The Lexical Integrity Hypothesis and the Notion of Irregularity: The Case of Spanish Participles[*]

Antonio Fábregas
Instituto Universitario Ortega y Gasset
webfabregas@gmail.com

Elena Felíu Arquiola
Universidad de Jaén
efeliu@ujaen.es

Soledad Varela
Universidad Autónoma de Madrid
soledad.varela@uam.es

0.   A New Approach for the Lexical Integrity Hypothesis

A problem that has always been present in the history of linguistics is to determine what relationship exists between morphology and syntax. The Lexical Integrity Hypothesis (LIH, Siegel 1974, Bauer 1978, Williams 1981, DiSciullo & Williams 1987) proposes that syntax is blind to the internal constituents of a word − i.e., its morphemes −. This principle limits the morphological information that can be read by syntax to the outer layer of the word. In a widely quoted article, Williams (1981) observes that the information perceived by syntax is contained in the head of the word as a whole, which always is in the outer layer. He notes that the past tense of the verb *under-stand* is the irregular *under-stood*, just like the past tense of the verb *stand* is *stood*. From here it follows that syntax must be sensitive to the information contained in the base *stand*.

(1)   [under [stand]]

The LIH defines the level whose information is accessed by syntax in a relational way: the last step of the process of derivation is the only one that syntax can see. There are no inherent properties of the layer that make it a 'special' domain, distinct from the rest of the components of the word.

        In this paper, we make an alternative proposal in which what can be considered 'the outer layer of a word' is defined by its intrinsic characteristics and a particular configurational status.

0.1.   Word Structure

Our proposal builds over a specific theory about the internal structure of words. We assume that words are constructed through combination of smaller units, morphemes, in a binary branching structure. Words have an internal hierarchical structure which (at least) shares with syntax some properties, such as the fact that heads project in phrases, where relations of c-command and domination hold (Cf. DiSciullo 1993, 1997; Lieber 1992; Borer 2004).

About the classes of morphemes combined, we assume that a morphological word is constructed through combination of roots and functional projections (Embick 2000, 2004; Marantz 1997, 2001; Borer 1999, 2004; Fábregas 2005). In consequence, we assume that the structure of a word is composed of at least two layers of different nature.[1] In the inner layer, we have the root (√) – take for instance English √Dog –, which is the part of the word which contains conceptual semantics. It is also the part of the word responsible of the fact that *dog*, *die*, *intelligent* and *repeat* are different lexical items, with different properties, but lacks crucial pieces of information, such as grammatical category. This root is selected by another head, which heads the second layer of the word: the functional head (F), which assigns a grammatical category to the root and therefore is responsible for the fact that the whole structure is a noun, an adjective or a verb –among other characteristics–, so it distinguishes between the noun *house* and the verb *to house*. In languages such as Spanish, English or French, the functional head may project as a suffix. This second layer of the word is shared by those structures which belong to the same category or subcategory.[2] The set formed by the root layer and the functional layer is what has been traditionally called the stem (2).[3]

(2)

FP

F°   √P

√°   …
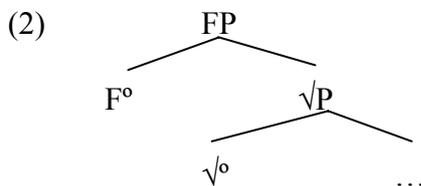
We follow Fábregas (2005: 269 and ff.) in his proposal that the structure in (2) has a special status in the structure of a word. The structure in (2), that Fábregas calls 'Morphological Local Domain' (MLD),[4] is a domain whose information from a

---

[1]   It may be the case that some words are constructed without roots and only with functional heads. This may be the case of the Spanish verb *ser*, according to Fábregas (2005: 271-273).

[2]   We use the term subcategory to refer to the different subclasses of words inside the same category, such as transitive vs. intransitive verbs, count vs. mass nouns, qualitative vs. relational adjectives, and so on.

[3]   Following Chomsky (2004: 110-111), when two heads are merged, the one that projects is the one whose semantic properties 'select' the other. The root, even though it lacks a category, contains semantic information which, among other things, is enough to select an internal argument. Therefore, when the root is merged with its internal argument, it projects its label, √, absent of categorial features but not of semantic ones, to the complete structure. In the absence of an internal argument, or any other complement of √P, both √ and F are heads when they are merged together, but only F may project as a full phrase, as it semantically selects the other.

[4]   It is important to note that MLDs are not syntactic Phases (Chomsky 2001). They are morphological entities, whose existence is not related to syntactic conditions, but to the fact that every independent word needs to have a grammatical category. Let us mention some specific differences between the two. First, Phases may have an edge position which can be used to extract constituents from inside them (Chomsky op.cit.). MLDs do not have this position; this explains that roots cannot be extracted from inside words.

morphological point of view is complete, because it has a grammatical category and conceptual semantics. A Morphological Local Domain is a structural space where phonological, semantic and specifically morphological information is defined. Inside a MLD, all the information is equally accessible. From outside the MLD, the information contained can only be accessed if the higher head of the MLD transmits it, so that the outer heads can read it. Therefore, we propose the principle in (3).

