On the Single Copy Condition

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Abstract

In this paper, we present counter-examples to what we call the Single Copy Condition, which states that only one copy in a chain is visible at LF (Lebeaux 1990, 2009), and argue that A-chains as well as $\bar{A}$-chains can undergo the scattered deletion procedure that splits a quantificational phrase into the operator part and the restrictor part (cf. Chomsky 1993). Based on this mechanism, we propose an alternative to the Single Copy Condition, which is a somewhat weaker version of it.

Keywords: reconstruction, trapping effect, chains, the Single Tree Condition

1 Introduction


(1) Every child$_1$ doesn’t seem to his$_1$ father [$t_1$ to be smart].
This sentence is acceptable under an interpretation that can be paraphrased as ‘It’s not the case for every child that it seems to his father that he is smart’. In other words, the sentence has the interpretation where negation takes scope over the subject universal quantifier phrase and the subject binds the pronoun *his*. For negation to take scope over a subject, the subject should reconstruct into the position that negation c-commands, rather than raising of negation over the subject (see Sauerland 2003 for evidence for this), *every child* should be interpreted at a position that c-commands *his* and is c-commanded by negation at LF.¹

The binding requirement “traps” the subject in a position higher than *his*. Sauerland assumes that the position is the matrix *vP*-adjoined position. Thus, in order to get the wide scope reading of negation, *every child* is interpreted at the *vP*-adjoined position at LF, as illustrated in (2).

(2) doesn’t \[ e_F \quad \text{every child}_1 \quad \text{[seem to his}_1 \quad \text{father to be smart]} \]

Given that reconstruction is only allowed to be into “trace” positions, Sauerland argues that A-movement to SpecTP, like Ā-movement, moves through the *vP*-adjoined position.

Notice, however, that Sauerland’s argument (like arguments based on the “trapping effect” in general) presupposes what Lebeaux (2009) calls the Single Tree Condition. The Single Tree Condition regulates the interpretation of chains at LF, consisting of two parts: (i) only one copy in a chain is visible at LF; (ii) positive interpretive conditions or procedures such as Condition A, scope interpretation, and idiom interpretation must all apply at a single level of representation, LF. If either one of the assumptions does not hold, Sauerland’s argument, along with related ones, collapses. Suppose that (i) does not hold. Then,
the following LF representation for (1) should be possible without positing the vP-adjoined position as a reconstruction site for every child:

(3) \[ TP [\text{every child}_1] \text{ doesn’t seem to his}_1 \text{ father } [TP [\text{every child}_1] \text{ to be smart}] \]

In (3), the higher copy of every child binds his, yielding the bound variable reading of his and the lower copy is under the scope of negation, yielding the wide scope reading of negation. Thus, we could account for (1) if we abandoned the assumption (i) that only one copy in a chain is visible at LF. Furthermore, the assumption (ii) is necessary to maintain Sauerland’s argument. Suppose that scope interpretation and/or variable binding apply derivationally. At a point of the derivational stage in which the subject has not moved to the matrix SpecTP yet, as shown in (4a), negation can take scope over the subject. Then, after the subject moves, every child can bind his, as illustrated in (4b).

(4) a. \[ \text{doesn’t seem to his}_1 \text{ father } [TP [\text{every child}_1] \text{ to be smart}] \]

b. \[ TP [\text{every child}_1] \text{ doesn’t seem to his}_1 \text{ father } [TP \text{ to be smart}] \]

Thus, the fact about (1) could be accounted for if we did not adopt the assumption (ii) that scope interpretation and variable binding take place at a single level of representation, LF, without positing the vP-adjoined position as a reconstruction site for every child.

Given this consideration, we can conclude that the Single Tree Condition is crucial for Sauerland’s argument, along with related ones. In this paper, we focus on the first part of this condition, which we call the Single Copy Condition. Particularly, in section 2, we will present evidence indicating that the Single Copy Condition does not literally hold, for both A-chains and Ā-chains. Furthermore, in section 3, it will be argued that
the multiple copies analysis in which a copy can be interpreted at multiple positions in a 
chain is also problematic. In section 4, we will propose an alternative approach in which 
not only Ā-chains but also A-chains can undergo a scattered deletion process that enables a 
quantificational element to split into the operator part and the restrictor part (cf. Chomsky 
1993). Based on this, we will propose a weaker version of the Single Copy Condition that 
the same part of a copy cannot be represented in multiple positions in a chain.

