(Axial) Parts and Wholes

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Abstract

In this article I identify some Spanish words as AxParts (Svenonius 2006) and I discuss their properties, some of which have already been noted in the previous literature. I show that there are three characteristics of these elements that contrast with English AxParts, and I provide an analysis that allows a unified analysis of AxParts in Spanish and English by deriving all three differences from the same independent property: the syntactic representation of part-whole relationships. A second contribution of this article is that I argue that the difference between two series of AxParts that have been identified in Spanish follow naturally if the members of one of the series select a DP as their ground, while those of the second series take a phonologically empty pronoun.

1. Spanish AxParts: A description

Under the name of '(in)transitive adverbs,' there is a certain amount of literature devoted to the study of Axial Parts (Svenonius 2006) in Spanish (Gili Gaya 1961, Trujillo 1971, Martínez 1988, Gaatone 1980, Lysebraate 1982, Pavón 1999; 2003). One of the properties of these items make them different from their English counterparts: two different series of AxParts, with different prefixes, can be identified. Consider the two series of projective (cf. Zwarts and Winter 2000) AxParts in (1).¹

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¹The study of AxParts in this article is restricted to what traditional grammars in Spanish consider purely adverbial AxParts, i.e., AxParts which do not contain an internal DP. Therefore, we will not analyse here constructions which arguably could be assimilated to AxParts, but contain DPs, such as *a la izquierda* 'to the left.'

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(1)	A	В	
	de-(l)ante	a-(l)ante	
	of-front	at-front	
	'in front of'		
	de-trás	a-trás	
	of- $behind$	at-behind	
	'behind'		
	de-bajo	a-bajo	
	of- $under$	at- $under$	
	'below'		
	en-cima	a-rriba	
	on-top	at-top	
	'on top of'		

Notice that the second series, B, systematically combines with the prefix a-, suspiciously similar to the preposition a. As for the first series, A, it takes the prefix de-, which is identical to the Spanish preposition de. Once we eliminate the pressure of normative grammar, the form *encima*, which apparently does not take this prefix, is easily documented with de-. (2a) is an example of classical Spanish, prior to the existence of the Spanish Royal Academy — and therefore, prior to the establishment of systematic normative pressure — while (2b) is a case of non-formal contemporary Spanish, found in a European weblog.

(2)Y de-n-cima del monte han disparado. a. and of.on.top of.the hill have.3pl shot 'And they have shot from-on top of the hill' (Cancionero, Pedro de Aguilar, c. 1575) b. ...no se encuentren a un señor viejo con barba blanca y $\dots not \text{ se find.3pl}$ A a man old with beard white and un triángulo dencima de la cabeza. a triangle of on top of the head "...they don't find an old man with a white beard and a triangle on top of his head' (Google, contemporary European Spanish)

Also two series are attested with most of the non-projective AxParts, although, as can be seen in (3), the first series is not characterised by the prefix de_{-} .

(3)	А	В	
	fuera	a-fuera	
	outside	at- $outside$	
	'outside'		
	dentro	a-dentro	
	inside	at-inside	
	'inside'		
	enmedio	(No equivalent)	
	in.middle		
	'in between'		

As the distribution of morphemes shows, the speaker does not segment any de- in these examples.² Unlike what happens with the projective Ax-Part *encima*, where a variant with de- is documented, searches in corpora show that the words **dedentro*, **defuera* and **denmedio* are unattested as locative prepositions in any dialect (diachronic or synchronic).

These are the words that are used as AxParts in Spanish, but different dialects of Spanish use them slightly differently. As both corpora searches and the intuition of native speakers suggest, two different dialects can be identified. Dialect one includes European Spanish, except for the Catalan areas, and Ecuador, Bolivia and Paraguay. As for dialect two, it covers the Catalan areas and the remaining varieties of American Spanish. In what follows, we will analyse the behaviour of AxParts in dialect one. The properties of dialect two will be briefly addressed in §5.

Let's start, then, with the description of dialect one. In this dialect some generalisations can be made. First of all, the series that takes the prefix a- cannot take a DP ground; this explains why these forms have been considered intransitive adverbs in the Spanish tradition. The members of the first series, which either take the prefix de- or do not take any prefix at all, must select a DP ground.³

(4) a. El libro está delante de la mesa. the book is.LOC of.front of the table 'The book is in front of the table'
b. El libro está alante (*de la mesa). the book is at.front of the table 'The book is in front'

²In these words there is no sequence de- which alternates with a-. This provides evidence that the speaker is not analysing de- as an affix or identifying an independent morphological base in these forms. Compare the form dentro-adentro (not *a-ntro, which is perfect from a phonological point of view) with any of the previous examples.

 $^{^{3}}$ When the DP ground is not phonologically expressed in the sentence, it has to be recoverable from the discourse, just like when it happens with the obligatory arguments of verbs.

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The second generalisation is that all the AxParts that are headed by the prefix de- can express the DP ground as a possessive pronoun, i.e., a pronoun in the genitive form, as seen in (5a). This differs from English projective AxParts since they cannot take a possessive pronoun as a DP ground, as seen in (5b).

(5) a. El libro está delante suyo. the book is of front his 'The book is in front of him'
b. *The book is in front his.

This second difference extends to every projective AxPart with de- in Spanish.⁴ Crucially, however, non-projective prepositions disallow possessives. Remember that non-projective prepositions consistently lack the prefix de-, in contrast with the projective prepositions that we have just described. These data are confirmed both by native speakers of dialect one and searches in CREA.

- (6) a. Juan está fuera de la casa. 'Juan is outside of the house'
 b. *Juan está fuera suya/ suyo 'Juan is outside hers/ his'
 c. Juan está dentro de la casa. 'Juan is inside of the house'
 - d. *Juan está dentro suya/suyo 'Juan is inside hers/ his'

Let us briefly summarise the data that we will be analysing in this article. Spanish has two series of AxParts; the second series, which is unable to take a DP ground, is consistently combined with the prefix *a*-. From the first series, only those that are combined with the prefix *de*-, which are exclusively the projective prepositions, can have a possessive DP ground.

