THE PREPOSITIONS *A*, *OF* AND *BY* AS DUMMY CASE-MARKERS: TWO STRUCTURAL CASES. CASE AS A SOLUTION OF BOUND PRONOUNS

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In this paper I explain the fact that bound pronouns in Iberian languages are grammatical in oblique case-marking contexts and ungrammatical in structural case positions. When we search for an explanation for this phenomenon relating it to case-theory, we discover that the dummy case-marking character of the preposition *a* plays an important role. An analysis of the contexts where we find this preposition gives us insight into the structure of specific and non-specific NPs in these languages and leads us to conclude that there are two types of structural object case (as proposed for Finnish by Belletti (1988), for Turkish by Enç (1991) and De Hoop (1992), and for Inuit by Bittner (1988) and Bok-Bennema (1991)). Furthermore, I will show that also bound pronouns in snake-sentences and bigger domains in English can be explained in terms of case-theory. The dummy case-marking character of the prepositions *of* and *by* and the assumption that Num is a genitive case-assigner plays an important role here. The theoretical framework in which this paper is written is that of the theory of Government and Binding, developed in Chomsky (1981) and subsequent work.

1. Bound Pronouns Are Contrary to the Current Theory

This section provides an introduction to the bound pronoun problem and an overview of the contexts where we can find these pronouns. The standard binding conditions A and B as formulated in Chomsky (1981:188), given in (1), are not able to account for the so-called 'snake-sentences', illustrated in (2):

Catalan Working Papers in Linguistics (CWPL) 1992: 183-203.
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(1) A. An anaphor has to be bound in its governing category.

B. A pronoun has to be free in its governing category.

(2) John$_i$ saw a snake near him$_i$

In this case the pronoun *him* is bound in its governing category (GC). This is in conflict with principle B of the standard binding conditions which states that a pronoun has to be free in its GC. We find bound pronouns in snake-sentences in many languages:

(3) Jan$_i$ ziet een slang naast 'm$_i$. (Dutch)
'John sees a snake near him.'

(4) Jan$_i$ seach in slange nêst him$_i$. (Frisian)
'John saw a snake near him.'

(5) Jean$_i$ voit un serpent à côté de lui$_i$. (French)
'John sees a snake near him.'

(6) Gianni$_i$ vede un serpente vicino a lui$_i$. (Italian)
'John sees a snake near him.'

(7) Ion$_i$ a vazut un sarpe linga el$_i$. (Romanian)
'John saw a snake near him.'

(8) Juan$_i$ vio una serpiente cerca de él$_i$. (Spanish)
'John saw a snake near him.'

(9) En Joan$_i$ va veure una serp a prop d'ell$_i$. (Catalan)
'John saw a snake near him.'

(10) O Joao$_i$ viu um gato ao pé dele$_i$. (Portuguese)
'John saw a cat near him.'

(11) Xan$_i$ veu unha serpe perto del$_i$. (Galician)
'John saw a snake near him.'

Lees and Klima (1963) proposed a sentential solution for (2):

(12) John$_i$ saw [a snake to be near him$_i$]

This is what nowadays would be called a small clause solution. Chomsky (1981) briefly considers such solutions in chapter 5 but rejects them as being not generally applicable to all cases. The inadequacy of the small clause solution to the problem clearly appears in Dutch cases with intransitives, as we can observe in (13):

(13) Jan keek om zich heen.
'John looked around him.'

If the domain introduced by *om* were a small clause, we would have the structure in (14):

(14) Jan$_i$ keek [$_S$ PRO$_i$ om zich$_i$ heen]

The problem is that with such intransitives, there is no other antecedent for PRO than the subject itself. But since *zich* is also bound by the subject, the reflexive is bound in the local domain, while it should be free.[1] In other words, with a structure like (14) one would expect *zichzelf* rather than *zich*. Thus, the small clause analysis gives exactly the opposite results from what is needed. This analysis must therefore be rejected.

