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OBJECT SHIFT AS AN A-MOVEMENT RULE[1]

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0. Introduction

It is well-known that Dutch, as well as German for that matter, has a relatively free word order of NPs inside VP, a phenomenon sometimes referred to as "scrambling," though I shall argue that scrambling is far more systematic as the name might suggest. An example is given below:

(1) dat ik (de directeur) morgen (de directeur) over die zaak
that I (the manager) tomorrow () concerning this matter
(de directeur) in Kopenhagen (de directeur) ontmoet
() in Copenhagen () meet

Assume, following Chomsky (1986), that sisterhood is a necessary condition for Θ-role assignment to take place:

(2) Sisterhood Condition
If α Θ-marks β then α and β are sisters

It follows that separation of the verb from is object must be the result of movement; suppose we do not allow for downward movement rules, it must then be the case that the object has moved and not the adverbials.[2] Following Holmberg (1986), we shall refer to the rule as Object Shift (OS), a somewhat misleading term as OS can also apply to subjects of possessive and resultative Small Clauses (SCs) and AcI complements (on the latter, see Bennis and Hoekstra 1984). At first sight, OS would seem to be the an instance of A'-movement, given that its landing site is usually assumed to be adjoined to V' or VP, i.e. an A'-position (cf. Hoekstra 1984:114, Bennis and Hoekstra 1984:74, Den Besten and Webelhuth 1987). However, in the following I shall argue that OS is an instance of A-movement. In order to support this thesis, I shall first present evidence relating to long distance movement, bound pronouns and anaphor binding. Then, I shall extend the analysis to English and argue that English has leftward OS like Dutch and German. A discussion of the problem of parasitic gaps, licensed by the traces of OS in Dutch and of Heavy NP Shift (HNS) in English, concludes the paper. Before turning to the first argument, however, I shall consider the more

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[1] For their comments, I should like to thank (in order of appearance) Teun Hoekstra, Eric Hoekstra, Anders Holmberg, Dany Jaspers, and the audience at the first Student Conference In Linguistics. Naturally, none of these are to be held responsible for the views expressed here.

[2] We furthermore assume that adverbs can only adjoin to one side of VP, i.c. the left.

general issue of the status of adjunction in the theory.

1. Some Version of X'-Theory

The adjunction theory of OS would seem to receive superficial support from the fact that adjunction to VP is needed anyway to overcome VP-barrierhood; by implication adjunction would be an option allowed in principle by UG. However, what I want to argue here is that adjunction is not a possible means of voiding barrierhood in general. In order to make this point, we must first turn to X'-theory. In recent GB, X'-theory has become a fairly impoverished component of the grammar, and we may consequently attempt to make as minimal assumptions about it as possible. One might suggest, for instance, following Stowell (1981), that ordering restrictions inside VP do not follow from attachment at different bar levels, but from independent principles, e.g. the Sisterhood Condition (2).[3] Interpretation of XPs as either complements or adjuncts is done by virtue of θ-marking and therefore does not require distinguishing bar levels either. It would seem, then, that allowing different bar-levels creates a certain redundancy which it might be worthwhile to eliminate.[4] If indeed we eliminated bar levels altogether, there would be no fundamental difference between adjunction and projection, i.e. between a and b below (cf. Speas 1986):

(3) a $[_{VP} \ldots [_{VP} \ ] \ldots \ ]$
b $[_{V'} \ldots [_{V} \ ] \ldots \ ]$

Whereas the former does not involve internal θ-marking by the head to the positions indicated by the dots, the latter does; hence there is need to distinguish different projection levels. One important consequence of this view is that only the topmost segment of a segmented XP is visible for Move-α, assuming Move-α to be restricted to heads and maximal projections: if adjunction is no different from projection, the lower segment of a segmented XP, as in (3a), cannot possibly count as a maximal projection and hence must be invisible for Move-α. Furthermore, if adjunction has no special status with respect to projection, no recourse can be had to adjunction in order to void barrierhood, a possibility invoked in Barriers in the case of A'-extraction out of VP. Consider an adjunction structure like the following:

(4) $[_{VP1} \ t' \ [_{VP2} \ V \ t \ ]]$

Both VP1 and VP2 being maximal projections, the questions arises why they can be crossed without inducing a violation. For VP2, this problem is overcome by means of the concept of exclusion (Chomsky 1986:9), which figures in the definition of both

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[3] In view of the theory to be developed below, adjacency of V and its NP-complements cannot be reduced to Case theory, so that we must have recourse to θ-theory instead.

