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VARIABLES AND THE BIJECTION PRINCIPLE*

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trace Phenomena and the Nominative Island
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zioni sull'Anafora', in *Atti del Seminario*
a, Firenze, 1981.

Foris Publications, Dordrecht.

e Locale' nella Teoria Government & Binding,
ntro Informale di Grammatica Generativa.

osition Finie. Gouvernement et Inversion',

ture. PhD dissertation, MIT.

nflected Infinitives in Portuguese', unpublished.

1. INTRODUCTION

The term variable has been introduced into recent linguistic theoretical frameworks by analogy with standard logic usage. In the following forms:

- (1) a. $[\text{Everyone}]_i$ $[\alpha x_i \text{ likes strong tea}]$
b. $\forall x, x \in S, [\alpha P(x)]$

The constituent α is an open sentence: its truth value cannot be evaluated since the reference of x or the domain over which x may range is not determined within α . In standard logic, x in (1)b is called a *variable* and is said to be bound by the universal quantifier. Analogically, the term x_i in (1)a is called a variable, bound by the quantifier phrase *everyone*.

This is not sufficient to define what a variable is, however. By extension from cases like (1)a, the implicit characterization of variables up to (and not including) Chomsky (1981) has been (2):¹

- (2) a is a variable iff a is the trace of movement from an A-position to an \bar{A} -position.

By an A-position, we mean a position bearing a grammatical relation (subject of..., object of...). An \bar{A} -position is a position which is not an A-position (COMP, adjunct...).

Beyond terminology, the introduction of definition (2) in linguistic theory embodies an implicit empirical claim: it characterizes a class of elements which, one would expect, should exhibit some distinctive property(-ies). This has indeed been argued to be the case (e.g. in Chomsky,

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(1976)) with the so-called weak crossover phenomena (henceforth WCO) illustrated in (3) below:²

- (3) a. Who does his mother love
 b. His mother loves everyone
 c. His mother loves JOHN
 d. Sa mère aime qui
- (focal stress on *John*)
 (non echo *wh*-in-situ)

In these sentences, the pronoun *his* or *sa* cannot be bound by *who* (or by *everyone*, *JOHN*, *qui* respectively).

At LF, the respective representations of the sentences in (3) are:

- (4) a. who_i [his_i mother loves x_i]
 b. everyone_i [his_i mother loves x_i]
 c. John_i [his_i mother loves x_i]
 d. qui_i [sa_i mère aime x_i]

(4)a is identical to its S-structure (3)a. (4)b is derived from (3)b by QR (the rule of Quantifier Raising cf. May (1978)), i.e. by adjunction of the QP to S^3 , (4)c from (3)c by the rule of Focus Interpretation (cf. Chomsky (1976) and infra section 5), and (4)d from (3)d by *wh*-raising, i.e. *wh*-movement in LF (cf. Aoun, Hornstein & Sportiche (1981), Huang (1980)).

By definition (2), which we assume holds at LF, the x_i in (4) are all variables: they are traces of movement from an A-position to an \bar{A} -position. The consideration of such examples as (3) lead Chomsky (1976) to express the WCO property as follows:

- (5) The Leftness Condition (LC)
 A variable cannot be an antecedent for a pronoun to its left

It is quite clear how the Leftness Condition rules out the interpretations (4) for the sentences in (3).

In Chomsky (1981), a modification of definition (2) is proposed, in accordance with the general idea that the nature of empty categories should be determined functionally, by looking at their closest antecedent, if any. Thus, variables are defined as in (6), a definition that we also assume to be operative at LF (at least):

- (6) α is a variable iff: α is an empty category
 and α is in an A-position
 and α is locally \bar{A} -bound⁴

As can be seen, the account given for the paradigm in (3) and (4) holds exactly as before, since (6) characterizes the same elements (2) does.⁵

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(focal stress on *John*)
(non echo *wh*-in-situ)

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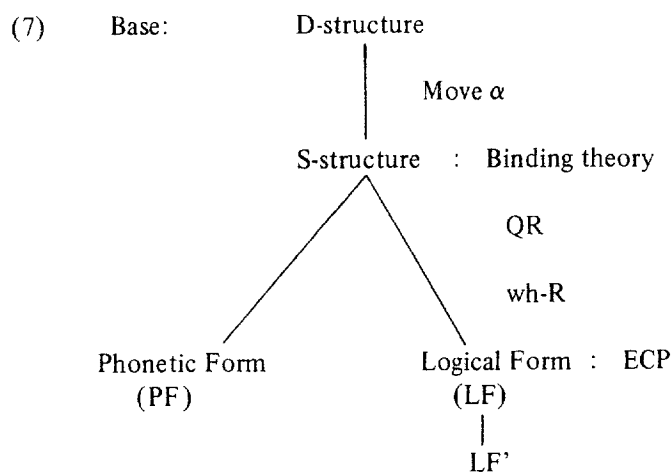
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s the same elements (2) does.⁵

However, we will argue that, given (6), a different account of this paradigm can be offered which carries over to other cases for which the LC and other proposals have nothing to say.

In section 2, we will show that (6) is too narrow and must be extended so as to include certain occurrences of pronouns as well. In section 3, we will examine the consequences of this extension of the concept of variables. A new explanation of the WCO facts will be constructed on the basis of what we call the Bijection Principle. In section 4, we will compare the Bijection Principle with other proposals and show why it seems superior. We will also discuss the problem of whether the Bijection Principle is a condition on rule application and/or on representations at some level, and if so, at which level. In section 5, we will briefly examine the case of focused phrases and the various alternative treatments of the WCO phenomenon in these constructions.

In the remainder of this article, we basically adopt the theoretical framework laid out in Chomsky (1981, 1982) which presents in particular the following picture:



where the ECP is formulated as:⁶

- (8) ECP:
An empty category must be governed by a proper governor.⁷

Note finally that we will restrict our attention to NPs and NP positions throughout, whether A or \bar{A} , thus excluding PP's etc. from our discussion.

2. RESUMPTIVE PRONOUNS

The existence of languages using a resumptive pronoun strategy poses a superficial challenge to definition (6), which requires variables to be empty categories. What happens when a locally \bar{A} -bound empty category is filled by a resumptive pronoun, especially if this type of pronoun exhibits the WCO characteristics of variables as is the case for example in Haitian (cf. Koopman, (to appear)). It would seem that definition (6) should be modified accordingly. This argument only holds however, if it can be shown that these resumptive pronouns are not empty categories at LF: otherwise, it could simply be assumed that the phonetic realization of these resumptive pronouns takes place in PF.

