

Abstract.

In this article we explore the two logical possibilities to nominalise a verbal structure: embedding under an independently introduced NP and recycling of the nominal features contained inside the verbal structure. The two procedures make different predictions about the behaviour of the resulting nominalisations. We will argue that both possibilities occur in the same language, and we show that in Spanish *-ción* and past participle nominalisations are cases of embedding and *-miento* nominalisations imply recycling of nominal structure.

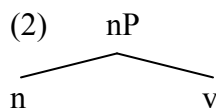
1. Verbs and nominalisations.

One of the most well known facts about the morphosyntax of natural languages is that there is a subset of nouns, typically derived from verbs, which contain a mixture of prototypical nominal and verbal properties. (Some) deverbal nominalisations exhibit referentiality, arbitrary gender and trigger agreement with adjectives, among their noun properties. At the same time these nominalisations have verbal properties to the extent that they are semantically eventive, retain at least part of the argument structure of a verb and allow for epistemic, aspectual or manner adjectives. This has widely noticed in the literature (Beard 1995, Alexiadou to appear, Harley to appear, Koptevskaja-Tamm 1993, Comrie & Thompson 1985, Croft 1990, etc.) (1).

- (1) Aquella supuesta rápida detención de los opositores por el gobierno
That-fem alleged-fem fast-fem detention of the opposers by the government.

(1) illustrates this mixture of properties. The nominal *detención*, derived from the verb *detener*, 'to detain', can combine with referential determiners such as the demonstrative *aquel*, 'that', is arbitrarily a feminine noun and triggers agreement with adjectives such as *supuesto* and *rápido*, whose semantics is compatible with events; it also requires some arguments to be semantically interpretable.

This is a well attested observational fact, but the explanation that it requires is far from clear. In a configurational approach to morphology, where derivations are constructed by adding pieces with morphosyntactic information and building up a hierarchical representation from them, this mixture of verbal and nominal properties has been tried to explain by combining a constituent with verbal information with a head that has nominal information (from very different perspectives, cfr. Lieber 2004, Hale & Keyser 2002, Harley to appear, Alexiadou to appear, Roeper & Van Hout 1998). We will represent these heads as little *v*, or *v*, and little *n*, or *n*, respectively (following Marantz 2001).



The reason why *n* dominates *v* is that the ultimate syntactic distribution of the deverbal nominalisation is nominal: that is, deverbal nominalisations require to appear in case positions and are typically arguments. The intuition behind the representation in (2) is, we believe, that the relevant semantic information of the word –eventivity, argument structure, combination with

manner or modal adjectives...- is determined by the inner layer of the word, while the outer layer is acting as a functional layer that changes the distribution of the form.¹

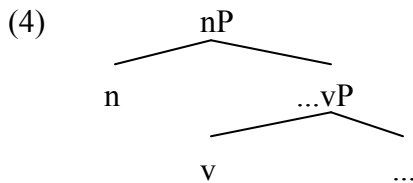
However, the representation in (2) is ambiguous, because it does not specify the origin of the nominal layer: is *n* merged for the first time in the derivation or does it come from the previously constructed structure? This is roughly the difference between external and internal merge in Chomsky (2004).

The first possibility is that *n* is introduced independently of the verbal structure. In this case, (2) would correspond to a case of embedding of a verbal structure under a nominal structure, that is, it would be a case of subordination.

(3) N-feature embedding.

Take a verbal functional structure and subordinate it to a nominal verbal structure.

In this proposal, differences between classes of nominalisations can be explained choosing how big the verbal structure is and how much functional structure is retained before *n* is introduced (cfr. Alexiadou 2001, Harley to appear, Alexiadou and Schaeffer 2007).

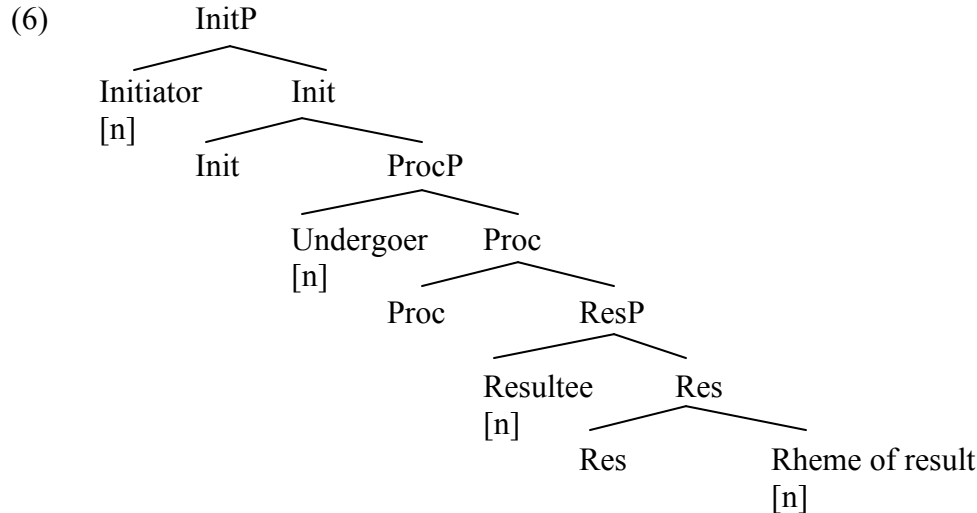


However, there is a second possibility, namely, that the nominal features come from inside the verbal structure. Verbs contain argument positions, where nominal features have to be present. It is a logical possibility, then, that *n* in (2) has been internally merged from one of the argumental positions of the verb. We will refer to this internal-merge option as N-feature recycling.

