizations of the two ID's are distinct, and so in neither case is the second element of the pair an i-copy of the first. As a result, 38a and 38b are ruled out as sources for reconstruction, and only 36, which corresponds to the wide scope reading of *some student*, is possible.

Let us assume that F&M's i-copy condition holds as a constraint on ellipsis resolution.[11] The scope properties of 34 would seem to indicate that this constraint must be applied to ID's which result from reconstruction at LF rather than at S-structure.

In fact, this is not the case. 34 does not represent a general pattern of scope assignment which holds for all sentences of this structure. For example, on the preferred reading of 41, *every meeting* has wide scope relative to to *at least one Labour MP*.

41. At least one Labour MP attended every committee meeting, and Bill did too.

But the LF's which are compatible with this reading are analogous to 38a,b, and so they violate the i-copy constraint. Therefore, if reconstruction applies at LF, the preferred reading of 41 is incorrectly ruled out.

The S-structure account allows for both readings. Reconstruction generates 42.

42. At least one Labour MP [$_{VP}$attended every committee meeting], and Bill [$_{VP}$attended every committee meeting] too

There are no ID's in 42, and so it satisfies the i-copy constraint vacuously. Rules of scope assignment can apply to the NP's in the first conjunct of 42 to derive both the narrow and the wide scope readings.

On the S-structure account, scope assignment is determined after reconstruction. How, then, can we explain the fact that in 34 the wide scope reading of the subject of the first conjunct is strongly preferred? What appears to give rise to this scope preference is an expectation that the instances of the relation which holds between the entities corresponding to the subject and internal argument terms of each conjunct will be of the same type. The second conjunct of 34 asserts that an individual, Max, saw everyone. Therefore, the first element of each pair which satisfies the relation denoted by *saw* in the second conjunct

[11] F&M (1991b) provide extensive evidence for this constraint. However, consider the interpretation of (i) on which John revised the papers of the (at least) five students in the class who revised their papers.

(i) At least five students in the class revised their papers, and John did too.

The pronoun *their* has a β occurrence of its index in the first conjunct of (i), as it corresponds to a variable bound by the quantified NP *five students*. However, when it appears in the reconstructed VP in the second conjunct, it is interpreted not as a bound pronoun, but as an E-type pronoun (in the sense of Evans (1980)) which denotes the set of (at least) five students who revised their papers. Therefore, it will bear an α index, in violation of F&M's requirement that the indexical type of an NP remain constant under reconstruction. This example suggests that it may be necessary to reformulate the i-copy constraint to permit changes of indexical type in certain cases of reconstruction.

is constant across all pairs. On the wide scope reading of *some student*, this condition also holds for the pairs which satisfy the relation in the first conjunct. But if *everyone* receives wide scope, this parallelism between the instances of the relation which each conjunct asserts of its subject-object pair is disrupted. In the first conjunct, the relation is distributed over pairs whose first elements are possibly distinct.[12]

The parallelism condition required to explain the scope properties of 34 appears, then, to be pragmatic rather than syntactic. As 41 shows, this pragmatic preference for parallel relations in antecedent and elided conjuncts can be easily overridden by lexical and semantic factors. In the case of 41, the presence of the determiner *at least one* in the subject NP of the first conjunct and a universal quantifier in the object NP establishes a strong preference for a wide scope reading of the object NP.

It seems that permitting reconstruction to apply prior to scope assignment provides a more satisfactory account of the interaction of scope and ellipsis resolution in intersentential cases of VP ellipsis.

6. Parasitic Gaps in ACD Structures

As the contrast between 43a and 43b indicates, parasitic gaps are subject to a locality condition on their relations to the wh-traces which license them.

43a. This is the performance which$_1$ John attended t_1 in order to review e_1
b.*This is the performance which$_1$ John attended t_1 before coming in order to review e_1

On the analysis of parasitic gaps proposed in Chomsky (1986), A parasitic gap is bound by an empty operator adjoined to the clause in which the gap appears. The A′ chain containing the parasitic gap is licensed by an A′ chain containing a wh-trace in argument position, and this trace does not c-command the parasitic gap. The two A′ chains are subject to a chain composition condition which requires that the empty operator binding the parasitic gap be 0-subjacent to the final wh-trace argument of the licensing A′ chain. This analysis explains the contrast in 43. The S-structures of 43a,b are 44a,b, respectively.

44a. This is the performance which$_1$ John [$_{VP}$attended t_1 [$_{PP'}O_1$[$_{PP}$in order to review e_1]]]
b.*This is the performance which$_1$ John [$_{VP}$attended t_1[$_{PP}$before coming [$_{PP'}O_1$[$_{PP}$in order to review e_1]]]]

[12] The same expectation of parallel relations in both conjuncts applies to (i), the non-elided counterpart of 34, where the wide scope reading of the subject of the first conjunct is still preferred.

(i) Some student saw everyone, and Max saw everyone too.