We will now show that Vata, a West African language of the Kru family spoken in the Ivory Coast⁸, displays a configuration of data forcing the conclusion of the above argument.

2.1. In Vata, *wh*-movement from subject position of a tensed clause requires the insertion of a resumptive pronoun in the vacated position:

- (9) a. $\dot{a}l\acute{o}$ * (\dot{o}) ml \dot{i} l \acute{a}
 who *(he) left *wh*
 'who left'
- b. $y\bar{t}$ \dot{n} g $\bar{u}g\bar{u}$ n \bar{a} *(\dot{i}) $\dot{b}li$ l \acute{a}
 what you think that *(it) fell *wh*
 what did you think happened'

This resumptive pronoun differs from regular 3rd person subject pronouns in that it bears a low tone (\dot{o} , \dot{i} , ...) instead of a mid-high tone (\acute{o} , \acute{i} , ...) ⁹. It is shown in Koopman (1980) that the obligatory character of this insertion is a direct consequence of the constraint on LF representations imposed by the ECP: the structure of Vata (superficially resembling Italian in this instance) is such that the subject position of a tensed clause is never properly governed by material in COMP position (contrary to, say, English or French). Thus, in cases like (9) above, insertion of a resumptive pronoun in subject position is obligatory, and must take place no later than S-structure in order to avoid an ECP violation.

On the other hand, such pronouns exhibit what we assume to be a characteristic property of variables at LF, the WCO property, which is shown by (10):

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West African language of the Kru family displays a configuration of data forcing a different interpretation.

subject position of a tensed clause requires the pronoun in the vacated position:

wh

*(i) bli lá

*(it) fell wh

opened'

from regular 3rd person subject pronouns (i) instead of a mid-high tone (ɔ́, í, ...)⁹. This shows that the obligatory character of this inflection is not the constraint on LF representations of the structure of Vata (superficially resembling the structure of the subject position of a tensed clause in COMP position (contrary to, say, like (9) above, insertion of a resumptive pronoun is obligatory, and must take place no later than ECP violation).

Pronouns exhibit what we assume to be a different status at LF, the WCO property, which is

- (10) a. * àlɔ́ɪ ɔ́ɪ nɔ́ gùgù nā ɔ́ɪ mlì lá
 who_i his_i mother think that he_i left wh
 'who did his mother think left'
- b. * àlɔ́ɪ n̄ yrá ɔ́ɪ nɔ́ nā ɔ́ɪ mlì lá
 who_i you tell his_i mother that he_i left wh
 'who did you tell his mother left'

Neither in (10)a nor in (10)b can the low tone pronoun be interpreted as coreferential with the underlined pronoun. (Note that there is no general prohibition forbidding coindexing of a low tone pronoun with a mid-high tone pronoun, cf. *infra* 2.2.).

So, this paradigm indicates that:

- The low tone pronoun behaves as a variable at LF
- The low tone pronoun position cannot be empty at LF (it must be filled by a phonologically realized pronoun).

In order to preserve the coextensiveness of the set of elements obeying the WCO property and the set of variables, we take the obvious step of allowing α in (6) to be a pronoun as well. Let us assume (11) for the time being:

- (11) α is a variable iff α is empty or a pronoun and
 α is locally \bar{A} -bound and
 α is in an A-position

2.2. This configuration of data also shows that it is not plausible to define an NP as a variable only by looking at its content, as would be the case for example if (12) were adopted:¹⁰

- (12) α is a variable at LF iff α is empty and
 α is in an A-position and
 α is case marked

The argument above shows that (12) should be supplemented by a statement of the form (13) in order to accommodate the variable-like character of the low tone pronoun:

- (13) Certain pronouns with a feature [+F] are variables

The choice of the feature [+F] must be such that it properly distinguishes the low tone pronouns which behave as variables from the mid-high pronouns which do not.

- (14) a. àlɔ̃ ɔ̃ mli lã
 who ɔ̃ left wh
 ‘who left’
 b. ɔ̃ mli
 ɔ̃ left
 ‘he left’

The nature of the feature [+F] is not clear however. It could neither be Case (since pronouns are all Case marked) nor the feature realized as a low tone instead of a mid high tone, which is the feature [+wh]. The reason is that occurrences of low tone pronouns are not restricted to sites of *wh*-phrases (and in fact, this is what justifies our calling them pronouns): a low tone pronoun may also occur in a position which is, informally speaking, neither too close, nor too far from the site of a *wh*-element provided that it is coindexed with a *wh*-trace, or a low tone pronoun [+wh]¹¹

- (15) a. àl_i ò_i gūgū nā ò_j / * ò_i / ò_i ní yà lá
 who_i ò_i think that ò_j / * ò_i / ò_i NEG healthy
 'who thinks he is sick' *wh*

Furthermore, these last occurrences of the low tone pronoun do not obey the WCO property as shown by the well-formedness of (16):

- (16) àlò_i ò_i yrá` ò_i nò nā ò_i mli lá'
 who_i he_i tell his_i mother that he_i left *wh*
 'who told his mother that he left'

In (16), the underlined low tone pronoun $\dot{\text{a}}$ may be coreferent with $\dot{\text{a}}$, which is to its left and does not c-command it.

Thus, because there is no independently motivated difference in the internal constituency of these occurrences of the low tone pronoun, (13) itself would have to be supplemented by some property distinguishing them. It seems that the only one is that those behaving as variables are locally \bar{A} -bound while those that do not are not, i.e. only the first occurrence of \bar{y} in (16) but not the second. So (13) should be replaced by (13'):

- (13') A pronoun is a variable iff it is locally \bar{A} -bound and is marked [+F]

It appears thus that reference to local \bar{A} -binding is difficult to avoid. But if such is the case for pronouns, it extends naturally to empty cate-

is not clear however. It could neither be (e marked) nor the feature realized as a tone, which is the feature [+wh]. The tone pronouns are not restricted to sites: is what justifies our calling them pro- also occur in a position which is, infor- , nor too far from the site of a *wh*-ele- ted with a *wh*-trace, or a low tone pro-

$\bar{a} \quad \acute{o}_j / * \acute{o}_i / \grave{o}_i \quad n\acute{i} \quad y\grave{a} \quad l\acute{a}$
 nat $\acute{o}_j / * \acute{o}_i / \grave{o}_i \quad \text{NEG healthy}$
wh

ices of the low tone pronoun do not by the well-formedness of (16):

$n\acute{o} \quad n\bar{a} \quad \grave{o}_i \quad m\bar{l}\bar{i} \quad l\acute{a}$
 mother that he_i left *wh*
 nat he left'

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gories as well, making reference to internal structure redundant (although it may still be true that Case-marked empty categories are variables).