Moreover, as empirical investigation shows, several Romance languages allow pronouns to be bound in more local contexts, as we can observe in (15)-(20):

(15) Jean$_i$ parle de lui$_i$. (French)
John talks about him

[1] As shown by Koster (1985:148, (19)):

a. *zich* and *zichzelf* are bound in their minimal full clause;
b. *zichzelf* must be bound in a small anaphoric domain, *zich* must be free.

(16) ??Gianni$_i$ parla de lui$_i$. (Italian)

John talks about him (allowed in certain contexts)

(17) Ion$_i$ totdeauna vorbeste despre el$_i$. (Romanian)

John always talks about him

(18) Juan$_i$ habla de él$_i$. (Spanish)

John talks about him

(19) En Joan$_i$ parla d'ell$_i$. (Catalan)

The John talks about him

(20) O Joao$_i$ fala sempre dele$_i$. (Portuguese)

The John talks always about him

(15)-(20)'John (always) talks about himself.'

Assuming that *lui*, *el*, *él*, *ell* and *ele* are pronouns, the standard binding conditions are not able to account for these locally bound pronouns. The French example (15) is widely known in the literature but the Italian example (16) is marked as ungrammatical in the literature so far. The native speakers I talked to, however, told me that it is much easier to get a bound reading when the sentence is supported by contextual information. In a forthcoming article I will discuss the specific problems with bound pronouns in French and Italian. I will also postpone the discussion of some Romanian and Galician sentences I got via questionnaries. In this article I will discuss bound pronouns in the Iberian languages.

Section 2 discusses the possibility of bound pronouns in Frisian and presents the Chain condition that Reinhart and Reuland (1991a, b) developed to explain this phenomenon. We will see that this Chain condition explains why bound pronominals in Iberian[2] languages are grammatical in oblique case-marking contexts. In this section I will also show what kind of contexts do not allow bound pronouns.

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[2] The Iberian languages are the Romance languages spoken in the Iberian Peninsula.

2. A Case-related Solution to the Bound Pronouns

The anaphoric system of Frisian presents a serious problem for the standard binding theory too. Like English, Frisian has a two-member system; it has an anaphor *himsels*, and a pronominal *him*. However, unlike Dutch and English, Frisian has locally bound pronominals. The generalization is that wherever Dutch allows *zich* (a so-called SE- anaphor[3]), Frisian allows a bound pronominal. In their search for an explanation of the distribution of bound pronouns in Frisian, Reinhart and Reuland (1991a, b) have developed a Generalized Chain condition on A-chains which is based on a general notion of Chain links by Chomsky (1986a, b):

(21) *Generalized Condition on A-chains*

A maximal A-chain (α_1, ..., α_n) contains precisely one link $-\alpha_1-$ which is fully specified for grammatical features (structural case features and ϕ-features).

> Pronominals are fully specified for phi-features. The referential dependence of anaphors is syntactically reflected in having a paradigm which lacks a distinction in at least one grammatical dimension. Anaphors fail to have a full paradigm for singular-plural or gender distinctions.
> (Reinhart & Reuland (1991b))

In (22) the pronoun *se* 'her', which bears structural case,[4] produces an ungrammatical sentence but *har* is grammatical in this bound position.

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[3] Reinhart and Reuland (1989) introduce the terms SE- and SELF-anaphors. SELF-anaphors are complex anaphors like e.g. *zichzelf* (Dutch), *seg selv* (Norwegian), *himself* (English), *se stesso* (Italian). SE-anaphors are Simplex Expression-anaphors like e.g. *zelf* (Dutch), *seg* (Norwegian), *self* (English), *se* (Italian).

[4] Two pronominals, namely the 3rd person singular feminine and the 3rd person plural (common gender), have two object forms: both have *se* as well as *har* (or -in plural- *harren*). The two forms can be used interchangeably. However, unlike *har* and *harren*, *se* is ungrammatical when locally bound. J. Hoekstra (1991) shows that *se* is ungrammatical in a number of positions where *har* and *harren* are allowed: (a) in the object position of prepositions (which assign oblique case); (b) in the object position of transitive adjectives (which assign oblique case to their objects, cf. Van Riemsdijk (1983)); (c) in the experiencer argument position of psychological verbs

(22) a. Jeltsje$_i$ skammet har$_i$. (Frisian)

Julia shames her-INH

b. *Jeltsje$_i$ skammet se$_i$.