(5) N-feature recycling.

Take a nominal feature from one of the argument positions introduced by the verb and remerge it on top of the verbal structure.

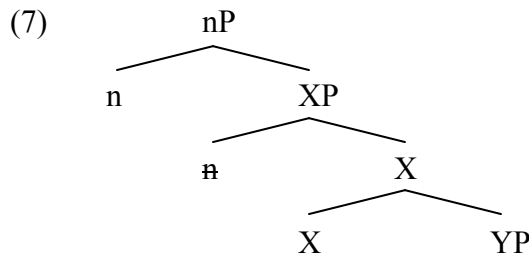
For explicitness's sake, our assumptions about the argument positions inside the verb come from Ramchand (2008). Verbs can be decomposed in three layers, each one corresponding to each one of the subevents: Init –which corresponds to *v*- introduces the cause subevent, Proc introduces the activity subevent and Res, the result subevent (6). We will assume this framework for the argument structure of a verb, but our theory is also compatible with the more standard decomposition of the verb in *v* and *V* (Larson 1988), so, as far as we can see, nothing crucial hinges on this.



Therefore, assuming (2), there are still two ways to get the nominal layer necessary: by introducing it independently -embedding- or by recycling it from one of the argumental positions introduced by the verb. In this article, I am going to argue that the two procedures are available to morphology: different affixes take part in one or the other procedure.

The two procedures that we have described make clear different predictions about the resulting nominalisations. In the case of embedding, when the nominal layer is independent of the verbal structure, by locality, we expect the affix to be non sensitive to the internal properties of the verbal phrase: the argument positions are too embedded to be accessed by *n*, in the absence of movement of these arguments to a higher layer. For a similar reason, we expect the presence of *n* to be in principle compatible with all the arguments of the verb, because the layer is independent of these positions.

On the other hand, in the case of feature recycling, we make the opposite predictions. As the *n* layer is introduced as part of the argument structure of the verb, we expect the resulting nominalisations to be sensitive to the internal structure of the verb: it will be the case that the argument position needs the presence of one of the verbal heads, because that is the one that introduces it. Also, as the nominal features come from an argument position, we expect that the presence of that layer is incompatible with one of the arguments of the verb, because the position is already occupied by the layer (7). In other words, we expect argument cancelation.



The structure of the paper is as follows. In the second section, we will show that the Spanish affix *-do /-da*, when used as a nominaliser, requires the presence of an internal argument interpreted as a Rheme Path, while the affix *-miento* requires the presence of an undergoer and the affix *-ción* is compatible with any kind of verb. In the third section, I will show that *-miento* cancels a Rheme Path argument, while *-do /-da* and *-ción* are compatible with the whole

argument structure of the verb. In section 4, I present a formal analysis that explains the properties of these three affixes, and also the apparently contradictory behaviour of *-do /-da* under the light of our proposal. In the last section I present my conclusions.

The data used in this research have been taken from two sources: more than 2.600 nominalisations taken from LexEsp, an annotated corpus from the *Universitat Politècnica de Catalunya* and –specially for the case of *-do/-da* nominalisations, which are difficult to retrieve from a corpus- the nominalisations contained on electronic dictionaries of contemporary Spanish (*Diccionario de la Real Academia* and *María Moliner*), which add ca. 400 nominalisations not contained in the previously mentioned corpus. Native speaker intuitions (European and Peruvian Spanish) have been used as well.

2. Spanish nominalisers: their sensitivity to the argument structure of the verb.

In this article, we will concentrate in the three most productive nominaliser affixes in contemporary Spanish: *-ción*, *-miento*, and the forms *-do / -da*, which are identical to the past participle marker.²

In our proposal, there is a background assumption about two classes of internal arguments which is crucial, and, therefore, we will take a few moments to make it explicit.

2.1. Two different types of internal arguments.

Different researchers (Verkuyl 1972, Krifka 1986, Tenny 1987, Ramchand 2008) have noticed that a class of direct objects –so-called incremental themes- measure the temporal extension of the event, while others don't. We will follow Ramchand's (2008) terminology.

The first class are Rheme Path objects. They are internal arguments that co-describe the event and whose referential properties –mass / count distinction, plurality...- have an influence on the telicity or atelicity of the predicate. These objects behave semantically like paths: their extension can be represented as a series of points which are mapped into the aspectual structure of the verb. In (9a), *sopa*, "soup", being a mass noun, is an unbounded path, in such a way that, when the points of the path are mapped into the aspectual structure of the verb *comer*, "to eat", the verb needs to be atelic. In contrast, the count noun *pastel*, "cake", in (9b) is a bounded path with a finite series of points; when this final point is met, the event culminates, and, therefore, the predicate is telic.

- (9) a. Juan comió sopa {durante/*en} media hora.
 Juan ate soup {for / in} half an hour.
 b. Juan comió un pastel {*durante / en} media hora.
 Juan ate a cake {for / in} half an hour.

