Focus, Parallelism and Accommodation*

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It is well-known that constructions involving ellipsis (i.e. construction in which semantically interpreted material is not realized phonologically, henceforth ECs) share many properties with constructions that involve phonological reduction (in which semantically interpreted material is realized phonologically but in a reduced form, henceforth PRCs). (See, among others, Lasnik 1972, Chomsky and Lasnik 1993, Rooth 1992 and Tancredi 1992.) The similarity between ECs and PRCs is semantic: the interpretation of both is constrained by the interpretation of an antecedent (Parallelism). Rooth and Tancredi have pointed out that this similarity follows from an independently needed theory of focus.

However, there are also differences in the interpretation of ECs and PRCs. The semantic restrictions on ECs appear to be stronger than the restrictions on PRCs. Specifically, there are cases in which phonological reduction (PR) is licensed via Parallelism with an antecedent which is not present in the discourse (accommodation), and in (at least some of) these cases ellipsis (E) is not licensed. This fact has motivated Rooth (1992) to propose a special identity condition which applies to E but not to PR. Under this proposal, the similarity between the two constructions follows from the theory of focus (which applies to both constructions) and the difference follows from the identity condition (which applies only to one). The aim of this paper is to argue for an alternative. Specifically, I will argue that the difference between ECs and PRCs follows from an economy condition on accommodation which is relevant for both constructions but is sensitive to properties that distinguish between them.

1. Ellipsis and Phonological Reduction – similarities and differences

The goal of this paper is to provide an account of the similarities and differences between ECs and PRCs. In this section, I will summarize the relevant observations, which were made by Rooth (1992) and Tancredi (1992). We will see (a) that both ECs and PRCs are subject to a form of parallelism, (b) that this follows from the theory of focus, and (c) that, nevertheless, there are cases in which PR is possible and E is not.

1.1. Similarities between Ellipsis and Phonological Reduction

Constituents containing E or PR must receive a parallel interpretation to the interpretation of an antecedent. More specifically when an antecedent is ambiguous, the relevant constituent that contains E or PR must be disambiguated in the same manner that the antecedent is; ambiguities do not multiply in ECs and PRCs. This is exemplified in (1-3).[1]

(1) *Identity of predication*:
   a. John likes flying planes because BILL does.
   b. John likes flying planes because BILL *likes flying planes*.

(2) *Identity of dependencies*:
   a. $John_1$ introduced Fred to his_1 mother. $Bill_2$ did, too <introduce $Fred_3$ to $his_{2/*3}$ mother>.
   b. $John_1$ introduced Fred to his_1 mother. Bill *introduced* $Fred_3$ *to* $his_{2/*3}$ *mother*, too.

(3) *Identity of Scopal relations*:
   a. First I introduced a boy to every girl and then YOU did.
   b. First I introduced a boy to every girl and then YOU *introduced a boy to every girl*.
   c. A boy admires every teacher and a GIRL does, too.
   d. A boy admires every teacher and a GIRL *admires every teacher,* too.

The antecedent for E and PR in (1), *John likes flying planes*, contains an ambiguous predicate. Parallelism ensures that the elided/reduced predicate will be disambiguated in the same manner. Thus, if the sentence attributes to John the property of liking the activity of flying planes, it cannot attribute to Bill the property of liking planes that fly. The same properties must be attributed to John and Bill. Similarly in (2) when the pronoun in the antecedent sentence is bound by the subject, the pronoun in the ellipsis/reduction sentence cannot be bound by the object. If ellipsis/reduction is resolved by sloppy identity, the pronouns must be bound from parallel syntactic positions. Finally when the antecedent and the ellipsis/reduction sentence contain more than one quantifier, the relative scope of the quantifiers must be identical in the two sentences, as illustrated by the interpretations available in (3).

1.2. Focus and Parallelism

As pointed out by Rooth (1992) and Tancredi (1992), the effects of Parallelism observed in (1-3) follow from an independently needed theory of focus. Sentences that contain E or PR share prosodic properties which have very specific implications for their focus structure. That is, a constituent which is phonologically reduced or elided doesn't bear pitch accent, and this has consequences for its focus structure: the elided/reduced constituent is not F(ocus)-marked. Furthermore, given the nature of focus projection, it is not dominated by an F-marked constituent.[2]

To explain how the parallelism requirement follows, I will make a simplifying assumption about the domain at which focus presuppositions are determined (the focus domain). Specifically, I will assume that the domain is sentential. The general theory of focus requires that for every focus domain, the discourse will contain an antecedent -- a linguistic object which is a member of the focus value. Parallelism then follows as a consequence of focus theory:

(4) **Parallelism** (first attempt): Every sentence, *S*, requires that the discourse will contain an antecedent sentence, *A*, which belongs to the focus value of *S*. [3]

It follows that ellipsis and phonological reduction require an antecedent sentence which is parallel to the ellipsis sentence, in the sense illustrated in (1-3). To see this, consider the constructions in (2).

(2) a. $John_1$ introduced Fred to his_1 mother. $Bill_2$ did, too <introduce $Fred_3$ to $his_{2/*3}$ mother>.
b. $John_1$ introduced Fred to his_1 mother. $Bill_2$ *introduced* $Fred_3$ *to* $his_{2/*3}$ *mother*, too.