⁴Examples from CREA follow:

(i)	a.	Llegaron incluso a encender una hoguera debajo suyo.
		arrived.3PL even to start a fire of.under his
		'They even started a fire below him' (El Mundo, 15-03-1995)
	b.	El cielo poco a poco se nublaba encima suyo.
		the sky little by little SE get.cloudy on.top his
		'The sky got cloudy little by little over him'
		(Julio Llamazares, El río del olvido)
	c.	Ahora tiene el volante delante suyo.
		now has the driving wheel of front his
		'Now he has the driving wheel in front of him'
		(Carlos Pérez Merinero, Días de guardar)
	d.	Le había parecido oír algo detrás suyo.
		DAT had seemed hear something of behind his
		'He though he had heard something behind him'
		(Felipe Hernández, Naturaleza)
		(r

The structure of this article is as follows. In the next section, we will briefly compare the properties of Spanish and English AxParts. In §3 we will present our analysis of the AxParts that take a DP ground. In this section, we further explain; 1) what is the role of the prefix de-, 2) how the possessive relationship is expressed, and 3) why it is necessary to express it and why those specific lexical items are used to spell out the structure. In §4 we will make a reference to the intransitive AxParts with a-. §5 briefly discusses a second dialect and how it can be analysed.

2. Three problems to unify the analysis of AxParts in English and Spanish

Let us concentrate now on the subset of projective AxParts that take a DP ground. These AxParts are different from the English equivalents in some crucial respects, which become evident when we confront the English and the Spanish structure, as in (7).

(7) a. in front of the house b. de- (1)ante de la casa

The first apparent difference is that in English the preposition that introduces the AxPart is locative, while in Spanish, the so-called prefix de-, very similar to the preposition de 'of,' is not locative. In fact, the presence of dein locative contexts results in ungrammaticality.

(8) *El libro está de LOC 'The book is of LOC'

The second difference refers to the AxPart itself. In English it is normally a noun which denotes a specific axis of the structure of an entity. In Spanish, however, the AxPart is lexicalised by a semantically heavy preposition with locative meaning.⁵ When it appears as an independent word, it also assigns oblique case, something that only prepositions can do in Spanish. Consider, for example, *-ante*, the morphological base of *de-lante*.

(9)	ante	-	ante mí
	before	-	before me.OBLIQ
	'before'	-	'before me'

The same can be said of *bajo* 'under,' from *de-bajo*, and *tras* 'behind,' from *de-trás*. The exception is *cima* 'summit of a mountain,' from (d)en-cima. We will refer to this in due course.

The third difference between Spanish and English has already been mentioned. Spanish projective AxParts can express the ground as a possessor,

⁵We use the term "semantically heavy" to refer to those prepositions that are generally associated with a particular semantic role, in contrast with de 'of,' which is used in a variety of contexts with very different semantic interpretations.

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but the same is impossible in English. In English, as in non-projective Spanish AxParts, the DP ground takes the same case as with prepositions in general (10).

(10) in front of me, *in front of mine, *in front mine (cf. a book of mine)

Of course, these three differences have to be combined with the big structural difference between Spanish and English, which is that in the former, but not in the latter, there are two series of AxParts with different properties.

In the next section I will argue that these three differences are motivated by the same reason, which has to do with the different way in which partwhole possessive relationships are syntactically expressed in English and in Spanish.

3. Possession, case and the lexicalisation of syntactic material

The main concerns of this paper involve the relationship between syntax and the lexicon, so a few words are in order to make explicit our theoretical assumptions with respect to this topic.

3.1. Theoretical assumptions about the nature of morphology

We assume a syntactic model of morphology where words are built in the syntax, and the lexicon is a purely interpretative module whose role is to insert different vocabulary items in the syntactic nodes. This view of morphology parts with the Lexicalist model (Halle 1973), where morphology and syntax are two separate generative components. It is close to the Distributed Morphology framework (DM, Halle and Marantz 1993), where the structure of words is also syntactic. However, DM allows post-syntactic operations of several kinds (cf. for example Embick and Noyer 2001), while in the model that we are assuming here the results of those post-syntactic operations are achieved as part of the purely syntactic operations. For example, in this model, operations such as fusion (which in DM imply a post-syntactic operation that merges two nodes in order to make it possible that only one piece of vocabulary is inserted) are technically implemented as the insertion of a lexical item in the non-terminal node that dominates the two nodes that undergo fusion in DM.

From this model of grammar, a strong hypothesis about the nature of affixes is as follows: affixes are necessarily the lexicalisation of a chunk of structure in the syntax. We state this hypothesis as in (11).⁶

 $^{^6\}mathrm{Of}$ course, this position about affixes is not exclusive of this model. See also Lieber (1992).

(11) Every morpheme is a chunk of structure in the syntax. There are no properly morphological rules or units.

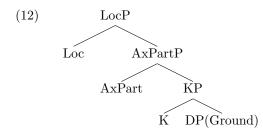
An important component of this model of grammar is that the insertion of lexical material can target non-terminal nodes in the syntactic configuration. If syntactic merge is an operation that creates a set by combination of two previous (possibly singleton) sets (Chomsky 2004), then there is no substantive difference between a terminal and a non-terminal node which can be taken as grounds to restrict the insertion of lexical material to only one of these two nodes.

As Caha (2007) shows, the DM assumption that lexical material can only be inserted in terminal nodes is forced by a theory-internal assumption about the way in which different lexical items compete for insertion at a certain node. More specifically, DM assumes the Subset Principle, by which, when different lexical items compete, the one which contains the maximal subset of syntactic features is the one inserted in the node. In other words, it is possible that some syntactic features will not be expressed in the lexical items inserted. In contrast, this model of grammar and morphology proposes the Superset Principle, by which all the syntactic features have to be expressed in the lexical items inserted. Following the Superset Principle, when different lexical items compete, the one which contains the minimal superset of the syntactic features will be inserted in the node. Lexical items inserted in a particular node may contain features which are redundant or simply not present in that node, but every feature present in the syntax needs to be lexicalised by lexical insertion. Caha (2007) and Ramchand (in press) have gathered considerable and convincing evidence in favour of the Superset Principle, which I assume in this article.

Thus, in this article I assume that the syntax and the lexicon relate directly by means of inserting lexical material in any node, terminal or non-terminal, following the Superset Principle.