Thus we conclude that *comer* selects a Rheme Path object as its internal argument. Notice that the nominalisation of this verb is derived using the affix *-do /-da*: *comida*

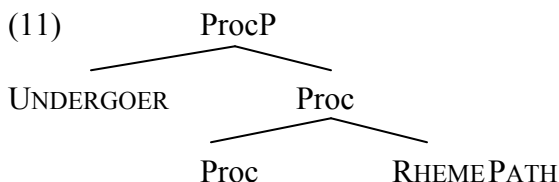
The second relevant class of internal arguments are undergoers. An undergoer is defined as the entity that experiences a process, but which does not delimit the extension of that process; therefore, they do not co-describe the event and by the same logic they do not intervene in the aspectual properties of the predicate. An example of a verb that selects an undergoer is the verb

desplazar, "to move". It does not matter for the aspectual properties of this verb whether the internal argument is a mass noun (10a) or a count noun (10b): in both cases, the arguments are compatible with an atelic reading of the predicate.

- (10) a. Juan desplazó arena durante cinco minutos.
 Juan moved sand for five minutes.
 b. Juan desplazó una silla durante cinco minutos.
 Juan moved a chair for five minutes.

It is interesting to notice that the nominalisation from this verb is done with the affix *-miento*: *desplazamiento*

The distinction between these two classes of internal arguments is well-known, but Ramchand (2008) goes one step further proposing that each class occupies a different position inside the verbal structure. Rheme Paths, and semantic paths in general –independently of whether they are materialised as nouns, adjectives or prepositions- are merged as complements of Proc, the head responsible for processes. Undergoers, on the other hand, are specifiers of this same category (11).



In this section we are going to argue that this difference is relevant for the empirical distribution of the three affixes mentioned. We will provide evidence that *-miento* requires the verb to have an undergoer, *-do / -da* requires the verb to have a rheme path, and *-ción* is compatible with any of these classes of verbs.

2.2. Paths vs. undergoers: the distribution of *-miento* and *-do / -da*.

In this section we will argue that *-miento* nominalisations go with verbs whose internal argument is an undergoer. In contrast, the participial nominalisations require predicates whose internal argument is a rheme / path.

Our most direct piece of evidence comes from the class of verbs of change of state. The data in (12), (13) and (14) illustrate that verbs that select an incremental theme are nominalised with the affix *-do / -da*, never *-miento*.

- (12) a. Juan peló fruta {durante / *en} cinco minutos.
 Juan peeled fruit {for / in} five minutes.
 b. Juan peló una manzana {*durante / en} cinco minutos.
 Juan peeled an apple {for / in} five minutes.

Nominalisation: *pelado* (not **pelamiento*).

- (13) a. Juan bronceó oro {durante / *en} cinco minutos.
 Juan bronced gold {for / in} five minutes.

- b. Juan bronceó un reloj { *durante / en } cinco minutos.
 Juan bronced a watch {for / in} five minutes.
 Nominalisation: broncea-do (not *bronceamiento).
- (14) a. Juan bordó tela {durante / *en} una hora.
 Juan sewed fabric {for / in} one hour.
 b. Juan bordó una camisa { *durante / en } una hora.
 Juan sewed a shirt {for / in} one hour.

Nominalisation: *bordado* (not **bordamiento*).

Other verbs that behave like this are *barnizar*, 'to barnish', *esquilar*, 'to cut the hair', *pintar*, 'to paint', *sembrar*, 'to seed', and many others, whose nominalisations are *barniza-do*, *esquila-do*, *pinta-do* and *sembra-do*.

Systematically, when the verb does not select an incremental theme object, the nominalisation requires *-miento*. This is the case with verbs such as *destripar*, 'to slaughter', whose nominalisation is *destripamiento*, *ocultar*, 'to hide', which makes *ocultamiento*, or *recibir*, 'to receive', which makes *recibimiento*. The following examples show that in these verbs the referential nature of the object does not influence their aspectual properties.

- (15) a. Juan destripa {poesía / un poema} en cinco minutos.
 Juan slaughters {poetry / a poem} in five minutes.
 b. Juan ocultó oro / a un fugitivo durante un mes.
 Juan hide gold / acc a fugitive for one month
 c. Juan recibió {oro / un premio} { *durante / en } cinco minutos.
 Juan received {gold / a prize} {for / in} five minutes.

Other verbs that behave like these are *procesar*, 'to process', *someter*, 'to subjugate' or *silenciar*, 'to silence', whose nominalisations are *procesa-miento*, *someti-miento* and *silencia-miento* (never **procesa-do*, **someti-do*, **silencia-do*).

Our proposal makes a further prediction in the change of state class. The well-known class of degree achievement verbs is famous because the scale that is used to evaluate a change of state is expressed by the verbal base, sometimes in the form of an adjective present in its morphological structure. As scales are, semantically, subtypes of paths –ordered series of points which can be bounded or unbounded-, the internal argument, if there is one, cannot be a path object: it needs to be an undergoer. Therefore, our prediction is that all degree achievement verbs will reject nominalisations with *-do* / *-da* and will use *-miento*. This prediction is borne out, as shown in the series of (16).