Julia shames her-STRUCT

'Julia is ashamed of herself.'

(22b) contains a chain that links two elements bearing structural case and thus violates the Chain condition in (21). Reinhart and Reuland argue that (22a) is grammatical because *har* bears inherent case and that in the entire sentence there is only one element which is specified for structural case: the proper name *Jeltsje*. We will see that this Chain condition also accounts for the (un)grammaticality of locally bound pronouns in Spanish, Portuguese and Catalan. Consider again examples (18)-(20), repeated here as (23)-(25), and examples (26)-(34):

(23) Juan$_i$ habla de él$_i$. (Spanish)

(24) En Joan$_i$ parla d'ell$_i$. (Catalan)

(25) O Joao$_i$ fala sempre dele$_i$. (Portuguese)

(26) Gregorio$_i$ lo ha comprado para él$_i$. (Spanish)

Gregory it has bought for him

'Gregory has bought it for himself.'

(27) Se'l pro$_i$ va comprar per ell$_i$. (not: per a ell) (Catalan)

it *pro* buy-PAST-3sg for *a* him (not: for *a* him)

'He bought it for himself.'

(as Den Besten (1985) and also Belletti & Rizzi (1988) show, this position is assigned oblique case), and (d) in free dative constructions (which are assigned inherent, dative case). Hoekstra comes to the conclusion that (A) '*Se* must bear structural case'. (that is, either accusative or nominative since *se* also is used for 3rd person singular feminine and 3rd person plural (common gender) subjects). Since he shows that in all four circumstances just mentioned the pronoun *har(ren)* is allowed, there is another, implicit, conclusion: (B) '*Har(ren)* can bear inherent case'. There is a fifth circumstance where *se* is ungrammatical and *har(ren)* is grammatical, namely: (e) in a bound position in a reflexive construction.

(28) O pai$_i$ comprou a casa para ele$_i$. (Portuguese)

The father has-bought the house for him

'Father has bought the house for himself.'

(29) a. *Mario se ama a él. (Spanish)

Mario loves *a* him

b. Mario se ama a sí mismo.

Mario loves *a* SE self

'Mario loves himself.'

(30) a. *En Joan s'estima a ell. (Catalan)

The John loves *a* him

b. En Joan s'estima a si mateix.

The John loves *a* SE self

'John loves himself.'

(31) a. *O Joao ama-se a ele. (Portuguese)

The John loves *a* him

b . O Joao ama-se a si próprio / a si mesmo.

The John loves *a* SE self / *a* SE self

'John loves himself.'

(32) a. *Fernando se lava a él. (Spanish)

Fernando washes *a* him

b. Fernando se lava a sí mismo.

Fernando washes *a* SE self

'Fernando washes.'

(33) a. *En Pere es renta a ell. (Catalan)

The Peter washes *a* him

b. En Pere es renta a si mateix.

The Peter washes *a* SE self

'Peter washes.'

(34) a. *O Pedro$_i$ lava-se a ele$_i$. (Portuguese)

The Peter washes *a* him

b. O Pedro lava-se a si mesmo / a si próprio.

The Peter washes *a* SE self / *a* SE self

'Peter washes.'

The prepositions in (23)-(28) assign oblique case to the object. This means that these objects do not have structural case. The only element in these sentences which is fully specified for all grammatical features is the subject. This means the objects are able to form a Chain with the subject without violating the Chain Condition (21). But what about (29)-(34)? Why can't we have bound pronouns here? Section 3 concerns the properties of the preposition *a* that precedes [+animate] and [+specific] direct object pronouns in the Iberian languages. The case-marking character of this preposition and the Chain condition, together, explain why bound pronouns in the Iberian languages are ungrammatical in certain contexts.

