RESTRUCTURING AND REANALYSIS

by

Maria Rita Manzini

B. A. Università di Pisa, Pisa
(1979)

M. A. Scuola Normale Superiore, Pisa
(1979)

Submitted to the Department of
Linguistics and Philosophy
in partial fulfillment of the
requirements of the
Degree of

DOCTOR OF PHILOSOPHY

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

October 1983

Signature of Author Maria Rita Manzini
Department of Linguistics and Philosophy
October 20 1983

Certified by
Noam Chomsky, Thesis Supervisor

Accepted by
S. Jay Keyser, Chairman
Departmental Graduate Committee

RESTRUCTURING AND REANALYSIS

by

MARIA RITA MANZINI

Submitted to the Department of Linguistics and Philosophy on October 20, 1983 in partial fulfillment of the requirements for the Degree of Doctor of Philosophy in Linguistics

ABSTRACT

This thesis, assuming the existence of restructuring and reanalysis processes in grammar, seeks to provide a precise and minimally simple definition of such processes (chapter 2), which successfully applies to restructuring and reanalysis phenomena both held to be such independently of this thesis (causative constructions, chapter 4), and introduced as such in this thesis (middle constructions, chapter 3).

Chapter 2 comprises the theoretical core of the thesis. Section 2.1 seeks to formalize the intuitive idea that restructuring is defined by the presence of more than one structure for one and the same sentence in one and the same level of grammar. Section 2.2 seeks to formalize the intuitive idea that reanalysis is defined by the merger of the subcategorization properties of an element with the subcategorization properties of another element.

Chapters 3 and 4, on the other hand, comprise the core of the thesis' empirical discussion. Chapter 3, in particular, uses middle constructions , concretely Italian si constructions, to illustrate the theory of restructuring arrived at in section 2.1; while chapter 4 uses causative constructions, concretely in French, to illustrate the theory of reanalysis arrived at in section 2.2.

Various theoretical and empirical issues essentially independent of restructuring and reanalysis are taken up in the course of the thesis as the opportunity presents itself. Perhaps the most sizable example of this is to be found in chapter 3; where, in taking into consideration Italian si for the purposes of restructuring, we independently present what to our knowledge is the first unified theory of its impersonal and reflexive constructions, as well as of its middle ones.

Thesis Supervisor: Noam Chomsky

Title: Institute Professor

ACKNOWLEDGEMENTS

Thanks

-- to my advisor, N. Chomsky

-- to the other members of my committee, J. Higginbotham and J.-R. Vergnaud

-- to my friends and colleagues of the diaspora: L. Rizzi, L. Burzio, G. Cinque, A. Belletti, G. Longobardi,...; R. Kayne, J. Guéron,...; H. Borer, O. Jaeggli, N. Hyams, D. Pesetsky, K. Safir, T. Stowell,...; M.-L. Zubizarreta, D. Sportiche, H. Koopman, D. Bouchard, J. Aoun,...; M. Brody,...;...

-- to my friends and colleagues (still) of Cambridge: I. Haïk, K. Johnson, J. Levin, D. Massam, M. Browning, T. Rapoport, M. Montalbetti, C. Picallo, E. Torrego,...

-- to J. Keyser and the Department of Linguistics and Philosophy

TABLE OF CONTENTS

1. Introduction

The purpose of this introduction is twofold: first, to actually introduce the discussion to follow; second, to partially complement it, in particular with references to the related literature.

The body of this thesis is structured as follows: Chapter 2 presents our theory of restructuring and reanalysis; Chapter 3 and 4 illustrate our theory of restructuring and reanalysis with middle constructions and causative constructions respectively.

Chapter 2 is articulated into two sections. First, section 2.1 presents our theory of restructuring; there, as we point out, our points of departure are Chomsky (1981; 1982) and Zubizarreta (1982), specifically Chomsky's (1981; 1982) ideas about phrase markers not representable by a tree structure and Zubizarreta's (1982) ideas about "parallel" or "simultaneous" structures. Second, section 2.2 presents our theory of reanalysis; as we also point out, there our point of departure is Rouveret and Vergnaud (1980), specifically their ideas about "cosuperscripting" between verbs.

Chapter 3, in turn, divides into three sections. Section 3.1 discusses different constructions of Italian involving a lexical element si: impersonal si constructions, middle si constructions, reflexive si constructions , and middle-reflexive si construcions; for each

construction section 3.1 derives the appropriate structure and the corresponding properties of si. If section 3.1 is correct, middle and middle-reflexive si constructions instantiate restructuring ; independently of restructuring, on the other hand, if section 3.1 is correct, the four different types of si can be unified into one. Actually, only three types of si are recognized in the literature: impersonal, middle and reflexive/middle-reflexive; the introduction of the middle-reflexive type is another innovation of section 3.1. Section 3.2,then, follows up on the discussion of si constructions in section 3.1; and adds a discussion of French se constructions and Icelandic -st constructions. If section 3.2 is correct, French se and Icelandic -st are very much the same element as Italian si; this in turn strongly suggests that the characterization of Italian si and si constructions can actually translate into a characterization of impersonal/reflexive/middle elements and constructions universally. Finally, section 3.3 goes back to one theoretical issue left open from section 2.1, the PF and LF of restructuring constructions. Again, the discussion in section 3.3 is anchored to Italian si data, but the conclusions are taken to extend not only to se data in French, etc..., but also to restructuring data in general.

Finally, chapter 4 divides into two sections. Section 4.1 discusses causative constructions in French. These in-

clude , on the one hand, causative constructions characterized by standard word order and Case marking, similar in all respects to English causative constructions, to which they are compared; on the other hand, causative constructions proper, characterized by idiosyncratic word order and Case marking. As pointed out there, section 4.1 follows essentially Rouveret and Vergnaud (1980) in assuming that causative constructions proper instantiate reanalysis. Section 4.2 then follows up on section 4.1 by considering the absence of causative constructions proper in English, by comparing causative constructions proper in French to causative constructions proper in Italian, and by discussing in the process the interaction of causative constructions proper with a number of other constructions. If section 4.1 is correct, what holds of causative constructions proper in French holds of causative constructions proper in Italian, though with an added parameter; once more, the strong suggestion is that the account of French (and Italian) causative constructions proper can actually translate into an account of causative constructions proper universally.

In more detail, section 2.1, following closely as noticed there Lasnik and Kupin (1977), starts by defining a phrase marker as a collection of monostrings; a normal phrase marker is then defined as a tree structure, a

restructuring phrase marker as a phrase marker which is not a tree structure. Crucially,a double condition on restructuring phrase markers is imposed : first, we require that each restructuring phrase marker be equivalent under union to a set of tree structures, what we call its normal form; second, we require that each two trees in a normal form be related either by movement or by deletion or else be identical up at least to indexing. Not less crucially, having defined a normal lexical item as an item which maps to a normal phrase marker, and a restructuring lexical item as an item which only maps to a restructuring phrase marker, an attempt is made to prove that a restructuring phrase marker must always contain at least one restructuring lexical item. In the case it cannot be derived, however, this condition can simply be stipulated as such in our grammar.

On the other hand, section 2.2 starts by subsuming the relations Case assignment and cosuperscripting, familiar from Chomsky (1981; 1982), under a general relation Case; where Case assignment is Case between a Case assigner and a nominal and cosuperscripting is Case between two nominals. The relation reanalysis is then introduced, and subsumed again under the general relation Case, as Case holding of a reanalyser and a Case assigner or eventually another reanalyzer. Next, the conditions on Case assignement also familiar from Chomsky (1981; 1982), the Case filter, the government condition, the

adjacency condition, are also reintroduced, with one major addition: the government and adjacency conditions now apply to reanalysis as well. Furthermore, in a move also dictated by reanalysis, the adjacency condition is now taken to be a condition on PF, as opposed to s-structure. Finally, a new condition is introduced, once again grouping together Case assignment and reanalysis; according to it, a Case up for assignment or for reanalysis must be assigned and reanalyzed respectively.

Next, chapter 3 does not particularly need to be introduced in any more detail than it already was. We want to take the opportunity to mention here, however, that si constructions in Italian, se constructions in French, -st constructions in Icelandic, etc... have given rise recently to a number of different treatments. A detailed comparison of those treatments with a first version of the theroy of chapter 3 can be found in Manzini (1982a). We want to mention here, however, that Burzio (1981) was our source for much of the data, and not a few times for their interpretation, including a number of important generalizations, such as that both impersonal and middle si always are associated with nominative Case. Similarly, Belletti (1981) was the source of crucial data and of important generalizations, such as that not only impersonal but also middle si always is associated with a theta-role; finally, Rizzi (1983) was the source of our treatment of the impossibility for reflexive

si to refer back to a derived subject. Marantz (1981), on the other hand, was our main inspiration in trying to reduce the different types of si to one only type.

Finally, chapter 4, much as chapter 3, does not particularly need to be introduced in any more detail than it already was. As we pointed out already, a large amount of our debt in chapter 4 is to Rouveret and Vergnaud (1980); we want to point out here, however, that, at least, we also owe to Burzio (1981) the idea of causative verbs subcategorizing for subjectless predicates. We leave it to the reader to exercise himself in further comparisons.

In general, in writing this thesis we did not feel we had to explain the notions we were introducing if they were easily found in Chomsky (1981; 1982) or the references cited there. Similarly, we did not reference the notions we were introducing if they were easily available, with the related bibliography, in Chomsky (1981; 1982). We do want however to refer here ingeneral to the works cited in our Bibliography for much general background to this thesis.

2. Restructuring and Reanalysis

2.1 Restructuring

Our starting point in this section is the notion of restructuring defined by the discussion of and preposition stranding in Chomsky (1981), by Chomsky (1982), by Zubizarreta (1982) and by the discussion there of Romance "restructuring" and causatives Our end will be defining our own notion of restructuring. In particular we will introduce a notion of phrase marker, (1), and a new notion of restructuring phrase marker, (3), as opposed to a notion of normal phrase marker, (2); we will further introduce a notion ofnormal form of a phrase marker, (4); and we will finally introduce a notion of restructuring lexical item, (17), as opposed to a notion of normal lexical item, (16). In addition we will introduce conditions on the association of phrase marker and normal forms, (5), and on normal forms themselves, (7). We will further indicate a number of theorems and corollaries of the theory we propose, regarding in particular the relation of normal phrase markers and normal forms, (6) and (8) and (20), of restructuring phrase markers and normal forms, (9) and (21), of normal forms and restructuring lexical items, (18), and of normal forms and normal lexical items, (19). In the process, we will present examples of the objects we define, of the effects on them of the conditions we propose and of the consequences in general of our theory, in particular examples of normal forms, of the effects of condition (7) on normal forms, and of the relation of normal forms and restructuring and normal lexical items, (10)-(15). Finally we will identify restructuring itself with any mapping within a normal form from a normal

phrase marker to another, (22). In concluding, we will leave the relation of restructuring phrase markers to PF and LF to be discussed in a later section.

To begin with, we assume, taking Lasnik & Kupin (1977) as our starting point, that a phrase marker is a set of monostrings, as in (1):

(1) ʔ is a phrase marker iff
ʔ is a set of monostrings

We assume on the other hand that when a set of monostrings includes in particular a one symbol nonterminal string, a terminal string, and in general monostrings which are each in a precede or dominate relation with any other, in other words when a phrase marker is representable as a tree structure, a normal phrase marker is defined, as in (2). We assume further that when a phrase marker by the definition (1) is not a phrase marker by the definition (2), in other words is not representable as a tree structure, a restructuring phrase marker is defined, as in (3):

(2) $\mathfrak{P}$ is a normal phrase marker iff

$\mathfrak{P}$ is a set of monostrings

if $\{\varphi, \psi\} \subseteq \mathfrak{P}$, φ dominates ψ or

ψ dominates φ or

φ precedes ψ or

ψ precedes φ

(3) $\tilde{\mathfrak{P}}$ is a restructuring phrase marker iff

$\tilde{\mathfrak{P}}$ is a phrase marker

$\tilde{\mathfrak{P}}$ is not a normal phrase marker

In summary, a phrase marker is a set of monostrings, including in particular a one symbol nonterminal string and a terminal string, as in (1). A phrase marker in which either a dominate or a precede relation holds between each two monostrings, i.e. a phrase marker representation on a tree structure, is a normal phrase marker, as in (2). A phrase marker which is not a normal phrase marker, i.e. is not representable as a tree structure is a restructuring phrase marker, as in (3).

Next, we define a <u>normal form</u> of a phrase marker to be a set of (distinct) normal phrase markers, i.e. by the already familiar definition of normal phrase marker phrase markers representable as tree structures, such that the union of the normal phrase markers yields the phrase marker itself, as in (4). We then assume the existence of a condition imposing that a phrase marker have a normal form, i.e., by the definition of normal form and of normal phrase marker, a set of tree structures such that the phrase marker can be obtained from the union of these tree structures, as in (5):

(4) If $\mathfrak{P}$ is a phrase marker

$\mathfrak{P}'$ is a normal form of $\mathfrak{P}$ iff

there are $\mathfrak{P}_1, \ldots, \mathfrak{P}_n$ such that

$\mathfrak{P}' = \{\mathfrak{P}_1, \ldots, \mathfrak{P}_n\}$

$\mathfrak{P}_1, \ldots, \mathfrak{P}_n$ are normal phrase markers

if $\{\mathfrak{P}_i, \mathfrak{P}_j\} \subseteq \mathfrak{P}'$, $\mathfrak{P}_i \neq \mathfrak{P}_j$

$\mathfrak{P}_1 \cup \ldots \cup \mathfrak{P}_n = \mathfrak{P}$

(5) If $\mathfrak{P}$ is a phrase marker there must be a $\mathfrak{P}'$ such that $\mathfrak{P}'$ is a normal form of $\mathfrak{P}$

An obvious corollary of the definitions of normal form and normal phrase marker is that given any normal phrase marker, the set containing just the normal phrase marker itself is a normal form of it, as in (6):

(6) If $\mathfrak{P}$ is a normal phrase marker, if $\mathfrak{P}' = \{\mathfrak{P}\}$, $\mathfrak{P}'$ is a normal form of $\mathfrak{P}$

Thus any normal phrase marker has at least one normal form, and condition (5) is always satisfied by normal phrase markers. On the contrary, by the definitions of restructuring phrase marker and normal form, a restructuring phrase marker can have or not have a normal form; if it does not, condition (5) obviously rules it out.

In summary, a phrase marker must have a normal form, as in (5). A normal form of a phrase marker is a set of distinct normal phrase markers, i.e. tree structures, such that the union of the normal phrase markers yields the phrase marker itself,

as in (4). In other words, a phrase marker must be equivalent under the operation of union to a set of tree structures or else is ruled out by the grammar; a set of tree structures equivalent under union to a phrase marker is called a normal form of the phrase marker. Trivially, a set consisting of a normal phrase marker is a normal form of the normal phrase marker itself; hence a normal phrase marker always has at least one normal form and automatically satisfies condition (5). A restructuring phrase marker on the other hand can have or not have a normal form, hence can satisfy or not satisfy condition (5).

Next, we assume the existence of a condition imposing that in a normal form of a phrase marker each two normal phrase markers be either derivable one from another or phrase-structure identical, as in (7). We assume the obvious definition of phrase-structure identity as identity up to phrase structure rules; we obviously assume the definition of derivation as a sequence of move and delete mappings:

(7) If $\mathfrak{Z}$ is a phrase marker, $\mathfrak{Z}'$ a normal form of $\mathfrak{Z}$ and $\{\mathfrak{Z}_i, \mathfrak{Z}_j\} \leq \mathfrak{Z}'$, it must be the case that there is a derivation from $\mathfrak{Z}_i$ to $\mathfrak{Z}_j$ or from $\mathfrak{Z}_j$ to $\mathfrak{Z}_i$ or $\mathfrak{Z}_i$ and $\mathfrak{Z}_j$ are phrase structure identical

Obviously, a normal form consisting of just one normal phrase marker always vacuously satisfies condition (7);

on the other hand a normal form consisting of more than one, normal phrase marker can satisfy or not satisfy condition (7) and if not is obviously ruled out. It follows that any normal phrase marker, having in any case a normal form consisting just of the normal phrase marker itself, as in (6), always has at least one normal form which satisfies (7). On the contrary, as a corollary of the definition of normal form, of normal phrase marker and of restructuring phrase marker, it follows that a normal form containing only one normal phrase marker always is the normal form of the phrase marker itself, as in (8), and that on the contrary a normal form of a restructuring phrase marker always contains more than one normal phrase marker, as in (9):

(8) If $\mathfrak{P}$ is a phrase marker, $\mathfrak{P}'$ a normal form of $\mathfrak{P}$ and $\mathfrak{P}' = \{\mathfrak{P}_1\}$, $\mathfrak{P}$ is a normal phrase marker and $\mathfrak{P} = \mathfrak{P}_1$

(9) If $\mathfrak{P}$ is a restructuring phrase marker and a normal form of $\mathfrak{P}$, $\mathfrak{P}' = \{\mathfrak{P}_1, \ldots, \mathfrak{P}_n\}$, $n>1$.

Hence, a restructuring phrase marker, supposing it has a normal form at all, can have a normal form which satisfies condition (7) or not, since by (9) it has only normal forms consisting of more than one normal phrase marker; in case it does not, it is obviously ruled out.

In summary, in a normal form of a phrase marker, there

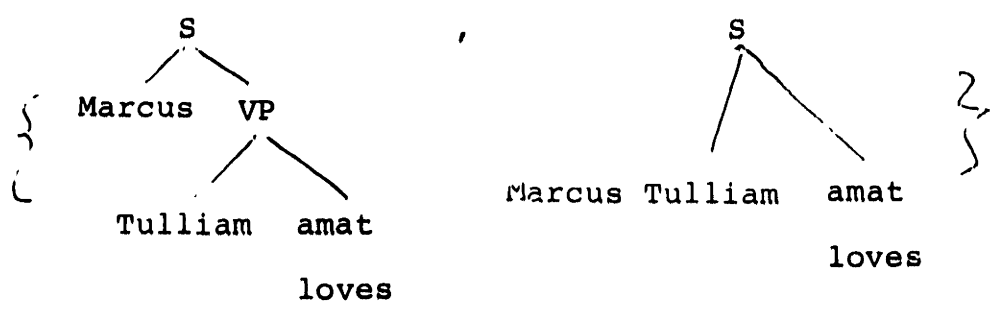
must be a derivation from one to another of each two normal phrase markers or the two normal phrase markers must be phrase-structure identical, as in (7). Paraphrasing, each two tree structures in a normal form of a phrase marker must be obtainable one from the other by movement or deletion or be identical with respect to phrase structure. A consequence of the theory is that a normal form including just one normal phrase marker always vacuously satisfies condition (7); indeed normal phrase markers always have a normal form consisting just of themselves, as in (6), hence always have normal forms which satisfy (7). On the other hand a normal form consisting of more than one normal phrase marker can satisfy or not satisfy condition (7); indeed restructuring phrase markers have, if any, normal forms consisting of more than one normal phrase marker, as in (8)-(9), hence can have or not have a normal form which satisfies (7).

In addition, phrase markers which satisfy condition (5) and normal forms of phrase markers which satisfy condition (7) must be well formed with respect to the other conditions of grammar: conditions on movement and deletion, such as the recoverability condition on deletion, etc.; conditions on the mapping from the lexicon to s-structure, such as the Projection Principle, etc.; and condition on s-structure, such as the θ-criterion, the Case filter, the binding conditions, etc. In particular, in normal forms satisfying (7) the derivation from one normal phrase marker to another must satisfy the conditions on movement and deletion; furthermore, for each normal phrase marker in a normal form the derivation from D-structure must satisfy the conditions on

movement and deletion, the mapping from the lexicon must satisfy the Projection Principle, and the phrase marker itself must satisfy the θ-criterion, the Case filter, etc. If these conditions are not satisfied, the normal forms are obviously ruled out. Phrase markers which satisfy condition (5) in turn must have normal forms which satisfy these same conditions; if not, they are ultimately ruled out.

In summary, once condition (5) and condition (7) are satisfied by a phrase marker and a normal form respectively, the other conditions of grammar must be satisfied by the derivation from one to another normal phrase marker in a normal form, by the derivation of each normal phrase marker from D-structures, by the mapping of each normal phrase marker from the lexicon, and by each normal phrase marker itself. In short, once the new conditions (5) and (7) are satisfied, we are back to the conditions of grammar as usual.

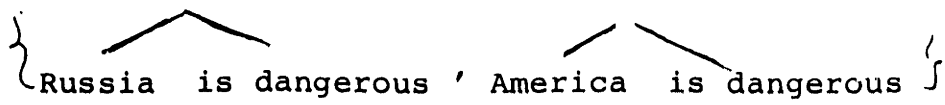
Consider for example the pair of normal phrase markers of Latin in (10), where the normal phrase marker on the left is a "configurational" phrase marker, and the normal phrase marker on the right a "nonconfigurational" phrase marker; this pair of normal phrase markers is ill formed under condition (7):

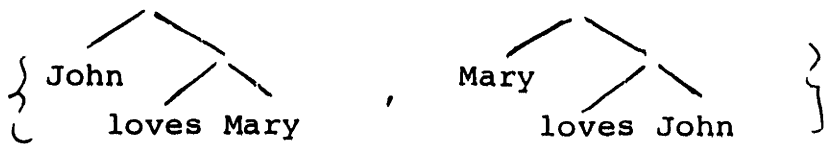


In (10), the normal phrase marker on the left and the normal phrase marker on the right can be described as related by the deletion of a node VP; but the deletion of a node VP to the exclusion of the material dominated by VP does not qualify as a deletion in the sense of the theory of grammar; consequently the relation defined by the deletion of the node VP does not qualify as a derivation. Hence, since in (10) none of the two normal phrase markers can be obtained from the other by deletion in the sense of the theory of grammar, nor of course by movement, and in general none of the two normal phrase markers can be derived from the other, under (7) (10) is ill formed; and so are all normal forms of the same description, containing pairs of one "configurational" and one "non configurational" normal phrase marker.

As another example, consider the pairs of normal phrase markers in (11)-(12). In (11)-(12) each normal phrase marker is perfectly well formed. But the pairs of normal phrase markers are all ill formed under (7):

(11) { John loves Mary , Russia is dangerous }

(12) a. 

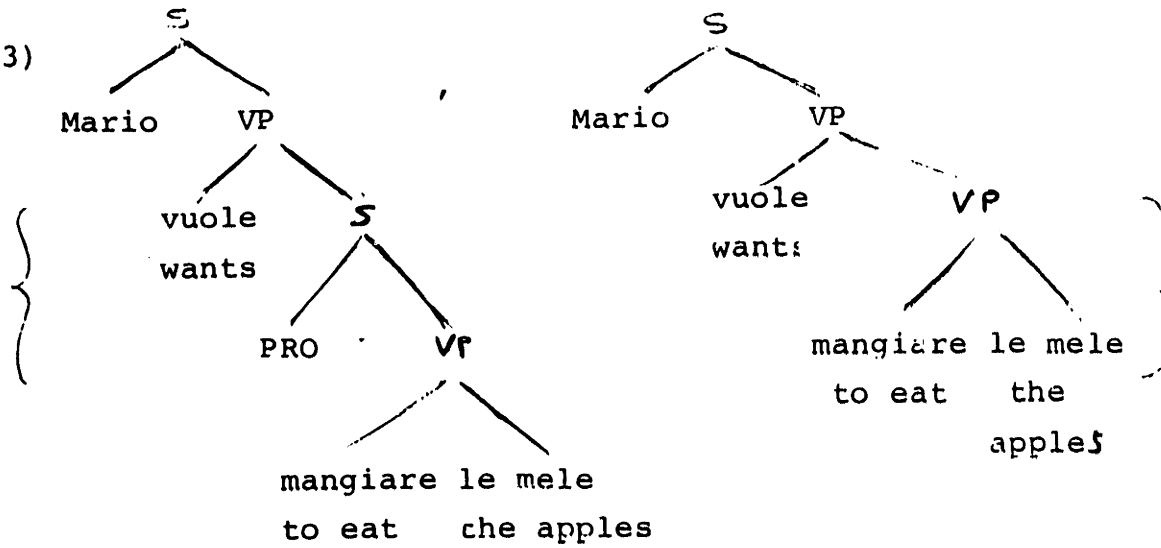
(12) b. 

In (12b) the two normal phrase markers can be described as related by the permutation of two constituents; in (12a) the two normal phrase markers can be described as related by the substitution of a constituent, in (11) the two normal phrase markers can be described as totally unrelated. In all of (11)-(12) neither one of the two normal phrase markers can be obtained from the other by movement or deletion, i.e. neither one of the two normal phrase markers can be derived from the other. Hence all of (11)-(12) are excluded by condition (7), and with them, of course,
all normal forms containing pairs of normal phrase markers of the same description.

On the other hand,
there actually are examples of pairs of normal phrase markers well formed under condition (7) as well as under the other conditions of grammar.

To begin with, normal forms of the type, roughly, of (13) falling under the general type of "restructuring" can be argued to be wellformed in Italian:

(13)

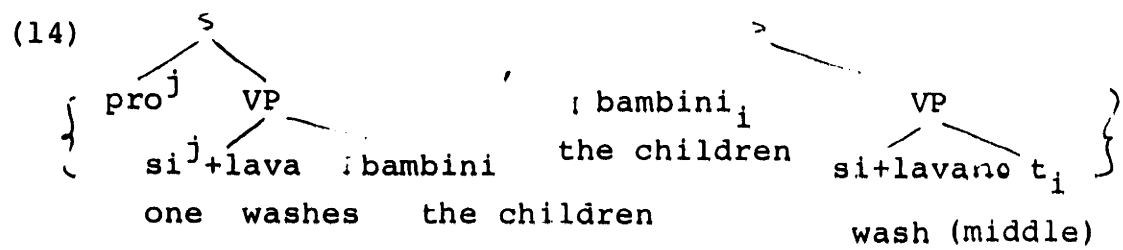


Obviously (13) satisfies condition (7); in (13) indeed the normal phrase marker on the right can be derived from the normal phrase marker on the left by deletion of the embedded constituents PRO and INFL, the embedded S being deleted as a consequence of the deletion of its head INFL. Further in (13) the derivation by deletion from the normal phrase marker on the left to the normal phrase marker on the right satisfies the recoverability conditions on deletions; indeed the elements deleted in the derivation, the PRO and the infinitival INFL with its projection S, are not lexical. Finally, the two normal phrase markers in (13) are themselves well formed, if we assume both is a main verb subcategorizing for an object, and in particular an object control sentence, and optionally an auxiliary verb modifying another verb; if so, first, the two normal phrase markers in (13) satisfy the Projection Principle on the mapping from the lexicon to phrase markers, for, in (13) <u>volere</u> subcategorizes for an object control sentence in the normal phrase marker on the left and modifies another verb in the normal phrase

marker on the right. All other conditions then are satisfied in the obvious way. We can notice parenthetically what happens if in (13) the infinitival control sentences in the normal phrase marker on the left is substituted by a subjunctive sentence with a pro subject. The resulting pair of normal phrase markers again satisfies condition (7); for, the normal phrase marker on the right can be derived from the normal phrase marker on the left by deletion of the embedded pro and INFL with its projection S. However, in this case, the deletion under which (7) is satisfied violates the recoverability condition on deletions since at least the subjunctive INFL, and possibly the prc in that it is Case marked, are lexical elements; hence the normal form is ultimately excluded.

Next, normal forms of the type roughly of (14) are also well formed in Italian, if our section 3.1 is correct:

(14)

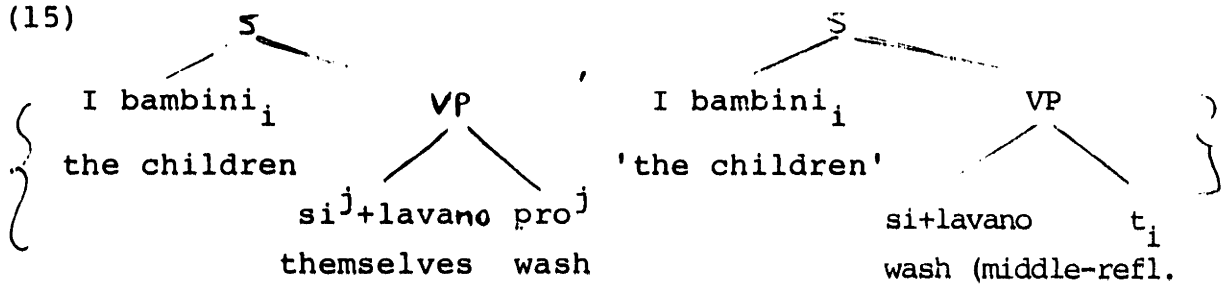


(14) again satisfies condition (7); in (14) the normal phrase marker on the right can again be derived from the normal phrase marker on the left, this time by movement of i bambini. In addition the derivation in (14) from one normal phrase marker to the other satisfies the conditions on movement, whatever they are, as every sentence internal movement does. Finally, the two normal phrase markers in (14) are themselves well formed, if we assume, as in section

3.1, that Italian si, besides being a clitic, both has the nominal properties of being interpreted as a free variable ("one") and of being bound to its subject, and optionally the morphology-like property of being a passivizer. If so, first, the two normal phrase markers in (14) satisfy the Projection Principle; indeed in the normal phrase marker on the left si is bound to its subject and is interpreted as a free variable and in the normal phrase marker on the right si is a passivizer eliminating an accusative Case and a subject θ-role and therefore inducing NP-movement. All other conditions are then satisfied in the obvious way.

Finally, if our section 3.1 is correct, normal forms of the type of (15) are well formed in Italian:

(15)



(15) once more satisfies condition (7); indeed it is easy to see that the two normal phrase markers are phrase structure identical, their terminal elements being identical and their nonterminal elements being identical in categorial content, though not in indexing, etc. Suppose we assume as before that si has both the optional property of being a passivizer and the properties of being bound to its subject and interpreted as a free variable; but we assume now, again as in section 3.1, that if si is bound to its subject by cosubscripting it is interpreted

as a bound variable (a reflexive). If so, the two normal phrase markers in (15) again satisfy the Projection Principle for,
in the normal phrase marker on the left *si* is bound to its subject by cosubscripting and interpreted as a reflexive; and in the normal phrase marker on the right *si* is a passivizer eliminating an accusative Case and a subject theta-role. Again, all other conditions are satisfied in the obvious way.

Are there examples of pairs of normal phrase markers well formed under (7) but ill formed under the other conditions of grammar?

In answer to this question we notice first that the three normal forms in (13), (14) and (15) have one thing in common: a lexical item, *volere* in (13) and *si* in (14) and (15), whose properties, optional properties included, cannot be mapped to a normal phrase marker but rather must be mapped to a restructuring phrase marker. Consider first *volere*. If *volere* as a lexical property both subcategorizes for an object and is an auxiliary to another verb there is no normal phrase marker such that the lexical properties of *volere* are mapped to it; rather, the lexical properties of *volere* can only be mapped, under the Projection Principle, to a restructuring phrase marker. Indeed, there is no tree structure such that both the syntactic frame __ $\bar{S}$ and the syntactic frame __ VP can be simultaneously represented in it; rather, the two subcategorization frames __ $\bar{S}$ and VP can only be simultaneously represented in a restructuring phrase marker. Similarly, consider *si*. If *si* as a lexical property both

is a free variable bound to its subject and a passivizer there is no normal phrase marker such that both the nominal and the passivizer properties of si can be mapped to it; rather, the lexical properties of si can only be mapped to a restructuring phrase marker. In other words, taking first the case in which si is bound to its subject by cosuperscripting, there is no tree structure such that in it si can simultaneously be the free variable subject of a sentence and a passivizer inducing movement of the object of the sentence into the subject; indeed there is no tree structure such that both si and a moved object can be subjects. Similarly, taking the case in which si is bound to its subject by cosubscripting, there is no tree structure such that in it si can simultaneously be the reflexive object of a sentence and a passivizer inducing movement of the object into the subject; indeed there can be no tree structure such that in it si is the object and at the same time there is no object under movement. Rather, the nominal properties of si and its passivizer properties can only be simultaneously represented in a restructuring phrase marker.

Imagine then normal forms exactly like (13)-(15) except that volere in (13) is substituted by a verb, say volere', with only one syntactic frame, either __ $\bar{S}$ or __ VP; and si in (14)-(15) is substituted by an element, say si', with either the properties of a free variable bound to its subject, or the properties of a passivizer but not both.

It is easy to see that normal forms of the type envisioned are well formed from the point of view of condition (7) exactly as (13)-(15) are; and similarly from the point of view of the conditions on movement and deletions applying to the derivation under which (7) is satisfied. It is equally easy to see, however, that a number of normal forms of the type envisioned are excluded by the Projection Principle on the mapping from the lexicon to phrase markers. Consider, for instance, the case of the volere' analogue to (13); if volere' has the syntactic frame __ $\bar{S}$, the Projection Principle is not satisfied at the normal phrase marker in which volere' modifies another verb; if on the other hand volere' has the syntactic frame __ VP, the Projection Principle is not satisfied at the normal phrase marker in which volere' subcategorizes for an object (control) sentence. Similarly, it is easy to see that a number of normal forms of the type under consideration are excluded by conditions on phrase markers such as the θ-criterion, the Case filter, etc. Consider, for instance, the case of the si' analogue to (14); if si' simply is a passivizer, the idea is that the normal phrase marker in which the object is not moved into subject position the object itself does not receive Case and the Case filter at least is violated; if si' is simply a free variable bound to its subject by cosuperscripting, in the normal phrase marker in which the object is moved into subject position, si cannot form a chain with its subject and the Case

filter and θ-criterion are violated, since si gets no θ-role and Case.

Finally, in the si' analogue of (15), if si' simply is a passivizer, both normal phrase markers are well formed, if in turn the empty category in both normal phrase markers is taken to be a trace; complementarily, if si' simply is a reflexive bound to its subject by cosubscripting, both normal phrase markers are well formed, if in turn the empty category in both normal phrase markers is taken to be a pro. But, if so, the two normal phrase markers turn out to be identical against the definition of normal form itself.