3.2. The prepositional domain

As has been shown in Svenonius (2006), Axial Parts (AxParts) are grammatical categories which identify a specific part of the ground which can be taken as a spatial axis to locate the figure. AxParts exhibit a mixed behaviour, with both prepositional and nominal characteristics; in fact, it is very common that AxParts are homophonous with some nouns that denote spatially relevant parts of objects, such as *front, side* or *top*. I will not review in this article the amount of evidence that has been gathered to show that AxParts can be classified as a category which, in a sense, is in between nouns and prepositions (see Pantcheva 2006, Muriungi 2006, Takamine 2006, Roy 2006, Amritavalli this volume, Rooryck and Vanden Wyngaerd this volume). In Svenonius (2006), the AxPart is located in a position inside the functional hierarchy which is immediately dominated by locative prepositions and above the DP structure that introduces the ground. This is shown in (12).⁷

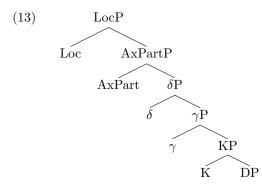


To the best of my understanding of this analysis, in this proposal, the mixed categorial properties of AxParts are explained by their specific position in the functional hierarchy, as intermediate projections between prepositions and DPs. In this article, I propose a variation on the structure proposed by Svenonius in the aforementioned article. I will argue that in projective prepositions the ground plays an additional semantic role; it is the possessor of the specific axis taken to evaluate the location of the figure. In other terms, in projective prepositions there is a part-whole semantic relationship between the ground and the AxPart. I will argue that these AxParts with projective semantics select an additional head δ , whose role is to head the part-whole configuration and to assign a possessor theta-role to its specifier. I present evidence in favour of this proposal in §3.3.

In addition to this, I propose that the nominal properties of AxParts are due to the presence of a projection γ , which contains some features that are a necessary but not sufficient condition to define the extended projection of nouns. The evidence in favour of this is mainly semantic and lexical and will be provided in §3.6.

For explicitness' sake, the variation that I propose is presented in (13).

⁷In this proposal, case heads its own projection and plays the semantic role of mapping the individual denoted by the DP to a set of points in space which can be taken to locate an individual. We will go back to the role of case in $\S3.4$.



3.3. Part-whole structures and AxParts in Spanish

The analysis that I propose to give account of the properties of Spanish AxParts has to do with the semantics of projective AxParts. Zwarts and Winter (2000) show that projective AxParts, in addition to the other truth conditions, require that the figure be located in a specific spatial axis of the ground. To say that an object is *dentro* 'inside' of another object requires only that the object occupies any position in the space defined by that object. However, to say that an object is *delante* 'in front' of another object requires that the object is in the space defined by projecting vectors whose origin is in a specific part of the ground, in this case, the front part.

I propose that this property of projective AxParts implies the definition of a part-whole relationship between the ground and its relevant spatial axis; this part-whole relationship is syntactically encoded by a specific projection, δP , to which the ground has to move to get the possessor reading.

Let us first show that there is a part-whole relationship between the ground and the AxPart, which lexicalises the spatial axis. This relationship has already been noticed in the literature, for example, in Pavón (2000). This author observes that the verb *tener* 'to have' can be used to express part-whole structures where the whole is the subject and the part is expressed as a locative PP.

(14) Ana tiene un lunar en la mejilla.'Ana has a spot in the chin'WHOLE has POSSESSUM in PART

Evidence that the locative PP en la mejilla is not a normal locative comes, for example, from the impossibility of paraphrasing this constituent with a conditional sentence. Unlike a sentence with a normal locative, like Juan tiene dolores de cabeza en el metro 'Juan has headaches in the subway,' (14) cannot be paraphrased as #'Ana has a spot when {she/it} is in the chin.' Evidence that this locative PP, in fact, denotes the part comes from the ungrammaticality of (15), where the locative PP contains another possessor.

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(15) *Ana tiene un pendiente en la nariz de Pedro.
'Ana has an earring on the nose of Pedro' (see Pavón 2000)

This author notices that the same contrast takes place with projective Ax-Parts; the properties of the AxPart are identical to the locative PP in (16); it is impossible to paraphrase the locative as a conditional sentence and the presence of a ground affects the grammaticality of the sentence.

(16) a. Ana tiene un paraguas delante. Ana has an umbrella of.front
'Ana has an umbrella in front'
b. ??Ana tiene un paraguas delante de un árbol. Ana has an umbrella of.front of a tree
'Ana has an umbrella in front of a tree'

Pavón also notices that the verb *poner* 'to put' can be used to construct the causative version of the structure in (14), where the whole is expressed as a verbal object. The construction is illustrated in (17a), and (17b) shows that the properties of the locative PP are, again, those that we expect from an argument expressing the part.

(17)	a.	Ana le puso a Pedro un pendiente en la nariz.
		Ana DAT put to Pedro an earring in the nose
		'Ana put Pedro an earring on his nose'
		(AGENT put to WHOLE a POSSESSUM in PART)
	b.	*Ana le puso a Pedro un pendiente en la nariz de Juan.
		Ana DAT put to Pedro an earring in the nose of Juan
		'Ana put Pedro an earring on the nose of Juan'
		• 0

(18) shows that the verb poner also accepts AxParts as locatives, under the same circumstances.

- (18) a. Juan le puso a Ana un paraguas delante. Juan DAT put to Ana an umbrella of.front 'Juan put Ana an umbrella in front'
 - b. *Juan le puso a Ana un paraguas delante de un árbol. Juan DAT put to Ana an umbrella of.fron of a tree 'Juan put Ana an umbrella in front of a tree'

However, Pavón does not notice that not every AxPart behaves in the same way. Only those AxParts that can be classified as projective following Zwarts and Winter (ibid.) behave as parts. Non-projective AxParts admit the presence of another DP ground, which is evidence that the other argument does not establish a part-whole relationship with it. Notice, in particular, the contrast between (19b) and (19d).⁸

⁸Notice that this shows, incidentally, that AxParts with de-, in certain contexts combined with the verb *tener* 'have,' do not accept deictic grounds; the AxParts with a- do

- (19) a. Juan tiene un gato delante. Juan has a cat of.front 'Juan has a cat in front'
 - b. *?Juan tiene un gato delante de casa. Juan has a cat of.front of home 'Juan has a cat in front of his house'
 - c. Juan tiene un gato dentro.
 Juan has a cat inside
 'Juan has a cat inside him'
 - d. Juan tiene un gato dentro de casa. Juan has a cat inside of home 'Juan has a cat inside his house'

This shows that projective AxParts, but not non-projective ones, establish a part-whole relationship between the ground and the spatial axis that they denote. The ultimate reason for this is, most probably, semantic, as part of the truth conditions of a projective locative expression is that the figure is situated in a specifically oriented area. The part-whole relationship guarantees that the spatial axis is the axis that belongs to the DP ground, and not, for example, to the speaker. In other words, the existence of the part-whole relationship between the AxPart and the ground explains that, in (20), it is interpreted that the dog is placed in the area defined by projecting vectors from the front of the house, irrespective of the position of the speaker.

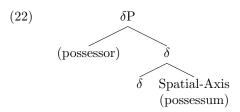
(20) El perro está delante de la casa. *The dog is of.front of the house* 'The dog is in front of the house'

The other reading, in which the position of the object is defined with respect to the position of the speaker is not ungrammatical; it is indeed the most salient reading with AxParts that do not have the prefix de.