3. Preposition *a* as a Dummy Case-marker

At first sight all object pronouns in (23)-(34) are assigned oblique, thus inherent, case by the preceding preposition. But the value of the preposition is not identical in all sentences. In the Iberian languages indirect objects and direct object strong pronouns with the features [+animate] and [+specific] are preceded by the preposition *a*. For example:

(35) Me ha visto a mí. (Spanish)

me has-3sg seen *a* me

(36) Jo el corregiré a ell. (Catalan)

I him correct-FUT *a* he

(37) O homem burlou-te a ti. (Portuguese)

The man cheated-3sg-you *a* you

(38) Vexo-o a ell. (Galician)

see-1sg him *a* he

Jaeggli (1982) points out that the preposition *a* 'to', when inserted before a direct object strong pronoun with the features [+animate] and [+specific], is a dummy case-marker. He was the first to relate case assignment to the phenomenon of clitic-doubling.[5,6] Zubizarreta (1985) shows that *a* is a dummy preposition functioning as a semantically empty case-marker by pointing out that the accusative direct object preceded by *a* is thematically unrestricted. She argues that an argument that is realized as object of the verb or as subject is semantically unrestricted since other roles than Agent may be assigned to the subject position and other roles than Theme may be assigned to the object position. However, the thematic role of an argument

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[5] Jaeggli uses this to explain that in River Plate Spanish clitic-doubling is only possible with [+animate] objects. Let us consider the circumstances in which clitic-doubling is allowed in Spanish:

(i) a. Veo a los chicos.
'I see the boys.'

b. Los veo a ellos.
'I see them.'

c. Los veo a los chicos.
'I see the boys.'

(ii) a. Compro los libros.

b. *Los compro los libros.
'I buy the books.'

In (iib) the object *libros* 'books' is not [+animate] so no *a*-insertion takes place. In (iib) the clitic absorbs case, this means case cannot be assigned to the object *libros*. In (ib) the clitic also absorbs case but insertion of the preposition *a* takes place because the object is [+animate] and [+specific]. As the preposition *a* is a dummy case-marker it is able to assign case to the object *ellos*. This is the reason why (ib) is grammatical and (iib) is ungrammatical.

[6] The dummy case-marking character of the preposition *a* leads Demonte (1987) to suggest a distinction between true PPs and pseudo-PPs (=NPs) in the grammar of Romance languages. In her reasoning the *a* + NP sequences of (29)-(38) are pseudo-PPs.

that is realized in a prepositional phrase is restricted by the preposition: the object of *to* must be the Goal, the object of *from* the Source, the object of *in* must be a Location, etc. She, then, shows that in the examples mentioned under (39) the preposition *a* preceding the animate direct object does not thematically restrict the object. Thus, she concludes, *a* is a semantically empty case-marker.

(39) a. Juan la trajo a María a casa.
John her-Acc brought *a* María to home
'John brought Maria home.'

b. El mucamo la sirvió a María.
The servant her-Acc served *a* María
'The servant served Maria.'

c. El mucamo le sirvió la comida a María.
The servant her-Dat served the food *a* María
'The servant served Maria the food.'

In (39a) the accusative direct object *María* is a Theme. In (39b) it is a Goal, comparable to the dative indirect object in (39c). Since inherent case is related to a specific θ-role (cf. Chomsky (1986a), Belletti (1988)) we must come to the conclusion that the objects preceded by the preposition *a* in (39a) and (39b) do not bear inherent case. Generally speaking, structural case is assigned in certain configurations, e.g. by INFL or V. I now assume that the preposition *a* in cases like (39a) and (39b) transmits the (structural) case, which is assigned by V, to the object.