We now can go back to the theory. To begin with, we define a lexical item whose properties can map to a well formed normal phrase marker a normal lexical item, as in (16); and we define a lexical item which can only map to a well formed restructuring phrase marker a restructuring lexical item, as in (17):

(16) α is a normal lexical item iff
α is a lexical item and there is a Σ such that Σ is a well formed normal phrase marker and α maps to Σ

(17) α is a restructuring lexical item iff
α is a lexical item, and if Σ is a well formed phrase marker and α maps to Σ, Σ is a restructuring phrase marker.

In what precedes, we have provided tentative proof that when normal lexical items are substituted for the restructuring lexical items in (13)-(15), the result is either ill-formedness or the creation of one single normal phrase marker in the place of two. Suppose our proof ultimately extends from (13) to all normal forms with two normal phrase markers derivable one from the other by deletion; from (14) to all normal forms with two normal phrase markers derivable one from the other by movement; and from (15) to all normal forms containing two normal phrase markers phrase-structure identical. If so, having exhausted all types of admissible normal forms with more than one normal phrase marker, we altogether have a proof that in our theory any well formed normal form with more than one normal phrase marker contains at least one restructuring lexical item, as in (18); if not, (18) can simply be postulated as an independent principle:

(18) If $\Im'$ is a normal form, $\Im' = \{\Im_1, \ldots, \Im_n\}$ and $n > 1$, there are/ must be $\Im_i, \alpha, \beta$ and γ such that $\Im_1 \in \Im'$, $\beta\alpha\gamma \in \Im_i$ and α is a restructuring lexical item

Much more straightforwardly, of course, it follows from our theory that a normal form with only one normal phrase marker contains only normal lexical items, as in (19); by (8) indeed a normal form consisting of one normal phrase marker is the normal form of the normal phrase marker, and by definition only normal lexical items can map to a normal phrase marker:

(19) If $\mathfrak{I}'$ is a normal form and $\mathfrak{I}' = \{\mathfrak{I}\}$
if $\beta\alpha\gamma \in \mathfrak{I}$ and α is a lexical item
α is a normal lexical item

Further consequences of our theory are that the normal form of a normal phrase marker containing just the normal phrase marker itself is its only normal form, as in (20); and that a normal form containing more than one normal phrase marker is a normal form of a restructuring phrase marker, as in (21):

(20) If $\mathfrak{I}$ is a normal phrase marker and
$\mathfrak{I}'$ is a normal form of $\mathfrak{I}$
$\mathfrak{I}' = \{\mathfrak{I}_1\}$ and $\mathfrak{I}_1 = \mathfrak{I}$

(21) If $\mathfrak{I}$ is a phrase marker, $\mathfrak{I}'$ a normal
form of $\mathfrak{I}$, $\mathfrak{I}' = \{\mathfrak{I}_1, \ldots, \mathfrak{I}_n\}$ and $n > 1$
$\mathfrak{I}$ is a restructuring phrase marker

Indeed by (18) a normal form containing more than one normal phrase marker must contain at least one restructuring lexical item; but by definition only normal lexical items map to normal phrase markers; hence normal phrase markers can only have normal forms consisting of one normal phrase marker, themselves, as in (20). On the contrary, since by (20) a normal phrase marker can only have a normal form consisting of itself, a normal form consisting of more than one normal phrase marker can only be a normal form of a restructuring phrase marker, as in (21).

In summary, a normal lexical item is a lexical item which can map to a normal phrase marker, as in (16); a restructuring lexical item is a lexical item which must map to a restructuring phrase marker, as in (17). A straightforward consequence of our theory is that normal forms containing only one normal phrase marker contain only normal lexical items, as in (19); another possible consequence of our theory is that normal forms containing more than one normal phrase marker must contain at least one restructuring lexical item, as in (18). If so, further obvious consequences of the theory are that the only normal form of a normal phrase marker is the normal form consisting just of itself, as in (20); and that conversely a normal form consisting of more than one normal phrase marker can only be the normal form of a restructuring phrase marker, as in (21).

What then is restructuring? Under condition (7) two normal phrase markers in a normal form must be derivable one from the other by movement or deletion. But this only concerns phrase structure configurations. What about the general mapping between the two? This mapping, whatever its exact content, we identify with <u>restructuring</u>, as in (22); and in the obvious way, given any two normal phrase markers in a normal form, we say that the one restructures to the other:

(22) If $\mathcal{F}'$ is a normal form,

ρ is a restructuring mapping (restructuring)

iff

if $\{\mathcal{F}_i, \mathcal{F}_j\} \subseteq \mathcal{F}'$, $\rho(\mathcal{F}_i) = \mathcal{F}_j$

Let us now give a general summary. To begin with, we have introduced six kinds of objects: phrase markers, as in (1), normal phrase markers, as in (2), restructuring phrase markers, as in (3), normal forms of phrase markers, as in (4), normal lexical items, as in (16), and restructuring lexical items, as in (17). Phrase markers, as in (1), are sets of monostrings, normal phrase markers, as in (2), are phrase markers representable as tree structures; restructuring phrase markers, as in (3), are phrase markers not representable as tree structures; normal forms, as in (4), are sets of normal phrase markers/tree structures equivalent under union to a phrase marker; normal lexical items, as in (16), are lexical items mapping to normal phrase markers/tree structures; restructuring lexical items, as in (17), are lexical items mapping to restructuring phrase markers. Furthermore, we have introduced two new conditions: a condition, (5), that phrase markers have a normal form, and a condition, (7), that each normal phrase marker in a normal form have a derivation to another, or from another, or be phrase-structure identical to another. Otherwise, we have assumed all of the other definitions and conditions of grammar unchanged. We have then shown that various consequences follow from our theory concerning the relation of normal and restructuring phrase markers and normal forms: a normal form with only one normal phrase marker always is a normal form of a normal phrase marker, (8); a normal phrase marker always has a normal form consisting just of itself, (6), and only the normal form

consisting just of itself, (20); a normal form with more than one normal phrase marker always is a normal form of a restructuring phrase marker, (9); and a restructuring phrase marker has, if any, a normal form with more than one normal phrase marker, (21). Similarly, we have shown that various cosequences follow from our theory concerning the relation of normal and restructuring lexical items and normal forms: a normal form with only one normal phrase marker contains only normal lexical items, (19), and, most significantly, a normal form with more than one normal phrase marker contains at least one restructuring lexical item, (18). As for restructuring itself, we have identified it simply with the general mapping from any normal phrase marker in a normal form to any other, (22).

In short, there are phrase markers representable as tree structures -- normal phrase markers -- and phrase markers not representable as tree structures -- restructuring phrase markers; correspondingly, there are lexical items which map to tree structures -- normal lexical items -- and lexical items which map to non tree structures -- restructuring lexical items. For any phrase marker, however, there must be -- condition (5) -- a set of tree structures, or normal phrase markers, which are equivalent to it under union -- normal form; and in any set of tree structures, or normal forms, the tree structures must be such that each has a derivation to another of from another or is phrase-structure identical to another -- condition (7). There is a one-to-one correspondence between normal phrase markers and normal forms containing one normal

phrase marker -- (6) and (8) -- and normal phrase markers do not have any normal form with more than one normal phrase marker -- (20). To normal forms with one normal phrase marker correspond restructuring phrase markers -- (8) -- and restructuring phrase markers correspond, if to anything, to normal forms with more than one normal phrase marker -- (21). Finally, a normal form with only one normal phrase marker obviously contains only normal lexical items -- (19); more significantly, a normal form with more than one normal phrase marker contains at least a restructuring lexical item -- (18). Any normal phrase marker in a normal form we say restructures to another, or indeed, the two are mapped on to the other by restructuring, (22).

At this point, assuming we are correct in what precedes, the one question open is the relation of restructuring phrase markers to PF and LF markers. Are restructuring phrase markers mapped to PF and LF markers under the same principles under which normal phrase markers are, or are special principles needed in the case of restructuring phrase markers? Specifically, are PF and/or LF markers representable by tree structures? And if so is some principle required to map restructuring phrase markers into tree-representable PF and/or LF markers? In the interest of concreteness we will postpone answering these questions to chapter 3 after the discussion of the syntax of middle constructions. In particular we will discuss in chapter 3

under what principles restructuring phrase markers of the type of (14) and (15) map to PF and LF markers. In general we will assume that the results obtained in chapter 3 hold true for every case of restructuring.

2.2 Reanalysis

Our starting point in this section is the notion of reanalysis defined in essence by the discussion of French causatives in Rouveret & Vergnaud (1980); our end will be defining our own notion of reanalysis. To begin with, we will introduce the relation Case assignment, with conditions on its domain and range, (1) and the notions of Case assigner and nominal phrase; at the same time we will subsume Case assignment into a more general relation Case, (2), and the notion of Case assigner into a more general notion of Case element, (3). Next, we will introduce the relation cosuperscripting, notated by cosuperscripting, with conditions on its domain and range, (4), and again we will subsume cosuperscripting into the more general relation Case, (5). Finally we will introduce the relation reanalysis, with conditions on its domain and range, (6), and the notion of reanalyser; once more, we will subsume reanalysis into the more general relation Case, (7), and the notion of reanalyser into the more general notion of Case element, (8); at the same time we will introduce a related condition on Case assigners, (9). At this point we will define the relation Case, (10), as subsuming Case assignment, cosuperscripting, and reanalysis, and the notion of Case element, (11), as subsuming the notions of Case assigner and reanalyser. We will then introduce the government condition on Case assignment and reanalysis, (12)

the Case filter on lexical nominal phrases, (13), and parallel to the Case filter a new condition on Case elements, i.e. Case assigners and reanalysers, (14). In addition, we will introduce the adjacency condition on Case assignment and reanalysis as a condition in the mapping from s-structure to PF, (17). Twice we will make reference to Manzini (1983): first, condition (14) is in essence introduced there in the context of a theory of empty categories, here as in (15) and (16); second, in the same context a theory of _of_ insertion is introduced under the same informal assumptions under which (17) is introduced here.

To begin with, we assume, essentially as in Chomsky (1981; 1982), that s-structure includes a binary relation _Case assignment_, and that Case assignment can only hold between a Case assigner and a nominal phrase, in other words that if an element Case assigns an element β, α must be a Case assigner and β a nominal phrase, as in (1):

(1) If α Case assigns β
α must be a Case assigner and
β must be a nominal phrase

We further assume that being a Case assigner is a feature of a lexical item. For example, we assume that _love_ is a Case assigner,

that to is a Case assigner, and so on. Give is a slightly more complicated example: not only is it a Case assigner, but it also defines a relation of some sort to to, where to is again a Case assigner, as above; hence give is in a sense twice a Case assigner, once properly and once by the selection of the other Case assigner to. Further, we assume a nominal to be an N or projection of N, hence in particular NP, or an INFL or projection of INFL, hence S and so on. In a more principled way we can assume a nominal to be an element which includes features N, or, recursively, an element which includes a nominal. If so, N's and their projections are nominals in that they obviously include N features; on the other hand, INFL's and their projections, S, etc., are nominals in that they include a set of features, AGR, which in turn includes N features and is therefore a nominal. What ultimately makes the difference between the cases in which AGR surfaces, as finite S's, and the cases in which AGR does not surface, as in infinitivals, could be simply that in the former cases AGR includes person number and gender features and in the latter cases it does not, the consequence being that agreement with a subject actually takes place in the former cases and not in the latter cases. On the other hand, whatever the exact definition of nominal, we we assume in the obvious way that a nominal phrase is the maximal projection of a nominal and hence in particular an NP or an $\overline{S}$.. Given then our

assumptions on Case ssignment, Case assigners and nominal phrases, an obvious example of Case assignment is Case assignment by love to Mary as in I love Mary, where love, as above, is a Case assigner and the NP Mary is a nominal phrase; other obvious examples are Case assignment by give to a book and Case assignment by to to Mary as in I give a book to Mary, give and to being Case assigners, as above, and the NP's a book and Mary nominal phrases; and so on. Finally, it is our assumption

that there is a more general relation Case subsuming Case assignment, indeed that every instance of the relation Case assignment also is an instance of the relation Case, though not vice versa, as in (2). Correspondingly, it is our assumption that

there is a more general notion of Case element subsuming the notion of Case assigner, indeed that every Case assigner is a Case element, though not vice versa, as in (3):

(2) If α Case assigns β ,
Case (α , β)

(3) If α is a Case assigner,
α is a Case element

In summary, we assume the existence of a relation Case assignment, whose domain is restricted to Case assigners and whose range is restricted to nominal phrases, as in We further assume that being a Case assigner is a feature of a lexical item; we also assume that a nominal phrase is

the maximal projection of a nominal and nominals and N's and INFL's with their projections; hence nominal phrases are NP's and $\bar{S}$'s. Finally we assume that there exists a general relation Case and a class of Case elements; we assume that Case assignment is subsumed into the relation Case, as in (2), and that Case assigners are subsumed into the class of Case elements, as in (3).

Next, we assume that s-structure includes a relation cosuperscripting, the relation notated by cosuperscripting and we assume that the relation cosuperscripting is restricted to pairs of nominal phrases, as in (4), where, as above, we assume that nominal phrases are maximal projections of nominals, hence NP's or $\bar{S}$'s:

(4) If α and β are cosuperscripted
α and β must be nominal phrases

We further assume that cosuperscripting is like Case assignment in that it is subsumed into the more general relation Case; in other words that every instance of the relation cosuperscripting, similar in this to an instance of the relation Case assignment, is an instance of the general relation Case, as in (5):

(5) If α and β are cosuperscripted
Case (α , β)

We can notice here that two nominal phrases related by cosuperscripting, hence by Case, in sharing cosuperscripting and Case, share the same abstract position, a nominative position, or an accusative position, or a to object position, etc.; and in sharing the same abstract position, they are in a sense the same element. In turn this could offer the key to eliminating all stipulations about the particular pairs of nominal phrases which can actually enter cosuperscripting. To begin with, it is only natural to assume that, given two elements which share Case hence the same abstract position and are in this sense the same element, they must share all features and all relations; or else one of them must be in some sense a dummy element with respect to features and relations. But if so, taking dummy element in the relevant sense to be synonimous with expletive, that cosuperscripting can hold between two elements one of which is an expletive does not need to be stipulated. Furthermore, that cosuperscripting can hold between two elements one of which is an AGR or a clitic does not need to be stipulated either, for AGR or clitic elements obviously share all properties with the nominals they are cosuperscripted with. On the other hand, it seems that only AGR's or clitics can enter cosuperscripting with another element

under the sharing properties heading; indeed, assuming, as is natural, that this has to do with their being generated in $\bar{A}$-position, only elements in $\bar{A}$-positions can enter cosuperscripting with another element under the sharing properties heading. Whether this can also be derived or not we will leave as an open question.

In summary, we assume the existence of a relation cosuperscripting, notated by cosuperscripting, restricted to pairs of nominal phrases, as in (4). We further assume that the relation cosuperscripting, in this similar to Case assignment, is subsumed into a general relation Case, as in (5). Finally we suggest that, this much said, further stipulations on which pairs of nominal phrases enter cosuperscripting and indeed Case are unnecessary.

Next, we assume that s-structure includes the relation <u>reanalysis</u>; where we assume that if reanalysis holds in the order of an element α and an element β, α must be a reanalyser and β a Case element, as in (6):

(6) If α reanalyses with β
α must be a reanalyser and
β must be a Case element

We assume further that being a reanalyser, exactly as being a Case assigner, is a defining property, or a feature, of a lexical item. Going one step further in the definition of the relation Case, we assume that reanalysis, as Case assignment and cosuperscripting, is subsumed by it,

as in (7); similarly, going one step further in the definition of the notion of Case element,

we assume that every reanalyser, as every Case assigner, is a Case element, as in (8):

(7) If α reanalyses with β
Case (α , β)

(8) If α is a reanalyser
α is a Case element

In addition, we assume that while normally the features of an element α are associated with α or its head in the lexicon, the features Case assigner can be associated with an element α in the lexicon, as in the normal case, or can be associated with an element α independently of the lexicon if some reanalyser γ reanalyses with α, as in (9):

(9) If α is a Case assigner
α must be a Case assigner in the lexicon
or for some reanalyser γ , γ must
reanalyse with α

So, for example, in French, if section 4.1 below is correct, faire (to make) is a reanalyzer. In sentences like J'ai fait écrire une lettre (literally "I made write a letter" or "I made someone write a letter"), reanalysis holds of ai fait ("made") and écrire ("write"), where écrire is a Case assigner in the lexicon. In sentences like J'ai fait aller Marie, on the other hand, (literally "I made go Marie" or "I made Marie go"), reanalysis holds of ai fait ("made") and aller

("go"), where aller is not a Case assigner in the lexicon, but becomes a Case assigner in s-structure due to reanalysis, and as a Case assigner enter Case assignment with the nominal phrase Marie. Finally, in sentences like J'ai laissé faire écrire une lettre (literally "I let make write a letter" or "I let someone make someone write a letter") reanalysis holds of ai laissé and faire, where laisser (to let) is at least optionally a reanalyser and faire is a reanalyser as usual, hence obviously a Case element; and reanalysis holds further of faire and the Case assigner écrire.

In summary, we assume the existence of a relation reanalysis whose domain is restricted to reanalysers and whose range is restricted to Case elements, as in (6); we further assume that being a reanalyser is a feature of a lexical item On the other hand we assume that, as Case assignment and cosuperscripting, reanalysis is part of the general relation Case, as in (7); and that, as Case assigners, reanalyzers are Case elements, as in (8). Our final assumption is that while features such as a Case assigner are generally lexical features, an element α can acquire the feature Case assigner in s-structure if reanalyzed with, as in (9).

At this point, we notice that while according to (2), (5) and (7), the relation Case includes the relations Case assignment, cosuperscripting and reanalysis respectively, the relation Case is not itself defined. We then assume, as in (10), that the relation Case includes in turn only the relations

Case assignment, cosuperscripting and reanalysis. If so, the relation Case is simply defined by (2), (5), (7) and (10) as the union of Case assignment, cosuperscripting and reanalysis:

(10) If Case(α , β),
α Case assigns β ,or
α is cosuperscripted with β ,or
α reanalyses with β

Similarly we assume, as in (11), that all Case elements are Case assigners or reanalysers. Given that according to (3) and (8) all Case assigners and reanalysers are Case elements, (3), (8) and (11) together then identify Case elements with the union of Case assigners and reanalysers:

(11) If α is a Case element
α is a Case assigner, or
α is a reanalyser

In summary, the relation Case is the collection of the relations Case assignment, cosuperscripting and reanalysis, and the notion of Case element is the collective notion for Case assigners and reanalysers.

Next, we assume that various conditions hold cf various subclasses of the relation Case, or of the various classes of elements which enter them, in particular Case elememts and nominal phrases.

To begin with, we recall that according to Chomsky (1981;1982), if Case assignment holds of a Case assigner α and a nominal phrase β , the Case assigner α must govern the nominal

phrase β . Here we assume, as in (12), that if Case holds of two elements α and β , one of which is a Case element α , the Case element α must govern the other element β . If so, given Case assignment between a Case assigner α and a nominal phrase β , the Case assigner α must indeed govern the nominal phrase β ; but in addition, given reanalysis between a reanalyser α and a Case assigner or reanalyser β , the Case assigner α and the Case assigner of reanalyser β must govern each other:

(12) If α is a Case element and
Case(α , β) or Case (β , α)
α must govern β

Let us exemplify. In the s-structure $[_{S}$ John $[_{VP}$ loves Mary $]]$ under the government condition (12), the Case assigner love can be related by Case, or Case assignment, to the nominal phrase Mary, but not to the nominal phrase John; for, under the definition of government love governs Mary but not John. On the other hand, if section 4.1 below is correct, in French a sentence like J'ai fait écrire une lettre (literally "I made write a letter" or "I made someone write a leter") is associated with an s-structure like $[_{S}$ Je $[_{VP}$ ai fait $[_{VP}$ écrire une lettre $]]]$ where the higher VP but not the lower one is a maximal projection .If so the reanalyser faire can be related by Case, or reanalysis, to the Case assigner écrire under the government condition (12); for,

no maximal projection intervenes between the two, faire governs écrire and écrire governs faire under the definition of government. Of course, if instead of a VP non-maximal projection, an $\bar{S}$ were embedded under faire, faire could not reanalyze with the embedded verb under the government condition (12); for, under the definition of government, the maximal projection $\bar{S}$ intervening between faire and the embedded verb would prevent them from governing each other.

Next, we recall that according to Chomsky (1981;1982) for every lexical nominal phrase α there must be a Case assigner γ and only one such that Case assignment holds of the Case assigner γ and the nominal phrase α (our phrasing); where this condition is referred to as the Case filter. Here we assume, as in (13), that under the Case filter for every lexical nominal phrase there must be an element γ and only one such that Case holds of γ and α in that order; where γ must be a Case assigner so that Case assignment holds of γ and α;

or else γ can be another nominal phrase so that cosuperscripting holds of γ and α, but if so there must be a sequence of elements $\gamma_1, \ldots, \gamma_n$ such that γ_1 is a Case assigner, γ_n is γ, and every γ_i enters Case with every γ_{i+1}:

(13) Case filter

If α is a lexical nominal phrase
there must be exactly one γ such that
Case(γ , α) and
either γ is a Case assigner, or
there are $\gamma_1, \ldots, \gamma_n$ such that
$\gamma_n = \gamma$, and
for every i, Case(γ_i, γ_{i+1}), and
γ_1 is a Case assigner

Let us exemplify. In a sentence like *John to love Mary would be a mistake, the lexical nominal phrase John violates the Case filter; for, there is no Case assigner entering Case assignment with John and no other nominal phrase entering cosuperscripting with it. On the contrary, in the sentence PRO to love Mary would be a mistake, PRO satisfies the Case filter vacuously; for, PRO is a nominal phrase but not a lexical one and the Case filter crucially applies to lexical nominal phrases only. In the sentence For John to love Mary would be a mistake, on the other hand, the lexical nominal phrase John satisfies the Case filter because there is a Case assigner for entering Case assignment with it. Further, in a sentence like There arrived a man, the lexical nominal phrase a man satisfies the Case filter by entering and cosuperscripting with the nominal phrase there, while in turn the INFL surfacing on arrived enters Case assignment with there; so that there is

a sequence of instances of the relation Case leading from the Case assigner INFL to there and from there to the lexical nominal phrase a man. Finally, in a sentence like *There arrived a man after PRO arriving some women, the lexical nominal phrase a man satisfies the Case filter exactly as above, and exactly as above the non-lexical nominal phrase PRO is simply not subject to the Case filter; but the lexical nominal phrase some women violates the Case filter. Indeed, if PRO enters cosuperscripting with some women a part of the Case filter is satisfied, but the Case filter as a whole is not; for, PRO itself is obviously not a Case assigner and, since there is no element entering Case with PRO, there is obviously no sequence of instances of the relation Case leading from a Case assigner to some women. We can notice at this point that all our examples of violations of the Case filter involve lexical nominal phrases of the category NP.

Ehether $\bar{S}$'s also count as lexical nominal phrases subject to the Case filter or not depends upon whether for a nominal phrase to be considered lexical entails that the nominal phrase must dominate lexical material or its nominal part must, and then, under the second hypothesis, upon whether the nominal part of an $\bar{S}$ or its INFL head, AGR, is to be considered lexical or not. What the correct answer is is an empirical problem and not one which need concern us here.

Finally, to the government condition (12)

and to the Case filter (13), we add here a new condition on Case elements, and hence on Case assigners and reanalysers. Specifically, we assume that for every Case element α there must be an element β and only one such that Case holds of α and β in that order, as in (14). Hence for every Case assigner α there must be a nominal phrase β such that Case assignment holds of α and β and for every reanalyser α there must be another Case element such that reanalysis holds of α and β :

(14) If α is a Case element
there is exactly one β such that
Case(α , β)

The idea obviously is that while the Case filter (13) is the Case theory parallel to the part of the θ-criterion stating that every argument must be assigned exactly one θ-role, there is also a Case theory parallel to the part of the θ-criterion that every θ-role must be assigned to exactly one argument, precisely condition (14). Let us exemplify. If section 4.1 below is correct, in the French sentence J'ai fait écrire une lettre (literally "I made write a letter" or "I made someone write a letter") the reanalyser ai fait enters reanalysis with écrire, and the Case assigner écrire enters Case assignment with une lettre, hence both the reanalyser ai fait and the Case assigner écrire satisfy condition (14). In English, on the other hand, the word by word translation of the French sentence above, *I made write a letter, is ill-formed. In it, if section 4.1

below is correct, the Case assigner write enters Case assignment with the nominal phrase a letter as écrire with une lettre; but made is a Case assigner, not a reanalyser like ai fait, hence made cannot enter reanalysis with write, as ai fait with écrire, but rather must enter Case assignment with some nominal phrase. If so, write satisfies condition (14) as écrire does; but, there being no nominal phrase made can enter Case assignment with, made contrary to ai fait violates condition (14). Correctly, the prediction is that I made someone write a letter is a well-formed sentence, with write entering Case assignment with the nominal phrase a letter and made entering Case assignment with the nominal phrase someone; for if so both the Case assigner write and crucially the Case assigner made satisfy Condition (14).

We can notice at this point that condition (13) is already informally introduced in Manzini (1983). Quoting, "we obviously want to maintain with Chomsky (1981) that there is a principle, the Case filter, stating that every lexical nominal must be assigned Case", in the present terminology, that for every lexical nominal phrase α there must be a γ such that Case holds of γ and α, and so on as in (13). Quoting again, "our idea, however, is that there is an additional principle stating that every Case up for assignment must be assigned", in the present that for every Case element α there must be one element β

such that Case holds of α and β, as in (14). In Manzini (1983), the immediate context for the informal introduction of what is essentially condition (14), is a discussion of empty categories; the general context is a discussion of the theory of control and of the theory of binding. In this context, the possibility is explored that the allowed combinations of the features ±anaphoric and ±pronominal give three empty category types: the +anaphoric type, redundantly (+anaphoric, -pronominal), the +pronominal type, redundantly (+pronominal, -anaphoric), and the (-anaphoric, -pronominal) type, as in (15); so that Chomsky's (1981;1982) (+pronominal, +anaphoric) type is excluded. Complementarily, the possibility is explored to introduce a definition of the +anaphoric empty category type stating that an empty category α is +anaphoric if and only if it lacks Case, i.e. if and only if there is no γ such that Case holds of γ and α, as in (16); and correspondingly to eliminate Chomsky's (1982) definition of the +pronominal empty category type. In this context, the introduction of a principle like (14) is essential for the theory in (15)-(16) to work correctly:

(15) [+anaphoric] or, redundantly, [+anaphoric, -pronominal]

[+pronominal] or, redundantly, [+pronominal, -anaphoric]

[-anaphoric, -pronominal]

(16) If α is an empty category, α is [+anaphoric] iff there is no γ such that Case (γ, α)

Consider for example the simple structure *John hit e, example (103) in Manzini (1983). In such a structure, e cannot be a variable, because by definition variables are $\bar{A}$-bound; and e cannot be a pro, because pro's are subject to identification and e is not properly identified. Further, hit being a Case assigner, if it enters Case with e e cannot be an anaphor by definition (16); but if it does not enter Case with e crucially condition (14) is violated. Hence there is no empty category type e can belong to and the structure under consideration is predicted to be ill-formed. On the contrary, in the minimally different structure John was hit e, example (109) in Manzini (1983), hit, as associated with passive morphology, is no longer a Case assigner, and neither can nor must enter Case with e; hence e can be an anaphor under definition (16), and the structure is predicted to be well-formed. And so on.

In summary, according to the government condition (12), if Case holds of a Case element and of some other element,

the Case element must govern the other element. Hence as under Chomsky's government condition, in Case assignment the Case assigner must govern the nominal phrase; but in addition, under (12), in reanalysis the reanalyzer and the other Case element must govern each other. Furthermore, according to the Case filter (13), for every nominal phrase α, there must be some element γ such that Case holds of γ and α in the order, and either γ is a Case assigner, as in Chomsky's Case filter, or, in addition, γ is not a Case assigner but then there is a sequence $\gamma_1,\ldots\gamma_n$ such that $\gamma_n=\gamma$ and Case holds of any γ_i and γ_{i+1} and γ_1 is a Case assigner. Finally, according to the new condition (14), for every Case element α, there must be some element β such that Case holds of α and β in the order; hence, if α is a Case assigner, Case assignment must hold of α and some nominal phrase β; if α is a reanalyzer, reanalysis must hold of α and of some other Case element β. As we have pointed out, condition (14) is essentially identical to a condition informally introduced in Manzini (1983), in the context of a theory of empty categories substituting (15) to Chomsky's inventory of empty categories and eliminating Chomsky's definition of +pronominal empty category in favor of the definition of +anaphoric empty category in (16); where according to (15) there are no (+anaphoric,+pronominal) empty categories, and according to (15) an empty category α is +anaphoric if and only if it lacks Case, in other

words, there is no γ such that γ and α in the order are related by Case.

Finally, we recall that according to Chomsky (1981;1982), subject to language variation, if Case assignment holds of two elements α and β, α and β must be adjacent. Here we assume that, subject to language variation, if Case holds of two elements α and β, one of which is a Case element, α and β must be adjacent; hence if α reanalyzes with β, α and β also must be adjacent. Further, we recall that, much as the government condition, the Case filter, etc., Chomsky's adjacency condition is a condition on s-structure, or indeed on phrase markers; here we assume however that the adjacency condition is a condition in the mapping from s-structure to PF. In other words, we assume that if Case holds of two elements α and β, one of which is a Case element in s-structure, or indeed in a phrase marker Σ, the two elements α and β must be adjacent in PF, or indeed in the PF-marker Σ of Σ, as in (17). Hence, given Case assignment (or reanalysis) between two elements α and β in a given s-structure, under Chomsky's adjacency condition the structure is wellformed only if α and β are adjacent; under (17), on the contrary, the s-structure can be well-formed whether α and β are adjacent or not, and only the corresponding PF is ill-formed if α and β are not adjacent there. In a sense, the adjacency

of two elements α and β is a condition on Case assignment (or reanalysis) between α and β under Chomsky's condition, but not under (17); rather, under (17), the adjacency of two elements α and β is in a sense a "phonological realization" of Case assignment (or reanalysis) between α and β:

(17) If $\mathcal{S}$ is a phrase marker and in $\mathcal{S}$ Case (α,β) and α or β is a Case, if $\mathcal{S}'$ is the PF-marker of $\mathcal{S}$, in $\mathcal{S}'$ α and β must be adjacent

To exemplify, if section 5.1. below is correct, French has structures of the type of

[$_S$ Je [$_{VP}$ ai fait [$_{VP}$ [$_{VP}$ écrire à Pierre] Marie]]]

(literally "I made write to Pierre Marie" or "I made Marie write to Pierre") where ai fait reanalyzes with écrire and écrire Case assigns Marie; but while ai fait and écrire are adjacent, écrire and Marie are not and cannot be moved around so as to be. On the other hand, it is a fact that the structure surfaces as J 'ai fait ecrire Marie a Pierre (literally "I made write Marie to Pierre"), where not only ai fait is adjacent to écrire but also écrire is adjacent to Marie. Assuming, as it is only natural to assume, that the order of elements can be rearranged, to an extent to be made precise, in the mapping from s-structure to PF, this is correctly predicted by the adjacency condition (17); for, under (17), in s-structure écrire can Case assign Marie without being adjacent to it, but given that écrire Case assigns

Marie in s-structure, écrire and Marie must be adjacent in PF.

We can notice that in Manzini (1983), in the context again of the discussion of the theory of empty categories here in (15)-(16), the idea is advanced, quoting, "that +N elements, and in particular nouns, assign Case exactly as -N elements, in particular verbs", in other words, that the feature Case assigner is in no way restricted to -N elements; and "that ... of insertion is the realization of object Case assigned by a noun" or an adjective to an NP. Consider for instance the nominal *Rome's destruction (of) e in the active reading of destruction. In it, e cannot be a variable because trivially it is not Ā-bound; and it cannot be a pro because trivially it is not properly identified. If e cannot be an anaphor either, every possible type of empty category being excluded, the nominal is correctly predicted to be ungrammatical, exactly as the sentence *John hit e is. In turn, the only reason why e cannot be an anaphor is that it is assigned Case; hence it must be the case that e is assigned Case, and assigned Case by the nominal that governs it. But how? The first hypothesis which comes to mind is that, admitting a process of of insertion to account for the presence of of in front of the NP object of a +N head, this process is not an optional one, but an obligatory one; if so, since of is a Case assigner, that e is Case assigned automatically follows. But why intuitively should of insertion be obligatory?

Another hypothesis comes then to mind, precisely the hypothesis in Manzini (1983): that not only -N elements can be Case assigners, but also +N elements, and indeed elements of all categories; and that *of* insertion or, generalizing, insertion of a genitive preposition is just a "realization" of Case assignment when involving a +N Case assigner and an NP. Under one point of view, *of* insertion is a precondition on Case assignment from a +N element to an NP; under another point of view, precisely the point of view in Manzini (1983), *of* insertion is rather a "realization" of Case assignment from a +N element to an NP. The similarity with the discussion of adjacency above is evident: under Chomsky's condition , the adjacency of two elements α and β is a condition on Case assignment (or reanalysis) between α and β, but under (17), the adjacency of two elements α and β is in some sense a "phonological realization" of Case assignment (or reanalysis) between α and β. The same line of thinking can obviously be extended from *of* insertion or adjacency to Case morphology, in languages which indeed include it, making of Case morphology yet another phonological realization of s-structure Case; and so on. If so, an explanation begins to emerge for why adjacency, or in general ordering constraints on Case assignment, and overt Case morphology pretty much never cooccur in a language, but in each given language either one of them must occur. Indeed

both adjacency and Case morphology being realizations of s-structure Case, when one is present, the other need not be; but under the assumption that phonological realization of abstract Case is obligatory, one or the other must indeed be present. Along the same lines, an explanation begins to emerge for the configurational vs. non configurational parameter, and smaller parameters within it. But this is decidedly beyond the scope of out investigation here.

