Infixes: right in the middle[*]

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Abstract. In this article we consider the nature of infixes and whether it is possible to explain their position in a configurational theory of word formation. We argue that in Spanish the elements called infixes are actually two different kinds of entities with different characteristics. The first class of infixes corresponds to a syntactic head and, in consequence, induces a systematic and predictable reading to the base it selects. The second class of infixes is part of certain contextually conditioned allomorphs of the base; as these infixes are subject to Late Insertion, they can only induce conceptual (and, therefore, idiosyncratic) meaning differences.

0. Infixes as a problem for configurational analyses of words

Morphology combines bases and affixes. Bases are not classified by the position they occupy in the word, but part of the characterisation of an affix is whether it appears materialised to the right or to the left of the base. In the first case they are suffixes, while, in the second case, they are called prefixes. Certain theories claim that the fact that an affix is materialised to the right or to the left of the base is an idiosyncratic property of that particular piece that has to be stored in a Lexicon (Scalise 1984, Varela 1990); other theories, in the same vein, claim that there are several morphological patterns -or 'templates' (Spencer 1991)- that impose a particular ordering among word constituents.

In contrast with these views, configurational theories which consider word structure as basically syntactic propose that affix order is imposed by c-command relationships between terminal nodes (Linear Correspondence Axiom, Kayne 1994) and has a clear semantic influence (Mirror Principle, Baker 1985). From this point of view, sequences of adjacent suffixes have been analysed as the reflect of series of syntactic heads (Brody 2000), while prefixes have been studied as adjuncts to different positions inside the word (DiSciullo 1997). In principle, configurational theories have the methodological advantage that they can be confronted to different kinds of data, for they make semantic and formal predictions (cfr. Rice 2000), while theories that rely on morphological templates unrelated to syntactic or semantic characteristics are, in principle, less predictive, for they allow mismatches between form and meaning.

However, there is one class of affixes which constitutes potential counterevidence to morphological theories based on the configuration, because this class always materialises between the base and another affix, either to the right (1a) or to the left (1b) of the base.

(1) a. polv-**ar**-eda, cafe-**t**-ería, corr-**et**-ear…
     lit. dust-INF-group, coffee-INF-ery, run-INF-verbaliser…
     'dust cloud', 'café', 'to rush around'…
     b. en-**s**-anch-a(r)
     prefix-INF-wide-CAUSE
     'to widen'

These units which appear always between the base and a prefix / suffix receive the name of infixes[1]. Configurational theories have a problem with infixes because they never appear in the absence of another affix (2).

(2)   a. *polv-ar, *corr-et-r…
        b. *s-anchar

If these units are constituents of a syntactic structure, as configurational theories claim, we would not expect that they have to co-occur with other elements. Heads and adjuncts, as they are units inside a structure, can be combined directly with a base –possibly another head, as X and Y in (3)– and are not subject to the presence of another element.

(3)   XP
         _____
        X°   Y°
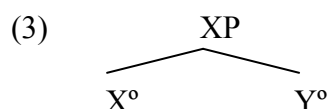
On the other hand, non-configurational theories propose that infixes are not units. That would be the reason why they never combine directly with a base. Some authors go a step further and propose that infixes illustrate the fact that morphemes are not constituents in which a word can be segmented. Following this line of reasoning, it is claimed that infixes are the by-product of different principles alien to syntax. Optimality Theory, for example, considers infixes as the by-product of the interaction of phonological principles that disfavour onsetless syllables (McCarthy & Prince 1993 [2004]); Natural Morphology proposes that infixes exist to make processing easier, helping to isolate the base from the suffix or prefix, in which case the function of infixes would be of psycholinguistic nature (Dressler 1986).[2]

An analysis of infixes which does not constitute a problem for configurational theories has to show that they are units –in a structuralist's sense– whose position can be predicted by general grammatical principles. We will argue that in theories with Late Insertion, as Distributed Morphology (Halle & Marantz 1993), where there is a clear difference between morpho-syntactic and morpho-phonological features, this possibility is feasible.

In this article we offer a Distributed Morphology analysis of infixes. We propose that 'infix' is a cover term which groups (at least) two[3] different types of units, summarised in (4):

(4)   a. Some infixes are associated with a systematic meaning; the bases they combine with may appear without or without infix, implying a difference in meaning: *com-isque-ar*, lit. eat-INF-verbaliser, 'to eat in an irregular way', *bes-uque-ar*, lit. kiss-INF-verbaliser, 'to kiss in an irregular way'.
        b. Some infixes do not provide the word with a systematic meaning; however, the bases they combine with can appear with and without infix, with a non-predictable difference in meaning change the meaning of the word to which they belong: *cas-er-ón* vs. *cas-ón*.

Other words that show syntactic infixes such as those in (4a) are *tir-ote-ar*, shoot-INF-verbaliser, 'to shoot repeatedly', and *apret-uj-ar*, push-INF-verbaliser, 'to squeeze'. The infixes in words such as *mot-ej-ar*, lit. nickname-INF-verbaliser, 'to brand', *cort-ej-ar*, lit. court-INF-verbaliser, 'to woo', *fest-ej-ar*, lit. party-INF-verbaliser, *viv-ar-acho*, lit. alive-

INF-augmentative, 'sparkling', *agu-**an**-oso*, lit. water-INF-ish, 'tasteless' and *sant-**urr**-ón*, lit. saint-INF-augmentative, 'overpious', belong to the second group, because they, as we will argue, have a morphological nature.

