An Exhaustive Lexicalisation Account of Directional Complements

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Abstract

In this article I revisit the well-known empirical problem of manner of motion verbs with directional complements in Spanish. I present some data that, to my mind, had not received due attention in previous studies and I show that some manner of motion verbs actually allow directionals with the preposition *a*, while all of them allow them with prepositions like *hacia* or *hasta*. I argue that this pattern is due to a principle that states that every syntactic feature must be identified by lexical insertion, the Exhaustive Lexicalisation Principle. The crucial problem with directional complements is that the Spanish preposition *a* is locative, in contrast with English *to*, and, therefore, unable to identify the Path feature. Some verbs license the directional with *a* because they can lexicalise Path altogether with the verb; all verbs can combine with *hasta* or *hacia* because these prepositions lexicalise Path. When neither the verb nor the preposition lexicalise the Path, the construction is ungrammatical.

1. Introduction: the Exhaustive Lexicalisation Principle

One of the main questions in linguistic research from the last fifty years has been the relationship between syntax and the lexicon. Two different views have been taken on this matter. In very general terms, the first approach proposes that syntax and the lexicon are not related directly. There is a set of operations, which have to take place to allow both components of the grammar to be connected. In this sense, perhaps surprisingly, Lexicalism (Halle 1973), which allows for a generative lexicon, and Distributed Morphology (Halle and Marantz 1993), whose view of the lexicon is that it plays a merely interpretative role, agree in the necessity of having an extra component where some operations take place to adapt lexical representations to the syntactic structure.

In Lexicalism, the lexicon itself contains a set of operations, Word Formation Rules, which applies to morphological constituents before they can project in the syntax (cf. among many others, Levin and Rappaport 1986). Word Formation Rules take place between the lexicon and the syntax. The

input of these rules is anything that is stored in the lexicon of a certain language (including a restricted set of phrases with idiomatic meaning, Di Sciullo and Williams 1987). The syntax itself does not have access to all the information contained in the lexical items used to build a word; several principles, such as what has been known as the Lexical Integrity Hypothesis Lapointe (1979), restrict this relationship.

Starting from a very different perspective about the nature of the lexicon, nonetheless, Distributed Morphology (DM) disallows a direct relationship between the syntax and the lexicon. In this framework, the priority between the lexicon and the syntax is inverted with respect to Lexicalism, in such a way that the lexicon is purely post-syntactic, unable to generate new structures, and merely interpretative. However, there is a set of non-generative operations which take the syntactic configuration as input and give an object which is interpretable for lexical insertion as output (cf. Embick and Noyer 2001 and references therein). This set of post-syntactic operations include rules which allow to erase syntactic features previous to lexicalisation of the structure, or, in DM terminology, spell-out. This operation is called impoverishment and plays a crucial role in DM analysis of several morphophonological phenomena (Bonet 1991, Noyer 1992). In other words, DM allows certain syntactic features not to be expressed by the lexicon.

In this article, we take a position against this general view of the grammar. We argue that the lexicon and the syntax are related directly without the intermediation of rules that modify the shape of one to make it readable to the other. Thus, the main background assumption of this paper is stated as the following principle (1).

(1)   The syntax and the lexicon are directly related.

From here it follows that the lexicon identifies syntactic structures directly, or, in other words, that syntactic structures are lexicalised directly. Once this background assumption is stated, the question arises of how exactly the process of lexicalisation takes place and which principles best describe why a certain lexical item targets one particular syntactic structure. If we take as an example neo-constructionalist approaches (cf. for example, Borer 2005), this theory would argue that these questions are not particularly relevant for the grammar proper, because for most lexical items it would be true that they could be inserted in any syntactic configuration and it would be left to the general cognitive capacities to determine if their insertion in that position clashes with what we know about the world. This would be true especially of the lexical items that have been identified as category-less roots in DM.

As for this paper, in contrast with the neo-contructionalist approach, we argue that relevant aspects of the meaning of lexical items are encoded in the syntax, in such a way that certain items cannot lexicalise a syntactic structure simply because the syntactic configuration required is not the

right one and, in those cases, knowledge of the world does not play any role in determining the ungrammaticality of a sentence. Therefore, this paper is not compatible with this crucial claim of the neo-constructionalist view. In the perspective that we are adopting, the question of how the lexicalisation of syntactic information takes place becomes relevant, and is, in fact, crucial.

In this article, we study the well-known case of manner of motion verbs with directional complements in Romance, specifically in Spanish. We take into consideration new data that, to our mind, had not previously received due attention and we propose an analysis which is based on the relationship between the syntactic features and the pieces that lexicalise them.

The main theoretical contribution of this paper is to argue for the existence of a universal principle that states that every syntactic feature has to be identified by the lexicon and, therefore, these features cannot be erased from the representation or be left without lexicalisation. We argue that a structure can be ungrammatical because one of its syntactic features is not identified by any lexical item. We state this principle as the Exhaustive Lexicalisation Principle (2).

(2)   *Exhaustive Lexicalisation Principle*:
        Every syntactic feature must be lexicalised.

The idea that a source of ungrammaticality is that a structure contains one or more features without lexicalisation underlies some previous proposals (Ramchand and Svenonius to appear, Ramchand in press). It is worth noting that the Exhaustive Lexicalisation Principle is not a condition on the phonological materialisation of the lexical items (in contrast with the *Invisible Category Principle* of Emonds 1985:277 or the restriction on silent heads and specifiers in Koopman 1996). The need to lexicalise syntactic features does not require that the lexical item used has any phonological information associated to it. Even though there are certainly restrictions on the use of phonologically empty lexical items, they derive from independent phonological principles and, presumably, learnability conditions, and they are independent from the Exhaustive Lexicalisation Principle. In other words, the Exhaustive Lexicalisation Principle states that every syntactic feature must be lexicalised by a lexical item, even if this item is phonologically null.

2. Directionals with manner of motion verbs: data and previous interpretations

One of the most discussed properties of lexical syntax and semantics in the last twenty years has been the possibility of licensing directional complements with manner of motion verbs. Under the usual description of the facts, English and German allow them, while Spanish is usually described as a language in which manner of motion verbs cannot take directional

complements. However, this standard description is challenged by some data, as we will show in this section.

First of all, in contrast with what has become the common description of data in Spanish (as taken from Talmy 1985), this language accepts directional complements introduced by the preposition *a* with some manner of motion verbs. The following data are taken from searches in different corpora of contemporary Spanish.

(3) a. Dos horas más tarde volaba a Panamá en un avión militar.
    two hours more late flew to Panama in a plane military
    'Two hours later, he flew to Panama in a military plane'
    (Gutierre Tibón, *Aventuras en las cinco partes del mundo*, pp. 250)

  b. Michel corre al molino y destruye el cementerio.
    Michale run to.the mill and destroy the cemetery
    'Michel runs to the mill and destroys the cemetery'
    (Julio López Navarro, *Clásicos del Cine*, pp. 152)

  c. Camina al baño.
    walks to.the bathroom
    'He walks to the bathroom'
    (Jaime Bayly, *La mujer de mi hermano*, pp. 144)

  d. Pues entonces anda al museo del
    *so then walk.*IMP.2SG *to.the museum of.the*
    Check-Point-Charlie.
    CPC
    'Then walk to the CPC museum'
    (CREA, document 04204001)

  e. A cada instante su imaginación se deslizaba a la   escena.
    at each instant his imagination SE *slid to the scene*
    'At each moment, his imagination slid to the scene'
    (Uslar Pietri, *Oficio de difuntos*, pp. 234)

  f. El bastoncillo resbalaba al suelo una y otra vez.
    the cottonstick slid to.the floor once and other time
    'The cottonstick slid to the floor once and again'
    (Ana María Matute, *Primera memoria*, p. 180)

  g. Nos recogió y condujo a la goleta.
    *us.*ACC *picked up and drove to the schooner*
    'He picked us up and then he drove us to the schooner'
    (Ortiz Armengol, *Aviraneta o la intriga*, p. 401)

  h. La nave del gran faraón Tutankamon, que tambin
    'The ship of.the great Pharaon Tutankamon which also
    navegaba a Iemenu..
    sailed to Iemenu...'
    (Terenci Moix, *El arpista ciego*, p. 287)

i. Después de tomarse una copa y   ver   un rato la tele,
    *after   of drink.*SE *a   drink and watch a   while the tv*
    se arrastra a la   cama.
    SE *creeps   to the bed*
    'After having a drink and watching the TV for a while, he creeps
    to his bed'
    (Carmen Rico Godoy, *Cómo ser mujer y no morir en el intento*,
    p. 182)

As these cases show, verbs like *drive*, *slide*, *walk*, *fly*, *swim*, *creep* or *sail* are attested with directional complements introduced by the preposition *a*, and they are indeed widely accepted by native speakers. Even Talmy (1985:p.123) gives the sentence *El hombre corrió al sótano* as one possible translation of English *The man ran back down into the cellar*, although this author still maintains that this type of construction is not characteristic of Spanish. However, both searches in corpora and native speakers intuitions show that there is nothing unusual in this construction in Spanish.

