

POSSESSIVE PRONOUNS IN CATALAN AND THE AVOID PRONOUN PRINCIPLE

M. Carme Picallo

Universitat Autònoma de Barcelona

Two types of pronominal elements may appear in Catalan Determiner Phrases (DPs): the possessive pronoun and the strong pronoun. These elements differ in distribution, syntactic behavior and denotative properties. In this study, it is shown that the alternation possessive/strong pronoun in Catalan nominal constructions is parallel to the alternation *pro*/strong pronoun in clausal structures. We propose that this parallelism follows from the application of the Avoid Pronoun Principle in Catalan DP and CP structures. We argue that Avoid Pronoun has to be conceived as a principle of grammar imposing economy strategies in the lexical content of the pronominal categories, but not in their phonological content as has customarily been assumed.

0. Introduction

The phenomenon of pronominal deletion is associated with the Avoid Pronoun Principle in Chomsky (1981). Avoid Pronoun is manifested as imposing the choice of a phonologically null pronoun (i.e. *pro* in current terms) over an overt one, when the referential content of the empty element can be identified by the feature content of a 'strong' functional category with which the pronoun is associated, as in the following example:

- (1) *pro* ha caigut
pro [AGR 3, sing] has fallen
'She/he/it has fallen'

We will propose that the phenomenon of phonologically null pronouns is related to another phenomenon: that of the distribution and syntactic behavior of possessive pronouns in Catalan, exemplified in (2):

- (2) La seva caiguda
the her/his/its/their fall

It will be suggested that *pro* and the possessive can appear in sentential and nominal structures respectively as the result of the Avoid Pronoun strategy. This proposal may seem contradictory, given that a possessive pronoun, unlike *pro*, is phonologically realized. We will claim, however, that Avoid Pronoun applies at the level of lexical representation, and affects the syntactic behavior of *pro* and the possessive the same way.

1. The Referential Properties of Possessives and *pro*

We will first consider some data that shows that *pro* and the possessive have the same behavior and properties with respect to a series of phenomena. *Pro* and the possessive contrast with the behavior and properties of the so-called 'strong pronouns' (i.e. *ell(a), ell(e)s* 's/he, they') in several respects.

1.1. Proximate Interpretation

When the alternation *pro* /strong pronoun is possible in a clausal structure, and contrastive effects are not intended, *pro* is known to be preferred over a strong pronoun to indicate proximate interpretation. The choice of *pro* has traditionally been explained under an economy strategy applying at the PF component. The referential content of *pro* can be identified by the features of the Infl-Agr node with which *pro* is locally related:

- (3) a. L'Anna_i diu que en Pere_j creu que [*pro*_{i/j} guanyarà]
'Anna says that Pere believes that (he/she) will win'

- (3) b. L'Anna_i diu que en Pere_j creu que [ella_{(??)i}/ell_{(??)j} guanyarà]
 'Anna says that Pere believes that she/he will win'

A parallel phenomenon occurs in nominals when the alternation possessive/strong pronoun is possible. The possessive is preferred over the strong pronoun when coreference is intended. In this case, no economy strategy at PF can be appealed to to explain why the possessive form is chosen:

- (4) a. L'Anna_i diu que en Pere_j telefona a [la seva_{i/j/i,j} mare]
 'Anna says that Pere calls his/her/their mother'
- b. L'Anna_i diu que en Pere_j telefona a [la mare d'ella_i/ell_j/ells_{i,j}]
 'Anna says that Pere calls the mother of she/ he/ they'

The contrast between (3a) and (4a) vs. (3b) and (4b) respectively raises an interesting question. Both *pro* and a possessive pronoun are referentially more ambiguous than a strong pronoun. *Pro* in (3a) is identified by the features of Agr, i.e. Person and Number. Therefore, any of the superordinate subjects –i.e. *Anna* (feminine) and *Pere* (masculine)– can be its antecedent. On the other hand, a possessive pronoun agrees with its antecedent in Person features only. The morphemes of Gender and Number of a Catalan possessive pronoun agree with those of the nominal head –i.e. *mare* 'mother' (fem, sing) in (4a)–. Thus, *seva*, which is inflected for feminine and singular, can refer to *Anna*, to *Pere*, or to *Anna* and *Pere* conjointly in examples of the type (4a).

The use of a strong pronoun would be the most logical option in both (3) and (4), given that a strong pronoun lexically expresses Person, Gender and Number, and no ambiguity is possible.