(3)   *MLD Information Policy*
        a.   All the information inside a Morphological Local Domain α is accessible from inside the Morphological Local Domain.

        b.   From outside a MLD, only the information contained in the higher head is accessible.

If the information is not contained in the projection of the higher head –in the case of (2), in FP–, the information inside the MLD is not available for the rest of the structure. In (4), as FP defines a MLD, X can be sensitive to the information contained in FP, but not in the root phrase √P or the root head √°.

(4)
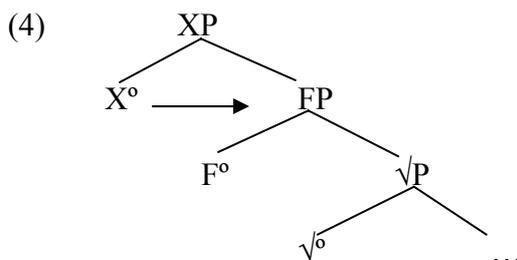
In our proposal we use the concept of MLD in order to explain whether, inside a word, the morphological information contained in its base is accessible to an affix or not. In particular, we propose the following idea:

(5)   The sharing of morphological information between an affix and its base is an epiphenomenon which covers different kinds of relations between heads.

Our alternative for the LIH has, then, some characteristics that differentiate it from other proposals. First, it does not necessarily imply that morphology and syntax are different in nature; it only acknowledges that some information is too far from some heads for them to access it. Being too far means having a head between the higher layer of the MLD and itself. Secondly, what constitutes the domain for information accessing is not defined relationally, as in the case of Williams' proposal, but through the ontological internal properties of the structure.

        We will provide evidence for this proposal studying the loss of irregularity in derived verbs. Irregularity is an idiosyncratic property of some roots that has to be

---

Secondly, according to Chomsky (op. cit.), only a special type of little v, i.e., the one with a causative meaning and able to check accusative case, can define a Phase. On the other hand, every functional head able to categorise a root –i.e., little v, little a, and little n– defines a MLD. In fact, the type of little v intervening in verbal participles is not able to define a syntactic Phase, because it is not causative, but passive-inchoative. For further differences between Phases and MLDs Cf. Fábregas (2005: 294 and ff.).

accessible to certain functional heads (such as Tense or Aspect), so it is a pertinent phenomenon to determine the availability of word internal information. We will concentrate on four groups of prefixed verbs in Spanish.

1. Classes of Prefixed Verbs

In this section we will present the data that we will use to substantiate our proposal for the LIH, presenting four different classes of prefixed verbs in Spanish. Let us consider first the Spanish verb *decir*, 'to say'. This verb is irregular, so that in some components of its paradigm special forms are found. We concentrate our interest on the participle in (6).

(6)   *decir – dicho*
         say – said

   As can be seen, the form *dicho* implies special forms of the root, which is spelled out as *d(i)-* instead of the usual *dec-*, and the aspectual head, transformed in *-cho*. However, the behaviour of the participle is not the same in the derivates that are obtained through combination of the verb with different types of prefixes.

1.1. Verbs with Demotivated Meaning that Do Not Keep the Regularity

In the case of the verbs *bendecir*, 'to bless', and *maldecir*, 'to curse', which are constructed from the verb *decir* through the addition of the forms *ben-*, related with the adverb *bien*, 'well', and *mal-*, related with *mal*, 'badly', the irregular form of the verbal participle is simply impossible.

(7)   a.   *he maldecido, he bendecido*
                 have.1st.sg cursed, have.1st.sg. blessed

         b.   **he maldicho, *he bendicho*

1.2. Verbs that Keep the Irregularity with Compositional Meaning

In contrast, in the case of the verb *contradecir*, 'to contradict', which is constructed from the verb *decir* through the addition of the form *contra-*, 'against', related with the preposition *contra*, the irregular form is possible and is the one preferred by speakers.

(8)   a.   *he contradicho*
                 have.1st.sg. contradicted

1.3.   Verbs without a Straightforward Regular or Irregular Participle

To make things more complex, the case of the verbs *desdecir*, 'to step back', and *predecir*, 'to predict', formed with the prefixes *pre-* and *des-*, is somewhat puzzling. Speakers of contemporary Spanish, as for instance the authors of this paper, feel that none of the forms, the regular or the irregular, are completely perfect.

(9)   a.   *?he desdecido*,   *?he predecido*
              have.1st.sg. stepped back,   have.1st.sg. predicted

       b.   *?he desdicho, ?he predicho*

Speakers tend to avoid the use of the participle or, if they have to employ it, they prefer the irregular form, for fear of being considered ignorant of the rules of Spanish grammar. However, none of the forms is perfect.