In the case of pronouns in Vata, reference to the feature [+F] is clearly not redundant, but we shall see directly that dropping reference to it will allow a simple and elegant treatment of the WCO property, while allowing us to keep the maximally simple definition for variables that we have adopted in (11).

3. THE BIJECTION PRINCIPLE

3.1. Let us now consider more closely a case of WCO in Vata, exemplified by the following form:

(17) * $\acute{a}l\acute{o}_i \quad w\acute{a} \quad y\acute{r}\acute{a} \quad \acute{o}_i \quad n\acute{o} \quad n\bar{a} \quad \grave{o}_i \quad m\bar{l}\bar{i} \quad l\acute{a}$
 who_i they tell his_i mother that he_i left *wh*

In (17), the low pronoun \acute{o} is locally \bar{A} -bound by the *wh*-phrase in COMP position and is thus interpreted as a variable at LF by virtue of (11). It is clear how the LC rules out the interpretation of (17) indicated, since the pronoun \acute{o} is to the left of the variable \acute{o} and coindexed with it. Definition (11) however, also implies that the pronoun \acute{o} is interpreted as a variable since it too is locally \bar{A} -bound by the *wh*-phrase in COMP. We are now in a situation where an \bar{A} -binder binds two positions which are both interpreted as variables. This immediately suggest an alternative approach to WCO violations. Before spelling it out, let us first examine some necessary properties of variables.

3.2. We have seen that prior to the introduction of such definitions as (6) and (11), variables were understood as A-positions created by movement to an \bar{A} -position. It was in fact also implicitly assumed that the NP moved to an \bar{A} -position was the *local* \bar{A} -binder of the trace in the A-position in question.¹²

Under this conception of variables, the following generalization is true:

(18) A variable is locally bound by one and only one \bar{A} -position

Indeed, if α is a variable, it is a trace resulting from movement to an \bar{A} -position and is therefore \bar{A} -bound, and in particular is bound. Since there exists a binder for α , there exists a local binder, call it β . If β is not in an \bar{A} -position, the resulting configuration is ruled out by condition C of the Binding theory (Chomsky 1981), which requires variables to be locally A-free (i.e. non A-bound). Thus β is in an \bar{A} -position. Hence the existence of the local \bar{A} -binder.

The uniqueness of the local \bar{A} -binder follows from the following considerations. Suppose \bar{A}_1 and \bar{A}_2 are two local \bar{A} -binders for α . Then \bar{A}_1 and \bar{A}_2 must c-command each other. But quite generally, this situation does not arise: if an \bar{A} -position \bar{A}_1 c-commands another position \bar{A}_2 , the converse is not true. Thus any element has at most one local \bar{A} -binder.¹⁴ Hence (18).

Under definition (2) with the extra assumption spelled out right above ((18), the 'converse' of (18) is also true, namely (19):)

(19) An \bar{A} -position locally binds one and only one variable.

Suppose that NP_1 in an \bar{A} -position locally binds two variables A_1 and A_2 . By assumption, A_1 and A_2 must be the traces of NP_1 . But no phrase can locally bind two of its traces because of constraints on movement rules imposed by the Binding conditions and Θ -theory (cf. Chomsky, (1981) p. 203 for an argument). Therefore this situation is not possible. Furthermore, NP's appear in an \bar{A} -position only if they have been moved there from an A-position.

Note now that under definitions (6) or (11) the generalization (18) remains essentially true¹⁵, but not (19), since (19) allows the introduction of variables in a representation by simple coindexing of a category with an \bar{A} -position. (19) will be falsified just in case two NP's, NP_1 and NP_2 , are coindexed with each other, and locally bound to a same \bar{A} -position.

3.3. Let us now return to structures like (17): (17) illustrates the fact that precisely when (19) is violated, under definition (11) for variables, ungrammatical structures are generated. So suppose that we take (19) as an axiom: let us assume that (19) is a wellformedness principle holding at LF. Putting (18) and (19) together, we can state this principle as in (20).¹⁶

(20) *The Bijection Principle*

There is a bijective correspondence between variables and \bar{A} -positions.

Or, to put it differently, every variable is locally bound by one and only one \bar{A} -position and every \bar{A} -position locally binds one and only one A-position.¹⁷

It is clear how the Bijection Principle (BP) rules out the ungrammatical Vata form (17), and also how it handles WCO violations in general. As an illustration, consider (3)a repeated below:

l \bar{A} -binder follows from the following condition. If \bar{A}_1 and \bar{A}_2 are two local \bar{A} -binders for α . Then \bar{A}_1 c-commands another position \bar{A}_2 , the element has at most one local \bar{A} -binder.¹⁴

The extra assumption spelled out right above is also true, namely (19):

Each \bar{A} binds one and only one variable.

Condition (19) locally binds two variables A_1 and A_2 . This must be the traces of NP_1 . But no phrase structure can be derived because of constraints on movement conditions and Θ -theory (cf. Chomsky, (1981)). Therefore this situation is not possible. Furthermore, this is only if they have been moved there.

Conditions (6) or (11) the generalization (18) is not (19), since (19) allows the introduction by simple coindexing of a category \bar{A} falsified just in case two NP 's, NP_1 and NP_2 , are other, and locally bound to a same \bar{A} .

Structures like (17): (17) illustrates the fact that, under definition (11) for variables, (19) is violated. So suppose that we take (19) as a wellformedness principle holding in any language, we can state this principle as in

Correspondence between variables and \bar{A} .

A variable is locally bound by one and only one \bar{A} if and only if \bar{A} locally binds one and only one variable.

