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# The Case for Reflexives or Reflexives for Case \*

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## 0. INTRODUCTION

Looking backwards at the history of the study of NPs, it seems, as Giorgi and Longobardi point out in the introduction to their forthcoming book on NPs, that the understanding of this particular topic has not particularly progressed, at least until recently, since Chomsky (1968) "Remarks on Nominalizations".

This state of affairs may paradoxically be linked to Chomsky's natural assumption that the structure related to a Verb is the same as the one related to the corresponding Noun, as illustrated in (1) and (2):

- (1) a. the barbarians destroyed the city  
b. the city was destroyed by the barbarians
- (2) a. the barbarians' destruction of the city  
b. the city's destruction by the barbarians

where (1a) and (2a) have the same basic representation, in which the subject NP the barbarians is interpreted as a subject.

According to the traditional view however, the subject NP is associated with an empty category in object position, in (1b) and (2b), expressing the "passive" effect, as we might call it today, which can also be found in Nominals, a state of affairs which seems to derive in a natural way from the X' theory itself.

It is however known that the construction exhibited in (2b) is subject to certain constraints not found in (1b), as illustrated by the contrast between (3) and (4):

- (3) ?\* the president's disillusionment of the people
- (4) the people's disillusionment by the president

We know moreover that some nominals which at first glance have a very different structure from derived nominals are subject to some poorly understood restrictions as illustrated in (5), (6) and (7):

- (5) John's house
- (6) ?\* the house of John
- (7) \* the mountain's foot

While keeping the essence of the X' hypothesis, this paper addresses the problems raised by these examples by making extensive use of the leading idea according to which the property of a given construction can be factored into several effects linked to different modules of the grammar (cf. Chomsky (1981)), namely Binding Theory, Case Theory and theta Theory.



It will be shown that the "passive effect" in nominals does not derive entirely from the absence or presence of an empty category in object position, but is partly linked to the nature of the genitive marker itself.

We show moreover that the notion of genitive should be viewed in a more abstract way and that this notion is related to the notion of reflexivity in very intricate ways.

This way of looking at things - which suggests again a rather drastic reformulation of our conception of Binding Theory - enables us to see in particular that certain properties of Nominals, such as the one observed in (5), (6) and (7) are not really restricted to this particular kind of construction, but apply to what are traditionally considered unrelated domains of the grammar.

The paper is organized as follows:

Section 2 shows that the constraints on derived nominals such as the one illustrated in (3) are reminiscent of certain constraints on reflexives. It will be shown that these constraints derive in a natural way from a general framework where the genitive *s* is analyzed as a mono-morphemic reflexive, akin to the French clitic *se*.

As will be shown, the behavior of the genitive *s* surprisingly mirrors the three main different usages of mono-morphemic reflexives that have been distinguished in the literature.

We stress in the conclusion some general observations based on diachronic considerations and suggest a potential solution to the apparent Watkins paradox (Watkins (1989)), according to which the study of what looks like "social" history parameters might be relevant for linguistics.

But let us start with section (1) in which we claim that the Scandinavian possessive reflexive *sin* plays a role in the assignment of genitive Case.

# 1. REFLEXIVES FOR CASE : THE POSSESSIVE *SIN*

Let us examine the Norwegian sentence (8):

- (8) vi liker Per sin bil  
("we like Per his (reflexive) car")

Fiva (1987) studies at length this construction which is acceptable in some dialects of Norwegian and Danish (see Indebjør (1951), Hulthén (1948) and Jul Nielsen (1986)).

The construction exemplified in (8) seems to represent an apparent paradox since *sin* which seems to be a possessive reflexive, in that it must be associated with *Per* (just like it is associated with *Per* in (9)), seems also to share some properties of the genitive *s*, as illustrated by the parallelism between (9) and (10):

- (9) Per liker sin bil  
("Per likes his (reflexive) car")  
(10) vi liker Pers bil  
(we like Per's car)

Fiva develops an analysis of (8) according to which the element *sin* - which is, in her terms, a Case bearing element (along the lines of traditional grammar, according to which *sin* is the genitive form of *sig*) - enters in a chain relationship with its antecedent *Per*, to which no Case is assigned.