1.4.   Verbs with a Demotivated Meaning that Keep the Irregularity

There is a fourth possibility, which is not documented with a form of the verb *decir*, but is still real and is a needed piece to complete the puzzle of Spanish participles. Some verbal bases with an irregular form of the verbal participle still have the irregular form when combined with certain prefixes, such as *in-*. This is the case of the base *–scrib-*, related to the verb *escribir*, 'to write'.

(10)   a.   *he inscrito* (cf. *he escrito*)
               have.1st.sg. inscribed

        b.   **he inscribido*

Let us note that prefixed verbs such as this one cannot be classified with (8), *contradecir*, even though both share the property of keeping the idiosyncratic form of the participle. While both the prefix and the base of *contradecir* are independent words on their own, neither *in-* nor *-scrib-*, the two constituents of this verb, are full words in contemporary Spanish.

1.5.   A Note on the Possibility of Becoming Regular

The four classes of verbs may exhibit in colloquial Spanish occurrences with the regular participle, including *contradecido* and *inscribido*. One famous case in contemporary Spanish is the verb *proveer*, which shows the regular *proveído* in addition to the irregular *provisto*, and there are even some cases in which the participles in 1.3.4. are regularised[5]. These data are interesting to the extent that they may show that regular

---

[5] "Hay veces que tú bajas y lo que te quedas es en la playa cogiendo sol porque no hay olas. O sea, te te devuelves, yo me he devolvido, yo me he devuelto como bueno, como cien veces". CSHC-87 Oral interview, Venezuela, 1987; "Un solo rebaño ha poseído el 27% de los genes de todo el Herd Boock de la

inflection is in a sense more basic that irregular inflection (Cf. Pinker 2001), but they are not crucial for our argumentation, even though we recognise that they exist. Relevant to our argumentation is the fact that some of the four classes of verbs may have a strong verbal participle, while others cannot, with the consequences that this fact has on the understanding of the LIH.

1.6.   A Note on Accidents: Why the Verb "decir"?

Basically, we consider that the fact that this pattern can be seen with the verb *decir* and not with another verb in contemporary Spanish is a matter of historical accident which may have a motivation, not an explanation. The fact that an entity is regular or irregular is a matter of historical accident, so there is not –in our mind- any synchronic reason that explains why something is irregular or regular, apart from the restrictions on MLD's which we explore in this paper.

There may be a motivation, however, for the verb *decir* to have a special status. The verb *decir* is the most basic *verbum dicendi* in Spanish. Semantically, this gives it a special position in Spanish. Universally, verba dicendi have a particular status. For example, morphemes derived from the most basic verbum dicendi in Hungarian are used to express epistemic modality. There is, moreover, some type of semantic operation which can turn verbs of emission into verba dicendi, such as those which express animal sounds (*maullar*, 'to mew', *ladrar*, 'to bark', *barritar*…). This suggests that the nature of a verb as a verb of saying has a special status. From here it can follow a special historical consideration which makes it distinct from other elements.

Nonetheless, we would like to note that the phenomena studied here are not exactly unique to the verb *decir*, even though this is the most puzzling case. Let us consider, for example, the verb *venir*, 'to come'. The verb venir has a derivative *viniente*, 'coming', where the vowel /e/ from the root has become an /i/. However, when this verb is the base of a prefixed verb *pro-venir*, 'to come from', and *con-venir*, 'to be convenient', this irregularity is lost, in such a way that the forms are not *proviniente or *conviniente. In the verb *convenir*, which belongs to the class of *bendecir*, because its meaning is demotivated, the regular form *conveniente*, 'convenient', is the only one possible. In the case of *provenir*, which belongs to the class of *predecir*, neither the irregular form mentioned nor the regular *proveniente* are considered entirely grammatical. Therefore, the phenomenon we are describing is not restricted to only one verb.

2.   Two Preliminary Problems

In this section we provide an analysis of the different classes of prefixed verbs introduced in the previous sections. Crucial to our analysis is the internal structure of a participle and the positions occupied by the different prefixes in Spanish, so we begin with these two problems.

---

raza Polied Hereford Australiana registrado, en el Angus Neozelandés un solo rebaño ha proveído el 22% de los genes". Raunelli Sander, José W. J., *Genética de la calidad de la carne bovina*, 1994, Perú.