[4] I am grateful to T. Hoekstra for pointing this out to me.

subjacency and the ECP; for VP1 by means of the definition of dominance, which requires dominance by all segments of XP and which enters into the definiton of barrier. If, on the other hand, only VP1 counts as maximal, as we are now assuming, VP2 will pose no problem whatsoever, as it is not maximal and hence not a barrier; VP1, however, will continue to dominate t' and therefore be a barrier for extraction, regardless of intermediate adjunction in the position of t'. Hence adjunction cannot void barrierhood.

How then can the VP barrier be overcome, if not by adjunction? Observe that there exists a relation of coindexing between V and the AGR which immediately dominates it; this coindexing may arise as either a consequence of movement of V to AGR or percolation. Following Guéron and Hoekstra (1988), I shall assume that the index of the head percolates up to the maximal projection, and that X^{max}'s with identical indices are interpreted as segments of the same projection: as a result, VP will never be a barrier for movement of its object, as required. The same reasoning applies to AGR and T, which stand in a coindexing relation with T and C, respectively. In fact, given that VP is Θ-marked, adjunction to it should be impossible as adjunction is restricted to nonarguments (Chomsky 1986:6). Furthermore, we can now dispense with the stipulation concerning the defective status of IP, nor need we extend it to Pollock's AGRP, or whatever other functional projections might be discovered within TP.

In conclusion, the VP-adjunction theory of OS is not supported on grounds of what are possible ways of voiding VP-barrierhood or barrierhood in general.

2. Locality Constraints on OS

If OS is an instance of A'-movement, the null assumption is that it could make use of the [SPEC,CP] position and thus be able to move NPs into higher clauses successive cyclically. However, this is not the case (in this and the following examples, underlining represents coindexing):

(5) a *dat Piet het artikel zei dat hij t gelezen had
that P the article said that he read had
b *dat Marie er zei dat Piet t over gepraat had
that M there said that P about talked had

As the second of these examples shows, the restriction also holds for R-movement (Van Riemsdijk 1978). These facts suggest that OS is at least a non-wh type of movement; now one still could claim that movements to A'-positions fall apart into operator and non-operator movements, OS being an instance of the latter (cf. Kayne 1984 on L-Tous; for OS, Holmberg 1986 and Webelhuth 1987). If one furthermore assumes that only operators may make use of [SPEC,CP], the locality constraints follow. However, in the ensuing sections I shall provide further arguments in support of the thesis that OS is really A-movement.

3. Variable Binding

Consider the following sentences:

(6) a *Ik heb in zijn tuin elke buurman ontmoet
I have in his garden each neighbour met
b *Ik heb aan zijn begeleider niemand voorgesteld
I have to his escort noone introduced

Assume that both these examples have a structure in which the PP occupies an adjunct position:

(7) $[_{VP}$ PP $[_{V'}$ NP V]]

Furthermore assume c-command to be a necessary condition on variable binding, such that the quantifier must c-command the pronoun it binds. The examples in (6) then provide direct evidence against maximal c-command and in favour of strict c-command, which I shall henceforth assume to be the correct notion. Evidence supporting this claim is provided by the ellipsis test discussed in Reinhart (1988):

(8) a ?Ik heb in zijn tuin de buurman gezien, en ook de slager
I have in his garden the neighbour seen, and also the butcher
b ?Ik heb aan zijn begeleider de student voorgesteld, en ook de professor
I have to his escort the student introduced, and also the professor

(9) a Ik heb de buurman in zijn tuin t gezien, en ook de slager
b Ik heb de student aan zijn begeleider t voorgesteld, en ook de professor

Whereas the sentences in (8) allow only a strict reading in the ellipted part, those in (9) are ambiguous between a strict and a sloppy reading. In the theory developed in Reinhart (1988), the sloppy reading is associated with binding, which in turn requires c-command of the pronoun by its antecedent, whereas a strict reading need not involve c-command. The contrast between (8) and (9) then supports the idea that there is no c-command from the object into the adjunct unless OS has moved the object into a position higher than the adjunct.