Thus, the question that the nominal and clausal examples above pose is why should a referentially ambiguous pronominal element be chosen over an unambiguous one when coreference, precisely, is intended.

1.2. Quantifier Binding

Pro, but not a strong pronoun, can serve as a logical variable at LF, and be directly bound to an m-commanding quantified expression or wh-trace (see Montalbetti (1984) for Spanish, and Rigau (1988) for Catalan). Consider the following contrasts:

- (5) a. Molts artistes_i creuen que [*pro*_i són genis]
'Many artists believe that (they) are geniuses'
b. Molts artistes_i creuen que [ells*_{i/j} són genis]
'Many artists believe that they are geniuses'
- (6) a. Aquest és el nen_i que diuen que *li* van donar un cavall *pro*_i
'This is the boy that they say that they CL gave a horse (to him)'
b. Aquest és el nen_i que diuen que *li* van donar un cavall a ell*_{i/j}
'This is the boy that they say that they CL gave a horse to him'

Strong pronouns can function as bound variables when they appear as objects of a preposition, and *pro* would not be allowed:

- (7) Cada membre del consell_i sap que la reunió no pot començar sense ella_i
'Each member of the council knows that the meeting cannot begin without her'

A strong pronoun is the only viable option in (7), given that there is no local Agr or clitic able to identify the object of the preposition, if phonologically null. Montalbetti (1984) suggests that the distribution of *pro* and overt pronouns with respect to the bound variable interpretation can be captured by the Overt Pronoun Constraint (OPC):

- (8) *OPC*

An overt pronoun cannot link to formal variables iff. the alternation overt/empty obtains.

The notions *overt /empty* in (8) are intended to refer to the phonological content of the pronominal category. However, the contrast between strong pronouns and *pro* with respect to bound variable interpretation surfaces in nominals when a pronominal can be realized either as a possessive or as a strong pronoun:

- (9) a. El temor de tot acusat_i al seu_i fiscal
 'The fear of every defendant_i to his_i prosecutor'
 b. El temor de tot acusat_i al fiscal d'ell*_{i/j}
 'The fear of every defendant to the prosecutor of him'
- (10) a. La pintora de la qual_i admiro retrats dels seus_i fills
 'The painter of whom (I) admire portraits of her sons'
 b. La pintora de la qual_i admiro retrats dels fills d'ella*_{i/j}
 'The painter of whom (I) admire portraits of the sons of her'

Possessives and strong pronouns are phonologically overt, but we can see that a possessive can function as a logical variable, whereas a strong pronoun can not. Thus, the constraint (8) does not seem to express a generalization, given that it is unable to account for the contrasts in grammaticality exemplified in (9) and (10).

The OPC would express a generalization, capturing both the behavior of *pro* and possessives as opposed to strong pronouns, if the notions *overt /empty* were understood as referring to the inherent lexical content of the pronominal categories, not to their phonological content. Prior to discussing this issue, other data would be considered.

1.3. *Numerable and Animate Referents*

In this section we will examine the classes of objects that different types of pronominals may denote. Abstracting away from focus or stress, it is well known that a strong pronoun cannot always alternate with *pro* in clausal structures. In Catalan, a strong pronoun with the function of subject or object can only denote a denumerable and animate/human set. Inanimate objects or

collectives/generics cannot be denoted by a strong pronoun, but only by *pro*. Consider the following:

- (11) a. L'estudiantat; està descontent quan *pro* /*ell; comprova la ineficàcia de l'administració
'The student body is unhappy when (he)/ he verifies the inefficiency of the administration'
- b. Tornaran a col·locar l'escultura; al parc si *pro* /*ella; es pot restaurar
'(They) will put the sculpture again in the park if (she)/she can be restored'
- c. (Els llibres) la Joana sempre *els* ; llegeix *pro* /*a ell; ;
'(The books) Joana always CL reads (them)/ them'

All nouns in Catalan, without exception, are assigned a grammatical Gender and are inflected for Number. *L'estudiantat* 'the student body' in (11a) is masculine and singular; *l'escultura* 'the sculpture' in (11b) is feminine and singular; and, *els llibres* 'the books' are masculine and plural. There is no obvious reason to exclude the strong pronoun in cases like (11 a-c). Moreover, and as E. Torrego (p.c.) has pointed out, strong pronouns can denote any class of objects when *pro* is not allowed:

- (12) a. L'estudiantat; sospita que l'administració no compta amb ell;
'The student body suspects that the administration doesn't count on him'
- b. En Pere és tan despistat que va pagar l'escultura; i va sortir de la galeria sense ella;
'Pere is so absent-minded that (he) paid the sculpture and left the gallery without her'

When nominal structures are considered, we can see that a possessive pronoun has the same referential properties as *pro*. A possessive can denote any type of object or set. Consider the following contrasts:

- (13) a. *La decisió de l'estudiantat*
 'The decision of the student body'
- b. **La decisió d'ell*
 'The decision of he (=student body)'
- c. *La seva decisió*
 'The his (=student body) decision'
- (14) a. *El clonatge de les cèl.lules*
 'The cloning of the cells'
- b. **El clonatge d'elles*
 'The cloning of them (=the cells)'
- c. *El seu clonatge*
 'The their (=the cells) cloning'

Possessive pronominalization is only possible when the argument receives Genitive Case and appears with the preposition *de* 'of' (i.e. Possessor, Agent, Experiencer or Theme). Objects of prepositions other than *de* 'of' can marginally be realized as a strong pronoun, regardless of whether the object denoted is denumerable/animate or it is nondenumerable/inanimate:

- (15) *Un conegut especialista en cèl.lules T₁ va donar una conferència sobre elles(?) ahir al migdia*
 'A famous specialist in T cells gave a conference about them yesterday at noon'

Summarizing, it has been shown that *pro* and the possessive have similar syntactic and denotative properties in Catalan. Proximate interpretation is preferably expressed by a possessive and *pro* in nominal and clausal structures respectively. We have also shown that *pro* and a possessive can function as a logical variable and can denote any type of object or set. Strong pronouns, on the contrary, can have these values only when the use of possessive or *pro* is not possible for independent reasons.

We will argue that the behavior of the pronominal elements we have been considering can be accounted for if we assume that an 'Avoid Pronoun' strategy applies in the grammar. The concept of Avoid Pronoun we will propose is conceptually similar to the one suggested in Chomsky (1981). However, we will suggest that economy strategies are implemented in the lexicon and affect the lexical content of the pronoun, not necessarily its phonological content.

2. The Avoid Pronoun Strategy

Avoid Pronoun imposes the selection of an *empty* pronominal over an *overt* one whenever possible. Suppose that the notions 'overt/empty' refer to the inherent referential content of the pronominal element. The condition, so understood, can be stated as follows:

(16) *Avoid Pronoun*

Avoid referential (ϕ) features up to identification.

Principle (16) is applied if ϕ -features can be assigned to a pronominal element at the level of formal grammar, i.e. at the syntactic component, under agreement. The possibility of assigning features to a pronominal category by a formal procedure like agreement may result in the realization of the pronoun as a phonologically null element, i.e. *pro*, but this may not be the only option. Principle (16) leaves open the possibility for some types of constructions to satisfy Avoid Pronoun, despite the fact that the pronominal forms that appear in them are phonologically realized. What matters is that the ϕ -features with which the pronoun is identified are not inherent, but formally assigned.

As stated in (16), the application of Avoid Pronoun is constrained by Identification requirements. Let us examine these, focusing first on the phonologically null element *pro*.

2.1. Identification

In Rizzi (1986), the Identification Condition for *pro* is proposed in the following terms:

- (17) *Pro* is identified if it has the same grammatical specification of the features of a head coindexed with it.

Identification can be understood either as a feature-assignment or as a recovery procedure in (17). There is, however, a difference between the two mechanisms that bears directly on the question of which inherent content *pro* is assumed to have.