- (16) Degree achievement verbs.
 a. enfriar, 'to cool', calentar, 'to heat', empobrecer, 'to impoverish', alargar, 'to lengthen', endurecer, 'to harden', ensanchar, 'to widen', engrosar, 'to fatten'...
 b. enfria-miento, calenta-miento, empobreci-miento, alarga-miento, endureci-miento, ensancha-miento, engrosa-miento.

We have yet another further prediction in the general class of change of state verbs. Undergoers are defined as entities that experience a process, and the concept of experiencer is tightly associated to psychological verbs. Therefore, we expect all psychological verbs to reject

nominalisations with *-do / -da*, for they select undergoers and not path objects. The prediction, again, is confirmed.

(17) Psychological state verbs.

a. sentir, 'feel', pensar, 'to think', descubrir, 'to discover', reconocer, 'to recognise', entender, 'to understand', presentir, 'to present', aburrir, 'to get bored', convencer, 'to convince', enamorar, 'to fall in love', relajar, 'to relax'.

b. senti-miento, pensa-miento, descubri-miento, reconocí-miento, entendi-miento, presenti-miento, aburri-miento, convencí-miento, enamora-miento, relaja-miento.

Another piece of evidence comes from verbs of motion. Two are the relevant subclasses here: verbs of inherent direction, whose semantics force them to introduce a path, and verbs of induced movement, which denote that movement was caused on an object. In this second case, the object that suffers the change of position is an undergoer.

(18) Verbs of induced movement.

a. *desplazar*, 'to displace', *mover*, 'to move', *asentar*, 'to settle', *deslizar*, 'to make something slide', *lanzar*, 'to throw', *posicionar*, 'to position', *acercar* 'to approach.

b. *desplaza-miento*, *movi-miento*, *asenta-miento*, *desliza-miento*, *lanza-miento*, *posiciona-miento*, *acerca-miento*.

The fact that their internal argument is an undergoer can be independently tested by the fact that the aspectual properties of the predicate do not depend on the mass / count nature of that object.

(19) a. Juan lanzó {harina / una silla} en un minuto.

Juan threw {flour / a chair} in a minute.

b. Juan acercó {agua / una sardina} al fuego en un segundo.

Juan approached {water / a sardine} to the fire in a second.

Forms such as **lanzado* or **acercado*, where the nominalisation uses the affix *-do / -da*, are felt as ungrammatical and are unattested in corpora. This contrasts with the verbs of inherent direction, that always imply a path, and whose nominalisation is constructed with *-do / -da*, never with *-miento*.

(20) Verbs of inherent direction.

a. llegar, 'arrive', ir, 'go', venir, 'come', caer, 'fall', entrar, 'come in', salir, 'come out'...

b. llega-da, i-da, veni-da, caí-da, entra-da, sali-da

Forms such as **llegamiento*, **imiento* or **entramiento* are ungrammatical: the verbs require the affix *-do / -da* for their nominalisations. The meaning of these verbs is defined with respect to the properties of the path (e.g., *fall* implies a path oriented downwards in the vertical axis), and, therefore, they need to have a path in their argument structure.

Let's explore another prediction of the proposal. Path objects necessarily require the existence of an action which can be measured, so we predict that verbs which do not express this semantic notion, but a static relationship between entities, will select an undergoer. In consequence, we expect these verbs to reject nominalisations with *-do / -da* and use *-miento*.

This prediction is, once more, confirmed. A verb such as *mantener*, 'to hold', which defines a static relationship between the direct object and a location, requires *–miento* (*manteni-miento*, not **manteni-do*). (21) shows that the internal argument is an undergoer.

- (21) Juan mantuvo {arroz / un lápiz} en el bolsillo {durante / *en} cinco
 Juan kept {rice / a pencil} in his pocket {for / in} five
 minutos.
 minutes.

Other similar verbs are *acompañar*, 'to go with', *enfrentar*, 'to confront', *acatar*, 'to accept' and *solapar*, 'to overlap', whose nominalisations are *acompaña-miento*, *enfrenta-miento*, *acata-miento* and *solapa-miento*.

We conclude, therefore, that both *–do* / *–da* and *–miento* are sensitive to the argument structure of the verb they nominalise, because their distribution can be accounted for by the type of internal argument selected by the verb.

2.3. *–ción: Expect the unexpected.*

The behaviour of *–ción* contrasts with the one of the two affixes we just presented in the sense that it is not sensitive to the argument structure of the verb. This patterns, as we will suggest, with other special properties of this affix.

This affix can nominalise a verb that selects an undergoer, such as *elegir*, 'to choose', whose nominalisation is *elec-ción*. (22) shows that the referential properties of the internal argument do not change the aspect of this verb.

- (22) Juan eligió {oro / un coche} {*durante / en} un segundo.
 Juan chose {gold / a car} {for / in} a second

However, the same affix can be used with verbs that select a rheme path object, such as *construir*, 'to build' (nom. *construc-ción*), whose internal argument is shown to be an incremental theme in (23).

- (23) a. Juan construyó una casa {*durante / en} un segundo
 Juan built a house {for / in} a second
 b. Juan construyó poesía {durante / *en} una hora
 Juan built poetry {for / in} an hour

This property patterns, we suggest, with other properties of the same affix. For example, *–ción*, unlike *–miento* or the past participle affix, does not require the verb to appear with a theme vowel, which is a property of all verbs in Spanish. There are some minimal pairs in Spanish in which the same verb has two nominalisations, one with *–miento* and another one with *–ción*; the former requires the presence of the theme vowel, while the latter does not.