In summary, according to (17), if Case holds in s-structure of two elements α and β, one of which is a Case element, subject to language variation, the two elements α and β must be adjacent in PF; hence, in particular, if Case assignment or reanalysis holds of α and β in s-structure, subject to language variation, α and β must be adjacent in PF. As we noticed, this makes adjacency between two elements α and β much like a "phonological realization" of Case assignment or reanalysis between α and β, as like a condition on it. As we also noticed, this is suggestive of the idea in Manzini (1983) that +N elements can be Case assigners exactly as -N elements can; and that <u>of</u> insertion or, generally, the insertion of a genitive preposition, is again a "realization" of object Case assigned by a +N element to an NP. As we finally suggested, the key to the parameters configurational vs. non configurational may lie in this direction of thought; though this obviously goes beyond the scope of our

investigation.

We can now give a general summary. To begin with, we have introduced the relation Case assignment, restricted by (1) to pairs of a Case assigner and a nominal phrase; and with the relation Case assignment, we have introduced the notion of Case assigner and of nominal phrase. Next, we have introduced the relation cosuperscripting, restricted by (4) to pairs of nominal phrases. And finally, we have introduced the relation reanalysis, restricted by (6) to pairs of a reanalyzer and another Case assigner or reanalyzer; and with the relation reanalysis, we have introduced the notion of reanalyzer, and a condition (9), allowing a non-Case assigner to become a Case assigner under reanalysis. We have then introduced a general relation Case, defined by (2), (5), (7) and (10) as the union of the relations Case assignment, cosuperscripting and reanalysis; and a general class of Case elements, defined by (3), (8) and (11) as the union of Case assigners and reanalyzers. Next, we have introduced the government condition as in (12); where, according to (12), if Case involves a Case element, hence a Case assigner of a reanalyzer, the Case element must govern the other element involved. Similarly, we have introduced the Case filter as in (13); where according to (13), for every lexical nominal phrase α, there must be some element γ such that Case holds of γ and α in the order, and either γ is a Case assigner or from γ_1 to $\gamma = \gamma_n$, there is a

sequence of Case relations Case (γ_i, γ_{i+1}) and γ_1 is a Case assigner. Next, we have introduced a new condition, (14), stating that for every Case element α, there must be some element β such that Case holds of α and β in the order. And finally, we have introduced, to take the place of Chomsky's adjacency condition on s-structure, a condition stating that if Case holds of two elements in s-structure, the two elements are adjacent in PF, as in (17). Parenthetically, we have also noticed that a principle very much like (14) is informally introduced in Manzini (1983) in the context of a discussion of a theory of empty categories, here in (15) and (16); and that in the same context a line of thinking is adopted on the subject of <u>of</u> insertion, very much like the line of thinking adopted here on the subject of the adjacency condition.

3. Middle Constructions

3.1 Italian *si* and *si* constructions

There are three major generally recognized types of Italian constructions involving *si* and, correspondingly, three major recognized types of *si*: the impersonal type, the middle type, also known as the passivizing type, and the reflexive type. Each of these three major types of *si* and *si* constructions will be taken into consideration here. In addition, a fourth major type of *si* and *si* construction will be introduced: the middle-reflexive type, as we will call it. For each type of *si*, we will indicate the semantic and syntactic properties as well as those phonological properties which we judge of some interest; correspondingly, for each type of *si* construction we will indicate what structures it is associated with. Most notably we will argue that middle *si* is a restructuring lexical item and middle *si* constructions are associated with restructuring phrase markers; and we will introduce middle reflexive *si* and *si* constructions as a restructuring lexical item and constructions associated with restructuring phrase markers respectively. As our last point, we will finally show how the four different types of *si* reduce to one *si*. This same unified *si* will be our starting point in section 3.2.

To begin with, we take into consideration impersonal *si* and impersonal *si* constructions, both exemplified in (1):

(1) Si lava con facilità i bambini
'One washes easily the children'

Our problem is obvious: what are the properties of impersonal si? And correspondingly: what kind of structures are associated with impersonal si constructions?

The PF properties of impersonal si do not directly concern us here; whatever they are, we write them /si/. With respect to the LF properties, on the other hand, impersonal si is the equivalent, among lexical items, of the class of empty categories PRO_{arb}. Concerning the LF properties of PRO_{arb}, we say that PRO_{arb} is a "free variable", i.e. a "variable" not bound by an operator ranging "freely" or "arbitrarily" over individuals, except for the restriction that it ranges over human individuals. Concerning the LF properties of impersonal si, we say much the same, that impersonal si is a free variable, etc. Example (1) already shows that si is interpreted as a free variable, ranging arbitrarily over human individuals; in (1), however, its ranging over humans as opposed to non-human individuals could be a by-product of the meaning of the predicate or of our knowledge of the world. This is no longer true in an example like (2), where neither the meaning of the predicate nor our knowledge of the world restrict the subject to humans, but impersonal si is indeed so restricted:

(2) Si riceve facilmente dei colpi
One receives easily blows

Impersonal si and PRO_{arb} are indeed equivalent not only with respect to their meaning, but also with respect to

an essentially PF level phenomena of agreement, interesting to us here in this respect only. As is well known, Italian has overt agreement in person, number and gender: finite verbs agree with nominals in person and number and adjectives and participles agree with nominals in number and gender. Obviously, the case in which a PRO_{arb} agrees with a finite verb never arises, whether because PRO's cannot be governed, or because anaphoric empty categories in general cannot be assigned Case. On the other hand, in the case in which a PRO_{arb} agrees with a adjective or a participle, the adjective or participle surfaces with plural masculine features. An example is in (3):

(3) E' facile PRO_{arb} essere nervosi
It is easy to be nervous

Now, impersonal <u>si</u> can be in agreement with both a finite verb and an adjective or participle. If it agrees with a finite verb, this surfaces with the features 3rd person singular, if it agrees with an adjective or participle, this surfaces with the features plural masculine. An example is in (4):

(4) Si è nervosi facilmente
One is nervous (pl. masc.) easily

How agreement works in examples like (2) and (3) with PRO_{arb} and impersonal <u>si</u> respectively is not particularly interesting. We can straightforwardly say that PRO_{arb} and impersonal <u>si</u> are associated with unspecified person, number and gender features,

until at a certain point in the derivation, essentially PF, these unspecified features assume a predetermined conventional value: 3rd person in any case for person agreement, masculine in any case for gender agreement, and, for number agreement, singular if a verb is involved, plural if an adjective or participle is. It is rather interesting, however, that at least with adjectives and participles, PRO_{arb} and impersonal si show exactly the same agreement, and that this results, in the case of impersonal si in a tensed sentence, as in (4), in the clash of singular agreement on the verb and plural agreement on the adjective or participle. This particular type of agreement is not known to occur otherwise. Furthermore, the agreement in number of a PRO_{arb} and an adjective or participle is subject to language variation: it is agreement in the plural in Italian, as we abundantly saw, but is agreement in the singular in Spanish. Remarkably, the agreement of the impersonal lexical item, si in Italian and se in Spanish, is subject to exactly the same language variation: si, as we saw, agrees in the plural, se agrees in the singular. Spanish examples are in (5)-(6):

(5) A qui es posible PRO_{arb} vivir contento
Here it is possible to live happy (sg. masc.)

(6) Se vive siempre nervoso en este pais
One lives always nervous (sg. masc.) in this country

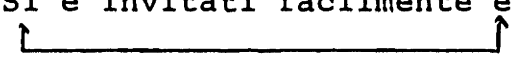
Once rid of the PF and LF properties of impersonal si, we can then begin to consider its syntactic properties.

To begin with, impersonal si falls within the class of arguments; so that, as an argument, it both can and must be assigned a θ-role, either directly or through non-arguments in a chain. Indeed, that impersonal si is an argument, and as such able and needing to receive a θ-role, is a consequence already of its semantic properties. Furthermore, impersonal si includes the categorial features N, and falls within the class of nominals, as well as the class of nominal phrases, and of lexical nominal phrases; so that, as a nominal phrase it can, and as a lexical nominal phrase it must, be assigned Case, either directly or through cosuperscripting. That impersonal si includes the categorial features N we naturally stipulate as one of its syntactic properties and we simply write it N ; that it is a lexical nominal phrase and as such is able and needing to receive Case is indeed a consequence of its having categorial features N, of its being a maximal projection and of its being lexical. Example (1) already shows that impersonal si can and must be assigned a θ-role and Case. In (1), in particular, the subject θ-role assigned by the predicate lava i bambini ("washes the children") can and must end up with impersonal si, and similarly the nominative Case assigned by the INFL surfacing on lava ("washes") can and must end up with impersonal si again. The same point is further shown in (3) and (4), where once more the subject θ-role and the nominative Case end up with impersonal si; and so on.

Next, if in (1), (3) and (4) impersonal si ends up with the subject θ-role and the nominative Case, it

can otherwise end up with a θ-role other than the subject θ-role; it must always, however, end up with the nominative Case . So aside from the case exemplified in (1), etc., in which impersonal si ends up with the subject θ-role and the nominative Case, impersonal si can only end up with nominative Case and object θ-role, as in (7). Obviously (7) is associated with the partial structure in (8), where the empty category fills the object position and is related in one way or the other with impersonal si, so that impersonal si ends up with the object θ-role through the empty category:

(7) Si è invitati facilmente alle mie feste
One is invited easily to my parties

(8) Si è invitati facilmente e alle mie feste


Complementarily, impersonal si cannot end up with accusative Case and object θ-role, as shown in (9), and cannot end up with accusative Case and subject θ-role, as shown in (10):

(9) *Si invito volentieri alle mie feste
'One I-invite eagerly to my parties'

(10) *Si vidi lavare con facilità i bambini
'One I-saw wash easily the children'

Apparently, then, among the other syntactic properties of impersonal si we must write that impersonal si is necessarily associated with nominative Case.

Finally, impersonal si is a clitic on a verb. That impersonal si is a clitic on a verb as a PF property is proved by any of the examples including it, from (1) on; but this is of little interest to us here. On the contrary, what is of interest to us here is to prove that impersonal si is a clitic on a verb as a syntactic property. Indiciary evidence at least suggests that this is indeed the case. First, we take it to be an established point that object clitics, dative clitics, locative clitics, genitive clitics and in general complement clitics on a verb are syntactic clitics: so, for example, Italian lo (him/it), etc., or French le (him/it), etc., are syntactically clitics on a verb. Second, we observe that French also has a class of nominative clitics, or subject clitics, as they are generally known, for example il (he/it), etc. Now, in simple declarative sentences at least, French subject clitics surface, with respect to the other elements in the sentence, in the same position in which a non-clitic subject would surface. So, for example, French subject clitics always surface before all complement clitics; and while complement clitics surface after the negation particle, subject clitics surface in front of it. This behavior is schematically exemplified in (11)-(14). (11) shows that the subject clitic il (he) precedes the complement clitic y (there); (12) shows that the negative particle ne precedes y; (13) shows that il precedes ne; (14) finally shows from left to right, il, ne and y in the order:

(11) Il y a vu Marie
He there has seen Marie

(12) Il n' a vu personne
He not has seen anybody

(13) Marie n'y a vu personne
Marie not there has seen anybody

(14) Il n'y a vu personne
He not there has seen anybody

The fact that at least in simple declarative sentences, French subject clitics have the distribution of non-clitic subjects rather than that of complement clitics most naturally follows if subject clitics are generated in s-structure in exactly the same position in which non-clitic subjects are, and are cliticised from there in PF only. Thus while (11)-(14) and similar examples do not necessarily prove that French subject clitics are phonological clitics they can be constructed as indiciary evidence in favor of such a conclusion. But what about impersonal si? Its surface distribution is exemplified in (15)-(18), and contrasted there with the surface distribution of non-clitic subjects and clitic complements; (15) shows that non-clitic subjects appear in front of the negative non, (16) shows that complement clitics like li (them) appear after non, (17) shows that impersonal si appears after non, and finally (18) shows that impersonal si appears after li:

(15) Mario non lava volentieri i bambini
'Mario not washes eagerly the children'

(16) Non li lava volentieri
'(He) not them washes eagerly'

(17) Non si lava volentieri i bambini
'Not one washes eagerly the children'

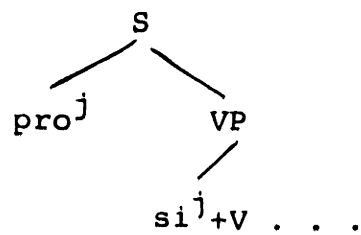
(18) Li si lava volentieri
"Them one washes eagerly'

Obviously, if the distribution of French subject clitics most naturally follows from the assumption that they are just phonological clitics, the distribution of impersonal si does not at all naturally follow from the same assumption. Thus, again, while examples like (15)-(18), by contrast to (11)-(14), do not necessarily prove that impersonal si is a syntactic as well as a phonological clitic, they can be constructed at least as indiciary evidence in favor of this conclusion. On the basis of such evidence, we can then write that impersonal si is a clitic on a verb among its syntactic properties.

One problem is left. According to what precedes, impersonal si can be associated with the subject θ-role, must be associated with the nominative Case and, on top of that, must be a clitic on a verb. The problem then is: how does a clitic on a verb end up with the nominative Case and eventually the subject θ-role? The obvious answer is that there must be a subject in an impersonal si construction which, first, receives the nominative Case and transmits it to impersonal si ; second, enters with impersonal si a chain which eventually receives the subject θ-role from the predicate. The problem, then, further reduces to the following: can there be such a subject, and indeed such a transmission of Case, and such

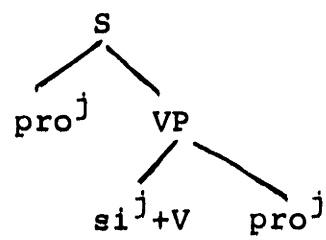
a chain? Obviously there can be such a subject, an expletive, and, in an empty subject (pro-drop) language like Italian, an expletive pro. The expletive pro can then be cosuperscripted with impersonal si, and impersonal si end up with the nominative Case; and the expletive pro and si can form a chain which is then assigned the subject θ-role if there is one to be assigned. This last problem solved, we can then finally provide structures for impersonal si sentences. Specifically, we can conclude that the partial structure in (19) is associated with all impersonal si sentences, including (1), (7), etc.; where in (19) si is a clitic on a verb, its subject is an expletive pro and the two are related by cosuperscripting:

(19)



In addition, sentences like (7), where the object position must also be an empty category and form a chain with impersonal si, are associated with the partial structure in (20); where we assume that the empty category in object position is also a pro, and also cosuperscripted with impersonal si, as empty categories in object position forming a chain with a clitic generally are:

(20)



In other words, while the subject-verb structure in (20) obviously overlaps with (19), the structure of the VP is essentially identical to the structure of a VP containing an object clitic of the type of li (them), exemplified in (16) and (18). The only difference is that, in the case of an object clitic, the pro in object position is assigned accusative Case and transmits it to clitic; while in the case of impersonal si, impersonal si is assigned nominative Case by cosuperscripting with the subject pro and transmits it by cosuperscripting to the object pro.

It is easy to see at this point that saying that impersonal si is necessarily associated with nominative Case, is equivalent to saying that impersonal si is necessarily bound to its subject, i.e. to the subject of the verb impersonal si is a clitic on, by cosuperscripting. Consider again examples like (1) or (7). We already saw that if we say that impersonal si must be associated with nominative Case, it follows that it must be cosuperscripted with its subject; for, cosuperscripting with its subject is the way for impersonal si to get nominative Case. It is easy to see that if we say that impersonal si must be cosuperscripted with its subject, it follows that it must be associated with; for, nominative Case is the Case transmitted by cosuperscripting from the subject position. But what about examples in which, unlike in (1) or (7), the subject of impersonal si is not directly or indirectly assigned the nominative Case or is not available for cosuperscripting?

One case in which the subject of impersonal si is not assigned nominative is the case in which the subject of impersonal si is a PRO, as in (21):

(21) *E' facile PRO ^{j} lavar-si ^{j} volentieri
It-is easy one-to wash eagerly
i bambini
the children

In this case, whether it is a property of impersonal si to be associated with nominative Case or to be bound to its subject by cosuperscripting, does not make any difference. If we stipulate that impersonal si must be associated with nominative Case, (21) and the like are excluded because, whether impersonal si is cosuperscripted or not with PRO, there is no nominative Case for si to be had. If, on the other hand, we stipulate that impersonal si must be bound to its subject by cosuperscripting, (21) and the like are equally excluded; indeed si and the PRO can be cosuperscripted, but since PRO is not assigned Case, impersonal si isn't, and the Case filter is violated. The other case in which the subject of impersonal si is not assigned nominative is the case in which the subject of impersonal si is instead assigned accusative, as in small clauses, as for example, in (22):

(22) *Vidi e ^{j} lavar-si ^{j} con facilita'
'I-saw one-wash easily
i bambini
the children

In this case, as in the preceding one, whether it is a property of impersonal si to be associated with nominative Case, or to be bound to its subject by cosuperscripting, does not make any difference. If we stipulate that impersonal si must be associated with nominative Case, (22) and the like are excluded because, whether impersonal si is cosuperscripted or not with its subject empty category, and whatever its subject empty category actually is, there is no nominative Case for si to be had. But if we stipulate that impersonal si must be bound to its subject by cosuperscripting, (22) and the like are equally excluded; indeed, (22) and the like are excluded independently of the cosuperscripting requirement. For, in (22) the empty category in the subject position of the small clause gives rise to ungrammaticality whatever its exact nature: if a PRO, it cannot by definition be assigned accusative Case or be governed; if a trace, it cannot be assigned accusative Case by definition and/or it cannot be free; if a variable, it cannot be $\bar{A}$-free, if a pro, finally, it must be properly identified and it is not. At this point then we are left with the cases in which the subject of impersonal si is a nominative but not accessible to cosuperscripting, already illustrated in (9) and (10); where (10) is the same as (22) except that impersonal si is cliticized on the higher rather than on the lower verb:

(9) *Si invito volentieri alle mie feste
One I-invite eagerly to my parties

(10) *Si vidi lavare con facilità i bambini
One I-saw wash easily the children

In this case as well, the stipulations that impersonal si must be associated with nominative Case, and that impersonal si must be bound to its subject by cosuperscripting, are obviously equivalent. Assume first that impersonal si must be associated with nominative Case; in (9) or (10) or the like, in order to get nominative Case it must be cosuperscripted with its subject. Now, we know that, when cosuperscripting holds of two elements one of which is an AGR or a clitic, the two elements must share all features and all relations, so for example, person, number and gender features and θ-role assignment relations. But if so, cosuperscripting of impersonal si with its subject is impossible in (9) and (10) or the like; for in (9) or (10) the subject is an element, pro=io ("I") which cannot share with impersonal si features or θ-relations or anything. And if cosuperscripting between impersonal si and its subject is impossible, so is nominative Case assignment to impersonal si. Assume now on the other hand that impersonal si must be bound to its subject by cosuperscripting; obviously the argument that it cannot is just a piece of the argument above. To repeat ourselves, cosuperscripting, when involving a clitic, implies an agreement-like relation; but in (9)-(10) the subject is pro=io ("I") and no agreement-like relation can hold between io and impersonal si; hence, in (9)-(10) and the like cosuperscripting between impersonal si and its subject is impossible.

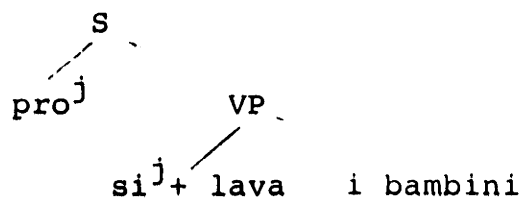
In summary, we started by asking two questions: what are the properties of impersonal si? and what kind of structures

are associated with impersonal si constructions? Our answer to the first question is that, leaving aside its phonological properties, /si/, impersonal si is semantically a free variable and syntactically a clitic on a verb, an N, and a nominative element or, equivalently, an element bound to its subject (the subject of the verb it is a clitic on) by cosuperscripting; as in (23):

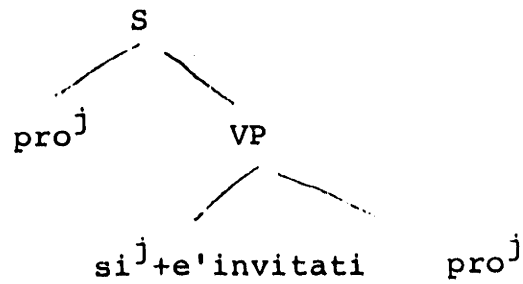
(23) impersonal si = /si/,
free variable,
N,
clitic on a verb,
nominative/bound to its subject
by cosuperscripting

We then answered the second question by structures like (19) and (20) or, to be concrete, like (24) and (25); where (24) is the structure of (1) and (25) the structure of (7):

(24)



(25)



Next we take into consideration middle si and middle si constructions, both exemplified in (26):

(26) I bambini si lavano con facilità
The children wash(middle) easily

Our problem takes an already familiar shape: what are the properties of middle si? And correspondingly: what kind of structures are associated with middle si constructions? Since, on the other hand, we already know the properties of impersonal si, as enumerated in (23), we can ask first: are the properties of middle si the same as the properties of impersonal si? Or are there properties which belong to the one but not to the other? Or are their (non-phonological) properties completely different?

First, though phonological properties are scarcely of any interest to us here, impersonal si and middle si are phonolgically identical; any two impersonal si and middle si examples show the point, (1) and (26) or any other two. More interestingly, middle si as impersonal si is not only a phonological clitic on a verb but also a syntactic clitic on a verb. Indeed, the surface ordering evidence is exactly the same for middle si as for impersonal si; (27) for example

shows that the negation non, the complement clitic vi (there) and middle si surface in the order, non before vi, and vi before middle si:

(27) I bambini non vi si lavano volentieri
The children not there wash(middle)

Next, there is at least one syntactic property which middle si does not share with impersonal si, and this is that middle si is a passiviser. a passiviser associates with a verb which is a Case assigner and in turn forms a predicate phrase which is a subject θ-role assigner and as associated to such a verb, yields a category which is not a Case assigner and forms a predicate phrase which is not a theta-role assigner. In Italian as in English and in other languages the affix forming the passive participle of a verb is the obvious example of a passivizer. That middle si is a passivizer is easy to argue. Consider for example (26) again. In (26), i bambini ("the children") is evidently associated with the object θ-role assigned by lavano ("wash"); at the same time, however, it can be easily proven that it is associated with the nominative Case assigned by the INFL surfacing on lavano. For, while in (26), in the presence of the plural i bambini, lavano agrees in the plural, (28) shows that, when i bambini is substituted by the singular un bambino ("a child") lava ("washes") agrees in the singular. Hence i bambini in (26), and un bambino in (28), agree with the verb, lavano and lava respectively But since in Italian only nominatives agree with verbs, the

comparison of (26) and (28) already proves our point that i bambini in (26), un bambino in (28), etc., are assigned nominative Case. Similarly, (29) shows that i bambini can be substituted by a pro; since in Italian only a nominative position can be occupied by a pro, our point that i bambini in (26), etc. is assigned nominative Case is proven once more:

(28) Un bambino si lava con facilità
A child washes(middle) easily

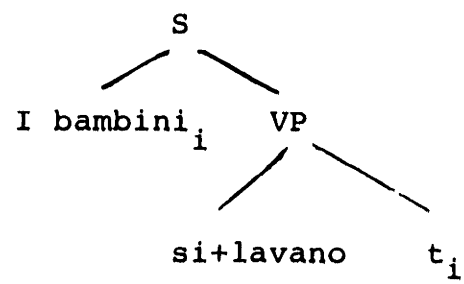
(29) Si lavano con facilità
they - wash(middle) easily

If, on the other hand, in (26) i bambini is assigned object theta-role and nominative Case, it must, first, be in the subject position, so that it can receive the nominative Case of INFL; and, second, bind a trace in object position, so that it can receive the object θ-role of lavano within a chain. In other words, i bambini in (26) must be moved from the object into the subject position. If so, in (26) the verb cannot be a Case assigner and the predicate phrase it forms cannot be a θ-role assigner. But since lavare ("to wash") in its active form, including lavano, both is a Case assigner and forms a predicate phrase which is a θ-role assigner, some passiviser must be associated with lavano. This passiviser in turn can only be middle si; we thus include being a passiviser among its syntactic properties.

At this point, if what precedes is correct, and middle si, phonological properties aside, is a clitic on a verb and a passiviser, we have at least a partial answer not

only to our question what are the properties of middle si but also to our question what kind of structure is associated with middle si constructions. Though there are at least a couple of properties of impersonal si which we have not discussed as properties of middle si, we know already not only that, phonological properties aside, middle si is a clitic on a verb and a passiviser but also that correspondingly middle si constructions are associated with passive-like structure, say (26) concretely with (30):

(30)



Next, the two properties of impersonal si which we have not yet discussed as properties of middle si are, first, the property of being semantically a free variable and hence an argument, with what follows for the purposes of θ-role assignment; second, the property of being an N and indeed a lexical nominal phrase, with what follows for the purposes of Case assignment; and, in addition, the property of being specifically associated with nominative Case or, equivalently, of being bound to its subject by cosuperscripting.

Consider, first, the property of impersonal si of being an argument, specifically a free variable, hence of ending up with a θ- role. There is at least one direct piece of evidence that this is a property of middle si as well .

We showed above that middle si is a passiviser and we mentioned that the other obvious passiviser in Italian, as in other languages, is the affix forming the passive participle. As we saw, both middle si and the passive participle affix associate with a verb which is a Case assigner and in turn forms a predicate phrase which assigns a subject θ-role; and both middle si and the passive participle affix yield, in conjunction with such a verb, an element which is neither a Case assigner nor forms a predicate phrase which is a θ-role assigner. But, in the presence of a passive participle, the θ-role which the predicate would otherwise assign can still be assigned, in Italian as in other languages, through a preposition, da in Italian, by in English, etc.; on the contrary, in the presence of a middle si a da phrase is excluded. This is exemplified in (31)-(33). (31) shows a passive participle construction without da phrase, (32) a passive participle construction with da phrase; (33), to be compared with (26), shows that a middle si construction is not compatible with a da phrase:

(31) I bambini sono stati lavati con facilità
The children have been washed easily

(32) I bambini sono stati lavati con facilità
The children have been washed easily
dai genitori
by the parents

(33) *I bambini si lavano con facilità dai genitori
The children wash(middle) easily by the parents

Why is middle si incompatible with a da phrase? If middle si as impersonal si is an argument, specifically a free variable, the answer follows straightforwardly. To begin with, in (33) as in (26), the object θ-role ends up with i bambini. Suppose then that middle si, being an argument, is assigned the subject θ-role; as an immediate consequence the same θ-role is not available for assignment through da to i genitori (the parents); and, i genitori being an argument, (33) is ill-formed under the θ-criterion. Suppose on the other hand that i genitori is assigned the subject θ-role through the preposition da; as a consequence, the same θ-role is not available to middle si; and, middle si being an argument, (33) is ill-formed under the theta-criterion again. On the other hand, a chain including both middle si and i genitori, if both middle si and i genitori are arguments is also obviously impossible. Thus the ungrammaticality of (33), and in general the incompatibility of middle si with da phrases, are easily accounted for if middle si as impersonal si is an argument, specifically a free variable; if, on the other hand this is not the case, the ungrammaticality of (33), and in general the incompatibility of middle si and da phrases, remains unexplained. Thus, we can conclude, on the basis of rather direct evidence, that impersonal si and middle si share semantic properties. One problem however i left. how are the properties of a free variable, an argument, and the properties of a passiviser compatible? We will address this problem shortly.

Consider now, on the other hand, the property of impersonal si of being an N, a lexical nominal phrase, with what follows for the purposes of Case assignment; and more specifically the property of being associated with nominative Case or, equivalently, of being bound to its subject by cosuperscripting. Once more, there is at least a direct piece of evidence that this is a property of middle si as well . Example (21) repeated below and example (34) show that, of the two constructions we have been comparing to middle si constructions, impersonal si constructions cannot and passive constructions can be embedded in a control context, respectively; example (35) shows that middle si constructions pattern with impersonal si constructions in this respect again, in that as impersonal si constructions they cannot be embedded in a control context:

(21) *E' facile lavarsi volentieri i bambini
It is easy one to wash eagerly the children

(34) E'facile essere lavati volentieri
It is easy to be washed

(35) *E'facile lavarsi volentieri
It is easy to wash(middle) eagerly

The well-formedness of (34) is self explanatory. The ill-formedness of (21) follows straightforwardly, as above, under the assumption that si must be associated with nominative Case or must be bound to its subject by cosuperscripting. For, in a control context there is no nominative Case for si to end up with. Equivalently, if si is cosuperscripted with PRO, since PRO is not assigned any Case, middle si cannot be transmitted

any, hence the Case filter is violated with respect to middle si. What then about (35)? The answer is straightforward if middle si, as impersonal si, must be associated with nominative Case or, equivalently, bound to its subject by cosuperscripting. If so, as impersonal si, middle si is excluded from control contexts because it cannot be assigned nominative Case. Equivalently, if it is cosuperscripted with its subject PRO, since PRO itself is not assigned any Case, middle si cannot be transmitted any, hence the Case filter is violated with respect to middle si. Obviously, if this is the answer to middle si not being embedded in control contexts, we expect middle si to be embedded, on the contrary, in raising contexts, where there is a nominative Case available through cosuperscripting from the matrix subject. Indeed, as example (35) shows, this expectation is filled:

(35) I bambini sembrano lavarsi con facilità
The children seem to wash(middle) easily

Thus the impossibility for middle si to appear in control contexts, as well as its actual appearence in raising contexts, is direct evidence in favor of middle si and impersonal si sharing the property of being N's, and indeed lexical nominal phrases, and, more specifically, the property of being associated with nominative Case or, equivalently, bound to their subjects by cosuperscripting. There is however one problem left, which takes an already familiar form: how can the properties of a lexical nominal phrase, associated with the nominative Case

or bound to its subject by cosuperscripting be compatible with the properties of a passiviser? We will address this problem, together with the earlier one concerning the compatibility of the properties of passiviser and free variable, or in general argument, immediately next.

To repeat ourselves once again, the question we are faced with at this point is: assuming that middle si is on the one hand a passiviser and on the other hand an argument, in particular a free variable, and an N, in particular one associated with nominative Case or equivalently bound to its subject by cosuperscripting, how is the first property compatible with the latter two? Recall we already concluded that, if middle si is a passiviser, a middle si construction is associated with at least a passive-like structure, and concretely an example like (26) is associated with a structure like (30). To make our question more concrete we then ask: how are the semantic and Case or binding properties of middle si compatible with a passive-like structure like (30)? Obviously these properties cannot be mapped directly to (30). For one thing, assuming that middle si in (30) is an argument, a free variable, there is no way it can be assigned a θ-role, the consequence being a violation of the θ-criterion. Specifically, once the object θ-role is assigned to i bambini, middle si must be assigned the subject θ-role. But the subject θ-role is not available to middle si from the predicate for the simple reason that, middle si being a passiviser, the predicate does not assign any; and, needless to say, the subject θ-role is not available to

middle si from the object of a da (by) phrase either. Hence, unless our assumptions about subject θ-role assignment are changed, subject θ-role assignment to middle si in (30) is impossible. Thus middle si in (30) cannot be an argument, a free variable; for, unless our assumptions about θ-role assignment are changed, it cannot be assigned a θ-role, in violation of the θ-criterion. In addition, if middle si in (30) is a nominal, and indeed a lexical nominal phrase, there is no way it can be assigned a Case, the consequence being a violation of the Case filter; nor a fortiori, is there a way it can be assigned nominative Case or, equivalently, be bound to its subject by cosuperscripting. To begin with, middle si in (30) cannot be cosuperscripted with its subject. For, if cosuperscripting holds between two elements one of which is an AGR or a clitic like middle si, the two elements must share all features and relations, for example person, number and gender features or θ-role assignment relations, but the subject in (30), i bambini, and middle si obviously cannot. In turn, if in (30) middle si cannot be cosuperscripted with its subject, it cannot be associated with nominative Case either; for, it cannot end up with nominative Case through cosuperscripting with its subject, and, obviously, being a clitic and not in subject position, it cannot be assigned nominative Case directly. And finally, if in (30) middle si cannot be assigned nominative Case, it cannot be assigned any other Case; for no other Case is assigned at all, given that the accusative Case of the verb is eliminated by middle si in its capacity of passiviser. Thus, unless our assumptions

about cosuperscripting and/or nominative Case assignment are changed, middle si in (30) cannot be bound to its subject by cosuperscripting, nor be associated with nominative Case, nor be associated with any Case at all, hence in turn be a nominal and indeed a lexical nominal phrase for the purposes of the Case filter. In conclusion, the semantic and Case or binding properties of middle si cannot be mapped directly to (30) or to any similar passive-like structure. Does this mean that the semantic and/or Case or binding properties attributed to middle si are incompatible with the passiviser properties also attributed to it?