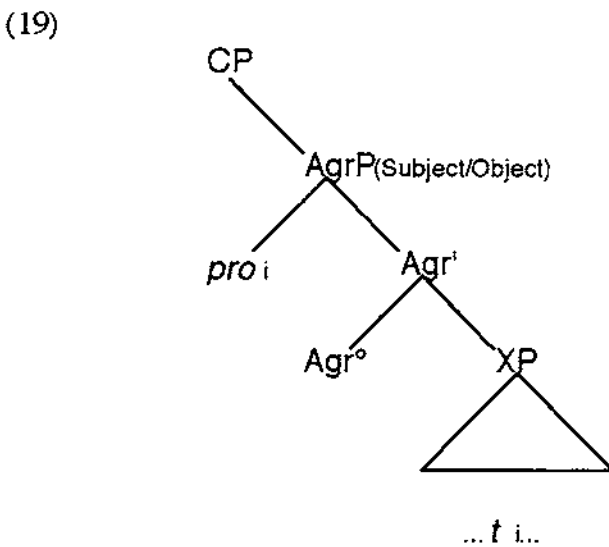
If Identification is understood as a *recovery* procedure, *pro* must be assumed to have the same inherent lexical content as a referentially equivalent phonologically specified form. That is, *pro* has categorial plus referential (ϕ) features. Each occurrence of *pro* should be lexically non-distinct from a referentially equivalent strong pronoun. Under this hypothesis, *pro* and its identifier must match in features, in the same way, say, that subject *ella* 'she' must match with Infl-Agr in example (18a):

- (18) a. *Ella* [balla]
she dance-3rd-SING
'She dances'
- b. *pro* 3rd,sing [balla]
dance-3rd-SING
'He/she dances'

Pro is not interpretable Genderwise in (18b), unless it has an antecedent. This is not the case of the strong pronoun in (18a), which lexically expresses Person, Gender and Number. We have seen in the last section that *pro* and strong pronouns are not equivalent with respect to a series of syntactic phenomena and denotative properties. This fact suggests that *pro* and a strong pronoun are lexically distinct.

We will propose that Identification –i.e. procedure (4)– consists of (formal) *feature assignment*. If so, *pro* can be thought of as an element that is lexically void of inherent features other than the categorial [+pronoun,–anaphor]. That is, *pro* is an empty pronominal in a radical sense. This means that we have a unique 'all purpose' *pro* in the lexicon that will be given any content its identifier has. The definition of Avoid Pronoun given in (16) is consistent with this second concept of Identification, but it is inconsistent with the idea of Identification as a recovery procedure, since there is no referential content to recover from an element lacking inherent ϕ -features.

Feature assignment, or Identification, is implemented at the syntactic component, when *pro* is in an environment where an agreement relation with a head can be established, as in the following abstract representation:



In (19) *pro* is assumed to have moved to a [Spec, AgrP_{S/O}] from its base-generated position *t*. This is the configuration in which a subject or an object *pro* satisfies Identification. If a subject, *pro* is assigned the features of Infl-Agr (Person and Number). If an object, *pro* is assigned the features of the Agr-O projection immediately dominating the VP node (see Chomsky (1989)). It has been suggested (see Fernández Soriano (1989), Cordin (1990)) that object clitics may

occupy the head of the functional Agr-O(bject) projection in the Romance languages. We will assume this hypothesis, for the purposes of this discussion.

Unlike subject *pro*, a direct object *pro* can be assigned Gender, besides Person and Number. This is so because some direct object clitics are able to specify these three features:

- (20) a. (Jo) el veig *pro*
(I) CL-3rd-MSC-SING see-1st-SING
'I see him/it (=John/the book)'
- b. (Jo) les veig *pro*
(I) CL-3rd-FEM-PL see-1st-SING
'I see them (=the women/the notebooks)'

When the identifier of *pro* is an indirect object clitic, *pro* is assigned Person, Number and [+/-Animate], but not Gender:

- (21) a. (Tu) li dónes cops *pro*
(you) CL-3rd-SING-ANIM give-2nd-SING hits'
'You hit him/her'
- b. (Tu) hi dónes cops *pro*
(you) CL-3rd-SING-INANIM give-2nd-SING hits
'You hit it (=the bookM, the notebookF)'

Although *pro* may only be assigned the features of its identifying element (and only these) factors independent of formal agreement, like the selectional restrictions of the predicate, or the existence of an intended antecedent, can restrict the referential range of *pro*:

- (22) a. *pro* escriu
'(S/he/*it) writes'

- (22) b. En Guillem_i diu que [*pro*_i ha caigut]
 'Guillem says that (he/*she/*it) has fallen'

Summarizing, it has been proposed that Avoid Pronoun licenses the existence of a pronominal category as void as possible of inherent ϕ -content. The application of Avoid Pronoun is constrained by the Identification Condition. Φ -features should be assigned to this underspecified element in formal grammar, under Spec-head agreement. In Catalan clausal structures, the head identifying *pro* is Infl-Agr or a Clitic. We will now proceed by discussing the application of Avoid Pronoun in nominals. We will begin by briefly introducing the constituent structure we assume for Catalan Determiner Phrases (DPs).