Some speakers also allow directional sentences constructed with *cojear* 'to limp,' *gatear* 'to crawl' or *nadar* 'to swim,' and, indeed, these constructions are also documented in different texts.

(4) Cuando me   encontró, me   desató el nudo y
     *when   me.*ACC *found.3*SG *me.*ACC *untied the knot and*
     nadamos a la   superficie.
     *swam.1*PL *to the surface*
     'When he found me, he untied the knot and then we swam to the
     surface' (www.feapscv.org)

In contrast, no text ever documents and no speaker ever admits directional verbs with a second class of manner of motion verbs, among them *bailar* 'to dance,' *flotar* 'to float,' *temblar* 'to shiver' and *tropezar* 'to trip.'

(5) a. *Juan bailó   a la oficina.
         Juan danced to the office
         'Juan danced into the office'
     b. *El barco flotó   a la   costa.
         the boat   floated to the coast
         'The boat floated to the coast'
     c. *Juan tembló   a la oficina.
         Juan shivered to the office
         'Juan shivered into the office'
     d. *Juan tropezó al   suelo.
         Juan tripped to.the ground
         'Juan tripped to the ground'

Another set of data which is sometimes overlooked in the literature (with some exceptions, like Morimoto 1998) are ballistic motion verbs like

lanzar 'to throw,' *tirar* 'to drop' and *catapultar* 'to catapult.' These verbs denote causative verbs of manner of motion and they do not lexicalise any direction; however, they uncontroversially take directionals introduced by *a*.

(6)   a. Juan lanzó una pelota al tejado.
'Juan threw a ball to the roof'
b. Juan catapultó a su gato al tejado.
'Juan catapulted his cat to the roof'
c. Juan tiró una piedra a la ventana.
'Juan threw a stone to the window'

These data seriously challenge the traditional Talmian description of the Spanish facts and, therefore, the subsequent analyses that have proposed that manner of motion verbs are impossible in Spanish because in this language there is no predicate composition rule that allows the merge of a manner lexical item with a light verb that selects a directional complement (Mateu 2002 and references therein, Zubizarreta and Oh 2007). These analyses cannot be maintained because they do not explain why the manner component is compatible with a directional complement in some cases, while it leads to ungrammaticality in other cases.

There is a second set of data that challenges the traditional view of directionals in a language like Spanish. Every manner of motion verb, including *bailar*, *flotar* and the rest of the members of their group, allows directional complements provided they are introduced by the prepositions *hasta* or *hacia*.

(7)   Silenciosamente flotaba hacia   la   puerta.
silently   floated towards the door
'She floated silently towards the door'
(Mario Vargas Llosa, *La tía julia y el escribidor*, p. 261).

This fact has already been acknowledged in the literature, and two possible analyses have been proposed to make it compatible with the widely accepted claim that Spanish does not admit directionals with manner of motion verbs.

To the best of our knowledge, the first person to acknowledge facts such as those in (7) and try to analyse them was Aske (1989). This author's generalisation is that Spanish allows directional phrases provided that they do not make the predicate telic. Under his account, *hasta* and *hacia* introduce unbounded directionals which do not imply an end point.

Although we agree that *hacia* introduces a directional complement which does not entail that the goal is attained, we disagree with Aske with respect to directionals introduced by *hasta*. Indeed, in these cases there is a presupposition that the goal has been attained, as shown by the following

test, taken from De Cuyper's (2006) study of *se*-constructions in Spanish.

(8) Scope of the negation

    a. Juan no corrió hacia   su casa.
       Juan not ran   towards his house
       'Juan didn't run towards his house'

    b. Juan no corrió hasta su casa.
       Juan not ran   to   his house
       'Juan didn't run to his house'

In (8a), the negation can only operate over the event, producing the meaning that Juan did not start running towards the house. In (8b) the same meaning is possible, but there is a second meaning, which is that in which Juan started running towards the house, but did not reach it. This can be explained only if there is a separate result component in the PP introduced by *hasta*, which is not present in the one introduced by *hacia*. Thus, a directional complement introduced with *hasta* makes the predicate perfective.

Another test that can be used implies phase verbs, like *parar de* 'to stop' or *comenzar a* 'to begin,' which cannot take telic verbs as complements. Notice that they can take a predicate with a directional PP introduced by *hacia*, but not one introduced by *hasta*. This is explained if the presence of hasta makes the predicate telic.

(9) a. Juan empezó a correr hacia   su casa.
      Juan started to run   towards his house
      'Juan started running towards his house'

    b. *Juan empezó a correr hasta su casa.
      Juan started to run   to   his house
      'Juan started running into his house'

Thus, we conclude that Aske's generalisation is not right and in fact some of the directional complements that Spanish accepts are telic.

The second strategy that has been used to cope with this problem is to propose that phrases introduced by *hasta* are adjuncts. Zubizarreta and Oh (2007, chapter 3) suggest that this is the analysis not only of complements with *hasta*, but also of the directionals with *a* that they find in their study of manner of motion verbs.

This suggestion, however, has several problems. First of all, treating directionals with *a* as adjuncts fails to explain why some manner of motion verbs allow them, while others don't. It also cannot explain in a principled way why the PPs introduced by *hasta* in sentences such as those in (9) has an impact in the aspectual structure of the predicate. It can be shown, in a way parallel to (9), that the PPs introduced by *a* also play a role in the aspectual interpretation of the predicate.[1]

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[1]Of course, (10b) becomes grammatical in a frequentative reading, under the inter-

(10)   a.   Juan dejó de correr.
             'John stopped running'
        b. ??Juan dejó de correr a su casa.
             'John stopped running to his house'

Standard tests also show that these directionals are not adjuncts. As is known, the use of a verbal proform *do it* in English, *lo hace* in Spanish- distinguishes adjuncts from arguments: adjuncts can co-occur with the verbal proform; arguments cannot. As can be seen in (11a), complements introduced with *a* or *hasta* don't survive a manner of motion verb ellipsis, in contrast with (11b).

(11)   a.   Juan corrió al sótano, y *María lo hizo {*al jardín / *hasta el jardín}.
             'Juan ran to the cellar, and María did it (to the garden / until the garden)'
        b.   Juan leyó novelas de espías en el sótano, y María lo hizo en el jardín.
             'Juan read spy novels in the cellar, and María did it in the garden'

To summarise this section, we have shown that some data that, to our mind, have not received the deserved attention in the literature, seriously challenge the standard description of Spanish directional complements with manner of motion verbs. We have argued that previous analysis fail to capture this pattern of data.

A predicate composition analysis, such as the one in Mateu (2002), fails to explain these data, because, crucially, some verbs which belong to the class of manner of motion verbs allow directionals, while others don't.

An analysis that somehow relates the possibility of having a directional complement to the telicity of the predicate (Aske 1989) also fails to anal- yse the data, because both telic and atelic directionals may co-occur with several manner of motion verbs.

Finally, the exceptions cannot be analysed as cases of adjunction, as Zubizarreta and Oh (2007) suggest, because the directional complements play a role in the aspectual interpretation of the predicate, they cannot co-occur with verbal proforms and, in any instance, not all the manner of motion verbs in Spanish allow them.

In the following pages, we will present our analysis of the possible and impossible combinations of directional complements and manner of motion verbs in Spanish, as compared to English. The main difference between Spanish and English, as we will argue, is that *a* is a locative preposition, and

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pretation that Juan used to run to his house every morning and at a certain point he decides to give up that habit. This interpretation is atelic because it presupposes an unbound series of repetitions of the event of running home; thus, it is compatible with the phase verb.

therefore, is not equivalent to English *to*. Therefore, the path component of the directional complement cannot be lexicalised by this preposition. The path component can be either lexicalised by the verb, if its lexical entry includes this part of the structure, which is the case with verbs like *volar* and *correr*, or it has to be lexicalised by another preposition, like *hacia* or *hasta*. If neither the verb nor the preposition lexicalises the path component, the resulting structure is ungrammatical because some syntactic features are not lexically identified.

3. Lexicalisation of syntactic features

Once we have presented the relevant data and we have shown why previous analyses fail to give an account of their distribution and some of their properties, we will make explicit the way in which the lexicalisation of the syntactic information takes place. In this section, we accept two ideas which have been motivated in previous studies about the dynamics of lexicalisation.