2.1. The Structure of the Participle

As we said, we assume a distinction between roots and functional projections. Taking the participle *cantado*, 'sung', as an illustration, the root is CANT-, shown also in the nouns *cant-o*, 'song', and *cant-or*, 'singer', and in the adjective *cant-oso*, 'notorious'. Several reasons lead us to propose that there is a little *v* projection dominating this root in the participle (Cf. also Embick 2000, 2004). Semantically, the existence of an event presupposed by the participle makes it necessary that there is an event-denoting category in its structure, and this category is little *v* (Chomsky 1995, 2001, Marantz 1997, Kratzer 1996, Van Hout & Roeper 1998).[6] Formally, the participle contains a theme vowel, which is a morphological property tightly associated with verbal heads, as Oltra (1999) and Oltra & Arregi (2005) argue convincingly. To conclude, paradigmatically, participles are forms which in general are contained inside verbal paradigms.

The combination of the two heads mentioned, little *v* and the root, produces a verbal stem, but there is some additional information needed to obtain a participle. As has already been noted, participles are associated to stative aspect, and are therefore aspectual in nature. Following Embick's previous work, and to a large extent traditional grammars, we propose that there is an aspectual component in participles. Driven by the morpheme order shown and the Mirror Principle (Baker 1985), we propose that the aspectual head selects little *v* (11).[7] (11a) represents the syntactic configuration, and (11b), the morphological configuration after Morphological Merger (Marantz 1984).

(11)　a.
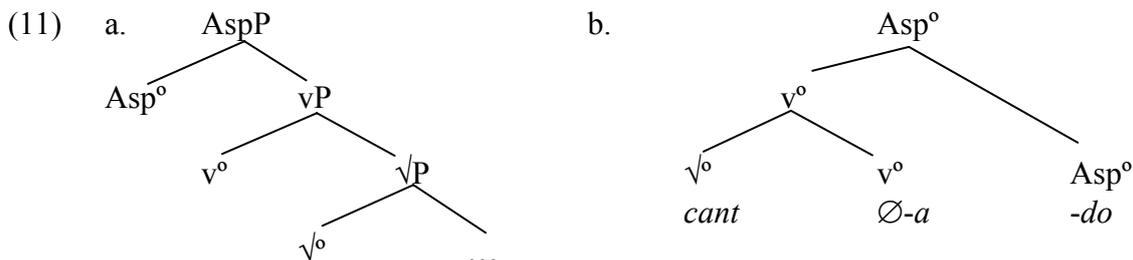
This is the structure that we assume for a verbal participle. As for the adjectival participle, the lack of eventive information and the impossibility of licensing an agent or a manner adverb (Cf. Bosque 1999, Varela 2003, 2004, 2005), implies –in our mind– that the little *v* projection is missing from inside the structure. In contrast, as it denotes a state which can become resultative, AspP is present. As it is an adjective, we propose that a little *a* projection, which categorises the word as an adjective (Marantz 2001, Fábregas 2005) is dominating AspP (12).

---

[6] This characterisation of the meaning of little *v* is valid, in principle, for eventive verbs, but it seems inadequate for state verbs, which do not denote events. The analysis of state verbs is a matter on its own and we do not intend to explore it in this article.

[7] As one of the referees observes, this structure does not give account of the ordering of some of the aspect morphemes in Slavic languages, which are prefixes: Cf. Russian *pisa-*, 'to write' vs. **napisa-**, 'to have written'. Even though we must recognise that we don't have an answer to this question, we would like to note that there is, in principle, nothing in our analysis that prevents that Slavic aspect morphemes are different from the Spanish ones –for example, they may be phrasal (Cf. Svenonius, to appear)- and they undergo a syntactic movement that changes their position with respect to the rest of the word.

(12)   a.   aP   b.   a°

           a°   AspP   Asp°

             Asp°   √P   √°   Asp°   a°

                 √°   ...
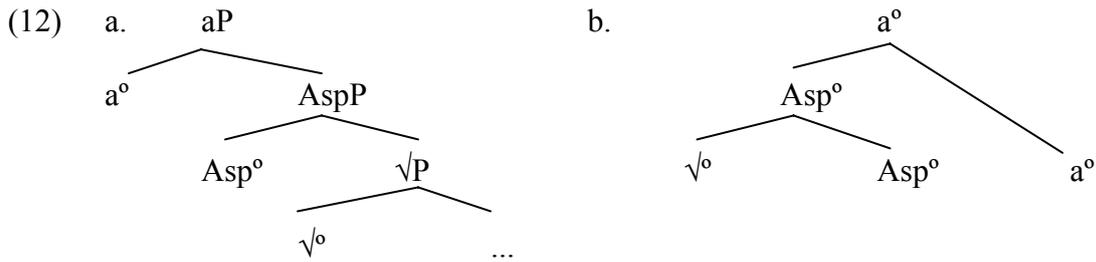
2.2.   Classes of Prefixes

At first blush, the main difference between the four classes of verbs presented in (1) – *inscribir, bendecir, desdecir* and *contradecir–* is to be found in the different classes of prefixes that combine with the base. Therefore, crucial to the analysis is the classification of prefixes in natural languages.