(21) El perro está alante. *The dog is at.front* 'The dog is in front (of me/us)'

I argue that the part-whole relationship is syntactically expressed in Spanish, and encoded by a specific syntactic head, δ . I propose that this syntactic head assigns a possessor theta-role to the constituent that moves to its specifier. This, as I will argue, contrasts with English, where the part-whole relationship is not expressed syntactically and is left to pragmatic inference, so that the ground does not move to δP in this language.

not accept anaphoric grounds. The situation contrasts with the one noticed in Svenonius (to appear b). We will go back to this contrast in §4.



In projective AxParts, at some point of the derivation, the DP ground has to move to the specifier position (or edge position) of δP to get possessor entailments. If δ establishes a part-whole possessive configuration, and it is a syntactic head, this means that at some point in the derivation the possessor and the possessum, the whole and the part, belong to the same constituent, δP , in my analysis. This makes my proposal easily testable.

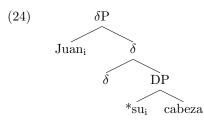
Remember that this proposal is far from new in the literature. Among the analyses that have proposed that the part and the whole form a syntactic constituent, sometimes a minimal clause of sorts, we find Hornstein and Uriagereka (1994), Español Echevarría (1997) and Pavón (2000) (cf. Vergnaud and Zubizarreta (1992) for a non-syntactic analysis of part-whole structures).

One compelling reason to propose the syntactic analysis in which possessor and possessum belong to the same constituent at some point is the effect found in (23), pervasive in Spanish.

(23)	a.	Tengo un sobrero en la/ *mi cabeza.
		have.1sg a hat on the/ my head
		'I have a hat on my head'
	b.	Le puse a María un sombrero en la/ *su
		DAT put.PAST.1SG to María a hat on the/ her cabeza. head
		'I put Maria a hat on her head'

When there is a part-whole relationship in Spanish, the part has to be introduced by the definite determiner and it can never take a possessive pronoun. This effect is very strong; the presence of a possessive pronoun is incompatible with a part-whole reading of the argument introduced by the possessive pronoun.

Under the syntactic analysis where the part-whole relationship is expressed with a head that takes both constituents as its arguments, this effect is straightforwardly explained as a Principle B violation. As possessives are pronouns, they cannot be c-commanded by an antecedent in their governing category, with the result that the configuration in (24) is ungrammatical.



This forces the use, in Spanish, of the definite determiner in these constructions. Notice, however, that in English, sentences like (25) are the unmarked way to express part-whole relationships.

(25) I have a hat on my head.

If Principle B also holds for English, then the immediate consequence is that the syntactic configuration of (25) cannot be the one represented in (24) for Spanish. I suggest that in English, part-whole relationships are not expressed syntactically through movement of the possessor DP to a syntactic category that assigns it a specific theta role. Instead, in English the part-whole relationship is left to pragmatic inferences. If this is the case, we have an explanation of why the possessive pronoun must be used in English, because the additional semantic information that this lexical item provides is used by the speaker to infer the nature of the possessive relationshop expressed.

In the next section I will show how the movement of the DP ground to get a possessor theta role explains the properties of AxParts in Spanish.

3.4. Case and peeling

In this section I am going to argue that movement of the DP ground to [Spec, δP] causes this constituent to be lexicalised in the genitive case. This proposal is based on the studies that analyze different morphological cases as the lexicalisation of different chunks of functional projections over DP (e.g., Ashbury 2006, Caha this volume). In these articles it is argued that K (Case) is decomposed into different functional projections, as shown in (26). The different morphological cases (MC) are the different lexical items that spell out different chunks of structure.

$$\begin{array}{c} (26) & \dots K1 \\ \hline K1 & K2 \\ \hline K2 & K3 \\ \hline K3 & K4 \end{array} \right\} MC\#1 \end{array} \right\} MC\#2 \end{array} MC\#3 \end{array} \right\} MC\#4$$

As can be seen, this view of case is different both from Chomsky (2004) and Pesetsky and Torrego (2001). More in the vein of Hale and Bittner (1996) or Neeleman and Weerman (1999), here case is a syntactic projection which is not semantically vacuous. Remember that, following Svenonius (2006; to appear a), the KP that dominates the DP ground acts as a semantic function that maps an individual into a set of points in space, a region.

In Caha (this volume), developing ideas by Michal Starke, it is proposed that the spell out of a subset of one morphological case can be another morphological case. In (26), the lexicalisation of the whole structure {K1, K2, K3, K4} is the morphological case number four of the paradigm — say, instrumental — but if K1 and the rest of the structure are not a constituent anymore, for example as a side-effect of movement, morphological case number three, e.g., locative, will emerge to spell out {K2, K3, K4} and K1 would have to be lexicalised by another item. This process by which the highest syntactic projection is left behind and the lexicalisation of the moved constituent changes is known as *Peeling*.

In this section I am going to argue that in Spanish, the relationship of the different morphological cases is such that when an oblique argument peels its highest layer as a side-effect of movement, it is lexicalised as a genitive pronoun.

Morphological case marking is very impoverished in Spanish, but still it is morphologically expressed in part of the pronominal system. In this system, the similarities and differences between the lexical items that spell out each case support an analysis of the case hierarchy in Spanish along the lines of (27), where genitive is under oblique and over dative/accusative, to which I will refer as object case.⁹

(27) Oblique > Genitive > Object case

Personal pronouns in Spanish involve a consonant, which normally characterises the grammatical person. /m/ normally characterises the first person

 $^{^{9}\}mathrm{I}$ am aware that dative and accusative are homophonous in most of the pronominal system of Spanish (*me*, for example, can be Laccusative or Ldative). I realise that this is an interesting problem for any case hierarchy, but, as neither accusative nor dative intervene in the phenomena that I study here, I will leave this problem for further research.

singular, /t/ the second person singular, and /s/ the third person. In the oblique form of the pronoun, a vowel /i/ is added, and stress is assigned to this vowel.

(28) /m-í/ 1sg /t-í/ 2sg /s-í/ 3

Stress disappears in the genitive form of the pronouns, and in addition to this, the vowel may change from /i/ to $/u/.^{10}$ But, even in the first person singular, where the vowel is still /i/, the oblique and the genitive form can be differentiated because the former is tonic and the latter is a proclitic form. The loss of the stress provides evidence that genitive is a subset of oblique.

In the object form of the pronoun, no vowel is used and, when the phonological rules allow it, the consonant appears alone.¹¹ When the phonology prevents the consonant from appearing on its own, an epenthetic /e/ is added.

