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## SENTENTIAL COMPLEMENTATION

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# On the distinction between argumental and non-argumental anaphors

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## 1. Non-argumental and argumental anaphors

In a recent paper (Pica 1983), we claimed that the binding theory had to be modified in order to account for the fact that certain anaphors are subject to a condition equivalent to the Specified Subject Condition while others are not, as illustrated by the following paradigm where (1a) contrasts with (1b) and (1c):

- (1) (a)  $On_i$  n'entend jamais les gens dire du mal de soi<sub>i</sub>  
(One never hears people slander one-self)  
(b) \* $On_i$  n'entend jamais les gens se<sub>i</sub> dire du mal  
(One never hears people slander one-self)  
(c) \* $Ils_i$  n'entendent jamais les gens dire du mal les uns des autres<sub>i</sub>  
(They never hear people slander each other)

We proposed a reformulation of the axiom A of the binding theory in the following way:

- (1) *An anaphor  $\beta$  must be bound in its binding category  $\alpha$  where  $\alpha$  is a binding category for  $\beta$  if:*  
(a)  *$\alpha$  is the minimal category containing  $\beta$  and an accessible subject to  $\beta$  and  $\beta$  is a non argumental position.*  
(b)  *$\alpha$  is the minimal category containing  $\beta$  and the element [ + TENSE] accessible to  $\beta$  and  $\beta$  is in an argumental position.*

We claimed that the reference to the notion of governing category had to be dropped in favor of the notion of binding category along the lines of Chomsky (1981) but that the generalization made by the notion of SUBJECT (including the grammatical subject and the element AGR (agreement) of tensed sentences) was a spurious one.

The theory we propose recalls in fact earlier stages of the theory where the specified subject condition and the tensed sentence condition were kept distinct from each other, but it crucially differs from earlier proposals with respect to (a) the fact that the two conditions apply to different types of elements, namely, elements in argumental positions (subject to the tensed S condition) and elements in non argumental positions (subject to the S.S.C.), (b) the fact that certain subjunctives in embedded clauses will be considered as controlled by the element [TENSE] of the main clause (in a sense to be made precise) and will not count as [+TENSED] with respect to the binding theory.

This last point allows us to account for examples like (2) whose equivalents have been intensively studied in Scandinavian languages (see Pica forthcoming (a) and (b) and references cited there).

- (2) (a)  $On_i$  ne souhaite jamais que les gens disent du mal de soi,  
 (One never wishes that people slander (subj.) one-self)  
 (b)  $*On_i$  ne souhaite jamais que les gens se<sub>i</sub> disent du mal  
 (One never wishes that people slander (subj.) one-self)

Our approach, which consists in extending the binding theory to elements in  $\bar{A}$  position, amounts to saying that *se* and *l'un l'autre* cannot be long distance bound in (1b), (2b) and (1c) as opposed to *soi* in (1a) and (2a) because *se* and *l'un* are both in non-argumental positions as opposed to *soi* which is in argumental positions.

One surprising consequence of this analysis is that we do not consider that *each other* or *himself* are anaphors in the usual sense but rather that the elements *each* and *self* are subject to the S.S.C. because they are in non-argumental positions.

This theory raises some terminological problems, as pointed out to me by R. Kayne, since the notion of anaphor we employ in our framework is more comprehensive than Chomsky's, which in our terms, paradoxically includes only non-argumental anaphors. For the sake of illustration, the relation between *soi* and its antecedent falls, in our terms, under the binding theory, but *soi* is not an anaphor in Chomsky's sense: *Soi* is not subject to a condition equivalent to the Specified Subject Condition but rather to the tensed S condition (as illustrated by the contrast between (1a), (2a) on the one hand and (3) on the other (see also Pica *op. cit.*) since it is an argumental anaphor:

- (3)  $*Personne_i$  ne dit que les gens ont pensé à soi,  
 (Nobody says that people thought about themselves)

Let us call ANAPHORS the class of elements including the class of non-argumental anaphors and the class of argumental anaphors.