The characteristics of these two classes of infixes are distinct. Those of (4a) can be considered morphemes in the sense that they are heads that can be paired with a specific meaning. We will argue that they are present in the level where the structural properties of the word are defined. We propose that they cannot combine directly with a base due to their specific properties as heads, namely that they lack a grammatical category.

In contrast, those in (4b) are not syntactic heads. The infixes in (4b) are optional, that is, given a certain base, it can be chosen whether to insert an infix or not, with differences of meaning in the word level. We will argue that these infixes are part of a contextually conditioned allomorph of the base, which is inserted post-syntactically when adjacent to some particular bases.

The structure of this article is as follows. First, we will introduce the framework of DM to show how the architecture of grammar proposed by this theory provides grounds to differentiate these two classes of infixes. In the second section, we will analyse syntactic infixes and we will show that they have to appear between the root and the verbal head because they are units without grammatical category that modify the internal aspect of the verb. After this, in the third section we will move to morphological infixes and we will provide evidence that they are morpho-phonological units. Section four is devoted to our conclusions and final remarks.

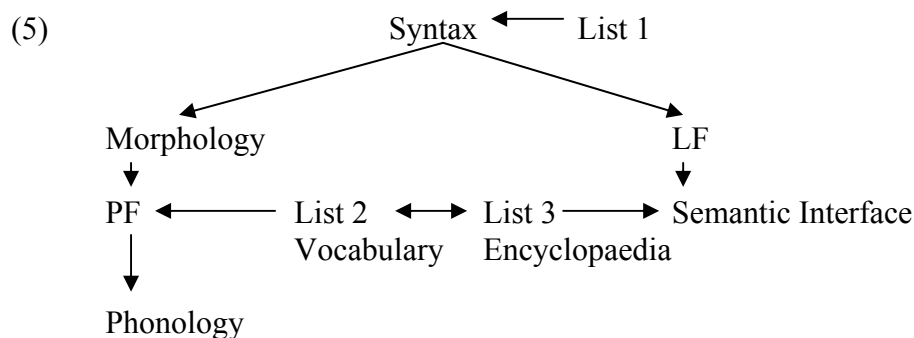## 1. The architecture of Distributed Morphology

DM (Halle & Marantz 1993, 1994; Marantz 1997, 2001; Embick 2000; Harley 1994; Harley & Noyer 1998, 2000) proposes that words are constructed in syntax, following the same principles that determine the structure of phrases and sentences. DM assumes that syntax transfers the structures it creates to the Interfaces to the Performance Systems (Chomsky 1995), Logical Form (LF) –which deals with semantics– and Phonetic Form (PF) –which is responsible for the articulation of syntactic structures–. In contrast with radical syntactic theories about word formation (for example, Baker 1988), DM admits the existence of specifically morphological operations, which are placed in the PF branch of the grammar (Embick & Noyer 2001). Essentially, the role of Morphology in DM is to map syntactic heads (X°) into positions of morphological exponence (M°) where particular morphemes with phonological representation, called Vocabulary Items, can be inserted. This mapping, in its simplest form, transforms X° into M°, but it may also trigger several processes, such as adding a morphological position of exponence which does not correspond to any syntactic head –which may be the case of theme vowels or desinences (Oltra 1999)–, erasing features that are present in the syntactic representation (Bonet 1991, Noyer 1992), splitting one X° into two or more M° (McGinnis 1995) or fusing two X° into only one M°.

It is important to note that DM proposes that there may be word constituents which are not represented in the syntactic configuration of the word; these units, called dissociated morphemes (Noyer 1992) are morphological entities which do not have any influence on the syntax of the word. Theme vowels are a clear candidate to be analysed as a dissociated morpheme.

Vocabulary Items are inserted in Mºs after syntax (Late Insertion, cfr. Halle 1997) and are bunches of features that contain idiosyncratic information relative to the phonology and morphology of the items. The information that a certain item belongs to a particular paradigm –the fact that latin *mulier*, 'woman', belongs to the third declension while *nauta*, 'sailor', belongs to the first one– is one piece of information which is not relevant for the syntax of the word, and therefore is assumed to be late-inserted as part of the information contained in the Vocabulary Item when syntactic terminals are spelled out.

Vocabulary Items, as morpho-phonological entities, are signs in a Saussurean sense, being associated to a list where conceptual semantics is stored. Conceptual semantics include the encyclopaedic information that the sign CAT represents a particular animal with certain habits, shape, colour, and other characteristics that a speaker may store about this concept (Marantz 1995).

For clarity, the architecture of DM, adapting Marantz (1997) is represented in the diagram in (5):

(5)   Syntax ⟵ List 1

Morphology   LF

PF ⟵ List 2 ⟷ List 3 ⟶ Semantic Interface
           Vocabulary Encyclopaedia

Phonology

Represented in (5) is the fact that there are three lists that contain information, each one associated to one level, syntax, LF or PF. List 1, also called the Narrow Lexicon, contains syntactic matrixes of features that syntax combines to construct words and phrases. List two – the so-called Vocabulary – contains the Vocabulary Items (VIs). The VIs are associated to the conceptual semantic entries contained in the third list, called Encyclopaedia.

Going back to the PF branch, let us note that the insertion of particular VIs in Mºs introduces phonological information into the grammatical representation. This forces phonological processes – such as linearisation, diphthongisation, syllabification, stress assignment, etc .– to take place.

Let us say more about the distinction done in this framework between structural and conceptual semantics, which will be crucial for our analysis.