Her analysis is then reminiscent of Kayne (1983)'s analysis of the so-called Complex Inversion construction in French, illustrated in (11):

- (11) cela est-il vrai ?  
("this is-it true?")

where, according to Kayne (1983), what is, in his terms, an impersonal pronoun (*il*), enters in a chain relationship with the NP *cela* to which it transmits a Case and a thematic role.

Leaving the case of Complex Inversion aside - to which we shall come back elsewhere - we think that it is doubtful that such an analysis can be extended to *sin* and *Per* in (7), where we would like to propose that the reflexive *sin* is the morphological realization of a genitive Case assigned to the NP *Per*. We shall propose however that, in this type of construction, *sin* is involved in both Binding Theory and Case theories.

That *Per* receives genitive Case in (8) is, from our point of view, illustrated by the fact that, as Fiva notices, the NP cannot be replaced by an inherently Case marked element such as the nominative pronoun *han* (he):

- (12) \* han sin bil er i garasjen  
("he his (reflexive) car is in the garage")

(12) is, in our terms, explained in terms of Case conflict since the pronoun, which is morphologically marked for nominative Case, is not compatible with a genitive Case, which the presence of *sin* implies.

Fiva notes that (12) is improved if the pronoun is stressed:

- (13) ? HAN sin bil er i garasjen  
("HE his (reflexive) car is in the garage")

We would like to suggest that this is so because the inherent nominative pronoun is in fact part of a larger NP (of which it is the head) to which the pronoun can transmit its Case feature, that is, that the representation of (13) is something like (14):

- (14) ? [[DP [NP HAN] [D sin [NP bil]]] er i garasjen

When the pronoun is focused, the entire NP moves at LF (along the line of Larson & Lujan (forthcoming)) leaving a variable which is compatible with the genitive Case.



Note that our way of looking at things is supported by (15), which shows that pronouns which are inherently marked for genitive Case are not completely excluded:

- (15) ? hans sin bil er i garasjen  
 ("his (pronoun) his (reflexive) car in the garage")

This suggests again that the genitive pronoun (in this case the specifier of a DP) might be part of a larger non overt structure, as in (16) - an analysis which is partly reminiscent of Postal's (1966) analysis of pronouns in English:

- (16) ? [DP[Nphans N] [D sin [NP bil]]] er i garasjen

We shall then consider that *sin* - which is, in our terms, a flectional element (contra Fiva (1987)) - is a Case assigner, or, alternatively that *sin* is a morphological realization of an inherent Case.

The relationship of *sin* to the genitive marker *s* in this kind of construction (a point also made by Fiva, who draws the exact opposite conclusions from ours) leads us to think that the NP position of *Per* in (8) is a thematic position, similar to the one of *Mary* in (17) in English.

This relationship suggests a parallelism between (8) and (17) in English which exemplifies a possessive genitive construction, in the sense of Anderson (1984):

- (17) Mary's store was on Hill street

We want to claim, extending Anderson's analysis of (17) in English to the construction exemplified in (8), that the reflexive assigns a possessive thematic role to *Per* in (8) just like the possessive *s* in (17) assigns a possessive thematic role to the NP *Mary*.

We could say, alternatively, that *sin* in (8) is just a realization of genitive Case (a possibility considered by Fiva), and that the thematic role assigned to *Per* is not directly linked to the lexical character of *sin*, but rather to the prenominal position itself, that is, that *sin* is not a reflexive at all in this kind of construction.

This will not do, however, since the possessive *sin* is clearly a reflexive.

We know in particular that a mono-morphemic reflexive cannot refer to a non agentive antecedent, as illustrated by (18) in Danish, from Diderischen (1924):

- (18) \* maanen er ofte rød i sin formørkelse  
 ("the moon is often red in its (reflexive) darkening")

(18) contrasts with (19), in that *the moon* in (18) is not really an agent - except in poetry, where example (18) can be considered as grammatical:

- (19) Peter fotograferer sin kone (Danish)  
 ("Peter photographs his (reflexive) wife")

This state of affairs, which holds in a very general way across languages of the world, has been somewhat neglected in the GB literature, and is generally accounted for in non grammatical terms such as the one of "point of view" (Cantrall 1974), "awareness" (Kuno 1972), "consciousness" (Zribi-Hertz 1980; Ruwet forthcoming).