Because there is no pitch accent in the verb phrase, the verb phrase is not F-marked. The subject, on the other hand, has to be F-marked (since it is distinct from the subject of the antecedent sentence). The focus value of the second sentence is either (5a) or (5b) depending on whether the pronoun *his* is bound by the subject *Bill* or by the object *Fred*. [4]

(5) a. F($[Bill]_F$ introduced $Fred_3$ to his_2 mother) = {S: $\exists$x [S = x introduced $Fred_3$ to x's mother]}
b. F($[Bill]_F$ introduced $Fred_3$ to his_3 mother) = {S: $\exists$x [S = x introduced $Fred_3$ to his_3 mother]}
$John_1$ introduced Fred to his_1 mother is a member of to the former but not of the latter.

It is now easy to see that the antecedent sentence is a member of the focus value of the sentence containing E or PR only if the subject is the binder of the pronoun in the latter (that is, only if (5a) is the focus value).

1.3. Differences Between Ellipsis and Phonological Reduction

The picture that emerges at this point is very simple. ECs and PRCs have the same focus structure, and given an independently needed theory of focus both must satisfy a parallelism requirement. However, it turns out that things are a little bit more complicated. Specifically, it turns out that the theory of focus yields a parallelism requirement which is weaker than the one stated in (4). This requirement accounts for the environments in which PR is possible but is too weak to account for E.

Consider the PRCs in (6). In these constructions, Parallelism as defined in (4) is not satisfied. There is no antecedent in the discourse which belongs to the focus value of sentence that contains PR. The only available antecedent, *Bill called Mary an idiot* is not a sentence of the form *x insulted her* and thus is not a member of the focus value of *$[John]_F$ insulted her.*

(6) a. First Bill called Mary an idiot. Then $[John]_F$ *insulted her*.
b. John talked to every woman he saw. $[Bill]_F$ *talked to many women*, too.

Because PR is licensed in (6), we must conclude that focus theory yields a weaker parallelism requirement than (4). More specifically, it seems that the antecedent for focus need not be present in the discourse; it can be accommodated when it is entailed by the sentences that are present in the discourse together with certain shared assumptions. The first sentence in (6a) does not belong to the focus value of the sentence that contains PR (henceforth, S_{PR}). However, with the assumption that calling someone an idiot is an insult, the first sentence entails the accommodated sentence *Bill insulted Mary* and the latter belongs to $F(S_{PR})$. Similarly, with the assumption that John saw many women, the first sentence in (6b) entails the accommodated sentence *John talked to many woman*, which belongs to $F(S_{PR})$. Focus theory requires either Direct Parallelism as defined in (4) or Indirect Parallelism (via accommodation):

(7) **Parallelism**: Every sentence, *S*, requires either
  a. that the discourse will contain an antecedent sentence, *A*, which belongs to the focus value of *S*. ($A \in F(S)$) **(Direct Parallelism)**
  or
  b. that the discourse will contain a sentence, *A*, which together with certain shared assumptions entails another sentence, the accommodated sentence, *AC*, and $AC \in F(S)$. **(Indirect Parallelism)**[5]

Parallelism, as defined in (7), can still account for the phenomena exemplified in (1-3).[6] However, it turns out that (7) is too weak to account for the conditions that must be met for ellipsis to be possible. This is seen when we compare the constructions that involve PR, (6), to their counterparts with E in (8).

(8) a. * First Bill called Mary an idiot. Then $[\text{John}]_F$ did <insult her>.
  b. * John talked to every woman he saw. $[\text{Bill}]_F$ did, too <talk to many women>.

2. The proposal

What we've learned in the previous section is that although the theory of focus accounts for the constraints on PR and for a substantial part of the constraints on E, there are some restrictions on E that it cannot account for. Specifically focus theory, which must allow for Indirect Parallelism to account for the availability of PR in (6), does not account for the unavailability of E in (8).

There must be something other than focus that accounts for the inability of Indirect Parallelism to license E in (8). Two possibilities come to mind. The first is that while both E and PR are constrained by (7), there is an additional condition which restricts E but not PR. The second possibility is that there is a condition on the availability of the accommodated sentences (needed for Indirect Parallelism) and this condition distinguishes ECs from PRCs. Rooth (1992) investigates the first possibility and Tancredi (1992) investigates the second.

2.1. Tancredi's proposal and Rooth's argument against it

Tancredi (1992) points out that in PRCs, in contrast to ECs, the phonologically reduced material indicates the nature of the accommodated sentence. In ellipsis there is no such indication (since the material is deleted). Therefore, Tancredi proposes that E, in contrast to PR, must satisfy Direct Parallelism. (Tancredi 1992: 127-131; see also Wold 1995).

Rooth, however, discovered a case in which E, just like PR, is licensed via Indirect Parallelism. First consider the EC in (9). This construction exemplifies the requirement of identical dependencies discussed in section 1.1. If the object is the binder of the pronouns in the antecedent sentence, the subject cannot bind the pronoun in the ellipsis sentence.

(9) First John told Mary_1 I was bad-mouthing her_1, and then
[Sue]$_F$ *told* [Jane]$_F$ *I was* <bad mouthing her>
a. <bad-mouthing Jane> b. <*bad-mouthing Sue>[7]

This fact follows from Direct Parallelism in a straightforward way. The focus value of the ellipsis sentence will have the antecedent sentence as a member only if in the ellipsis sentence the object binds the pronoun. Rooth's observation is that Indirect Parallelism sometimes obviates the identical dependency requirement. Consider, for example, the ECs in (10).

(10) a. First John told Mary_2 I was bad-mouthing her_2, and then
[Sue_1]$_F$ *heard I was* <bad-mouthing her_1>.
b. John told every girl_2 I was bad-mouthing her_2.
Even [Sue_1]$_F$ *heard I was* <bad-mouthing her_1>.