Returning to quantifier binding as in (6), we correctly predict that moving the object to the left of the PP through OS will render the sentences grammatical:

(10) a Ik heb elke buurman in zijn tuin t ontmoet
b Ik heb niemand aan zijn begeleider t voorgesteld

In other words, OS is able to create the configuration for variable binding. This is like A-movement generally:

(11) a *It seems to his teacher that each student is lazy
b Each student seems to his teacher to be lazy

Contrast this with a clear A'-dependency like topicalisation, which is unable to create the configuration for variable binding:

(12) a *Zijn leraar heeft elke student ondervraagd
His teacher has each student questioned
b *De auteur ervan heeft elke scriptie gekopieerd
The author of-it has each thesis xeroxed
(13) a *Elke student heeft zijn leraar t ondervraagd
b *Elke scriptie heeft de auteur ervan t gekopieerd

The examples in (12) are out under the intended reading because the pronoun is not c-commanded by its antecedent, the object. The variant in which the object occurs in a topicalisation position remains ungrammatical even though the c-command requirement is now satisfied. Hence there is a clear contrast in this respect between A-movement and A'-movement, OS patterning with A-movement. We shall return to the reason for the ungrammaticality of (12) and (13) below.

Conversely, OS can not only create the variable binding configuration but also destroy it. In order to see this, we must consider some German examples (due to Den Besten and Webelhuth 1987):

(14) Der Kongressvorstand hat [jedem Kongressbesucher]
the congress-chairman has each congress visitor(DAT)
[den Uebersetzer, der ihn begleiten wurde] zugewiesen
the translator(ACC) that him accompany would assigned-to
"The chairman of the congress assigned the translator that would accompany him to every congress visitor"

This sentence, in which a quantified indirect object binds a pronoun embedded in the direct object, represents the base order. Unlike Dutch, German allows the direct object to be moved to the left of the indirect object by OS. The result is given below:

(15) *Der Kongressvorstand hat [den Uebersetzer, der ihn
The congres-chairman has the translator that him
begleiten wurde] [jedem Kongresbesucher] zugewiesen
accompany would each congress-visitor assigned-to

We see that variable binding is no longer possible because the c-command configuration has been destroyed: in other words, in the case of OS, the landing site rather than the position of the trace is relevant for binding. This again contrasts with A'-movement, where the position of the trace is relevant. This is shown in the following:

(16) a Elke Freudiaan heeft zijn vader vermoord
Each Freudian has his father murdered
b Geen dichter zou zijn slechte gedichten willen voordragen
No poet would his bad poems want read out
(17) a Zijn vader vermoord heeft elke Freudiaan t
His father murdered has each Freudian
b ?Welke van zijn gedichten wil geen dichter voorlezen?
Which of his poems wants no poet read-out

For binding, topicalised consituents are reconstructed into the position of their trace, as opposed to those moved by OS.

4. Anaphor Binding

The binding of anaphors by their antecedents reveals the same pattern: for OS the landing site is relevant, for topicalisation the position of the trace. Consider first OS:

(18) a *Ik heb aan elkaar de jongens voorgesteld
I have to each other the boys introduced
b *Piet heeft met elkaars hamer die mensen vermoord
P has with each other's hammer those people murdered
(19) a Ik heb de jongens aan elkaar t voorgesteld
b Piet heeft die mensen met elkaars hamer t vermoord

After OS, the c-command condition on anaphor binding is met and binding is possible. Again, this contrasts with topicalisation:

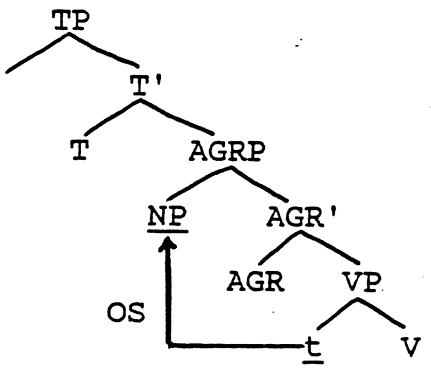
(20) a *Vrienden van elkaar hebben de jongens uitgenodigd
Friends of each other have the boys invited
"Friends of each other invited the boys"
b *De jongens hebben vrienden van elkaar t uitgenodigd

An object cannot bind into a subject, even if the object c-commands the subject in a topicalisation structure (cf. (20b)).