One very appealing classification of prefixes in natural languages that has been successfully applied to the study of Greek (Ralli 2002) and Spanish (Varela & Haouet 2001) is found in DiSciullo (1997), where there is a division between external and internal prefixes. Internal prefixes are those which can change the argument structure of the base, while external prefixes express adverbial notions which operate over an already constructed argument structure. One example of the later would be French iterative *re-* in *réorganiser*, 'to reorganise', while an example of the former is to be found in French *a-* in *apporter*, 'to fetch'.

In this paper we will propose a more complex classification of prefixes. We will analyse all cases of prefixes as category-less constituents which are adjoined to different positions inside word structure – which implies to leave aside, for the sake of the exposition, the possibility that some prefixes are constituents that take a complement[8]. Starting from here, we will consider two factors which combine to produce four different classes of prefixes. From one side, we make a difference between those prefixes which are adjoined to the root layer and those which are adjoined to the functional layer. Following Di Sciullo's (1997) Adjunct Identification Criterion, we will assume that an adjunct must identify –this is, operate on– a characteristic found in the projection to which it is adjoined. If the root layer contains conceptual semantics, we expect that those prefixes which alter the conceptual semantics of the word are adjoined to the root; in other words, we expect that the combination of this kind of prefixes with the base gives as a result a word with demotivated meaning. Following this criterion, we must consider that prefixes such as those that take part in the verbs in (13) (Cf. Aronoff 1976) are adjuncts to the root layer.[9]

(13)   *in-ferir, re-ferir, pre-ferir, di-ferir…*
       to infer, to refer, to prefer, to differ…

---

[8] DiSciullo (1997) also proposes that some prefixes are heads. A good candidate for this status are the prefixes of parasynthetic formations, for example *en-* in *encarcelar 'to put in jail'*. Cf. also Varela & Haouet (2001).

[9] A second possibility is to analyse these prefixes as heads which are under the root layer, as Marantz (2003) does. We will not pursue here this track, which may imply problems for the isomorphism between the argument structure and the category definition of constituents. At this point of the argumentation, it is only relevant for us to make the point that the prefixes must be associated to the root layer.

On the other hand, prefixes which are adjoined to the functional layer are expected not to be able to alter the conceptual semantics of the base, but to operate on the formal properties which are defined by the functional head itself, such as case assignment or the number of arguments selected (cf. for example, the distinction between two types of little v heads proposed in Chomsky 1995).

At this point it is important to make explicit our assumptions about what counts as conceptual meaning. In configurational theories, meaning is divided into two classes: conceptual and structural. Structural meaning consists of the aspects of meaning that derive from the syntactic configuration, and, therefore, depends on the formal properties of the structure, while conceptual meaning is encyclopaedic, unpredictable and related to knowledge of the world. Let us consider, as an illustration, theta roles. The number of theta roles of a predicate depends on its structural configuration (Hale & Keyser 1993, Mateu 2002), so the fact that, for instance, a causative verb has two arguments counts as structural semantics. In contrast, the semantic selection of the specific entities that can be a felicitous argument of a verb depends on the speaker's knowledge of the world (Harley & Noyer 2000): for example, we know that *John*, *a boy* or *the writer* are good external arguments for a verb such as *to think*, while *the daisy*, *freedom* or *the construction* make much less sense in that context, even though we may imagine another situation, such as a fairy tale, where their adequacy would improve. The semantic selection of arguments is a fact of conceptual semantics.

There is a second criterion which will also be employed in this paper, and it is whether the prefix is an adjunct to the head or to the phrase. As we know, both possibilities exist in the grammar of natural languages, but, in accordance with the Linear Correspondence Axiom (Kayne 1994), it is only possible that heads are adjoined to heads and phrases to phrases. From here it follows that we have two types of prefixes, one adjoined to the phrase and the other adjoined to the head, and that those adjoined to heads must be heads and those adjoined to phrases must be phrases. This fact provides us, by implication, with a criterion to determine which adjuncts are heads and which phrases. Let us assume that affixes are heads[10] (Cf. Lieber 1980, Zwicky 1985, DiSciullo & Williams 1987), and that independent words are constructed by the combination of affixes in a meaningful structure. In the Distributed Morphology framework, where the internal structure of a word is a syntactic object, from the previous two assumptions it follows that independent words are structures where syntactic heads are combined, this is, syntactic phrases. The internal logic of this theory, which is, of course, arguable, leads us to consider that those prefixes whose form is that of a complete word[11] are phrases and, therefore, adjuncts to phrases. In addition to this, if the prefix intervenes in the definition of those properties which have to be defined by the head – for example, in the case of the verbal projection, whether the verb selects an internal argument or not –, the prefix is, plausibly, adjoined to the head. By combination

---

[10] At least, in those theories which consider morphemes to be units and not the result of processes (Siegel 1974, Lieber 1980, Scalise 1984 vs. Aronoff 1976, 1994, Anderson 1992, Spencer 1999).