That such a class of elements does exist is supported by the fact that

anaphors cannot generally be pragmatically controlled nor find their antecedent in the discourse, and by the following paradigm which indicates that both types of anaphors are subject to some common constraints with respect to split antecedents (in a local domain at least):

- (4) (a)  $*On_i$  aimerait rendre chacun<sub>i</sub> amoureux de soi,  
 (One would like to make each in love with one-self)  
 (b)  $*Paul_i$  parle à Jean<sub>i</sub> l'un de l'autre,  
 (Paul talks to John about each other)  
 (c)  $*Paul_i$  talks to John<sub>i</sub> about themselves<sub>i</sub>

That two distinct classes of anaphors, namely anaphors in argumental position and anaphors in non-argumental positions do exist is moreover supported by the fact that the appropriate notion of binding does not seem to be the same for the two classes of anaphors, as illustrated for example, by the contrast between (5) and (6) in Danish where *sig* is in an argumental position in (5) but the element *hi* (each) of *hinanden* (each other) is claimed to be in a non argumental position (on this point see Pica *op.cit.*):

- (5)  $*Jeg$  fortaler Jørgen<sub>i</sub> om sig<sub>i</sub>  
 (I tell Jørgen about himself)  
 (6)  $Jeg$  fortaler dem<sub>i</sub> om hinanden<sub>i</sub>  
 (I tell them about each other)

The generalization seems to be that, argumental anaphors must in general be linked to a subject (and this fact may be expressed in terms of the unambiguous path constraint (applied to binding) of Kayne (1982)), while non-argumental anaphors are subject to the (weaker) constraint of c-command.

This point can also be illustrated by the following Danish paradigm which seems to indicate that the anaphor *sin* (his own) is in an argumental position and this is also confirmed by the fact that it is not subject to the S.S.C. as pointed out in Pica (*op. cit.*).<sup>1</sup>

- (7)  $*Jeg$  forsyner Jørgen<sub>i</sub> med sine<sub>i</sub> nødrationer  
 (I provide Jørgen with his own emergency food)  
 (8)  $?Jeg$  forsyner dem<sub>i</sub> med hinandens-nødrationer<sub>i</sub>  
 (I provide them with each other's emergency foods)

The prediction of our analysis is that we shall find long distance binding (intervening across an S or  $\bar{S}$  boundary) of nonargumental anaphors in contexts where the S.S.C. cannot apply, namely, when the non-argumental anaphor is part of the subject itself (even when the embedded clause is tensed), since non-argumental anaphors are not subject to the tensed S condition, that is, in contexts where long distance binding of argumental

anaphors will not be possible, since argumental anaphors are subject to the tensed S condition. This fact is illustrated by the contrast between (9a) and (9b) on the one hand and Danish sentence (10) on the other hand (recall that we claim that the elements *each* and *selves* (of *themselves*) are in non-argumental positions):

- (9) (a) They<sub>i</sub> believed that pictures of each other<sub>i</sub> were on sale  
 (b) They<sub>i</sub> believed that pictures of themselves<sub>i</sub> were on sale  
 (10) \*De<sub>i</sub> så at billeder af sig<sub>i</sub> var til salg  
 (They saw that pictures of themselves were on sale)

We want to contrast the opposition between (9) and (10) with the opposition between (11) and (12) in Danish where (11) is blocked by the S.S.C., since the anaphor *hi* is in a non argumental position, which (12) is not, since *sig* is always in an argumental position:

- (11) \*De<sub>i</sub> hørte Larsen fotografere hinanden<sub>i</sub>  
 (They heard Larsen photograph each other)  
 (12) Han<sub>i</sub> hørte Larsen fotografere sig<sub>i</sub>  
 (He heard Larsen photograph himself)

The same point again can be illustrated in French by the contrast between (13) and (14) where (14) is blocked by the S.S.C. while (13) is not. That is, Milner is right in claiming that the relation between *ne* and *personne* falls under the binding theory, (see Milner (1977)) as opposed to Kayne (1981) but Milner is wrong in claiming that *personne* is an anaphor in Chomsky's sense since *personne* is not subject to the S.S.C. but rather to the tensed S condition (see also Pica forthcoming (b)). This fact derives in a natural way from our theoretical framework since *personne* is always in an argumental position:

- (13) Je n<sub>i</sub> ai laissé Jean parler à personne<sub>i</sub>  
 (I have not let John speak to nobody)  
 (14) ??Ils<sub>i</sub> ont laissé Jean et Marie parler les uns aux autres<sub>i</sub>  
 (They let John and Mary speak one to the other)