- (24) a. From *cocer*, 'to boil'
 coc-ción, coc-i-miento
 Verb-ción verb-theme vowel-miento

- b. From *recibir*, "to receive"
 recepc-ción, recib-i-miento
 verb-ción verb-theme vowel-miento

Other verbs, such as *elegir*, "to choose" (nom. elec-ción), *optar*, "to aspire" (nom. opción) or *intervenir*, "to intervene" (nom. interven-ción), illustrate that *-ción* does not need the theme vowel to be present.

In fact, *-ción*, as opposed to the past participle and *-miento*, does not require a verbal base; it also admits smaller units which Distributed Morphology has identified as roots (Marantz 1997, 2001). (25) shows that some of the bases of *-ción* cannot be used to construct verbs.

- (25) a. fun-ción, "function", rela-ción, "relation", reac-ción, "reaction".
 b. *fun-ar, *rel-ar, *reac-ar / *reag-ir

There are no equivalent cases with the participle or with *-miento*: all their formations are constructed on top of verbs with their theme vowels.

Finally, these properties may also be related to the fact that some of the nominalisations that use *-ción* cannot be characterised as event or result nouns, but are rather nouns denoting general properties, states, qualities or even physical entities. This is never the case with nominalisations that use either *-miento* or *-do / -da*. Other relevant examples are shown in (26).

- (26) colora-ción, "colour", posi-ción, "position", direc-ción, "direction", tradi-ción, "tradition"

A noun such as *na-ción*, "nation", may be related to the verb *nacer*, "to be born", but as a noun it does not keep any relationship with this verb. I have not attested similar cases with *-miento* or the participle, and, to the best of my knowledge, such cases have not been reported in the literature about Spanish.

Thus, we have shown that the productive Spanish nominaliser affixes can be classified in two groups, depending on whether they are sensitive to the argument structure of the verb: *-ción*, by far the most productive of them, is not sensitive, while the distribution of *-miento* and *-do / -da* can be explained by the nature of the internal argument of the verb.

3. Argument preservation and argument cancelation.

In this section we will explore our second set of predictions: a nominalisation process where the nominal features are recycled from inside the verbal structure must cancel one of the arguments of the verb, namely the one that would occupy the position that the affix is occupying. We will show that the affix *-miento* actually cancels the (optional) path argument of the verb, while *-do / -da* and *-ción* are in principle compatible with the whole argument structure of the verb. Part of the evidence comes from verbs that select both an undergoer and a path argument, and, therefore, allow nominalisations with *-do / -da* and *-miento*. We will see, also, that the properties of the past participle morpheme are, apparently, contradictory with our proposal.

3.1. PP paths.

In this section we show that *-miento* nominalisations are not compatible with a path expressed as a prepositional phrase, while the other affixes studied allow it.

The following pair illustrates that the *-do / -da* nominalisation is compatible with all the arguments: agent, rheme and the optional path.

- (27) a. Las autoridades alumbraron la calle hasta el tercer bloque.
The authorities illuminated the street up to the third block.
b. El alumbrado de la calle hasta el tercer bloque por las autoridades.
The illumination of the street up to the third block by the authorities.

The pair in (28) shows that the same situation is true with *-ción* nominalisations: agent, undergoer and path are allowed in the nominalisation of (28b).

- (28) a. Las autoridades repatriaron a los inmigrantes a Kenia.
The authorities repatriated ACC the immigrants to Kenia.
b. La repatriación a Kenia de los inmigrantes por las autoridades.
The repatriation to Kenia of the immigrants by the authorities.

The same is not true. A verb such as *seguir*, 'to follow', allows a path in its verbal manifestation, but speakers consider the path to be ungrammatical in the nominalisation (29b).

- (29) a. Siguieron al sospechoso a la casa.
They followed acc-the suspect to the house.
b. El seguimiento del sospechoso (*a la casa).
The following of the suspect (to the house).

In fact, for many speakers, there is a related contrast. The preposition *hasta* is ambiguous between a path reading equivalent to English *(in)to* and a preposition that introduces a temporal boundary (equivalent to English *until*). Speakers consider the first sentence, where *hasta* expresses the temporal boundary, grammatical, while the second sentence, where it denotes a path, is degraded.

- (30) a. El seguimiento del proyecto hasta su conclusión.
The tracking of the project until its conclusion.
b. */?? El seguimiento de Juan hasta su casa.
The following of Juan up to his house.

3.2. DP Paths.

In the light of the previous cases, one could argue that the problem is that *-miento* is not compatible with some path prepositions, not with path itself. In this section we show that it is not compatible with the semantic notion of path, and even when the path is expressed as a DP, a *-miento* nominalisation rejects it. The semantic interpretation of *el río*, 'the river', in (31) is that it

is the entity that defines the path that the subject is following: its meaning is "To follow the path defined by the river's banks".

- (31) Seguir el río.
To follow the river

The verb *seguir* is also interesting because its argument structure includes both a path and an undergoer. Therefore, it is compatible both with a *–miento* and a *–do / –da* nominalisation.