2 Problems with the Single Copy Condition

It is easy to demonstrate that the Single Copy Condition (SCC) does not apply to Ā-chains. 
For example, consider the following simple wh-question sentence:

(5) Which pictures of himself₁ does John₁ like t₁?

The acceptability of this sentence as a wh-question indicates that multiple copies in an 
Ā-chain are visible at LF contrary to the SCC. In order to get the interpretation of wh-
question, the higher copy in SpecCP must be interpreted. At the same time, in order to get 
himself bound by John, the lower copy in the object position must be interpreted. Thus, the 
SCC predicts that (5) is unacceptable as a wh-question sentence, contrary to fact.

The SCC does not literally hold for A-chains either. Consider the following sentence:

(6) No criticisms of him₁ seem to any linguist₁ to be valid.

This sentence is acceptable with him understood as bound by any linguist. This indicates 
that no criticisms of him is interpreted both at the higher position and the lower position of 
the A-chain. The higher copy in the matrix SpecTP must be visible in order to license the 
NPI any linguist. At the same time, however, the lower copy in the embedded clause has to
be visible in order to be bound by *any linguist*. Thus, the sentence in (6) indicates that the SCC does not apply to A-chains.

Furthermore, the fact that the following sentence is acceptable under the so-called idiomatic interpretation makes the same point:

(7) No pictures were proven to have been taken with this camera.

This sentence is acceptable under the idiomatic interpretation of *take . . . pictures* (in the sense of ‘photograph’) (the literal interpretation of it (‘carry away’) is also available if the PP *with this camera* is removed). According to Chomsky (1993), in order to get the idiomatic interpretation, the idiom phrase *take . . . pictures* must be a constituent at LF. Chomsky presents the following sentence as evidence for this claim:

(8) John wondered [which picture of himself] Bill took $t$.

Under the literal interpretation of *take . . . pictures*, *himself* in this sentence can take either *John* or *Bill* as its antecedent. On the other hand, the idiomatic interpretation forces *himself* to take *Bill* as its antecedent.² This is explained if the idiom phrase must be a constituent at LF, hence forcing the lower copy of *which picture of himself* to be interpreted.

If this is correct, *no pictures* in (7) should be interpreted at the lower position of the A-chain. This requirement, however, is in conflict with an interpretive property of negative quantifiers that negative quantifier phrases cannot have reconstructed readings. As first observed by Partee (1971), and as Lasnik (1998, 1999) discusses, the following sentences, in which the raised subjects are negative quantifier phrases, do not have the reconstructed reading:³
(9)  a. Nobody is (absolutely) certain to pass the test.
    b. No large Mersenne number was proven to be prime.
    c. Noone is certain to solve the problem.

These sentences cannot be paraphrased by the following sentences:

(10)  a. It is (absolutely) certain that nobody will pass the test.
    b. It was proven that no large Mersenne number is prime.
    c. It is certain that noone will solve the problem.

This fact suggests that a negative quantifier phrase cannot be interpreted at the lower position of an A-chain for some reason (whatever that reason may be). If this is correct, no pictures in (7) must be interpreted at the higher position of the A-chain. Therefore, the fact that the sentence in (7) is acceptable under the idiomatic interpretation indicates that no pictures can be interpreted at both the higher position and the lower position at the same time, contrary to the SCC.

To sum up, in this section, we have shown that there are cases in which the SCC does not hold for not only Ā-chains but also A-chains. Given that the SCC is empirically problematic, the question that arises is whether a copy can be represented at multiple places in a chain, which we call the multiple copies analysis (cf. Brody 1995). In the next section, we will argue that the multiple copies analysis is also problematic.

3 Multiple Copies Analysis

One of the apparent alternatives to the SCC is the multiple copies analysis, in which a copy can be represented in multiple positions in a chain (Brody 1995). In fact, the multiple
copies analysis can account for (6) and (7), repeated below as (11a) and (12a), which are problematic for the SCC. This is because LF representations like (11b) and (12b) are possible for these sentences under this analysis:

(11)  a. No criticisms of him$_1$ seem to any linguist$_1$ to be valid.
    b. [no criticisms of him$_1$] seem to any linguist$_1$ [no criticisms of him$_1$] to be valid.