In Kuno's terms, *maanen* (the moon) is not a proper antecedent for the reflexive in (18) because the moon is not "aware".

We would like to suggest that the contrast between (18) and (19) is reminiscent of the contrast between (8) and (20):

- (20) a. ?\* huset sitt tak  
 ("the house its (reflexive) roof")  
 b. ?\* bilen sitt ratt  
 ("the car its (reflexive) steering wheel")

which shows that *sin* cannot be linked to a non agentive antecedent in a construction like (8). The fact that *sin* must refer to an agentive antecedent follows in an obvious way from the analysis of *sin* as a reflexive.

We saw however that there are also good reasons to analyse *sin* as an element involved in the assignment of genitive Case, akin to the English element *s*.

We believe that the same state of affairs is illustrated by the contrast between (21) and (22) (underlining indicates binding relationships):

- (21) John hørte Peter fotografere sin kone (Danish)  
 ("John heard Peter photograph his (reflexive) wife")  
 (22) \* John fortalte om Per sin kritikk (Norwegian)  
 ("John spoke about Per his (reflexive) critic")

This last contrast shows that *sin* (which can be associated with a long distance antecedent as in (21)) cannot be long distance bound when it is also a genitive Case marker as in (22).

We believe that the impossibility of long distance binding in (22) follows from the same locality requirement on Case assignment illustrated in (23), where the genitive marker cannot be associated with a long distance antecedent:

- (23) \* John told us about Mary 's problems

Moreover, we shall see in the next section that the analysis according to which *sin* can, in certain contexts, be analyzed as both a reflexive and a genitive marker, is supported by the analysis of the English genitive marker *s* itself.



2. THE CASE FOR REFLEXIVE : THE GENITIVE *s* AS A REFLEXIVE

## 2.1 THE POSSESSIVE GENITIVE

Among many others, Jespersen (1918) notes the complementarity of the genitive *NP's NP* construction on the one hand, and the use of the preposition *of* on the other hand, as illustrated by the following contrasts:

- (24) a. John's house  
b.?\* the house of John  
(25) a.\* the mountain's foot  
b. the foot of the mountain

We shall tentatively assume, extending the analysis of genitive *of* Chomsky (1986) to this kind of expression, that the possessive genitive *s* and the preposition *of* are realizations of an inherent genitive Case.

This raises the question of understanding what distinguishes (24a) from (25a) on the one hand, and (24b) from (25b) on the other hand, which exhibit reverse grammaticality judgments.

We would like to suggest, in accordance with the leading idea of Jespersen, that these distinctions can be reduced to a contrast between agentive NP and non agentive NP.

Jespersen does not give any suggestion for why this should be the case, but we would like to claim that these contrasts are reminiscent of the contrast between (18) and (19) above. In other words, the contrasts between (24) and (25) indicate that the English genitive is a reflexive.

It seems to us that the ungrammaticality of (25a) can be reduced to the ungrammaticality of (18) where it seems somewhat inaccurate to say that the constructions are excluded because the subject NP is not "aware" or is not a "subject of consciousness".

We want moreover to suggest that the complementarity between the "prepositional" genitive of (25b) and the "specifier" genitive of (24a) indicates that possessive genitives are realized as prepositional genitives when the "specifier" genitives are excluded.