DM's proposal is that the morpho-syntactic features contained in the abstract hierarchical configuration which is constructed in the syntax impose a specific, predictable meaning in LF. According to Harley & Noyer (2000: 353), an argument is interpreted as an agent, a goal or a patient depending on its position in the syntactic configuration. In (6) the argument *the sun* is interpreted as performing whatever action is being done, just because it is in the edge of a certain projection, little *v*.

(6)   The sun melted the snow.

Structural meaning depends on the morpho-syntactic features which are present in the syntax. Therefore, when the conditions imposed by these features are violated, the result is ungrammatical, as can be seen in (7), taken from Harley & Noyer (*ibidem*).

(7)   a. *The red under did not five lunch.
        b. *James put yesterday.

In contrast, the conceptual meaning is associated with the information contained in the particular Vocabulary Items that are inserted, post-syntactically, to materialise the abstract syntactic nodes in the Phonology. The morpho-phonological features that Vocabulary Items consist of do not play a role in the syntax, due to Late Insertion, but are indirectly responsible for conceptual semantics, as they are linked to specific encyclopaedic entries. Conceptual semantics is unpredictable and subject to cultural variation. Harley & Noyer observe that the example in (8) is an infraction of the conceptual semantics associated to the particular Vocabulary Item *think*.

(8)   Chris thought the book to Martha.

As these authors note, although *think* doesn't usually appear in a ditransitive construction, a plausible interpretation is still possible if some cultural assumptions are modified: "to the extent that the sentence [(8)] has any meaning, Chris must be engaging in teleportation or telepathic dictation and Martha is the recipient of a book, as information or as object." (Harley & Noyer *ibidem*). That is, provided that the conditions imposed by the morpho-syntactic features – such as the interpretation of the argument Chris as agent and Martha as goal – are respected, conceptual meaning can be adapted.

We propose that the same distinction between structural and conceptual semantics is relevant for the analysis of words. The meaning of a word is constructed combining two kinds of semantic information: conceptual semantics – which is unpredictable, idiosyncratic and a result of the (late-)insertion of morpho-phonological features – and structural semantics, which is derived compositionally from the syntactic configuration of the structure and its morpho-syntactic features. This distinction will prove crucial for our analysis.

2. Infixes as syntactic heads: morpho-syntactic infixes.

There is a first set of infixes that, we will argue, are present in syntax. They are proper morphemes in the traditional sense, that is, isolatable constituents with formal properties, with a specific and regular meaning. Among them, we include those infixes present in the words in (9).

(9)   bes-**uqu-**ear, lit. to kiss-INF-verbaliser, 'to kiss repeatedly', enamor-**isc-**ar, lit. to fall in love-INF-verb., 'to get a crush on someone', corr-**et-**ear, lit. to run-INF-verb, 'to run around'...

Let us consider the characteristics of these infixes. First of all, the same base may appear with and without an infix. The infixed verbs in (9) have counterparts without this particular constituent. The verb *besuquear* is related to *besar*, 'to kiss'; *enamoriscar* is

constructed over the verb *enamorar,* 'to fall in love', and *corretear* is obviously related to the verb *correr*, 'to run'.

The second property is that there is a systematic difference of meaning between the word without infix and the word constructed with it. In general, these infixes qualify the word with an aspectual meaning. When the base word is a verb that expresses a momentary (or punctual) event, the presence of the infix usually means that the event is repeated and, sometimes, also loosely performed. For example, *tirar*, 'to shoot', is a momentary action, and *tir-ot-ear*, 'to shoot repeatedly', expresses the same action, but repeated over some time. The same difference takes place in the case of *besuquear,* 'to kiss insistently and without any order', vs. *besar*, 'to kiss', or *mordisquear*, 'to nibble', vs. *morder*, 'to bite'. If the base verb expresses a durative event, the meaning added by the infix is usually that the event has been interrupted several times. The pragmatic implication is, in many cases, that the event described is aimlessly performed. This is the case of *corretear,* which has a sense of running without any definite direction, vs. *correr*, 'to run'.

The meaning of repetition and the meaning of irregular action can be reduced to one if we interpret that the infix means that the event is interrupted and then resumed over and over.

The meaning of irregular action generally allows a reading where the event has been performed in a less than perfect way. This is quite remarkable in the verb *mordisquear*, 'to nibble', where it may be inferred that none of the bites has been completed. Therefore, some of these infixes – specially if the verbs they combine with imply a change of state – are associated to a meaning of lessening of the action. This is the case of *enamoriscar*, 'to have a crush', vs. *enamorar*, 'to fall in love'.

The third property is that these infixes are straightforwardly segmentable constituents. The infix /-isk-/, present in *enamoriscar,* appears also in *lambisquear*, 'to lick irregularly', from *lamer*, 'to lick', *mordisquear*, 'to nibble', from *morder*, 'to bite', *olisquear*, 'to sniff', from *oler*, 'to smell', *cellisquear* or *ventisquear*, 'to blow with blizzards', from *ventear*, 'to blow (the wind)'. The infix /-ot-/ is present also in *picotear*, 'to peck repeatedly', vs. *picar*, 'to peck', *fregotear*, 'to wash imperfectly', vs. *fregar*, 'to wash', *bailotear*, 'to dance without rythm', vs. *bailar*, 'to dance', and *charlotear*, 'to prattle', vs. *charlar*, 'to chat'. The infix /-et-/, is also present in *tembletear*, 'to shiver repeatedly', from *temblar*, 'to shiver', and *golpetear*, 'to hit softly and repeatedly', vs. *golpear*, 'to hit'.
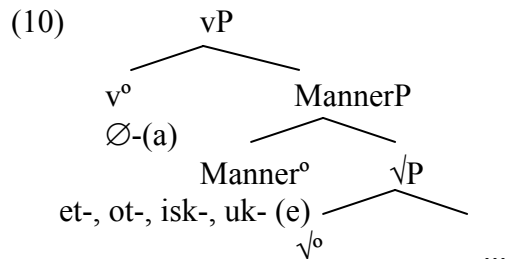
2.1 *The analysis*

As can be seen in the list of verbs that we have mentioned, these infixes imply a quite systematic difference in meaning. This suggest that they are present in the syntax.