Now, let us look at sentences (29)-(34) again and see whether we have a solution for the ungrammaticality of the (a) sentences. We assume the standard idea that the preposition *a* in the sentences (29)-(38) is a dummy case-marking preposition whereas the head of the PP in the sentences (23)-(28) is a 'real' preposition with 'true' semantic value. Moreover, the preposition *a* assigns structural case (accusative) to its object rather than inherent case. This means that in these sentences we find a chain that links two elements with structural case, and violates the

Chain condition (21). However, in (29)-(34) we observe that, while the pronoun produces an ungrammatical sentence (see (a) examples), the anaphor *sí mismo* is allowed ((b) examples). Section 4 shows that the use of the preposition *a* before specific NPs in relative clauses is related to the use of the indicative mood whereas omission of this preposition before non-specific NPs is related to the use of the subjunctive. Section 5 suggests that this follows from a correlation between the interpretation of an object and the type of case it receives.

4. Preposition *a* as a Dummy Case-marker and (Non-)Specific NPs

Having solved our bound pronoun problem, the next question is: why is insertion of preposition *a* obligatory in (40)?

(40) a. Veo a los chicos.
b. *Veo los chicos.
'I see the boys.'

Why is the dummy case-marker *a* needed in (40), given that the verb can assign case to the object NP? Consider the next sentences:

(41) Veo al chico.
'I see the boy.'
(42) Veo un chico.
'I see a boy.'
(43) Veo a un chico que es profesor.
'I see a boy who is a teacher.'

We can observe that the object NPs in (41) and (43) are interpreted as [+specific]: in (41) because the definite article specifies the NP; and in (43) because there is a relative clause which modifies the NP. In both cases *a*-insertion takes place, even in (43), where the object is

preceded by an indefinite article. We must come to the conclusion that [+specific] and [+animate] direct objects need a different objective case, that is, the case assigned by the dummy case-marking preposition. Sentences (44) give some more evidence for this hypothesis. The indefinite object preceded by *a* is interpreted as specific, and a relative modifier must be in the indicative mood. If the *a* is missing, the indefinite object is interpreted as non-specific, and the relative modifier must be in the subjunctive mood:

(44) a. Busco a una secretaria que está vestida de blanco.
look-1sg-for *a* a secretary that is-IND dressed of white
'I am looking for a secretary dressed in white.'

b. Busco una secretaria que sepa hablar inglés.
look-1sg-for a secretary that know-SUBJ-3sg speak-INF English
'I am looking for a secretary who can speak English.'

In sentence (44a) *a*-insertion takes place because the NP *secretaria* is modified by a relative clause and is therefore specific. However, in sentence (44b) no *a*-insertion takes place, notwithstanding the fact that the NP is modified by a relative clause. The use of the subjunctive mood of the verb implies that the object NP is non-specific. This is the kind of sentence one would expect to find in an ad in a newspaper: 'Company is looking for any person that is able to function as a secretary and that is able to speak English'. So we can say that the object NP in (44b) is non-specific. The use of the indicative mood in (44a) already indicates that the object NP in this sentence is specific. One expects to hear this sentence in spoken form expressed by someone who is inquiring after the whereabouts of a certain person describing her as a secretary dressed in white.[7] On the other hand, the counterparts of (44) in (45) change the meaning of both sentences:

[7] I will not give an extensive exposition of the theory that describes the terms 'specific' and 'non-specific' NP's, nor will I go into the details of the discussion on these topics that is taking place at the moment. I just would like to outline in a rather intuitive way what I mean by a 'specific' NP and by a 'non-specific' NP. Let us consider the next sentence:

(45) a. Busco a una secretaria que esté vestida de blanco.
look-1sg-for *a* a secretary that be-SUBJ-3sg dressed in white

b. Busco una secretaria que sabe hablar inglés.
look-1sg-for a secretary that know-IND-3sg speak-INF English
'I am looking for a secreatry who speaks English.'

Now (45a) is the sentence which could very well be uttered by a company looking for any person that is able to function as a secretary as long as this person is dressed in white: the NP headed by *secretaria* is non-specific. (45b) contains a specific NP: in this sentence someone is inquiring after the whereabouts of a certain person decribing her as a secretary that is able to speak English.

(i) A colleague of mine went nuts (because of linguistics).