The same analysis extends in a natural way to the following contrast, from Lema (1990), if we analyze these genitives as possessive genitives, along the lines of Anderson (1984), which shows that this construction is subject to severe semantic constraints:

- (26) a. that book of John's  
b.\* that book of the library's

## 2.2 THE SUBJECTIVE GENITIVE

Interestingly the agentive constraints on the genitive *s* do not seem to be limited to the possessive genitive as illustrated by (27) which involves a gerund nominal, where John must be interpreted as an agent, as pointed out to me by N. Chomsky:

- (27) John's amusing of Bill

The same point can be made by the following contrast, from Rozwadoska (1989):

- (28) a?\* the president's disillusionment of the people  
b? the president's deliberate disillusionment of the people

and by the contrasts between (29a) and (29b), from Chomsky (1968), and, (30a) and (30b), pointed out to me by P. Baldi:

- (29) a. John's eagerness to please  
b.\* John's easiness to please  
(30) a. John's acknowledgement of the problem  
b?\* John's knowledge of the problem

Of course, this type of contrasts did not pass unnoticed in the literature, where they have been treated in terms of lexical idiosyncrasies (Chomsky (1968)) or thematic constraints (see Rozwadoska (1989) and the references cited therein).

We would like to suggest however that these constraints are entirely predictable within a framework where the subjective genitive is analyzed as a reflexive, subject to the general principle of binding theory.

This amounts to saying that the contrast between (28a) and (28b), (29a) and (29b) and (30a) and (30b) are of the same nature as the following contrast in French, which involves the clitic reflexive *se*.

- (31) a. Jean se lave  
("Jean self washes")  
b\* le sage s'est indifférent  
("the wise self is indifferent")  
(the wise is indifferent to himself)

The parallelism between the genitive *s* and the reflexive construction is somewhat in accordance with the general analysis of Grimshaw (forthcoming), for whom the "agentive" character of the genitive *s* (or of the reflexive *se*) does not follow from the properties of these elements themselves but rather from the general mechanisms involved in nominalization and reflexivization.

We cannot review in detail Grimshaw's analysis here, to which we shall come back elsewhere. We shall see however in the next section that the properties of the so-called passive nominals strongly suggest that the lexical properties of the genitive *s* (the fact that the genitive is a reflexive) are involved.

Note incidentally that the present framework correctly predicts that the genitive reflexive *sin*, as we may now call it, will not be possible with a non agentive predicate. This point is illustrated by the contrast between (32) and (33) in Norwegian, which shows that *sin* can marginally be used as a non possessive reflexive:



- (32) \* Jeg beundrer Per sin kunnskap  
 ("I admire Per his (reflexive) knowledge")  
 (33) ?? Jeg beundrer Per sin demonstrasjon  
 ("I admire Per his (reflexive) demonstration")

## 2.3 THE OBJECTIVE GENITIVE

An obvious apparent counter-example to the analysis developed in the text is illustrated by (34), where the genitive *s* does not seem to be associated with an agent:

- (34) the city's destruction by the barbarians

We would like to suggest however that the representation of (34) is something like (35), with an internal PRO:

- (35) [DP the city [*s* [ PRO destruction *e* by the enemy]]]

and that the reflexive like element *s* is licensed by the presence of the agentive PRO in the same way that the clitic *se* is licensed in the French middle construction (36):

- (36) les pions se disposent de cette façon  
 ("pawns self dispose in this way")  
 (one disposes pawns in this way)

Note that the construction exemplified in (36) is subject to severe semantic restrictions as illustrated by the following contrast, inspired by Ruwet (1972):

- (37) ces animaux se frappent toujours de cette façon  
 ("these animals self hit in this way")  
 (38) \* ces gens se frappent toujours de cette façon  
 ("these people self strike always in this way")

where (37) means something like (39) and (38) something like (40):

- (39) on frappe toujours les animaux de cette façon  
 ("one hits always animals in this way")  
 (40) on frappe toujours les gens par son imagination  
 ("one strikes always people by one's imagination")

that is, (37) where *frapper* is a non stative predicate is grammatical, as opposed to (38) with a stative use of the same verb.

Since the presence of an agentive PRO is required, the grammatical representations associated with (36) and (37) must involve an agentive PRO, as illustrated in (41) which corresponds to (36):

- (41) [les pions se [ PRO disposent *e* de cette façon]]

The ungrammaticality of (38) strongly suggests that such an element is not licensed in stative predicates since they do not involve an agent.