Their meaning has to do with the manner in which the event of the verb is internally performed. These infixes provide a qualification of the meaning of the base verb, and, as we have seen, they modify the internal aspect of Aktionsart of the predicate. This can be represented structurally if the infix is a head with a meaning of manner that selects the base, a root that will eventually be categorised by a functional projection (little *v* or little *n*, as we will see) (Marantz 1997, 2001; Embick 2000). We will call this head Manner°.

Let us note that infixed verbs exhibit two segments which can play the role of being a theme vowel: /e/ and /a/. In fact, the infixes *et-, ot-, isk-* or *uk-* are always associated with a specific theme vowel, /e/, which is adjacent to them. Following Oltra (1999), we assume that theme vowels are not freely inserted in the word, but mark the presence of a functional head.
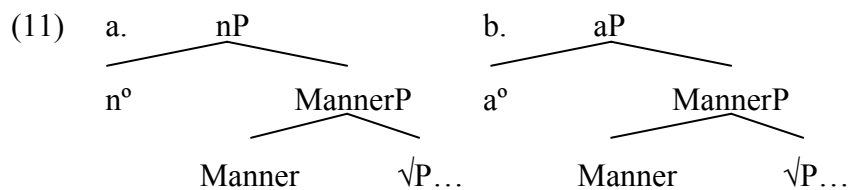
The fact that these infixes appear always with a particular theme vowel, /e/, is evidence that they are functional heads.

If we consider these facts, we will conclude that this infix has to be a functional head with a meaning of manner that selects the base of the verb. The second theme vowel of the verb, /a/, provides evidence for the existence of a little *v* projection. Assuming the Mirror Principle (Baker 1985), the infix has to be under the head little *v*. The structure of an infixed verb is as represented in (10); the theme vowel is represented between brackets.

(10)
```
                vP
              /    \
          v°          MannerP
        ∅-(a)        /     \
              Manner°        √P
        et-, ot-, isk-, uk- (e)  / \
                    √°         ...
```

Our explanation, up to this point, is merely coherent, as it respects the Mirror Principle and other formal properties. Other conceivable structures (or other theories) would respect in a way or another these characteristics, so it is necessary to provide evidence in favour of the particular configuration we have proposed. The next sections are devoted to this.

Let us note that in our proposal the infix is under little *v*, the categorising head. In principle, then, we expect that this type of infixes does not appear exclusively with verbs, but also with nouns or adjectives (11).

(11)   a.   nP   b.   aP
```
          /    \                      /    \
        n°       MannerP            a°       MannerP
               /     \                      /     \
          Manner      √P…            Manner      √P…
```

On the other hand, if the head is above little *v*, we would expect that it combines exclusively with verbs, as it would select already categorised structures.

As Manner° is under little *v*, we expect that the head MannerP operates on an 'internal' semantic property, such as Aktionsart, and not, for instance, on the external argument selected by the verb, or some paradigmatic property of the verb, such as inflectional tense or aspect.

Finally, we will also show that our theory straightforwardly predicts that MannerP will materialise as an infix, and never as a suffix, while an alternative theory in which it is merged over vP indeed predicts that it would behave as a typical (inflectional) suffix.

2.2 *Evidence in favour of our analysis*

2.2.1 *Infixation is category-neutral*
Some authors (among them Portolés 1988: 163) have noted that these morphemes may appear also in nouns, even though the examples are not numerous. Portolés illustrates this situation with the words *pic-**ot**-ada*, lit. peck-INF-suffix, 'a hit with the peck' or *chup-**et**-ón*,

lit. suck-INF-suffix, 'small bruise caused by a kiss, generally on the neck', among others. Crucial is the fact that these words have counterparts without infix (12).

(12)   a. pic-ada, 'action of pecking'
        b. chup-ón, 'person who uses to suck'; metaphorically, 'scrounger'

As we expect from this class of infixes, there is a systematic meaning difference between the words mentioned by Portolés and those in (12). The meaning of the nouns with infix is that there is a particular, isolated occurrence of an (otherwise) possibly repetitive action denoted by the respective infix-less nouns. If a *chupón* is a person (or thing) which performs typically the action of sucking, a *chupetón* is one single and isolated occurrence of the (possibly repetitive) action of sucking; in the same vein, *picada* is an animal's pecking, while a *picotada* is each of the single pecks given by the same animal. The presence of the infix imposes the same meaning restriction to the word in both cases, forcing a reading where an otherwise possibly iterative event is interpreted as only one single instance of that event.[4]

In the next section we will pay a little more attention to the semantic interpretation of the infix.

2.2.2 *Second piece of evidence: semantic import of the infix*
As is well-known, there are two different kinds of aspectual information associated to a verb: internal aspect or Aktionsart and inflectional aspect. Inflectional aspect is the result of the combination of the verb with the functional projections that dominate it, so it is in principle independent of the semantic meaning of the verbal stem.[5] Aktionsart, on the other hand, is a semantic property of the verb -in combination with internal arguments- which is independent of the functional heads that dominate little v. That the two kinds of aspect are, to a great extent, independent, is illustrated by the fact that state verbs have the same inflectional aspect paradigm than eventive verbs (13).