3.1. The Superset Principle

The unmarked view of lexicalisation would be that there is a one-to-one mapping between a particular piece of syntactic information and only one lexical item. We know, however, that this situation is idealised and that, indeed, natural languages exhibit a phenomenon known as syncretism, which is the situation in which one and the same lexical item is used to express more than one piece of syntactic information (cf. Baerman et al. 2005 for a recent survey). The existence of this phenomenon, combined with the neutralisation of some morphological oppositions under certain circumstances, make it apparent that lexicalisation involves competition of different lexical items for insertion in the very same syntactic configuration.

Once we know that the relationship between the lexicon and the syntax involves competition, we are left with two logical options. The first one, proposed in DM, is the Subset Principle (cf. for example, Halle 1997): when several lexical items compete, the one that identifies the maximal subset of features present in the syntax is chosen. Under this principle, it is possible that certain syntactic features are not identified in the lexicon. An independent device, Impoverishment, has been proposed in this framework Bonet (1991) precisely to make it possible that a lexical item is inserted in a syntactic node where there are some features which it does not spell out.

The alternative view, first proposed by Michal Starke in unpublished work and widely developed in Caha (2007), proposes that, when several lexical items compete, that one which identifies the minimal superset of syntactic features is chosen. This is known as the Superset principle.

Let us compare how the two principles make opposed predictions when applied to the same situation. Suppose that in language X we find the

chunk of syntactic information represented in (12). Crucially, language X lacks a lexical item which identifies exactly those three syntactic features, in such a way that the two lexical items represented in (13) compete to lexicalise that chunk.

(12)   A, B, C

(13)   Lexical Item 1   <A, B, C, D>
          Lexical Item 2   <A, B>

Following the Subset Principle, the lexical item which identifies the maximal subset of features of (12) will be inserted; this would be Lexical Item 2. In contrast, the Superset Principle predicts that the Lexical Item 1, which contains a minimal superset of the features in (12), will be inserted. Caha (2007) analyses in detail syncretism patterns inside paradigms and argues convincingly that in situations like the one here languages follow the Superset Principle, and syncretism uses lexical items with more information to lexicalise syntactic chunks of information.

Notice that the Subset Principle is incompatible with a model of the grammar where the lexicon and the syntax are directly related without intermediate levels of operations, because it crucially requires impoverishment of syntactic features when there is not a one-to-one correspondence between lexical items and syntactic representations. This has the effect that some syntactic features are not lexicalised by any piece. In contrast, the Superset Principle has the effect that all syntactic features present in the syntactic terminal have to be spelled out.

3.2. Phrasal spell-out

It is commonly assumed that lexical insertion can only target terminal nodes. However, this assumption is not motivated by independently grounded theoretical principles; rather the contrary is true. Syntactic Merge has been understood in recent work as an operation that takes two sets and builds a bigger set composed of the components of each of the sets merged together (Chomsky 2004). Under this view, there is no substantial difference between terminal nodes and non-terminal nodes, all of them being sets of different sizes (cf. also Starke 2001). Therefore, there is no a priori theoretical reason to forbid lexical insertion in non-terminal nodes.

The idea that lexical items can lexicalise non-terminal nodes has been successfully pursued in different previous analysis, among them Caha (2007), Neeleman and Szendrői (2007), and Weerman and Evers-Vermeul (2002). In this paper we will follow this line of reasoning and, therefore, we will allow lexical items to lexicalise full phrases or even bigger chunks of structure, if their lexical entries are tagged with the features contained under these terminals.

4. The meaning of *a*

The idea that we will argue for in this section is that *a* is a locative preposition. This preposition is not equivalent to English *to*, but roughly equivalent to English *at*.

4.1. The internal decomposition of P

Starting from Koopman (2000), several studies, including den Dikken (to appear) and Svenonius (to appear), have argued for a decomposition of the category P into different heads. One common aspect that these works share is the proposal that the directional meaning of prepositions is conveyed in the syntax by embedding a locative projection under a specific syntactic head. These two projections have received a variety of names in the literature, but in this paper we follow Koopman (2000), who, sticking to the Jackendovian conceptual taxonomy, calls the locative projection PlaceP and the directional projection PathP.

The structure proposed in these works captures the intuition that locative prepositions are semantically simpler than directional ones, which are built up over the locative structure. Directional prepositions are frequently more complex than locative ones with respect to morphology. This is true of some English directional prepositions, like *into*, obviously decomposable in *to* and *in*, where *to* lexicalises the PathP and *in* lexicalises the PlaceP embedded under it (14).

(14)

PathP
├── Path
│   └── to
└── PlaceP
    ├── Place
    │   └── in
    └── DP
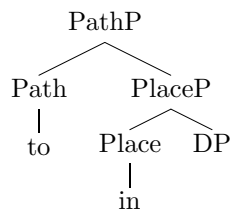
In Spanish, also, path prepositions like *desde* 'from,' *hacia* 'towards' and *para* 'for,' are constructed diachronically by the combination of at least two independent lexical items. According to etymologists (Corominas and Pascual 1989), *desde* comes from the combination of the Latin prepositions *de* and *ex*, *hacia* comes from the combination in Old Spanish of the words *faz* 'face' and the preposition *a*, and *para* comes from the combination of *por* 'through' and, again, the preposition *a*.

In contrast, the locative reading of a preposition is obtained just with one projection, PlaceP, as shown in (15).

(15)

PlaceP
├── Place
│   └── in
└── DP
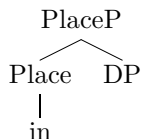
When the preposition appears on its own, its denotation is that of a pure location. However, when the same head is embedded under PathP, configurationally, the locative preposition denotes one point inside that path. In the specific case of goal directionals, which are those relevant for the case under study, PlaceP denotes the last point in the path denoted by the higher part of the tree and is, therefore, interpreted as a result location. In other words, when embedded under PathP, LocP denotes the final point of the path. Thus, the semantic interpretation of a sentence like *John went into the house* means roughly 'John followed a path whose last point is located inside the house.'

The studies mentioned provide several external tests to determine if a certain preposition is locative or directional. The main one, proposed in Svenonius (to appear), is that path prepositions cannot be the complement of purely stative verbs like *remain*, *stay* or *be located*.

(16) a. John stayed in the city.
      b. *John stayed to the city.

The same test works with Spanish purely stative verbs like *permanecer* 'to remain,' *estar* 'to be in a certain state or location' and *quedar(se)*, 'to stay.'

(17) a. Juan permaneció en la oficina.
          'Juan remained in the office'
      b. *Juan permaneció hasta la oficina.
          'Juan remained to the office'

Notice that this test only works in one direction, precluding path prepositions from combining with purely stative verbs. The opposite, that is, the combination of a preposition with a directional verb is not a test to differentiate locative and directional prepositions, because many locative prepositions get a derived path meaning when combined with these verbs, as (18) witnesses.[2]

(18) a. John went over the city.   (directional meaning)
      b. John stayed over the city.   (locative meaning)

                              Svenonius to appear , ex. (6)

To summarise, locative prepositions may combine with both stative and directional verbs; in the first case, they keep their purely locative meaning, while in the second case they get a directional reading. In contrast, path prepositions cannot combine with stative verbs.

We can use this test to determine if Spanish *a*, used to introduce directional complements, is a locative or a directional preposition. The data

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[2]There are, however, exceptions to this tendency. The English prepositions *in* and *on* get directional readings in more restricted contexts than *over* or *under*. We do not have an explanation for this contrast.

in (19) show that *a* can combine with purely stative verbs like *estar*, *permanecer* and *quedar(se)*.[3]

(19) a. Juan está al sol.
    Juan is at.the sun
    'Juan is standing in the sun'
  b. Juan permaneció al borde (del acantilado).
    Juan stayed at.the border of.the cliff
  c. Juan se quedó al nivel de Pedro.
    Juan SE *remained at.the level of Pedro*
  d. La nota está al margen (del papel).
    the note is at.the margin of.the paper
    'The note is on the margin of the paper'
  e. Esa cita está al principio (del artículo).
    that quote is at.the beginning of.the article

The behaviour of Spanish *a* is the one expected from a locative preposition. We conclude, then, that *a* is a locative preposition which can get a directional reading when embedded under the right syntactic configuration, just like English *over*.

  The crucial question as this point is the following: if *a* is a locative preposition, why are sentences like (20) impossible in Spanish, unlike in Italian or French? Notice that in Spanish, in these contexts the preposition *en* 'in,' must be used (21).