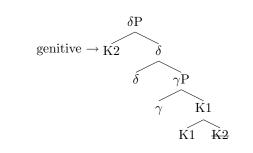
(30)
$$/m/$$

/t/
/s/

If genitive is the lexicalisation of a subset of the structure that is lexicalised by oblique as the lexical relationships that I have just presented suggest, then we expect that, when an oblique DP moves leaving a functional layer behind, it will be lexicalised by a genitive pronoun. (31) illustrates the operation; the DP ground moves to [Spec, δ P] and, in this movement, only K2 is attracted, leaving K1, the highest projection, behind. Without K1, the oblique argument is spelled out as a genitive pronoun.

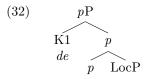
 $^{^{10}\}mathrm{Possessive}$ adjectives, such as mio or tuyo, keep stress, but they don't have the behaviour of pronouns.

¹¹For example, in colloquial Spanish the normal pronuntiation of *Te has llevado* 'You have taken' is [tás] *llevado*, with no vowel. The same process does not normally occur with non-stressed final /e/ followed by another vowel; *coche azul* 'car blue' is not pronounced as *coch[a]zul.



In English, the absence of movement explains that the ground cannot be expressed as a genitive. The same holds for non-projective prepositions in Spanish, whose grounds, not being marked as possessor, do not move either.

A relevant question at this point is what happens with the functional layer that has been left stranded, namely K1. I propose that this functional layer is lexicalised as the non-locative preposition de, which, after movement to a higher prepositional projection -plausibly, to check a prepositional categorial feature- emerges as the prefix de.



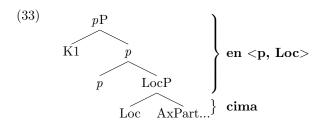
(31)

In this way, I relate the presence of the prefix de- to the presence of a genitive DP ground and to the projective nature of the AxPart. Nonprojective AxParts do not contain this prefix because the DP ground has not moved to [Spec, δ P] and, therefore, no functional layer has been left behind to be lexicalised independently as de-. For a similar reason, AxParts with the prefix a-, which do not have DP grounds, will be unable to contain the prefix de-.

In the next section I discuss the lexicalisation of the rest of the structure and I provide evidence for the presence of nominal features inside AxParts.

3.5. Prepositions and nouns

There is one case in which the projections that correspond to the P domain and those that belong to the AxPart are lexicalised by different items, in such a way that they provide crucial pieces of evidence for the presence of nominal features in the AxPart, i.e., the AxPart *en-cima* 'on top.'



In this adverb, the spatial axis is lexicalised inside the noun *cima* 'summit,' since it necessarily implies the top-down dimension. The preposition en, in contrast, does not imply any axis, and it is definitely categorised among the non-projecting prepositions.¹² As can be seen in (33), the P domain and the AxPart domain are lexicalised independently in this particular adverb, which can provide us with evidence for part of our analysis.

If we assume a principled relationship between the lexicon and the syntactic structure such as that it is not possible to insert any lexical item in any position, the fact that the AxPart domain is lexicalised by a noun, *cima*, provides us with evidence that there are some exclusively nominal features in this domain. However, it is necessary to be very careful, for this is evidence for the presence of some nominal features, but not, in itself, for the presence of a full NP. In fact, independent cross-linguistic evidence shows that what is inside the AxPart domain cannot be a full noun. Here I will concentrate only on the Spanish evidence. Consider the sentence in (34).

(34) encima mío on.top mine.MASC 'on top of me'

Here the possessive is inflected for gender. The final -o, analysed in several articles as a word marker (e.g., Harris 1991), is characteristic of the masculine gender. In fact, with normal nouns, a postnominal possessive ending in -o can only be masculine.

(35)	a.	un amigo mío
		a friend.MASC mine.MASC
		'a boyfriend of mine'
	b.	una amiga mía
		a friend.fem mine.fem
		'a girlfriend of mine'
	c.	*una amiga mío
		a friend.fem mine.masc

 $^{^{12}{\}rm I}$ suggest that, in those varieties where the form dencima is used, en lexicalises the head p and de- lexicalises the specifier K1.

As (35c) shows, the possessive and the noun have to agree in gender. In contrast, (34) shows that the gender of the possessive does not depend on the gender that the noun *cima* has. *cima* is a feminine noun when it does not appear inside the AxPart, and in those contexts it forces feminine agreement in the possessive. This is shown in (36), possible in a context where someone has conquered the summit of a mountain and is proudly showing it to a friend.

(36) Esto de allí es una cima mía that of there is a summit.FEM mine.FEM 'That thing there is a summit of mine'

So, at the very least, nouns inside AxParts lack gender features, in contrast with Spanish nouns, which always have gender as one of their characteristics. No Spanish noun lacks gender.¹³ This shows that inside AxParts there is no full NP, although there must be some nominal features.

The situation with *encima* is exceptional to the extent that in Spanish the prepositional and the AxPart domains are normally lexicalised together with the same lexical item, a semantically heavy preposition which includes information about the spatial axis, as in (37).

(37) *ante* 'before' *bajo* 'under' *tras* 'behind'

These lexical items are locative prepositions that include information about the specific axis of the ground which is relevant to locate the figure. *tras* and *ante* imply the back-front axis for the location and *bajo*, just like the noun *cima*, imply the top-down axis.

On top of that, if AxParts in Spanish contain nominal features, we expect these semantically heavy prepositions to behave in a manner similar to nouns in some respect. This prediction is borne out.

We know that prepositions can take part in word formation processes as prefixes, but they generally reject being the base of the morphological word (Scalise 1984). There are very few exceptions to this tendency. The preposition *ante* is the morphological base of the adjective *anterior* 'previous,' the preposition *tras* forms the parasynthetic verb *retrasar* 'to delay,' and the preposition *bajo* can also be used as a base to derive verbs, as in *bajar* 'to go down.' The only other preposition which, arguably, could be analysed in a similar way would be según 'according to,' which is morphologically related to the verb seguir 'to follow'; every other preposition cannot be used as a morphological base. This behaviour is unexpected from

¹³In AxParts gender of the possessive depends on other factors. In most varieties, its gender is determined by the gender of the referent. However, there is some variation, and we find some speakers for whom gender seems to be fixed in masculine or in feminine. To the best of my knowledge, however, no speaker agrees the possessive with the AxPart.

prepositions, as we have mentioned, but it is typical of nouns. In a way parallel to *cima* when used inside the AxPart, these prepositions cannot be used as independent nouns, but they display noun-like properties which differentiate them from all the other prepositions.

On the basis of this evidence, I propose that these prepositions are tagged in the lexicon as <Loc, AxPart, $\gamma >$.