In these constructions the binding dependencies are not identical: the object binds the pronoun in the ellipsis sentence, while in the antecedent sentence the subject does. Consequnetly the antecedent sentence is not in the focus value of the ellipsis sentence (which contains sentences of the form *x heard that I was bad-mouthing x*). Indirect Parallelism accounts for this mismatch. The antecedent sentence allows the accommodation of the sentence *Mary/every girl heard that I was bad-mouthing her* and the latter belongs to the focus value of the ellipsis sentence.

Given (10) (and an additional consideration to which I return in section 5) Rooth concludes that in addition to Parallelism as defined in (7), there is a special identity condition which applies to E but not to PR. This condition explains the unavailability of E in (8), in contrast to the availability of PR in (6).

2.2. A problems for the formulation of the identity condition

Rooth's Identity condition on E is meant to ensure that an elided VP would not be substantially different from the antecedent VP as in (8). In the next sub-section, I will suggest a different way of looking at the contrast between (6) and (8). But first I would like to point out a difficulty in the formulation of the identity condition.

Consider cases of Antecedent Contained Deletion exemplified in (11). At Surface Structure the antecedent VP contains the elided VP and therefore the two are not identical. This means that the identity condition on E can be satisfied at Logical Form (LF) once QR has taken place and (as a result) the VPs are identical.

(11) I saw every man that you did <saw t>.

Consider now (12), and focus on the interpretation in which the adjective *likely* outscopes the subject (scopal relationships being identical in the ellipsis and the antecedent sentence as (7) requires).

(12) Someone from NY is likely to win the lottery and someone from Boston is, too.

If narrow scope for the subject requires an LF representation in which the subject is c-commanded by the adjective (as argued for in May 1977 and more recently in Sportiche 1996, Romero 1997 and Fox 1999) the antecedent and elided VP would not be identical at LF. This means that the identity condition must be allowed to hold at Surface Structure. The conclusion from (11) and (12) is that the identity condition can hold both at Surface Structure and at LF.[8] This, of course, is not a contradiction, but I think it should inspire one to search for alternatives.[9]

2.3. An economy condition on accommodation

As mentioned above, Tancredi's suggestion that E can be licensed only by Direct Parallelism cannot account for the availability of sloppy identity in (10). Nevertheless, I would like to pursue the idea that what distinguishes E from PR is a condition on the availability of the accommodated sentences needed for Indirect Parallelism. This condition will have the effect of blocking Indirect Parallelism in (8) while (contrary to Tancredi) allowing it in (10).

What is the difference between (8) and (10) that might be relevant for the availability of Indirect Parallelism? The relevant difference, I would like to suggest, is that (10) contains non-F-marked material (*heard I was*) which is not present in an antecedent sentence. The presence of this material indicates that accommodation is necessary and (furthermore) indicates something about the nature of the required accommodation. In (8), by contrast, there is nothing that indicates that accommodation is necessary and therefore (I would like to suggest) accommodation is impossible.

What might indicate that accommodation is necessary in order to satisfy the focus requirements of a given sentence? A natural answer is the existence of overt (i.e. pronounced) constituents that are non-F-marked in the sentence and are nevertheless absent in the targeted antecedent. I will call these constituents the "accommodation-seeking material".

In other wordd I would like to propose that given a potential antecedent, *A*, accommodation is possible only when the sentence containing E or PR, *S*, contains accommodation-seeking material. This economy condition is stated as follows:

(13) Accommodation of a new antecedent for *S*, *AC*, must have a trigger.

(14) Accommodation has a trigger when *S* contains accommodation-seeking material, i.e., when *S* contains pronounced non-F-marked material which is absent in *A*..

The intuition behind this proposal is that only accommodation-seeking material indicates that accommodation is necessary; other material is either:

a. deleted (hence indicates nothing)
b. already present in the antecedent (hence indicates that accommodation is not necessary) or
c. F-marked (thus identified as "new information" -- indicating, once again, that accommodation is not necessary).

The condition in (13) distinguishes (8) from both (6) and (10). In the next section, I will provide additional evidence in favor of this condition. However, it will turn out that (13) is a necessary but still insufficient condition for accommodation. In section 4, I will propose a stronger condition which will (hopefully) allow for accommodation in exactly those cases where it is possible.

3. Further evidence in favor of the economy condition

In the previous section we saw that an economy condition on accommodation can distinguish ECs which require Direct Parallelism from ECs and PRCs which can be licensed only by Indirect Parallelism. With such a condition it is conceivable that the identity condition on ellipsis will not be needed to account for the differences between E and PR. In this section, I will provide independent evidence for the economy condition, and against an identity condition. Specifically, I will argue (a) that in cases where the identity condition on E is not at stake both E and PR cannot be licensed by Indirect Parallelism if the economy condition is not satisfied and (b) that when the economy condition is satisfied, Indirect parallelism is possible even in cases where an identity condition on E would not be satisfied. If successful, the first argument will make an identity condition on E redundant, and the second argument will make it untenable.

3.1. When Identity is not at stake

3.1.1. Identity of binding dependencies: The EC in (10) argues (as pointed out in section 2.2.) that E can be licensed by Indirect Parallelism. This fact makes it impossible to distinguish between E and PR by claiming that sentences containing the former must satisfy Direct Parallelism, and thus supports the postulation of a separate identity condition on E. However, I made an alternative suggestion according to which (10) allows for Indirect Parallelism by virtue of the accommodation-seeking material. This proposal predicts that without the accommodation-seeking material Indirect Parallelism will be unavailable.