3. The Constituent Structure of DPs and Word Order

In previous work (see Picallo (to appear)), we have argued that the constituency of Catalan DPs should conform to the abstract representation (23), where DP corresponds to Determiner Phrase, NuP corresponds to the functional projection Number Phrase, and GeP to the functional projection Gender Phrase:

- (23) [DP [D' D° [NuP [Nu' Nu° [GeP [Ge' Ge° [NP [N' N°]]]]]]]]

This representation takes into consideration the fact that Romance nominals have Gender and Number. Number specifies the extension of the set the nominal head denotes, and all nouns belong to a particular Gender. The functional element Gender may carry the semantic content of specifying sex distinctions in common regular nouns but, in general, Gender has the function of marking the NP as belonging to a particular declension class [+/-FEM]. We will slightly modify a proposal in Harris (1991), and attribute to Gender the status of a Word Marker, a functional morpheme with a [+N] subcategorization frame.

The structure (23) reflects the order in which the suffixes of Gender and Number appear in the N head at S-structure. N° in (24) below is assumed to adjoin to Nu° , via Ge° , to form a morphological complex with the inflectional heads, as in the following example:

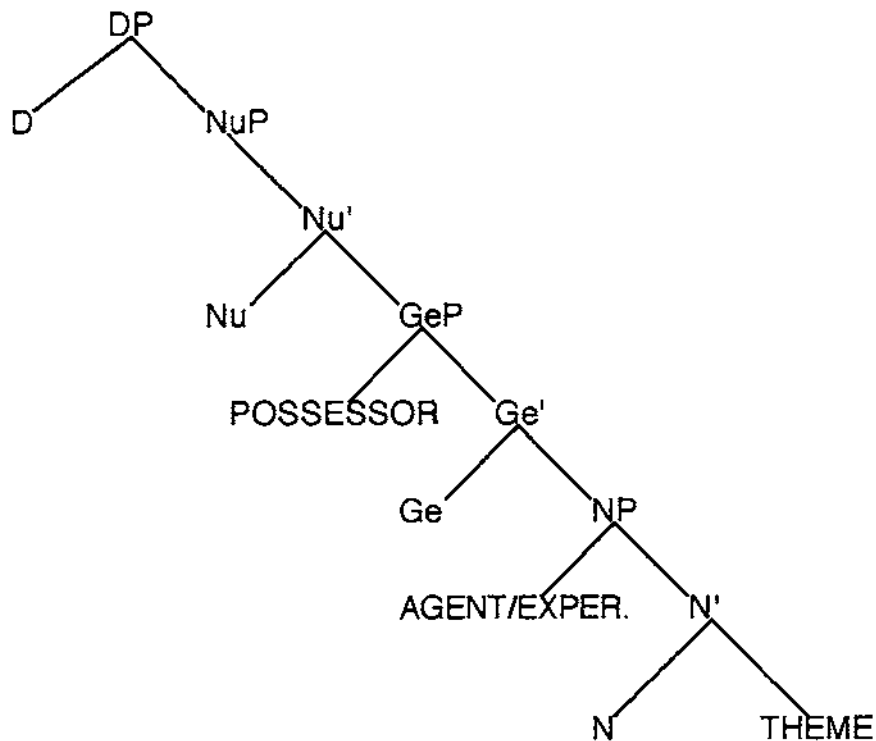
(24) a. Les gates

'the cats_{FEM}'

b. $[DP [NuP [Nu' [[gat-]_i -e-F]_j -sp] [GeP [Ge' t_j [NP [N' t_i]]]]]]$

For the purposes of the discussion that follows, suppose that the thematic roles that a nominal can assign are realized at D-structure in the positions shown in the abstract configuration (25):

(25)



Obligatory head movement in a configuration conforming (25) results in the Head-Arguments order characteristic of Romance nominals:

- (26) a. La traducció d'ell d'una novel.la gòtica
the translation of he of a gothic novel
'His translation of a gothic novel'
- b. [Dpla [NuP[traducció_i [GeP t_i [NP ell [t_i una novel.la]]]]]]
the translation (of) he (of) a novel
- (27) a. L'ordinador de la Núria
the computer of the Núria
'Núria's computer'
- b. [DP l' [NuP [ordinador_i [GeP la Núria [Ge' t_i [NP [t_i]]]]]]]
the computer (of) the Núria

These expressions exemplify the word order that obtains when the arguments of NP are realized as strong pronouns or names. When an argument is realized as a possessive pronoun, it must appear at the left of the nominal head and following the determiner in absence of contrastive stress:

- (28) a. La seva traducció d'una novel.la gòtica
the his/her/their translation of a gothic novel
- b. El seu ordinador
the his/her/their computer

We will argue that the possessive appears prenominally because it must move to [Spec, NuP], a raising category:

- (29) [DP [NuP POSSESSIVE_i [Nu' Nu [...t_i...]]]]