[11] Note that the reasoning does not force all phrase-adjunct prefixes to be complete words. It is still possible that some prefixes are adjoined to a phrase without themselves being a complete word, due –for example– to prosodic licensing conditions. There are other criteria which can be used, as for example the type of information over which it must have scope. For example, if argument structure is determined, at least partially, by a head, a prefix such as *inter-*, which operates on an already defined argument structure imposing a semantic condition on it (in this case, reciprocity) is a good candidate for being adjoined to the phrase, not to the head.

of these two criteria, we obtain four classes of prefixes – which, not accidentally, coincides with the number of different classes of prefixed verbs.

(14)   a. *Prefixes adjoined to the root head.*   b. *Prefixes adjoined to the root phrase*
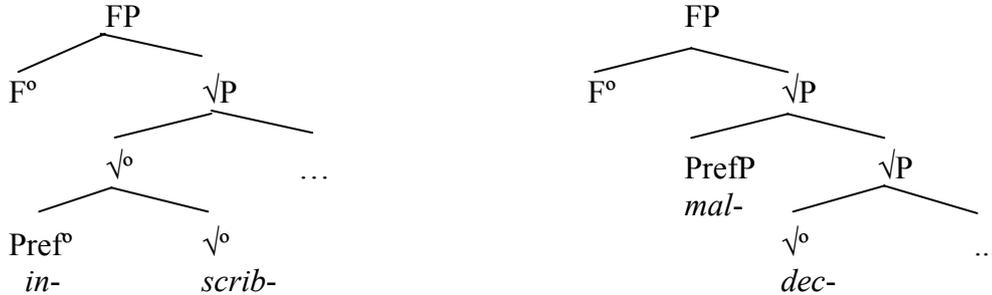
c. *Prefixes adj. to the functional head*   d. *Prefixes adj. to the functional phrase*
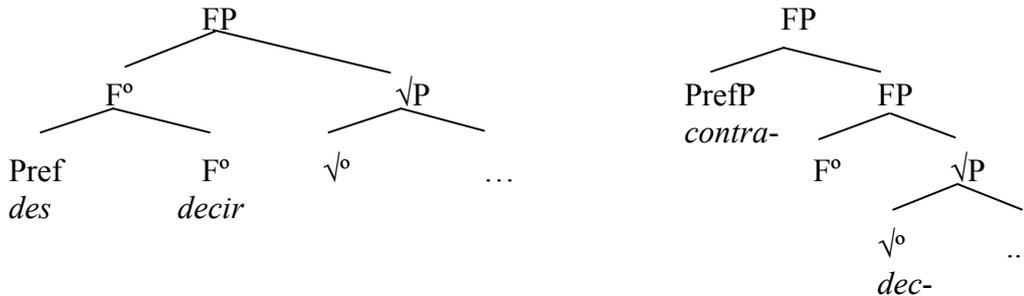
In the following section we will propose that verbs such as *inscribir* are instances of the structure in (14a), while verbs such as *maldecir* are represented as in (14b). On the other hand, verbs such as *desdecir* are analysed as in (14c), and verbs such as *contradecir*, as in (14d).

3.   Irregularity and MLD's

In the following section, we will analyse each of the four classes of prefixed verbs according to the structures proposed and we will discuss the impact that the configuration has on the possibility of accessing information contained in the root.

3.1.   "Bendecir": A Case of a Prefix Adjoined to √P

We propose that the elements *ben-* and *mal-* of the verbs *bendecir* and *maldecir* are adjoined to the root layer. We have several pieces of evidence to back this claim.
In the first place, the prefix alters the conceptual meaning of the base. The conceptual meaning of the verbs *maldecir* and *bendecir* is not compositional. It is a new meaning which does not derive from the meaning of the separate constituents. *Maldecir* is not to speak badly of someone, but a specific action which means to curse someone. *Bendecir* is not to speak well, but to bless.

In the second place, the prefix alters the selectional requisites which depend on the root. We follow Chomsky (1995, 2000, 2001, 2004) and Kratzer (1996) with respect to the proposal that the external argument is selected by the functional heads that dominate the root, but the object is associated to the root (Marantz 2003). If the prefix is added to the root layer, we expect that its adjunction may change the semantic selectional requisites of the direct object, but it will not change the number of arguments. *Decir* selects propositional entities as DO, for example CP's or NP's with propositional meaning, such as *que vino*, 'that he came', or *la pregunta*, 'the question'; however, *maldecir* selects individual entities as DO, such as *el niño*, 'the child', or *Pedro*, but never propositional entities.