Let's start with the *–miento* nominalisation, *seguí-miento*. As shown in (32), this nominalisation is ungrammatical with this DP path.

- (32) *El seguimiento del río
The following of-the river.

The second nominalisation of *seguir* is actually compatible with the DP in the path reading.

- (33) La seguida del río
The following of-the river.

3.3. Path measure phrases.

The last piece of evidence that *–miento* nominalisations are incompatible with paths comes from measure phrases which quantify the distance inside a path. For semantic reasons, they can only be licensed when there is a path in the argument structure. As shown in (34), even when the verb allows this kind of constituent, the nominalisation in *–miento* rejects it.

- (34) a. La mesa se movió dos metros.
The table SE moved two meters
b. *El movi-miento de la mesa ({en/de/con...}) dos metros
The movement of the table ({in /of/with...}) two meters.

This is not a general property of nominalisations, as some of them –such as past participle nominalisations- allow path measure phrases. This is illustrated in (35) with the case of the verb *bajar*, "to descend", whose nominalisation is *baja-da*.

- (35) a. Las temperaturas bajaron dos grados.
The temperatures lowered two degrees.
b. La bajada {en / de} dos grados de las temperaturas.
The lowering {in / of} two degrees of the temperatures.

3.4. Interim summary.

At the beginning of the paper, we noticed that an N-embedding proposal and an N-feature recycling one make different predictions about the properties of the nominalisations regarding

both their sensitivity to argument structure and their compatibility with arguments. The results that we have obtained can be summarised in the table in (36).

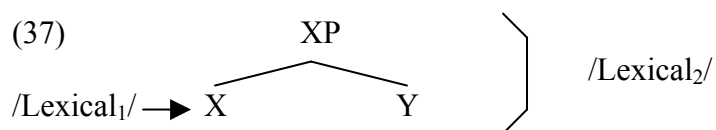
(36)

	AS sensitivity	Argument cancellation
-ción	No	No
-do / -da	Yes	No
-miento	Yes	Yes

The two properties, argument sensitivity and argument cancellation, are predicted to pattern together, because they are both explained by the same reason: the nominal features are introduced into the derivation in an argument position of the verb. This is why the behaviour of the past participle morpheme looks contradictory with our proposal. In the next section, we will make explicit the analysis of *-ción*, *-miento* and we will show how the analysis resolves this apparent inconsistency.

4. Putting it together.

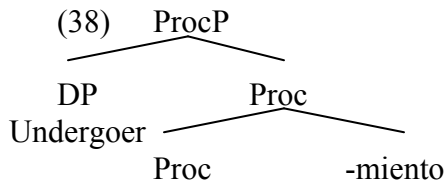
In this section I am going to make a proposal with respect to the syntactic account of these empirical generalisations. My syntactic proposal follows the version of Minimalism argued for in Gärtner (2002), in which the syntactic derivation is related with set theory: each node represents a set consisting of the items that it dominates, if any. In this proposal, lexical insertion cannot be restricted to terminal nodes, because both terminal and maximal nodes are the same entity: sets. Therefore, in my proposal I will crucially use what has become known as phrasal spell out, that is, the insertion of lexical material under non-terminal nodes (cfr. Caha 2007, Neeleman & Széndroi 2007, Ramchand 2008). A lexical item, thus, can lexicalise a terminal node (Lexical₁ in 37) or a maximal node (Lexical₂ in 37), in which case it lexicalises the constituents contained under that node.



4.1. The nature of *-miento*.

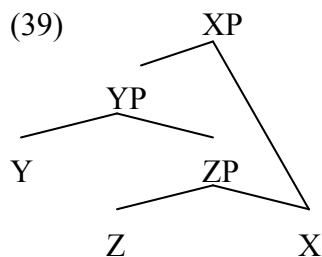
The relevant properties of *-miento* are those that we predict if the features of the nominalisation where it takes part are recycled from one of the internal argument positions of the verb: sensitivity to the argument structure, compulsory presence of verbal structure and incompatibility with a path argument, when the verb can select one.

For this set of reasons, I propose that the position of the affix is the one in (38), where I do not represent yet the features of the affix.



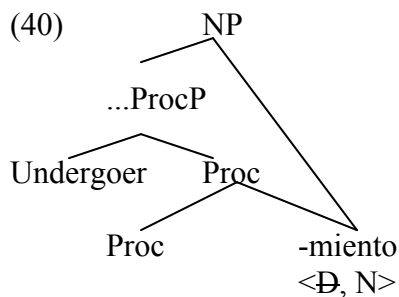
This configuration explains the properties that we have identified for this affix. The affix is incompatible with path arguments because they need to be merged in exactly the same position where the affix is merged. The affix requires a verbal structure because this position is provided by ProcP, which is a verbal projection, and, finally, the affix is sensitive to the argument structure of the verb because the head that selects it also selects an undergoer.

The crucial question at this point is how the affix can nominalise the structure from this position. Our technical implementation of this process follows Gärtner (2002) in his proposal that syntactic movement can be viewed as remerge of a constituent from a lower projection to the highest node of the configuration. From here it follows that the constituent that "moves" through remerge is able to project its label to the whole configuration (cfr. also Chomsky 2004 and Starke 2004).