Besides the existential reading, the indefinite NP in (i) also has the interpretation of a referring expression, comparable to the interpretation of a proper name or a demonstrative. That is, the existential reading just states that the set of crazy colleagues of mine is not empty, whereas the referential reading refers to a specific individual, for instance {X}. The existential reading is also called 'non-specific' in the literature, whereas the referential one is called 'specific'.

Fodor and Sag (1982), for example, present evidence for a semantic ambiguity in indefinite NPs. They provide a number of arguments in favour of the hypothesis that the difference between an existential and a referential reading for indefinites reflects a semantic ambiguity, over and above contextual scope ambiguities. They sum up certain factors that favour either a referential or an existential reading of an indefinite NP. When we observe our Spanish data we come to the conclusion that the next factor can be included among those mentioned by Fodor and Sag:

(ii) For Spanish:
The use of the preposition *a* before the object and the use of the indicative mood in the relative clause that modifies the object gives rise to a referential reading whereas the omission of this preposition and the use of the subjunctive mood leads to an existential reading of the indefinite NP.

5. Two Types of Objective Case

In the work of various authors we can find the idea, put forward here for Spanish, that there is a correlation between the type of interpretation an object gets and the type of case assigned to this object. Belletti (1988) notes that in Finnish there are two possible cases for object NPs. Depending on the reading associated with it, the object of a transitive verb will be marked either with accusative or with partitive case. De Hoop (1992) notes that Finnish is not the only language that shows morphological realization of two different objective cases. In Turkish direct objects optionally get an accusative case-marker. Once again we can observe here a correlation between the type of objective case and the interpretation of the NP. In Turkish inherent case correlates with non-specificity whereas structural case corresponds to specificity (cf. Enç (1991)). In Greenlandic Eskimo there is also a correlation between the type of case assigned to an object and the type of interpretation this object receives. An indefinite object NP in this language has instrumental case in an antipassive construction and a definite object NP has nominative case in a transitive variant (cf. Bittner (1988) and Bok-Bennema (1991)). De Hoop puts forward that an object gets a strong reading if and only if it bears strong structural case. A 'strong reading' of an object is attributed to one certain type of NP, i.e. the type of a generalized quantifier; the term 'strong reading' is meant to capture the unmarked reading of strong NPs as well as strong readings of weak NPs such as referential (specific), partitive, and generic readings. It is important to talk about 'strong' and 'weak' readings of objects instead of 'definite' and 'indefinite' objects, since, as confirmed by our Spanish data, we have to distinguish (at least) two classes of indefinite objects. Furthermore, it is important to point out that, within De Hoop's approach, the two types of objective case that are distinguished are both claimed to be structural rather that inherent.[8] The type of accusative case that is related to the strong reading of an object is called strong case and is licensed at S-structure, whereas the other type of structural objective case is assigned at D-structure and is called weak case.

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[8] Structural case is assigned in certain configurations, whereas inherent case is related to a specific q-role (cf. Chomsky (1986), Belletti (1988)).

The claim that there are two types of accusative case is in accordance with the Spanish facts. Remember that Zubizarreta (1985) concludes that the dummy case-marking preposition *a* assigns structural case to its object rather than inherent case. It seems very likely that the other type of objective case which gives rise to a weak reading is also a structural case.

6. Preposition *of* as a Dummy Case-marker. Number as a Structural Case-assigner

This section shows that the Chain condition developed by Reinhart and Reuland does not only account for bound pronouns in Frisian, Spanish, Catalan and Portuguese but also for the (un)grammaticality of bound pronouns in snake-sentences and bigger domains in English. I will assume that Number (Num) has its own functional projection in English and that it is Num that assigns genitive case just like Infl assigns nominative case and V assigns accusative case. The preposition *of* is a dummy element which 'helps' Num to assign genitive.

The idea that a bound pronoun is allowed when it bears oblique case (assigned to it by a preposition) is supported by some additional data presented in Johnson (1992):

(46) a. Betsy$_i$ returned every picture near her$_i$.

b. ??Betsy$_i$ returned every picture of her$_i$.

(47) a. *They$_i$ remember a discussion by them$_i$.[9]

b. *Liz$_i$ remembers some discussion of her$_i$.