Note that a consequence of our analysis is that we are now able to account for the contrasts between (15), (16) and (17) in Danish, without being obliged to claim that distinct binding categories have to be defined for each anaphor as opposed to Aoun (1981), where a "parametric" definition of binding categories is advocated:

- (15) Lægen<sub>i</sub> betragter patienten<sub>i</sub> som farlig for sig<sub>i</sub>  
 (The doctor considers the patient as dangerous for himself)

- (16) Lægen<sub>i</sub> betragter patienten<sub>i</sub> som farlig for sig selv<sub>i</sub>  
 (The doctor considers the patient as dangerous for himself)  
 (17) Læger<sub>i</sub> betragter patienter<sub>i</sub> som farlige for hinanden<sub>i</sub>  
 (The doctors consider the patients as dangerous for each other)

That *hinanden* is submitted to the S.S.C. in (17) derives, in our framework, from the fact that the element *hi* is in a non argumental position (see comments of (11) above). That the anaphor *sig selv* is also submitted to the S.S.C. derives from the fact that *selv* is not in an A-position (although *sig* is in an A-position). We want to claim that *sig selv* is subject to both constraints on argumental anaphors and non-argumental anaphors; that is, that *sig selv* must be bound to an antecedent in subject position (because *sig* is in an argumental position) but is submitted to the S.S.C. (because *selv* is in a non-argumental position).<sup>2</sup>

That *sig* is preferably not bound to a local subject does not, in our terms derive from the binding theory, properly speaking, but rather from some functional principles of which the avoid pronoun principle is one (On the role of such functional principles see Pica (*op. cit.*)). The result of these principles is that, roughly speaking, in a given situation, the most appropriate (least ambiguous) anaphoric element is employed. If this is true, *sig* is preferred not to be locally bound in (15) because of the existence of a more appropriate element for this kind of anaphora, namely, *sig selv* (as illustrated in (16)).

Note, however, that our approach can hardly be extended to empty categories, at this stage, since some empty categories located in argumental positions do seem to be subject to the Specified Subject Condition, as illustrated by (18), which shows that long distance movement of NPs, from a position which is assigned a thematic role to a position which is not, from an embedded subjunctive clause to a main clause, is impossible. That NP traces are subject to the S.S.C. (and not to the tensed S condition) is also illustrated by (19) from Kayne (1982) which seems to indicate that NP-movement is blocked by the subject of a small clause:

- (18) \*Des carottes, semblent [qu'<sub>i</sub> il soit mangé t<sub>i</sub>  
 (Some carrots seem that there is (subj) eaten t)  
 (19) \*The money<sub>i</sub> was credited somebody with t

One could still want to claim, that (19) is not blocked by the S.S.C. but rather, as suggested to me by R. Kayne, by another kind of constraint (whatever it might be), namely, the same constraint which blocks (20), and that sentences like (18) are in fact blocked by subjacency (from which the S.S.C. effects would derive).

- (20) \*What don't you know who to provide with
- t*

That sentences like (18) are blocked by subadjacency cannot be maintained, however, since sentences like (21), which are, with respect to the subadjacency constraint, structurally equivalent to (18), are grammatical. This observation is reminiscent of Rizzi's claim that movement of a Wh-word is possible over a filled Comp and is not subject to the S.S.C., although *wh*-movement does observe subadjacency (see Rizzi (1980)):

- (21) Combien
- <sub>i</sub>
- de garçons sais-tu [où] inviter
- t*
- <sub>i</sub>
- 
- (How many boys do you know where to invite)

We shall propose a solution to the apparent paradox raised by the contrast between the behavior of lexical and non lexical anaphors in argumental positions in the next section.