Principle (BP) rules out the ungrammatical structures and handles WCO violations in general. As an example, see below:

(3)a * who_i does his_j mother love $[e]_i$

At LF, both his and e_i are locally \bar{A} -bound by who , which is ruled out by the Bijection Principle. Of course, this account works provided that we extend definition (11) to English and other languages.¹⁸

But this is clearly the better move: one wishes to restrict language particular definitions with respect to such fundamental notions as variables as much as possible. Whatever the correct definition of variable, it is reasonable to suppose that it is universal.¹⁹

3.4.1. Let us reconsider (11) again. Although the modification from (6) to (11) is understandable, we may realize under closer examination that it really makes no sense. For, if a pronoun is locally \bar{A} -bound, it is no longer a pronoun since by definition (cf. Chomsky, (1981), p. 330) pronominals are either free or locally A-bound to an NP with an independent Θ -role.

In fact, (11) means that variables need not be empty categories, they may also assume the shape of pronouns. This suggests that we replace (11) by the simpler, more general and more adequate (21):

(21) α is a variable if α is in an A-position
and α is locally \bar{A} -bound

Clearly, some independently needed principle will exclude entities with intrinsic reference, such as proper names etc... from being locally \bar{A} -bound with the effect that variables may be only pronominals and/or empty categories (lexical anaphors are excluded by the Binding Theory, which requires them to be locally A-bound).

Summing up, we assume that the BP (20) and the definition of variables (21) hold universally. Furthermore, keeping the simplest possible assumptions, we will suppose that (21) holds at any syntactic level.

3.4.2. It is important to note that the BP only makes sense if one adopts (21) as the definition of variables: these two hypotheses reinforce each other. It is worth pointing out however that (21) is independently motivated by the fact that it permits to derive the Strong Crossover effects (SCO), i.e. part of principle C of the Binding Theory, from Principles A and B.

The SCO configuration is illustrated below:

- (22) a. \bar{A} -position_i..... pronoun_i e_i
 local binding local binding
 b. * who_i does he_i think e_i left
 c. * who_i does he_i think you saw e_i
 d. * who_i does he_i see e_i

Note that, by (21), it is the pronoun *he* which is interpreted as a variable, and no longer the trace e_i of the *wh*-phrase *who*. How then is e_i interpreted? In each case, it will be locally A-bound to *he*, ignoring traces of successive cyclic movement in the intermediate COMPs which appear to play no particular role. *He* has an independent Θ -role, so e_i is an empty pronominal, i.e. a PRO.

But principles A and B of the Binding Theory (cf. Chomsky, (1981), chapter 3) require PRO to be ungoverned and e_i in (22b, 22c and 22d) is governed: hence they are ruled out by these principles. The SCO violations are thus explained by (21) and principles A and B of the Binding Theory.

3.4.3. We have provided above motivations for (21) independent of the Bijection Principle and WCO. We now present evidence for the Bijection Principle independent of WCO.

The relevant type of ungrammatical structures are those involving parasitic gaps. Extensive discussion of these structures can be found in Chomsky (1982), Engdahl (1980) and Taraldsen (1981). We will limit ourselves here to one particular type of parasitic gap structures obeying the schema (23)a illustrated in (23)b:²⁰

- (23) a. \bar{A} -position..... e_i e_j

 local \bar{A} -binding
 local \bar{A} -binding
- b.* Who_i did you give a picture of e_i to e_j

Clearly, structures like (23)b can be generated: base generation of an empty category in one of the two gap positions and movement to an \bar{A} -position from the other. Furthermore, as the reader may verify, nothing rules out these structures, since they are equivalent to the following two grammatical structures:

id
 noun_i e_i
 local binding

e_i left
 you saw e_i
 e_i

un *he* which is interpreted as a variable,
wh-phrase *who*. How then is e_i interpre-
 A-bound to *he*, ignoring traces of suc-
 ermediate COMPs which appear to play
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Binding Theory (cf. Chomsky, (1981),
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be generated: base generation of an
 gap positions and movement to an \bar{A} -
 nore, as the reader may verify, nothing
 they are equivalent to the following

- (24) a. Who_i did you give a picture of e_i to John
 b. Who_i did you give a picture of John to e_i

Whatever mechanisms permit these structures will carry over to (23)b
 and the like.²¹

Note in particular that the proposal presented in Chomsky (1981), p.
 203 to rule out (23)b in terms of Θ -theory, in fact rules out a particular
derivation of these structures (namely by movement from one *e*-position
 into the other and from there to the \bar{A} -position), but not (23)b itself.
 Clearly, structures like (23) are deviant, and it is obvious that they violate
 the Bijection Principle, since an \bar{A} -position locally binds two A-positions.

In conclusion, constructions like (23) justify, quite independently
 of WCO, the need for some principle like the BP. In other words, given
 the definition of variables (21) and the independent justification for the
 BP due to the parasitic gap constructions, we get a free explanation for
 the traditional cases of WCO.

Summing up, the BP treats uniformly:

- (25) a. Who_i did you give a picture of him_i to e_i
 b. Who_i did you give a picture of e_i to him_i
 c. Who_i did you give a picture of e_i to e_i

4. THE BIJECTION PRINCIPLE AND ALTERNATIVES.

There are a number of proposals that have been made in recent years to
 deal with the WCO violations, for example, the Leftness Condition (LC)
 of Chomsky (1976), the Revised Leftness Condition (RLC) (Higginbotham,
 (1980a)), the Accessibility Condition (AC) (Higginbotham, (1980b)), the
 C-command condition (CCC) (Reinhart, (1976), (1979), (1981)) advocated
 for in Haik (1982). Some of these are wellformedness conditions, e.g.
 the CCC, while others are conditions on rule application, e.g. the RLC,
 the AC. We will limit our comparison here to the AC, the CCC and the
 BP, and refer the reader to Higginbotham (1980b) for criticisms of the
 LC and the RLC.

Each approach specifies two parameters: first the particular kind of
 structural configurations leading to WCO violations, second the mode by
 which these ungrammatical structures are ruled out.

4.1. Let us begin with the CCC. The CCC states in essential that:

- (26) A non-definite NP (trace, QP,...) can be coindexed with a pronoun
 if the pronoun is c-commanded²² by the non-definite NP at S-
 structure.

The BP, taking into account the effects of QR, cannot be an S-structure condition. Furthermore, contrary to the CCC, the BP does not include any necessary condition for pronominal binding by a quantifier. We in fact assume that the independent principle (27) does this work:

(27) *The Scope Condition*

A pronoun may be coindexed with a variable bound by a (quasi-)quantifier (i.e. *wh*-phrases, quantifiers subject to QR)²³, only if it is in the scope²⁴ of the (quasi-)quantifier at LF.

In fact, our approach is very similar to the CCC.