(48) a. Gary$_i$ dislikes any questioning directed at him$_i$.

b. ?*Gary$_i$ dislikes any questioning of him$_i$.

(49) a. Liz$_i$ dislikes the guy with her$_i$.

b. *Betsy$_i$ bought a likeness of her$_i$.

(50) a. Newton$_i$ denigrated scientists before him$_i$.

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[9] K. Johnson marks this sentence as "?" and the (b) sentences in (47), (49), (50),and (51) as "?*", but some other informants find them ungrammatical.

(50) b. *This problem$_i$ virtually defines a solution of it$_i$.

(51) a. Sam$_i$ doesn't remember the man after him$_i$ (at the podium).

b. *Sam$_i$ doesn't remember any brother of him$_i$.

(52) a. ?Which picture near John$_i$ does he$_i$ like?

b. *Which pictures of John$_i$ did he$_i$ like?

(53) Pictures of John$_i$ seem to him$_i$ to be beautiful.

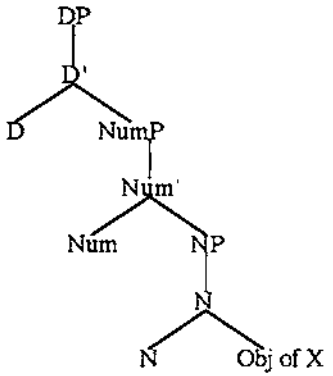
(54) a. Which picture near John$_i$ did he$_i$ buy?

b. *Which picture of John$_i$ did he$_i$ buy?

In all these cases the pronoun is bound in its governing category. The judgements on the (b) sentences range from highly dubious to ungrammatical. The (a) sentences are grammatical in general (as we will saw in section 7, the ungrammaticality of (47a) turns out to be a strong argument in favour of my analysis in terms of case and chains). It is not difficult to observe that in most of the (a) sentences the object is preceded by a preposition that assigns oblique case. The objects in the (b) sentences, however, are preceded by the preposition *of* which assigns structural case. This means that in the (b) sentences we find two elements with structural case in the same chain, and hence these examples are ruled out. In the (a) sentences, however, no violation of the Chain Condition takes place so they are felt to be much better. The idea that in English a genitive in the complement of NP or AP is realized by means of the preposition *of* which, as a semantically empty case-marker, assigns objective case is put forward by Chomsky (1986a:87, 192-204, footnote 139). More concretely, I will assume that Number has its own functional projection in English (like Ritter (1991a, b) does for Hebrew and Picallo (1991) for Catalan) and that it is Num that assigns genitive case just like Infl assigns nominative case and V assigns accusative case.[10] The preposition *of* is a dummy element which 'helps' Num to assign genitive:

[10] Ritter (1991b) discusses genitive constructions (both construct states and free genitives) in Hebrew. She says that in a construct state the N raises to the head of DP to pick up a phonetically null genitive case-assigning determiner, which she labels Dgen. There are two characteristics that distinguish the free genitive from the construct state: First, the definite article *ha* may appear in initial position of the free genitive; and second, the free genitive subject bears an overt genitive case-marker *Sel*. Since a free genitive DP can be headed by the

(55)



N attaches to Num, Num assigns genitive case to the object via the preposition *of*.[11]

Section 7 explores the case-marking properties of the preposition *by* in English.

7. Preposition *by* as a Dummy Case-marker

It is interesting to observe that (47a), repeated here as (56), is ungrammatical:

(56) *They$_i$ remember a discussion by them$_i$.

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definite determiner, the surface order cannot be derived by raising N to Dgen in this context. Moreover, the presence of *Sel*, the overt case-marker on the subject, suggests that genitive case is assigned by some other means than Dgen in the free genitive construction. Nevertheless (because of subject-object assymetry) Ritter wants to derive the surface order by moving the head noun. Therefore, she supposes that the free genitive construction is derived by N-raising, but not to the head of DP. According to the Head Movement Constraint, one is forced to postulate another head position intermediate between D and N. Ritter assumes, following Anderson (1982) and others, that there is a distinction between inflectional affixes and derivational affixes. Inflectional affixes are attached to the lexical stem as a consequence of head movement and thus must be heads of syntactic projections. Number is an inflectional affix (in Hebrew and, for our sake, in English) and is thus realized as the head of a syntactic category. Moreover, the position of this category is intermediate between DP and NP. So, the intermediate category is NumP and its head bears the number specification of the noun phrase.