5. OS as an A-Movement Rule

Let us now try and provide an explanation for the facts just discussed. We shall assume that [SPEC,AGRP] qualifies as the landing site for OS, as follows:

(21)



Assume furthermore that this movement is triggered by the need to satisfy the Case filter, i.e. that objective Case is assigned, like nominative, by a functional head, AGR, under Specifier-Head agreement (SHAG). Structural Case thus contrasts with inherent Case in being assigned under SHAG at S-structure, whereas inherent Case, being tied to subcategorisation properties, is

assigned under government at D-Structure.[5]

We are now in a position to formulate the A/A-bar distinction as follows:

(22) A chain C is an A-chain iff the head of C is assigned Case; a chain C is an A-bar chain otherwise

It is clear that (22), in conjunction with the assumption that OS moves NPs into a Case-marked position, derives the required result that chains of OS are A-chains, as opposed to topicalisation chains, where Case is assigned to the foot of the chain. However, while (22) does indeed seem to be valid as an empirical generalisation, it does not tell us why A and A' chains behave the way they do. We shall therefore make an attempt to explain the A-A' contrast in a more principled way.

Reinhart (1986;1988) argues that the binding of pronouns and anaphors by either quantified or unquantified NPs takes the form of the binding of a variable at LF. The derivation of LF thus involves the following step:

(23) Translate an index as a variable

Binding, she argues, contrasts with coreference: while the former is a grammatical notion subject to a requirement of strict c-command, coreference is a case of two NPs having free reference and picking out the same referent. Names like Lucie, Harry, etc. and pronouns differ from quantified and questioned NPs in that they are referential, i.e. can have free reference, and can therefore corefer. The only way for a nonreferential NP to be coindexed with a pronoun, however, is through binding. This accounts for the following contrast:

(24) His friends adore Harry/*everyone

The pronoun cannot be bound because the potential binder in object position does not c-command it; hence only coreference is available, but since a quantified NP is nonreferential, it cannot corefer with the pronoun, unlike the name.

I shall assume that the distinction between coreference and binding is not only represented at LF but also at S-structure, i.e. in the syntax generally: in particular, I assume that binding is represented by coindexing, whereas coreference is not. this will have the result that (23) applies to all indices,

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[5] This implies that in cases discussed above where OS did not seem to have applied, the adjunct is simply attached in a higher position, i.e. left-adjoined to AGRP. Allowing adjuncts to adjoin to AGRP, and perhaps functional projections generally, is necessary anyway to account for examples where adjuncts occur on either side of the object, as in (1) above.

barring those of NP-traces.[6] Next, I shall assume the following principle:

(25) Bound Pronoun Principle (BPP)
(i) an anaphor is A-bound
(ii) a pronoun is A-bound or has free reference

The BPP ranges over both anaphors and pronouns, the difference being that anaphors are obligatorily bound, i.e. cannot have free reference, and, in addition, that they are subject to a stricter locality condition than pronouns. Finally, A-binding is defined as follows:

(26) A-binding
α A-binds β iff
(i) α and β are coindexed
(ii) α strictly c-commands β, and
(iii) α is in a Case-marked position

Clause (i) formulates the indexing property of binding discussed above, and (ii) the familiar c-command requirement; (i) and (ii) taken together define A'-binding. Clause (iii), then, introduces a visibility condition on potential A-binders, requiring that they be Case-marked.

Let us now see how these assumptions work out in practice, turning to WCO first. Consider the following:

(27) a ?*Who did his girlfriend kiss t?
b ?*Wie heeft zijn meisje t gekust?