Note incidentally that the grammaticality of (41), where the reflexive absorbs the accusative Case, assigned to the object position of *disposer*, shows clearly that a reflexive can be bound to a derived subject, as opposed to what is sometimes claimed in the literature (see among many others, Rizzi (1982)) and that a reflexive is licensed by an agent, whether the agent is the antecedent of the reflexive or not.

The same point can be made about (31a), if one adopts R. Kayne (1987)'s analysis according to which the grammatical representation of (31a) is (42) (where *Jean* is coindexed with the empty category in object position of *laver* - an analysis which accounts for the use of *être* in "Jean s'est lavé", now analyzed as an ergative construction):

- (42) [Jean se [ PRO lave *e*]]

The reflexive absorbs the accusative Case assigned to the object of *laver* and the thematic role assigned to the internal specifier position of the VP.

Interestingly, Anderson (1979) notes the existence of some peculiar constraints on the so-called passive nominals, as illustrated in (43):

- (43) \* the film's enjoyment *e* by John

Anderson explains the contrast between (34) and (43) in terms of "affectedness", an analysis which amounts to saying that the object NP is directly governed in (34), but not in (43).

We would like to say that the affectedness effect derives from the agentive PRO requirement and that constructions like (34) always correspond to a non stative predicate.

Our hypothesis makes the prediction that, in all cases where the agentive reading can be forced (see also (28b) and (30b) in section (2.1) above) the passive derived nominal should be possible. This prediction is borne out as illustrated in (44) and (45) below, where the semantic content of the prepositional phrases introduced by *by* and *at* licenses the presence of an agentive PRO:

- (44) the people's disillusionment *e* by the president  
 (45) John's amusement *e* at the children's antics

Our way of looking at things also predicts that no raising-like constructions should be possible with stative derived nominals, as illustrated by (46)-(48) below, from Rappaport (1983), which claims explicitly that "poorly understood thematic relations" are at stake (see also Amritavalli (1980)):

- (46) \* history 's knowledge *e*  
 (47) \* John's sight *e* by Mary  
 (48) \* the events's recollection *e*



The ungrammaticality of (46), (47) and (48) derives in a natural way from the agentive PRO requirement since none of the "specifier" genitive NPs are by themselves agentive.

Note that the present framework allows us to solve what seems to be a paradox in Grimshaw's theory: Grimshaw establishes a (sound) distinction between complex event nominals that project an argument structure one the one hand, and simple event nominals and result nominals that don't project an a-structure on the other hand. A complex event nominal is defined in her framework as taking (among other criteria) (i) a modifier such as *frequent* (e.g. "the frequent expression of one's feeling is desirable"), (ii) a possessive interpreted as a subject (e.g. "the instructor's examination of the papers took a long time"), (iii) argumental *by* phrases (e.g. "the expression of aggressive feelings by patients").

Passive nominals seem to have the strange property of not being associated with an argument structure (\*"the politicians frequent nomination" (to be compared with "the president's frequent nomination of the politicians")) while being associated with a *by* phrase which is in general licensed by an argument.

Grimshaw notes that the "co-occurrence of the *by* phrase with possessive 'passives' remains something of a mystery".

We would like to suggest however that the presence of a subjective genitive - which implies the presence of an agentive PRO, which in turn licenses the presence of an object - can be reduced to the lexical properties of the genitive *s* whose Lexical Semantic Representation and argument structure imply the presence of an Agent.

This amounts to saying that (49):

- (49) ? America's defeat by the Soviet Union

involves a PRO in the internal specifier position of the NP and an empty category in the object position of the head noun, in accordance with the general analysis developed in the text, as illustrated in (50):

- (50) ? [DP America's [NP PRO defeat *e* by the Soviet Union]]

Our analysis amounts to saying that the empty categories involved in (50) are participants, not arguments (Grimshaw's terminology) whose presence is licensed by the properties of the genitive *s* itself. This point is confirmed by the contrast between (49) and (51) which remains unexplained in Grimshaw's analysis:

- (51) \* the American defeat by the Soviet Union

## 2.4 THE INHERENT GENITIVE AND OTHER RELATED CONSTRUCTIONS

Note that the analysis developed in the text implies that there is no agentive PRO in (52):

- (52) the wall's color

where we would like to claim that the genitive *s* has none of the properties of a reflexive element but is a morphological realization of the genitive Case assigned to the NP *the wall*. We would like to claim that *s* (which can be dropped in this type of example) is not a "real" reflexive but simply expresses the very general semantic relation between *color* and *wall*, as illustrated by the contrast between (52) and (53b), pointed out to me by J. Higginbotham:

- (53) a. the angle of the junction  
b.\* The junction's angle

where *angle* does not seem to be a property associated with the definition of *junction*.