(20) a. *Juan está a casa.
    Juan is at home (cf. Italian *Gianni è a casa*)
  b. *Juan está al colegio.
    Juan is at.the school (cf. French *Jean est à l'école*)

(21) a. Juan está en casa.
    Juan is in home
  b. Juan está en el colegio.
    Juan is in the school

Our answer to this problem is that in Spanish, the locative preposition *a* competes with the locative preposition *en* because the type of location that each one of them denotes is different, in such a way that locative *a* can only

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[3]As noted by Cresswell (1978), some path prepositions can combine with a stative verb if they allow an 'end of journey' reading in which they denote the final location reached after having followed a certain path. For example, in *The band was playing across the field*, there is a possible interpretation meaning 'The band was playing at the end of the journey that follows a path across the field.' This end of journey reading is not available for PP headed by *a* with stative verbs, further showing that this preposition does not denote a path: *Juan est a la sombra* 'Juan is in the shadow,' does not mean 'Juan is at the end of the journey that follows a path that goes to the shadow'; *La herida est al aire* lit. 'The wound is at the air' or 'The wound is in contact with the air,' does not mean 'The wound is at the end of a journey that ends in the air.'

combine with a very well defined class of nouns whose denotation is directly compatible with that of *a*. In the next section we will study in detail the denotation of *a* and *en* to explain the distribution of locative *a*.

4.2. *A* versus *en*

The class of nouns that can combine by themselves with locative *a* is very restricted, while most nouns would be able to combine with *en*. Our proposal will try to explain the distribution of these two prepositions on the basis of their semantic denotation.

We argue that the denotation of the locative prepositions *en* and *a* are as follow:

(22)   Locative *en* expresses a place relationship where the figure is contained in the ground or supported by it.[4]

(23)   Locative *a* denotes a place relationship where the figure is in contact with (at least) one point of the boundary of the ground.

En denotes the inclusion of the figure inside the ground, while the preposition *a* denotes the contact between the figure and a part of the ground (much like the English preposition *at*), which is minimally satisfied if the figure is in contact with only one point of the boundary of the ground.

This explains the distribution of the two prepositions, because most nouns do not denote by themselves the boundary of an object, but the object itself. Only a restricted set of nouns denote boundaries, and those are precisely the core set of nouns with which *a* can combine.

(24)   Nouns denoting boundaries from objects:
lado 'side,' *borde* 'border,' *límite* 'limit,' *margen* 'margin,' *fondo* 'end, bottom,' *trmino* 'terminal,' *vera* 'side of a river,' *entrada* 'entrance,' *salida* 'exit,' *frente* 'front.'

Notice that these nouns, due to their meaning, are normally relational nouns which have to combine with a complement that denotes the entity whose boundary they denote.

(25)   a.   Juan está al   límite de sus fuerzas.
              Juan is   at.the limit of his strength
              'Juan is at the limit of his forces'
         b.   Juan está a la entrada de la casa.
              Juan is   at the entry   of the house
              'Juan is at the entrance of the house'

---

[4]Spanish *en* subsumes the denotation of two English prepositions, *in* and *on*, so it does not make any distinction with respect to whether the figure is contained inside the ground or supported by it. I leave open the problem of how to define the spatial relationships introduced by *on* and *in*.

Some of these nouns do not refer to any arbitrary part of the boundary of the object, but only to one with a specific orientation. This is the case of *frente*, which only denotes the part of the perimeter that stands in the front side of the object. This is the case also of the names of oriented boundaries in (26), which can also combine by themselves with the preposition *a*.

(26)   Nouns denoting oriented boundaries of objects:
       izquierda 'left,' *derecha* 'right,' *norte* 'north,' *sur* 'south,' *este* 'east,' *oeste* 'west.'

Other class of nouns that can combine with *a* by themselves are those nouns that denote points inside different scales. Nouns that denote points, when taken in their literal meaning, cannot fulfil the truth conditions required by the denotation of *en*, because, being one single point, they cannot contain the figure inside them. However, they fit the semantic description of *a* to the extent that one point of the figure may be coincident with the only point denoted by the ground. This class of nouns, therefore, also combines with *a*.

(27)   Nouns that denote points inside scales:
       máximo 'maximum,' *mínimo* 'minimum,' *nivel* 'level,' *altura* 'height,' *principio* 'beginning,' *final* 'end,' *fin* 'end,' *mitad* 'middle.'

In this series of words, some denote points inside degree scales, like *máximo*, *mínimo*, or the generic nouns *nivel* and *altura*, while others denote points inside spatial and temporal scales, or paths, like *principio*, *final*, or *mitad*.

The idea is that *en* and *a* compete in such a way that *a* only is inserted instead of *en* with those nouns that, because they denote either perimeters of objects or single points, cannot fulfil the truth conditions of *en*, which denotes containment of the figure inside the ground.

There are some nouns which admit different readings with *en* and with *a*. We will show that their differences in meaning confirm our description of the facts.

For example, speakers of Spanish admit the two sequences in (28), with clear semantic differences.

(28)   a.   Juan está en el piano.
            'Juan is in the piano'
       b.   Juan está al piano.
            'Juan is at the piano'

In (28a) the meaning is that Juan is inside the piano, contained in it, for example because he is hiding from someone. In (28b), the meaning is that Juan is the person playing the piano. This meaning can be easily derived from the meaning of *a* with the help of some pragmatic knowledge. The semantic meaning of the expression is that Juan is in contact with one of the boundaries of the piano, and pragmatic knowledge tells us that the

most relevant part of this boundary is the side where the keyboard is, from where the meaning that Juan is playing the piano follows. Similar effects take place with other nouns that denote instruments, like *volante* 'steering wheel' or *teléfono* 'phone.'

(29)   a.   La hormiga está en el volante.
              'The ant is on the steering wheel'
        b.   La hormiga está al volante.
              'The ant is at the steering wheel'

(29a) means that there is an ant on the steering wheel, while (29b) denotes the pragmatically awkward situation in which an ant is in contact with the steering wheel and, *modulo* pragmatic inference, driving the car.

   Other examples show us that some objects allow their perimeter to be defined in a fuzzy way. This is the case of *sol* 'sun.'

(30)   a.   La nave espacial está en el sol.
              'The spaceship is on the sun'
        b.   La nave espacial está al sol.
              'The spaceship is at the sun'

(30a) means that the spaceship has actually travelled to the sun and landed there, while (30b) simply means that the spaceship, which can be on the earth, is getting the sun rays. This contrast follows from our account of these prepositions if what counts as the boundary of the sun can be extended to at least the area reached by the sun rays.

   At this point the question that arises is why in directional constructions nouns which normally do not allow combination with *a*, because they don't denote a boundary, allow this preposition. We address this question in the next section.

4.3. *A* licensed inside directional configurations

Contrasts like that in (31) show that the same noun which does not allow *a* in the locative construction must take *a* in the directional one.

(31)   a.   El pájaro voló a su nido.
              the bird   flew at its nest
              'The bird flew to its nest'
              (only directional meaning possible)

b. #El pájaro voló en su nido.
   the bird flew in its nest
   'The bird flew inside its nest'
   (no directional meaning possible)

The answer to this puzzle is to be found in the truth conditions of path structures. We will argue that the semantic denotation of paths coerces objects like *nido* 'nest,' to denote a perimeter.

Let us take for the sake of the argument a directional construction headed by an uncontroversial path preposition like *hasta* (32).

(32)   Juan corrió hasta su casa.
       'Juan ran to his house'

For (32) to be true, it must be true that Juan followed (running) a path whose ending point is somewhere in contact with the house. In other words, for (32) to be true it is not necessary that Juan ends actually inside the house — although this would normally be inferred from pragmatic principles — but only that Juan is in contact with the boundary of the house.

This means that the semantic denotation of a path preposition constructs a continuous series of points in space, the last of which is in contact with the ground. When the locative structure is embedded under the path structure, then, the part of the object that is highlighted is the boundary with which the figure has to be in contact. Nouns like *casa* 'house,' which do not denote boundaries by themselves, are coerced under the path structure to denote a boundary, which can be defined fuzzily in some cases.

This explains why, in this context, *a* outranks *en* to introduce the ground of the structure. *A* is not a path preposition, but the best choice for a locative preposition given the truth conditions of the directional construction.

4.4. Alternation between *en* and *a* with a difference in meaning

We have seen data, taken from Morimoto (1998), where the prepositions *a* and *en* actually can alternate, contrasting in meaning. This situation is radically different from directional complements (where *en* cannot appear) and from locative complements (where the presence of *a* is restricted to a specific class of nouns). The alternation between *en* and *a* is only possible with some ballistic motion verbs. The relevant data, taken from Morimoto (1998), are presented in (33).

(33)   a.   Juan tiró la pelota a la papelera.
            'Juan threw the ball at the dustbin'
            (no implication that the ball ended in the dustbin)
       b.   Juan tiró la pelota en la papelera.
            'John threw the ball in the dustbin'
            (presupposition that the ball ended in the dustbin)

In (33b) there is the presupposition that the ball ended inside the dustbin, while in (33a) it could be the case that Juan threw the ball aiming at the dustbin, but failed. Morimoto takes this contrast as evidence that *a* is a directional preposition, while in this context *en* denotes a result location.