Evidence that this prediction is borne out comes from the contrast in (15). (15a) makes the same point that was made by (10). (15b) differs minimally and does not allow for sloppy identity.

(15) a. First John convinced Mary$_1$ that I was bad-mouthing her$_1$, and then [Sue$_2$]$_F$ *came to believe that I was* <bad-mouthing her$_2$>.
b. First John convinced Mary$_1$ that I was bad-mouthing her$_1$, and then [Sue$_2$]$_F$ [denied]$_F$ *that I was* *<bad-mouthing her$_2$>.

This contrast is unexpected without the economy condition stated in (13). The reason it is unexpected is that the focus value of the relevant sentence that contains E, S_E, in (15b) properly contains the focus value of the parallel sentence in (15a). Therefore, by Parallelism as defined in (7) any antecedent for ellipsis in (15a) should be an antecedent in (15b). More concretely, in (15b) the focus value of S_E (= *[Sue$_2$]$_F$ [denied]$_F$ that I was bad-mouthing her$_2$*) contains all sentences of the form *x V I was bad mouthing x*. The antecedent sentence, *A* (= *John$_2$ convinced Mary$_1$ I was bad-mouthing her$_1$*), is not a sentence of the relevant form. However, it allows accommodation of a sentence *AC* (= *Mary$_1$ came to believe that I was bad-mouthing her$_1$*) which has the relevant form.

Why, then, is sloppy identity blocked in (15b)? (13) provides the answer. S_E lacks non-F-dominated material which is absent in *A*, and thus there is no trigger for accommodation.

(16) argues that (13) restricts PR as well as E. (16a,b) are the phonological reduction analogs of (15a,b). (16c) shows that when (13) is not satisfied sloppy identity requires the pronoun to be focused (thus making accommodation unnecessary). (In (16c), F(S_{PR}) is the set of sentences of the form *x V I was bad mouthing y*. *A* is a sentence of the relevant form if we make the independently needed assumption that *convinced Mary* is a possible alternative to *deny*.)

(16) a. First you convinced Mary$_1$ that I was bad-mouthing her$_1$, and then [Fred$_2$]$_F$ *came to believe that I was bad-mouthing him$_2$*.
b. *First you convinced Mary$_1$ that I was bad-mouthing her$_1$, and then [Fred$_2$]$_F$ [denied]$_F$ *that I was bad-mouthing him$_2$*.[10]
c. First you convinced Mary$_1$ that I was bad-mouthing her$_1$, and then [Fred$_2$]$_F$ [denied]$_F$ *that I was bad-mouthing* HIM$_2$.

To complete the argument for (13), it is important to show (empirically) that the potential accommodation (*Mary$_1$ came to believe that I was bad-mouthing her$_1$*) is Directly Parallel to the E- or PR-sentence in (15b, 16b). In other words, it is important to provide empirical evidence that without (13), Indirect Parallelism would wrongly predict Sloppy identity to be possible in these constructions. This evidence is provided in (17). Here the antecedent sentence is *already* (in all relevant respects) identical to the sentence that needed to be accommodated in (15b, 16b). The fact that sloppy identity is possible in (17) argues that the only thing that blocked sloppy identity in (15b, 16b) is the unavailability of the accommodation.

(17) a. [Sue$_2$]$_F$ came to believe that I was bad-mouthing her$_2$. However, [Jane$_3$]$_F$ [denied]$_F$ *that I was* <bad-mouthing her$_3$>.

c. [Sue$_2$]$_F$ came to believe that I was bad-mouthing her$_2$. However, [Fred$_3$]$_F$ [denied]$_F$ *that I was badmouthing him$_3$.*

The argument is re-enforced in (18). (18a, b) are very similar to (15b, 16b), respectively. The only difference is that the LF which must be accommodated in (15b, 16b) to license sloppy identity is part of the discourse in (18a, b). Therefore accommodation is unnecessary in (18a, b); sloppy identity is available without it.

(18) a. First John convinced Mary$_1$ that I was bad-mouthing her$_1$, and then [Sue$_2$]$_F$ *came to believe that I was* <bad-mouthing her$_2$>. But lucky for me at least [Jane$_3$]$_F$ [denied]$_F$ *that I was* <bad-mouthing her$_3$>.

b. First John convinced Mary$_1$ that I was bad-mouthing her$_1$, then [Fred$_2$]$_F$ *came to believe that I was bad-mouthing him$_2$*. But lucky for me at least [Jane$_3$]$_F$ [denied]$_F$ *that I was bad-mouthing her$_3$.*

3.1.2. Identity of Scopal Relations: In 3.1.1 I investigated a case in which the requirement of identical binding relations is obviated by Indirect Parallelism and argued that this obviation is possible only when there is a trigger for accommodation. In this sub-section I would like to do the same for the requirement of identical scopal relationships.

3.1.2.1. Setting the stage: Consider (19-20). The antecedent sentence in these constructions is disambiguated in favor of a scopal interpretation that corresponds to the surface c-command relations (Surface Scope).

(19) a. Some boy admires every teacher and [Mary]$_F$ does, too.
($\exists>\forall$) *($\forall>\exists$)

b. Some boy admires every teacher and [Mary]$_F$ *admires every teacher*, too.
($\exists>\forall$) *($\forall>\exists$)

(20) a. Someone from NY is very likely to win the lottery. [Jon]$_F$ is, too.
($\exists$>likely) *(likely>$\exists$)

b. Someone from NY is very likely to win the lottery. [Jon]$_F$ *is very likely to win the lottery* , too. ($\exists$>likely) *(likely>$\exists$)

The reason for this disambiguation is not crucial for the purposes of this paper, but for expository purposes, I will adopt the account I provided in Fox (1995, in press). According to this account an economy condition on the mechanism that yields Inverse Scope (Scope Economy) restricts the E and PR sentences to Surface Scope (since Surface- and Inverse-Scope yield logically equivalent representations). Consequently, Parallelism blocks Inverse Scope in the antecedent sentence.