[11] It is not probable that these DPs are headed by a phonetically null genitive case-assigner (Dgen) which assigns genitive because they can have a definite determiner in initial position.

Bresnan (1982), and later Zubizarreta (1985), claim that in English the preposition *by* is a semantically empty case-marker which thematically does not restrict the object. As Zubizarreta has pointed out:[12] "In English, the adverbial status of the *by*-phrase in the passive construction is not so obvious because it has lost its lexical meaning. As (57a, b) illustrate, the *by*-phrase in the English passive (as well as in other languages such as French, Spanish, and Italian) need not be agentive. This shows that the preposition *by* in this construction does not restrict the semantic role of its object. The *by*-phrase is interpreted as having the same semantic role as the lexical external argument of the verb. This is an unusual situation for an adverbial: adverbials are typically semantically restricted phrases.

(57) a. The letter was received by Mary.
b. The house is surrounded by trees.

Further proof that *by* is a dummy preposition is provided by example (58a). Only semantically unrestricted grammatical positions may be predicated of. As noted by Bresnan (1982) and illustrated in (56b) for French, the *by*-phrase in the passive construction can be predicated of. Since adjectives in French carry overt agreement features, there can be no doubt that *soûle* in (58b) is functioning as a predicative adjective and not as an adverb.

(58) a. John said he was passed by Mary in the hall yesterday drunk.
b. Ces vers ont été récités par Marie complètement soûle.
'Those verses were recited by Mary completely drunk.'
(Zubizarreta (1985:254-255))

Since inherent case is related to a specific θ-role (cf. Chomsky (1986a); Belletti (1988)) we must come to the conclusion that the object preceded by the preposition *by* in (56) does not bear inherent case. I assume that *by* assigns structural case.

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[12] The numbering of the examples of the quotation has been modified to agree with the numbering of the present paper.

Now, let us look at sentence (56) again and see whether we have a solution for its ungrammaticality. We assume that the preposition *by* is a dummy case-marking preposition whereas the head of the PP in the sentences (46) and (48)-(51) is a 'real' preposition with 'true' semantic value. Moreover, the preposition *by* assigns structural case to its obejct rather than inherent case. This means that in these sentences we find a chain linking two elements bearing structural case, violating thus the Chain condition (21).

8. Conclusion

In this paper I have shown that the Chain condition developed by Reinhart and Reuland does not only account for bound pronouns in Frisian but also for bound pronouns in all domains in Spanish, Catalan and Portuguese and in snake-sentences and bigger domains in English. According to Jaeggli (1982) the difference between specific NPs, which are *a*-NPs, and non-specific NPs which are 'bare' NPs is related to case. We saw this is indeed plausible since according to Bittner (1988), Bok-Bennema (1991), Enç (1991) and De Hoop (1992) the type of interpretation an object gets is correlated to the type of case assigned to this object. Following De Hoop (1992) on a link between two types of structural case and different readings on objects, it can be argued that Spanish *a* is a case-marker inserted at S-structure in order to license strong structural case on [+specific] [+animate] objects. In the case of Spanish, it seems very likely that the other type of objective case which gives rise to a weak reading, is also a structural rather than an inherent case. Furthermore, Jaeggli's hypothesis is also in accordance with the Chain condition developed by Reinhart and Reuland (1991a,b). In fact, Reinhart and Reuland's A-chain condition can be adapted somewhat in the sense that the notion structural case is replaced by strong structural case in order to distinguish the latter type of case from inherent as well as from weak structural case with respect to A-chains (this was independently put forward by De Hoop as well).

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