In (39), X is a member which belongs to more than one set: the set XP and the set ZP. This is possible in a system which views syntactic trees as representations of sets of units, such as the one developed in detail in Gärtner (2002, specially pp. 145-171).

X in (39) would correspond to *-miento* in (38), after remerge which brings as a consequence that it nominalises the structure. The crucial question at this point is what makes it need to remerge. We propose that the set of features lexicalised by *-miento* include a full DP with an additional N feature. In the representation in (38), before remerge, the D feature of *-miento* is already licensed by its being in an argument position, but the N feature cannot be licensed in this context. This is what triggers remerge of *-miento*: the affix needs to remerge in order to project this N feature, resulting in a NP.



Once that *-miento* remerges, the structure is nominalised and the projection of its N feature blocks insertion of the projections that normally dominate a verb, such as Aspect and Tense.³

The feature constituency of a remerging affix follows naturally from the general principles of syntax. If the affix is merged for the first time in an argument position, then it needs to have a D feature, because argument positions require this feature (cfr. Longobardi 1994); if the affix needs to remerge and the result of this remerge is a nominalisation, then there must be a noun feature, which is not licensed by the argument position. Thus, from our analysis it follows a generalisation about affixes that behave like *-miento*.

(41) Remerging nominaliser affixes.

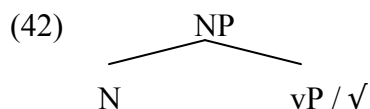
A remerging affix is a DP constituent with an additional categorial N feature.

Thus, clitics, which arguably can be classified as arguments and cancel an argument of the verb (Romance *se, si*) are not expected to nominalise if they lack an additional N feature. On the other hand, the agentive suffix *-dor* (*-er* in English), which behaves like *-miento* according to the relevant criteria, is predicted to be composed of <D, N>.

4.2. Position of *-ción*.

The properties of the affix *-ción* are those that we expect from a nominalisation process where the nominal features are introduced independently from the verbal structure: non sensitivity to argument structure, possibility of combining with roots and compatibility with all the arguments of the verb.

These properties are explained if *-ción* is the lexical spell out of an NP layer which subordinates the verbal structure, as represented in (42).



As the nominal features that *-ción* represents are introduced independently of any verbal structure, it follows that *-ción* will not cancel any arguments, and will not even require that under it there is a verb with argument structure: it could be a root, explaining, thus, the cases in which *-ción* combines with a unit that, by itself, is not a verb, as illustrated in (25).

4.3. Position of *-do* / *-da*.

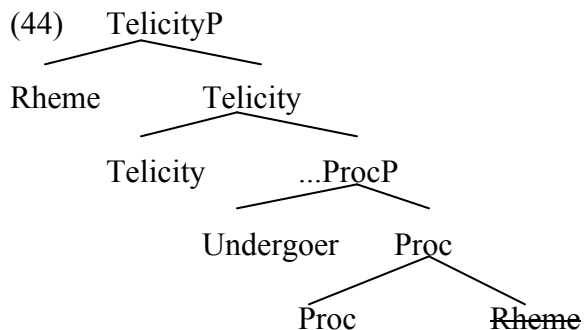
The problematic case comes from the affix *-do* / *-da*, because it is sensitive to the argument structure of the verb –it requires rheme path objects- but does not cancel any part of the argument structure of the verb. In this section, we will show that this apparent contradiction is solved by the fact that the nominaliser *-do* / *-da* is identical to the past participle. We will show that this affix is, actually, the participle and the nominal features are introduced by N-embedding. Sensitivity to the argument structure of the verb comes from the fact that the participle requires a functional projection that needs a rheme path object to be licensed.

Let us show first that this affix is the past participle suffix and not just one which happens to be homophonous with it. The evidence comes from irregular participles: in those verbs that allow participial nominalisations, if the past participle is irregular, the nominalisation uses the same irregular participial affix than the verb (43).

- (43) a. escribir, "to write", he escri-to, "I have written". Nominalisation: *escri-to*.
 b. decir, "to say", he di-cho, "I have said". Nominalisation: *di-cho*.

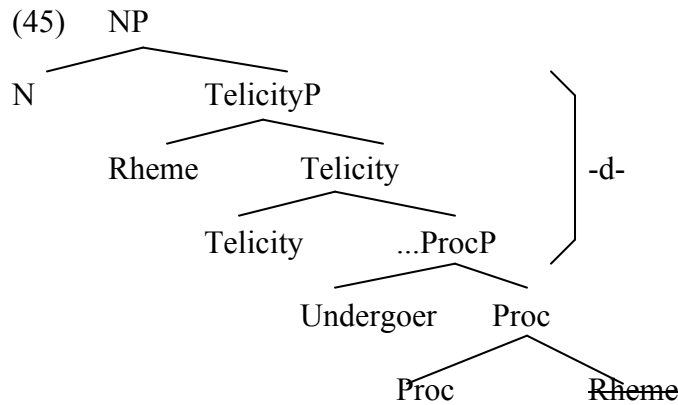
From here it follows that it is necessary to analyse the participial morpheme in the nominalisation as part of the verbal structure, not as the nominalising part. Now, if this is true, then the nominal features have to be introduced in the derivation independently of the affix, and, therefore, it is a case of N-embedding, not of N-feature recycling. This leaves as a mystery why the affix requires the presence of a rheme path objects.