As can be deduced from the exposition of the internal structure of the word, roots are dependent entities, because they have to be associated to functional heads in order to have some of their properties defined, such as category. From here it follows that we expect entities in the root layer to show signs of dependency. In the case of the elements considered, we can see that they are phonologically dependent, as they do not have stress of their own. The constituent *ben-*, in fact, is associated to the adverb *bien*, but, unlike it, it does not have stress, and is therefore undiphthongised. This behaviour is expected from any element contained in the root layer.

Finally, these prefixes are associated with otherwise independent words, so we will consider them adjuncts to a phrase, and therefore themselves phrases.

(15)

```
              AspP
            /      \
        Asp°        vP
        -do        /  \
                 v°     √P
                      /    \
                  PrefP     √P
                  ben-      dec-
                          [irregular]
```
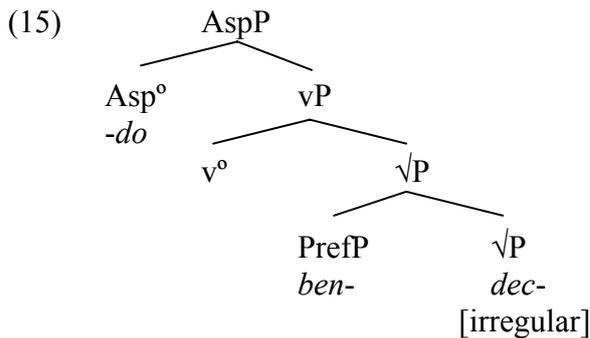
In this structure, vP heads a MLD whose information is the only accessible to the head Asp°, on which it depends whether the participle is regular or irregular. The configuration makes it impossible for the head v° to reflect the meaning that the root is irregular, so the participle must be necessarily regular.
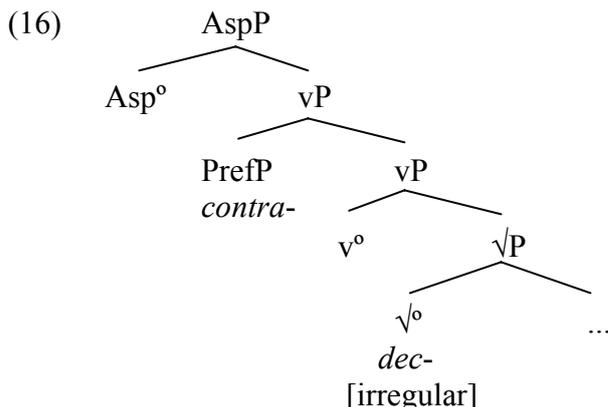
We propose that prefixes are ontologically the same element as roots, for they both lack category information, select their combination semantically and do not have desinences by themselves. The difference between a root and a prefix is structural: roots are bases and prefixes are adjuncts to different positions. From here it follows that ontologically a prefix and a root are undistinguishable by a functional head. The functional head will be sensitive to the information contained in the element which is, in structural terms, nearer to it.

As the prefix is not c-commanded by the root (because it is only dominated by a segment of the category, Cf. Kayne 1994), it c-commands the root. If the crucial relation in syntax is c-command, this means that the prefix is nearer to the functional head than the root. The problem is that the information that the root is [irregular] is present in the root, not in the prefix. As prefixes and roots are ontologically the same type of elements, the functional head chooses the nearest of them, which is the prefix. The

prefix does not have the feature [irregular], so when Asp°, from outside the MLD, checks the features of little v, it does not see a feature [irregular], with the result that it inserts the morpheme by default, i.e., *-do*.

3.2. *"Contradecir": A Case of Prefix Adjoined to FP*

Now we will consider cases such as *contradecir*. We propose for them the structure in (16), where the prefix is adjoined to the functional phrase.

(16)

```
            AspP
           /    \
        Asp°      vP
                 /   \
             PrefP     vP
             contra-  /   \
                    v°     √P
                          /   \
                        √°      ...
                        dec-
                      [irregular]
```

In these verbs, the prefixes are related with full words of Spanish, specifically prepositions which may appear as full morphological forms: *sobre mí,* 'over me', *contra mí,* 'against me'. This is not to claim that the prefixes are in fact prepositions, as we do not claim that *ben-* or *mal-* are adverbs in the previous examples. However, the fact that they are formally identical to prepositions shows, in our framework, that they have a phrasal status and that they are not simply dependent heads.

The meaning of the prefixed word is compositionally derived from the meaning of the root and the meaning of the prefix. The semantics of the verb *contradecir* is, to a wide extent, the one that we expect from the phrase *decir X contra Y*, 'to say X against Y'. Similar observations can be made from verbs such as *sobrevolar,* 'to overfly', or *contraindicar,* 'to contraindicate', showing that the behaviour of this kind of prefixes is quite regular.