(13)   a. STATE: saber, 'to know'
        ha sabido, 'has known'
        b. ACTIVITY: correr, 'to run'
        ha corridor, 'has run'
        c. ACCOMPLISHMENT: construir una casa, 'to build a house'
        ha construido una casa, 'has built a house'
        d. ACHIEVEMENT: morir, 'to die'
        ha muerto, 'has died'

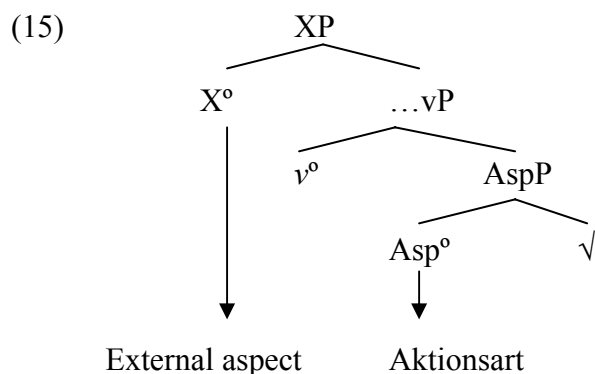Let us observe that, in contrast, the presence of these infixes is restricted to eventive verbs.

(14)   a. ACTIVITY: correr, 'to run', corretear
        b. ACCOMPLISHMENT: tirar, 'to throw', tirotear
        c. ACHIEVEMENTS: enamorarse, 'to fall in love', enamoriscarse

There are no state verbs that can combine with the infix. However, let us note that state verbs do have a full external aspect paradigm.

This type of contrasts between internal and external aspect would be explained if external aspect is due to a head that dominates vP, while internal aspect or Aktionsart depends on a head which is lower than little *v*.
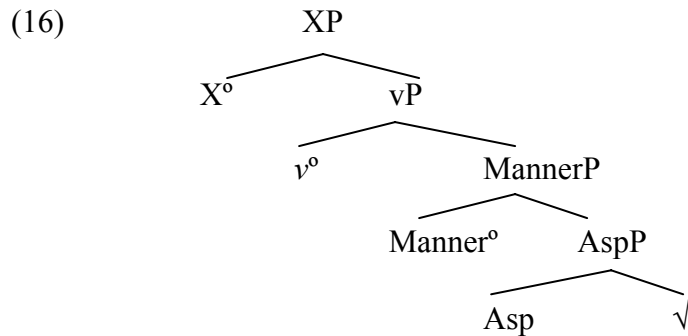
A head which is over little *v* – or any other categorising head – is expected to display inflectional properties, that is, to be paradigmatic in such a way that every word that belongs to a certain category will be able to combine with such a head (cfr. Marantz 2001). As it selects a particular grammatical category – in this case a verb – there is no reason to expect that some words that belong to that category will not be combinable with that head. We have already noted that every verb, even state verbs, exhibits the full paradigm of aspectual contrasts. Therefore, following this reasoning, we expect that paradigmatic aspect is due to a head which is higher than little *v*.

In contrast, Aktionsart (or internal aspect) is not a paradigmatic notion, but part of the 'lexical' meaning of the verb –in combination with internal arguments–. It is not the case that any given base can be a state, an achievement, an accomplishment and an activity. Moreover, Aktionsart is subject to lexical exceptions and idiosyncrasies of specific bases. This situation is expected if Aktionsart depends on an aspectual head lower than little *v*, in such a way that this head does not select a grammatical category, but a specific root.[6] The relevant syntactic tree is represented in (15).

(15)

$$
\begin{array}{c}
\text{XP} \\
\diagup \quad \diagdown \\
\text{X}^{\text{o}} \qquad \text{...vP} \\
\mid \qquad \diagup \quad \diagdown \\
\mid \qquad v^{\text{o}} \qquad \text{AspP} \\
\mid \qquad \quad \diagup \quad \diagdown \\
\mid \qquad \text{Asp}^{\text{o}} \qquad \sqrt{} \\
\downarrow \qquad \quad \downarrow \\
\text{External aspect} \quad \text{Aktionsart}
\end{array}
$$

We have observed that infixes operate on the Aktionsart of the verb with which they combine. They give raise to an iterative interpretation in which the action denoted by the verb is interrupted and then resumed again and again; in a telic verb, such as *tirar*, 'to throw', the presence of the infix forces an iterative reading, while in an atelic predicate, such as *correr*, 'to run', the infix imposes a discontinuous reading of the event, a situation which pragmatically may imply that the action is purposelessly performed.

From the fact that infixes operate on the Aktionsart of the predicate, combined with a principle of isomorphism between form and meaning, it would follow that Manner° has to be merged between vP and AspP, as shown in (16). From this position, MannerP selects the internal aspect projection and can modify it.

(16)

```
                    XP
             _____
           X°           vP
                    _____
                  v°          MannerP
                         _____
                       Manner°      AspP
                                _____
                              Asp        √
```

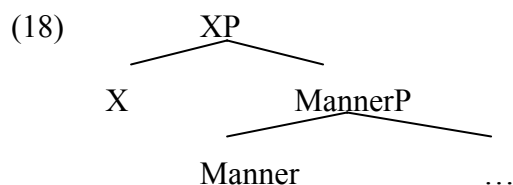Therefore, the semantic import of this morphological piece constitutes evidence that it is under vP.