Consider the following configuration at LF (linear order irrelevant), where *P* is a pronoun, there are no phrases indexed in other than those indicated, and *e* is the trace of *wh*-movement, QR or *wh*-raising.

(28) $Q_i \dots P_i \dots e_i$

Suppose first Q_i c-commands P_i . There are three possibilities, discussed in (29)a-(29)c.

(29) a. P_i c-commands e_i .

Under the BP approach, this will be excluded as a SCO violation - cf. 3.3.2. -, since e_i is locally bound by P_i .

Under the CCC approach, we must further distinguish between two cases: if e_i does not c-command P_i , the structure is excluded by the CCC since Q_i will not c-command P_i at S-structure. If e_i does c-command P_i , the structure respects the CCC. However, if e_i and P_i c-command each other, they govern each other. They therefore belong to the same Governing Category. This configuration is then ruled out by the Binding Theory, since the pronoun P_i is not free in its Governing Category.

b. Neither P_i nor e_i c-command the other.

The BP is violated since, at LF, Q_i locally binds both e_i and P_i . The CCC is also violated since at S-structure, Q_i occupies the position e_i which does not c-command P_i .

c. e_i c-commands P_i and not conversely.

This is allowed by both the BP and the CCC as the reader may verify.

This leaves us to discuss a last case:

In (31)a, neither the pronoun, nor the QP c-command the other and the pronoun is in an A-position. (31)b is derived by QR from (31)a.

The CCC rules such structures out since the pronoun is not c-commanded by the QP_i at S-structure, i.e. in (31)a. For the BP the structure is well formed: looking at (31)b - LF - QP_i locally \bar{A} -binds P_i and the A-position locally \bar{A} -binds e_i .

Finally, and most importantly, the CCC has nothing to say about parasitic gap constructions. As we argued, a simple principle excluding them would automatically extend to the WCO cases, as does the BP.

4.2. Let us now turn to the AC. Higginbotham (1980b) actually proposes two accessibility conditions: The Strong Accessibility Condition (SAC) and a weaker variant, the Accessibility Condition (AC), to which we return in the next section.

In fact, Higginbotham (1980b) notes that the following modification of the CCC: (Note that if $A = C$ below, (32) is the CCC)

- (32) if A is a quantifier and B a pronoun, A can bind B only if A is co-indexed with some C that c-commands B at S-structure

"... quite apart from the assumption of QR, appears to be equivalent to assuming the SAC with QR."

Consequently, the main criticism that we have offered of the CCC in favor of the BP holds against the SAC as well, i.e. the fact that the treatment of parasitic gap structures like (23), when properly formulated, carries over to the WCO cases. There is an important difference however between the SAC (or the Revised LC) and the BP. Higginbotham (1980a, b) argues that the SAC (or the RLC) is best viewed as a condition on rule application, namely a rule reindexing a pronoun with the index of some other NP, rather than a wellformedness condition applying at a particular level. So far, we have assumed without particular argument that the BP is a wellformedness principle holding at the level of LF. Although there is no intrinsic bar to viewing the BP as constraining rule application, such a theory would appear less desirable on several counts. First, if it is a constraint on the applicability of some rules, we must assume the existence of the relevant rules, in particular, a rule of reindexing or identification of indices. But this is a needless complication of the optimal indexing algorithm, namely index freely at S-structure, which is all we need if the BP is an LF filter. Moreover, conditions on rule applicability (such as, perhaps, Subjacency) constrain the analyzability of terms in a string with respect to a given structural description, whereas the BP viewed as constraining rule application would rule out the output representation of some rules at any stage of a derivation and would thus in effect be a new type of

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condition which is made, in principle, available to the language learner,
thus leading to a less restrictive theory of grammar. Consequently, we take
the minimal assumption to be that the BP is an LF filter.

We will now show that the arguments presented in the literature for
taking whatever condition involved in WCO as constraining derivations,
i.e. rules rather than representations, do not hold with respect to the BP,
an LF filter. Such arguments are based on sentences like the following (cf.
Higginbotham, (1980), (1980b)):

- (33) a. * which pictures of which man_i did his_i mother see
b. Someone_j will play every piece you want him_i to

Instead of reviewing the arguments, we will simply show that such senten-
ces pose no problem for the BP.

Consider first (33)a. If *which man* has narrower scope than *which*
pictures (which is possible and comes out more clearly with *men* instead
of *man*) it will not c-command *his*, so binding is impossible by principle
(27).

Consider next the inversely linked case, i.e. the reading of (33)a corres-
ponding to LF (34):

- (34) [which man]_i [[_Swhich pictures of e_i]_j [_Shis_i mother saw e_j]]

Such structure violate the BP: *which man* locally \bar{A} -binds e_i which is in an
A-position, namely, argument of *pictures*, and also locally \bar{A} -binds *his*.
So structures like (33)a, or similar structures where *which man* is further
embedded (e.g. *which daughter of which uncle of which man*) pose no
problem for the BP taken as a condition on LF representations.

Consider next (33)b. In (33)b *some* can only bind *him* if *some* has wi-
der scope than *every*. How do we account for this fact?

Suppose *every* has wider scope than *some*. Then, the only possible LF
representation of (33)a corresponding to this reading is one in which QR
moves the object as in (35).

- (35) [every piece you want him_j to]_i [[_Ssomeone]_j [_Se_j will play e_i]]

Here, *some* cannot bind *him*, since, by assumption, *him* is not in the scope
of *some*. Suppose *every* has narrower scope than *some*. If both quantified
expressions are adjoined to S as in (36):

- (36) [_SSomeone]_i [_SEvery piece you want him_i to]_j [e_i will play e_j]]

the resulting structure will be ruled out by the BP (as noted in Haik, (1982)). Note however the implicit assumption for which no independent argument, neither empirical nor conceptual has been offered, namely that QR *must* move all quantifiers and adjoin them to S. If either of these assumptions is dropped, no problems for the BP arise. Suppose for example, that QR may adjoin quantifiers to VP. Then we may derive:

- (37) Someone_i [S e_i [VP [NP every piece you want him_i to]_j
VP[played e_j]]]

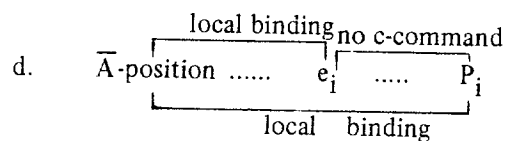
In (37) binding of *him* by *someone* is permitted without BP violation, since it is not local binding.