This combined effect of Scope-Economy and Parallelism is obviated in (21) and (22) (an abviation which we can call anti-disambiguation).

(21) a. Mary admires every teacher and *some* [boy]$_F$ does, too. ($\exists>\forall$) ($\forall>\exists$)

b. Mary admires every teacher and *some* [boy]$_F$ *admires every teacher*, too.
($\exists>\forall$) ($\forall>\exists$)

(22) a. Jon is very likely to win the lottery. *Someone from* [NY]$_F$ is, too.
($\exists$>likely) (likely>$\exists$)

b. Jon is very likely to win the lottery. *Someone from* $[\text{NY}]_F$ *is very likely to win the lottery* too. (∃ >likely) (likely>∃)

Anti-disambiguation is expected given Indirect Parallelism. The reason is that the antecedent sentence allows for the accommodation of a sentence that would be parallel to the E or PR sentence under Inverse Scope. (If Mary admires every teacher it follows that for every teacher there is a girl who admires the teacher and if John is very likely to win the lottery it follows that it is very likely that someone from John's city will win the lottery.[11])

Notice that the economy condition on accommodation, (13), is satisfied as well. The subject of the E and PR sentences in (21, 22) contains non-F-Marked material that is absent in the antecedent, and hence accommodation has a trigger. I will now try to show that without the trigger disambiguation cannot be obviated. This is predicted by the economy condition and (if correct) argues in favor of it.

3.1.2.2. The argument: Consider the examples in (23-24) with unmarked pronunciation. (Pitch accent is represented with an acute accent.) Scope Economy together with Indirect Parallelism predicts anti-disambiguation in all of the examples in (23-24). However, this prediction is not borne out in the (b) cases.

(23) a. Jon is likely to win the lottery. Someone from New Yórk is, too.
(∃ >likely) (likely>∃)
b. Jon is likely to win the lottery. Two people from New Yórk are, too.
(∃2 >likely) *(likely>∃2)

(24) a. John likes every teacher. At least one gírl does, too.
(∃ >∀) (∀>∃)
b. John likes every teacher. At least two gírls do, too.
(∃2 >∀) *(∀>∃2)

This contrast is expected once the economy condition on accommodation is taken into account. To see this, we have to know the focus structure of the E and PR sentences. Given that pitch-accent falls on the most embedded constituent in the DP, there are two possibilities for F-marking (see Jackendoff 1972). F-marking can target (a) the whole DP or (b) a smaller constituent which excludes the quantificational material (*someone* in (23a) and *at least one* in (24a)).

Let's consider how Economy and Parallelism determine the LF representations of (23-24) given the constraint on accommodation in (13). I will focus on (24) and leave it for the reader to see that the account extends to (23). Anti-disambiguation is predicted for (24a). The basic idea is that disambiguation, which is the standard prediction of Economy and Parallelism, is obviated by the availability of Indirect Parallelism. (*A* (=*John likes every teacher*) entails *AC* (=*at least one boy likes every teacher* with Inverse Scope), and *AC* is an appropriate antecedent for S_E (=*At least one girl likes every teacher* with Inverse Scope)

The economy condition on accommodation is satisfied in (24a) if there is narrow focus on the common noun *girl* (as in (24'ai)), but isn't satisfied if there is focus on the whole DP (as in (24'aii)).

(24'a) i. $[_A$John likes every teacher]. $[_{S_E}$ *At least one* [girl] $_F$ does, too].
(∃ >∀) (∀>∃)
ii. $[_{A_A}$ John likes every teacher]. $[_{S_E}$[At least one girl] $_F$ does, too].
(∃ >∀) *(∀>∃)

Anti-disambiguation is predicted for (24a), because (24'ai) is a possible focus structure

Now consider (24b) and its two possible focus structures in (24'b). When there is narrow focus on *girls* as in (24'bi), there is no way for Parallelism to be satisfied; F(S_E) is the set of sentences of the form *Every teacher$_y$ at least* ***two*** *N_x x like y*, and the available antecedent does not entail a sentence of this form; In particular, *AC* (above) does not belong to F(S_E) because it contains the wrong numeral expression.

(24'b) i. $[_A$John likes every teacher]. *$[_{S_E}$ *At least two* [girls] $_F$ do, too].
ii. $[_A$ John likes every teacher]. $[_{S_E}$[At least two girls]$_F$ do, too].
(∃2 >∀) *(∀>∃2)

If there is focus on the whole DP on the other hand, *AC does* belong to F(S_E) (the set of sentences of the form *Every teacher$_y$ QP$_x$ x like y*), but the economy condition on accommodation is no longer satisfied.

Compare (23b) and (24b) with the pairs of sentences in (25) and (26).

(25) a. Jon and Bill are likely to win the lottery. Two people from New Yórk are, too. (∃2 >likely) (likely>∃2)
b. Jon, Bill and Fred are likely to win the lottery. A few people from New Yórk are, too. (a few >likely) (likely> a few)

(26) a. John and Bill like every teacher. At least two gírls do, too.
(∃2 >∀) (∀>∃2)
b. John, Bill and Fred like every teacher. A few gírls do, too.
(a few >∀) (∀> a few)

In (25) and (26) narrow focus on the head noun allows for accommodation of an appropriate LF. The difference between these sentences and (23b, 24b) strongly suggests that the anti-disambiguation depends on the presence of accommodation-seeking material.