2.2.3 *Third piece of evidence: Deriving the position of the infix*
One obvious property of infixes is the fact that they materialise necessarily between the base and another affix. Our analysis explains this characteristic.

Let us remember that the infix is a head that selects a root, that is, a constituent which lacks a grammatical category. As the infix itself does not have categorial features, it necessarily follows that the chunk of structure dominated by it does not have any grammatical category (17).

(17)

```
              MannerP
          _____
        Manner°      AspP
                 _____
               Asp°        √
```
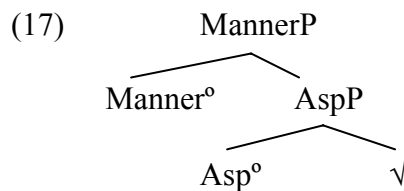
However, a necessary property of every word is that it must have grammatical category (cfr. Fábregas 2005). This means that the chunk of structure in (18) is not independent; crucially, it has to be selected by a head able to assign a grammatical category (18). In (18) X° stands for little *v* or little *n*.

(18)

```
           _____
          X    XP
               _____
             X         MannerP
                    _____
                  Manner        …
```

This implies that the infix cannot materialise as the terminal constituent in the word, because it has to be dominated by another head in order to be categorised. In our analysis, thus, the fact that infixes cannot be terminal elements in a word is derived from the general principle that all words must have a grammatical category.

Let us note that an analysis where MannerP selects vP is not able to explain this property: as vP assigns a grammatical category to the word, there would be no obvious reason why the (possible) chunk of structure in (19) cannot be a well-formed word.

(19)

```
            MannerP
          ⁄      ＼
     Manner        vP
              ⁄      ＼
            v°          √
```
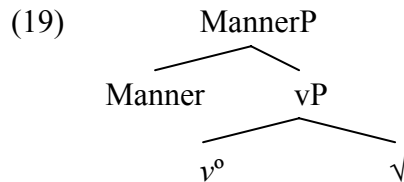
This, however, would not explain why infixes cannot be terminal constituents.

3. Infixes in the Vocabulary: morpho-phonological infixes

The infixes present in the words from the list in (20) have completely different properties from the morpho-syntactic units we have just analysed.

(20)　　problem-**át**-ico, lit. problem-INF-related to, 'problematic', cas-**er**-ón, lit. house-INF-appreciative, 'run down house', sant-**urr**-ón, lit. saint-INF-appreciative, 'overpious', hoj-**ar**-asca, lit. leave-INF-appreciative, 'fallen leaves', viv-**ar**-acho, lit. alive-INF-appreciative, 'sparkling', fest-**ej**-ar, lit. party-INF-verbaliser, 'to party'...

Some of the words that contain this type of infixes are attested also without them. This is the case of the words in (21), pointed out by Lázaro (1980).

(21)　　cas-**er**-ón, lit. house-INF-appreciative, 'run down house', vs. cas-ón, 'big house'; sant-**urr**-ón, lit. saint-INF-appreciative, 'overpious', vs. santón, 'holy man'; agu-**an**-oso, lit. water-INF-adjectiviser, 'too wet', – aguoso, 'watery'...

These infixes share this property with the morpho-syntactic units that we have studied in the previous section. However, in sharp contrast with them, the meaning difference between the pairs of words in (21) is not systematic. Morphosyntactic infixes operate on the Aktionsart of the predicate, forcing a reading of irregular action, but there is no common semantic nuance that can group the words in (21). The word *santurrón* refers to someone whose virtue of santity is extreme and, also, is accompanied by a certain degree of stupidity; a *santón* is a religious leader in the Caribbean; *aguanoso* is, according to DRAE, something which is too wet, while *aguoso* is, like *acuoso*, something that contains water; a *caserón* is a somewhat wrecked big house, while a *casón* is the augmentative of *casa*, and so forth.

The absence of a systematic difference in meaning suggests that this infix is not present in the syntax. Let us remember that our assumptions include a clear distinction between productive and systematic aspects of meaning – which derive from the syntactic configuration and the morphosyntactic features, interpreted in LF – and non-systematic, encyclopaedic aspects of meaning, which are contained in a post-syntactic list related to specific morpho-phonological units.

Our proposal is that the infixes present in the words in (20) and (21) are not present in the syntactic derivation. They are not heads, so they never select any kind of specific configuration or category, and they do not stand for morpho-syntactic features. They are inserted as part of the specific Vocabulary Items that materialise the abstract syntactic representation of the word. We propose that the Vocabulary entry for a base such as *polv(o)*,

'dust', which shows an infix in the collective derivative *polv-**ar**-eda*, 'cloud of dust', would look like (22):

(22)   POLVAR-   ←→   [_____ + eda]
           POLV-   ←→   [elsewhere]

What this entry states is that the same base will materialise as *polvar-* in combination with the suffix *-eda*, but as *polv-* in a context where it is adjacent to another suffix, *-illo* for instance, resulting, then, in the words *polvareda*, 'cloud of dust', and *polvillo*, 'diminutive for dust'. Another relevant formation is *em-polv-ar*, a parasynthetic verb meaning 'to put dust on something', where the morphophonological form of the base does not show any infix, as stated by the entry in (22). The same situation arises with other bases, such as *hum(o)*, 'smoke', which shows the infix only when it is adjacent to a suffix *-eda* (23).

(23)   hum-**ar**-eda, 'cloud of smoke', a-hum-ar, 'to smoke something', hum-illo, 'diminutive for smoke'...