Although the preference for the wide scope reading of *some student* is somewhat stronger in 34 than in (i), this could be due to the fact that ellipsis reinforces the expectation of parallelism in the relations specified in each conjunct. When the order of the conjuncts in (i) is reversed, as in (ii), the preference for the wide scope reading of *some student* is comparable to that in 34.

(ii) Max saw everyone, and some student saw everyone too.

The empty operator which binds the parasitic gap is 0-subjacent to the wh-trace in 44a, but in 44b it is not. Therefore, the two A′ chains satisfy the locality condition on chain composition in the former structure but not in the latter.

Consider the parasitic gap in the elided VP of the ACD structure in 45.

45. This is the book which Mary thinks she reviewed before she could have.

If reconstruction applies at LF and the parasitic gap in the elided VP of 45 appears only after reconstruction, then the condition on chain composition which licenses the appearance of a parasitic gap can only apply to a post-reconstruction LF representation of 45. The two possible post-reconstruction LF's of 45 which correspond to the non-contradictory reading of this sentence are 46a,b.

46a. This is the book $[_{CP}$which$_1$ $[_{IP}$Mary $[_{VP'}$ $[_{PP'_2}O_1[_{PP}$before she could have $[_{VP}$reviewed $t_1]]]]$ $[_{VP}$thinks $[_{IP}$she $[_{VP}$reviewed t_1 $e_2]]]]]]$

b. This is the book $[_{CP}$which$_1$ $[_{IP'}[_{PP'_2}O_1$ $[_{PP}$before she could have $[_{VP}$reviewed $t_1]]]$ $[_{IP}$Mary $[_{VP}$thinks $[_{IP}$she $[_{VP}$reviewed t_1 $e_2]]]]]]$

The empty operator is not 0-subjacent to the wh-trace in either 46a or 46b, and so the non-contradictory reading of 45 appears to be incorrectly ruled out on the LF approach.

Notice that it is not possible to save 46a or 46b by treating the reconstructed parasitic gap in these structures as a species of resumptive pronoun. While this analysis of reconstructed parasitic gaps will exempt them from locality conditions like the chain composition condition, it will also fail to explain the fact that parasitic gaps are sensitive to barrier constraints in ACD structures. Therefore, the analysis will not account for the contrast in 47, or the distinction between 48a and 48b.

47a. *This is the play which John reviewed before Mary arrived so that she could.

b. This is the play which John reviewed before Mary arrived so that she could review it.

48a. *This is the book which$_1$ John read t_1 before knowing why Max did

b. This is the book which$_1$ John read t_1 before knowing why Max read it$_1$

It is also worth pointing out that the contrast between parasitic gaps and resumptive pronouns with respect to the locality condition governing parasitic gaps in elided VP's is particularly problematic for the semantic approach to ellipsis. Given that the difference between A′ bound traces and lexically realized resumptive pronouns is not visible at the level of semantic representation which this approach uses to resolve elided VP's, it would seem to be unable to account for the distinction in acceptability in these cases.

The behaviour of parasitic gaps in ACD structures is not a problem on the S-structure account. The elided VP in 45 is analyzed in the same manner as an ACD structure containing a wh-trace. The parasitic gap is realized at S-structure as the argument of a partially elided VP. The S-structure of 45 is 49a, and reconstruction produces 49b.

49a. This is the book $[_{CP}$which$_1$ $[_{IP}$Mary $[_{VP}$thinks $[_{CP}$ $[_{IP}$she $[_{VP}[_{V'}$reviewed $t_1]$ $[_{PP'}O_1[_{PP}$before she could have $[_{VP}[_{V}$ $]$ $t_1]]]]]]]]]$

b. This is the book $[_{CP}$which$_1$ $[_{IP}$Mary $[_{VP}$thinks $[_{CP}$ $[_{IP}$she $[_{VP}[_{V'}$reviewed $t_1]$ $[_{PP'}O_1[_{PP}$before she could have $[_{VP}[_{V}$ reviewed $]$ $t_1]]]]]]]]]$

The condition on chain composition is satisfied in 49a, prior to reconstruction, and reconstruction generates a representation which is compatible with both the contradictory and the non-contradictory readings of 45.

The behaviour of parasitic gaps in ACD structures like 45 provides evidence for the view that reconstruction applies at S-structure in order to generate representations which are the input to rules of scope interpretation.

7. CONCLUSION

I have compared two versions of the reconstructionist view of ellipsis. The LF variant takes the logical form, defined by QR, of the antecedent as the input to reconstruction. The S-structure approach characterizes reconstruction as the identification of a correspondence relation at S-structure among the head and the constituents of an antecedent VP, and their counterparts in the elided VP. It also analyzes ACD structures in relative clauses as a species of psuedo-gapping in which the trace of an operator is realized at S-structure. This account provides a more adequate explanation of the interaction of ellipsis with a variety of phenomena involving binding condition effects, scope assignment, and parasitic gaps. These facts support the view that ellipsis resolution consists in the assignment of a lexically anchored S-structure representation to an elided VP on the basis of a correspondence between this representation and the S-structure of an antecedent VP.

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