Compare now (23b) and (24b) with the construction in (27), which were pointed out to me by Kai von Fintel. I assume that the focus structures of the two sentences are as represented in (27').

(27) a. John is likely to win the lottery. Twò óther *people from NY* are, too.
(∃2 >likely) (likely>∃2)
b. John likes every teacher. Twò óther *boys* do, too. (∃2 >∀) (∀>∃2)

(27') a. John is likely to win the lottery. [Two] $_F$ [[other] $_F$ people from NY] are, too]. (∃2 >likely) (likely>∃2)
b. John likes every teacher. [Two] $_F$ [[other] $_F$ boys] do, too.
(∃2 >∀) (∀>∃2)

In both (27'a) and (27'b), the economy condition on accommodation is satisfied. (In both cases accommodation is triggered by novel material which is non-F-marked.) Furthermore, in both cases it is possible to accommodate an LF with Inverse Scope which will belong to the focus value of S_E . To see this, focus on (27'b): *A* entails the LF of *a boy likes every teacher* with Inverse Scope and the latter is a member of F(S_E). The relevant difference between (27b) and (24b) is that in (24b) the only way to satisfy (13) is by excluding the numeral *two* from the F-marked constituent, and such a focus structure makes Parallelism unattainable. In (27b), by contrast, it is possible to focus the numeral and not the common noun, thus making the accommodatable LF an appropriate alternative to S_E .

3.2. When Indirect Parallelism allows ellipsis with no identity

In 3.1 we saw that even in cases where an identity condition of the sort proposed by Rooth is satisfied, the effects of the economy condition on accommodation are nevertheless visible. If these cases have been analyzed correctly, it follows that an economy condition on accommodation must be postulated on grounds independent of the account of the difference between E and PR, thus making the identity condition redundant. In this section, I will examine a case in which an elided VP is allowed to be non-identical to an antecedent VP. This case is problematic for an identity condition on ellipsis. However, we will see that it is a predicted consequence of focus theory together with an economy condition on accommodation. The upshot will be that the identity condition on ellipsis is not only redundant but also gives the wrong results.

Consider the "abstract cause subject alternation" in (28) (Levin 1993:81).

(28) a. John proved that I'm innocent with fingerprints.
b. Fingerprints proved that I'm innocent.

Given this alternation, it seems reasonable to assume that the predicates in the two sentences assign different thematic roles to the subject and are thus not identical. Evidence that this is the case is provided by the impossibility of ellipsis in (29).

(29) a. *John proved that I'm innocent. [Fingerprints]$_F$ did, too.
b. *Fingerprints proved that I'm innocent. [John]$_F$ did, too.

The status of the construction in (29) is predicted by an identity condition of the sort proposed by Rooth. It is also predicted by Parallelism together with the economy condition on accommodation. (The antecedent sentence does not belong to the focus value of the ellipsis sentence and accommodation is impossible.) However, the predictions diverge in cases where the ellipsis sentence contains accommodation-seeking material.

Evidence against the identity condition and in favor of the economy condition on accommodation comes from the contrast in (30).

(30) a. John proved that I'm innocent. *Fingerprints that* [BILL]$_F$ *presented* did, too.

b. *Fingerprints that Bill presented proved that I'm innocent. John did, too.

Consider first the unacceptability of (30b). The unacceptability of this sentence is by assumption the result of the elided VP and its antecedent being non-identical. Why then is (30a) acceptable. I suggest that in (30a) it is possible to accommodate the LF *AC* (=*Fingerprints that John presented proved that I'm innocent*) and that $AC \in F(S_E)$.[12] If this suggestion is correct, there must be something that blocks a similar accommodation in (30b) (*Fingerprints that Bill presented proved that I'm innocent ≈> Bill proved that I'm innocent*). The economy condition on accommodation serves this purpose; the ellipsis sentence doesn't contain novel material that is non-F-marked and therefore has no trigger for accommodation.

4. Strengthening the economy condition on accommodation

In the previous section, I've provided independent evidence in favor of an economy condition on accommodation. I've attempted to show that the condition is needed independently of an account of the difference between E and PR, and that it can deal with certain cases that are problematic for Rooth's identity condition. However, it turns out that there are still differences between E and PR that the economy condition cannot account for.

In section 2.3, we saw that the economy condition distinguishes between (8) and (6) (repeated below) based on the fact that (8) contains no accommodation-seeking material.

(6) a. First Bill called Mary an idiot. Then $[\text{John}]_F$ *insulted her*.
(8) a. * First Bill called Mary an idiot. Then $[\text{John}]_F$ did <insult her>.

However, this explanation predicts that (8) would be rescued by minimal changes in the subject position; all that is needed is the addition of some accommodation-seeking material. (31) demonstrates that this is not the case. The economy condition on accommodation in (13) is, therefore, too weak to account for the difference between E and PR.

(31) *Every boy called Mary an idiot. *Many* GIRLS did too <insult her>.