If the analysis developed in this section is on the right track, we can relate the use of the descriptive genitive to the French neuter reflexive construction exemplified in (54), from Ruwet (1972):

- (54) la branche se casse  
("the branch self breaks")  
("the branch breaks")

According to Ruwet, the syntax of this construction (in which the reflexive pronoun can be dropped) is not different from the so-called inherent reflexives such as (55):

- (55) Paul s'admire  
("Paul self admires")  
(Paul admires himself)

We would like to suggest that, in this type of construction, the so-called reflexive is semantically inert (is not subject to Binding Theory) and is used to turn the predicate into an ergative predicate. That is, the grammatical representation associated with (55) (or (54)) is something like (56):

- (56) Paul s' [ admire *e* ]

That the element *se* is semantically inert and does not consequently license an agentive PRO is supported by the grammaticality of (55) and (57) which involve stative predicates that could not enter in an usual reflexive construction since the subject NP cannot be interpreted as an agent.

- (57) Paul s'ennuie  
("Paul self bore")  
(Paul is bored)

The same point is also illustrated by the following contrast between (58a) and (58b), also inspired by Ruwet (1972):

- (58) a.\* on tasse les désaccords  
(one settles the disagreement)



- b. les désaccords se tassent  
 ("the disagreements self settle")  
 (the disagreements are being settled)

where (58b) does not imply the presence of an agent, as confirmed by the ungrammaticality of (58a). It seems to us that the so-called neuter or inherent reflexives in French are often employed in stative predicates (which express a characterization of the subject of which they are predicated).

That this might be the case, and that this property might be shared by what we could now call the inherent genitive, is supported by the following contrast, brought to our attention by P. Baldi:

- (59) a.\* John's enjoyment of the movie  
 b.? John's apparent enjoyment of my problems

The fact is that sentence (59a) tends to improve with a descriptive adjective, as illustrated in (59b). We would like to suggest that the relative acceptability of (59b) is related to the fact that *enjoyment* in (59b) expresses a characteristic property of *John*.

We would like tentatively to suggest that the same analysis can be extended to examples such as (60) (restricted to non argument taking nominals in Grimshaw's terminology) where a kind of temporal connection licenses the use of a genitive, which seems to have lost any semantic content in itself:

- (60) yesterday's paper

The property of not being a reflexive-like element is obviously also shared by the genitive marker of verbal gerunds as illustrated by (61), from Chomsky (1968):

- (61) John's being easy to please

where the genitive marker is then reduced to a pure Case marker.

### 3. CONCLUSION

The analysis developed in the text suggests that the genitive *s* is semantically and historically related to the reflexives *se* and *soi* (see Jespersen (1918) for a partly similar idea).

The hypothesis according to which the genitive *s* is a lexical element associated with an argument structure and with a Lexical Semantic Representation akin to that of a monomorphemic reflexive, is able to explain many properties of nominals.

These anaphoric elements seem to have retained some general semantic properties of the indo-european *sw\** which was used in connection with kinship terminology and other terms related with social activity (see among many others, Benveniste (1969), Friedrich (1979), Hamp (1984), Meillet (1937), Milner (1978) and Watkins (1990)).

Although these pronominal-like elements lost the original usage of the indo-european form they retained its general meaning of inalienable relationship (see also Pica (1989)), in that they can only refer to (agentive) individuals (as argued independently by Bouchard (1990) and Pica (forthcoming)).

The usages of the inherent genitive and inherent reflexive seem to be, from that point of view, the ultimate evolution of an element which acts in this case as a marker (with no real semantic content) of very different relationships, involving the concept of characteristic property, temporal relationship, or Case.