## 2. Non-thematic and thematic anaphors

An interesting aspect of the analysis developed in the first section of this paper is that it can be extended in a very natural way to the class of examples illustrated by (22) and (23), which could not be accounted for in the G. B. framework and where *tous* and *respectivement* are in non-argumental positions:

- (22) \*Les garçons
- <sub>i</sub>
- pensent que tu es tous
- <sub>i</sub>
- parti (Kayne 1980)
- 
- (The boys think that you have all left)
- 
- (23) \*Pierre
- <sub>i</sub>
- , et Jean ont laissé Marie parler respectivement
- <sub>i</sub>
- de littérature et de cinéma (Rouveret 1975)
- 
- (Peter and John have let Mary speak respectively about literature and movies)

Note that Milner's hypothesis of an anaphorisation process in (23), (*respectivement* is in Milner's framework supposed to give the feature [+ Anaphor] to the NP it is followed by (see Milner (1977) and, Aoun (1981) where this hypothesis is extended to *each* and *self* in English and, for a similar hypothesis concerning *l'un* in French, Milner (1983)) cannot be extended to *tous* in (22). The appeal to such an anaphorisation process is completely unnecessary in our framework, where it is tempting to say that the fact that *tous*, *respectivement*, *each*, *self*, etc. are subject to the S.S.C. is not a property that has to be marked in the lexicon but rather derives from properties of elements in non-argumental positions.

This hypothesis seems indeed to be supported by the fact that the relation between *l'un* (*each*) and *l'autre* (*the other*), for example, is not submitted to the S.S.C. in sentences like (24), where *l'un* is in an argumental position:

- (24) L'un
- <sub>i</sub>
- aura demandé à Marie de prévenir l'autre
- <sub>i</sub>
- 
- (One would have asked to Mary to warn the other)

Note, however, that all elements in  $\bar{A}$ -positions are not anaphors as shown by sentences like (25), where *lui* is clearly a pronoun, not an anaphor:

- (25) Je
- <sub>i</sub>
- lui
- <sub>x</sub>
- donne une pomme
- 
- (I give him (CL) an apple)

What we want to suggest is that it is the absence or the presence of a thematic role which allows us to distinguish the behavior of *l'un* in (24) from the behavior of *l'un* in (1c), that is, that *l'un* is an anaphor subject to the S.S.C. when it lacks a thematic role. This hypothesis is confirmed by the fact that (26) is perfectly grammatical since *l'un* is governed by the preposition *de* and is in a thematic position (a position which gets a thematic role) and is not subject to the S.S.C.

- (26) Ils
- <sub>i</sub>
- ont laissé entendre à Marie que les propos de l'un sur l'autre
- <sub>i</sub>
- 
- avaient été rapportés
- 
- (They let Mary understand that the stories about each other had been reported)

We are now able to formulate the following principle:

- (II)
- A dependent element which lacks a thematic role is an anaphor subject to the S.S.C.*

Principle (II) permits us to account for the fact that *tous* (in a non thematic position), *respectivement*, *self*, etc. are anaphors in Chomsky's sense, that is, are subject to the S.S.C., since they lack thematic roles.

Note that we can now extend this analysis to elements in A-positions which lack a thematic role and which are predicted to be subject to the S.S.C. This prediction is borne out as illustrated by (27) in Danish and (28) in French:

- (27) \*Jørgen
- <sub>i</sub>
- bad Gertrude vaske sig
- <sub>i</sub>
- 
- (Georges asked Gertrude to wash himself)
- 
- (28) \*Jean
- <sub>i</sub>
- regardait Marie perdre la tête
- <sub>i</sub>
- 
- (John saw Mary loose her mind)

*Sig* is a non referential unit in (27) which contrasts with (12) (since *sig* cannot be long distance bound in (27)) since "*at vaske sig*" (to wash oneself) is a kind of inherent reflexive verb in Danish as reflected by the contrast between (29) and (30):

- (29) Jørgen
- <sub>i</sub>
- vasker sig
- <sub>i</sub>
- /\*sig selv
- <sub>i</sub>
- 
- (Jørgen washes himself)

- (30) Jørgen<sub>i</sub> beundrer ?sig<sub>i</sub>/sig selv<sub>i</sub>  
(Jørgen admires himself)

*Selv* cannot be added to *sig* in (29) since *sig* is not a real argument and in our terms lacks a thematic role as opposed to *sig* in (30). Note that "at beundre" (to admire) is not an inherent reflexive verb.<sup>3</sup> In other words, a non-thematic anaphor (an anaphor that does not bear a thematic role) can only be adjoined to a thematic anaphor (anaphor that does bear a thematic role). As for (28) we want tentatively to propose that "la tête" does not bear a thematic role since "perdre la tête" (literally translated "lose the head" is an idiomatic expression. The NP "la tête" is consequently subject to the S.S.C.