How is (31) different from the cases we've discussed in section 3 (in which the accommodation-seeking material licensed the necessary accommodation)? I would like to suggest that (31) doesn't allow the necessary accommodation (*Many boys insulted Mary*) because there is an alternative accommodation (*Many boys called Mary an idot*) which satisfies the requirements of the accommodation-seeking material. More specifically, I would like to suggest that the economy condition on accommodation needs to be stronger. It is not sufficient for accommodation to have a trigger. For an accommodation to be possible it must be "minimal" given the trigger. An accommodation is minimal given a trigger when there is no alternative accommodation that is closer to the targeted antecedent and contains the trigger (the accommodation-seeking material):

(32) Accommodation of a new antecedent for S, AC, must be minimal given the accommodation-seeking material in S,α.[13]

(33) a. An accommodation, AC, is minimal given accommodation-seeking material α, if there is no alternative accommodation, AC', such that AC' contains α and AC' is closer to the existing antecedent sentence, A, than AC is.
b. AC' is *closer* to A than AC is, when the accommodated material of AC' is a proper subset of the accommodated material of AC.
c. The accommodated material of an accommodation AC consists of the lexical material which is present in AC and absent in A.[14]

The economy condition in (13) follows from the condition in (32). (If S contains no accommodation-seeking material, the minimal accommodation is the trivial one AC=A.) Consequently, the arguments I presented in section 3 in favor of (13) are also arguments in favor of (32). (For reasons of space, I leave it for the reader to verify that in all the cases discussed in which accommodation was possible, the condition in (32) is satified.)

5. A consequence for the nature of Focus

Throughout this paper I've assumed that focus values are sets of LF structures. Under this view one sentence satisfies the focus requirements of another when the LF structure of the former belongs to the focus value of the latter. However, since Rooth 1985 it has been assumed that focus values are sets of unstructured meanings. In this section, I would like to present two arguments in favor of the assumption that the members of a focus value are structured objects (either LF structures or structured meanings).

The first argument has already been presented in Wold 1995, though under a slightly different approach to E and PR. Consider the following difference between E and PR, which was observed in Rooth 1992.

(34) a. 7 is greater than or equal to 7. 5 *is greater than or equal to itself*, too.
b. 7 is greater than or equal to 7. 5 is, too *<greater than or equal to itself>.

This difference was taken by Rooth to be an additional argument in favor of an identity condition on E. The reason that E is not licensed in (34b), Rooth suggests, is that the VP and it's antecedent are not identical. (The antecedent contains the name *7* in a position where the elided VP contains the anaphor *itself*.)

Assuming that the arguments presented in this paper are successful there must be an alternative account for the contrast in (34). More specifically, we would like the unacceptability of (34b) to follow from the unavailability of a necessary accommodation. However, if we assume that focus values are sets of unstructured meanings, (34b) would satisfy Direct Parallelism and accommodation would be irrelevant. To see this consider the focus value of the ellipsis sentence in (34b). Under Rooth's assumption, this focus value would contain the set of propositions which would result from applying the denotation of the matrix predicate (*is greater than or equal to itself*) to each alternative to the denotation of *5*. One element in the focus vlue is [λy. y ⟦is greater than or equal to⟧ y](⟦7⟧), which is an unstructured proposition identical to ⟦7 is greater than or equal to 7⟧, the denotation of the antecedent sentence.

If we assume that the members of a focus value are structured objects (either syntactic structures, i.e. LFs, or structured propositions) the problem is overcome. The focus value of the ellipsis sentence contains LFs (or structured propositions) of the form *x* λ*y.y is greater than or equal to y*, and the antecedent sentence doesn't have the appropriate form. In (34a) this could be corrected via accommodation of the LF *7* λ*y.y is greater or equal to y* but in (34b) accommodation is impossible given the lack of accommodation-seeking material.

Assuming that there is no identity condition on ellipsis, we are forced to conclude that focus values are sets of structured objects. The next argument in favor of the conclusion is independent of the status of an identity condition on ellipsis. Consider the ECs in (35), and their counterparts with PR in (36).

(35) a. John likes every teacher. [At least two girls]$_F$ do, too.
(∃2 >∀) *(∀>∃2)
b. Ken Hale speaks more than 3 of these Australian languages.
Rob Pensalfini, doesn't. (not>more than 3) *(more than 3>not)
c. A boy is talking to Mary and a girl is, to every teacher. (∃ >∀) *(∀>∃)

(36) a. John likes every teacher. [At least two girls]$_F$ *like every teacher*, too.
(∃2 >∀) *(∀>∃2)
b. Ken Hale speaks more than 3 of these Australian languages.
Rob Pensalfini, doesn't *speak more than 3 of these Australian languages*.
(not>more than 3) *(more than 3>not)
c. A boy is talking to Mary and a girl *is talking*, to every teacher.
(∃ >∀) *(∀>∃)

In these constructions, the ellipsis/reduction sentences are disambiguated in favor of Surface Scope. This should follow from Parallelism together with Scope Economy as outlined in section 3.1.2: the antecedent sentence is semantically identical under its two potential interpretations and is therefore restricted to Surface Scope; consequently, given Parallelism (and given the fact that accommodation cannot obviate the verdict of Direct Parallelism in these cases, see Fox in press) the ellipsis sentence is restricted to Surface Scope. However, this result would be lost if focus values contain unstructured propositions. The reason is trivial. The antecedent sentence is semantically equivalent under Surface and Inverse Scope. Therefore the proposition denoted by the antecedent is identical irrespective of the syntactic scopal relations. In other words, whether or not the antecedent denotes a proposition in the focus value of the ellipsis sentence will be determined irrespective of the syntactic structure of the antecedent. This means that there is no way for Parallelism and Scope Economy to account for the disambiguation in (35-36). If, on the other hand, focus values contain structured objects, disambiguations follows straightforwardly.

6. Conclusion

In this paper I have argued that E and PR obey the same constraints. They both obey a parallelism condition which is a direct consequence of focus theory and an economy condition on accommodation. The differences between E and PR is not a consequence of an identity condition on E. Rather it follows from the fact that the economy condition on accommodation is sensitive to accommodation-seeking material of which there is much more in PR.