This is the time to go back to section 2.1. Admittedly, the properties we attributed to middle si cannot all be mapped to a normal phrase marker, a phrase marker representable as a tree structure. But can the properties we attributed to middle si be mapped to a restructuring phrase marker, a phrase marker not representable by a tree structure? First, we know that under condition 2.1(5) a restructuring phrase marker must have a normal form, i.e. a set of normal phrase markers/tree structures it is in some sense equivalent to. The question then is: can the properties we attributed to middle si be mapped to a set of tree structures? Consider example (26) again. We already know that it must be associated at least with the tree structure in (30)

since, phonological
properties aside, (30) preserves the property of middle si of being a passiviser, what we are looking for is a tree

structure which preserves the semantic and Case or binding properties of middle si. And since normal forms are subject essentially only to condition (7), stating that for each two normal phrase markers in a normal form one must be derivable from the other, what we are looking for, further, is a tree structure which can be obtained from (30) by movement or deletion or can yield (30) by movement or deletion. But we already have such a tree structure, namely (24) above, the structure we associated with the impersonal si construction (1). For, it is easy to see that in the set comprising (24) and (30), at last, all of the properties of middle si are mapped, the passivizer property in (30) and the argument and Case or binding properties in (24); and at the same time condition 2.1(7) is satisfied, since there is a derivation by movement from (24) to (30). It is worth noticing that, apparently, in (30) a plural AGR with i bambini substitutes for a singular AGR with impersonal si in (24); in reality we can assume that, while the agreement relation, say a subcase of cosuperscripting, is established in s-structure, the actual person, number and gender features are filled in in PF. If so, in s-structure there is no substitution of features, which would violate 2.1(7), but only different indexing, which does not count for the purpose of 2.1(7). Thus the set consisting of (24) and (30) is the answer to our original question: what kind of structure is associated with middle si constructions and concretely, what kind of structure is associated with a middle si construction like (26). But the set consisting of (24) and (30) is not a normal phrase marker, rather the normal form of a restructuring

phrase marker ence it is part of our answer that middle si constructions are associated with restructuring phrase markers, and that middle si is a restructuring lexical item, a lexical item which can only be mapped to a restructuring phrase marker.

We notice at this point that one last property of middle si has not been taken into consideration yet. This is illustrated by examples (36)-(39), which show that, in middle si constructions, the subject can never be 1st or 2nd person, whether singular or plural, or indeed, that it must always be 3rd person, as in (26) and other examples above:

(36) *Si invito volentieri
'I-invite(middle) eagerly

(37) *Si inviti volentieri
'you-invite(middle,sing.) eagerly

(38) *Si invitiamo volentieri
'We-write(middle) eagerly

(39) *Si invitate volentieri
'You-invite(middle,pl.) eagerly

What excludes (36)-(39)? Needless to say, examples point by point identical, except that the verb is a passive rather than a middle, are perfectly well-formed; and so are the impersonal si counterparts to (36)-(39). Now, we notice first that person, number and gender features are obviously associated with middle si as a nominal and not as a passiviser; second, we recall that in pairs of tree structures like (24) and (30), the verb agrees in one tree (the impersonal si tree) with si, and in the other tree (the passiviser si tree) with the

derived subject, i bambini in (30). These two simple observations offer us a key to the solution of our problem. We recall we assumed above that agreement is an s-structure process as long as the establishment of the agreement relation is concerned, say a subcase of cosuperscripting, but is a PF process when it comes to the filling in of the actual features. We now assume that this is so for the number and gender features, but that, as for the person feature, agreement is an s-structure process in all of its aspects. Recall further we assumed above that impersonal si, hence we add here middle si, is associated with unspecified person, number and gender features, which are assigned fixed values in PF, including 3rd person, etc. We now assume that again this is so for the number and gender features, but that, as for the person feature, impersonal and middle si are associated with 3rd person to begin with. Under these simple assumptions we already have a solution to the ungrammaticality of (36)-(39), as opposed to the grammaticality of (26) and other sentences above. Consider a normal form consisting of an impersonal si structure, say (24), and a passiviser si structure, say (30). In s-structure, in the impersonal si tree si cosuperscripts with AGR and, under the assumption that it is associated with a 3rd person feature, its 3rd person feature is filled in in AGR. In the passiviser si tree the derived subject, i bambini in (30), cosuperscripts with AGR, and its person feature , 3rd person in the case of i bambini in (30), is filled in in AGR. Now, the cosuperscripting of different nominals with AGR in the impersonal and passiviser si trees does not compromise the well-formedness of the middle

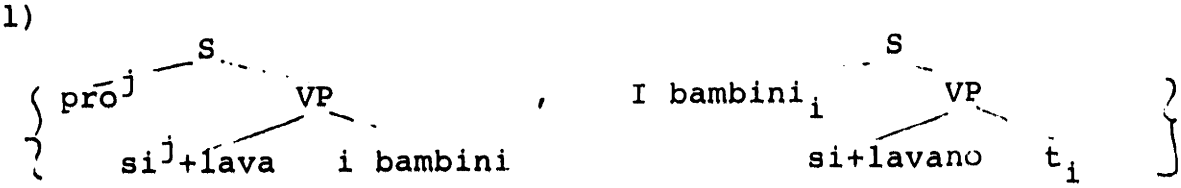
si normal form which contains them under condition 2.1(7); but under condition 2.1(7), if different features are filled in in in the impersonal and passiviser si trees, the well-formedness of the middle si normal form which contains them is compromised, since what amounts to a substitution process is taking place between them. Hence, if in a middle si normal form, as in the normal form consisting of (24) and (30), the feature 3rd person, which is filled in in AGR in the impersonal si tree, where si is the agreeing element, is filled in in AGR also in the passiviser si tree, the normal form is well-formed; but if, as in the normal forms corresponding to (36)-(39), the feature 3rd person is filled in in AGR in the impersonal si tree, and the feature 1st or 2nd person is filled in in AGR in the passiviser si tree, the normal form is excluded by 2.1(7). Thus middle si is compatible only with 3rd person subjects. On the other hand, under the assumption that number and gender features are filled in in AGR in PF, what number and gender the subjects in middle si constructions are is obviously irrelevant.

In summary, in turning to middle si and middle si constructions our first problem was: what are the properties of middle si? Our answer was that middle si has all of the properties of impersonal si, and the one additional property of being a passiviser; as in (40):

(40) middle si = /si/,
free variable,
N,
clitic on a verb,
nominative/bound to its subject
by cosuperscripting,
passivizer

Our next problem was: what kind of structures are associated with middle si constructions? Our conclusion was that, phonological properties aside, the property of middle si of being a passivizer maps to tree structures like (30); but the other properties of middle si map to a different tree structure, an impersonal si structure like (24). Altogether, then, the structure associated with a middle si construction is a set of tree structures, i.e. a restructuring phrase marker; in the case of example (26), the set consisting precisely of (24) and (30), as in (41):

(41)



The reason for the existence of a middle si structure including the impersonal si structure (24) but not of a middle si structure including the other type of impersonal si structure, (25), scarcely needs mentioning: in (25), the verb is already associated with passive morphology, making it impossible for the passivizer properties of middle si to be realized.

Next, we take into consideration reflexive si and,

correspondingly, reflexive si constructions, both exemplified in (42):

(42) I bambini si lavano con facilità
The children themselves wash easily

Our problem takes the familiar shape: what are the properties of reflexive si? and correspondingly: what kinds of structures are associated with reflexive si constructions? Since, on the other hand, we already know the properties of impersonal and middle si, as enumerated in (23) and (40) respectively, we can, to begin with, ask other questions with an already familiar shape too: are the properties of reflexive si the same as the properties of impersonal or middle si? Or are there properties which belong to one and not to the other? Or are their properties completely different?

To begin with, evidently, reflexive si is not a free variable; example (42) already shows that reflexive si is not interpreted as ranging arbitrarily over the set of human individuals. On the contrary, example (42) shows that reflexive si is interpreted as having exactly the same value as its subject i bambini or indeed as being referentially dependent on its subject; in other words, reflexive si is, as we write among its properties, a bound variable. Thus, impersonal or middle si and reflexive si have different semantic properties; these different semantic properties, however, obviously converge in that they both define impersonal or middle si on the one hand, and reflexive si on the other hand, as variable-like

elements. Indeed, not only impersonal or middle si, as free variables, are an exact counterpart among lexical elements of PRO_{arb} empty categories; but impersonal or middle si together with reflexive si are an exact counterpart among lexical elements of anaphoric empty categories in general, since these also are variable-like elements which differentiate into free variables, PRO_{arb}, and bound variables, control PRO and trace.

Next, reflexive si, like impersonal or middle si, is a syntactic clitic on a verb. The ordering of reflexive si with respect to the negation non and to various complement clitics proves this point; for example, as (43) shows, non appears in front of vi (there) and vi in front of reflexive si:

(43) I bambini non vi si lavano con facilità
The children not there themselves wash easily

Thus we write that reflexive si, as impersonal ot middle si, is a clitic on a verb, among its syntactic properties.

Next, like impersonal or middle si, reflexive si has categorial properties N, hence, ultimately, is a lexical nominal phrase, and as such can and must end up with Case. Obviously, being a clitic, reflexive si, like impersonal or middle si, cannot be assigned Case directly; rather, as in the case of impersonal or middle si, in the case of reflexive si there can and must be an empty category pro cosuperscripted with it, so that it ends up with Case by cosuperscipting. However, contrary to impersonal or middle si, reflexive si is not associated with nominative Case nor, equivalently,

cosuperscripted with its subject. Indeed, (42) already shows that reflexive si ends up with the accusative Case assigned by lavano. Thus, we write among the properties of reflexive si, as with impersonal or middle si, that it is an N; but, as for the property of being associated with nominative Case or, equivalently, being bound to its subject by cosuperscripting, impersonal or middle si on the one hand and reflexive si on the other hand, diverge. We notice, however, that, in order to be semantically bound to some element, reflexive si must first be syntactically bound to it by cosubscripting. We notice further that reflexive si, not only can be semantically bound, and syntactically bound by cosubscripting, to its subject, as already exemplified in (42), but must also be. Consider for example (44)-(45). (44), where reflexive si is a dative complement bound by cosubscripting to its subject, hence referentially dependent upon it, is perfectly wellformed; (45), which is point by point identical to (44), except that reflexive si is bound by cosubscripting to an object, hence referentially dependent upon it, is completely ungrammatical:

(44) Mario si affidò i bambini
Mario to-himself entrusted the children

(45) *Mario si affidò i bambini
Mario to-themselves entrusted the children

Thus the Case properties of impersonal or middle si and of reflexive si still diverge in that the former two are

associated with nominative Case and the latter is not However, their binding properties converge in that the three of them are bound to their subjects, though impersonal or middle *si* by cosuperscripting, and reflexive *si* by cosubscripting. We thus write among the properties of reflexive *si* that it is bound to its subject by cosubscripting, much as we write among the properties of middle or impersonal *si* that they are bound to their subjects by cosuperscripting.

Next, in the case of impersonal or middle *si*, being bound to their subjects by cosuperscripting is equivalent to being associated with the nominative Case; in the case of reflexive *si*, being bound to its subject by cosubscripting can be shown to imply not being cosuperscripted with its subject, hence not being associated with the nominative Case. For, we recall that two elements in a cosuperscripting relation, in sharing Case, share in a sense the same position and are in a sense indeed the same element. So, one of the two elements involved in a cosuperscripting relation must be an Agr or a clitic, or else an expletive; and if an Agr or a clitic is involved, the two elements must share all features and all relations -- for example person, number and gender features, θ-role assignment relations and obviously cosubscripting relations.

But if so, suppose reflexive *si* was bound to its subject by cosuperscripting and was in a sense one element

with it; its subject could still bind it by cosubscripting, but then it would have to bind itself by cosubscripting as well and trivially no interpretation would be available for such a configuration. Thus, assuming that reflexive si is bound to its subject by cosubscripting, it indeed follows that it cannot be bound to its subject by cosuperscripting; and since it cannot be bound to its subject by cosuperscripting it cannot receive nominative Case. Rather, reflexive si must be cosuperscripted with some element pro filling the accusative or another complement position, and end up with accusative Case, as shown already in (42), or another complement Case, specifically dative, as shown already in (44).

Finally, reflexive si can also be shown to be an argument ending up with a θ-role. To begin with, we know that every position assigned a complement Case is also assigned a complement θ-role, since no complement position can be moved into. Hence, if reflexive si is cosuperscripted with a pro assigned a complement Case, the chain formed by reflexive si and pro is always assigned that complement θ-role; hence reflexive si must be an argument. This is already exemplified in (44), where reflexive si ends up with the dative θ-role. Further, for every accusative Case assigned into an object position, since no object position can be moved into, an object θ-role is also assigned into it. Hence, if reflexive si is cosuperscripted with a pro assigned accusative Case in an object position, the chain that the reflexive si and the pro form is always assigned object θ-role; hence middle reflexive si must be

be an argument. This is already exemplified in (42), where reflexive si ends up with object θ-role. Finally the one case is left in which reflexive si is associated with accusative Case not assigned into an object position, but into the one other possible position, the subject position of a small clause. For this case, we recall that every verb which assigns accusative Case also forms a predicate which assigns subject θ-role, hence whose subject position is filled by an argument, or a place-holder in a chain with an argument. Hence in any case in which reflexive si is associated with accusative Case, in being bound to its subject by cosubscripting, it is bound to an argument, and consequently it is an argument itself; where the possibility that reflexive si serves as a trace of its subject, i.e. enters a chain with it instead of being an independent argument is eliminated by reflexive si and its subject having different Cases. Hence obviously, if reflexive si is cosuperscripted with a pro assigned accusative Case in the subject position of a small clause, the chain formed by the reflexive si and the pro is always assigned a θ-role. This is exemplified in (46);

(46) Mario si vide sorridere
Mario himself saw smile

Thus, in general, reflexive si is indeed an argument, and it indeed ends up with a theta-role.

There is one problem left from what precedes. While we established above that it is necessary to stipulate that reflexive si is bound to its subject by cosubscripting, this stipulation is apparently not sufficient. More precisely, indeed, reflexive si must be bound to a nonderived subject, as in (42)-(46), and not a derived subject, as in (47):

(47) *I bambini si furono affidati
The children to-themselves were entrusted

Now, by what we know already of reflexive si and of passive, the structure of (47) must be as in (48), where t is the trace of i bambini and reflexive si is cosuperscripted with pro and cosubscripted with its subject, i bambini again:

(48) $[_S$ I bambini$_i$ $[_{VP}$ si$_i^j$+furono affidati t$_i$ pro$_i^j$]]

In order for θ-role assignment to give the correct result in (48), i bambini and t must form a chain. But under the definition of chain, any element in a chain must be locally bound by the element immediately preceding it in the chain. Now, in (48), while i bambini correctly binds t, it does not, incorrectly, bind it locally; rather, the pro locally binds t. Hence, i bambini and t cannot form a chain; and under any other arrangement of chains, there is no proper assignment of θ-role under the θ-criterion . Thus, that reflexive si must be bound by cosubscripting to a nonderived subject does not need to be stipulated, but can be deduced.

Finally, the phonological properties of si are identical to the phonological properties of impersonal or middle si, /si/. There is one apparent problem in this respect, assuming the relative ordering of clitics with respect to each other to be essentially a PF level phenomenon. The problem is illustrated in (19) and (49). While the ordering of reflexive si with respect to complement clitics like vi (there) is the same as the ordering of impersonal or middle si, as is illustrated with middle si in (27) and with reflexive si in (43), (19) shows that impersonal si is ordered after an accusative clitic like li (them), (49) shows that (dative) reflexive si is ordered before an accusative clitic like li:

(19) Li si lava volentieri
Them one washes eagerly

(49) Mario se li affidò
Mario to-himself them entrusted

That the problem is only apparent is easily shown. We have already established that impersonal and reflexive si differ in that impersonal si is associated with nominative Case and reflexive si with accusative Case, or dative Case as in (49). The different ordering of impersonal si in (19) and (dative) reflexive si in (49) with respect to an accusative clitic is then naturally attributed to their different Case properties.

Next, we can recall that, in discussing essentially PF level phenomena of agreement, we reached the conclusion that impersonal or middle si are associated with a 3d person feature and unspecified number and gender features; and that person agreement is an s-structure process, while number and gender agreement actually are PF level processes. With respect to person, number and gender features, reflexive si is once more identical to impersonal or middle si. Examples (50)-(53) show that reflexive si is not compatible with a 1st or 2nd person subject, whether singular or plural. Examples (48), (43) and (44), (46), (49) already show that reflexive si is compatible with a plural 3d person subject, i bambini, or a singular 3d person subject, Mario; and it could as easily be shown that reflexive si is

compatible with both masculine subjects, as in all of the above examples, and with feminine subjects:

(50) *Si lavo volentieri
Myself I-wash eagerly

(51) *Si lavi volentieri
Yourself you-wash[sg] eagerly

(52) *Si laviamo volentieri
Yourselves we-wash eagerly

(53) *Si lavate volentieri
Yourselves you-wash[pl] eagerly

If reflexive si, like impersonal or middle si, is associated with a 3d person feature and unspecified number and gender features, its compatibility with only 3d person subjects, though of any number and gender, is obviously explained. For, if reflexive si is bound to its subject by cosubscripting, and a bound variable of it ,it must agree with it in all grammatical features. Hence, if reflexive si is itself 3d person it obviously cannot agree with 1st or 2nd person elements, hence it is incompatible with 1st or 2nd person subjects. If on the other hand reflexive si has unspecified number and gender features, it can agree in number and gender with any element, hence it iscompatible with subjects of any number and gender. Thus reflexive si is indeed associated with a 3d person feature and unspecified number and gender features, and in this respect is once more identical to impersonal and middle si.

We can notice at this point, before concluding, that, in attributing to reflexive si the properties of being a bound variable and being bound to its subject by cosubscripting, we have never mentioned what the status of reflexive si is with respect to the binding theory or with respect to such notions as anaphor or pronominal. In general, we maintain that the notions of (A-)bound variable and of anaphor are closely related but not identical. Rather, we maintain that the notion of (A-)bound variable is a semantic notion, while the notion of anaphor is a syntactic notion; and that being a bound variable implies being an anaphor, but being an anaphor does not imply being a bound variable. For example, if we maintain, as in Manzini (1983), that the empty categories generally designated as PRO_{arb}, controlled PRO, and trace are all anaphors, it is clear that there is at least one class of anaphors, PRO_{arb}, which are not bound variables. Correspondingly, if we maintain as in Manzini (1983), that there are positions in which anaphors can be free under binding condition A, it is clear that for such elements as English himself/herself/... or Italian se (stesso)/se (stessa)/...etc... it is insufficient to stipulate that they are anaphors; rather, it is necessary to stipulate that they are (A-)bound variables. On the other hand, if we maintain that all (A-)bound variables are also anaphors,

we do not need to write among the properties of an element that it is both a (A-)bound variable and an anaphor; rather,we can simply write that it is a(A-)bound variable and deduce from this that it is an anaphor as well. In deed the implication from being a (A-)bound variable to being an anaphor can be naturally interpreted as some sort of redundancy rule between semantic and syntactic properties of an element. If so, going back to reflexive <u>si</u>, the fact that it is a (A-)bound variable already implies that it is an anaphor. As an anaphor, reflexive <u>si</u> is predicted to be bound in its governing category by binding condition A . Obviously, assume that the governing category for reflexive <u>si</u> is the first sentence which contains it, counting the verb on which it is a clitic as its governor and the subject of the verb on which it is a clitic as its subject and accessible subject. Since by independent stipulations, reflexive <u>si</u> is bound to its subject by cosubscripting, the prediction that it is bound in its governing category necessarily holds true. Thus we conclude that reflexive <u>si</u> is an anaphor and that

follows from its being a (A-)bound variable. Thus, the properties of reflexive <u>si</u> diverge from the properties of impersonal or middle <u>si</u> in that it is an anaphor, but the source of this divergence is once more a property, the property or being a bound variable, with respect to which reflexive <u>si</u> actually converges with impersonal or middle <u>si</u>, in that they

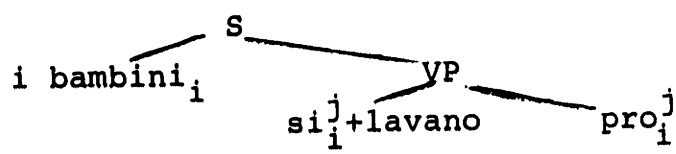
all are variable-like elements.

In summary, when we turned to reflexive si and reflexive si constructions our problem was first: what are the properties of reflexive si? and more specifically: what are the properties of reflexive si in relation to impersonal and middle si? Our answer is that reflexive si, as impersonal or middle si, is phonologically /si/; is semantically a bound variable, hence, as impersonal or middle si, a variable-like element; like impersonal or middle si, is an N and a clitic on a verb; and finally is bound to its subject by cosubscripting, hence, like impersonal or middle si, bound in general to its subject, as in (54):

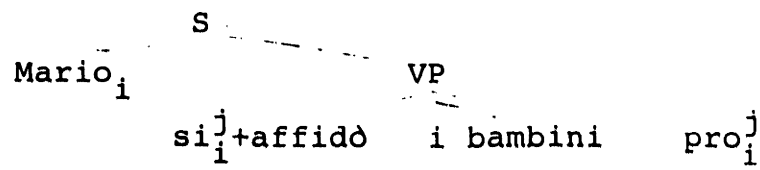
(54) reflexive si = /si/,
bound variable,
N,
clitic on a verb,
bound to its subject by
cosubscripting

Our problem was then: what kinds of structures are associated with reflexive si constructions? The answer is obvious; (42), for example, is associated with structure (55), and (44) with structure (56), refelxive si being accusative in (42)/(55) and dative in (44)/(56):

(55)



(56)



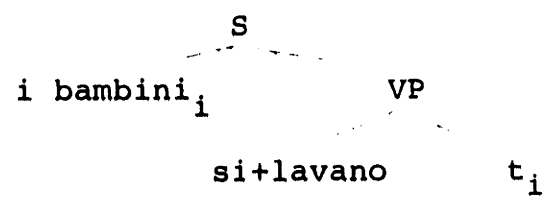
Now, according to the lexical entries in (23), (40) and (54), impersonal, middle and reflexive si respectively, are largely identical and differentiate one from another in essentially two ways. On the one hand, impersonal si and middle si group together against reflexive si in that the former two are bound to their subjects by cosuperscripting and are semantically free variables, while the latter is semantically a bound variable and is bound to its subject by cosubscripting. On the other hand, impersonal si and reflexive si group together against middle si in that the latter has, and the former two do not have, passivizer properties. But if the three major generally recognized types of si group as indicated, a fourth type can logically be expected: a si, which, phonological properties /si/ aside, is, like all si's, an N and a clitic on a verb; is a bound variable and is bound to its subject by cosubscripting like reflexive si; and is a passivizer like middle si. To give it a name, middle-reflexive si can be expected, as in (57):

(57) middle reflexive si = /si/,
bound variable,
N,
clitic on a verb,
bound to its subject by cosubscripting,
passivizer

If middle-reflexive si then exists, impersonal and middle si pattern against reflexive and middle-reflexive si in that the former two are free variables and bound to their subjects by cosuperscripting, while the latter two are bound variables and bound to their subjects by cosubscripting; and impersonal and reflexive si pattern against middle and middle-reflexive si in that the former two are not passivizers, and the latter two are.

Let us assume that middle-reflexive si indeed exists. The next question is of course: what kinds of structures and constructions is middle-reflexive si associated with? We already know that middle si, in that it is a clitic on a verb and a passivizer, gives rise to structures like (30). In the case of middle-reflexive si, we can conclude that, as a clitic on a verb and a passivizer, it also gives rise to structures like (30):

(30)



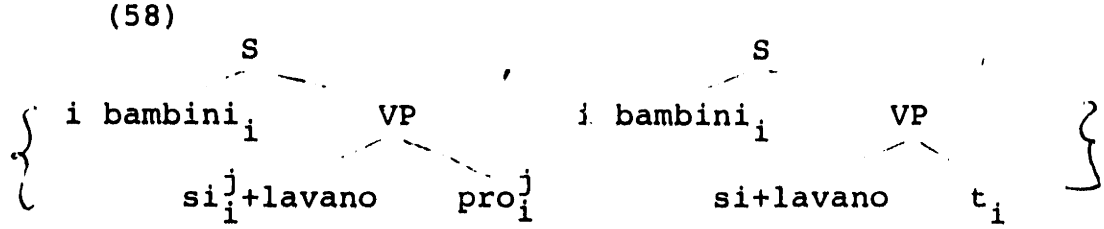
Once accepted structure (30), in the case of middle si we then argued that its other semantic and syntactic properties, i.e. that it is an N and bound to its subject by cosuperscripting and a free variable, cannot be mapped to a tree structure like (30) together with its passivizer property. Rather, we argued that its properties as a whole can only be

mapped to a restructuring phrase marker, whose normal form consists of a passivizer si tree like (30), and, in addition, of an impersonal si tree, as in (41). What about middle-reflexive si? Consider again (30). Can si in (30) be cosubscripted with its subject and attributed the other properties of middle-reflexive si, in addition to the passivizer property? To begin with, as a passivizer, middle-reflexive si associates with a verb, lavano in (30), which is a Case assigner and forms a predicate which assigns the subject θ-role; and yields a category which is not a Case assigner and forms a predicate which does not assign the subject θ-role. Next, as an N and a lexical nominal phrase, middle-reflexive si must end up with a Case; and as cosubscripted with its subject, it must end up with accusative or another complement Case, as proven above for reflexive si. But how can middle-reflexive si end up with accusative Case while taking it away as a passivizer? Clearly it cannot, hence a violation of the Case filter arises, unless some of the basic assumptions are changed. Next, middle-reflexive si must end up with a θ-role, as proven above for reflexive si again. Now, since the trace in (30) is locally bound by middle-reflexive si, if it is cosubscripted with its subject, middle-reflexive si can form a chain with the trace in object position and end up with the object θ-role.

But where does this leave the subject of middle-reflexive si, i bambini in (30)? Clearly, nowhere; i bambini cannot be assigned object θ-role, which is taken by middle-reflexive si and cannot be assigned the subject θ-role, which is taken by middle-reflexive si again as a passivizer. Hence, a violation of the θ-criterion arises, unless some of our basic assumptions are changed. Thus in the case of middle-reflexive si, as in the case of middle si, we reach the conclusion that its passivizer property and its other semantic and syntactic properties are not compatible in a normal phrase marker, a phrase marker representable by a tree structure. Can the properties of middle-reflexive si, like the properties of middle si, be represented in a restructuring phrase marker? or, under condition 2.1 (5), in a normal form, i.e. a set of tree structures which in turn, under condition 2.1 (7), are related by movement or deletion or else are phrase structure identical? If in the case of middle si the normal forms it is associated with consist of a tree like (30), where middle si is a passivizer, and of an impersonal si tree, we can by analogy expect that in the case of middle-reflexive si the normal forms it is associated with consist of, again, a tree like (30) where middle-reflexive si is a passivizer and of a reflexive si tree. Indeed, it is easy to check that if the passivizer properties of middle-reflexive si are mapped in a tree like (30), all of its other properties are properties of reflexive

si as well, and are mapped in a reflexive si tree. At this point, then, we only have to find a reflexive si tree such that a normal form consisting of it and, say, (30) satisfies condition 2.1(7). But we already have such a tree, namely (55); for, it is easy to check that (30) and (55) are phrase structure identical. Putting together (30) and (55) we obtain (58); where the tree on the left is the reflexive si structure reproduced from (55) and the tree on the right the passivizer si structure reproduced from (30); we then take (58) to exemplify the type of structures associated with middle-reflexive si:

(58)



In what precedes, we have shown that an element middle-reflexive si associated with the properties in (57) could exist; and that, correspondingly, middle-reflexive si structures of the type of (58) could exist.

But do middle-reflexive si and middle-reflexive si constructions actually exist? In the case of impersonal, middle and reflexive si and si constructions, we started with constructions and elements whose existence was generally recognized; and the question to solve was what the properties of these elements

and constructions were. In the case of middle-reflexive si, we already know what its properties are and what the properties of middle-reflexive si constructions are. Our problem is the reverse of the preceding one: to find actual examples of middle-reflexive si and middle-reflexive si constructions. In this section, we will leave the problem open.

Ultimately then, if we are correct, there are four types of si's, impersonal si, middle si, reflexive si and middle-reflexive si, with the properties indicated in (23), (40), (54) and (57) respectively. Correspondingly, there are four types of si constructions: impersonal si constructions, as in (24)-(25), middle si constructions, as in (41), reflexive si constructions, as in (55)-(56), and middle-reflexive si constructions, as in (58).

But, if we are indeed correct, among the four types of si's, impersonal si and reflexive si have identical or converging properties: they both have the same phonological properties; both are nominals; both are clitics on a verb; both are variable-like elements, though impersonal si is a free variable and reflexive si a bound variable; and both are bound

to their subjects, though impersonal si is bound by cosuperscripting and reflexive si is bound by cosubscripting. Moreover, middle si and eventually middle-reflexive si have exactly the same properties as impersonal and reflexive si respectively, with the only difference that they are in addition passivizers. If so, there is one obvious next step we can take: in place of the four different types of si's, we can introduce one only si, with the properties which impersonal and reflexive si have in common or converge on, plus an optional passivizer property. This one si, phonological properties /si/ aside, is then a nominal; it is, by the way, associated with 3rd person, unspecified number and gender features; is a clitic on a verb; is semantically a variable-like element, notated "x"; is bound to its subject; and finally, as an optional property notated in parentheses, is a passivizer, as in (59):

(59) si = /si/,
"x",
N, 3d person, unspecified number and gender,
clitic on a verb,
bound to its subject,
(passivizer)

Conversely, the unified si in (59) can easily be shown to correctly diversify into the four types of si's identified above, where the existence of middle-reflexive si

is now positively predicted. If, given the si in (59), its obligatory properties are mapped to a phrase marker, but not its optional passivizer property, impersonal or reflexive si are obtained; if both its obligatory and its one optional property are mapped, middle or middle-reflexive si are obtained. Further, given the properties of si of being a variable-like element, "x", and of being bound by its subject, impersonal or middle si are obtained if si is a free variable and bound to its subject by cosuperscripting; if si is a bound variable and bound to its subject by cosubscripting, reflexive or middle-reflexive si are obtained. As it is easy to see, there is just one problem with this deduction of impersonal, middle, reflexive and middle-reflexive si from the one si in (59). If the properties of impersonal or middle si are enumerated separately from the propertes of reflexive or middle-reflexive si, the grouping of free variable properties with binding by cosuperscripting properties is just stipulated; and so is the grouping of bound variable properties with binding by cosubscripting properties. If, on the other hand, the properties of si are enumerated together as in (59), what prevents a si from being a free variable and bound to its subject by cosubscripting or, complementarily, a bound variable and bound to its subject by cosuperscripting? Consider first the first part of the question; this is illustrated by sentences like (60), where si is bound to its

subject by cosubscripting and si is a free variable. What makes (60) and similar sentences impossible?

(60) *I bambini$_i$ si^j_i lavano pro^j_i con facilità
The children one wash easily

The answer is trivial: in general, we know that if an element α binds an element β by cosubscripting, β is referentially dependent upon α; in particular then, if, as in (60), si is bound to its subject by cosubscripting, si is referentially dependent upon its subject, or, given its variable-like properties, a bound variable of its subject; hence it can under no circumstances be a free variable. Consider now the second part of the question; this is illustrated by sentences like (61), where si is bound to its subject by cosuperscripting but is also bound to another nominal by cosubscripting, hence referentially dependent upon it or a bound variable of it. What makes (61) and similar examples impossible?

(61) *Mario$_i$ dice che pro^j si^j_i lava con facilità
Mario says that he(self) washes easily

i bambini
the children

The answer is also evident, if in general an element which is an (A-)boundvariable must also be an anaphor; hence in particular si when a (A-)bound variable must also be an anaphor, as we motivated above for reflexive si. For, assume that, in (61), being a bound variable, si is also an anaphor. If so

by binding condition A, si must be bound by cosubscripting in its governing category, where its governing category, as motivated above for reflexive si, in the embedded sentence. But si is not bound in the embedded sentence by cosuscripting; hence binding condition A is violated. Thus, (61) is excluded and so are all examples in which si is a bound variable and not bound to its subject by cosubscripting. Si then is a bound variable if and only if it is bound to its subject by cosubscripting; complementarily, si is a free variable if and only if it is bound to its subject by cosuperscripting. Thus, ultimately, the unification of the different types of si's into the si in (59) can be upheld.

3.2 More si and other constructions

In the preceding section we proceeded from the examination of maximally simple examples of impersonal, middle and reflexive si constructions to the determination of the properties of impersonal, middle and reflexive si, then to the introduction of middle-reflexive si and si constructions, and finally to the unification of impersonal, middle, reflexive and middle-reflexive si in one lexical item si. In this section we will start where we left in the preceding section, with the unified si, and go on to discuss both more complicated examples of si constructions and examples of impersonal/reflexive/ middle constructions in languages other than Italian. As for more complicated examples of si constructions, we will take up again from the preceding section the interaction of si with agent phrases, with control, with raising, and with Exceptional Case Marking/small clauses, and we will deal in addition with the interaction of si with "small clause relatives", and with inversions. All the relevant examples, we will argue, follow naturally under our assumptions; most interestingly, the interaction of si and"small clause relatives" follows only if the existence of middle-reflexive si is assumed. As for examples of impersonal/reflexive/middle constructions in languages other than Italian, we will then take into consideration se constructions in French and -st constructions in Icelandic. French se and Icelandic -st, we will argue, have essentially the same properties as Italian si; most interestingly, the differences among the three languages depend simply upon which ones of the

properties of the impersonal/reflexive/middle element are taken to be obligatory.