The pronouns in these examples not being able to corefer with the wh-phrases, they must be A-bound by the BPP. However, the trace does not qualify as a binder as it does not c-command the pronoun, and the wh-phrase does not either as it is not in a Case-marked position, thus violating clause (iii) of (26). Therefore, the sentences are out. Next consider (28), which might be seen as a case of "nonstandard" WCO, as these sentences do not involve literal crossover and thus do not violate any condition framed in those terms (e.g. the Bijection Principle).

(28) a ?*Whose girlfriend t kissed him?
b ?*Wiens meisje heeft t hem gekust?

Though arguably the wh-word is in a Case-marked position, thus satisfying the Case requirement on A-binding, it does not c-command the pronoun, in violation of clause (ii) of (26). Part of the reason for believing that (27) and (28) really instantiate the same phenomenon is the fact that they behave alike in relative contexts:

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[6] The reason for this is that NP-traces, not being Case-marked, are invisible for the rule (23) which derives LF.

(29) a ?John, who his girlfriend kissed t
b ?Jan, die zijn meisje t kuste
(30) a ?John, whose girlfriend t kissed him
b ?Jan, wiens meisje t hem kuste

This fact is accounted for by assuming a binding or coreference relationship between the relative head and the bound pronoun. That this is correct is shown by the following:

(31) $John_i$, [a friend of $whom_i$]$_j$ his_i/*j wife kissed t_j

In cases of Pied Piping, where the relative head (i.e. John in (31)) does not match the constituent in [SPEC,CP] but only a subpart of it, a pronoun inside the relative clause can only be bound by the relative head and not by the entire wh-constituent in [SPEC,CP]; in other words, his wife in (31) can only be understood as John's wife, not John's friend's wife, because the constituent in [SPEC,CP] does not satisfy clause (iii) of (26).

Returning to the data discussed in sections 3 and 4 above, the contrast between OS and topicalisation falls out directly in that A'-moved NPs do not receive Case in their landing site, whereas A-moved NPs do: hence only the latter can bind from their surface position. Let us next consider some more intricate cases, beginning with wh-extraction of an object across an adjunct containing a coindexed pronoun:

(32) a Wie heb je t' in zijn tuin t gezien?
Who have you in his garden seen
b Wie heb je t' aan zijn begeleider t voorgesteld?
Who have you to his escort introduced

This case contrasts with (27) above, where a subject-contained pronoun triggers a WCO effect for the reasons discussed. However, adjunct-contained pronouns are fully acceptable in this construction. This contrast is readily explained on our assumptions, as t' in (32) is in a Case-marked position so that it can bind the pronoun in the adjunct as required. Adjunction theories of OS are hard put to exploit the presence of t' as t' does not occupy an A-position. Neither can in this particular case the content of the antecedent be used to determine the A-nature of that part of the chain, a problem which also potentially affects the nonadjunction theory of OS, though not the one outlined above. Next consider some instances of quantifier topicalisation: these behave like the wh-extractions just discussed:

(33) a Iedereen heb ik t' aan zijn begeleider t voorgesteld
Everyone have I to his escort introduced
b Elke buurman heb ik t' in zijn tuin t gezien
Each neighbour have I in his garden seen

By the BPP, the pronouns must be A-bound: only t' qualifies as an A-binder, being Case-marked and c-commanding the pronoun in the adjunct. By consequence, there is no WCO effect. The same pattern is observed with anaphor binding under topicalisation of the

object:

(34) a De jongens heb ik t' aan elkaar t voorgesteld
The boys have I to each other introduced
b Die mensen heb ik t' met elkaars hamer t vermoord
Those people have I with each other's hammer murdered

Contrast these examples with the one in (20b) above, where the anaphor is contained in a subject.