Raising to [Spec, NuP] is obligatory for the possessive, because it will be claimed that the possessive has to satisfy Identification requirements. Possessive raising to [Spec, NuP] in DPs is then parallel to *pro* raising to a [Spec, AgrS/O] in clausal structures. We are suggesting, in

short, that Catalan possessive pronominalization instantiates one particular case of Avoid Pronoun as stated in (16) –i.e. ‘avoid ϕ -features’–.

4. The Avoid Pronoun Strategy in DPs

The nominal expression exemplified in (30a) cannot be syntactically represented as (30b), with syntactically realized but phonologically null pronominals with the function of Agent and Theme respectively:

- (30) a. L'avaluació
 'The evaluation'
 b. *L'avaluació *pro pro*

The expression (30a) is not interpreted as having an arbitrary Agent and a Theme (i.e. as ‘somebody's evaluation of something’), although these arguments are lexically licensed:

- (31) L'avaluació d'en Joan dels resultats de l'experiment
 'The evaluation of Joan of the results of the experiment'

Identification of a phonologically null pronoun in a given syntactic structure (an IP, a DP or a PP) is related in many languages to having the features of Person, Number, and sometimes also Gender, overtly specified in some local projection (see Borer (1983, 1986), Stump (1985), Jaeggli and Safir (1989), McCloskey and Halle (1984) among many others). If this correlation between the possibility of having null pronominals and overt Person/Number specification holds in Catalan, as we have traditionally assumed it does, we can suppose that *pro* should be illicit in Catalan DPs. This is so because the functional projections that constitute a DP in Catalan contain Gender and Number, but not Person, a feature that allows a pronoun to function as a deictic expression.

The concept of Avoid Pronoun we have proposed in (16) leads us to assume that the principle can still be satisfied in nominals when a referentially defective pronominal is inserted at D-structure. The requirement of maximal underspecification (avoid ϕ -features) up to identifiability would be satisfied if the grammar could resort to inserting at D-structure a pronominal element with [+Person] as its only inherent referential content. Recall that [Person] is the only ϕ -feature a pronominal category cannot be assigned in a DP under agreement.

Identification of this referentially defective pronominal can be implemented at the syntactic component in Catalan DPs. The features of Gender and Number can formally be assigned to the defective element under Spec-head agreement. The [+pron,+person] element must raise successive cyclically from its base-generated position to [Spec,NuP], via [Spec,GeP], as shown in the abstract representation (32b) below. Possessive raising has overt agreement effects:

- (32) a. [DP[NuP [[[PRON_[+pers]]_i+Ge]_j+Nu] [Nu' Nu^o [GeP t_j [Ge'Ge^o [NP t_i]]]]]]
- b. La seva_{F,S} avaluació_{F,S}
 'The his/her/their evaluation'

Our hypothesis is able to explain why a possessive pronoun appears in prenominal position in the DP (cf. (28a,b) and (32b)). Possessive raising in DP is a movement parallel to *pro* raising in IP. The possessive is a referentially defective pronominal, and its movement to [Spec, NuP] is necessary to satisfy formal Identification requirements.

This hypothesis explains also why two types of pronominals (possessives and strong pronouns) should exist in Catalan nominal constructions. Our claim is that the possessive is to DPs what *pro* is to IPs: both elements instantiate the application of Avoid Pronoun in two different syntactic structures.