The presence of the infix is induced by a specific adjacent Vocabulary Item. Therefore, its appearance is an instance of pure contextual allomorphy (Carstairs-McCarthy 1987, Bobaljik 2000, Rubach & Booij 2001).[7]

Now, if these infixes are part of a contextual allomorph of the base, it is explained that their presence induces a non-systematic difference of meaning. The morphophonological items contained in the Vocabulary are associated to another list, the Encyclopaedia, where it is stored the idiosyncratic meaning of the different Vocabulary Items –or sequences of them–. The Encyclopaedia is the place where non-predictable differences of meaning are stored. The two different allomorphs of the base are associated with two different entries in the Encyclopaedia (24): the meaning difference between the word with and without infix cannot be predicted from general grammatical principles, but has to be learnt.

(24)   Encyclopaedic entries for the two forms of *sant(o)* in combination with *–on*.
        SANT-ÓN   ←→   [religious leader from the Caribbean]
        SANTURR-ÓN   ←→   [overpious, excessively devout]

There is one further question relevant to our analysis: which of the two Vocabulary Items combined in these words undergoes contextual allomorphy? That is, how do we know that the constituent that contains the infix as part of its entry is not the suffix, but the base? Consider for example the Vocabulary Item *corp-*, 'body'. The words formed using it as a base may contain an infix *-or*, which appears with more than one affix, as in *corpor-al*, 'related to the body', and *corpor-izar*, 'materialise'. Bases such as this one show us that it is not economical to analyse the infix as part of the affix. If we analysed the infix in that way, we would double the number of VI's, because we would need to have the pair *-oral* / *-al*, the pair *-orizar* / *-izar*, and so on and so forth. Moreover, the allomorphs *-oral* and *-orizar* would be attested only with another base, *temp-*, 'time', in the words *temporal*, 'temporary', and *temporizar*, 'to measure the time'. Our solution is more economical, as it proposes that there are two allomorphs of the base, *corpor-* and *corp-*, but only one form of the affix *-izar* or *-al*.[8]

3.1 *Some other properties of morpho-phonological infixes*

If these infixes are contained in the Vocabulary, as part of the contextual allomorph of a certain Vocabulary Item, some of their properties can be predicted.

The Vocabulary is, unlike syntax, a list of forms where non predictable information is kept. This explains that diachronic or etymological idiosyncrasies of the units stored here can be preserved as part of their entry. In fact, some of the infixes we consider in this section are motivated by historical reasons, while others are determined by the etymology of the base, a loan from foreign origin. For example, Lázaro (1980: 17) considers the case of the verbs *manejar,* 'to handle', *motejar,* 'to brand', *festejar*, 'to party', and *cortejar*, 'to woo', where the bases exhibit the allomorphs *cortej-, motej-*, and so on, and notes that they are French loans adopted in Spanish during the XVIII Century. Something similar happens with the series of words that contain the infix *-ar*, as *danzarín,* 'fond of dancing', *bailarín*, 'fond of dancing', or *cantarín*, 'fond of singing', constructed over Italian loans where the allomorphic variant of the affix *-arín* is attested. In some other cases, there are no particular reasons that justify that an allomorph of the base or the affix appears.

As the information stored in the Vocabulary is memorised by the speaker, it is expected that the information associated with one unit may spread to other semantically related VI's. Analogy is typical of systems where idiosyncrasies are listed, as a strategy of the learner to derive generalisations from the information contained in that list (cfr. Maiden 1991 for a historical survey). In fact, certain researchers (Malkiel 1957, Lázaro 1980, Dressler 1986) have noted that infixes of this kind are prone to extend to other words. We have already noted the extension of the infix from the word *danzarín* to the word *bailarín*. Lázaro discusses the /l/ found in *cursi-l-ería*, 'twee thing', from *cursi*, 'chic', and observes that there is another formation on the base *cursi* that also shows this increment, the word *cursi-l-ón*, 'too chic'. This appreciative form is augmentative, so it gives the idea of tendency towards an attitude. For Lázaro, the origin of this infix must be found in an analogy with other formations with *-ón* that express tendency towards an action, such as *dormilón*, 'big sleeper', or *comilón*, 'with a big appetite'. From these formations the increment /l/ would extend to *cursilón*, a non verbal base, and it will be maintained in *cursilería*[9].

The fact that morpho-phonological infixes are never terminal constituents follows also from our analysis. These infixes are part of a contextually conditioned allomorph that only appears when the base is adjacent to a certain affix, so, in the absence of that affix, the infix will not appear. Therefore, either the infix is inside the word or it does not spell out at all, because the affix that triggers the special form is not present.

4. Conclusions and final remarks

In this article, we have tried to show that the position of the infix can be derived from more general principles. We have proposed that morpho-syntactic infixes cannot appear in word final position because of the general principle that forces every word to have a grammatical category. As the infix is the materialisation of a head without category features that selects a root, it must be dominated by a categorising head, such as little *v* or little *n*. In the case of morpho-phonological infixes, as they are part of the contextual allomorphs of certain pieces of the Vocabularuy, they only appear when specific VI's are adjacent to them; in the absence of the adjacent constituent, the infix does not materialise. Therefore, the position of the infix

does not have to be stipulated, but is the by-product of independently motivated grammatical phenomena.

In the same sense, our explanation shows that these elements are not necessarily pieces of evidence for non configurational theories of word formation. They are amenable to a configurational analysis where their properties can be explained and their position can be motivated.