Our analysis can give a unified analysis of the contrast in (33) and the rest of cases presented previously in this paper. The presupposition that the ball ends inside the dustbin in (33b) is forced because the presence of *en* forces the path to have its endpoint actually inside the ground. In contrast, in (33a), where *a* is used, it is only required that the final point of the path is in contact with the perimeter of the object. As we have seen from examples like (30), Spanish *a*, much like English *at*, allows the boundary of the object to be defined fuzzily, as the perimeter of the area surrounding the object.

Depending on how fuzzily this boundary is defined, the final point of the path followed by the ball in (33a) will be closer or more distant to the dustbin itself, explaining, thus, that it is not necessary for (33a) that the ball ends inside the dustbin.

Let us address now the question of why *en* can actually appear in this context, in alternation with *a*. Remember that we have argued that *en* cannot be used to denote the final point in a path; this means that a configuration like the one in (34) is ungrammatical.

(34)　　*

$$
\begin{array}{c}
\text{PathP} \\
\diagup\diagdown \\
\text{Path}\quad\text{Place} \\
| \\
en
\end{array}
$$

However, with some ballistic motion verbs, *a* alternates with *en*, so something else must be said about these cases. We will argue, in section 6.5, that in these cases the place prepositions are not selected by a path structure, but by a specific verbal head. But, first, we have to introduce the structure of manner of motion verbs, which we will do in the following section.

4.5. Summary

In this section we have argued that the Spanish preposition *a*, like Italian *a* and French *à*, is not directional, but locative. The different distribution of *a* in Spanish, as compared to these two other languages, follows from its semantic meaning, which causes it to be outranked by *en* in most contexts. We have suggested that the choice of *a* in directional constructions with nouns that would normally combine with *en* in locative constructions is due to the fact that the sequence of points with a direction denoted by PathP makes the boundary of the object salient, with the result that *a* outranks *en*.

We have shown that *a* does not lexicalise path, but we have not yet addressed the question of what the part of the structure is that lexicalises this projection when the directional combines with a verb. In the next section we will argue that it is the manner of motion verb.

5. The decomposition of manner of motion verbs

In this section we will study the internal structure of verbs of manner of motion and we will propose that they divide in two classes, partially following Morimoto (2001): verbs that, in addition to the verbal projections, also lexicalise the path preposition and verbs which do not include this component in their structure.

The background assumptions of this part of the analysis are the proposals of Ramchand's (to appear) First Phase Syntax. This author proposes to decompose the vP into three syntactic projections, each one of them associated to a specific subevent: Initiation Phrase (InitP), Process Phrase (ProcP) and Result Phrase (ResP). Each one of these projections introduces different arguments in their specifiers, and also in their complements, if they are not occupied by another subevent-denoting projection. Different classes of verbs are represented in the syntax as different combinations of these three projections. Pure activities which do not imply any initiator or any result, like *roll*, lexicalise only ProcP (35a), while verbs which imply an initiator and a process, but lack a result, like *push*, lexicalise both InitP and ProcP (35b).[5] Notice that in this approach it is crucial that phrasal spell-out be possible.

(35) a.   ProcP   } **roll**   b.   InitP
         /\   /\
       DP Proc   DP   Init
                                                      /\
                                                    Init ProcP   } **push**
                                                          /\
                                                        DP   Proc
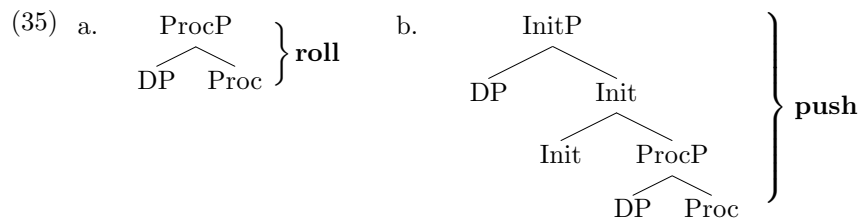
Several properties of this system are relevant for our analysis.

First of all, with respect to the relationship between semantics and syntax, this system argues that systematic aspects of the meaning of lexical items are represented syntactically in the configuration. The fact that a

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[5]Similar contrast between verbs with and without an agent have been repeatedly noticed in the recent literature. Marantz (1997) notices that the difference between *destroy* and *grow* boils down to the fact that the former, but not the latter, requires an external causer. Krifka (1999) relates the possibility of allowing the double object construction with the absence of an agent-manner component that differentiates verbs like *carry* from verbs of ballistic motion like *throw*. This agent-manner component is also used in Hale and Keyser (1993) to differentiate a verb like *smear*, which undergoes transitivity alternations, from a verb like *splash*.

verb denotes a process with or without result is captured in the syntax, in contrast with purely neo-contructionalist approaches.

Similarly, the fact that a verb like *push* does not denote a pure process without an initiator is not due to world knowledge, but to the features that this lexical item can identify. A lexical item like *push* is tagged in the lexicon as <Init, Proc>, while *roll* is tagged as <Proc>, in such a way that they will lexicalise different structures.

Another property of this system is that it is strongly configurational. Part of the meaning of a constituent is due to the position that it occupies in the syntactic representation. It is also committed to compositionality, in such a way that only categories whose semantics is compatible can combine with each other. In the next section we will introduce Ramchand's arguments in favour that ProcP can take a PathP as a complement.

5.1. Combination of ProcP and PathP

Ramchand (2007, chapter 2) challenges the view, proposed in part of the literature on aspect and argument structure (e.g., Tenny 1986), that internal arguments determine the telicity of the event. Some verbs are telic without any internal argument (36a) or with a mass DP (36b), while some verbs are atelic even if they have a quantized DP internal argument (36c).

(36) a. John stood up in a second.
   b. John found gold in three hours.
   c. John pushed the cart for hours.

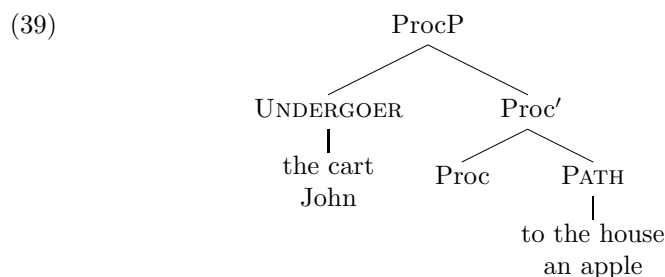<div align="right">Ramchand (in press), ex. (16) and (17)</div>

This author proposes that DPs that do not measure the event are projected as specifiers of ProcP, that is, as Undergoers that are affected by the process denoted by ProcP. All the internal arguments in (36) would be projected in this position.

(37)

```
              ProcP
              /    \
            DP      Proc...
            |
        UNDERGOER
```

The arguments that measure the event, and, therefore, change the telicity of the verb depending on their mass or quantised nature, are those arguments that can be read as scales or paths, that is, as (ordered) sets of points which potentially may have an end. These DPs include the direct objects of consumption verbs like *eat* or *drink*, as well as the PPs which denote a path with verbs like *push* (38).

(38) a. John ate an apple/apples.
   b. John pushed the cart to the house/towards the house.

As has been noted in the literature, the telicity of these verbs is indeed determined by the nature of the DP or the preposition used in the construction. This property can be explained if *an apple* and *to the house* are projected as complements of ProcP, where they are interpreted as paths that measure the different stages of the process. The different degrees in which an apple can be eaten until it is completely gone or the different positions that the cart can occupy until it reaches the house denote different points inside a scale which are mapped into the different stages of the event denoted by ProcP.

(39)

```
                    ProcP
                   /     \
          UNDERGOER       Proc′
             |           /    \
          the cart    Proc    PATH
           John               |
                         to the house
                           an apple
```

The referential and quantificational properties of *an apple* make it a bounded path, just like *to the house*, which bounds the event. To the same extent, the referential and quantificational properties of the bare plural *apples* make it an unbounded path (cf. *towards the house*, resulting in an unbounded event). This fine-grained analysis of internal arguments provides independent evidence that ProcP and PathP are semantically compatible and can, although they do not necessarily need to, combine together.

5.2. Two classes of manner of motion verbs

Going now back to manner of motion verbs, it has already been noted in the Spanish literature, from a semantic perspective (Morimoto 2001; cf. also Lucien 1959 for French), that they can be grouped in two different classes. Some of these verbs denote an internal bodily motion, while others imply also that the subject has changed its location, or, in other words, imply a path. We will argue that the verbs in (40), which do not allow directionals with *a*, are verbs of internal bodily motion and those in (41), which can introduce directionals with *a*, always imply a path.