4.1. The Morphological Characteristics of Possessive Pronouns

A complex of morphemes constitute Catalan possessives. Consider first those corresponding to the third person paradigm:

(33)

<i>Person</i>	<i>Gender</i>	<i>Number</i>		
se ([w])	∅	∅	seu	3rd+masc+sg
se ([w])	-[ə]-	∅	seva	3rd+fem+sg
se ([w])	∅	-[s]	seus	3rd+masc+pl
se ([w])	-[ə]-	-[s]	seves	3rd+fem+pl

Recall that the morphemes of Gender and Number are assigned at S-structure under agreement. Only the Person morpheme in the left-hand column in (33) is claimed to be inserted at D-structure. The morpheme [w], is assumed to be the overt expression of Case. Consider the following examples:

- (34) a. El seu discurs[MASC,SING]
 'His/her/their talk'
- b. Els seus discursos[MASC,PLUR]
 'His/her/their talks'
- c. La seva decisió[FEM,SING]
 'His/her/their decision'
- d. Les seves decisions[FEM,PLUR]
 'His/her/their decisions'

The Person morpheme, i.e. the one expressing the only inherent referential content of the pronoun, according to our hypothesis, is isomorphic with the clitic SE. In Kayne (1975:194-197) it is suggested that French possessive formation involves a subset of the clitics. We will adopt this hypothesis for Catalan, although we will claim that Catalan possessives do not

occupy a 'clitic position', but an argument position. Consider the distribution of the clitic SE in clausal structures and its referential properties. In Catalan, SE can link two types of arguments, a Dative or Accusative anaphor, as in (35a,b), and an arbitrary subject, as in (36):

- (35) a. Elles gescriuen cartes
 they_{FEM} SE write letters
 'They write letters to themselves/each other'
- b. Ell gafaita
 he SE shaves
 'He shaves himself'
- (36) S' ha vist un cometa
 SE has seen a comet
 'Someone/people has/have seen a comet'

Se is a form unspecified for Gender or Number. If it functions as an anaphor, it can be bound to a [+/-PLUR,+/-FEM] antecedent; if it functions as a pronominal, it has an arbitrary reference. Our claim that Avoid Pronoun is instantiated as the possessive in Catalan nominals, can explain why the base form for 3rd person possessive should be SE but not any other form: it is an element with a minimal inherent referential content, since it only expresses 3rd person. Recall that specification for [Person] is the minimal inherent referential content that Avoid Pronoun admits, and proper Identification requires, for the principle to apply in Catalan DP structures.

The hypothesis proposed allows us to account for the morphological characteristics of the possessive and its denotative ambiguity (see glosses in (34)). As we have shown, 3rd person possessive pronouns must overtly agree with the N head in Gender and Number. A possessive agrees with its antecedent in Person features only:

- (37) Quan les *seves*_i fotografies van aparèixer al diari, el degà_i es va empipar
 when the POSS_{3rd-F-P} pictures_{F-P} appeared in-the newspaper the dean_{M-S} got mad
 'When his pictures appeared in the newspaper, the dean got mad'

The possessive *seves* in (37) is inflected for feminine and plural, like the head Noun, although its intended referent, *el degà* 'the dean', is masculine and singular. Ungrammaticality obtains if the possessive does not agree with the NP head, but with its coindexed expression:

- (38) *Quan les *seu*_i fotografies van aparèixer al diari, el degà_i es va empipar
 when the POSS_{3rd-M-S} pictures_{F-P} appeared in the newspaper the dean_{M-S} got mad

Lack of agreement between a possessive and a predicative adjective offers additional support to the hypothesis that the possessive is a referentially defective form. A 3rd person possessive can be the subject of a predicative adjective inflected for [+/-FEM], [+/-PLUR]:

- (39) Les *seves* fotografies assegut/asseguda/asseguts/assegudes
 the POSS_{F-P} pictures_{F-P} seated (M-S), (F-S), (M-P), (F-P)
 'His/her/their_F/their_M pictures seated'

The inflection the adjective will show is given by the features attributed to the intended referent of the possessive, not by the possessive form itself.

4.1.1. *First and second person possessives.* The forms *me*, *te*, *nos*, and *vos*, which are Accusative/Dative clitics in Catalan, are inserted at D-structure as the base forms for first and second person possessives. These forms also express Number inherently. There is no equivalent to SE (i.e. Person only) in the first and second person paradigm. Consider the following:

- (40) a. Les meves aquarel·les
the 1SING-FEM-PLUR watercolors[FEM, PLUR]
'My watercolors'
- b. El nostre llibre
the 1PLUR-MASC-SING book[MASC, SING]
'Our book'
- c. Un teu germà
a 2SING-MASC-SING brother[MASC, SING]
'A brother of yours'

As the glosses show, the same process of overt agreement in Gender and Number with the head noun that characterizes third person possessives applies in these cases. The result is that first and second person possessives express Number twice, lexically and formally.