One relevant question at this point is what is the specific nature of the nominal features contained in the AxPart. It is well-known that, among other things, nouns introduce arguments and have the possibility to corefer. Rooryck and Vanden Wyngaerd (this volume) analyse contrasts like those in (38), where the anaphor alternates with the pronoun.

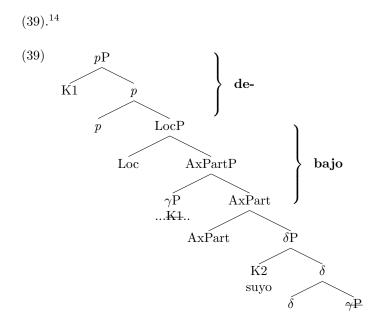
(38) They placed their guns in front of them/themselves.

Rooryck and Vanden Wyngaerd (this volume) propose that the AxPart has to refer to a constituent to define axiality; depending on whether the constituent the AxPart refers to is internal or external to the AxPartP, the anaphor or the pronoun is used. When the anaphor is used, the Ax-Part agrees 'internally' with the *self* morpheme 'itself,' an AxPart-like constituent, resulting in an object-centered perspective of the locative relationship. Similarly, nouns contain a list of the relevant axial parts, in such a way that, whenever the AxPart takes a DP object, it agrees with the relevant feature inside the noun, defining axiality in that way. In contrast, when the AxPart agrees 'externally' with the speaker, the deictic center is defined when an abstract speaker constituent binds the AxPart as a variable, yielding a speaker-centered perspective and forcing the use of the pronoun.

What is relevant for our purposes is that, in any case, the AxPart has to co-refer with a constituent to define axiality. This is a form of referential dependency which is typical of some pronouns and other nominal expressions. Indeed, co-reference is a typically nominal property which is not far from the index of identity that Baker (2003) identifies as the defining noun property. We propose that the type of co-reference identified by Rooryck and Vanden Wyngaerd is the nominal characteristic introduced by γ P inside AxParts.

3.5.1. Movement operations and lexicalisation

Notice that two movement operations have to take place prior to lexicalisation in order to allow the lexical items to be inserted in the positions without violating the Superset Principle. The first movement operation is that γ will have to move to the specifier of AxPart; in this position, it can be lexicalised with AxPartP and in the absence of γ P. As for the case shell K1, which has been left behind as a side-effect of peeling, I propose that, in order to be lexicalised as the preposition *de*, it has to move to [Spec, *p*P]. Both movement operations and their lexicalisations are represented in



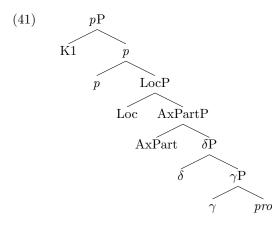
4. AxParts with a

In this section I will argue for an analysis of the AxParts which are consistently combined with the prefix a-. From their many properties I will be concerned here mainly with the fact that in dialect one they cannot take a DP ground. The most salient property of the AxParts combined with a- is, indeed, that they are unable to appear with a DP ground. The main consequence of this situation is that in these AxParts the ground is determined by the comunicative context, "here" being the reference point in the unmarked speech situation. However, the presence of a semantic ground — and, therefore, of the syntactic structure that introduces it — is apparent. Assuming, as we do in this article, that the functional hierarchy is universal, this means that the same set of projections is present in these intransitive AxParts. Our proposal is stated in (40).

(40) 'Intransitive' AxParts are AxParts which take a *pro* ground.

That is, the structure of an intransitive AxPart in Spanish is the one represented in (41), where the ground is a phonologically null *pro*; contrast this structure with (13), corresponding to a transitive AxPart, where the ground is a DP.

 $^{^{14}}$ The question arises as to what triggers these two last movements and, specifically, if movement can be triggered strictly by the need of every chunk of structure to be lexicalised (in compliance with Ramchand's (in press)Exhaustive Lexicalisation Hypothesis).



Independent evidence for the presence of a *pro* instead of the DP is found in the impossibility of having anaphoric null grounds with this kind of AxPart in Spanish. In contrast with what happens with English *in front of* (Svenonius to appear b), which allows an anaphoric null ground (42a); the anaphoric ground is possible only with the series with de-, as in (42b). The series with *a*- does not allow an anaphoric reading, and is, as we already saw in the previous section, degraded with the verb *tener* 'to have', as in (42c). This is straightforwardly explained if, in the series with *a*-, the ground is occupied by a *pro*, which does not leave room for a trace of the DP subject of the verb *tener* 'to have.'

- (42) a. The boy has a car in front. (Possible reading: in front of himself).
 - b. El chico tiene un coche delante. [Only in front of the boy] the boy has a car of.front
 - c. ??El chico tiene un coche alante. the boy has a car at.front

In fact, following the distinction in Rooryck and Vanden Wyngaerd (this volume), the series with *a*- requires a deictic ground and forces an observercentered perspective, while the series with *de*- requires an object-centered perspective.

Let us imagine a context with two people, A and B, in the same room. A is standing high on top of a ladder, while B is sitting on a chair. Between A and B there is a bookshelf with two rows of books. In the lower row there is book 1, and in the row above it, book 2. Thus, from the perspective of speaker A, book 2 is below, while from the perspective of book 1, book 2 is above. Let us suppose that B knows where book 1 is and asks A to tell him where book 2 is. In this context, (43a) would be a possible answer, but not (43b). (43) Dónde está el libro 2? Where is book number 2?

a. Abajo. at-below b. #Debajo. of-below

The reason is the following; (43a), being forcefully observer-centered and not allowing anaphoric null grounds, locates book 2 below from the perspective of the speaker. On the other hand, (43b), object-centered and not allowing deictic null grounds, would locate book 2 below the object referred to as book 1, which is false. (43a) cannot be used to identify the position of something from the perspective of another object.

As can be seen, with respect to the object-centered vs. observer-centered reading, the series with *a*- in Spanish patterns with the context in which the AxPart combines with the pronoun in English, and the series with *de*-patterns with the AxPart combined with the anaphor in English. This is not the only property in which these two series in Spanish pattern with the two different constructions in English. Rooryck and Vanden Wyngaerd (this volume) also notice that the use of the anaphor with the AxPart is associated with a contact reading between the figure and the ground, while the pronoun normally does not entail the same reading. Let us consider the pair of sentences in (44).