Rheme internal arguments have a special status on the functional structure of the verb. As we have seen, they influence the external aspect of the verbal predicate, in the sense that their referential properties determine whether the event is telic or atelic. This implies that they interact with the functional projection that determines this aspect of a verbal predicate. Following Borer (1994, 2005) and other authors, I adopt the proposal that there is a specific external aspect projection that defines the (a)telicity of the event by attracting the rheme object; unlike Borer, however, I propose that this projection is present both with telic and atelic events and in both cases it attracts the rheme: none of them can be considered unmarked.



I propose that the past participle morpheme in Spanish lexicalises (at least) this telicity phrase. If this is the case, the configuration explains that object rhemes are necessary in nominalisations that use *-do* / *-da*: the participial morpheme does not come from inside the argument structure of the verb, but it is associated with a projection that interacts with path objects. Therefore, we expect this class of nominalisations to require a path object and, also, to require the presence of the verbal structure that introduces this path object.

On top of this configuration, the nominal layer is merged.



Now the question is what spells out the nominal layer. I suggest that this layer is spelled out by the nominal desinence (-o or -a) which appears in the participle in these nominalisation cases. Although this desinence also appears in past participles in other cases, such as passive constructions, it is a property of nouns in Spanish, and, thus, it is plausibly associated either to the NP layer itself or to some other property that it introduces.

Therefore, the apparent contradiction in the properties of *-do* / *-da* nominalisations is resolved: the nominal features are introduced independently of the verbal structure, but the participial morphology indirectly requires the presence of a path object.

5. Consequences and conclusions.

We have proposed that there is a correlation between the properties of the affix and the type of process that gives rise to the nominalisation. We have identified two ways of getting a nominalisation:

- (46) a. N- feature recycling:
Nominal features in one of the argument positions of the verbal domain remerge on top of the verbal structure (*-miento*).
b. N-embedding:
Nominal features come from a nominal head under which the (verbal) structure embeds (*-ción*).

These two processes imply different empirical properties: remerge implies that one of the argument positions is occupied, so we expect that one of the arguments of the verbal predicate will be lost in the nominalisation. We also expect that this type of nominalisation is dependent on the existence of verbal structure, and a specific type of it.

Another possible instance of nominalisation through remerge would be the "agentive" (although see Booi & Lieber 2005) suffix *-dor* in Spanish, which is incompatible with the external argument and selects verbal predicates with a specific type of argument and event structure.

As for the subordination strategy, the main property is that it can co-occur with all the arguments of the predicate, because the nominal features are not introduced in an argument position. This does not imply that it will always co-occur with all the arguments: this may depend on the different heights where the subordination can take place (Alexiadou 2007, Harley 2007).

Depending on whether the affix lexicalises part of the verbal structure or not, we can differentiate between two different kinds of affixes associated to the subordination strategy. If the affix just lexicalises the nominal features, we expect it to be able to combine with any kind of verbal predicate –maybe, also, non verbal structures, like roots–, as was the case with *–ción*. As far as we know, another good candidate for this kind of affix would be *–ing* nominalisations in English.

However, if the affix lexicalises part of the verbal projections in addition to the nominal features, we expect that it will be dependent on the presence of a specific type of verbal structure –at least to the extent that the projections that it lexicalises depend on the category that we call “verb”–. This was the case of the affix *–do* and its feminine counterpart *–da*. Infinitival nominalisations in Spanish, which are dependent on the type of predicate (Fábregas & Varela 2006), are, in our opinion, a good candidate for this kind of affix.

Finally, we believe that it is also important to think about what interaction between the affix and the verb is not found in the languages of the world. To the best of my knowledge, there are no cases of nominalisations that add arguments to the verbal predicate that it derives. If this empirical suggestion is confirmed, it would cast doubt on a theory where some nominal affixes are constituents which introduce arguments (cfr. DiSciullo 2005). This proposal either predicts that we would find nominalisations with more arguments than their verbal counterparts or requires an independent device that checks the argument structure introduced by the affix with the argument structure of the base; in the absence of empirical evidence for nominalisations that add arguments or this independent device, therefore, we believe that no affix can be analysed as a head that introduces arguments.

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¹ In this respect, the syntactic proposal is not so different from a theory of transposition (Beard 1995) where the nominal morphology is altering only the shape and syntactic relationships of the word, while the verbal base keeps its semantic specification.

² We will concentrate only in affixal nominalisations, and therefore we will not take into account the zero nominalisations from verbs, such as *empuje*, from *empujar*, “to push”, *compra*, from *comprar*, “to buy” or *canto*, from *cantar*, “to sing”.

³ A fair question at this point is why the nominalisations in *–miento* do not denote paths if the affix is merged in the position reserved for paths. Compare this situation with the “agentive” suffix *–dor / –er*, which shares its properties with *–miento*. As shown in Booij & Lieber (2004), this suffix does not always produce nominalisations that denote agents. The nominalisations in *–er* denote many kinds of semantic notions apart from agent (e.g., *six packer*, *third grader*, *Londiner*...). I suggest that a general property of affixes, as opposed to stems, is that their denotation is not determined by their position, maybe due to a defective conceptual semantics. However, this requires further research.

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