(12)  a. No pictures were proven to have been taken with this camera.
    b. [no pictures] were proven to have been taken [no pictures] with this camera.

In these representations, the copies of the subjects are represented at multiple positions in a chain. In (11b), the higher copy of no licenses the NPI, any linguist, while the lower copy of him can be bound by any linguist. Similarly, in (12b), the higher copy satisfies the requirement on negative quantifiers that they cannot have the lowered reading (see section 2) while the lower copy fulfills the requirement of the idiom phrase that it must be a constituent at LF (see section 2).

Thus, the multiple copies analysis can deal with the problematic data. However, Lebeaux (2009) presents a number of examples that cannot be accounted for under the multiple copies analysis. We review one of them. Consider the following example:

(13) Two women seem $t$ to be attracted to every man.  (Lebeaux 2009: 19)

For many speakers, this sentence is ambiguous between the $two \not\succ \forall$ reading and the $\forall \succ two$ reading. There are at least two imaginable ways to get the $\forall \succ two$ reading: $\forall$ is QRed to the matrix clause or $two$ is “reconstructed” into the same clause as $\forall$. However,
the following data suggests that only the latter option is available:

(14) Mary seems to two women \( t \) to be attracted to every man.

Only the \( \text{two} \succ \forall \) reading is allowed in this sentence, in which there is no reconstruction site for \( \text{two women} \) in the embedded clause. This can be accounted for if the inverse scope reading is possible only if the higher clause quantifier is reconstructed into the lower clause, perhaps because of clause-boundedness of QR.

With this in mind, let us consider the following sentence, which allows only the \( \text{two} \succ \forall \) reading:

(15) Two women\(_1\) seem to their\(_1\) mother \( t \) to be attracted to every man. (Lebeaux 2009: 19)

In (15), \( \text{two women} \) is “trapped” in the matrix clause in order to bind the pronoun \( \text{their} \). Thus, the unambiguity of this sentence is accounted for under the SCC, since in order for \( \forall \) to take wide scope, \( \text{two women} \) must be “reconstructed”. On the other hand, the multiple copies analysis wrongly predicts that this sentence allows the \( \forall \succ \text{two} \) reading since it has the following LF representation under this analysis:

(16) \([\text{two women}_1]\) seem to their\(_1\) mother \([\text{two women}_1]\) to be attracted to every man.

In (16), the higher copy can bind the pronoun while the presence of the lower copy enables \( \forall \) to take wide scope. Thus, if we allow a copy to be represented at multiple positions in a chain, the unambiguity of sentences like (15) cannot be accounted for.
4 Scattered Deletion Analysis

We have shown, so far, that both the SCC and the multiple copies analysis are empirically problematic. As a compromise, we propose (i) that both A-chains and $\bar{A}$-chains undergo Chomsky’s (1993) scattered deletion procedure that enables a quantificational element to split into the operator part and the restrictor part and (ii) that neither part can be interpreted at multiple positions in a chain, which can be considered to be a weaker version of the SCC.

Chomsky (1993) proposes the scattered deletion procedure specifically for $\bar{A}$-chains. For example, the LF representation of the sentence in (5), repeated below as (17a), can be (17b).

(17) a. Which pictures of himself$_1$ does John$_1$ like $_1$?

   b. [which pictures of himself$_1$] does John$_1$ like [which pictures of himself$_1$]?

In (17b), the operator part of the $\bar{A}$-chain is interpreted at the higher position in the chain, allowing the wh-phrase to take scope over the sentence and the restrictor part is interpreted at the lower position in the chain, satisfying condition A.

We argue that the same mechanism is operative on A-chains. Thus, one of the possible LF representations of raising sentences like (18a) is (18b).

(18) a. A student of John’s seems to be at the party.

   b. [a student of John’s] seems [a student of John’s] to be at the party.