- (44) a. Siempre trabajo con una almohada abajo. *always work*.1SG with a pillow at.below 'I always work with a pillow below me'
 - b. Siempre trabajo con una almohada debajo. *always work*.1SG *with a pillow of.below* 'I always work with a pillow under myself'

Again, the series with a- patterns with the AxPart + pronoun construction. (44a) is somewhat odd, as it would mean that the speaker always studies keeping a pillow below the chair where she sits, or even that the pillow is in another room one floor below him. (44b) has the pragmatically more expected meaning that the person always studies sitting on a pillow.

The impossibility of having a contact reading with the adverbs with a- explains the ungrammaticality of (45) with *abajo*; as *pegar* 'to stick', implies contact and the adverb with the prefix a- is not compatible with a contact reading, ungrammaticality arises unless it is read that the chewing gum was stuck to the area of the floor which is under the chair.

(45) Me senté en la silla y pegué un chicle me.ACC sat.1SG on the chair and stuck.1SG a chewing.gum (debajo/ #abajo). of.below/ at.below
'I sat on the chair and stuck a piece of chewing gum under it'

Another interesting contrast arises with the two sentences in (46). Backpacks are normally carried on the back; (46a) invites precisely this interpretation, while (46b) is only compatible with a reading in which the backpack is somewhere behind the subject, who is not taking it with him.

- (46) a. Estaba en el bosque con la mochila detrás.
 was.1SG in the forest with the backpack of behind
 'I was in the forest with my backpack behind myself'
 - b. Estaba en el bosque con la mochila atrás. was.1sg in the forest with the backpack at.behind 'I was in the forest with my backpack behind me'

The fact that the series with a- shares properties with the AxPart + pronoun in English can be explained in our analysis. As we have seen, Rooryck and Vanden Wyngaerd (this volume) argue that the object-centered reading, which can imply some physical contact between the ground and the figure, happens when the features of the AxPart agree with some dimensional features contained in the ground. We expect, however, that not every ground is going to be specified for dimensional features. In particular, it is very plausible to imagine that the phonologically null pronoun *pro*, unlike many possible DP grounds, is not specified for this type of feature. Consequently, we expect that, when *pro* is the ground, the features of the AxPart must be erased by an external constituent, triggering thus the observer-centered reading.

4.1. Lexicalising the structure

There are two crucial properties that differentiate the lexicalisation of the AxParts with a *pro* ground and those that have a DP ground. The first one has to do with the preposition used to introduce the AxPart. In this case, it is indeed a locative preposition a, in contrast to de-, which we have analysed as a prepositional case shell.

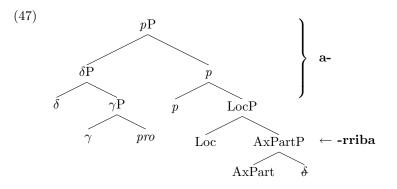
The second difference has to do with the presence of nominal features in the AxPart itself. Remember that the presence of nominal features was apparent in the word (d)en-cima 'on top,' whose second constituent, cima, is used as an independent noun which refers to the summit of a mountain. In contrast with this, the equivalent of encima in the series with a- is a-rriba, while the form *a-cima is unattested in any known variety of Spanish. Now, the second constituent of a-rriba, riba, cannot be used as an independent noun in this dialect of Spanish. Although, modulo several semantic changes, it can be related to a classical Spanish noun that denoted the side of the river, this constituent cannot be used as a noun.

In this section we will try to relate these properties with the fact that *pro* is the ground with these constituents.

Remember that in our analysis the presence of the preposition *de*- is a side effect of case peeling, which occurs when the DP ground is attracted to

the specifier of δP , where it gets possessor entailments. Therefore, the fact that de- does not appear with these AxParts can be explained if the *pro* ground is not attracted to specifier δP and, instead, stays *in situ*. In this situation, there is no case-shell left behind and de- would not materialise. This can be technically implemented if we assume that the categorial features of DP and *pro* are not identical, and, δP attracting only a constituent which contains a feature D, it cannot attract *pro*.

If the ground is not attracted independently, then the same lexical item could in principle spell out the case layers, altogether with γP and δP , because these projections are adjacent. We propose that this is what happens in these AxParts. First, the chunk of structure formed by δP , γP and the ground moves together to the specifier of pP, as represented in (47).



In this configuration, the AxPart and the nominal features do not belong to the same constituent, with the consequence that it will not be possible to lexicalise the AxPart with a noun. This explains that the form *a-cima, composed by the preposition a- and the noun cima 'summit,' is unattested; instead, the form riba, which is not a noun, is used to lexicalise the AxPart on its own.

The lexicalisation of the rest of the structure, including a locative preposition and nominal features, by a is more problematic. Independent evidence that a expresses a Place preposition can be found in Fábregas (this volume), but it is still necessary to independently motivate the claim that a lexicalises some nominal features related to the reference of the noun phrase. Notice that the preposition a is also used to mark accusative objects in Spanish (48).

(48) Juan vio a Pedro. Juan saw A Pedro 'Juan saw Pedro'

Crucially, as has repeatedly been noticed in the literature (cf. Torrego 1998 for a general survey and a specific proposal), the presence of the preposition

a is dependent, among other factors, on the specificity of the object. Nonspecific direct objects, which trigger the subjunctive mood in an adjectival clause that takes them as antecedents, cannot combine with a (cf. (49a) vs. (49b)); generic objects normally disallow this marking, as well.

- (49) a. Juan busca (*a) una secretaria que habl-e inglés.
 Juan looks.for A a secretary who talks-SUBJ English
 'Juan is looking for a secretary who is able to speak English, whoever she is'
 - b. Juan busca *(a) una secretaria que habl-a inglés.
 Juan looks.for A a secretary that talks-INDIC English
 'Juan is looking for a certain secretary, and that secretary happens to speak English'

It is interesting to notice that these restrictions about the genericity of the object which accusative a introduces can also be found with the locative a. The sentence in (50a) is ungrammatical, in contrast with (50b).

- (50) a. Los náufragos siempre nadan a la costa. the cast.aways always swim.3PL to the coast 'Cast-aways always swim to the coast'
 - b. *Los náufragos siempre nadan a costas. the cast.aways always swim.3PL to coasts 'Cast-aways always swim to coasts'

This connection between the locative and the accusative a may suggest that it lexicalises a chunk of structure that contains particular information about the reference; in our analysis, this property can be captured if a lexicalises, among other things, γP . However, we acknowledge that the question of what relates locative a with accusative and maybe also dative- a is much more complicated and requires a detailed study of case marking in Spanish. At this point, our analysis of the lexicalisation of a is not much more than a speculation that is left open for further study.

5. Some considerations about AxParts in dialect two

Up to this point we have only referred to dialect one and we have proposed an analysis of AxParts that gives account of their behaviour in this variety. We would like to end this article with a short reference to the second dialect. This dialect is different from the dialect that we have been analysing in two properties.