Pending arguments to the effect that, say, QR adjunction to VP is forbidden etc., we see that the BP can be thought of as an LF filter.

4.3. Some Asymmetries

Consider the following examples:

- (38) a. * Whose_i mother likes him_i
b. * Everyone_j's mother likes him_i
c. * A picture of every child_i pleased him_i



These examples have the structure indicated in (38)d, where, moreover, e_i is inside an NP which c-commands P_i . As is clear, the BP excludes such structures. For some languages, e.g. Mandarin Chinese (Higginbotham 1980a), Vata, our respective dialects of French and Dutch, some dialects of English (Lasnik, (1976)), there is nothing more to say. For some other, e.g. some dialects of English (Reinhart, (1976), Higginbotham (1980a)), sentences like (38), although marginal, are not felt as unacceptable as parallel structures such as (3)a, where the linear order of e_i and P_i is reversed. Higginbotham (1980b) captures this difference by weakening the SAC to the Accessibility Condition (AC). Essentially, the effect of this weakening is to permit coindexing of a pronoun B with a quantified A only if A is coindexed with some C c-commanding B or being in an NP c-commanding B.

ruled out by the BP (as noted in Haik, it assumption for which no independent conceptual has been offered, namely e_i and adjoin them to S. If either of these forms for the BP arise. Suppose for example e_i to VP. Then we may derive:

[NP every piece you want him_i to]_j

one is permitted without BP violation,

that that, say, QR adjunction to VP is for be thought of as an LF filter.

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indicated in (38)d, where, moreover, e_i is not properly governed by P_i . As is clear, the BP excludes such structures, e.g. Mandarin Chinese (Higginbotham 1980a), French and Dutch, some dialects of which have nothing more to say. For some other languages, e.g. English (Sportiche 1980), the linear order of e_i and P_i is reversed, but this difference is not felt as unacceptable as in English. Essentially, the effect of this is to weaken the binding condition (AC). Essentially, the effect of this is to weaken the binding condition (AC). Essentially, the effect of this is to weaken the binding condition (AC).

Although some stipulation or other may be added to the BP account, for example, one extending the c-command domain of an empty category to that of an NP containing it,²⁵ the logic of our account would seem to imply that these sentences should be considered ungrammatical in the unmarked case, even if somewhat acceptable to some speakers. First, because they are ruled out by the BP, but more importantly because they display an empty category/pronoun asymmetry with respect to \bar{A} -binding, which, given our arguments on how to define variables, would be unique to these sentences.

5. FOCUS

In this last section, we consider focus constructions. As (3)c shows, focus constructions exhibit WCO properties, which lead Chomsky (1975) to postulate a LF movement rule of Focus Interpretation (FI), converting (3)c into (4)c.

Clearly, forms like (4)c are excluded by the BP. The problem is, however, that focused elements should, on this account, behave as empty categories at LF. However, they fail to do so on two counts:

First, with respect to the ECP. For example, (39)a is translated into (39)b by FI:

- (39) a. Mary claims that SARAH should stay
b. SARAH_i [Mary claims that e_i should stay]

(39) should be ill formed, contrary to fact, since e_i is not properly governed. Note that, if we assume, as is quite natural, that the scope of Focus, i.e. the minimal constituent not containing it at LF (or perhaps LF') expresses the presupposition of the sentence, FI should be able to freely adjoin its target phrase to any S, i.e. the embedded S or the matrix S in (39). (So the two possible derived structures would be semantically similar to *It is Sarah that Mary claims should stay* and *Mary claims it is Sarah who would stay*). If this assumption about presupposition is dropped, one could claim that the Focus is always adjoined to the first S containing it, thus avoiding the ECP problem, as suggested in Sportiche (1980). However, even this assumption would not overcome the other problem facing FI, to which we turn now.

It has been argued that a specific (or referential) NP cannot contain a variable whose local binder is external to this NP at LF (cf. *The Specificity Condition* of Fiengo & Higginbotham (1979), *the Name Constraint* of Guéron (1981) etc.) Focused NP's however are not subject to this constraint as (40) shows:

- (40) a. She appreciates Vermeer's last painting of DELFT

Applying FI to the focus NP yields violations of the mentioned constraints, unless one assumes that FI adjoins the focus to NP so that the specification of the trace is NP internal. Sticking to the most natural assumption, namely that the scope of Focus at LF determines the presupposition of the sentence, we can make two alternative assumptions to overcome the problem. The first one is to assume that, although the Focus is somehow related to some \bar{A} -position, this is not done through movement. This is for example what is suggested for the scope of quantifiers in van Riemsdijk & Williams (1981), who propose that the scope of a phrase is marked by adjoining the index of this phrase to the relevant constituent. Such a move is consistent with the BP, even if this mode of expressing scope relations is true across the board, i.e. for quantifiers, *wh*-in situ, Focus NP, as is suggested in van Riemsdijk & Williams (1981).

The second possibility is to assume, following a suggestion of Brody (1981) that there is a rule of FI freely adjoining a Focus phrase to any S, but that this rule maps LF onto LF', rather than S-structure onto LF. At LF, where the ECP and the Specificity Condition are relevant, no empty category is present. This would of course force us to assume that the BP is an LF' filter (rather than or) as well as an LF filter. If this were the correct move, we might extend the BP to a well formedness condition constraining all levels of representations (D-structure, S-structure, LF and LF').

We will leave the problem as it stands, simply noting that the BP is consistent with either of these possibilities.

6. SUMMARY

Let us conclude by briefly summing up our proposals. We have argued that WCO phenomena as well as some ill-formed parasitic gap constructions can be handled by the Bijection Principle, which requires a one-to-one correspondance between \bar{A} -binders and variables. We have argued that variables must be defined as locally \bar{A} -bound categories (with no extra requirement), a definition that allows the reduction of SCO phenomena to principles A and B of the Binding Theory. We have furthermore argued that the BP can be viewed as a filter on LF representations (and perhaps D-structure, S-structure and LF' as well).