To begin with, we recall that if our conclusions in the preceding section are correct, the lexical item si is associated with the properties in (1):

(1) si = /si/
"x"
N, 3d person, unspecified number, unspecified gender
clitic on a verb
bound to the subject of the verb that it is a clitic on
(passivizer)

Furthermore, if our conclusions in the preceding section are correct, depending upon whether si is a bound or a free variable, whether it is bound to its subject by cosuperscripting or by cosubscripting, and whether it is a passivizer or not, the four different types of si are obtained: impersonal si, middle si, reflexive si and middle-reflexive si. In particular, if si is a free variable and bound to its subject by cosuperscripting, impersonal or middle si are obtained; if si is a bound variable and bound to its subject by cosubscripting, reflexive or middle-reflexive si are obtained. Furthermore, if si is not a passivizer, impersonal or reflexive si are obtained; if si is a passivizer, middle or middle-reflexive si are obtained. Hence impersonal si is si when a free variable, bound to its subject by cosuperscripting and not a passivizer; middle si is si when a free variable, bound to its subject by cosuperscripting and a passivizer; reflexive si is si when a bound variable, bound to its subject by cosubscripting and

not a passivizer; middle-reflexive si is si when a bound variable, bound to its subject by cosubscripting and a passivizer. This we sum up in (2):

(2)

	free vbl/bound to its subject by cosuperscripting	bound vbl/bound to its subject by cosubscripting
non-passivizer	impersonal si	reflexive si
passivizer	middle si	middle-reflexive si

Consider first the interaction of si constructions with agent phrases. In impersonal and reflexive si constructions agent phrases are trivially excluded by the θ-criterion. For in impersonal si constructions, if the subject θ-role is assigned to si, it cannot be assigned to the object of da(by), and vice versa if it is assigned to the object of da, it cannot be assigned to si, in both cases violating the θ-criterion, as in (3). Similarly in reflexive si constructions, if the subject θ-role is assigned to the subject, it cannot be assigned to the da phrase, and vice versa if it is assigned to the da phrase, it cannot be assigned to the subject, in both cases violating the θ-criterion, as in (4);

(3) * [pro^j [si^j mangia volentieri le mele] dai bambini]
One eats eagerly the apples by-the children

(4) * [I bambini$_i$ [si$_i^j$ lavano volentieri pro^j] dai genitori]
The children themselves wash eagerly by-the parents

In middle and middle-reflexive si constructions, then, agent phrases are excluded by exactly the same reasons by which they are excluded in impersonal and reflexive si constructions. In particular, in middle si constructions, as for example in (5), an agent phrase can appear in the passivizer si tree, as in the lower tree in (5), but, because of the theta-criterion, not in the impersonal si tree, as in the upper tree in (5); hence, because it is excluded in the impersonal si tree, the agent phrase is altogether excluded in the middle si construction. Similarly, in middle-reflexive si constructions, as for example in (6), an agent phrase can appear in the passivizer si tree, as in the lower tree in (6), but, because of the theta-criterion, not in the reflexive si tree, as in the upper upper tree in (6); hence, because it is excluded in the reflexive si tree, the agent phrase is altogether excluded in the middle-reflexive si construction:

(5) * { [pro^j [si^j mangia volentieri le mele] dai bambini]
[Le mele$_i$ [si mangiano volentieri t$_i$] dai bambini] }
The apples eat(mid) eagerly by the children

(6) * { [I bambini$_i$ [si$_i$ lavano volentieri pro^j] dai genitori] / [I bambini$_i$ [si lavano volentieri pro^j] dai genitori] }

The children wash(mid-refl) eagerly by the parents

Consider next the interaction of si constructions with control constructions. To begin with, control constructions are incompatible with impersonal si constructions, as in (7); furthermore, control constructions are incompatible with middle si constructions, as in (8):

(7) * E' difficile [PRO^j [invitarsi^j volentieri gente]]

It is difficult one to invite eagerly people

(8) * { E'difficile [PRO^j [invitarsi^j volentieri e]] / E'difiicile [PRO$_i$ [invitarsi volentieri t$_i$]] }

It is difficult to invite(mid) eagerly

Obviously enough, the incompatibility of impersonal si constructions and control constructions, as in (7), is accounted for by the Case filter. Indeed if, as in (7), the subject of impersonal si is a PRO and impersonal si and the PRO are cosuperscripted, the Case filter is violated, since impersonal si is neither assigned Case directly nor assigned Case through PRO, PRO lacking Case by definition. Similarly the incompatibility of middle si constructions and control construction, as in (8), is accounted for by the Case filter again. Indeed si violates the Case filter in the impersonal tree, as in the upper tree in (8), exactly as it does in impersonal si constructions; hence, since the impersonal si tree is excluded

by the Case filter, the middle si construction as a whole is excluded.

Next, consider the interaction of si constructions with raising constructions. Raising constructions are incompatible with impersonal si constructions, as in (9):

(9) * pro^j risulta $[pro^j [mangiarsi^j$ volentieri le mele$]]$
It turns out one to eat eagerly the apples

Obviously enough, in (9) and in similar sentences involving raising and impersonal si, the subject of the raising sentence and of si must be a pro, as indicated; indeed, given that impersonal si must be cosuperscripted with its subject and Case assigned through it, its subject must itself be directly or indirectly Case assigned.

In turn the subject of a raising sentence can be indirectly Case assigned through cosuperscripting with the subject of the matrix sentence, as also indicated.

But a pro subject of a raising sentence can be easily argued not to be properly identified; if so, the subject of a raising sentence cannot actually be a pro. Hence in (9) and in similar sentences the embedded subject both must and cannot be a pro; therefore, that raising constructions are incompatible with impersonal si constructions is correctly predicted. On the other hand, raising constructions are perfectly compatible with middle si constructions, as in (10):

(10) { pro^j risulta [pro^j [mangiarsi^j volentieri le mele]] }
{ le mele$_i$ risultano [t$_i$ [mangiarsi volentieri t$_i$]] }

The apples turn out to eat(mid) eagerly

If impersonal si is incompatible with raising in (9), the question arises how impersonal si can be compatible with raising in the upper tree in (10); rather obviously the answer can be argued to lie in the nature of the identification conditions for pro's, and in particular in the level they belong to. Recall we assumed that in (9) and similar examples the pro subject of the raising sentence and of the impersonal si is not properly identified. Suppose now we assume that the identification conditions for pro's do not belong to s-structure, as is implicit in the discussion of (9), but rather to PF. If so, examples like (9) are still correctly predicted to be excluded; for they are now predicted to be well-formed in s-structure, but they are still predicted to be ill-formed, under the proper identification conditions for pro's, once mapped to PF. In addition, examples like (10) are now correctly predicted to be well-formed; for in s-structure both the passivizer si tree and the impersonal si tree are now predicted to be well-formed, while in PF the passivizer si tree obviously also predicted to be well-formed. Hence, that raising constructions are compatible with middle si constructions is correctly predicted.

Next, consider the interaction of si constructions and Exceptional Case Marking/small clause constructions. Whether the propositional complements of verbs like perception verbs

are sentences subject to Exceptional Case Marking or small clauses, they are incompatible with both impersonal si and middle si, as in (11) and (12) respectively:

(11) * Vidi [pro^j [mangiarsi^j volentieri le mele]]
I saw one eat eagerly the apples

(12) * { Vidi [pro^j [mangiarsi^j volentieri le mele]] }
{ Vidi [le mele$_i$ [mangiarsi volentieri t_i]] }
I saw the apples eat(mid) eagerly

Minimally, examples like (11) are excluded by the proper identification conditions on pro's, exactly as examples like (9) are. Indeed in (11) the embedded subject can and must be assigned Case by the matrix verb and transmit Case to impersonal si through cosuperscripting; hence, given that it must be an empty category, it must be a pro rather than a trace or PRO. But an accusative pro not associated with a clitic can be easily argued to be excluded under any possible conception of proper identification for pro's. Hence minimally examples like (11) are excluded because the embedded subject pro is not properly identified. But, as examples like (9), examples like (11), if excluded only by the identification conditions on pro's, are excluded only in PF if the identification conditions on pro's belong to PF. If so, the question arises why examples like (12) are not wellformed, as examples like (10) are. For, under the identification

conditions on pro's, in s-structure both the passivizer *si* tree and the impersonal *si* tree are well-formed; and while the impersonal *si* tree would be ill-formed in PF under the identification conditions for pro's, if only the passivizer *si* tree is mapped to PF, it is well-formed there. Evidently, if examples like (12) are to be excluded, the reasons must be other than the lack of proper identification for the embedded subject pro in the impersonal *si* tree. Now, the passivizer *si* tree in (12) as in (10) can only be well-formed at all levels. For, passive morphology and passivizer *si* are essentially equivalent; but if passive morphology is substituted for passivizer *si* in the lower tree in (12), a structure is obtained corresponding to a well-formed sentence, though a (semantically) odd one. Ultimately then, if examples like (12) are to be excluded, the impersonal *si* tree in (12), and indeed the impersonal *si* phrase marker in (11), must be excluded by some s-structure condition. Which condition, is an open guess; may be, since accusative expletive clitics must also be excluded in some way, whatever condition excludes them , also excludes accusative expletive pro's independently of proper identification

Next, we consider the interaction of *si* constructions with "small clause relatives". But first we take into consideration "small clause relatives" themselves. "Small" clause relatives" are expressions headed by a participle, hence "small clauses", and modifying a noun or NP in the way of restrictive relatives,

hence, "relatives" or properly "restrictive relatives". Crucially, the participle heading a "small clause (restrictive) relative" must either be a passive participle, as in (13a), or the participle of an ergative verb, as in (13b); and can neither be the participle of an intransitive verb, as in (13c), nor of a transitive verb, whether the transitive verb has an ordinary object, as in (13d), or an anaphoric object, as in (13e), or a cliticized object, as in (13f):

(13) a. Un uomo lavato dalla pioggia . . .
A man washed by the rain

b. Un uomo venuto da Roma . . .
A man come from Rome

c.*Un uomo tele fonato a Maria
A man telephoned to Maria

d.*Un uomo lavato il pavimento
A man washed the floor

e.*Un uomo lavato se stesso
A man washed himself

f.*Un uomo lavatolo
A man washed it/him

On the other hand, in addition to "small clause (restrictive) relatives", expressions headed by a participle are found which modify an NP in the way of non-restrictive relatives; these "small clause" non-restrictive "relatives" can be headed by any kind of participle, passive, ergative, intransitive, and transitive, as in (14):

(14)a. Mario, lavato dalla pioggia . . .
Mario, washed by the rain

b. Mario, venuto da Roma, . . .
Mario, come from Rome

c. Mario, telefonato a Maria, . . .
Mario telephoned to Maria

d. Mario, lavato il pavimento, . . .
Mario washed the floor

e. Mario, lavato se stesso, . . .
Mario washed himself

f. Mario, lavatolo, . . .
Mario washed it/him

Our problem is what structures "small clause relatives" like (13) and (14) are associated with. To begin with, in (14c)-(14f) the participle is understood to have a subject, identified with the NP the small clause relative modifies. The subject of the participle must be an empty anaphor, since it is easy to see that, whether directly or indirectly, it cannot be assigned Case; and must in particular be a PRO, since it is easy to see that it is not dependent upon an antecedent in θ-role assignment. Furthermore, the subject of the participle must be interpretively related to the NP the participial expression modifies, though it is unclear how, whether it is by cosubscripting under the conditions on binding or by some other mechanisms under some other conditions. On the other hand, in (14a)-(14b) and

(13a)-(13b) the participle has an object understood to be identical to the NP the participial expression modifies. Since the participle does not assigne Case, its object can and must be a trace or a PRO; whether it is a trace or a PRO depends upon whether the participle has a subject PRO, as we established for (14c)-(14f) or no subject: if the participle has a subject PRO the object is its trace, if the participle has no subject the object is itself an argument and a PRO. By analogy with (14c)-(14f) we can assume that in (14a)-(14b) and (13a)-(13b) the participle must have a subject, though under what conditions is once more unclear. Finally, (13c)-(13f) remain to be taken into account. The only difference between (13a)-(13b) and (13c)-(13f) seems to be that the participles in (13a)-(13b) do not assign accusative Case and subject θ-role, while the participles in (13c)-(13f) assign subject θ-role and eventually object Case. We can then assume that "small clause relatives" of the restrictive type in (13) can only be headed by participles not assigning object Case and subject θ-role, and not by participles assigning subject θ-role and eventually object Case. In particular, we can assume that a condition of some sort restricts modifiers of a noun/NP to expressions belonging to certain categories only, and that such a condition, whatever its exact nature, is able to discriminate between participles which assign object Case and/or subject θ-role and participles which do not. Again, not every aspect of our account is clear;

our concern here however is not "small clause relatives", but rather the interaction of "small clause relatives" with si constructions.

Consider then the interaction of "small clause relatives" and si constructions. Trivially, "small clause relatives" of both the non-restrictive and the restrictive kind are incompatible with both impersonal si constructions, as in (15), and middle si constructions, as in (16):

(15) * Un uomo [PRO^j [lavato si^j il pavimento]]
A man one washed the floor

(16) * { Un uomo [PRO^j [lavato si^j e]] / Un uomo [PRO_i [lavato si t_i]] }
A man washed (mid)

Indeed if, as indicated in (15) and (16), "small clause relatives" are control constructions, they are incompatible with impersonal and middle si constructions for the same reasons for which other control constructions are, as in (7) and (8). Specifically, in (15) as in (7), the Case filter is violated because impersonal si does not receive Case neither directly nor indirectly through cosuperscripting with PRO, since PRO itself, by definition, is not Case assigned. Similarly, in (16) as in (8), the passivizer si tree is excluded once more for the reasons for which the impersonal si constructions in (7) and (15) are; hence the middle si construction as a whole is excluded. Not much more interestingly, reflexive si constructions are

predicted to be compatible with "small clause relatives" of the non-restictive variety and incompatible with "small clause relatives" of the restrictive variety, as in (17):

(17) * Un uomo $[_{PRO_i}$ [lavato si_i pro^i]]
A man washed himself

Reflexive si constructions are just ordinary transitive constructions with an object cliticised and anaphoric. Since, as we saw in (14d)-(14f), transitive constructions are in general compatible with "small clause relatives", including transitive constructions with cliticised objects as in (14f) and with anaphoric objects as in (14e), reflexive si constructions can only be compatible with non-restictive "small clause relatives". Furthermore since, as we saw in (13d)-(13f), restrictive "small clause relatives" are incompatible with transitive constructions, and in particular with transitive constructions with cliticised objects, as in (13f), and with anaphoric objects, as in (13e), reflexive si constructions can only be incompatible with restrictive "small clause relatives". Quite interestingly, however, the terminal string in (17), associated with the interpretation indicated there, is acceptable not only as a non-restrictive "small clause relative" but also as a restrictive "small clause relative". Barring the possibility that restrictive "small clause relatives" are actually compatible with reflexive si constructions, the one

possibility left is that middle-reflexive si constructions are compatible with both restrictive and non-restrictive "small clause relatives", as in (18):

(18) { Un uomo [PRO_i [lavato si^j_i pro^j]] }
{ Un uomo [PRO_i [lavato si_i t_i]] }

A man washed(mid-refl)

As a non-restrictive "small clause relative" (18) is obviously well-formed; for, the impersonal si tree is well-formed exactly as the impersonal si construction in (17) is, and the passivizer si tree is well-formed exactly as a passive construction like (14a) is. But how can (18) be well-formed as a restrictive "small clause relative"? To begin with, the passivizer si tree in (18) is obviously well-formed, since passive constructions like (13a) in general are. The question then is how the reflexive si tree in (18) can be well-formed; for, as a restrictive "small clause relative" the reflexive si construction in (17) is ill-formed, and in general transitive constructions are, no matter whether their objects are cliticised or anaphoric. The key to the answer lies in the condition which, whatever its exact content, restricts the heads of restrictive "small clause relatives" to participles not assigning accusative Case and subject θ-role. We can recall that in our discussion of (9) and (10) we solved the apparent contradiction between the incompatibility of raising constructions

and impersonal si constructions and the compatibility of raising constructions and middle si constructions by postulating that the conditions violated in the interaction of raising and impersonal si are conditions in PF. By analogy, we can then hypothesize that the condition which, whatever its exact content, restricts the heads of restrictive "small clause relatives" to participles not assigning accusative Case and subject θ-role, is a condition in PF. If so, it is easy to see that a reflexive si construction like (17) is still predicted to be ill-formed as a restrictive "small clause relative" in PF. On the other hand, a middle-reflexive si construction like (18) can be predicted to be well-formed as a restrictive "small clause relative" if the passivizer si tree is mapped to PF and not the reflexive si tree. Thus we know too little about "small clause relatives" themselves to work out a full theory of their interaction with si constructions; but if our approach is correct they at least provide a context in which reflexive si constructions are excluded and middle si constructions acceptable. This in turn is an important piece of evidence that middle-reflexive si constructions, which our general theory of si constructions induces us to postulate, actually exist.

Consider finally the interaction of si constructions and subject inversions. With respect to impersonal si constructions, the question of the compatibility or incompatibility

with subject inversions scarcely arises; for, impersonal si constructions obviously have cliticised subjects, the impersonal si's themselves, and cliticised elements obviously fill a fixed position. Middle si constructions, on the other hand, are obviously compatible with subject inversions; in particular in the passivizer si trees, instead of movement from the object into the subject position, there can simply be cosuperscripting between the subject and the object position, creating a subject inversion construction, as in (19):

(19) { [pro^j [si^j mangia volentieri le mele]] }
{ [pro^j [si mangiano volentieri le mele^j]] }

eat(mid) eagerly the apples

As for reflexive si constructions, obviously, as other transitive constructions, they are compatible with inversion of the subject in post-VP position; equally obviously, on the other hand, as other transitive constructions, they are incompatible with inversion of the subject in object position, the object position being independently filled. Finally, then, middle-reflexive si constructions are left; are middle-reflexive si constructions compatible or incompatible with subject inversions? In general middle-reflexive si constructions are compatible with subject

inversions; more particularly, in the passivizer si trees, exactly as in the passivizer si trees of middle si constructions, the subject, instead of being moved from object position, can fill the object position, creating a subject inversion construction into object position, as in (20):

(20) { [I bambini$_i$ [si^j_i lavano volentieri pro^j]] }
{ [pro^j [si lavano volentieri i bambini^j]] }

wash(mid-refl) eagerly the children

At this point we can recall that in non-restructuring constructions, there is a one-to-one correspondence between subject inversion into object position and the possibility of cliticization of ne, the genitive clitic, from a subject. The question naturally arises whether the same correspondence holds for restructuring constructions. To begin with, in middle si constructions which have subject inversion into object position in the passivizer si tree, ne cliticization from what can be described as the object in the impersonal si tree and as the inverted subject in the passivizer si tree is obviously possible, as in (21):

(21) { [pro^j [se^j ne^k mangia volentieri [molte pro^k]]]
{ [pro^j [se ne^k mangiano volentieri [molte pro^k]^j]] }

of them eat(mid) eagerly many

But is ne cliticization possible in middle-reflexive si constructions which have subject inversion in the passivizer si tree, from what can be described as the inverted subject in the passivizer si tree but only as the subject in the reflexive si tree? The answer obviously depends upon what conditions exactly account for the possibility of ne cliticization from an object or an inverted subject in object position, but not from elements in other positions, and upon what level these conditions belong to. If the conditions which exclude ne cliticization from positions other than the object belong to PF, then ne cliticization is predicted to be compatible with middle-reflexive si structures; for, if the passivizer si tree is mapped to PF and not the reflexive si tree,

ne cliticization is obviously possible in it from the subject inverted into object position. On the other hand, if the conditions which allow ne cliticization only from the object position belong to s-structure, then ne cliticization is predicted to be incompatible with middle-reflexive si structurew; for, no matter what happens in the passivizer si tree, in the reflexive si tree ne cliticization is impossible from the subject. The data are controversial; but our judgement is that middle-reflexive si constructions, as reflexive si constructions, are incompatible with ne cliticization, as in (22):

(22) *{ [[Molti pro^k]$_i$ [se$_i^j$ ne^k lavano pro^j]]
[pro^j [se ne^k lavano [molti pro^k]^j]] }

of them wash(mid-refl) many

At this point, then, we are left with the problem of impersonal/reflexive/middle elements, and impersonal/reflexive/middle constructions, in languages other than Italian. Does our theory of si and si constructions extend to these elements and constructions as well?

Consider first French. The French element se seems to be identical in all respects to Italian si, with the one exception that it cannot be associated with impersonal constructions, as in (23):

(23) *Se lave facilement les enfants
One washes easily the children

Can we extend the theory of Italian si to French se, and at the same time account for the impossibility of impersonal se constructions? It is easy to see that the answer is positive. To begin with, we know that, quite independently of si/se and si/se constructions, Italian and French differ in that Italian is a "null subject" or "pro-drop" language, and French is not; indeed, in Italian the Agr of a tensed sentence can properly identify a pro in the subject position, which is not the case in French. If so, it is easy to see that impersonal se constructions in French can be excluded, contrary to impersonal si constructions in Italian, on the grounds of the "pro drop" or "null subject" parameter; so that se in French can have exactly the same properties as si in Italian,

and their otherwise similar behavior can be straightforwardly accounted for. Indeed, we saw already that in the Italian counterparts to examples like (23) the subject position is filled with an expletive pro, cosuperscripted with impersonal si and properly identified by the Agr of the sentence. In French examples like (23), however, no pro can fill the subject position; for, under the "pro drop" or "null subject" parameter, the Agr of the sentence cannot properly identify it. It is true that in French the consequences of the "pro drop" or "null subject" parameter can sometimes be escaped, in the case of expletive subjects, by using, in the place of the expletive pro of languages like Italian, a lexical expletive; but this is not generally the case. Indeed, in French the lexical expletive il seems to be able to coexist only with a quantified subject; if so, however, examples like (24), where il is cosuperscripted with se, are obviously excluded:

(24) *Il se lave facilement les enfants
One washes easily the children

Furthermore, we have seen already that, quite independently of how Italian si and French se relate to each other, the proper identification conditions on pro's must be postulated to be conditions in PF and not in s-structure. If so, the prediction correctly is that, though impersonal se structures like (23) are illformed ,

the middle se structures which contain them are wellformed, as in (25):

(25) Les enfants se lavent facilement
The children wash(mid) easily

Indeed if the proper identification conditions on pro's are in PF, examples like (25) are wellformed in s-structure exactly as their Italian counterparts are; and in the same way they are obviously wellformed in PF, given that only the passivizer se tree is mapped there. Thus, to begin with, we can assume that Italian si and French se have exactly the same properties, and explain on these grounds their largely similar behavior, while at the same time accounting for the impossibility of impersonal se constructions on the grounds of the independently needed "pro drop" or "null subject" parameter.

There is however a second way to extend the theory of Italian si to French se. Suppose we assume that French se has the same properties as Italian si, except that, while for Italian si the passivizer property is optional, for French se the passivizer property is as obligatory as the nominal properties. It is easy to see that, under such assumptions, se can be associated with middle constructions but not with impersonal constructions again. Indeed we saw already that, in Italian, impersonal si constructions arise when the obligatory nominal properties of si are mapped to

s-structure but not its optional passivizer property. If in French the passivizer property of se is an obligatory property, there is no way of mapping only its nominal properties to s-structure without violating the Projection Principle; hence again impersonal se constructions are excluded. Thus, as a second option we can assume that Italian si and French se differ minimally in that the passivizer property which both include is optional in Italian but obligatory in French; from which, as we just saw, the impossibility of impersonal se constructions straightforwardly follows. It is not difficult to see, however, that the two different extensions of the theory of Italian si to French se suggested here while equivalent and both correct with respect to impersonal and middle constructions, actually differ with respect to reflexive and middle-reflexive constructions. If, as we suggested first, French se has exactly the same properties as Italian si, and the impossibility of impersonal se constructions is to be explained solely on the grounds of the proper identification conditions on pro's, reflexive and middle-reflexive se constructions are obviously predicted to be both found in French. If on the other hand, as we suggested next, French se minimally differs from Italian si in that si has an optional passivizer property, while se has an obligatory passivizer property, the prediction obviously is that French has middle-reflexive but not reflexive se constructions.

For, if the impossibility of French impersonal si constructions is predicted solely on the grounds of the proper identification conditions on pro's, then these conditions are simply irrelevant in the case of non impersonal constructions. On the other hand, if the impossibility of French se constructions depends upon the fact that in French all of the properties of se are obligatory, including, contrary to si in Italian, its passivizer property, then reflexive se constructions are impossible for the same reason impersonal se constructions are, because only the nominal properties of se are mapped to s-structure and not its passivizer property, in violation of the Projection Principle. Unfortunately, though in principle there is a straightforward way of telling apart the two hypothesis of solution advanced here, in practice we know of no context in French which allows for reflexive but not middle-reflexive se constructions. If in such a context a reflexive se construction were actually wellformed, this would support our first hypothesis; if it were not, our second hypothesis would be supported. But in absence of such a context, which one of the two hypotheses is the correct one remains untestable.

Consider then Icelandic. Icelandic has an element -st which, like French se and unlike Italian si, gives rise to middle but not to impersonal constructions, what is more, in Icelandic, contrary to French there actually is a way of telling that -st gives rise to middle-

reflexive but not reflexive constructions. So, for example, there actually is a way of telling that in Icelandic the -st construction in (26) is a middle-reflexive and not a reflexive construction:

(26) Keisarinn klæddist nyjum fötunn
The emperor dressed(mid-refl) in new clothes

Two sets of facts of Icelandic enter into showing that constructions of the type of (26) are middle-reflexive and not reflexive -st constructions. First, Icelandic much like English, Italian, etc. has Exceptional Case Marking and small clause constructions. Second, Icelandic crucially is an overt Case marking language, with abstract Case relations surfacing in overt Case morphology. The key observation then is that Icelandic has wellformed sentences of the type of (27), but not wellformed sentences of the type of (28):

(27) Hann telur sig (vera) sterkan
He says himself to-be strong-acc.

(28) *Hann telst (vera) sterkan
He says(mid-refl) to-be strong-acc.

Obviously, Icelandic (27) is wellformed as its English counterpart is, with the addition that in Icelandic the embedded predicate adjective overtly agrees in accusative Case with its subject. If Icelandic had reflexive -st constructions the prediction would obviously be that sentences like (28) are wellformed, with the embedded predicate adjective

agreeing in accusative Case with an embedded subject pro, which in turn still receives accusative Case and transmits it by cosuperscripting to -st. On the other hand, if Icelandic does not actually have reflexive -st constructions but only middle-reflexive -st constructions, the ungrammaticality of examples like (28) is correctly predicted, and so is the grammaticality of examples word by word identical to them, except that the embedded predicate adjective is overtly Case marked nominative and not accusative, as in (29):

(29) Hann telst (vera) sterkur
He says(mid-refl) to-be strong-nom

For, assuming that underlying (29) is a middle-reflexive -st structure and that its passivizer -st tree surfaces in (29), the embedded predicate adjective, in agreeing with its subject, agrees with the trace of the matrix subject; hence, under obvious assumptions about Case agreement, with the matrix subject itself. But since the matrix subject is obviously marked nominative, the embedded adjective also is. Thus, empirical evidence leads us to conclude that Icelandic has middle and middle-reflexive -st constructions but not impersonal and reflexive -st constructions. If so, the theory of Italian si obviously extends to Icelandic -st in the second way we have seen it to eventually extend to French se, by simply assuming that

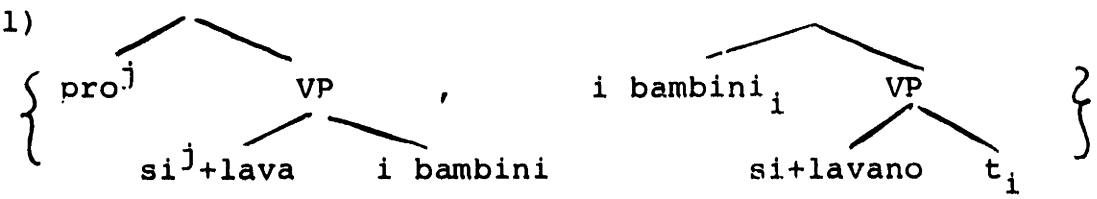
Icelandic -st has the same properties as Italian si and indeed French se; but for Icelandic -st, unlike for Italian si, though possibly like as for French se, all properties are obligatory, passivizer property included. For , we saw that in Italian impersonal and reflexive si constructions arise when only the nominal properties of si are mapped to s-structure and not its optional passivizer property; if in Icelandic the passivizer property of -st is obligatory, there obviously is no way of mapping to s-structure only its nominal properties without violating the Projection Principle.

3.3 The PF and LF of Italian si constructions

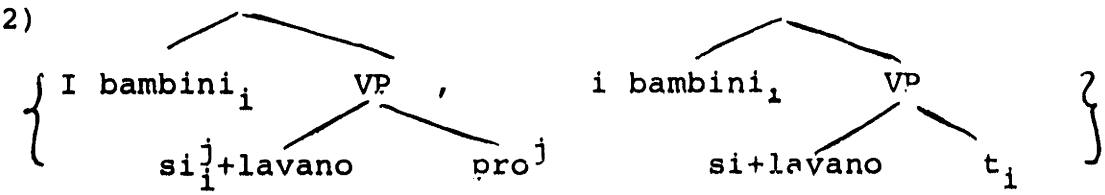
In the preceding sections we introduced two major types of restructuring phrase markers, middle si phrase markers and middle-reflexive si phrase markers. In this final section, we will concern ourselves with the mapping of middle si and middle-reflexive si phrase markers to PF and LF.

Concretely, we can take into consideration, as an example of a middle si restructuring phrase marker, the phrase marker associated with the normal form in (1) and, as an example of a middle-reflexive si restructuring phrase marker, the phrase marker associated with the normal form in (2):

(1)



(2)



Our first problem then is how a restructuring phrase marker, or indeed a normal form, of the type of (1) and (2) maps to PF.

To begin with, there is no way both of the two different lexical strings in (1) can be mapped to PF. For, trivially, if one of the lexical

strings in (1) is uttered over a segment of time, the other cannot simultaneously be uttered. Hence, in this respect, our problem is which one of the two different lexical strings in (1) is mapped to PF, and obviously according to what principles. On the other hand, we assume that PF markers are not only phonological strings, but have syntactic structure to them. So, for example, the requirement that Case assigning and Case assigned elements be adjacent, or the requirement that pro's be properly identified are PF level principles, as in sections 2.2 and 3.2 respectively; and so are syntactic-like conditions on phonological processes, such as on French liaison, etc...If however PF markers have syntactic structure, this must be such that only one terminal string is included, but if so, PF markers must ultimately be representable as tree structures. Hence, in this respect, our problem is not only which one of the two different lexical strings in (1) is mapped to PF, but also which one of the two different tree structures in (1) as in (2) is , and, obviously, according to what principles.

In general, given again the normal forms (1) and (2), it is not evident at all that one of the two trees must be mapped to PF rather than the other.

Consider for example (1). If the passivizer si tree is mapped to PF, a wellformed middle si sentence surfaces; if the impersonal si tree is mapped to PF, a wellformed impersonal si sentence surfaces. Consider on the other hand (2). In general, there is not even a way to tell apart the sentence in which the passivizer si tree surfaces, a middle-reflexive si sentence, and the sentence in which the reflexive si tree surfaces, a reflexive si sentence. Nevertheless, in sections 3.1 and 3.2 we led our discussion under the tacit assumption that, whatever the principles which account for this are, in middle si normal forms it is the passivizer si tree which gets mapped to PF; and, analogously, it is the passivizer si tree which gets mapped to PF in middle-reflexive si phrase markers. This line of thinking is only natural if we take the reverse point of view of the derivation of s-structure from PF. From this point of view, given an impersonal si sentence and a middle si sentence, it is natural to assume that, while the middle si sentence obviously maps to a middle si phrase marker, the reflexive si sentence simply maps to a reflexive si phrase marker, and not again to a middle si phrase marker. Analogously, given a reflexive and a middle reflexive si sentence, it is natural that the reflexive si sentence maps to a simple reflexive si phrase marker and not to a middle-reflexive si phrase marker. Suppose then

that we maintain that, as implicit in section 3.1. and 3.2., of the two tree structures in a normal form like (1), it is the tree structure on the right, the passivizer si structure, which maps to PF; and, similarly, of the two structures in a normal form like (2), it is again the tree on the right and again the passivizer si tree which maps to PF. The problem is left to determine the principles according to which this is so.

Consider first (1) again. What principles determine the passivizer si tree to be mapped to PF, and not the impersonal si tree? There are at least three possible answers to this question. First, we notice that in (1) the condition 2.1.(7) on normal forms is satisfied by the existence of a derivation by movement from the impersonal si tree to the passivizer si tree. In such a derivation, the impersonal si tree is the basic tree, the passivizer si tree the derived tree. It is not difficult to see that from this observation, we can extract a principle with exactly the desired consequences for the mapping of (1) to PF. Suppose in general that $\mathfrak{T}$ is a restructuring phrase marker, $\mathfrak{T}'$ is its normal form and $\mathfrak{T}_1,..,\mathfrak{T}_n$ are the normal phrase markers in $\mathfrak{T}'$ ordered in such a way that $\mathfrak{T}_i$ is derived from $\mathfrak{T}_{i-1}$. Suppose we stipulate that, given $\mathfrak{T}$ and $\mathfrak{T}'$ and $\mathfrak{T}_1,..,\mathfrak{T}_m$ as above, $\mathfrak{T}_n$ and only $\mathfrak{T}_n$ is mapped to PF. According to such a principle, of the two trees in (1) the passivizer si tree is mapped to PF, precisely because it is derived

from the impersonal si tree, and not vice versa. Thus, exactly the desired result is obtained. Next, we notice that in (1) not only the passivizer si tree has a derivation from the impersonal si tree . but the passivizer si tree also has a longer derivation from D-structure than the impersonal si tree. Suppose indeed we define the length of a derivation from a phrase marker $\mathcal{P}_i$ to a phrase marker $\mathcal{P}_j$ to be the number of the movement and/or deletion mappings yielding $\mathcal{P}_j$ from $\mathcal{P}_i$. In (1), assuming s-structure clitics are generated as such in D-structure, the D-structure of the impersonal si tree is exactly identical to the impersonal si tree itself. Hence, the length of the derivation from D-structure to s-structure in the Case of the impersonal si tree in (1) is null. On the other hand, the D-structure of the passivizer si tree in (1) differs from its s-structure in that i bambini, which is in subject position in s-structure, is in object position in D-structure Indeed the passivizer si tree in (1) has a derivation from D-structure by movement of i bambini from object into subject position; hence the passivizer si tree has a derivation from D-structure of length one. Thus, in (1), the passivizer si tree has a lengthier derivation from D-structure than the impersonal si tree. That from this observation we can derive a principle which, given (1), has the correct consequence of mapping to PF the passivizer si tree and not the impersonal

si tree is not difficult to show. As above, suppose in general that $\mathcal{S}$ is a restructuring phrase marker, $\mathcal{S}'$ is its normal form and $\mathcal{S}_1,..,\mathcal{S}_n$ are the normal phrase markers in $\mathcal{S}'$, where however $\mathcal{S}_1,..,\mathcal{S}_n$ are ordered in such a way that if $\mathcal{S}_i$ has a derivation from D-structure of length k and $\mathcal{S}_{i-1}$ has a derivation from D-structure of length j, k is greater than j. Suppose then we stipulate that, given $\mathcal{S}$, $\mathcal{S}'$, and $\mathcal{S}_1,\ldots, \mathcal{S}_n$, $\mathcal{S}_n$ and only $\mathcal{S}_n$ is mapped to PF. According to such a principle, of the two normal phrase markers in (1) the passivizer si phrase marker is mapped to PF, since it has a lengthier derivation from D-structure than the impersonal si phrase marker. Thus, again, the desired result is obtained. Finally, we notice that in (1), apart from the fact that the passivizer si tree can be derived from the impersonal si tree, but not viceversa, and that the passivizer si tree has a longer derivation from D-structure than the impersonal si tree, it is also the case that the passivizer si tree includes an element morphologically more complex than the impersonal si tree. Indeed in the passivizer si tree the verb lavano is associated with the passive morphology element si, while in the impersonal si tree the verb lavano is again associated with si but as a nominal element. Once more it is not difficult to extract from this observation a principle which correctly predicts that the passivizer si tree and not the impersonal si tree in (1) is

mapped to PF. Suppose again in general that Σ is a re-structuring phrase marker, Σ' is its normal form, and $\Sigma_1,\ldots,\Sigma_n$ are the normal phrase markers in Σ', where now $\Sigma_1,\ldots,\Sigma_n$ are ordered in such a way that Σ_i contains morphologically more complex elements than Σ_{i-1}. Suppose further we stipulate that given Σ, Σ', and $\Sigma_1,\ldots,\Sigma_n$, Σ_n and only Σ_n is mapped to PF. Once more, according to such a principle, of the two normal phrase markers in (1) the passivizer si phrase marker is mapped to PF, because it contains a morphologically more complex element than the impersonal si tree. Thus once more, the correct result is obtained.