The first one is that in this dialect the AxParts with the preposition a can take a DP ground. Examples taken from CREA follow.

(AXIAL) PARTS AND WHOLES

(51)Arístides está sentado arriba de la mesa. a. Arístides is sitting at.top of the table 'Aristides is sitting on top of the table' (Eduardo Rovner, Suenos de náufrago, Argentina) b. Abajo de los libros encontré los instrumentos que at.under of the books I.found the instruments that necesitaba. I.needed'Below the books I found the instruments I needed' (Fernando del Paso, Palinuro de México, México) Silencio, dejen escuchar dijo alguien atrás de ellos. c. silence let.us listen said someone at.behind of them 'Silence, let us listen, someone said behind them' (Jaime Bayly, Los últimos días de la prensa, Perú) d. Alante de to el tumulto. $at.front \ of \ all \ the \ mob$ 'In front of the whole mob' ("Cassidy," República Dominicana) Pues en Cadaqués vivía con los Gabarró en una casa e. in Cadaqués lived with the Gabarró in a sobeautiful preciosa, arriba de todo de una montañ. house at.top of all of amountain'In Cadaqués he lived with the family Gabarró in a beautiful house, right on top of a mountain' (Féliz de Azúa, Diario de un hombre humillado, Catalan Spanish)

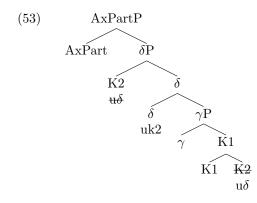
The second difference with dialect one is that, in this variety, the DP ground can be expressed as a possessive, irrespectively of the projective or nonprojective nature of the AxPart involved. The following examples illustrate this second property.

(52)Tuvo a Leonor sentada en el banco, atrás a. suvo. had Leonor sitting in the bench at behind his he'He had Leonor sitting in the bench behind him' (Héctor Aguilar, *El error de la luna*, Colombia) b. Entonces pareció hacerse dentro suyo alguna conexión seemed make.se inside his some connection thenque faltaba that lacked 'Then it seemed that some connection that was missing got wired inside him' (Jaime Collyer, El habitante del cielo, Chile)

c. Algo dentro suyo se ha asomado a la barandilla something inside his SE has look.into to the handrail del vértigo of.the vertigo
'Something inside him has looked over the handrail into the vertigo' (Javier García Sánchez, El Alpe d'Huez, Catalan Spanish)

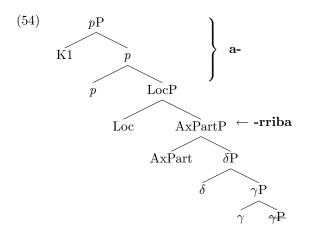
In this section we would like to suggest that there are two differences, one syntactic and the other lexical, in this dialect.

Let us address the syntactic difference first. The fact that the DP ground can appear in the possessive form with any AxPart implies, in our analysis, that it is attracted by δP independently of the semantic entailments. We could assume that in this dialect the DP ground moves to check a categorial feature, irrespectively of the semantic entailments that made movement necessary in the other dialect that we have considered previously. The representation would be the one in (53); notice that movement only involves categorial features here.

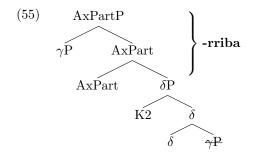


However, this cannot be the only difference with this dialect, because it seems that the case layer K1 which is left behind is spelled out sometimes as de-, as in de-bajo, and sometimes as a-, as in a-bajo. This would require some modifications for the entry of a in the second dialect.

More specifically, the situation in this dialect suggests that their a is different in that it lexicalises, in addition to other projections, K1. Assuming that, as in the case of the AxParts with de-, K1 moves to [Spec, pP], we would get the structure in (54).



This structure makes one prediction which can be used to test the proposal. Notice that in (54) no independent lexical item is lexicalising the nominal features contained in γP . As it happens with the AxParts with de-, we can argue that γP moves to [Spec, AxPart], where the whole phrase is lexicalised by the form *rriba* (55).



If this analysis is correct, we expect that in this dialect, in contrast with the other variety that we have analysed earlier in this article, the form *riba* is used as an independent noun. The reason is that *riba* is lexicalising not only AxPart, but also γP , and, therefore, this lexical item must be tagged to nominal features. The prediction is confirmed; although it is not a frequent noun, searches in corpora show that *riba* is attested as a noun in different texts written in the dialect two areas.

(56) a. Recordaba vagamente la riba oscura. *remembered vaguely the side dark*'He vaguely remembered the dark side of the river' (Rosa Regás, Azul, Catalan Spanish)

b. Pasamos a la opuesta riba.
passed.1PL to the opposed side
'We crossed to the other side of the river'
(José Eustasio Rivera, La vorágine, Colombia)

However, several questions remain open in the analysis of this second dialect. One of them is what consequences the different behaviour of the lexical item a has when used as an accusative or dative preposition. Another important problem is to determine what exactly is the difference in meaning between the AxParts introduced by a and those introduced by dewhen they both combine with a DP ground. At this moment, I am not in a position to answer these questions and, therefore, we leave these problems open for further inquiry.

6. Conclusion

In this paper I have discussed the behaviour of two series of Spanish Ax-Parts, those that combine with *de* and those that combine with *a*. Although I have briefly referred to dialectal variation, I have mainly focused on the properties of AxParts in what I have characterised as dialect one, which, roughly, corresponds to European Spanish.

I believe that I have been able to provide compelling evidence for the existence of AxParts in Spanish as described in Svenonius (2006) (and references therein) for English and other languages. I have shown how an independent property of part-whole structures in Spanish derives the three characteristics of AxParts which contrast with their equivalents in English: the non-locative nature of the first preposition, the prepositional nature of the lexical item used to lexicalise the morphological base and the lexicalisation of the ground as a genitive pronoun.

As for those AxParts introduced by the preposition *a*, I have shown what I believe is compelling evidence that these forms take a *pro* ground. From this characteristic, many of the semantic, syntactic and lexical properties of this series of AxParts follow without further stipulations.

Finally, I have described the two series of AxParts in a second dialect of Spanish that differs in crucial respects from the variety I have been analysing in this paper. To give an account of the characteristics of this variety, I have suggested a preliminary line of analysis which has not been developed in this paper and that requires further research.

Databases:

CREA (Corpus de referencia del espanol actual), RAE (www.rae.es) CORDE (Corpus diacrónico del espanol), RAE (www.rae.es) DAVIES-NEH (Corpus del espanol de Mark Davies) (www.corpusdelespanol.org)

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