5. Possessive Raising and Superiority Effects

In the course of the discussion, we have been assuming that Catalan possessives are generated in A(argument)-position and undergo A-movement. Such an assumption is based on the fact that possessive raising is blocked by the syntactic realization of arguments superior in the thematic hierarchy (cf. (25)). Consider the following examples: in (41a) the Agent is syntactically realized, in (41b) only the Theme is realized.

- (41) a. El descobriment de Gallo
the discovery of Gallo
'Gallo's discovery'
- b. El descobriment del virus de la leucèmia
the discovery of-the virus of the leukemia
'The discovery of the leukemia virus'

In both (41a) and (41b) the argument may appear as a possessive pronoun:

- (42) a. El *seu* descobriment *t*
the his (=Agent) discovery
b. El *seu* descobriment *t*
the its (=Theme) discovery .

When both the Agent and the Theme are syntactically realized, an asymmetry can be observed with respect to possessive pronominalization. The Agent can raise to the possessive position, but not the Theme:

- (43) El descobriment de Gallo del virus de la leucèmia
'The discovery of Gallo of the leukemia virus'
(44) a. El *seu*_{*i*} descobriment *t*_{*i*} del virus de la leucèmia
the his discovery of the leukemia virus
b. *El *seu*_{*i*} descobriment de Gallo *t*_{*i*}
the its discovery of Gallo

The ungrammaticality of (4 b) is reminiscent of the illicit instances of super-raising discussed in Chomsky (1986b:75):

- (45) *En Joan_{*i*} sembla que *pro* cal *t*_{*i*} estar content
'Joan seems that (it) is necessary to be happy'

In (45) the trace *t_i* fails to be antecedent governed by *en Joan*, due to the intervening effect of *pro*. Ungrammaticalities of the type in (45) have been accounted for under the Relativized Minimality Condition proposed in Rizzi (1990). According to this Condition, an element in A-position intervening between a moved argument and its trace, blocks antecedent government of

the latter. Intervening elements in an A' position or intervening heads do not block antecedent government in an A-chain.

The ungrammaticality of (44b) constitutes a Relativized Minimality violation if we assume that the possessive moves from an A- to another A-position. Antecedent government of the possessive trace is not possible because another argument interrupts the A-chain.

6. Conclusion

It has been claimed that the alternation possessive/strong pronoun in Catalan nominals is parallel to the alternation *pro* /strong pronoun in clausal structures. It has been proposed that this parallelism is a consequence of the application of the Avoid Pronoun Principle in Catalan DP and CP structures. In this study, Avoid Pronoun has been conceived as a principle of grammar imposing an economy strategy at the level of lexical representation.

The hypothesis proposed has allowed us to explain: (i) the pronominal position of possessive pronouns, and (ii) the reason for the existence of two types of phonologically realized pronominals in DPs, i.e. the possessive and the strong pronoun.

Our proposal may also offer an account for why *pro* and the possessive are chosen over a strong pronoun in cases of anaphoric or bound variable interpretation (see sections 1.1 and 1.2). Pronominals functioning as anaphors or logical variables have to be obligatorily bound to an antecedent. If economy strategies can apply (i.e. formal identification requirements are satisfied), the choice of pronominal categories as void as possible of inherent referential content seems a logical option for cases of referential dependence, such as bound variable or proximate interpretation.

With respect to denotative properties, we have seen that *pro* /possessive may denote any type of object or set, whereas a strong pronoun may only denote a denumerable/animate (human) set

(see section 1.3). A speculative and tentative explanation for this fact may be the following: non denumerable and inanimate sets do not have notional Gender or Number, although they have grammatical Gender and Number. Pronominal elements like *pro* /possessive inherently lack these referential features, unlike strong pronouns. The former will therefore be used to denote inanimate and non denumerable sets which notionally lack these properties.

Finally, our proposal allows us to conceive the idea that some languages may be able to apply Avoid Pronoun in some types of structures, but not in others. This will depend on the syntactic properties of the functional elements in the particular structures under consideration. The application of the principle, as we have defined it, does not exclude the phonological realization of the pronominal forms subject to it.

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Departament de Filologia Catalana
Edifici B
Universitat Autònoma de Barcelona
E-08193 Bellaterra (Barcelona)