In (18b), the operator part is interpreted at the higher position while the restrictor part is represented at the lower position. Given that both A-chains and $\bar{A}$-chains can undergo the scattered deletion procedure, we propose the following condition instead of the SCC.
Quantificational phrases can split into the operator part and the restrictor part, which can be represented in different positions of a chain at LF. However, the same part cannot be represented in multiple positions.\(^8\)

The examples that we presented as evidence against the SCC, repeated below as (20a) and (21a), are consistent with this condition since they can have LF representations like (20b) and (21b), respectively.

\[(20)\]
\[
\begin{align*}
\text{a. } & \text{ No criticisms of him}_1 \text{ seem to any linguist}_1 \text{ to be valid.} \\
\text{b. } & \text{[no criticisms of him] seem to any linguist}_1 \text{[no criticisms of him] to be valid.}
\end{align*}
\]

\[(21)\]
\[
\begin{align*}
\text{a. } & \text{ No pictures were proven to have been taken with this camera.} \\
\text{b. } & \text{[no pictures] were proven to have been taken [no pictures] with this camera.}
\end{align*}
\]

In (20b), the operator part, \textit{no}, is represented at the higher position, licensing the NPI, \textit{any linguist}, while the restrictor part, \textit{criticisms of him}, is represented at the lower position, being c-commanded by \textit{any linguist}. Similarly, in (21b), the operator part, \textit{no}, is represented at the higher position, satisfying the high scope requirement on negative quantifiers while the restrictor part, \textit{pictures}, is represented at the lower position, fulfilling the requirement on idiomatic phrases. In this way, the scattered deletion analysis can deal with the data that the SCC cannot.

Let us consider whether the present analysis can account for the data that is problematic for the multiple copies analysis, that is, (15), repeated below as (22).

\[(22)\]
\[
\text{Two women}_1 \text{ seem to their}_1 \text{ mother } i \text{ to be attracted to every man.}
\]
In order for their to be bound, the operator part of the subject must be represented at the higher position. At the same time, the operator part must be represented at the lower position to be scoped over by ∀. In order to fulfill these two requirements, either of the following LF representations should be available:

(23) a. [two women] seem to their mother [two women] to be attracted to every man.
   b. [two women] seem to their mother [two women] to be attracted to every man.
   c. [two women] seem to their mother [two women] to be attracted to every man.

However, all of them violate our condition in (19). Therefore, we can account for the unambiguity of the sentence in (22).

In this way, the present analysis can deal with all the data that we have seen. However, data from Fox (1999) are apparent counter-examples to our analysis. Fox observes the following paradigm:

(24) a. [A student of David’s] seems to him to be at the party.
    \( (\exists \succ seem, \ast seem \succ \exists) \)
   b. [A student of his] seems to David to be at the party.
    \( (\exists \succ seem, seem \succ \exists) \) (Fox 1999 : 179)

(25) a. [Someone from David’s city] seems to him to be likely to win the lottery.
    \( (\exists \succ seem, \ast seem \succ \exists) \)
   b. [Someone from his city] seems to David to be likely to win the lottery.
    \( (\exists \succ seem, seem \succ \exists) \) (Fox 1999 : 179)

Fox reports that the b-sentences are ambiguous between the wide scope reading and the
narrow scope reading of the raising subjects while the a-sentences are not, allowing only
the wide scope reading of the subject. In the a-sentences, unlike the b-sentences, the rais-
ing subjects are “trapped” in the higher position since if they are interpreted at the lower
position, that leads to violation of condition C. The SCC can account for the unaccept-
ability of the a-sentences under the narrow scope reading since one of the two possible LF
representations for these sentences yields the wide scope reading, as illustrated in (26a) and
the other representation is ruled out by condition C, as illustrated in (26b).

(26)  a. [a student of David’s₁] seems to him₁ [a student of David’s₁] to be at the
      party.

     b. [a student of David’s₁] seems to him₁ [a student of David’s₁] to be at the
      party.

On the other hand, under our analysis, in which A-chains can undergo the scattered
deletion procedure, the following LF representation for the sentence in (24a) appears to be
allowed:

(27)  [a student of David’s₁] seems to him₁ [a student of David’s₁] to be at the party.

In this representation, the operator part, a, is interpreted at the lower position, yielding the
narrow scope reading, while the restrictor part, student of David’s, is represented at the
higher position, satisfying condition C. Therefore, if a representation like (27) is possible
for sentences like (24a) and (25a), we wrongly predict that these sentences can have the
narrow scope reading.