Watkins convincingly advocates that we find traces of what we take to be cognitive faculties in many domains which are usually taken to belong to the domain of social activity (in texts, myths, poems, religion, politics and the like).

The same point is also implicit in Friedrich's (1979) detailed study of the indo-european institutions, in the context of an analysis of the indo-european kinship terminology.

It is not surprising from our point of view that the structuration of these domains should be constrained by specific properties of the mind/brain, including those of Universal Grammar.

We can, for example, restate the observations of Zribi-Hertz (1989) by saying that "reflexives" which are not subject to Binding Theory - for reasons to which we shall come elsewhere - are still subject to constraints which look very much like those of BT, because of the semantic content of the "reflexive" element itself. This state of affairs is not very surprising if the cognitive constraints on Discourse enter in relationship with the constraints of UG, perhaps through a Conceptual Structure, in the sense of Jackendoff (1987).

If so, the study of Universal Grammar and its interaction with other faculties of the human brain could prove to be an important tool for the study of the interaction of human beings with their ecological environment.

The importance of this type of observations (partly reminiscent of the concerns of the comparative linguistic project of the beginning of the century) and its significance for current research should not need to be stressed, at a moment when the world is subject to important technological and political changes that might affect its future in an irreversible way.

### NOTES

\* This article is intimately linked to the work on Binding theory that I have been pursuing since 1982, most of which is cited in the references - the main idea being that elements subject to Binding Theory can ultimately be analysed as affixes (an obvious property of the genitive marker) that cliticize into INFL at different levels of interpretation.

See Pica (1982) (1985) (1987) & (1990) for an extension of the analysis developed in the text to compound reflexives (which seems at first glance to be a potential counter-example to the claim that reflexives are always affixes).

The present article benefited directly or indirectly from numerous exchanges with several linguists, among them Phil Baldi, Noam Chomsky, Ken Hale, Eric Hamp, Richard Kayne, Jean-Claude Milner, Nicolas Ruwet and Bill Schmalstieg, although none of them are directly or indirectly responsible for the contents of the text itself.



Thanks to J. Rooryck for his comments on several previous drafts of the present article.

For obvious limitations of space, many issues raised by the analysis developed in the text are left open, and to which we shall come back in a more extended version of the same article.

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## The Selectional Properties of Adverbs\*

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The purpose of this paper is to develop an analysis of the selectional properties of adverbs that will also account for the restrictions that govern their occurrence and positioning in a sentence.

It will be argued that the existence of different classes of adverbs is best accounted for by viewing adverbs as predicates which are subcategorized with respect to the type of argument that they select. However, the use of subcategorization frames like those used to classify verbs with respect to their transitivity properties does not appear to be adequate in the case of adverbs since adverbs do not necessarily enter into a head-complement relationship with their argument like verbs do with their objects.

It will be argued that the selectional properties of adverbs should be encoded in terms of semantic categories like "proposition", "event" and "action". These semantic categories are mapped onto syntactic heads such as Comp, Infl and V and are therefore structurally realized as projections of these heads. Like other predicates, adverbs must appear in a position from which they can govern the head of their argument at some level of representation. In contrast to primary predicates like verbs, secondary predicates like adverbs are generated in adjunction positions and can therefore be adjoined either to the head of their argument or to the maximal projection of that head.

### 1. A positional classification of adverbs

That adverbs must be characterized in terms of their selectional restrictions is clearly shown by the fact that adverbs classify into several major types with respect to their possibilities of occurrences in a sentence, that is with respect to what portion of the sentence or what element in the sentence they may modify.

On the basis of examples like the following, Jackendoff (1972) concludes that we must distinguish at least six major types of adverbs, as shown in table 1 below.<sup>1</sup>

- (1) a. Clumsily (,) John dropped his cup of coffee.  
b. John clumsily dropped his cup of coffee.  
c. John dropped his cup of coffee clumsily.
- (2) a. Slowly (,) John dropped his cup of coffee.  
b. John slowly dropped his cup of coffee.  
c. John dropped his cup of coffee slowly.