NOTES

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yields violations of the mentioned constraint FI adjoins the focus to NP so that the \bar{A} is internal. Sticking to the most natural type of Focus at LF determines the presupposition to make two alternative assumptions to one is to assume that, although the Focus position, this is not done through movement. It is suggested for the scope of quantifiers (van Riemsdijk & Williams 1981), who propose that the scope of a quantifier is the index of this phrase to the relevant BP, even if this mode of movement is not across the board, i.e. for quantifiers, as suggested in van Riemsdijk & Williams (1981). We assume, following a suggestion of Brody (1981), that I freely adjoining a Focus phrase to any NP at LF, rather than S-structure onto LF. If the specificity Condition are relevant, no empirical evidence of course force us to assume that the BP is as well as an LF filter. If this were the case, the BP to a well formedness condition on representations (D-structure, S-structure, LF

it stands, simply noting that the BP is not a filter.

ning up our proposals. We have argued that some ill-formed parasitic gap construction Principle, which requires a one-to-one correspondence between binders and variables. We have argued that the \bar{A} -bound categories (with no extra \bar{A} -bound categories) allows the reduction of SCO phenomena in Binding Theory. We have furthermore argued that the filter on LF representations (and perhaps also on the syntax) is well.

NOTES

1. Note that we restrict ourselves throughout to the syntactic sense of variable. We exclude from consideration cases of pronouns bound to variables and therefore interpreted semantically as variables, as *he* in *Everyone_i said he_i left*.
2. The name "Weak Crossover" was chosen in opposition to "Strong Crossover" cases exemplified in (a) below:

- a. *Who_i did he_j see e_i

the unacceptability of the WCO being "weaker" than that of the SCO.

3. We need not assume QR is obligatory: the reason is that if the QP does not move, *his* will not be able to be interpreted as bound by the QP since it will not be in its scope at LF (cf. section 4, principle (27)).
4. x c-commands y iff the first maximal projection which dominates x also dominates y (cf. Aoun & Sportiche, (1981a)).
 - x (locally) binds y iff x c-commands y and x and y are coindexed (and if z has the same properties as x, z c-commands x)
 - x (locally) \bar{A} -binds y iff x (locally) binds y and x is an \bar{A} -position (resp. for A-binding).
5. Chomsky (1981) also stipulates that (6) might be extended so as to include cases of resumptive pronouns, although no argument is presented. We return to this point in section 2.
6. Cf. Kayne (1981), Rizzi (1980) and Koopman (1980, 1982) for arguments that the ECP applies at LF.
7. x governs y iff the first maximal projection dominating y is x^{\max} . Proper governors are X^0 in the \bar{X} system (cf. Aoun & Sportiche, (1981) and Aoun, Hornstein & Sportiche, (1981) for details).
8. For our purposes, it suffices to assume that Vata is identical to English in the relevant respects except as indicated in the text. For details on the structure of Vata, cf. Koopman, (1980) and Koopman & Sportiche, (1981).
9. Vata has four lexical tones: \checkmark high, \uparrow midhigh, $\bar{\checkmark}$ mid and $\bar{\checkmark}$ low. On the selection of pronouns in relation to nouns, cf. Kaye (1981).
10. Cf. Borer (1981) for a similar argument based on Hebrew data.
11. For a detailed discussion, cf. Koopman (1980) and Koopman & Sportiche (1981).
12. Note that we exclude altogether from our discussion intermediate traces of successive cyclic movement, and constructions with clitics which, we may assume, only involve superscripting in the sense of Chomsky (1981), chapter 4 and no coindexing cf. Sportiche (forthcoming) for detailed discussion.
13. In fact, by assumption, β can be nothing else than the phrase which has moved (ignoring successive cyclic movement).
14. Note that this was true due to the definition of c-command that used to be adopted, namely α c-commands β iff the first branching node dominating α dominates β , and α does not contain β . However, given the definition of c-command we adopt (fn4) (as well as Reinhart's, cf. fn 22), the situation may arise in which two \bar{A} -positions c-command each other. A detailed discussion would take us too far afield. Let us just indicate the relevant type of cases. The only type that would not be ruled out independantly is of the following nature (with two ultimately A-bound positions, neither of which c-command the other):

- a. S-structure. I bought a picture of everyone_i for everyone_i.
 b. LF: Everyone_i [Everyone_j [I bought a picture of e_i for e_j]]

Nothing in the present theory so far prevents the interpretation corresponding where i corresponds to j ($i = j$), namely

$\forall x, \text{I bought a picture of } x \text{ for } x$

As can be checked, the BP (20) will rule this out since e_i and e_j will be both locally \bar{A} -bound by *everyone_i* (and in fact may be construed to do so in two different ways) cf. Sportiche (forthcoming) for more details.

15. Note again that this holds under the c-command definition given in fn. 14. Under the one we adopt, this is stricto sensu false. The only generalization remaining true after the changes of definition is that a variable is locally bound by at least one \bar{A} -position, which is true by definition. The others are false as the examples in fn. 14 show. What this means is that the BP (20) must be stipulated in toto, which, in fact, provides further independent evidence for it.

16. An idea similar in spirit if not in extension was expressed in an unpublished version of Aoun & Hornstein & Sportiche (op. cit.). A modification of (2) quite different from (and in fact incompatible with) (6) or (11) was proposed (the idea was to exclude successive cyclic LF movement by assuming that each trace created in LF was a variable and by applying the Binding-Principle C to the resulting configuration)

17. Recall that we exclude clitics and intermediate traces of successive cyclic movement into COMP from consideration.

Note that the BP as stated is too strong, given our definition of \bar{A} -position, if positions such as TOPIC and the like are considered \bar{A} -positions, viz. *John_i, his_i mother saw him_i on T.V.* and more generally Dislocations, some resumptive pronoun constructions. Perhaps the defining characteristic of these \bar{A} -positions is that the NP they contain inherits a Θ -role, contrary to preposed quantifiers, *wh*-phrases in COMP...

For concreteness, let us assume that NP's in these positions bear no index at LF, and therefore do not participate in any of what we say. They might get coindexed with some other position through a Predication rule mapping LF to LF', as Chomsky (1982) suggests.

18. We implicitly assume here that the specifier position of NP's in English, French, Dutch and Chinese (cf. *Infra*) is an \bar{A} -position. This seems plausible given that such positions appear to be able to bear independent Θ -roles, i.e. Θ -roles not inherited from another position by coindexing. This assumption becomes necessary if one adopts the version of the Θ -criterion given in Chomsky (1981) in conjunction with his Projection Principle.