(40)   *flotar* 'to float,' *temblar* 'to shiver,' *bailar* 'to dance'

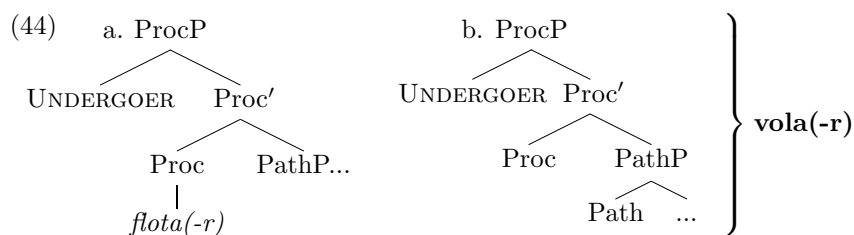(41)   *volar* 'to fly,' *correr* 'to run,' *caminar* 'to walk'

In fact, from a purely semantic perspective, the normal conceptualisation of the actions denoted by the verbs in (41) implies that the subject has changed its position. Sentences like the one in (42) are pragmatically odd, unless the subject has been moving in circles and has ended in the same place from which he started.

(42) #Juan voló durante una hora y al terminar estaba en el mismo sitio.
      'Juan flew for one hour and when he finished he was in the same
      place'

Similar sentences with the verbs in (40) are also pragmatically odd, but
for different reasons: the qualification that the subject was in the same
place when the event finished seems redundant, because no displacement
was assumed.

(43) #Juan tembló durante una hora y al terminar estaba en el mismo
      sitio.
      'Juan shivered for one hour and when he finished he was in the
      same place'

We propose that the crucial difference between these two classes of verbs is
that in the lexicon they are tagged with different features. Verbs of internal
bodily motion are tagged as <Proc>, while verbs from the second class are
tagged as <Proc, Path>. This is to say that *volar* lexicalises both the
verbal structure and the path projection, while *flotar* only lexicalises the
verbal structure.[6]

(44) a. ProcP   b. ProcP

      UNDERGOER   Proc′   UNDERGOER   Proc′   ⎫
                                                                      ⎬ **vola(-r)**
              Proc   PathP...   Proc   PathP   ⎭
               |
            flota(-r)   Path   ...

From a different perspective than the one adopted by Morimoto, our
claim is also that this second group of verbs, just like verbs of inherent
direction, like *subir* 'to go up' or *entrar* 'to come in,' contain a path.

Independent evidence that the second group of verbs lexicalises a path
projection can be provided. As is known, some movement verbs in Span-
ish can take a complement which denotes the differential value between
the position occupied by the subject before the event took place and that
occupied at the end of the event.

(45) Juan subió   dos metros.
      Juan went.up two meters

---

[6] As can be noted, we are claiming that the lexical item is crossing a categorial bound-
ary, because it is lexicalising (at least) one projection that belongs to the verbal domain,
ProcP, and one with prepositional nature, PathP. This could, in principle, be a theoreti-
cal problem. However, independent evidence shows that lexical items do not care about
categorial boundaries. Many lexical items — famously, the participle and gerund affixes
— display a behaviour which is ambiguous between two or more grammatical categories,
depending on the context. This suggests that these lexical items can cross categorial
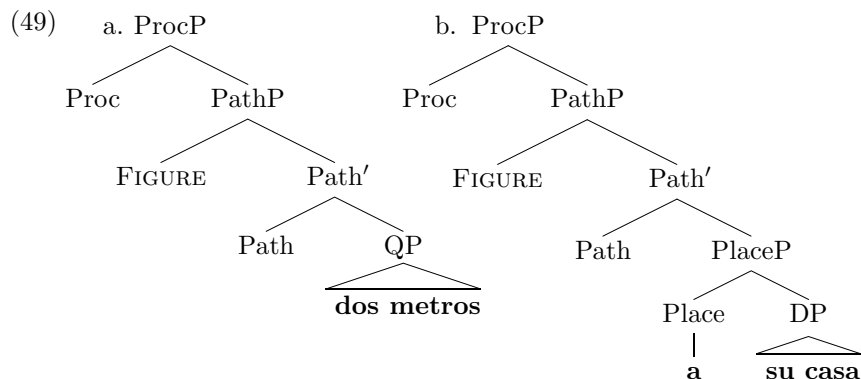boundaries and lexicalise projections belonging to two or more domains.

The semantic interpretation of these complements forces the presence of a PathP, as they imply a change of location. Notice that the verbs that allow directionals introduced with *a* allow these complements (46), while the verbs that we have classified, following Morimoto (2001), as internal bodily motion, cannot take them (47).

(46)   a.   Juan voló dos metros.
               'Juan flew two meters'
        b.   Juan nadó dos metros.
               'Juan swam two meters'
        c.   Juan corrió dos metros.
               'Juan ran two meters'
        d.   Juan anduvo dos metros.
               'Juan walked two meters'
        e.   Juan se deslizó dos metros.
               'Juan slided two meters'

(47)   a. *Juan bailó dos metros.
               'Juan danced two meters'
        b. *Juan flotó dos metros.
               'Juan floated two meters'
        c. *Juan tembló dos metros
               'Juan shivered two meters'

Notice that a potential alternative analysis of these data would be to propose that the measure complement is licensed by the presence of *a*, a path preposition. This analysis is impossible, however, as the directional introduced by *a* and the measure complement cannot co-occur.

(48)   *Juan corrió dos metros a su casa.

This pattern of data can be explained if the structure introduced by *a* and the measure phrase actually compete for the same position, complement of Path (49).

(49)

a. ProcP
```
        ProcP
       /     \
    Proc    PathP
           /     \
       FIGURE   Path′
               /     \
            Path      QP
                      |
                  dos metros
```

b. ProcP
```
        ProcP
       /     \
    Proc    PathP
           /     \
       FIGURE   Path′
               /     \
            Path    PlaceP
                    /     \
                Place      DP
                  |        |
                  a      su casa
```

To summarise this section, we have assumed a Ramchandian decomposition of vP, we have shown that ProcP and PathP can combine and we have argued that those verbs that can take directional complements whose PlaceP is lexicalised by *a* lexicalise both ProcP and PathP, while those that cannot only lexicalise ProcP.

In the next section we will show how the Exhaustive Lexicalisation principle explains the pattern of data presented in section 2.

6. The Exhaustive Lexicalisation principle at work

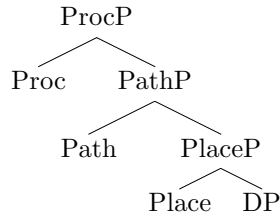Up to this point we have argued for the following ideas:

(50)   a.   The Spanish preposition *a* is tagged as <Place>.
        b.   Only some manner of motion verbs are tagged as <Proc, Path>.
        c.   Prepositions like *hacia* and *hasta* are tagged as <Path, Place>.[7]

In this section we are going to show how some combinations of verbs and prepositions leave the PathP without lexicalisation, and, therefore, the structure violates the Exhaustive Lexicalisation Principle, resulting in ungrammaticality.

The common syntactic structure that all the structures under study share is the one presented in (51): a ProcP takes as a complement a PathP that selects a PlaceP.

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[7] An independent question which we will not address in this article is what the difference is between *hasta* and *hacia*; these two prepositions, even though they both lexicalise Path and Place, do not behave alike with respect to whether the PlaceP is attained or not. One option worth pursuing to distinguish the two prepositions would be to follow Pantcheva (this volume) in her proposal that PathP can be decomposed into three different heads similar to InitP, ProcP and ResP in the verbal domain; *hasta*, which implies a result location, may lexicalise a Path that contains the prepositional ResP, while *hacia* may lack this projection and lexicalise the equivalent of ProcP in the prepositional domain. Another option would be to treat *hacia* as the imperfective version of *hasta* and propose that this preposition contains, in addition to the Path-Place structure, an operator similar to that found in the progressive forms of telic verbs. We leave the question open.
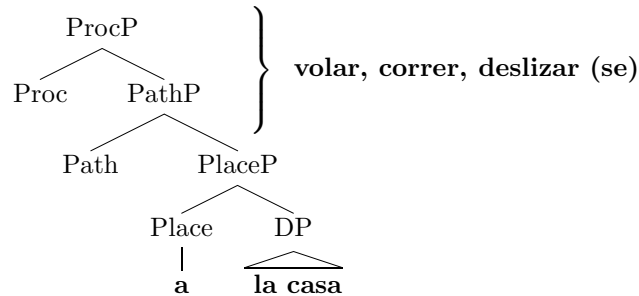
(51)

```
              ProcP
             /    \
          Proc    PathP
                 /    \
              Path    PlaceP
                     /    \
                  Place    DP
```

Let us see now how the different combinations of lexical items are able to lexicalise the whole structure or not.