A prediction made by this account is that wh-in-situ should give rise to the familiar WCO effect if the conditions on A-binding are not met. This turns out to be the case:

(35) a *Ik weet niet wie in zijn tuin wie gezien heeft
I know not who in his garden who seen has
b *Ik vraag me af wie aan zijn begeleider wie heeft voorgesteld
I wonder who to his escort who has introduced

If OS were an instance of adjunction, it is again hard to see what would bar this adjunction in the derivation of LF, yielding a configuration identical to that of (32) above and yet ungrammatical as opposed to the latter. Under our analysis, these examples are ruled out as before because the wh-phrase fails to c-command the pronoun it is coindexed with. Surprisingly, if wh-in-situ undergoes OS before LF, WCO is absent:

(36) a Ik weet niet wie wie in zijn tuin gezien heeft
b Ik vraag me af wie wie aan zijn begeleider heeft voorgesteld

This follows under our analysis as the wh-phrase satisfies all conditions on A-binding. By contrast, if one defined chains in terms of the content of the antecedent, the grammaticality of (36) is again surprising.

Interesting confirmation for our analysis comes from German: in German, apart from the usual SOV order illustrated in a below, it is possible to have an OSV order in subclauses as in b:

(37) a weil seine Eltern den Schüler besuchten
because his parents(NOM) the schoolboy(ACC) visited
"because his parents visited the schoolboy"
b weil den Schüler seine Eltern t besuchten

Assuming that θ-role assignment in German proceeds as in Dutch, the OSV order must result from movement of the object into a position higher than the subject. It turns out that this movement rule has the properties of OS (Webelhuth 1987:292):

(38) a *dass seine Mutter jeden mag
that his mother(NOM) everyone(ACC) likes
"that his mother likes everyone"
b dass jeden seine Mutter t mag

The theory developed thus far implies that in the b-sentence the object is assigned Case in its landing site: assume, then, that it is a reversal of Case-assignment patterns that makes the OSV order possible, i.e. accusative is assigned directly to the object by the higher functional head and nominative to the subject by the lower one, AGR. Dutch differs from German in not allowing this Case reversal. If this analysis is correct, we predict that there will be no standard WCO with wh-phrases in German, as a Case-marked trace may c-command the subject and hence A-bind a pronoun contained in it. This prediction is confirmed:

(39) Wen mag t' seine Mutter t?
Who(ACC) likes his mother(NOM)
"Who does his mother like?"

We furthermore predict that "nonstandard" WCO, as in (28) above, should be present in German just as well:

(40) *Wessen Mädchen t mag ihn?
Whose girl likes him

This is indeed the case. Dutch, which disallows the OSV order in subclauses, also disallows (39), as we saw before. Note that the contrast between the quantifier in (38a) and the wh-phrase in (39) is quite unexpected from the point of view of many current accounts of WCO, but falls out naturally in our analysis.

6. OS in English

In this section, I want to argue that English has leftward OS like Dutch and German. Consider the following data:

(41) a I met each neighbour in his garden
b I introduced every teacher to his student
(42) a I killed the boys with each other's hammer
b I presented Mary to herself

Let us make the minimal assumption that these examples have the same hierarchical structure as their Dutch equivalents:

(43) $[_{VP}\ [_{V'}\ V\ NP\ ]\ PP]$

What the Dutch case showed, however, was that there could be no c-command, hence binding, from the the direct object into the adjunct PP unless OS had moved the object to a position from which it could strictly c-command the adjunct. The fact that binding from the object into the adjunct seems to be possible in English clearly poses a challenge for our analysis, then. The ellipsis test discussed above illustrates the same difficulty:

(44) a I met John in his garden, and Bill too
b I introduced Mary to her teacher, and Jill too

These examples are ambiguous between a strict and a sloppy

reading, suggesting that the object can bind into the adjunct.

The problem also extends to secondary predicates. Consider the following data:

(45) a *Jan heeft koud de kroketjes gegeten
J has cold the croquettes eaten
b Jan heeft de kroketjes koud t gegeten

These suggest that a secondary predicate must be strictly c-commanded by its antecedent. This is further confirmed by the following example:

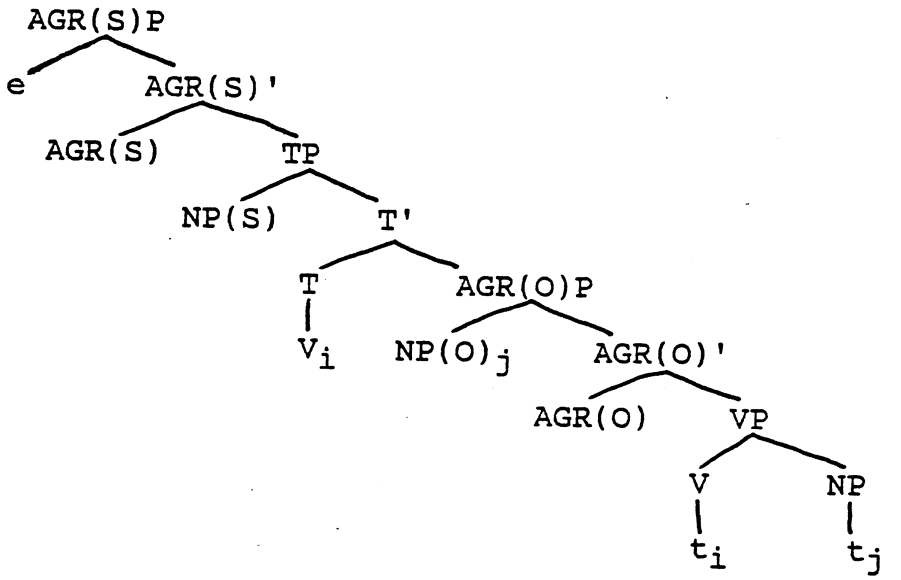
(46) *Jan heeft van de kroketjes koud gegeten
J has of the croquettes cold eaten

Again in English it seems as if the c-command condition can be violated, though violations are not possible across the board:

(47) a John ate the meat raw
b *John ate of the meat raw

All these cases can continue to fall under a condition of strict c-command if it is assumed that English, like Dutch, has leftward OS to [SPEC,AGRP], where structural Case is assigned. The verb preceding the object at the surface, it must move out of VP into the head position of a projection that dominates the OS projection, though not as far as the position reserved for the modals. Adding these requirements means that we need an extra functional projection, call it AGR(S):

(48)



English is now entirely paralell to Dutch, with NP(O) being able to strictly c-command, and hence bind, anything adjoined to VP. Another advantage of this analysis is that conjunctions like the following can be assumed to be conjunctions of constituents (examples due to Larson 1988, Abbott 1976 and Grosu 1976, respectively):

(49) John sent a letter to Mary and a book to Sue
(50) a Leslie played, and Mary sang, some C&W songs at George's party
b Mary baked, and George frosted, 20 cakes in less than an hour
c I borrowed, and my sisters stole, large sums of money from the Chase Manhattan Bank
(51) a John has sliced, and Mary also seems to have sliced, a large piece of cake with a shining new knife
b Bill may present, and Mary certainly will present, a series of papers at tomorrow's linguistic meeting
c Mary may have conducted, and Bob certainly has conducted, a number of tests in the large oval lab

The constituent involved then each time is AGR(O)P, which contains both the object and the adjunct, but not the verb.

7. Parasitic Gaps

A major problem for the analysis developed thus far is the fact that the trace left by OS seems to license parasitic gaps:

(52) a *Pim heeft [zonder e te lezen] het boek afgekraakt
P has without to read the book slated
b Pim heeft het boek [zonder e te lezen] t afgekraakt

Given that traces of A-movement do not normally license parasitic gaps, this is clearly a problem for our claim that OS is a rule of A-movement. In order to explain this surprising fact, we need to approach the problem from a comparative point of view.

Thus far, we have argued that languages like Dutch and German have a rule of OS, a name which we shall reserve for the rule that moves objects to a Case-marked specifier position left of their base-position. We have furthermore argued that English is no different from Dutch and German in that it also has OS. However, English also has a rule usually called Heavy NP Shift (HNS), which moves NPs to the right across adjuncts. Crucial evidence for this rule comes from parasitic gaps:

(53) a *John offended his favourite uncle from Cleveland by not recognizing e immediately
b John offended t, by not recognizing e immediately, his favourite uncle from Cleveland

Only if we assume that the b-sentence contains a trace left by A'-movement can we account for this contrast under the usual theories of parasitic gaps. English, then, on the one hand has OS, a rule of A-movement to the left, and on the other HNS, a rule of A'-movement to the right involving adjunction. The question now arising is whether Dutch has the same inventory of rules: we know it has OS, but does it have HNS? The answer seems to be negative.