19. As it stands, the BP suffers from some of the defects of the LC. The following examples seem to indicate that it might be too strong:

- a. Any man that his friends help will succeed
 b. PRO sleeping late pleases everyone

These should be on a par with WCO violations but they seem more acceptable. See Chomsky (1982) for a proposal concerning the relative clause case (a). In the (b) case, we adopt Aoun & Sportiche (op. cit.) suggestion that coindexing of the PRO with the QP at LF is not necessary to get the relevant interpretation but rather that it is constructed derivatively from the predication of the whole sentential subject with the QP as in:

- c. Bad marks bother every serious student with the reading: every serious student is bothered by his getting bad marks.

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Finally, let us mention that across-the-board contexts yield superficial violations of the BP as in:

d. I wonder who_i you saw e_i and you talked to e_i

At worst, we would have to stipulate that coordinate structures are special.

20. It turns out that these are the only structures containing parasitic gaps which are not independently excluded.

21. Some questions might arise with respect to P-stranding, because of the double stranding.

The following examples escape this problem:

- a. Who_i did you persuade friends of e_i to see e_i
- b. Who_i did you persuade friends of e_i to see John
- c. Who_i did you persuade friends of John to see e_i

22. The notion of c-command used by Reinhart is different from the one adopted here (cf. footnote 4). For her, x c-commands y iff the first branching node (or the node immediately dominating it if they are of the same category) which dominates x dominates y. Cf. Aoun & Sportiche, (1981) for a criticism of this notion.

23. We wish to exclude from consideration quantifier-like expressions like *any* which are not subject to QR (cf. Aoun, Hornstein & Sportiche (1981) and Hornstein (1981)).

24. We define scope of a quantifier (at LF) as the maximal constituent not containing this quantifier.

25. Reinhart (1976) describes these two dialects of English. She points out that there is a general tendency for speakers who reject (resp. accept) sentences in (38)a, (38)c to accept (resp. reject) sentences like *his_i mother likes John_i*. She argues that this correlation follows from the assumption that in one dialect, the c-command domain of the specifier is extended to that of the NP containing it.

REFERENCES

- Aoun, Y., N. Hornstein & D. Sportiche (1981) "Some Aspects of Wide Scope Quantification" in *Journal of Linguistic Research*, 1.3.
- Aoun, Y. & D. Sportiche (1981) "A Formal Theory of Government", to appear in *The Linguistic Review*.
- Belletti, A., L. Brandi and L. Rizzi, eds. (1981) *Theory of Markedness in Generative Grammar*, proceedings of the 4th GLOW Colloquium at Pisa, Scuola Normale Superiore, 1979.
- Borer, H. (1981) "On the Definition of Variables," in *Journal of Linguistic Research* 1.
- Brody, M. (1981) "Binding Theory and the Generalized ECP" unpublished ms. presented in part at NELS XII at MIT and 1982 GLOW in Paris.
- Chomsky, N. (1972) "Deep Structure, Surface Structure and Semantic Interpretation," in *Studies on Semantics in Generative Grammar*, Mouton.
- Chomsky, N. (1976) "Conditions on Rules of Grammar," in *Linguistic Analysis* 2.
- Chomsky, N. (1981) *Lectures on Government and Binding*, Foris Publications, Dordrecht.
- Chomsky, N. (1982) *Some Concepts and Consequences of the Theory of Government and Binding*. MIT Press.

- Engdahl, E. (1980) "Parasitic Gaps" to appear in *Linguistics and Philosophy*
- Fiengo R. & J. Higginbotham (1981) "Opacity in NP" in *Linguistic Analysis* 7.4.
- Guéron, J. (1981) "Logical Operators, Complete Constituent and Extraction Transformations" in *Levels of Syntactic Representation*, R. May & J. Koster, eds. Foris Publications, Dordrecht.
- Haik, I. (1982). "Indirect Binding" unpublished article, MIT, read at 1982 GLS in Paris.
- Higginbotham, J. (1980a). "Pronouns and Bound Variables" in *Linguistic Inquiry* 11.4.
- Higginbotham, J. (1980b) "Anaphora and GB: some Preliminary Remarks", *NE* X.
- Hornstein, N. (1981) "Two Ways of Interpreting Quantifiers," unpublished article, Columbia University.
- Huang, J. (1980) "Move wh in a Language without Wh-movement, *The Linguistic Review* 1:369-416.
- Kaye, J. (1981) "On the Selection of Pronouns in Vata and Other Eastern K Languages," in *Revue Québécoise de Linguistique*, 1.1.
- Kayne, R. (1981) "Two Notes on the NIC," in A. Belletti, L. Brandi and L. Rizzi, eds.
- Koopman, H. (1981) "Theoretical Implications of the Distribution of *quoi*" *NELS* XII.
- Koopman, H. (1980) "Subject/Object Asymmetries in Vata," unpublished article, UQAM, presented at the 5th GLOW Colloquium at Nijmegen, 1980.
- Koopman, H. (to appear) "Les Relatives en Haitien," in *Syntaxe du Haitien*, C. L. fèvre et al, eds, Karsma, Ann Arbor.
- Koopman, H. and D. Sportiche (1981) "Binding Theory and Pronouns in Vata," unpublished article, MIT and UQAM.
- Lasnik, H. (1976) "Remarks on Coreference," in *Linguistic Analysis* 2.1.
- May, R. (1977) *The Grammar of Quantification*, unpublished Ph.D. Dissertation, MIT.
- Reinhart, T. (1976) *The Syntactic Domain of Anaphora*, unpublished Ph.D. Dissertation, MIT.
- Reinhart, T. (1979). "Syntactic Domains for semantic rules" in F. Guenther and S. Schmidt, eds. *Formal Semantics and Pragmatics for Natural Languages*
- Reinhart, T. (1980) "Coreference and Anaphora: a Restatement of the Anaphora Questions" unpublished article, Tel Aviv University.
- Reinhart, T. (1981). "Definite NP Anaphora and C-Command Domains". in *Linguistic Inquiry*, 12.4.
- Riemsdijk, H. van and E. Williams (1981) "NP Structure", *The Linguistic Review* 1, :171-217.
- Rizzi, L. (1980) "Negation, Wh-movement and the Null Subject Parameter," *Issues in Italian Syntax*, Foris Publications.
- Sportiche, D. (1980) "A Short Note on Focus," unpublished article, MIT.
- Sportiche, D. (forthcoming) MIT Ph.D. Dissertation.
- Taraldsen, T. (1981) "The Theoretical Implication of a Class of Marked Exceptions," in A. Belletti, L. Brandi and L. Rizzi, eds.