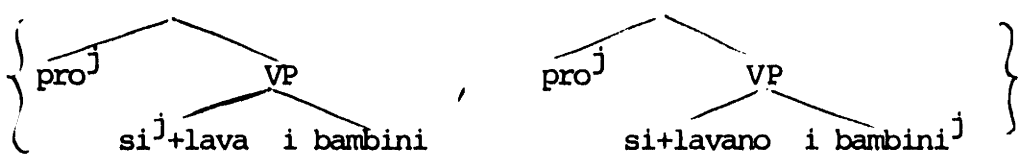
Consider then the normal form in (2). Assuming that the passivizer si tree in it is mapped to PF, our question again is: what principles cause it to be mapped and not the reflexive si tree To begin with, we notice that, of the two normal phrase markers in (2), neither one is derived from the other by either movement or deletion, and in fact the condition 2.1.(7) on normal forms is satisfied by the two normal phrase markers being phrase-structure identical. Consider then the first principle suggested above, that of two normal phrase markers in a normal form derived one from the other, the derived one maps to PF. Obviously, this principle is unable to predict that in (2) the passivizer si tree is mapped to PF. On the other hand, we notice that, again assuming that s-structure clitics are generated as such at D-structure,

the reflexive si tree in (2) is identical to its D-structure, hence trivially has a derivation from D-structure of length zero. On the contrary, the passivizer si tree in (2) is associated with a D-structure with i bambini in object, rather than in subject, position, and is indeed derived from D-structure by movement of i bambini from the object into the subject position; hence obviously, it has a derivation from D-structure of length 1. If so, consider the second principle suggested above, that of two normal phrase markers in a normal form, if one has a lengthier derivation from D-structure than the other, the one with the lengthier derivation is mapped to PF. This principle makes exactly the right prediction: that of the two normal phrase markers in (2), the passivizer si one is mapped to PF, not the reflexive si one. Finally, consider the third principle suggested above, that of two normal phrase markers in a normal form, a normal phrase marker which includes morphologically more complex elements than the other is mapped to PF. This principle again makes the right prediction, that of the two normal phrase markers in (2), the passivizer si phrase marker is mapped to PF, and not the reflexive si phrase marker. Indeed

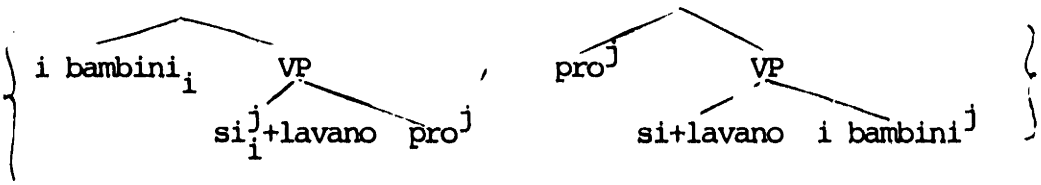
in (2), as in (1), the verb lavano is associated with the passive morphology element si in the passivizer si tree; while in the reflexive si tree the verb lavano is associated again with si, but there si is a nominal element.

In general, in the case of more complicated examples of middle and middle-reflexive si constructions the same conclusions hold as in the case of simple examples like (1) and (2). The one exception are examples in which middle and middle-reflexive si constructions interact with "subject inversion" into object position, as in (3) and (4) respectively:

(3)



(4)



Consider (4). In (4) it is easy to see that condition 2.1.(7) is satisfied in that the passivizer si tree can be derived by movement from the reflexive si tree; and that both the passivizer si tree and the reflexive si tree have a derivation from D-structure of length zero. Hence, unlike in (2), the passivizer si tree cannot be predicted to map to PF on the grounds that it has a lengthier derivation from D-structure than the reflexive si tree; and, unlike in (2), the passivizer si tree can be predicted to map to PF on the grounds that it is derived from the reflexive si tree. On the other hand, in (4) as in (2), the verb lavano is associated with si as a passive morphology element in the passivizer si tree, but with si as a

nominal element in the reflexive si tree; hence in (4) as in (2), the passivizer si tree can be predicted to map to PF on the grounds that it contains a morphologically more complex element than the refelxive si tree. Consider then (3). In (3) condition 2.1.(7) is satisfied by the two normal phrase markers being phrase structure identical; and that both the impersonal si phrase marker and the passivizer si phrase marker have a deriviation from D-structure of length zero. Hence, unlike in (1) the passivizer si phrase marker cannot be predicted to map to PF neither on the grounds that it is derived from the impersonal si phrase marker, nor on the grounds that it has a lengthier derivation from D-structure than the impersonal si phrase marker. On the other hand, in (3) as in (1), the verb lavano is associated with si as a passive morphology element in the passivizer si phrase marker, but with si as a nominal element in the impersonal si tree; hence finally, in (3) as in (1), the passivizer si phrase marker can be predicted to map to PF on the grounds that it contains a morphologically more comple element than the impersonal si phrase marker.

In summary, three different principles were suggested above for the mapping of middle and middle-reflexive si phrase markers and normal forms to PF: a first principle stating that, of the two trees in the normal form, one derived from the other maps to PF; a second principle stating that,

of the two trees in the normal form,one with a lengthier derivation from D-structure than the other maps to PF; and finally a third principle stating that,of the two trees in the normal form, one with morphologically more complex elements than the other maps to PF. Assuming that in both middle and middle-reflexive si constructions the passivizer si tree is mapped to PF, the correct predictions are obtained in straightforward examples of middle si constructions like (1) under any of the three principles; in straightforward examples of middle-reflexive si constructions like (2) under the second and the third principle but not the first one; in "inverted" examples of middle-reflexive si constructions like (4) under the first and third principle but not the second one; and in "inverted" examples of middle si constructions like (3) under the third principle but not the first or second one. If so, then the obvious conclusion to be drawn is that only the third principle, the one based on morphological complexity, is compatible with the data.

Consider then our second problem, which is according to what principles restructuring phrase markers of the type of (1) and (2), and eventually (3) and (4), are mapped to LF.

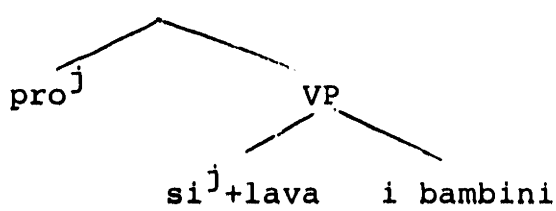
To begin with, much as in the case of the mapping to PF, in the case of the mapping to LF, we need to know what exactly maps to it. Consider for example (1) again. First, it hardly needs to be argued that, in the mapping from s-structure to LF, θ-role assignment configurations are

preserved. For, the information about what assigns a θ-role to what is crucial to LF, if any information contained at s-structure is. Indeed it is θ-role relations which determine what is the logical subject, object,etc... of what predicate or predicate phrase, as opposed to their surface or Case subject, object, etc...; and θ-role assignment relations which ultimately determine what is interpreted as the agent, the patient, etc... of what expressions. But if θ-role assignment configurations are preserved from s-structure to LF, we can conclude that, given (1), it cannot be the case that only the passivizer si tree is mapped from s-structure to LF. For, if only the passivizer si tree in (1) is mapped, the object θ-role assignment relation between the verb lava and i bambini present in the passivizer si tree as in the impersonal si tree is preserved at LF, but not the subject θ-role assignment relation between the predicate lava i bambini and si present in the impersonal si tree and not in the passivizer si tree. On the contrary, we can conclude that, given (1), at least the impersonal si tree is mapped from s-structure to LF. For, if at least the impersonal si tree in (1) is mapped, both the object θ-role assignment relation from lava to i bambini and the subject θ-role assignment relation from lava i bambini to si is preserved at LF. Then, at this point, we take it to be established both that θ-role assignment configurations are preserved form s-structure to LF, and that, as a consequence, in a normal form like (1), at least the impersonal si tree

is mapped to LF.

Next, once established that θ-role assignment relations must be preserved from s-structure to LF and that, consequently, from (1) and similar phrase markers, at least the impersonal si tree is mapped to LF, the question arises whether the impersonal si tree can be mapped from (1) to LF to the exclusion of the passivizer si tree, or whether, on the contrary, other configurations than θ-role assignment configurations must be preserved from s-structure to LF, which impose mapping to LF the passivizer si tree in (1) as well. This particular question is settled by empirical considerations. It is easy to see that, if in (1) or similar phrase markers no configurations other than those present in the impersonal si tree were relevant in LF, and consequently only the impersonal si needed to be mapped onto LF, the interpretation of (1) and similar phrase markers ought to be identical to the interpretation of the impersonal si trees they contain; so, for example, the interpretation of (1) ought to be identical to the interpretation of (5):

(5)



However, the intuition about (1) and (5) is that they are not synonymous. How precisely the interpretation of (1) differs from the interpretation of (5), and what configuration present in the passivizer si tree in (1) but not in the impersonal si tree determines, once mapped to LF, the different interpretation, is a question of some interest in itself. Intuitively, the difference between (1) and (5) is that in (1), if anything, the statement is about si or, semantically, the free variable. In (5), on the contrary, the statement is obvioulsy about i bambini. More properly, in (1), si is not really what the statement is about, but rather the statement is not about any expression in particular. Obviously, then, the configuration present in the passivizer si tree and not in the impersonal si tree in (1) which makes the difference between the interpretation of the middle si structure in (1) and the interpetation of the impersonal si structure in (5) must be a predication configuration involving i bambini. For, it is predication configurations which correspond to intuitive aboutness relations. Indeed, it is easy to see that in (1), there is a predication relation between the subject i bambini and the predicate si lavano in the passivizer si tree, which is obviously not there in (5).

Rather, in (5), no predication relation is found, and in particular no such relation between subject and predicate,

since the subject position is filled by an expletive and all the arguments, including the one, impersonal si, ending up with the subject θ-role, are internal to the VP. In other words, with respect to predication, the difference between the middle si structure in (1) and the impersonal si structure in (5) is comparable to the difference between the passive structures corresponding respectively to the sentences in (6) and (7):

(6) I bambini furono lavati
The children were washed

(7) Furono lavati i bambini
Were washed the children

In (7), as in the impersonal is structure in (5), no predication relation is present, and in particular, no predication relation between subject and predicate, since the subject position is filled by an expletive, a null expletive pro, and the one argument, i bambini, is internal to VP, and actually fills the object position. On the contrary, in (6), i bambini having moved from the object into the subject position, a predication relation holds between the derived subject, i bambini, and the predicate, furono lavati, as in the passivizer si tree in (1) a predication relation holds between i bambini and si lavano. Otherwise, and in particular with respect to θ-role assignment relations, (6) and (7) would be synonymous,

exactly as middle and impersonal si structures would. Thus, the difference in interpretation between the middle si structure (1) and the impersonal si structure in (5) stems from the presence, in the passivizer si structure in (1), of a predication relation between subject and predicate absent from the impersonal si structure in (5). On these grounds, or simply on the ground that there is indeed a difference in interpretation between the middle si structure in (1) and the impersonal si structure in (5) we take it to be established that, given a middle si phrase marker like (1), not only the impersonal si tree, as established before, but also the passivizer si tree is mapped to LF.

Repeating ourselves, our conclusion with respect to the mapping of the middle si phrase marker in (1) to LF is that both trees are mapped, and not just one as in the case of the mapping to PF. But, if both normal phrase markers in (1) are preserved from s-structure to LF, the question according to what principles (1) is mapped to LF in a sense does not arise. Whatever those principles are, there does not seem to be any one of them especially concerned with the mapping of (1) to LF, in the way some principles must be especially concerned with the mapping of (1) to PF.

Indeed, in the case of the mapping to PF, we know that some principle had to simplify the two different lexical strings in (1) to a single string, and the two different tree structures in (1) to a single tree structure. In the case of the mapping to LF, however, we have no reason to believe that a phrase marker not representable by a tree like (1) must be reduced to an LF-marker representable by one; on the contrary, we have reason to believe that given a middle si phrase marker like (1) both its impersonal si tree and its passivizer si tree must be mapped to LF. We notice on the other hand that our line of argument leads to the prediction that, for one type of middle si phrase markers, only the impersonal si tree needs to be mapped to LF, in other words, that there is one type of middle si structures synonimous with impersonal si structures. These obviously are middle si structures of the type of (3), with "subject inversion" into object position.

Intuitively, our predictions are correct: middle si structures like (8) are semantically equivalent to impersonal si structures like (5) rather than to middle si structures like (1). Indeed we saw that in structures like (1), the one contribution that the passivizer si tree makes to the interpretation of the structure is the subject-predicate relation created by

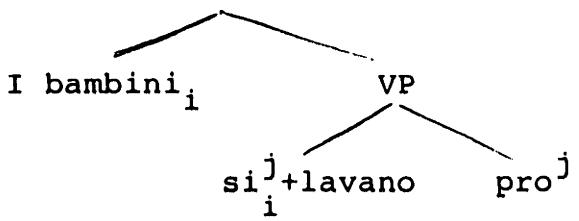
movement of the object into subject position. In structures like (3), however, there being no movement from the object into the subject position, in both the impersonal and passivizer si trees all arguments are internal to the VP, and the subject position is filled by an expletive; hence no predication is to be found, and the passivizer si tree does not contribute anything to the interpretation of the structure that the impersonal si tree does not contribute already.

Finally, the mapping to LF of middle-reflexive si phrase markers like (2), and eventually (4), remains to be considered. In what precedes, we have taken into consideration restructuring phrase markers with normal forms like (1), where both of the normal phrase markers must be mapped to LF, and restructuring phrase markers with normal forms like (3), where both of the normal phrase markers can be mapped to LF, but the result is the same if only one of them is mapped, the impersonal si one. We have furthermore decided that, in general, there is no special principle governing the mapping of restructuring phrase markers to LF, as opposed to the mapping of restructuring markers to PF; indeed an LF marker, exactly as a phrase marker, and contrary to a PF marker, can but need not be representable by a tree. In general, then, we expect the mapping of a middle-reflexive si phrase marker to LF to present no problem. It can be interesting to

wonder, however, whether both of the normal phrase markers in (2) and (4) must be mapped to LF, or only one must. In the case of (2), the answer is rather obvious. From the point of view of θ-role assignment relations, once the reflexive si tree in (2) is mapped, the passivizer si tree need not be. Indeed in both the reflexive and the passivizer si trees in (2), i bambini, or equivalently a bound variable of it, is assigned the object θ-role of the verb lavano; while, in addition, in the reflexive si tree, i bambini is assigned the subject θ-role of the VP si lavano. From the point of view of predication, on the other hand, the reflexive and passivizer si trees in (2) are equivalent, i bambini being the NP predicated of in both cases. Hence, predication does not change the conclusions arrived at with respect to θ-role assignment. In the case of (4), in turn, the answer is also rather obvious. The one difference between (2) and (4) is that in the passivizer si tree in (4), there is no movement from the object into the subject position, hence no predication relation is to be found; correspondingly, while in (2) the reflexive and passivizer si trees are equivalent with respect to predication relations, in (4) the reflexive si tree contains a predication relation that the passivizer si tree does not contain. This, however, does not change the conclusion that only the reflexive si tree needs to be mapped to LF; on the contrary, it strengthens it. Ultimately, our prediction is that intuitively, middle-

reflexive si structures both of the type of (2) and of the type of (4) are synonimous with the reflexive si structures they contain, in the case of (2) and (4) the reflexive si structure in (8); nor surprisingly, our prediction turns out to be correct:

(8)



4. Causative Constructions

4.1 French causative constructions.

Our topic here will be the constructions entered in French by causative verbs faire (to make) and laisser (to let) or similar constructions entered by other types of verbs, notably perception verbs like voir (to see). To begin with, we will take into consideration causative and causative-like constructions involving standard word order and Case marking, in particular constructions in which, we will argue, a causative or causative-like verb subcategorizes for a small clause. Next, we will then take into consideration causative constructions proper, i.e. causative constructions involving non-standard word order and Case marking. These constructions, we will argue, involve a causative verb subcategorizing for a small clause and reanalyzing in addition with the embedded predicate. In particular, we will take into consideration causative constructions proper in which the element the causative verb reanalyzes with is, in the order, a transitive verb, a transitive verb used intransitively, i.e. an object deletion verb, a pure intransitive verb, and an "ergative" verb. In concluding the section, we will finally take into consideration causative constructions in which the causative verb reanalyzes with another causative verb, the second causative verb in turn enters reanalysis, and so on ad libitum.

To begin with, by causative constructions we mean constructions involving a causative predicate and

a propositional complement to it, hence in French constructions involving faire (to make) or laisser (to let) and a propositional complement to faire or laisser.

What makes causative constructions interesting in French is that the word order and/or overt Case marking within the propositional complements of faire or laisser must or can respectively diverge sensibly from the word order and/or overt Case marking within the other propositional structures in the language. However, the special word order and/or overt Case marking found within complements of causative verbs can be found within the complements of another small class of predicates, including voir (to see), entendre (to hear) and in general perception verbs. We refer to the constructions including a perception predicate and a propositional complement to it as causative-like constructions.

First, we take into consideration those among French causative and causative-like constructions whose word order and/or overt Case marking converges with the word order and/or overt Case marking typical of the language. When causative or perception predicates subcategorize for finite complements, the standard word order and/or overt Case marking are observed in all cases. This is exemplified in (1) with faire and in (2) with voir,

where in the (a) examples the embedded verb is transitive, in the (b) examples the embedded verb is the same

as in (a) but this time used intransitively, in the (c) examples the embedded verb is a pure intransitive and in the (d) examples, finally, the embedded verb is an "ergative" verb:

(1)a. Ça a fait que Marie a écrit une lettre
This made that Marie wrote a letter

b. Ça a fait que Marie a écrit
This made that Marie wrote

c. Ça a fait que Marie a ri
This made that Marie laughed

d. Ça a fait que Marie s'en est allée
This made that Marie was gone

(2)a. Je vois que Marie écrit une lettre
I see that Marie is writing a letter

b. Je vois que Marie écrit
I see that Marie is writing

c. Je vois que Marie rit
I see that Marie is laughing

d. Je vois que Marie s'en est allée
I see that Marie is gone

On the other hand, when causative or perception predicates subcategorize for infinitival complements, the standard word order and/or overt Case marking can be observed or not; the case in which it is observed is exemplified in (3) and (4) with <u>laisser</u> and <u>voir</u>, where again in (a) the embedded verb is transitive, in (b) transitive used intransitively, in (c) intransitive, and in (d) "ergative":

(3)a. J'ai laissé Marie écrire une lettre
I let Marie write a letter

b. J'ai laissé Marie écrire
I let Marie write

c. J'ai laissé Marie rire
I let Marie laugh

d. J'ai laissé Marie s'en aller
I let Marie go

(4)a. J'ai vu Marie écrire une lettre
I saw Marie write a letter

b. J'ai vu Marie écrire
I saw Marie write

c. J'ai vu Marie rire
I saw Marie laugh

d. J'ai vu Marie aller là-bas
I saw Marie go there

Our first question is: what kinds of structures are associated with sentences like (3) or (4)? and what properties do the matrix verbs laisser and voir have there? Part of the answer is obvious. In all of (3) and (4), je, an NP, is the subject of the VP's ai laissé Marie écrire une lettre, ai laissé Marie écrire,..., ai vu Marie écrire une lettre,... and assigned the subject θ-role by them, as well as the nominative Case by the Infl surfacing on their head verb (or its auxiliary). Further, the V's ai laissé in (3) and ai vu in (4) subcategorize for and assign the subject θ-role to the propositions Marie écrire une lettre, Marie écrire,...Finally,

the NP Marie is the subject of the VP's écrire une lettre,... and is assigned the subject θ-role by them; and in the (a) examples, the verb écrire subcategorizes for and assigns the object θ-role and the accusative Case to the NP une lettre. Another piece of answer is also fairly obvious: while subcategorizing for and assigning a θ-role to Marie écrire une lettre,... ai laissé in (3) and ai vu in (4) also govern and assign accusative Case to Marie. The only open question is what category the propositions Marie écrire une lettre,... belong to. Essentially, two answers seem to be possible. The first possible answer is that Marie écrire une lettre,... are sentences, but exceptionally not a barrier to government; if so, the structure of sentences like (3) or (4) is essentially like the structure of English sentences like (5), where we write ($\bar{S}$) to indicate a sentential category which exceptionally does not count as such when it comes to government and Case assignment:

(5) I believed [$_{(\bar{S})}$ Mary to be tired of it]

The second possible answer is that in (3) or (4), Marie écrire une lettre,... are small clauses; if so, the structure of (3)-(4) or the like is much like the structure of English (6), where the proposition Mary tired of it is assigned the category, AP, of its predicate, tired of it; or, in other words, Marie is adjoined to tired of it:

(6) I believed [$_{AP}$ Mary [$_{AP}$ tired of it]]

If the first answer is chosen, (3)-(4) or the like have much the same structure as (5) with Marie écrire une lettre,... a sentence ($\bar{S}$) exceptionally permeable to government and Case assignment. If the second answer is chosen, (3)-(4) or the like have a structure analogous to (6), with Marie écrire une lettre,... the same category, VP, as its predicate écrire une lettre,... Under both options, the data in (3) and (4) are correctly accounted for. The small clause option however is more likely to be right. For, leaving aside causative and causative-like constructions like the ones in (3) and (4), small clause constructions are independently attested in French, as in (7):

(7) Je crois $[_{AP}$ Marie $[_{AP}$ fatiguée de ça $]]$
I believe Marie tired of it

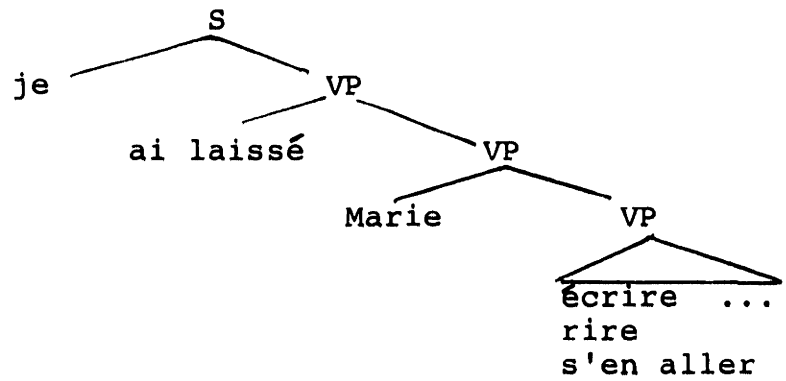
On the contrary, constructions characterized by sentential complements permeable to government and Case assignment are not independently attested in French,
as shown in (8):

(8) *Je crois $[_{(\bar{S})}$ Marie être fatiguée de ça$]$
I believe Marie to be tired of it

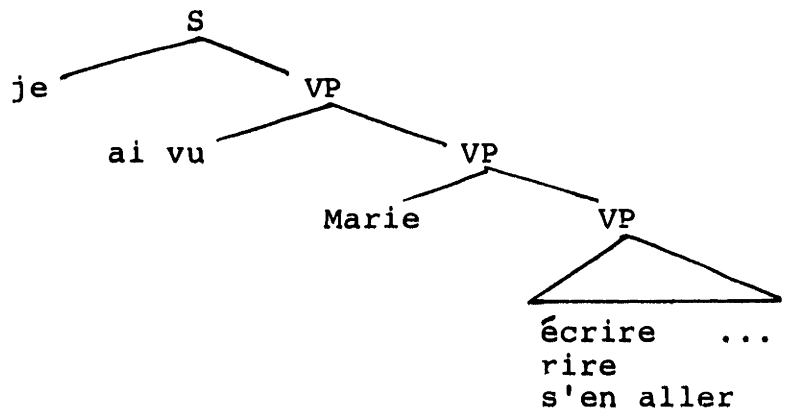
Thus, knowing no argument to the contrary, we maintain that in sentences like (3) and (4), Marie écrire une lettre,... are small clauses. If so, on the model of (6) and the like, we can associate to causative and causative-like constructions of the type of (3) and (4) structures of the type of

(9) and (10), where the propositions Marie écrire une lettre,... are assigned the category, VP, of their predicates, écrire une lettre...; or indeed Marie is adjoined to écrire une lettre...;

(9)



(10)



But why are small clauses AP's, VP's, etc..., not maximal projections? In an example like (7), fatiguée de ça obviously is the first projection of fatiguée; hence fatiguée de ça is in absolute terms an $\bar{A}$. Similarly in (9)-(10), écrire une lettre,... obviously are the first projections of écrire,... hence in absolute terms $\bar{V}$'s. Furthermore, in (7), Marie fatiguée de ça is the same category

as fatiguée de ça, hence in absolute terms an $\bar{A}$ again. Similarly, in (9)-(10), Marie écrire une lettre,... are the same category as écrire une lettre,... hence in absolute terms $\bar{V}$'s. Finally, in (7), crois Marie fatiguée de ça obviously is the first projection of crois, hence in absolute terms a $\bar{V}$. Similarly, in examples like (9)-(10) ai laissé Marie écrire une lettre,... are the first projections of ai laissé,... hence in absolute terms $\bar{V}$'s once again. In relative terms, on the other hand, in (7), fatiguée de ça is a possible maximal projection, i.e. an AP, as notated in (7), since it is immediately dominated by another adjectival projection, but one not higher in absolute terms than it is. Similarly in (9)-(10) écrire une lettre,... are possible maximal projections, i.e. VP's, as notated in (9)-(10), since again they are immediately dominated by another verbal projection but one not higher in absolute terms than they are. Similarly again, Marie écrire une lettre,... are possible maximal projections, or VP's, as notated in (9)-(10), since they are immediately dominated by another verbal projection but one once again not higher in absolute terms than they are. Furthermore, in relative terms, in (7), Marie fatiguée de ça obviously is a possible maximal projection, an AP, as anotated in (7), since it is not immediately dominated by

any other adjectival projection, let alone an adjectival projection higher than it is. Similarly in (7) crois Marie fatiguée de ça and in (9)-(10) ai laissé Marie écrire une lettre,... are possible maximal projections, VP's, as notated in (7) and (9)-(10), since again they are not immediately dominated by any other verbal projection, let alone a verbal projection higher than they are. And so on. Next, in (7), one of the two AP's which are possible maximal projections must obviously be assumed to be an actual maximal projection; and of the two AP's, the lower and fundamental AP can obviously be assumed to be one, rather than the higher and adjoined one. Furthermore, in (7), the one possible maximal projection VP must obviously be assumed to be an actual maximal projection. Similarly, in (9)-(10), one of the two lower VP's which are possible maximal projections must be an actual maximal projection, and the lower one can be assumed to be, rather than the higher one; and finally the highest VP must similarly be assumed to to be an actual maximal projection.

Under our assumptions, it is easy to see that crois in (7), ai laissé in (9) and ai vu in (10) govern Marie, hence can assign Case under the government condition , as they must under the Case filter and condition 2.2 (14). Under the same assumptions, it is also easy to see why Marie in (7) or (9)-(10) cannot be substituted for by an empty category. To begin with, leaving aside the obvious case of variables,

Marie in (7) or (9)-(10) cannot be substituted for by a pronominal empty category, i.e. a pro, for the simple reason that the pro would not be properly identified. On the other hand, Marie in (7) or (9)-(10) cannot be substituted by an anaphoric empty category either, i.e. a trace or a PRO. For, if crois, as in (7), ai laissé, as in (9), and ai vu, as in (10), Case assign the empty category substituted for Marie, as they can under the government condition, by definition the empty category substituted for Marie is not anaphoric; and if crois, as in (7), ai laissé, as in (9), and ai vu, as in (10), do not Case assign the empty category substituted for Marie, condition 2.2 (14) is violated. Now, since we depend so crucially on Case, it is natural to wonder what our predictions are if crois in (7), ai laissé in (9) and ai vu in (10) are substituted for by passive counterparts. To begin with, it is easy to see that the subject of the small clause cannot be lexical. For, a passive verb, by definition, is not a Case assigner; and if the subject of the small clause is lexical and is not assigned Case, the Case filter is violated. Furthermore, if crois in (7), ai laissé in (9), and ai vu in (10) are substituted for by passive counterparts, it is equally easy to see that, by definition, the subject of the small clause, if an empty category, can only be anaphoric, i.e. neither a variable nor a pro, precisely because as before it cannot be assigned

Case. Suppose then that the subject of the small clause is an anaphoric empty category; by binding condition A, the anaphoric empty category must be bound in the matrix sentence, since the matrix sentence is its governing category, and therefore bound by the matrix subject. Suppose further that the anaphoric empty category is bound by the matrix subject; since a passive verb by definition forms a VP which does not assign the subject θ-role, the matrix subject and the anaphoric empty category must share the θ-role of the anaphoric empty category. Thus, if crois in (7), ai laissé in (9) and ai vu in (10) are substituted by passive couterparts, we predict that the subject of the small clause can be an empty category, if the empty category is anaphoric, bound to the matrix subject and entering a chain with it; in other words, we correctly predict that the subject of the small clause must be a trace of the matrix subject, as in (11)-(13):

(11) Marie est crue $[_{AP}$ t $[_{AP}$ fatiguée de ca]]
Marie is believed tired of it

(12)a. Marie a été laissée $[_{VP}$ t $[_{VP}$ écrire une lettre]]
Marie has been let write a letter

b. Marie a été laissée $[_{VP}$ t $[_{VP}$ écrire]]
Marie has been let write

c. Marie a été laissée $[_{VP}$ t $[_{VP}$ rire]]
Marie has been let laugh

d. Marie a été laissée $[_{VP}$ t $[_{VP}$ partir]]
Marie has been let go

(13)a. Marie a été vue $[_{VP}$ t $[_{VP}$ écrire une lettre]]
Marie has been seen write a letter

b. Marie a été vue $[_{VP}$ t $[_{VP}$ écrire]]
Marie has been seen write

c. Marie a été vue $[_{VP}$ t $[_{VP}$ rire]]
Marie has been seen laugh

d. Marie a été vue $[_{VP}$ t $[_{VP}$ s'en aller]]
Marie has been seen go

It is also easy to see that if, instead of small clauses in a complement position of some predicate as in (7), (9)-(10), (11)-(13), etc, small clauses in a modifier position are considered, the correct predictions once more follow under our assumptions; in particular the prediction that the subject of a modifier small clause can never be lexical but must always be an empty category and indeed a PRO, as in (14):

(14) Marie a laissé son travail $[_{AP}$ PRO fatiguée de ça]
Marie left her work tired of it

In (14), the subject of the small clause cannot be assigned Case; hence lexical NPs and non anaphoric empty categories alike are excluded from the position, lexical NPs by the Case filter, and non anaphoric empty categories by definition. If, on the other hand, the subject of the small clause is an anaphoric empty category, it can only be indepedent in θ-role assignment from its eventual binders, hence a PRO.

Finally, as English (6) straightforwardly translated into French (7), we obviously expect French (9)-(14) to translate into English, under identical assumptions for both languages. Indeed, French (14) straightforwardly translates into English (15) and French (9)-(10) into English (16)-(17):

(15) Mary left her work $[_{AP}$ PRO $[_{AP}$ tired of it]]

(16)a. I let $[_{VP}$ Mary $[_{VP}$ write a letter]]

b. I let $[_{VP}$ Mary $[_{VP}$ write]]

c. I let $[_{VP}$ Mary $[_{VP}$ laugh]]

d. I let $[_{VP}$ Mary $[_{VP}$ go t]]

(17)a. I saw $[_{VP}$ Mary $[_{VP}$ write a letter]]

b. I saw $[_{VP}$ Mary $[_{VP}$ write]]

c. I saw $[_{VP}$ Mary $[_{VP}$ laugh]]

d. I saw $[_{VP}$ Mary $[_{VP}$ go t]]

Furthermore, French passive (11) straightforwardly translates into English (18); unexpectedly, however, French (12)-(13) translate into English as ungrammatical sentences, as in (19)-(20):

(18) Mary was believed $[_{AP}$ t $[_{AP}$ tired of it]]

(19)a. *Mary was let $[_{VP}$ t $[_{VP}$ write a letter]]

b. *Mary was let $[_{VP}$ t $[_{VP}$ write]]

c. *Mary was let $[_{VP}$ t $[_{VP}$ laugh]]

d. *Mary was let $[_{VP}$ t $[_{VP}$ go t]]

(20)a. *Mary was seen $[_{VP}$ t $[_{VP}$ write a letter]]

b. *Mary was seen $[_{VP}$ t $[_{VP}$ write]]

c. *Mary was seen $[_{VP}$ t $[_{VP}$ laugh]]

d. *Mary was seen $[_{VP}$ t $[_{VP}$ go t]]

Whether this is the right or the wrong move, here we will simply disregard the problem.