However, the representation in (27) can be ruled out independently of the condition in
(19) by the semantic condition in (28).

(28) The restrictor must be in the scope of the operator at LF.

This condition rules out the LF representation in (27) because the restrictor part is interpreted outside of the scope of the operator part in that representation.\textsuperscript{10} This condition is plausible in terms of semantics since LF representations that violate it such as (27) lead to implausible semantic representations. For example, the following (pseudo-) semantic representation is derived from the LF representation in (27):

(29) \( x \) student of David’s seems to him to \( \exists x. x \) be at the party

This semantic representation cannot be properly interpreted because it includes an unbound variable. Thus, the LF representation in (27) that can be derived under our analysis is ruled out by this semantic reason.

Before closing this section, let us consider a potential problem with the semantic condition in (28). The following example that Brody (1995) presents as evidence for the multiple copies analysis poses a potential problem for our analysis:

(30) Mary\(_1\) wondered how many pictures of herself\(_1\) everyone painted. (Brody 1995: 134)

Brody observes that this sentence is acceptable under the distributive reading, in which everyone takes scope over how many. Given that how many must be interpreted at the lower position in order to yield the distributive reading and that herself must be interpreted at the higher position in order to satisfy condition A, this sentence under the relevant reading should have the following LF representation under our analysis:
(31) Mary$_1$ wondered [how many pictures of herself$_1$] everyone painted [how many pictures of herself$_1$].

Notice that this representation violates the semantic condition in (28) because the restrictor part is outside of the scope of the operator part. Thus, our analysis wrongly predicts that the sentence in (30) is bad under the narrow scope reading.

Fox and Nissenbaum (2004) argue that examples like (30) are irrelevant to the discussion of scope reconstruction and condition A since apparent anaphors that are arguments of a picture noun phrase can be logophors (cf. Pollard and Sag 1992, Reinhart and Reuland 1993). A logophor is not subject to the binding theory (condition A) but licensed when it is bound by a noun phrase that refers to a sufficiently salient individual. Given this, the anaphor, herself, in (30) can be considered to be a logophor since it is an argument of the picture noun phrase. If we assume that subjects of predicates like wonder are salient enough to license a logophor, herself does not have to be interpreted at the higher position to be licensed. Thus, the fact that herself can be bound by Mary in (30) does not indicate that herself is “trapped” in the higher position. Then, Brody’s argument does not stand. To sum up, we propose the scattered deletion analysis of A-chains. Our analysis can account for both the data that is problematic for the SCC and the data that is problematic for the multiple copies analysis. Furthermore, the apparent counter-examples to our analysis can be accounted for on independent grounds.
5 Conclusion

In this paper, we presented counter-examples to the SCC and argued that A-chains as well as Å-chains can undergo the scattered deletion procedure that splits a quantificational phrase into the operator part and the restrictor part. Based on this mechanism, we proposed an alternative condition to the SCC, which is a somewhat weaker version of the SCC.

References


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1 One complication which we put aside here is that for most speakers the possibility of clausal negation scoping over a subject quantifier is limited to universal quantifiers (cf. Beghelli and Stowell 1997). Thus, it is possible in (ia) but not in (ib), casting doubt on the idea that we are dealing with straightforward reconstruction.

(i) a. Every student hasn’t arrived yet.
   b. Many students haven’t arrived yet.

2 However, the relevant contrast is not as clear as Chomsky claims that it is. Some speakers find that John can be an antecedent in the sentence in (8) both under the idiomatic reading and the literal reading. This might be related to the fact that himself in this sentence could be interpreted as a logophor, as we will discuss in section 4. See Runner 2002 for arguments against Chomsky’s claim.

3 In fact generally scope reconstruction is only available with indefinites. See Lasnik (2010) for discussion and a possible account of this limitation.

4 Thus, we must reject Hornstein’s 1998 condition on A-chains that at the CI interface, an A-chain has one and only one visible link.

5 Chomsky rejects this option: “(…) if “reconstruction” is essentially a reflex of the formation of operator-variable constructions, it will hold only for Ā-chains, not for A-
chains” (Chomsky 1995: 205). He proposes the scattered deletion in order to implement reconstruction in the copy theory of movement. Given this, claiming that reconstruction holds only for \( \bar{A} \)-chains is tantamount to claiming that the scattered deletion is only for \( \bar{A} \)-chains. In this paper, however, we presuppose, contrary to Chomsky, that reconstruction holds both for A-chains and \( \bar{A} \)-chains. Therefore, the extension of the scattered deletion approach to A-chains is a natural option.