Note at this stage, that certain anaphors that do bear a thematic role, like *sig* in Scandinavian languages or *soi* in French, (and thus are not subject to the S.S.C. but rather to the tensed S constraint) have to be marked as anaphors.

English seems to lack this kind of anaphor which has to be marked in the lexicon and whose existence is subject to variations across languages.

Note, however, that we cannot drop, in our definition of binding categories in (I), the reference to the distinction between argumental and non argumental positions: Thematic anaphors behave like non-thematic anaphors when they are (moved) in a non-argumental position as illustrated by the contrast between (1b) and (1a), in French, which indicates that *se*, which is in non-argumental position, is subject to the S.S.C., while *soi* (which is always in argumental position) is not.

It is interesting to point out that we could not account for the behavior of *se* which is always subject to the S.S.C. by postulating that *se* does not bear a thematic role (which would imply that the thematic role is carried by the trace of *se*) since the trace of *se* is itself subject to the S.S.C. as illustrated by (31):

- (31) \*Elle *se*<sub>i</sub> veut admirer *t*<sub>i</sub>  
(She wants to admire herself (C.L.))

Note in fact that our analysis, which involves using theta theory to identify elements which are lexically realised, can now be easily extended to empty categories (for which such an approach is usual) since empty categories which lack a thematic role (like NP-traces) are subject to the S.S.C. while others that do bear a thematic role (traces of Wh-movement, PRO, etc.) are not.

Examples like (31) give, according to our analysis, strong support for the hypothesis that clitics absorb the  $\theta$ -role of their traces. These traces, which are not variables, do not bear a thematic role and are consequently subject to the S.S.C. (see Pica (forthcoming (b)) for a more detailed analysis).

Note incidentally that our analysis is also supported by the fact that we

do not observe long distance agreement phenomena (from a subjunctive embedded clause to a main clause, for example) as illustrated by (32):

- (32) \*On<sub>i</sub> (sg) souhaite que les gens (plural) dise<sub>i</sub> (sg) du bien de soi  
(One wishes that people praise (sub.) one-self)

The ungrammaticality of (32) derives, in our terms, from the fact that the element AGR (of INFLEXION) is both in a non argumental and a non-thematic position.

We can now modify our formulation of the axiom (A) of the binding theory (see (I)) in the following way:

- (III) *An anaphor  $\beta$  must be bound in its binding category  $\alpha$ , where  $\alpha$  is a binding category for  $\beta$  if:*  
(a)  *$\alpha$  is the minimal category containing  $\beta$  and an accessible subject to  $\beta$  and  $\beta$  lacks a thematic role or is in a non-argumental position.*  
(b)  *$\alpha$  is the minimal category containing  $\beta$  and the element [+ TENSE] accessible to  $\beta$  and  $\beta$  has a thematic role and is in an argumental position.*

The consequences of the analysis presented here are numerous and important and go far beyond the scope of the present article. They are developed in Pica (forthcoming (a)) where a detailed analysis of long distance binding phenomena is given and where we claim that E.C.P. cannot be derived from the binding theory, as opposed to what is claimed in Aoun (1981). We claim in Pica (forthcoming (b)) that a subpart of the binding theory cannot be reduced to the E.C.P., as opposed to what is suggested in Kayne (1981), and show that empty categories subject to axiom (III) (b) do exist as expected in the present framework.

Note finally that the binding theory advocated here gives strong support for the analysis developed in Pica (1983) following which anaphors and pronouns are only partly in complementary distribution and where it is claimed that the effects of axiom (B) of Chomsky's theory derive from the avoid pronoun principle (Axiom (B), as such, does not exist in our framework) since the parallelism between axioms (A) and (B) seems difficult to maintain.

#### Notes

1. We show in Pica (forthcoming (a)) that an analysis in terms of small clauses is not possible in Danish for examples of the type (5)-(6) and (7)-(8).
2. More precisely: *sig* is in an A-position even when *selv* is added.
3. That is, *sig* is not a real argument in (27) but *sig* is an argument in (30). See also on this point Hellan (1982).