In conclusion, our first question in this section, what kinds of structures are associated with causative and causative-like constructions of the type of (3) and (4) is answered in (9)-(10). The related question, what properties are associated with causative and causative-like verbs like laisser and voir, as used in (3)-(4), etc... is then easily answered. Leaving aside their phonological and semantic properties, syntactically, as far as constructions like (3) and (4) are concerned, laisser, voir, etc... are just verbs, θ-role assigners, and Case assigners.

Next, we can then take into consideration causative and causative-like constructions characterized by non standard word order and/or overt Case marking. In contrast with causative and causative-like constructions in general, including such examples as (3), (4), etc..., we can call these

causative and causative-like constructions proper. On the authority essentially of Rouveret and Vergnaud (1980), we can assume that in causative and causative-like constructions proper, the causative or causative-like verb is a reanalyzer. Given then causative and causative-like constructions proper entered by causative and causative-like verbs, our second and crucial problem in this section obviously is what kinds of structures are associated with such constructions.

To begin with, we can consider the case in which the verb embedded in a causative or causative-like construction proper is a transitive verb; this is exemplified with the causative verb faire in (21) and the causative verb laisser in (22):

(21)a. J'ai fait écrire une lettre à Marie
I made write a letter Marie

b. J'ai fait écrire une lettre par Marie
I made write a letter by Marie

c. J'ai fait écrire une lettre
I made write a letter

(22)a. J'ai laissé écrire une lettre à Marie
I let write a letter Marie

b. J'ai laissé écrire une lettre par Marie
I let write a letter by Marie

c. J'ai laissé écrire une lettre
I let write a letter

Part of the structure of (21) and (22) is obvious: in (21)-(22), much as in (3)-(4), or indeed (9)-(10), the NP je is the subject of the VPs ai fait écrire une lettre à Marie,... ai laissé écrire une lettre à Marie,... and assigned the subject θ-role by them as well as the nominative Case by the Infl surfacing on ai fait and ai laissé. Furthermore, the Vs ai fait and ai laissé subcatgorize for, and assign the object θ-role to, écrire une lettre à Marie, écrire une lettre par Marie, écrire une lettre; and, by analogy with (9)-(10), we can assume that the expression that ai fait and ai laissé subcategorize in (21)-(22), écrire une lettre à Marie,...,are VP small clauses. What is more, we can assume that in (21)a and (22)a, the VP écrire une lettre assigns the subject θ-role to Marie, while the preposition à assigns its Case to it, à being relevant with respect to Case assignment but not θ-role assignment. Similarly in (21)b and (22)b, the VP écrire une lettre assigns the subject θ-role to Marie through the preposition par and par assigns Marie its Case. Furthermore, the verb écrire subcategorizes for the NP une lettre and assigns the object θ-role to it. Finally, we can recall that it is our assumption that in causative constructions proper, causative verbs like faire and laisser are reanalyzers. Suppose that in (21) and (22) ai fait and ai laissé respectively enter Case and indeed reanalysis, with écrire; if so, the non-standard word ordering and Case marking in (21) and (22) immediately follows. To begin with, if

reanalysis holds of ai fait or ai laissé and écrire, under the adjacency condition on

Case assignment and reanalysis, ai fait and ai laissé respectively must be adjacent to écrire. Next, écrire still has a Case to assign and, as in (3)a or (4)a, it can assign it to une lettre, the two ending up adjacent to each other. On the other hand, ai fait and ai laissé do no longer have a Case to assign; hence in particular in (21) and (22) (a) and (b) ai fait and ai laissé do no longer have a Case to assign to Marie; so that Marie must be assigned Case by a preposition, à in (21)a and (22)a, and par in (21)b and (22)b.

Various problems are left, however. First, we know that in Case assignment and reanalysis, the Case element must govern the other element involved; hence, in particular, if reanalysis holds of ai fait or ai laissé and écrire, ai fait or ai laissé and écrire must govern each other. But can they? In (7), we assumed that one of the the two possible maximal projections AP, and specifically the lower one, must be an actual maximal projection, and so must be the one VP; similarly, in (9)-(10), we assumed that one of the two lower VPs must be an actual maximal projection, and so must be the higher VP. The obvious principle behind the assumption is that for each head, i.e. each zero projection, V, A, etc..., there is one actual maximal projection; so in (7), the A fatiguée must have one actual maximal

projection, the V crois must have one, and so on; in (9)-(10) similarly, the V écrire must have an actual maximal projection, the V ai laissé or ai vu must have one, and so on. Suppose now we assume that if two heads have some relation to each other, there does not need to be one actual maximal projection for each of them; rather, there can be one actual maximal projection for both of them. Thus, in particular, in (21) and (22), if ai fait and ai laissé reanalyze with écrire, ai fait and ai laissé respectively and écrire can have the same actual maximal projection; naturally, we assume that this is the one possible maximal projection of the higher of the verbs, ai fait or ai laissé, hence the matrix VP. But, if so, in (21) and (22), ai fait and ai laissé respectively govern écrire and, vice versa, écrire governs ai fait and ai laissé; hence, in turn, reanalysis between ai fait or ai laissé and écrire satisfies the government condition on Case assignment and reanalysis.

Next, we know that in general an expression can both be assigned Case by the preposition par and be assigned the subject θ-role by a VP through par, that this is true in English of the preposition by, and so on. Thus, in particular, we expect that Marie in (21)b and (22)b can be assigned Case by par and a θ-role by the VP écrire une lettre through par But how can Marie in (21)a and (22)a be assigned the subject θ-role by the VP écrire une lettre, while being assigned Case by the preposition à? To begin

with, we can assume that the preposition à can and must Case assign any nominal phrase in a complement position of a verb, i.e. a position governed and not subcategorized by the verb which would not otherwise be Case assigned. Suppose further we assume that à can assign a θ-role or not. The case in which à assigns a θ-role we can identify with the case of a benefactive à phrase. In the case in which à does not assign a θ-role, on the other hand, the object of à must be assigned a θ-role independently. Indeed it is not hard to show that in general a Case assigned object of a preposition must be an argument and as such needs to be assigned a θ-role, for, the two essential types of non arguments, traces and expletives, are excluded, expletives because they cannot bind another element out of the prepositional phrase, and traces by hypothesis because they are Case assigned. But, this much established, the one complement position in which a nominal phrase can receive Case by à and a θ-role independently, obviously is the position of Marie in (21)a and (22)a.

Finally, one last problem is left. Given (9)-(10), or indeed (7), we showed that Marie cannot be substituted by an empty category , but what about (21) and (22)? To begin with, Marie in (21) and (22) (a) and (b) cannot be replaced by an empty category, for the obvious reason that the object position of à or par is Case assigned, hence excluding an anaphoric empty category, and not properly identified, hence excluding a pronominal empty category. On the other hand,

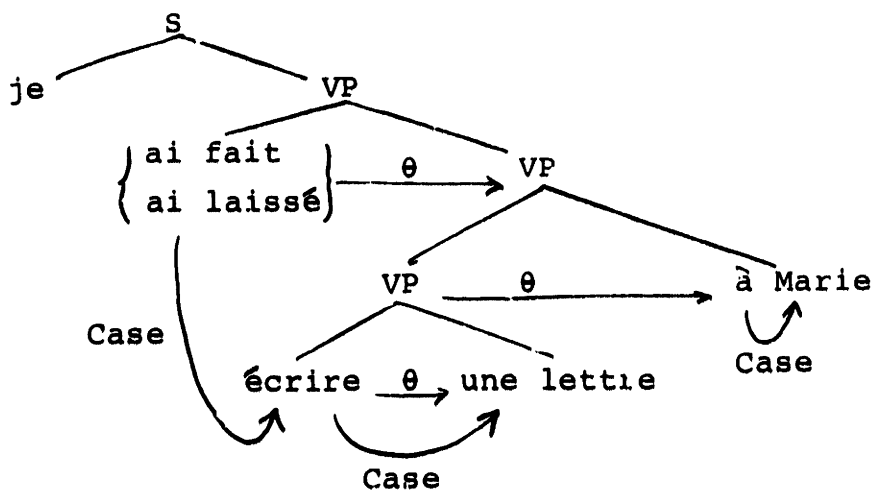
à Marie in (21)a and (22)a and par Marie in (21)b and (22)b cannot be replaced by an empty category for the simple reason that, as we established before, an element in complement position not otherwise assigned Case is obligatorily assigned Case by à; hence, we are back to the case in which an empty category substitutes for Marie in the object position of à, a case which we excluded already. Thus, in (21) and (22) (a) and (b), Marie or à Marie or par Marie cannot be substituted by an empty category. But, if so, in (21)c and (22)c, in turn, the embedded small clause must consist simply of the VP écrire une lettre without any subject position to it.

Of course, from the point of view of Case assignment, we already know that ai fait and ai laissé enter reanalysis with écrire, so that no Case is left for assignment; furthermore, from the point of view of θ-role assignment, we already know that subject θ-role assignment is never obligatory. On the other hand, the (Extended) Projection Principle must include some principle forcing the obligatoriness of subject positions. In this respect, however, we can assume that it is not predicates which need to have subjects, but Infls or indeed the sentences projected from Infl's. If so, from the point of view of the Extended Projection Principle, while finite and infinitival sentences must have a subject position, small clauses again do not

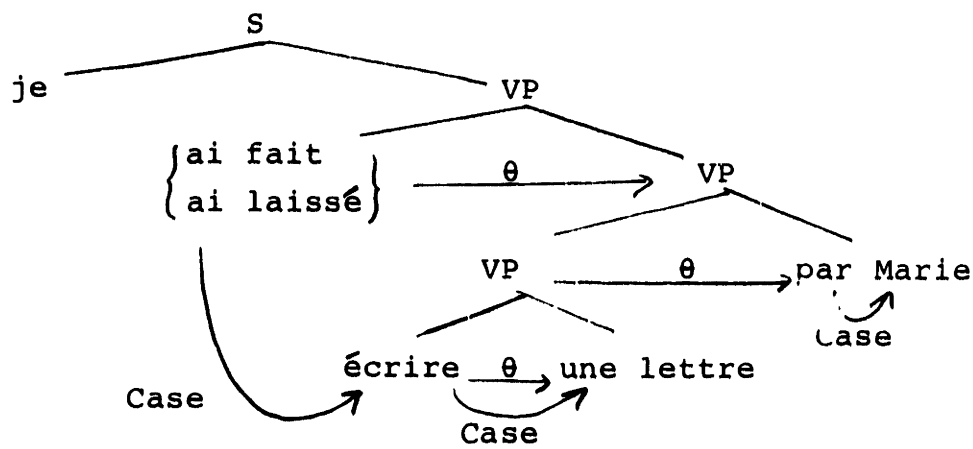
have to; hence in particular in (21)c and (22)c, écrire une lettre can be subjectless. once more.

Summing up, in (21)-(22), je is the subject of the VPs ai fait écrire une lettre à Marie, etc,...,is assigned the subject θ-role by them and the nominative Case by the Infl on ai fait and ai laissé. Ai fait and ai laissé subcategorize the VPs écrire une lettre à Marie, etc,..., assign them object θ-role, and enter reanalysis with écrire. Ecrire subcategorizes for une lettre and assigns object θ-role and Case to it. And finally, in (21)a-(21)b, and (22)a-(22)b, Marie is assigned Case by à or par and the subject θ-role by the VP écrire une lettre (through à or par), while in (21)c and (22)c, the VP écrire une lettre is subjectless. Thus, in conclusion, (21) and (22) and similar examples are associated with structures of the type of (23)-(25), with θ and Case relations as indicated:

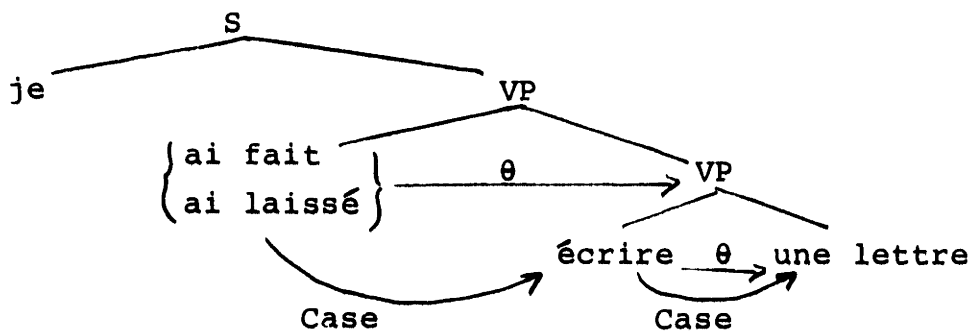
(23)



(24)



(25)



At this point, we can notice that, while faire and laisser pattern exactly alike in (21)-(22), and indeed (23)-(25), laisser can appear in sentences like (3)a or structures like (9) subcategorizing small clauses with standard word order and overt Case marking; but faire cannot appear in analogous structures, as shown in (26):

(26) *J'ai fait [$_{VP}$ Marie [$_{VP}$ écrire une lettre]]
I made Marie write a letter

This follows straightforwardly from the assumption that while laisser is an optional reanalyzer, faire is a reanalyzer obligatorily. Indeed we have already shown that sentences of the type of (21) and (22) are correctly derived if faire and

laisser respectively are reanalyzers, and that sentences of the type of (3) are correctly derived if laisser is simply a Case assigner and not a reanalyzer. That sentences of the type of (26) are illformed, if faire is only a reanalyzer, can also easily be shown. For, if ai fait in (26) assigns Case to Marie, as ai laissé in (3)a, ai fait is not a reanalyzer; but if ai fait in (26) reanalyzes with écrire, Marie does not receive Case from ai fait, as from ai laissé in (3)a, and the Case filter is violated. Finally, our paradigm is logically completed by sentences like (27), with the structure indicated:

(27)a. *J'ai fait $[_{VP}$ $[_{VP}$ écrire une lettre] Marie]

b. *J'ai laissé $[_{VP}$ $[_{VP}$ écrire une lettre] Marie]

Obviously, if faire and laisser are reanalyzers, (27) and the like are excluded for the simple reason that Marie is not assigned Case, in violation of the Case filter. If, on the other hand laisser is not a reanalyzer and assigns Case to Marie under government, the two must be adjacent, which they are not in (27); and the result again is ungrammaticality.

Next, we can consider the case in which the verb embedded in a causative construction proper is a transitive verb used intransitively; this case is exemplified, with faire and laisser respectively, in (28) and (29):

(28)a. J'ai fait écrire Marie

b. J'ai fait écrire à Marie

c. J'ai fait écrire par Marie

d. J'ai fait écrire

(29)a. J'ai laissé écrire Marie

b. J'ai laissé écrire à Marie

c. ?J'ai laissé écrire par Marie

d. J'ai laissé écrire

Given what we already know of (21)-(22), most of the structure of (28) and (29) is obvious. Needless to say, the NP je is the subject of the VPs ai fait écrire Marie,... and assigned the subject θ-role by them,as well as the nominative Case by the Infl on ai fait or ai laissé. More interestingly, ai fait or ai laissé subcategorize and assign the subject θ-role to the VPs écrire Marie,... . In turn, in (28)a and (29)a, Marie is the subject of the VP écrire and assigned the subject θ-role by it; similarly, Marie is assigned the subject θ-role by the VP écrire in (28)b and (29)b, à being relevant for the purposes of Case assignment only; and in(28)c and (29)c, Marie is assigned the subject θ-role by the VP écrire through par. Crucially, ai fait or ai laissé reanalyze with the verb écrire; indeed being related by reanalysis, ai fait or ai laissé and écrire can have one same maximal projection, hence govern each other, and,being able to govern each other, ai fait or ai laissé and écrire can satisfy the government

condition on reanalysis and Case assignment. Finally, if ai fait or ai laissé reanalyze with écrire, they do no longer have a Case to assign; but écrire does. Hence, in (28)a and (29)a, Marie can and must be assigned Case by écrire, Marie being governed by and adjacent to écrire. On the other hand, in (28)b and (29)b, Marie must be assigned Case by à; and, in (28)c and (29)c, Marie must be assigned Case by par. But if écrire is a Case assigner, can Marie be assigned Case by à or par without violating condition 2.2.(14)? Similarly, in (28)d and (29)d, as in (21)c and (22)c, there can be no empty category subject of the VP écrire; first, no anaphoric empty category (trace or PRO) because it would be Case marked, whether by écrire, like Marie in (28)a and (29)a, or by à, like Marie in (28)b and (29)b; second, no pronominal empty category (pro), because it would not be properly identified. But, if so, and if écrire again is a Case assigner, can condition 2.2.(14) be satisfied?

The answer to our problem lies in the nature of the verb embedded under ai fait and ai laissé, namely, écrire. As we stated above, écrire in (28)-(29) is a transitive verb, as it is in (21)-(22), but a transitive verb used intransitively, in other words an "object deletion" verb. More precisely, we can assume that verbs which can be used both transitively and intransitively, i.e. "object deletion" verbs, are θ-role assigners and Case assigners optionally, and, in particular, écrire is. If so, in (28) and (29), condition 2.2.(14)

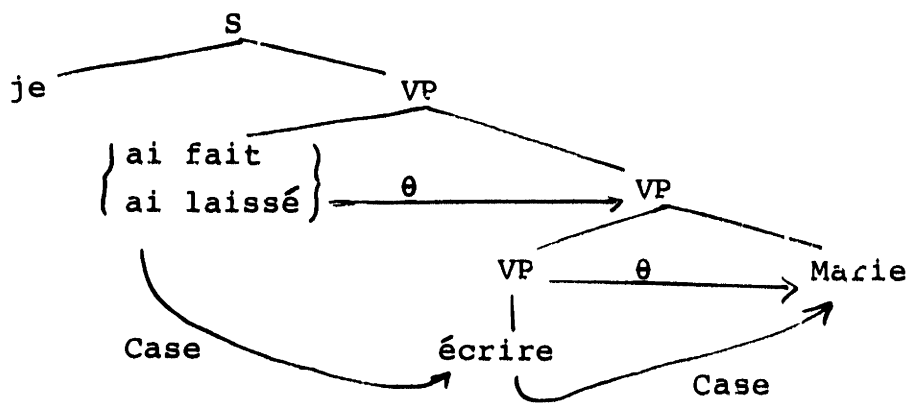
is satisfied, whether écrire assigns Case, as in (28)a and (29)a to Marie, or does not assign it, as in (28) and (29)b-c, where Marie is assigned Case by à or par , or where the VP is subjectless

We can notice, on the other hand, that in (28) and (29), écrire does not assign any θ-role; hence an optional θ-role and Case assigner like écrire can both assign no θ-role and no Case, or assign no θ-role and a Case, as in (28)a and (29)a. Further, we can notice that in (21)-(22), écrire assigns both Case and θ-role to une lettre; hence in general, an optional θ-role and Case assigner can assign both θ-role and Case. Naturally, we can then wonder whether an optional θ-role and Case assigner, and écrire in particular, can assign Case and not assign a θ-role. The answer is that, obviously, it cannot. For example, wash is a verb which can be used both transitively, as in "I am washing myself", or "I am washing the laundry", or intransitively, as in "I am washing "; if wash assigned a θ-role but no Case, its object position would be predicted to be filled by an anaphoric empty category, independent from the subject in θ-role assignment, hence a PRO, and under condition A, coreferential with the subject; but this, of course is impossible. Hence, we must assume that if an optional θ-role and Case assigner does not assign Case, it does not assign a θ-role either, thus excluding the combination of no Case assignment

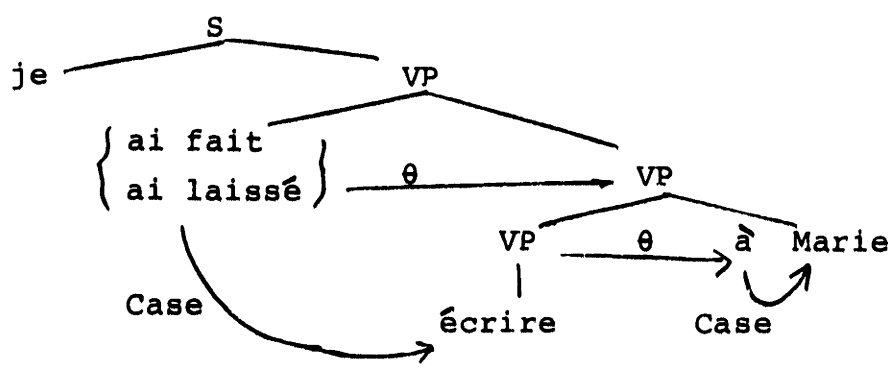
and θ-role assignment.

Summing up, in (28)-(29), je is the subject of ai fait écrire Marie, etc... . Ai fait and ai laissé subcategorize the VPs écrire Marie, etc... and assign them object θ-role, while reanalyzing with écrire. And finally, in (28) and (29) a-c, Marie is assigned the subject θ-role by the VP écrire, in (28) and (29)b-c through à and par respectively. In (28)a and (29)a, Marie is assigned Case by écrire, in (28) and (29) b-c, it is assigned Case by à and par respectively, while in (28)d and (29)d, the VP écrire is subjectless. Thus, examples like (28) and (29) are associated with structures like (30)-(33), with θ- and Case relations as indicated:

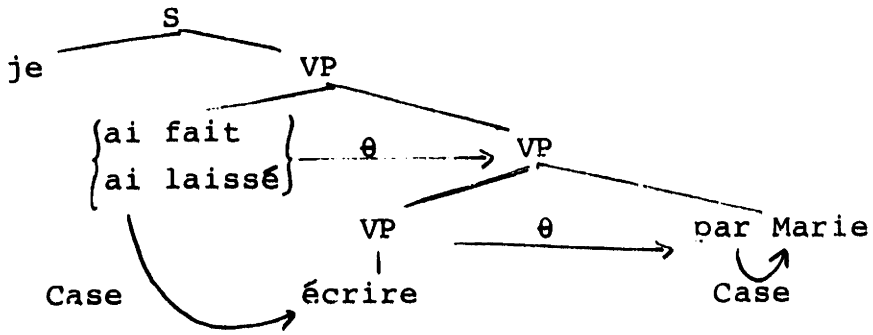
(30)



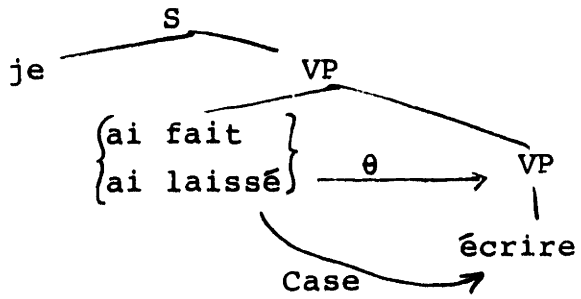
(31)



(32)



(33)



Finally, if we assume that faire is an obligatory reanalyzer, while laisser is an optional reanalyzer, we have an explanation for the impossiblity of examples like (34), as opposed to examples like (3)b, or (9), involving laisser:

(34) *J'ai fait $[_{VP}$ Marie [écrire]]

For, as we illustrated above with respect to (3)a (9), and (26), if ai fait in (33) assigns Case to Marie, like ai laissé in (3)b, ai fait is not a reanalyzer. If, on the other hand, ai fait reanalyzes with écrire and écrire assigns Case to Marie, Marie must be not only adjacent to écrire, but also to the right of écrire, not to its left as in (34), a consequence, we assume, of French being a "head first" language, whatever this exactly means.

Next, we can consider the case in which the

verb embedded in a causative construction proper is a pure intransitive verb ; this case is exemplified, with faire and laisser respectively, in (35) and (36):

(35)a. J'ai fait rire Marie
I made laugh Marie

b. J'ai fait rire
I made laugh

(36)a. J'ai laissé rire Marie
I let laugh Marie

b. J'ai laissé rire
I let laugh

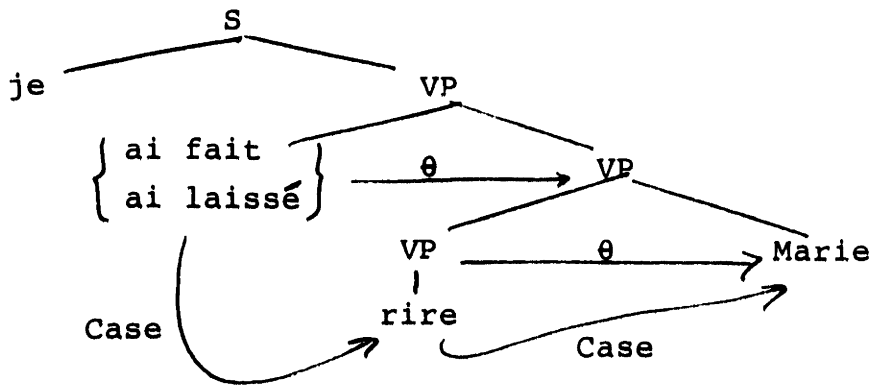
After what we established of both (21)-(22) and (28)-(29), the structure of (35)-(36) is for the most part transparent. Once more, the NP je is the subject of the VPs ai fait rire Marie,... and is assigned the subject θ-role by them as well as the nominative Case by the Infl on ai fait or ai laissé. Furthermore, ai fait or ai laissé subcategorize for and assign their θ-role to the VPs rire Marie,... . Finally, ai fait or ai laissé reanalyze with the verb rire. Since reanalysis holds of ai fait or ai laissé and rire, they can have the same actual maximal projection and govern each other, hence in turn satisfy the government condition on reanalysis (or Case assignment). And because reanalysis holds of ai fait or ai laissé and rire, rire , though not a Case assigner in the lexicon , can be a Case assigner in the syntax, thus in turn satisfying the restriction of the

range of reanalysis to Case elements. In addition, in (35)a and (36)a, the NP Marie is the subject of the VP rire and is θ-role assigned by it as well as Case assigned by the verb rire. In (35)b and (36)b, on the other hand, the small clause rire is subjectless. Indeed, an empty category subject is excluded, an anaphoric empty category because the subject position is assigned Case, either by rire or through à insertion, and a pronominal empty category because it is not properly identified. An obvious problem then arises. If rire, due to reanalysis, is a Case assigner in (35)-(36), under condition 2.2 (14), it must enter Case assignment with some nominal phrase. In (35)a and (36)a, condition 2.2 (14) is satisfied by rire by entering Case assignment with Marie. But if, in (35)b and (36)b the small clause is indeed subjectless, and rire does not enter Case assignment with any nominal phrase, how can condition 2.2 (14) be satisfied? Obviously, the answer must lie in the nature of rire. To begin with, we observe that in (35)b-(36)b, while, due to reanalysis, rire can be a Case assigner, there is no θ-role the Case it assigns can be associated with. On the other hand, we already assumed that various dependencies between Case assignment features and θ-role features are stipulated in the grammar, in particular, as in the discussion of (28)-(29) above, that, given an optional Case assigner and θ-role assigner, it cannot enter Case assignment without also

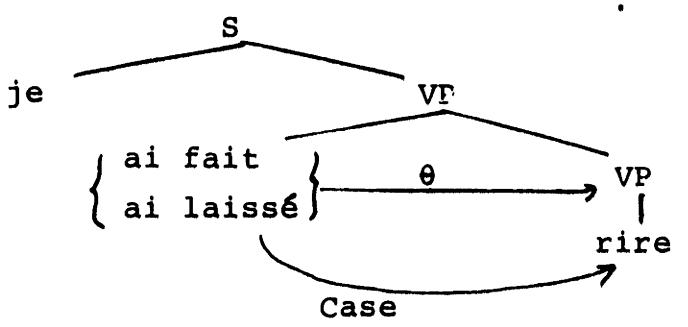
entering θ-role assignment. In this context, it is perfectly natural to assume that if a Case assigner feature is not matched by any θ-role assigner feature, it automatically counts as an optional feature; so that it can either define a Case assignment relation or no Case assignment relation. If so, our problem is obviously solved. On the one hand, in (35)b and (36)b, rire can be a Case assigner under reanalysis with ai fait and ai laissé. On the other hand, its Case assigner feature, not being matched with any θ-role assigner feature, is automatically optional. Hence rire in (35)b and (36)b can enter no Case assignment relation and still satisfy condition 2.2(14).

Summing up, then, in (35)-(36) ai fait or ai laisse subcategorize and θ-role assign the VP small clauses rire Marie,... while entering Case and indeed reanalysis with the verb rire. Finally, in (35)a and (36)a, the VP rire assigns subject θ-role to Marie and the verb rire assigns it Case. In (35)b and (36)b, on the other hand, the small clause is subjectless. Thus, in conclusion, sentences like (35) and (36) are associated with structures like (37) and (38) respectively, with θ-role and Case relations as indicated:

(37)



(38)



Obviously, if as before we assume that laisser can either function as a Case assigner or as a reanalyzer, but faire is a reanalyzer obligatorily, the contrast between the grammaticality of examples like (3)c with the structure in (9), and the ungrammaticality of examples like (39) with the structure indicated, is immediately explained:

(39) *J'ai fait [$_{VP}$ Marie [$_{VP}$ rire]]
I made Marie laugh

In fact, while the wellformedness of (3)c depends upon ai laissé assigning Case to Marie, in (39), ai fait being a reanalyzer cannot Case assign Marie but must enter reanalysis with rire. On the other hand, if rire Case assigns Marie, rire and Marie not only must be adjacent, but Marie also must be to the right of rire, as in (35)a, and not to its left, as

in (39), as, we assume, is a consequence of French being a "head first" language. Finally, we can notice that there are two word order or Case marking patterns, occurring in both the sets of examples (21)-(22), and (28)-(29), which do not occur in the set of examples (35)-(36); in fact, in contrast with examples like (21)-(22)a-b, and (28)-(29) b-c, where <u>faire</u> and <u>laisser</u> reanalyze with a transitive and an "object deletion" verb respectively, examples of the type of (40) and (41), where <u>faire</u> and <u>laisser</u> reanalyze with an intransitive verb like <u>rire</u>, are illformed:

(40)a. *J'ai fait $[_{VP}$ $[_{VP}$ rire] à Marie]

b. *J'ai fait $[_{VP}$ $[_{VP}$ rire] par Marie]

(41)a. *J'ai laissé $[_{VP}$ $[_{VP}$ rire] à Marie]

b. *J'ai laissé $[_{VP}$ $[_{VP}$ rire] par Marie]

Why are (40) and (41) illformed? We can recall that we assumed in the discussion of (35)-(36) that <u>rire</u> is a Case assigner under reanalysis with <u>ai fait</u> or <u>ai laissé</u>, but an optional Case assigner under the stipulation that Case assignment properties not matched by θ-role assignment properties are optional. Hence <u>rire</u> satisfies condition 2.2 (14), both if it enters Case assignment, as in (35)a and (36)a, and if it does not, as in (35)b and (36)b. Going then back to (40) and (41), we can hypothesize that, there, the association of the Case assigning properties of the verb <u>rire</u> with the

θ-role assigning properties of the VP rire prevents the verb rire itself from being a Case assigner optionally. If so, obviously, in (40)-(41), rire, being an obligatory Case assigner, must enter Case assignment with some nominal lexical phrase under condition 2.2 (14).

But it obviously cannot, Marie being independently Case assigned by the preposition à or par. Hence, in (40) and (41), rire actually violates condition 2.2 (14), and ill-formedness arises.