In fact, his argument that A-chains and \( \bar{A} \)-chains are different in terms of reconstruction is based on questionable data. Freidin (1986) observes that in constructions like (i), the pronoun, \textit{he}, cannot take John as antecedent (see also Riemsdijk and Williams 1981, Lebeaux 1988, 1990).

(i) *Which claim that John\(_1\) was asleep was he\(_1\) willing to discuss?

This fact indicates that reconstruction takes place (in fact, must take place, in this case) in \( \bar{A} \)-chains. In contrast, as Chomsky (1995: 204) points out, we do not find the same effect in the case of A-movement, as shown in the following sentence (Lebeaux (1990) also points out the contrast between A-movement and \( \bar{A} \)-movement in this respect):

(ii) The claim that John\(_1\) was asleep seems to him\(_1\) to be correct. (cf. *I seem to him\(_1\) to like John\(_1\).)

Based on this contrast between A-chains and \( \bar{A} \)-chains, Chomsky argues that reconstruction does not apply to A-chains, unlike \( \bar{A} \)-chains. However, Lasnik (1998) argues that the unacceptability of sentences like (i) should be attributed to pragmatic reasons, pointing out that there are examples structurally parallel to sentences like (i) that are fully acceptable.
The following examples are drawn from Lasnik 1998: 87:

(iii)  
   a. Which piece of evidence that John was guilty did he successfully refute?
   b. How many arguments that John’s theory was correct did he publish?
   c. Which proof that Mary’s theory is superior to John’s did she present?

If this is correct, the empirical motivation for making this distinction between A-chains and \( \bar{A} \)-chains with respect to reconstruction is lost.

6 Notice that this is just one of the possible representations. The following representations are also possible:

(i)  
   a. [a student of John’s] seems [a student of John’s] to be at the party.
   b. [a student of John’s] seems [a student of John’s] to be at the party.

However, as we will discuss later, the representation in which the operator part is interpreted at the lower position and the restrictor part at the higher position is ruled out for semantic reasons.

(ii) [a student of John’s] seems [a student of John’s] to be at the party.

7 This condition can be derived from the Scope Correspondence Axiom (SCA) of Hornstein 2001 that if \( \alpha \) c-commands \( \beta \) then \( \alpha \) scopes over \( \beta \), which is an LF analogue of the LCA. If the same lexical item is represented in multiple positions, the SCA forces the LF representation to have incoherent scope. This argument presupposes that scope relation is total, as Hornstein (2001: 85) explicitly mentions. However, it is not obvious why this is so while the totality of linear order is obvious.

8 Note that this is a necessary, but not sufficient, condition for scope reconstruction. See
footnote 3.

9 Although the relevant contrast is subtle, we accept Fox’s judgement for the sake of discussion.

10 This condition should apply to LF representations since as Norbert Hornstein (personal communication) points out, the following sentence is acceptable:

(i) Of the men in the room, John thinks that each has dated Mary.

In this sentence, the restrictor of the men in the room is outside of the operator each in overt syntax. The fronted restrictor should be somehow represented within the embedded clause at LF. We assume that this is via a hidden restrictor rather than reconstruction. Thus, the sentence in (i) has the following LF representation:

(ii) of the men in the room, John thinks each (of) them has dated Mary.

Notice that the construction in question can be derived without movement, as the acceptability of the following sentence suggests:

(iii) Of the men here, John met someone who thinks that each has dated Mary.

This sentence should not be considered to be derived by movement since it involves an island.

11 Chomsky’s (1993) idiom argument that we discussed in section 2 is also thus undermined. However, even if we construct test sentences to eliminate the possibility of a logophor, like the following sentences, which are drawn from Fox and Nissenbaum 2004, the relevant contrast obtains:

(i) a. I asked John and Mary which pictures of each other Bill liked.
b. *I asked John and Mary which pictures of each other Bill took.

If this is correct, Chomsky’s idiom argument remains intact even if we take the possibility of a logophor into consideration. See Fox and Nissenbaum 2004.