Endnotes

[*] The ideas presented in this paper are implicit but not fully developed in Fox in press, chapter 3. I would like to thank Noam Chomsky, Martin Hackl, Kai von Fintel, Irene Heim, David Pesetsky, Mats Rooth, and especially Jon Nissenbaum.

[1] Throughout this paper, I use CAPS for syllables that receive pitch accent, *small italics* for constituents that are phonologically reduced (and hence receive no pitch accent), and the subscript F for constituents that are focused.

[2] Various interesting questions arise regarding the nature of focus, and in particular focus projection. See Fox, in press, chapter 3 footnotes 10 and 11.

[3] Contrary to standard assumptions, I take focus values to be sets of syntactic structures (rather than sets of unstructured meanings). The focus value of a given sentence is the set of LF structures that are identical to the LF of a sentence modulo the focus-marked constituents (which can be substituted by appropriate alternatives). Evidence in favor of this view of focus is presented in section 5. When I talk about a sentence, *S*, being a member of a focus value, this should be understood as a statement about the LF structure of S.

[4] The focus values in (5) should be understood as sets of LF structures (see footnote 3). This means that the variable x should range over NPs which are appropriate alternatives to *John* (i.e., NPs that denote individuals).

[5] Of course PR is possible also when there is no antecedent in the discourse. In such a case shared assumptions allow the accommodation of *AC*. Whether or not ellipsis is possible with no overt antecedent depends on ill-understood factors. See Johnson 1997 and references therein.

[6] A problem arises with respect to the examples in (3). Why is it impossible to have a Surface Scope parse for antecedent sentence and an Inverse Scope parse for the ellipsis sentence (given that in these cases Surface Scope entails Inverse Scope)? The economy condition that I propose in sections 2.3 provides a partial answer. My hope is that one can re-formulate the economy condition in a way that

will provide a better account. In any event, the problem arises for PR as well as for E and is thus independent of whether or not there is an identity condition on E.

[7] Some speakers don't allow for any sloppy identity in (9). The judgment of these speakers are irrelevant for Rooth's argument. Rooth's point is that if sloppy identity is possible in (9) under parallel dependencies, it is possible in (10) with non-parallel dependencies, hence the argument for Indirect Parallelism.

[8] A similar conclusion could potentially be drawn from Jacobson's (1998) observation that a relative clause with pied-piping can be elided when its antecedent contains no pied-piping:

(i) This is the man I met. And this is the man *the* FAther *of whom I did*.

If Pied-piping involves obligatory reconstruction, the VPs are not identical at LF. Jacobson uses the paradigm to argue against obligatory reconstruction, but it can also be seen as an argument against an identity condition (see Fox 1999b).

[9] Jacobson (1998) argues that the identity condition raises conceptual problems for non-variable-Free semantics: Rooth's identity condition (as pointed out in Heim 1997) must ignore variable names, and no explanation is offered for this fact. To the extent that there are arguments in favor of variables (and to the extent that there is no natural explanation for the fact that variables are ignored) there might be an argument here against the identity condition.

[10] Mats Rooth (p.c.) points out that the effect disappears if we replace the focus verb *deny* with the verb *doubt*. He also pointed out that this difference would follow if *doubt* decomposes to *not* >*agree*. *Not* could be focused and *agree* can serve as accommodation-seeking material. *Deny* might decompose to *claim* >*not*, but given that there is no accommodatable antecedent that contains the verb *claim* with *Mary* as subject, both *claim* and *not* would have to be focused.

[11] For a more detailed discussion, see Fox (in press).

[12] That the accommodation is necessary is evident from the fact that (30a) is good only under the (accommodated) assumption that John used fingerprints in his proof.

In Fox (in press) I use the minimal pair in (i), which makes the same point. I changed the construction here to make the role of accommodation more evident.

(i) a. *What John said revealed my identity. $[\text{BILL}]_F$ did, too.
b. Bill revealed my identity. *What* $[\text{John}]_F$ *said* did, too.

[13] Given this minimality requirement, and elided VP can be non-identical to the antecedent VP only in cases where the accommodation-seeking material is inconsistent with an identical VP. This is the case in (30a), but not in (31).

[14] This definition is not quite right. It is easy to construct examples which will demonstrate that the accommodated material of an accommodation AC should be defined as the lexical material which is present in AC and not present in A *in a parallel syntactic position*. Of course one would have to define *parallel syntactic position*. This can be overcome by the following alternative to (33b):

(33b') AC' is closer to A than AC is, if F (AC', A) $\subset$ F(AC, A).
F(X, Y):= Min {F_{SS}(Y'): SS(X)$\in F_{SS}$(Y') and Y' differs from Y in at most the placement of focus}.
F_{SS}(A):= {S: S is identical to SS(A) modulo focus marked constituents}
SS(A):= The Surface Structure of A.

The reason I need to appeal to F_{SS}(A) rather than to a simple focus value is the phenomena of anti-disambiguation discussed in 3.1.2. The necessary accommodation for anti-disambiguation (the accommodation with Inverse Scope) is a sentence which doesn't belong to the focus value of the antecedent, *A*, unless *A* receives sentential focus. Therefore, if the definition of 'closer' were to appeal to standard focus values, the potential accommodation with Surface Scope would block the necessary accommodation with Inverse Scope. However, the accommodation with Inverse Scope belongs to F_{SS}(*A*) when only the subject is focused, and thus is a minimal accommodation.

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