Finally, we can consider the case in which the verb embedded in a causative construction proper is an "ergative" verb, this case exemplified by (42) and (43) with faire and laisser respectively:

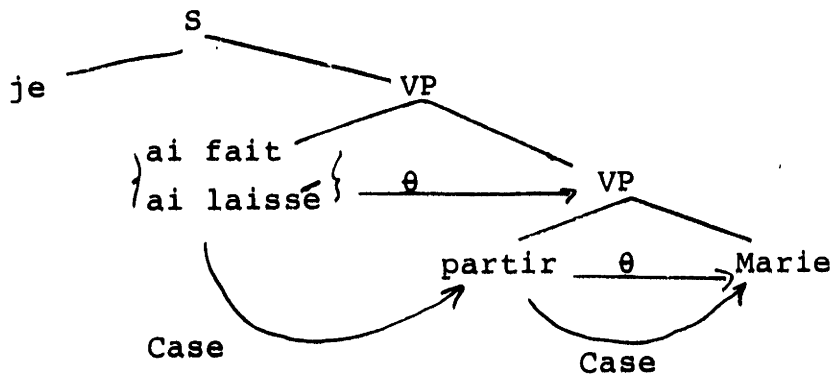
(42) J'ai fait partir Marie
I made go Marie

(43) J'ai laissé partir Marie
I let go Marie

At this stage of our investigation, the structure of (42)-(43) is immediately transparent. As usual, je is the subject of ai laissé partir Marie,... and assigned the subject θ-role and nominative Case in the standard way. More interestingly, ai fait or ai laissé subcategorize for and θ-role assign the VP small clause partir Marie. Ai fait or ai laissé, on the other hand, reanalyze with the verb partir. Reanalysis between ai fait or ai laissé and partir makes it possible for ai fait or ai laissé and partir to govern each other and this

in turn makes it possible for partir to satisfy the government condition on reanalysis. Similarly, partir, though not a Case assigner in the lexicon, can be a Case assigner in the syntax due to the fact that it is reanalyzed with ai fait or ai laissé, this in turn making it possible for it to satisfy the restriction of the range of reanalysis to Case elements. Finally, the verb partir subcategorizes Marie and assigns it a θ-role and Case. And the small clause partir Marie is obviously subjectless, an anaphoric empty subject being excluded because there is no way for it to lack Case, à insertion intervening if Case is not otherwise assigned, and a pronominal empty subject being excluded because there is no way for it to be properly identified. Thus, the structure of sentences like (42)-(43) can be simply as in (44), with θ-role and Case relations as indicated:

(44)



On the other hand, one can wonder whether another structure is possible for (42)-(43), as in (45), where Marie is the subject of the VP partir and the position subcategorized

by partir is occupied by the trace of Marie. In such a structure, partir must Case assign Marie directly in subject position, so that the trace correctly lacks Case; while the trace must be θ-role assigned by partir, and Marie end up with the object θ-role of partir by forming a chain with the trace. If this can indeed be the case, the structure in (45) can obviously be wellformed. However, independently of any other theoretical consideration, it seems only natural to assume that, if a verb assigns both θ-role and Case, while in principle it can assign the θ-role into a subcategorized position and the Case into a higher governed position, in fact it must be assumed to assign the θ-role and the Case into the same subcategorized position. If so, obviously, a structure like (45) is excluded:

(45)a. $[_S$ Je $[_{VP}$ ai fait $[_{VP}[_{VI}$ partir t] Marie]]]

b. $[_S$ Je $[_{VP}$ ai laissé $[_{VP}[_{VI}$ partir t] Marie]]]

Predictably, on the other hand, examples of the type of (46) are ill-formed, though similar examples with laisser are wellformed, as in (3)d:

(46) *J'ai fait $[_{VP}$ Marie $[_{VP}$ partir t]]

I made Marie go

As we already motivated, the one syntactic difference between laisser and faire is that laisser can be either a Case

assigner or a reanalyzer, while faire can only be a reanalyzer. If so, in (46), ai fait must reanalyze with partir and cannot Case assign Marie as in (3)d; but if ai fait reanalyzes with partir and partir assigns Case to Marie, Marie must not only be adjacent to partir,

as in (46), but must also be to its right, as a consequence of French being a "head first" language. Not surprisingly, finally examples of the type of (47) and (48) are also illformed:

(47)a. *J'ai fait [$_{VP}$ [$_{VP}$ partir t] à Marie]

b. *J'ai fait [$_{VP}$ [$_{VP}$ partir t] par Marie]

(48)a. *J'ai laissé [$_{VP}$ [$_{VP}$ partir t] à Marie]

b. *J'ai laissé [$_{VP}$ [$_{VP}$ partir t] par Marie]

Minimally, both (47) and (48) are illformed because partir does not satisfy condition 2.2.(14) For, in (47)-(48), partir, though a Case assigner under reanalysis, and a Case assigner which is also a θ-role assigner, does not enter Case assignment, not with the trace by definition, and not with Marie because Marie is already Case assigned by à or par. But if so, condition 2.2(14) is violated. In addition, at least (47)b and (48)b are excluded because Marie must bind the trace t, but, being embedded under par, it cannot, since it clearly does not c-command it. Whether the same is true of (47)a and (48)a depends ultimately upon the exact

nature of the à of à insertion, but is not crucial here.

At this point, we can notice that all of the examples we gave involve simple patterns subject - verb - object embedded under faire or laisser. It is obvious however that more complex patterns involving in particular PP complements reduce essentially to simple ones; hence, in general, more complex patterns than the already familiar ones do not require any special attention. There is however one exception to this general state of affairs. Consider again the pattern where the verb reanalyzed with by faire or laisser Case-assigns its subject. This pattern is most clearly exemplified by sentences like (28)a and (29)a and structures like (30), where ai fait or ai laissé reanalyze with the "object deletion" verb écrire; or by sentences like (35)a and (36)a and structures like (37), where ai fait or ai laissé reanalyze with the purely intransitive verb rire. If a PP complement to écrire and rire is inserted in (30) and (37) respectively, we expect that structures of the type of (49) and (50) are obtained, where in (49) écrire takes an à (to) phrase complement and in (50) rire takes a de (of) phrase complement:

(49)a. [$_S$ Je [$_{VP}$ ai fait [$_{VP}$ [$_{VP}$ écrire à Pierre] Marie]]]
I made write to Pierre Marie

b. [$_S$ Je [$_{VP}$ ai laissé [$_{VP}$ [$_{VP}$ écrire à Pierre] Marie]]]
I let write to Pierre Marie

(50)a. [$_S$ Je [$_{VP}$ ai fait [$_{VP}$ [$_{VP}$ rire de ça] Marie]]]
I made laugh of it Marie

$[_S$ Je $[_{VP}$ ai laissé $[_{VP}[_{VP}$ rire de ça] Marie]]]

Rather uninterestingly, in (49) and (50), Case and θ relations are exactly as indicated in (30) and (37) respectively, with the simple addition that in (49) à, selected in some way by écrire, in turn assigns θ-role and Case to Pierre; and, similarly, de in (50), selected by rire, assigns θ-role and Case to ça. Structures like (49) and (50) then are not very interesting in themselves. What is interesting about them, however, is that, while they include the constituents écrire à Pierre and rire de ça, respectively, with à Pierre and de ça preceding Marie, the sentences they correspond to are (51) and (52), where Marie precedes a Pierre and de ca, and not (53) and (54), where the ordering in (49) and (50) is maintained:

(51)a. J'ai fait écrire Marie à Pierre

b. J'ai fait rire Marie de ça

(52)a. J'ai laissé écrire Marie à Pierre

b. J'ai laissé rire Marie de ça

(53)a. *J'ai fait écrire à Pierre Marie

b. *J'ai fait rire de ça Marie

(54)a. *J'ai laissé écrire à Pierre Marie

b. *j'ai laissé rire de ça Marie

This, however, is exactly what is predicted by the adjacency condition 2.2 (17). According to 2.2 (17), two elements related by Case assignment or reanalysis in the syntax must

be adjacent one to the other, not in the syntax itself but rather in PF. If so, in (49) and (50), écrire and rire respectively can Case assign Marie, across à Pierre and de ça, while in the corresponding PF, the prediction is, correctly, that écrire and rire must be adjacent to Marie, as in (51)-(52), and cannot be separated from it by other material, as in (53)-(54).

Finally, before concluding, we can notice that, in introducing the relation reanalysis, we restricted its range to Case elements, hence Case assigners or reanalyzers; while in all of the examples we gave up to now, faire or laisser reanalyze with Case assigners, never with other reanalyzers. Exemples of faire or laisser reanalyzing with other reanalyzers, however, are easily found. In fact, faire or laisser can reanalyze one with the other, as in (55):

(55)a. J'ai laissé faire écrire une lettre
I let make write a letter

b. J'ai laissé faire écrire Marie
I let make write Marie

c. J'ai laissé faire rire Marie
I let make laugh Marie

d. J'ai laissé faire s'en aller Marie
I let make go Marie

In (55), obviously ai laissé subcategorizes the small clause VPs faire écrire une lettre,... and assigns a θ-role to it, while reanalyzing with the reanalyzer, hence Case element

faire, exactly as if the verb embedded under ai laissé were a normal Case assigner, like écrire, etc,... . In turn, faire subcategorizes for and θ-role assigns the VP small clauses écrire une lettre,... and reanalyzes with the verb écrire,... exactly as in all of the other examples of reanalysis involving it we gave. Similarly, it is not difficult to find examples with three reanalysers in a row, one reanalyzing with the following till the last one ends the sequence by reanalyzing with a Case assigner. In theory, indeed a sentence can contain an indefinitely large number of reanalyzers.

In conclusion, our second question in this section, what kind of structures are associated with causative or causative-like constructions proper, is answered in (23)-(25), (30)-(33), (37)-(38), (44) as well as in (49)-(50), etc. As for faire, laisser, etc., in causative and causative-like constructions proper, they are, phonological and semantic properties aside, just verbs and θ-role assigners, in addition to being reanalysers. Thus, a verb like laisser has, everything considered, a lexical entry like (56) where /laisser/ stands for its phonological properties, "laisser" for its semantic properties, and its syntactic properties are that it is a verb, a θ-role assigner, and alternatively either a Case assigner, as in examples of the type of (3) and structures of the type of (9), or a reanalyser, as in examples like (22), (29), (36) and (43) and corresponding structures:

(56) laisser: /laisser/,
"laisser",
V,
θ-role assigner
Case assigner ∨ reanalyser

On the other hand, a verb like faire has a lexical entry like (57), where once its phonological properties, /faire/, and its semantic properties, "faire", are discounted, its syntactic properties are that it is a verb and a θ-role assigner and a reanalyser obligatorily, not optionally as laisser:

(57) faire: /faire/,
"faire",
V,
θ-role assigner
reanalyser

Obviously the lexical entry in (57) does not take into account the fact that faire both θ-role assignes and Case assigns nominal objects in examples like J'ai fait une table (I made a table). If this is taken into account faire must be a Case assigner or a reanalyser and not only a reanalyser in the lexicon; the fact that, when subcategorizing for a (small) clause, faire obligatorily reanalyses must obviously be captured by introducing in its lexical entry an implication from θ-role assigning a (small) clause to being a reanalyser. This, however, need not concern us here.

4.2 More causative constructions

In the preceding section we limited our investigation of causative constructions essentially to French, though we extended it to English in the case of causative constructions not involving reanalysis; and in French we limited our investigation to causative constructions of the simplest kind. In this section we will be concerned with extending our investigation both to more complicated constructions and to a larger number of languages. In particular, we will discuss the impossibility of causative constructions proper in English; the impossibility of passivizing the causative verb in a causative construction in French and the possibility of doing so in Italian; the impossibility of passivizing the embedded verb in a causative construction proper in general; and more. On the one hand, we will argue that all differences between English, French and Italian causative constructions follow from the assumption that English causative verbs are simply Case assigners, French and Italian causative verbs are reanalyzers, and Italian causative verbs and the verbs they reanalyse with are like one verb with respect to Case. On the other hand, we will argue that all complex patterns met in causative constructions follow from our assumptions about reanalysis and in general about Case. Among additional topics, we will address the question of cliticization in causative constructions proper,

and we will conclude that its properties are less crucial it is otherwise assumed.

To begin with, we recall that if section 4.1 is correct, the fact that French faire, laisser, etc. are associated with causative constructions proper, i.e. causative constructions with peculiar word order and/or Case marking, follows straightforwardly from the theory of grammar under the assumption that faire and laisser are reanalysers. On the other hand, we recall that if section 4.1 again is correct the fact that French laisser, but not French faire, is associated with causative constructions with ordinary word order and Case marking follows from the theory of grammar under the assumption that laisser, but not faire, can also simply be a Case assigner. Now, English to make, etc. are associated with causative constructions of the ordinary word order and Case marking kind exactly as French laisser, etc. are. On the other hand to make, etc., contrary to French faire, laisser etc., are not associated with causative constructions proper, as in (1)-(4):

(1) a. *I made write a letter "to" Mary
    b. *I made write a letter by Mary
    c. *I made write a letter

(2) a. *I made write Mary
    b. *I made write "to" Mary
    c. *I made write by Mary
    d. *I made write

(3) a. *I made laugh Mary
b. *I made laugh

(4) *I made go Mary

Obviously the fact that to make, etc. are associated with causative constructions of the ordinary word order/Case marking kind can be made to follow, as in section 4.1 under the assumption that to make, etc., like French laisser, etc., are simply Case assigners. On the other hand, the fact that to make, etc. are not associated with causative constructions proper implies, everything else equal, that to make, etc., contrary to French faire, laisser, etc., are not reanalysers. The question then is whether, conversely, from the assumption that to make, etc. are not reanalysers the fact that to make, etc. are not associated with causative constructions proper can be made to follow. Consider first (1). In (1) the theta criterion and the Case filter as well as various other conditions, can be satisfied exactly as in the French counterparts in 4.1(21); made however, contrary to ai fait, clearly violates condition 2.2(14). In 4.1(21) indeed faire, being a reanalyzer, satisfies condition 2.2(14) by entering reanalysis with écrire. In (1) on the other hand to make, being a Case assigner, under condition 2.2(14) must enter Case assignement with some nominal phrase; but

obviously there is no nominal phrase to make can enter Case assignment with. In (1) indeed the small clause made governs and subcategorizes for, being neither a projection of N nor of INFL, does not fall under our definition of nominal (phrase). On the other hand the matrix subject I, the embedded object a letter and in (21a)-(21b) the embedded subject or agent Mary are nominal phrases, but they are not governed by made , hence made cannot Case assign them or the government condition is violated. Thus under the assumption that to make, contrary to faire, is a Case assigner and not a reanalyzer, the ungrammaticality of (1) follows straightforwardly.

Consider then the other examples. Obviously enough, (2b)-(2d) and (3b) reduce to (1); indeed it is easy to see that in (2b)-(2d) and (3b) as in (1) there is no nominal phrase made can enter Case assignment with, hence, as (1), (2b)-(2d) and (3b) violate condition 2.2(14). In particular, it is easy to see that (2b) is in all relevant respects analogous to (1a), (2c) analogous to (1b) and both (2d) and (3b) analogous to (1c). If so, only (2a), (3a) and (4) are left. (2a), (3a) and (4) differ from the other examples in that they can satisfy not only the θ-criterion and the Case filter but also condition 2.2(14); indeed in (2a), (3a) and (4) made can govern Mary and Case assign it. On the other hand, we know that under the adjacency condition two

elements entering Case assignment must be adjacent to each other in PF; hence if in (2a), (3a) and (4) made Case assigns Mary, made and Mary must be adjacent to each other in PF. But in (2a), (3a) and (4) made and Mary are separated by write, laugh and go respectively, hence the adjacency condition is violated. Thus under the assumption that to make, contrary to faire, is a Case assigner and not a reanalyser, the ungrammaticality of (1)-(4) also straightforwardly follows. Ultimately then we conclude that in the lexicon to make, leaving aside its phonological properties, /make/, and its semantic properties, "make", syntactically simply is a verb, a θ-role assigner and a Case assigner, as in (5); and that the difference between the lexical entries of make, as in (5) and faire or laisser, as in 4.1(56) and 4.1(57) respectively, indeed accounts for the difference between causative constructions in English and in French:

(5) make = /make/,
"make",
V,
theta-role assigner,
Case assigner

Next, we consider what is both a more complicated example of causative construction and a more subtle example of variation across languages. We know from section 5.1 that causative constructions of the ordinary word order/Case marking type are predicted to be compatible with passivization of the causative verb, correctly in French, though incorrectly in English for reasons that we tentatively dismissed as irrelevant to our investigation here. We can wonder, then, whether causative constructions proper are compatible with passivization of the causative verb and what our predictions are in this respect.

For one thing, French causative constructions proper are incompatible with passivization of the causative verb, no matter whether it involves an embedded subject as in (6) and (7), or an embedded subject in object position as in (8), or an embedded object, as in (9):

(6) *Marie a été faite écrire (par Pierre)
Marie was made write (by Pierre)

(7) *Marie a été faite rire (par Pierre)
Marie was made laugh (by Pierre)

(8) *Marie a été faite partir
Marie was made go

(9) a. *La lettre a été faite écrire a Marie (par Pierre)
The letter was made write "to" Marie (by Pierre)

b. *La lettre a été faite écrire par Marie
The letter was made write by Marie

(par Pierre)
(by Pierre)

c. *La lettre a été faite écrire (par Pierre)
The letter was made write (by Pierre)

On the other hand, in Italian, which exactly duplicates French in simple examples, causative constructions proper are compatible with passivization of the causative verb in all cases, whether an embedded subject is involved as in (10) and (11) or an embedded subject in object position is involved as in (12), or an embedded object is involved, as in (13):

(10) Maria fu fatta scrivere (da Piero)
Maria was made write (by Piero)

(11) Maria fu fatta ridere (da Piero)
Maria was made laugh (by Piero)

(12) Maria fu fatta andare (da Piero)
Maria was made go (by Piero)

(13) a. La lettera fu fatta scrivere a Maria (da Piero)
The letter was made write "to" Maria (by Piero)

b. La lettera fu fatta scrivere da Maria (da Piero)
The letter was made write by Maria (by Piero)

c. La lettera fu fatta scrivere (da Piero)
The letter was made write (by Piero)

Thus in the case of French we must be able to predict that causative constructions proper and passivization of the causative verb are incompatible; in the case of Italian we must be able to predict that causative constructions proper and passivization of the causative verb are compatible.

Consider first French, and the incompatibility in French of causative constructions proper and passivization of the causative verb. To begin with, we notice that passive morphology has been characterized, here and quite generally, as eliminating the Case assigner properties of the verbs it is associated with, and the theta-role assigner properties of the predicates the verbs form. It would be a natural extension of this characterization if passive morphology were to eliminate in general the Case properties of the verbs it is associated with, including not only their Case assigner properties but also their reanalyzer properties. This extension however is by no means necessary; obviously it is at least as natural to maintain that passive morphology is actually associated with Case assigners only, excluding in this way reanalyzers. If this is the case, it is easy to see that the incompatibility of causative constructions proper and passivization of the causative verb straightforwardly follows. For in causative constructions proper the causative verb is a reanalyzer; and if passive morphology cannot eliminate its reanalyzer property, it must enter reanalysis. Hence, for example, in (6)-(9) <u>faire</u> must reanalyze with <u>écrire</u>, <u>rire</u>, <u>partir</u>

and écrire again. But if so, in (6) and (7) écrire and rire respectively must Case assign the embedded subject, making movement of Marie into the matrix subject position impossible; similarly in (8) partir must Case assign the embedded "inverted" subject, making movement of Marie into the matrix subject position similarly impossible. Fi ally in (9), even independently of whether faire reanalyzes with it or not, écrire must Case assign the embedded object position; hence movement of la lettre into the matrix subject position is once again made impossible. Ultimately then the impossibility in French of causative constructions proper and passivization of the causative verb follows under unchanged assumptions about both passive morphology and French causative verbs.

Consider then Italian and the compatibility in Italian of causative constructions proper and passivization of the causative verb. To begin with, we must recall that Italian and French, while differing with respect to examples of the type of (6)-(9) and (10)-(13), are identical with respect to all other examples of causative constructions taken into consideration. Indeed if we were considering only examples of the simpler kind, we could conclude that Italian causative verbs have the same lexical properties as their French counterparts, hence, under the same principles of grammar enter the same syntactic constructions. When on the other hand we consider examples of the type of (6)-(9) and (10)-(13) we must conclude, barring the hypothesis that Italian and French differ with respect to some principle(s) of grammar, that Italian causative verbs and French causative

verbs have different lexical properties, hence under the same principles of grammar enter different syntactic constructions. Suppose then we assume that an Italian causative verb like fare has all of the (syntactic) properties of its French counterpart faire; but, in addition, if fare enters reanalysis with a Case element α, it is a property of fare that α in turn enters Case with another element β if and only if fare and α together enter Case with β, much as if they were one (Case) element. It is not difficult to see that under these assumptions it indeed follows both that fare enters all and only the simple constructions its French counterpart faire enters, and that fare, contrary to its French counterpart faire, as in (6)-(9), enters constructions of the type of (10)-(13). Consider first (10)-(13). As in (6)-(9) the passive morphology does not eliminate the reanalyzer property of faire, in (10)-(13) we can assume that the passive morphology does not eliminate the reanalyzer property of fare. Consequently, as in (6)-(9) faire reanalyzes with ecrire, rire, partir and écrire again, in (10)-(13) fare reanalyzes with scrivere, ridere, andare and scrivere respectively. As the next step, however, in (6)-(9) the embedded verbs écrire etc. must Case assign Marie in (6)-(8) and la lettre in (9); in (10)-(13) on the other hand it is our assumption that, as a property of fare, the embedded verbs scrivere etc. enter Case if and only if fare and the embedded verbs together, hence fare scrivere etc. do. Obviously, because fare is associated with passive morphology, fare scrivere etc. also are; and because they are associated with passive morphology, fare scrivere etc. have

their Case assigner properties eliminated and do not enter Case assignement. But in turn, because fare scrivere etc. do not, scrivere etc. do not have Case assigner properties and do not enter Case assignement either. Hence in (10) and (11) (fare)scrivere and (fare)ridere respectively do not Case assign the embedded subject position, and Maria can and must move into the matrix subject position; similarly in (12) (fare)andare does not Case assign the embedded "inverted" subject, and Maria similarly can and must move into the matrix subject position; and finally in (13) (fare)scrivere does not Case assign the embedded object position and la lettera can and must move into the matrix subject position. Thus the compatibility in Italian of causative constructions proper and passivization of the causative verb indeed follows from the assumption that the causative verb and the verb it reanalyzes with are, with respect to Case, essentially one element. Consider then the exact similarity of simple causative constructions in Italian to simple causative constructions in French. Leaving aside causative constructions with standard word order, and taking into consideration, among causative constructions proper, all and only the wellformed ones, the relevant Italian examples are in (14)-(17), where the embedded verb is a transitive verb in (14), a transitive verb used intransitively in (15), an intransitive verb in (16), and an "ergative" verb in (17):

(14) a. Feci scrivere una lettera a Maria
I-made write a letter Maria

b. Feci scrivere una lettera da Maria
I-made write a letter by Maria

c. Feci scrivere una lettera
I-made write a letter

(15) a. Feci scrivere Maria
I-made write Maria

b. Feci scrivere a Maria
I-made write Maria

c. Feci scrivere da Maria
I-made write by Maria

d. Feci scrivere
I-made write

(16) a. Feci ridere Maria
I-made laugh Maria

b. Feci ridere
I-made laugh

(17) Feci andare Maria
I-made go Maria

In the French counterparts to (14)-(17), faire reanalyzes with the embedded verbs écrire etc.; in turn écrire etc., depending upon their different properties, Case assign the embedded object or the embedded subject or do not assign Case at all. Similarly in (14)-(17) fare reanalyzes with the embedded verbs scrivere etc.; and similarly in turn scrivere etc. Case assign the embedded object, as in (14), or the embedded subject, as in (15a) and (16a), or the embedded "inverted" subject, as in (17), or do not assign Case at all, as in (15b)-(15d) and (16b). Under our assumptions the one difference between French and Italian is that in Italian, as a lexical

property of fare, the embedded verbs scrivere, etc. enter Case if and only if fare and scrivere, etc. together do. But this simply means that in (14) fare scrivere Case assigns una lettera as scrivere does; in (15a), (16a) and (17) fare scrivere, fare ridere and fare andare Case assign Maria as scrivere, ridere and andare respectively do; and in (15b)-(15d) and (16b) fare scrivere and fare ridere do not enter Case at all, as scrivere and ridere also do not. Hence in general fare scrivere, etc. simply double scrivere, etc. Thus under the assumption that in Italian a causative verb and the verb it reanalyzes with are essentially one element with respect to Case, the exact similarity of simple causative constructions in Italian to simple causative constructions French also follows. Ultimately then we can conclude that an Italian causative item like fare, leaving aside its phonological properties, /fare/, and its semantic properties, "fare", is a verb and a theta-role assigner and a reanalyzer; and in addition it is its property that if it reanalyzes with some other element α, α enters Case if and only if fare and α together do; as in (18):

(18) fare = /fare/,
"fare",
V,
theta-role assigner,
reanalyzer,
if Case (fare, α), then Case (α, β)
if and only if Case ((fare, α), β)

Next, we consider again a complicated example of causative constructions proper, though this time one not involving variation across languages. We just saw in this section that causative constructions proper and passivization of the causative verb are incompatible in French and compatible in Italian. We now notice that causative constructions proper are incompatible with passivization of the embedded verb in both French and Italian, as in (19) and (20) respectively:

(19) *J'ai fait être invité Pierre par Marie
I made be invited Pierre by Marie

(20) *Feci essere invitato Piero da Maria
I-made be invited Piero by Maria

It is easy to see that the incompatibility of causative constructions proper and passivization of the embedded verb indeed follows from our assumptions. In (19) ai fait reanalyzes with être invité, in (20) feci reanalyzes with essere invitato; être invité and essere invitato then must Case assign Pierre and Piero respectively. But both être invité and essere invitato bear passive morphology; hence être invité and essere invitato cannot assign Case at all. The one difference between French and Italian is that in Italian, in addition, as a lexical property of fare essere invitato enters Case assignment if and only if feci essere invitato also does. But this only means that as essere invitato cannot enter Case, so feci essere invitato cannot. Hence the incompatibility of causative constructions proper and passivization of the embedded verb follows straightforwardly,

lack of differences between Italian and French included. Notice that while there is incompatibility between causative constructions proper and passive embedded verbs there is no general incompatibility between causative constructions proper and NP-movement embedded verbs Indeed, we have seen already, in the preceding section and in this one, that one significant class of NP-movement verbs, "ergative" verbs, is perfectly compatible with causative constructions proper both in French and in Italian. One class of NP-movement verbs is left after this, the class of raising verbs, including verbs of the type of <u>to seem</u>, and verbs of the class of <u>to be</u> if the small clause and raising analysis is adopted for them; the compatibility of these verbs and causative constructions proper is dubious both in French and in Italian, as in (21) and (22) respectively:

(21) a. ? J'ai fait résulter Marie avoir vaincu
I made appear Marie to have won

b. ? J'ai fait être Marie arrogante
I made be Marie arrogant

(22) a. ? Feci risultare Maria aver vinto
I-made appear Maria to have won

b. ? Feci essere Maria arrogante
I-made be Maria arrogant

Both in (21) and in (22) the causative verb, <u>ai fait</u> and <u>feci</u> respectively, can reanalyze with the embedded verb <u>résulter</u>/<u>risultare</u> or <u>être</u>/<u>essere</u>; and the embedded verb in turn, in virtue of reanalysis, can be a Case assigner and Case assign <u>Marie</u>/<u>Maria</u>. Hence, exactly as in the case

examples involving an "ergative"verb embedded under a causative verb, (21) and (22) are predicted to be wellformed, provided of course, under our assumptions about fare, that in (22) as risultare and essere so fare risultare and fare essere assign Case to Maria. On the other hand not only the compatibility of embedded raising verbs with causative constructions proper, but also the compatibility of embedded raising verbs with causative constructions of the standard word order/Case marking type is dubious, as in English (23); and (23) is obviously predicted to be wellformed , made in particular assigning Case to Mary:

(23) a. ? I made Mary appear to have won

B. ? I made Mary be arrogant

Hence it is only natural to assume that (21)-(22) altogether are not quite wellformed for reasons other than syntactic, say sematic reasons; roughly, it is sematically sound to make something "happen" but not to make something "seem" or "be".

Notice that there is a degree of dubiousness associated also with the interaction of causative constructions of the standard word type and passive embedded verbs, as in English (24), (24) being obviously predicted to be wellformed under the general principles of grammar, with made in particular assigning Case to Peter:

(24) ? I made Peter be invited by Mary

Naturally we assume that (24) is not quite wellformed for reasons other than syntactic, say sematic again. Correspondingly, we actually expect the difference which seemingly exists between the unacceptability

of examples like (19) and (20) and the oddity of examples like (24); and the similar difference which seems to exist between examples like (19) and examples like (21) within French and examples like(20) and examples like (22) within Italian.

Finally, we consider again a class of complicated examples of causative constructions proper and one without variation across languages, the class of examples involving interaction of causative constructions proper and cliticization. To begin with, in a causative construction proper a clitic from the embedded subject or "inverted" subject or object position associated with the causative verb (or its auxiliaries), as in French (25)-(26) and Italian (27)-(28); where the clitic is the embedded object in (26) and (28) and the embedded subject or "inverted" subject in (25) and (27), in particular a dative subject in (25a),(25c) and (27a),(27c) and an accusative subject otherwise:

(25) a. Je lui ai fait écrire une lettre
I her made write a letter

b. Je l'ai faite écrire
I her made write

c. Je lui ai fait écrire
I her made write

d. Je l'ai faite rire
I her made laugh

e. Je l'ai faite partir
I her made go

(26) a. Je l'ai faite écrire à Marie
I it made write Marie

b. Je l'ai faite écrire par Marie
I it made write by Marie

c. Je l'ai faite écrire
I it made write

(27) a. Le feci scrivere una lettera
Her I-made write a letter

b. La feci scrivere
Her I-made write

c. Le feci scrivere
Her I-made write

d. La feci ridere
Her I-made laugh

e. La feci andare
Her I-made go

(28) a. La feci scrivere a Maria
It I-made write Maria

b. La feci scrivere da Maria
It I-made write by Maria

c. La feci scrivere
It I-made write

Suppose we assume that in general a clitic and a pro the clitic identifies must c-command each other, equivalently that the verb the clitic is associated with must govern the pro the clitic identifies; and more in particular that in a set of verbs c-commanding each other, hence all governing the same elements, the verb a clitic is associated with must be the first or highest of the set. It is easy to see that, on the one hand, these assumptions are independently needed to account for the simple fact that a clitic is generally associated

with the verb whose Case the clitic ends up with, or with the highest/first one of the auxiliaries associated with the verb, if any; on the other hand under these assumptions the interaction of subject and object clitics and causative constructions proper also straightforwardly follows. Consider first (26) or (28). In (26), where ai fait reanalyzes with écrire, and in (28), where feci reanalyzes with scrivere, écrire/scrivere and faire/fare c-command each other and govern each the embedded object; and, of the two, faire/fare obviously is the first or highest one. Hence in (26) and (28) the clitic la which identifies a pro in the embedded object position, must be associated with ai fait/feci. Consider then (25) or (27); needless to say, the same can be repeated if only subject, or "inverted" subject, is substituted for object and lui eventually for la. Thus the interaction of cliticization from the embedded subject or object and causative constructions proper follows indeed straightforwardly under our assumptions. Now, as the embedded subject or object, in a causative construction proper an embedded complement generally cliticizes on the causative verb (or its auxiliaries); which as in the case of an embedded subject or object follows straightforwardly under our assumptions. In the case of an embedded complement, however, there seem to be a number of exceptions. For example, cliticization of an embedded dative complement on a causative verb is unacceptable in presence of an embedded dative subject, as in French (29) and Italian (30),

though obviously French (29), Italian (30) and similar examples are perfectly wellformed if the clitic is taken to be the dative embedded subject and the dative phrase the embedded complement:

(29) a. * Je lui ai fait écrire une lettre à Marie
I to-him made write a letter Marie

c. * Je lui ai fait écrire à Marie
I to-him made write Marie

(30) a. * Gli feci scrivere una lettera a Maria
To-him I-made write a letter Maria

c. * Gli feci scrivere a Maria
To-him I-made write Maria

Naturally, our contention is that the ungrammaticality or oddity of (29) - (30) and the like does not count against our assumptions; rather examples like (29) and (30) are less than good on grounds other than syntactic. Notice indeed that all supposed principled accounts of (29) - (30) and the like, essentially Kayne's (1975) and Rouveret & Vergnaud's (1980), rely on some version of the Specified Subject Condition, or of Opacity or of binding condition A, as applied to the empty category left behind by cliticization. But the unacceptability of (29) and (30) is exactly reproduced if in (29) and (30) wh-movement is substituted for cliticization, as in French (31) and Italian (32); and obviously the empty category left behind by wh-movement is not subject to binding condition A:

(31) a. * L'homme à qui j'ai fait écrire une lettre
The man to whom I made write a letter
à Marie
Marie

b. * L'homme à qui j'ai fait écrire à Marie
The man to whom I made write Marie

(32) a. * L'uomo a cui feci scrivere una lettera
The man to whom I-made write a letter
a Maria
Maria

b. * L'uomo a cui feci scrivere a Maria
The man to whom I-made write Maria

Hence a Specified Subject Condition or Opacity or binding account of (29)- (30) and the like actually loses credibility and correspondingly an use-oriented account gains some, especially in view of the fact that, again, (29) and (30) as well as (31) and (32) are perfectly well-formed if the clitic is taken to be the dative embedded subject and the dative phrase the embedded complement. Ultimately then if this, and some more, is the case, we can conclude that all the various types of interactions between causative constructions proper and cliticizarion, in French and in Italian alike, indeed follow from our assumptions or else behave anomaluously on grounds other than syntactic.

Bibliography

Aoun, J. (1982), Ph. D. Dissertation, MIT

Belletti, A. (1981),"'Morphological' Passive and Pro-drop", ms., MIT

Bouchard, D. (1982), Ph. D. Dissertation, MIT

Borer, H. (1981), Ph. D. Dissertation, MIT

Bresnan, J. (1982), The Mental Representation of Grammatical Relations , MIT Press

Burzio, L. (1981), Ph. D. Dissertation, MIT

Chomsky, N. (1975),The Logical Structure of Linguistic Theory , Plenum

(1965) Aspects of the Theory of Syntax , MIT Press

(1981) Lectures on Government and Binding , Foris

(1982) Concepts and Consequences of the Theory of Government and Binding , MIT Press

Higginbotham, J. (1983), Formal Foundations of Linguistic Theory course notes, MIT

Kayne, R. (1975), French Syntax, MIT Press

Jaeggli, O. (1980), Ph.D. Dissertation , MIT

Lasnik, H., and J. Kupin (1977), " A Restrictive Theory of Transformational Grammar", Theoretical Linguistics, 4, 173-196

Manzini, M. R. (1981a),"On Small Clauses", ms., MIT

(1981b),"On easy-to-please constructions", ms., MIT

(1982a),"On Italian si", ms. MIT

(1982b),"'Restructuring'Constructions", ms. MIT

Manzini, M. R. (1983), "On Control and Control Theory", Linguistic Inquiry, 14: 421-446

(in preparation a) Restructuring and Reanalysis

(in preparation b) "Does Restructuring exist?"

(in preparation c) "Restructuring II"

Marantz, A. (1981), Ph. D. Dissertation, MIT

Pesetsky, D. (1983), "Morphology and Logical Form", ms., USC

Rizzi, L. (1982a), Issues in Italian Syntax, Foris

(1982b), "On Chain Formation", ms., Università della Calabria

Rouveret, A. and J.-R. Vergnaud (1980), "Specifying Reference to the Subject", Linguistic Inquiry, 11: 97-202

Safir, K. (1982), Ph. D. Dissertation, MIT

Sportiche, D. (1983), Ph. D. Dissertation, MIT

Stowell, T. (1981), Ph. D. Dissertation, MIT

Zubizarreta, M.-L. (1982), Ph. D. Dissertation, MIT