(54) a *Ik heb gezien [de vader van het kind dat ons gisteren zo flink geholpen heeft]
I have seen the father of the child that us yesterday so well helped has
b Ik heb [de vader t] gezien [van het kind dat ons gisteren zo flink geholpen heeft]
c Ik heb [de vader van het kind t] gezien [dat ons gisteren zo flink geholpen heeft]

Extrapositon of the NP across the V is impossible also if the NP is particularly heavy; in such cases only CPs and PPs which are embedded in the object NP are extraposable. Hence HNS is lacking in Dutch. Why should this be so? I should like to claim that Dutch also has a rule of A'-movement equivalent to HNS, called Light NP Shift (LNS), which differs from HNS in that it adjoins objects to the left rather than to the right. The trace left by this rule is repsonsible for the presence of parasitic gaps. The proper representation of the above example should be as follows:

(55) Pim heeft het boek [zonder e te lezen] t' t afgekraakt

Here t marks the base position, t' the Case position [SPEC,AGRP], and het boek the adjunction position derived by LNS. Thus t' is at the same time the head of the A-chain derived by OS and the foot of the A'-chain derived by LNS which licenses the parasitic gap. The presence of two distinct chains is illustrated in the following example:

(56) Ik heb elke student [na e begroet te hebben] t' aan zijn
I have each student after greeted to have to his
begeleider t voorgesteld
escort introduced

Here t' serves as the A-binder for the pronoun and as the foot of the A'-chain licensing the parasitic gap. Similar cases exist in English:

(57) a ?Freud confronted with his problems each patient that seemed intelligent enough to deal with difficult issues
b ?I met in his garden every neighbour that had asked me to come by

Under a derivation of these sentences that applies OS followed by HNS, the pronoun is licitly bindable by the Case-marked trace of the quantified phrase.

The left-right asymmetry between English HNS and Dutch LNS follows from the VO-OV opposition between the two languages, adjunction of NPs being possible only at the same side as the extraction site (cf. Bennis 1986; Bennis and Hoekstra 1984:note 12; Frampton 1988). The prediction then is that, whereas all languages have OS, OV languages have A'-movement of objects to the left and VO languages A'-movement to the right. This prediction seems to be confirmed by the Scandinavian languages, VO languages which, following Holmberg (1986), have OS to the left. This can be seen in the following example (Icelandic):

(58) a Hvers vegna lasu stúdentarnir ekki allir greinina?
Why read the students not all the article
b Hvers vegna lasu stúdentarnir greinina ekki allir t?

The Scandinavian languages furthermore should have (rightward) HNS; the latter rule should license parasitic gaps, whereas OS should not. For Swedish at least, these predictions turn out to be correct (examples due to Holmberg 1986:173; p.c.):

(59) a *Jag kastade den inte t, innan jag hade läst e
I threw it not before I had read
b ?John har faktiskt sårat t, [genom att inte känna igen e
John has actually offended, by to not know again
omedelbart, sin favoritonkel från Cleveland
immediately, his favourite uncle from Cleveland

Swedish, then, provides support for the dissociation of the A and A'-movement rules potentially applying to objects advocated here.[7]

9. Conclusion

We have considered the complex of rules that may apply to objects apart from promotion to subject (i.e. passive) and wh-extraction. We argued that these fall apart into two classes: first, there is OS, a rule of A-movement triggered by the need for objects to receive structural Case in [SPEC,AGRP]. A Case requirement was incorporated into the definition of binding, so that we could account for binding from the OS landing site. Assuming that the rule of OS also exists in English allowed an explanation for certain problematic data from English syntax. Second, there is a rule of HNS/LNS, which is sensitive to the VO/OV nature of the language in question, and which creates A'-dependencies; this rule explains the presence of parasitic gaps licensed by movement of the object, both in English and in Dutch.

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[7] H. Sigurðsson (p.c.) points out that the equivalent of (59b) is ungrammatical in Icelandic:

(i) *Jón móðgaði, með Því að Þekkja ekki strax, frænda sinn...
John offended, by to recognize not immediately, uncle his...

I have no explanation for this fact.

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