We have also shown that there is a quite sharp distinction between two classes of infixes in Spanish: morpho-syntactic infixes, which correspond to syntactic heads, and morpho-phonological infixes, which are part of specific allomorphs inserted to materialise abstract hierarchical configurations. Their semantic and formal properties are also different, as we have noted in sections two and three.

Due to this distinction and the way in which we derive the two classes' properties from the different status of these elements, our analysis provides evidence for a distinction between two levels of analysis for complex words, one where the configurational properties of the word are defined following syntactic principles, and another where particular pieces with idiosyncratic properties are inserted. Distributed Morphology provides a general framework where this distinction can be framed, due to Late Insertion.

One of the possible extensions of our analysis – which we will not explore here – has to do with the Spanish 'suffix' -*ear*. Under the light of this article, it would be worth studying whether this element is one single suffix or rather a sequence of two different suffixes, Manner° and little $v°$. Let us note that most verbs with morphosyntactic infix contain the sequence -*ear*. One possibility that we would like to suggest is that verbs with -*ear* and without an infix also contain MannerP, maybe with some special characteristics. However, this will have to be the subject of a different article.

Notes

[1] In the structuralist tradition (cfr., among others, Lewandosky 1992: 183), a distinction is usually made between *interfijos*, 'interfixes', and *infijos*, 'infixes'. While *interfijos* are those morphemes which appear between two segmentable morphological constituents –as *ar* in *polv-ar-eda*, where it appear between the base *polv(o)*, 'dust', and the collective suffix *-eda*– so called *infijos* are those morphemes that break the morphological base in two. For example, in the noun *Vict-it-or*, diminutive for the proper name *Victor*, the diminutive affix *–it–* is inserted inside the unsegmentable noun *Victor*, breaking it into two parts, *Vict-* and *-or*, none of which is a morphological constituent. These two processes are usually referred to as 'infixation' in contemporary literature. In this paper, we only take into account the cases of infixation between segmentable affixes, so we will not refer to the *Victítor* cases.

[2] The controversy of whether infixes are units or not has also been reflected in Spanish morphology, where Malkiel (1958) proposed that they are phonological entities used to avoid sequences of adjacent vowels, and Lázaro (1980) argued that they are lexical units which imply a difference in meaning.

We will not compare these two views here, though, from our analysis, some relevant consequences could be drawn.

[3] In the Spanish literature (e.g., Lázaro Mora 1977) some infixes are claimed to have purely phonological characteristics. These infixes are not associated to any meaning at all. Moreover, some base + affix combinations are ungrammatical without these infixes: *puent-ec-ito*, lit. bridge-INF-diminutive, 'little bridge', *santafe-r-eño*, lit. Santa Fe-INF-origin, 'from Santa Fe (Argentina)', *sol-ec-ito*, lit. sun-INF-diminutive, 'little sun', *rousseau-n-iano*, Rousseau-INF-related, 'related to Rousseau' or *buen-ec-ito*, lit. good-INF-diminutive. The phonological principles that favour the presence of these infixes have already been identified in the literature (Malkiel 1958, Lázaro Mora 1977, Crowhurst 1992, Ambadiang 1996). In this paper we will not consider this kind of elements, as their presence seems to be caused by purely phonological reasons without any import whatsoever in the meaning of the word.

[4] It is not difficult to find something in common between the interpretation of the infix with nouns and the one it has with verbs. In both cases its meaning affects the internal aspect of the event expressed by the root. In the case of the verb it is quite clear that the infix has an aspectual effect; the semantic contrast which arises with nouns is also amenable to an aspectual effect: the most straightforward interpretation of the events expressed by the roots *pic-*, 'peck' and *chup-*, 'suck' is iterative, that is, a series of repetitions of the same punctual action. The infix' semantic role is to delimit the series selecting only one instance of that action.

[5] Leaving aside, of course, defective verbs such as Spanish *soler*, 'to use to', which lacks any perfect (*ha solido, *solió, 'I used.perfect to') or future form (**soleré / soldré*, 'I will.use to')*.*

[6] Let us remember that words belonging to non verbal categories also have internal aspect, as there are result nouns (*table*) and event nouns (*war*). This phenomenon also supports the idea that Aktionsart is defined by an Aspectual head lower than the categorising head, little *v*.

[7] The situation of bases such as *cas(a)*, 'house', or *sant(o)*, 'saint', is not an instance of contextual allomorphy, because in the presence of the same Vocabulary Item, two alternative forms of the base can be inserted:

(i)   KAS-, KASER-   ←→ [_____+ón]

Mascaró (2005) and Bonet, Lloret & Mascaró (2005) show that this kind of situation, where the morphology provides the phonology with more than one form to materialise a set of features, actually occurs in natural languages. These authors argue convincingly that, in those cases where there is a phonological principle at stake, one of the alternatives is chosen. We propose that, in those cases where no phonological principle eliminates the alternatives, it is in fact possible to insert any of the forms of the Vocabulary Item, resulting in attested pairs such as *caserón / casón* or *santurrón / santón*. This is, however, a matter for further research.

[8] Malkiel (1958: 176) notes that, if the infix is not segmented and / or considered part of the affix, it would be necessary to propose the existence of 28 new highly idiosyncratic suffixes.

[9] Lázaro considers also an example of analogy the case of the /n/ in *rousseauiniano*, *daliniano* and *mironiano*, which are formed from *calderoniano*, *moratiniano* and *azoriniano*, among others, and Malkiel considers that the /t/ in *cafetería* and *tetera* is due to the influence of *chocolatera*.

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