6.1. Verbs of manner of motion that lexicalise a path

Constructions that involve verbs like *volar*, *correr* or *deslizar(se)*, which are tagged as <Proc, Path> are predicted to combine well with *a*, tagged as <Place>.
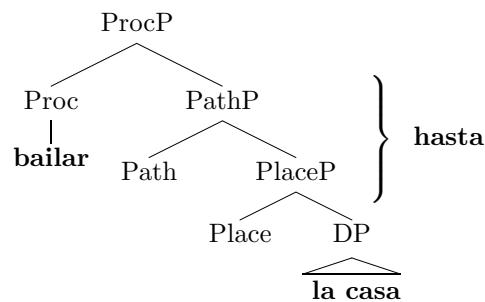
(52)

```
              ProcP
             /    \
          Proc    PathP
                 /    \
              Path    PlaceP          }  volar, correr, deslizar (se)
                     /    \
                  Place    DP
                    |       |
                    a     la casa
```

6.2. Verbs of internal bodily motion with *hasta* or *hacia*
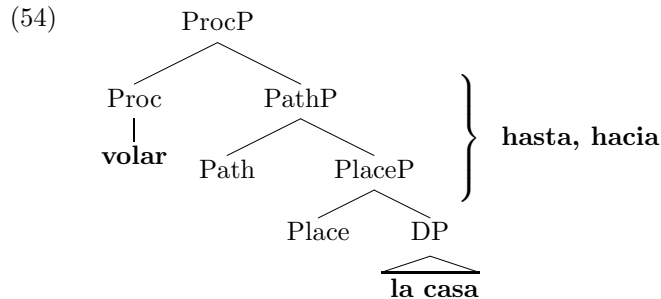
Verbs of internal bodily motion, as *bailar*, tagged as <Proc>, are predicted to give a grammatical output when combined with the prepositions *hasta* or *hacia*, tagged as <Path, Place>.

(53)

```
              ProcP
             /    \
          Proc    PathP
            |     /    \
          bailar Path   PlaceP       }  hasta
                      /    \
                   Place    DP
                             |
                           la casa
```
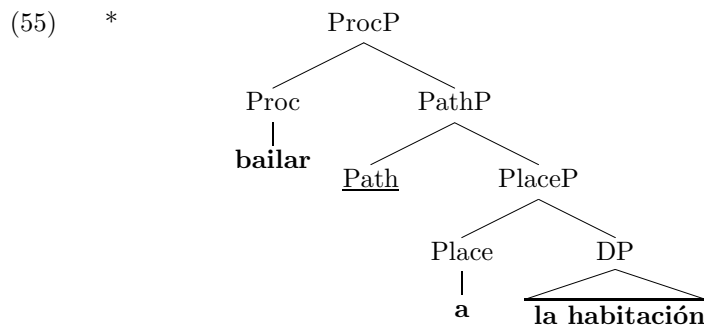
When *hasta* or *hacia* combines with a verb that lexicalises a path, by the Superset Principle, the verb lexicalises only a subset of the features that it is tagged to, squeezing into ProcP, while the preposition lexicalises

PathP and PlaceP (54).[8]

(54)

```
              ProcP
             /     \
         Proc       PathP          ⎫
          |        /     \         ⎬  hasta, hacia
        volar    Path    PlaceP    ⎭
                        /     \
                    Place      DP
                              /__\
                             la casa
```

6.3. Verbs in internal bodily motion with *a*

However, the combination of a verb tagged as <Proc> with the preposition *a*, tagged as <Place>, is predicted to be ungrammatical, for PathP is not identified by any lexical item. In (55) the section of the tree which is not identified by insertion of any lexical item is underlined.
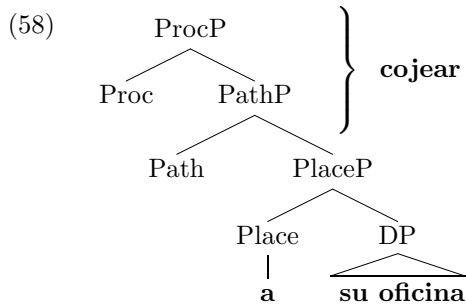
(55)   *

```
                 ProcP
                /     \
            Proc       PathP
             |        /     \
           bailar   Path    PlaceP
                    ‾‾‾‾    /      \
                       Place        DP
                         |         /__\
                         a      la habitación
```

In principle, verbs like *cojear* 'to limp,' and *gatear* 'to crawl,' also fall in this class. However, we expect some degree of variation in the lexical entry of different vocabulary items, which in this theory is captured by suggesting that lexical items may be tagged with different sets of features in different varieties of the same language while, by assumption, the syntactic structure remains identical. In fact for some speakers, sentences like (56) are acceptable; the same speakers also find acceptable, to a comparable degree, the use of measure phrases with these verbs (57), strongly suggesting that in their varieties lexical items like *gatear* and *cojear* are tagged as <Proc, Path>.

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[8]Notice that the alternative — namely, that the verb *volar* lexicalises ProcP and PathP and the preposition *hasta/hacia* squeezes into PlaceP — is impossible. Under those circumstances, *hasta* would compete with the lexical item *a*, which is tagged just as <Place>, and, therefore, could not be inserted in this position.

(56) a. %El doctor House cojeó a su oficina.
         'Dr. House limped to his office'
      b. %El bebé gateó a su cuna.
         'The baby crawled to his cradle'

(57) a. %El doctor House cojeó varios metros.
         'Dr. House limped several meters'
      b. %El bebé gateó varios metros.
         'The baby crawled several meters'

In these varieties, the lexicalisation of the structure under study is as represented in (58). That is, these verbs lexicalise the structure that we saw in the case of *volar* 'to fly.'
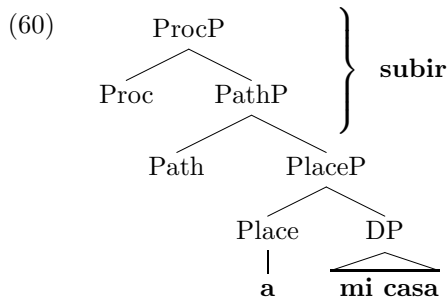
(58)
```
        ProcP        ⎫
       /    \        ⎬  cojear
    Proc   PathP     ⎭
          /    \
       Path   PlaceP
             /    \
          Place    DP
            |      /\
            a   su oficina
```

6.4. Inherent directional verbs

Unsurprisingly, inherently directional verbs like *avanzar* 'to come towards' or *subir* 'to go up' also can take directionals introduced by *a*.

(59) a. Juan subió   a mi casa.
          Juan went.up to my house
      b. Juan avanzó a mi casa.
          'Juan went towards my house'

I propose that these verbs are also tagged as <Proc, Path>, in such a way that they lexicalise the syntactic structure as in (60).

(60)
```
        ProcP        ⎫
       /    \        ⎬  subir
    Proc   PathP     ⎭
          /    \
       Path   PlaceP
             /    \
          Place    DP
            |      /\
            a    mi casa
```

The prediction, then, is that inherently directional verbs can take measure phrases and that these will not co-occur with directionals introduced by *a*. The prediction is confirmed.

(61) a. Juan avanzó   varios metros (??a mi casa).
          Juan went.towards several meters   at my house
          'Juan went several meters towards my house'
      b. Juan subió   varios metros (*a mi casa).
          Juan went.up several meters   at my house
          'John went several meters up to my house'
      c. Juan bajó   varios metros (*a mi casa).
          Juan went.down several meters   at my house
          'Juan went several meters down to my house'
      d. Juan entró   varios metros (*a mi casa).
          Juan went.inside several meters   at my house
          'Juan came several meters into my house.'

Some inherently directional verbs, like *ir(se)*, 'to go,' *venir* 'to come' and *llegar* 'to arrive' do not admit measure phrases.

(62) a. Juan fue   (*dos metros) a su casa.
          Juan went two   meters at his house
          'Juan went (two meters) to his house'
      b. Juan vino (*dos metros) a mi casa.
          Juan came two   meters at my house
          'Juan came (two meters) to my house'
      c. Juan llegó   (*varios metros) a mi casa.
          Juan arrived several   meters at my house
          'Juan arrived (several meters) to my house'

We propose that the reason is not that they lack a PathP, but that they denote minimal transitions which cannot be measured. In this sense, these verbs would be comparable to change of state verbs like *nacer* 'to be born,' which are not compatible with degree modifiers. Our suggestion is that the path introduced by verbs like *ir* and *venir* consists, minimally, of only two points, roughly transalated as HERE and NOT-HERE. *Ir* denotes the minimal transition that goes from here to not-here, while *venir* denotes the opposite transition.[9]

6.5. *En* and *a* with ballistic motion verbs

For the sake of exhaustivity, let us address at this point what licenses the alternation of *en* with *a* in ballistic motion verbs. Let us repeat the data,

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[9]Cf. a similar analysis that makes use of minimal transitions being a specific subtype of path, Fong (1997), about the use of some locative adpositions in Finnish. McIntyre (2005) makes comparable observations about the meaning of what he analyses as hindrance *get*.

taken from Morimoto (1998).

(63)   a.   Juan tiró la pelota a la papelera.
            'Juan threw the ball at the dustbin'
       b.   Juan tiró la pelota en la papelera.
            'Juan threw the ball in the dustbin'

Our semantic description of the semantics of *a* and *en* explains why the sentence in (63a) doesn't have a presupposition that the ball ended inside the dustbin, but the one in (63b) does. However, we still have to explain what is the syntactic structure that allows the presence of both prepositions.

   We propose that verbs like *tirar* 'to throw,' contain a Result Phrase (ResP) that denotes the state in which the object *la pelota* 'the ball' ends at the end of the event described by the verb. This ResP, which is lexicalised by *tirar*, unlike the PathP, can select the preposition *en*, because it does not denote an ordered set of points in space and, therefore, does not coerce the reading that the PlaceP selected as a complement is the last point of the path. It just predicates from the object merged in its specifier that it has certain properties, in this case, to be located in a certain place. The structure is represented in (64).

(64)
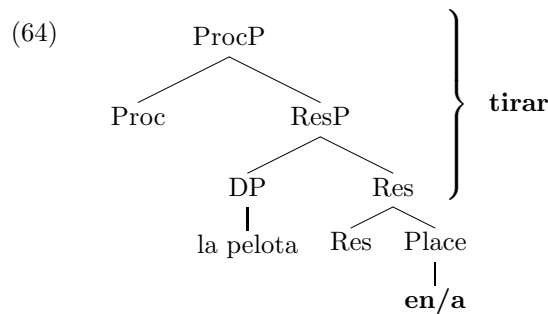
   The presence of the ResP is independently justified by the fact that a verb like *tirar* 'to throw,' has the presupposition that the event that it denotes is fulfilled only if the object thrown has changed its position in space at the end of the process.

   So, in short, *en* and *a* can alternate with this class of verbs because the PlaceP is not embedded under a PathP, but under a ResP.

6.6. Summary

In this section, we have shown how the Exhaustive Lexicalisation principle explains the distribution of the data presented in section two of this article, where it was shown that some manner of motion verbs license directional complements. In our analysis, what the grammar does not allow is that any syntactic feature is not identified by lexical insertion. The syntactic feature relevant to explain the distribution of this pattern of data is Path. This

feature must be either lexicalised as part of a verb or as part of a preposition, but the combination of an internal bodily motion verb and the locative preposition *a* leaves it non lexicalised, resulting in ungrammaticality.

The opposite situation, that in which a lexical item is associated only to a subtree of its lexical entry, does not result in ungrammaticality. The situation in which some of the features of a lexical item are underassociated is in compliance with the Superset Principle, for which independent evidence has been provided in the literature (cf. section 3).

7. Final observations and conclusions

In this paper we have argued that the reason that some manner of motion verbs cannot take directional complements introduced by *a* is that this preposition does not lexicalise the path component of the directional. The preposition *a* is locative, so it can only take a directional meaning when embedded under the proper structure. Only a subset of manner of motion verbs can lexicalise the path component, while others, like *bailar* 'to dance,' cannot lexicalise this component. In contrast, every verb of motion, including the class of *bailar*, can take a directional complement if this is introduced by a path preposition like *hasta*.

This analysis provides strong evidence in favour of a theoretical principle that, we claim, is a source of ungrammaticality in the languages of the world. We have named this principle the Exhaustive Lexicalisation Principle, which states that every syntactic feature present in the derivation must be identified by a lexical item. Thus, as opposed to DM, syntactic features cannot be erased from the representation.

7.1. The source of linguistic variation

We have argued that the syntactic structure of manner of motion verbs and directionals is identical in English and in Spanish. Both languages share the same syntactic structure, and the reason why English allows directionals to combine with a bigger variety of verbs is due to the fact that the lexicon of English contains a preposition that lexicalises Path, *to*, while Spanish *a* only lexicalises Place. This shows that the syntactic structure of different languages is universal and the surface differences are due to differences in the lexical repertoire that each language, or variety within one language, has to lexicalise the same configuration. In this sense, this paper follows the line of Ramchand and Svenonius (to appear), where it is proposed that there are no semantic parameters and the semantic differences between particular languages are an epiphenomenon of their choice of lexical items.

7.2. Late insertion versus early insertion

Our proposal assumes late insertion, so a few words are in order to justify this theoretical position. This is most relevant for the purposes of this paper

as, from a perspective which is committed to early insertion, arguably there is no need for an independent principle of Exhaustive Lexicalisation. Defendants of early insertion could argue that there is no need for an independent Exhaustive Lexicalisation Principle if the lexical items are inserted before the syntactic derivation takes place and determine the syntactic derivation by means of projecting different heads. Under this view, our analysis of directional complements in Spanish could be maintained, but it would not provide independent evidence for the Exhaustive Lexicalisation principle.

However, there are independent reasons to commit to a late insertion approach. The main source of evidence comes from allomorphy which is conditioned by a specific syntactic configuration. In the literature, several cases have been identified where the choice of the specific allomorph inserted depends on the presence of a syntactic feature or a syntactic configuration which is not local to the base position of the allomorph.

Consider, for example, German weak and strong inflection (Sauerland 1997). The choice between one of these allomorphs of the adjectival inflection is dependent on the specific determiner that dominates the whole NP. It is not clear how, in a system with early insertion, the right allomorph is base merged in a position where the features of the determiner are not accessible. This is even more problematic in a bottom-up system where the head of the whole construction — in this case, the determiner — is the last constituent to be introduced in the syntactic derivation. In a system with late insertion, on the other hand, the right form is chosen after the whole syntactic structure has been constructed, and all the syntactic features are present in the representation.

Stem suppletion is studied in Svenonius (2007). This author observes that in principle stem suppletion, which he illustrates with examples like those in (65), is a problem for early insertion for the reasons just mentioned.

(65)   a.   *há:l* (Indicative) – *máh* (Imperative), 'hear' (Koasati)
       b.   *ktahu* (Assertive) – *kta'apri* (Negative), 'be heavy' (Hua)
       c.   *go* (Present) – *went* (Past) (English)

This author acknowledges that an early insertion system may try to explain the choice of suppletive stems in a number of different ways, for example, proposing that the stems contain a feature which has to be checked with the right syntactic head. In any case, any early insertion analysis would say that the right form of the stem is base merged in VP. Now, the cross-linguistic study of idiomatic expressions (Ruwet 1991, Dubinsky and Simango 1996, Marantz 1984; 2007) has shown that not every kind of construction can be an idiomatic expression. In particular, verbal idiomatic expressions can only include the material which is contained in the domain of the vP phase, because this is the chunk of structure which is transferred together to the interfaces and, therefore, can access the encyclopaedic information that assigns it an idiomatic meaning Svenonius 2005. Material outside the domain of the phase, like for example that contained in TP, cannot be part of the

idiomatic expression: idioms cannot span the phase boundary.

To the best of our knowledge, no study has ever reported the existence of an idiomatic expression which is stored only in the past, even with a suppletive form, which is assumed to be stored in the lexicon. That is, it is never the case that a structure like [*went* [*X*]] is an idiom if the more general form [*go* [*X*]] is not an idiom also. Svenonius (2007) notes that this is a surprising result in a system with early insertion, because the form *went* would be base merged in the domain of the vP phase and would be able to access the encyclopaedia to get an idiomatic meaning. However, a system with late insertion can explain this difference because the right context to insert the form *went* will not be created until the TP is merged, that is, after the domain of vP has been transferred to the interfaces.

7.3. Manner and direction components

One question which we have not addressed in this paper is whether the syntactic representation of directional verbs and manner verbs which contain a path is identical or not. In principle, two possibilities exist. The first one is that the direction and the manner component of these verbs are represented in the syntax, and these verbs, being identical with respect to the presence of a path, minimally differ in the presence of specific syntactic heads that introduce directions and manners. The second option is that the direction and the manner meanings are introduced as part of the semantic information associated to the lexical item. In this second view, the manner component of the verb *volar* is not present until the lexical item *volar* itself has been inserted in the structure, and the meaning that *entrar* involves a specific direction would not be represented in the syntax. This question remains unanswered in this paper and is left for further inquiry.

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Corpora used: CREA, CORDE.