The prefix changes one property of the verb: case checking. A verb such as *volar* is unable to check accusative case (17a), but in combination with the prefix *sobre-* it acquires the capacity to check this kind of case (17b).[12]

(17)　a.　*El pájaro voló (*el campo) – *el pájaro lo voló.*
　　　　　the bird flew (*the countryside) - *the bird itACC flew

---

[12]　It may be in order that case checking and argument selection are considered independent processes in most generative frameworks. Stowell (1981) notes that every category may select a subject in a special structure called Minimal Clause, but only some of them are able to check their subject's case. This is clear in so called Exceptional Case Marking contexts, where a higher verb assigns accusative case to the subject of a lower predicate: *la considero {inteligente / en buena forma}*, 'I consider her (acc.) {intelligent / in good shape}.

b. *El pájaro sobrevoló el campo – el pájaro lo sobrevoló.*
the bird over-flew the countryside – the bird itACC over-flew
'The bird flew over the countryside'

Case checking is a characteristic of functional projections, which contain the formal features necessary to trigger this syntactic operation (Chomsky 2004: 113-115); roots lack these features, so they are not expected to assign case by themselves. Therefore, if a prefix changes this property of a predicate, we expect that it is adjoined to its functional layer, not to the root.

Finally, these prefixes express notions which can be considered adverbial, in DiSciullo's sense. *Contra-* can be assimilated to a meaning of opposition – *contradecir* is to say something in the opposite direction of what had been previously said–, and *sobre-* usually has a locative meaning – *sobreimprimir* is to print something in a certain position, and so on –. This is the semantics which is associated to external prefixes in DiSciullo's (1997) theory.

If we concentrate now on the structure in (18), we will see that in this configuration the prefix does not prevent the head little *v* to access the information that the root is [irregular]. The irregularity of the root is transmitted unambiguously to v°, and from here it projects to the whole phrase, in such a way that the head Asp° has access to it.

(18)

AspP
Asp° $\longrightarrow$ vP
-*cho*
PrefP   vP
contra-
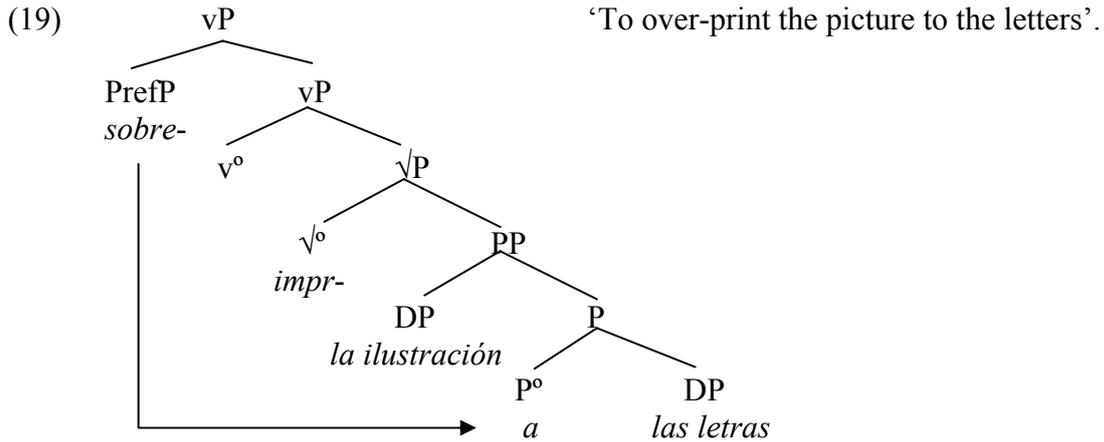v°   √P
√°   ...
di-
[irregular]
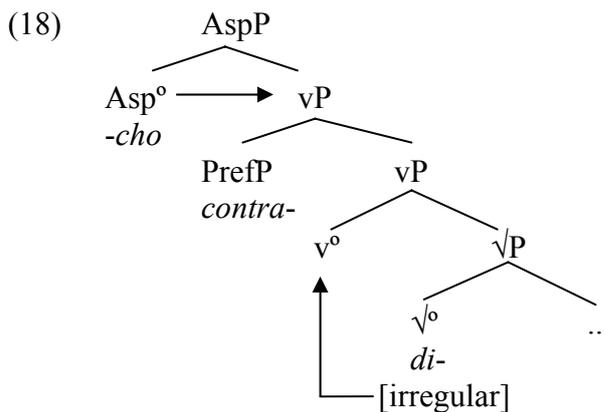
An alternative to our analysis could be to claim that the preposition has been incorporated à la Baker. We have several reasons to reject an analysis where *sobre-* is a preposition that assigns accusative case to the direct object and has been incorporated (Baker 1988) to the verb. First, Spanish prepositions assign oblique case to pronouns (*sobre mí*), but, in these verbs, the direct object exhibits accusative case, which is the case assigned by verbs: *sobreimprimir-**lo***, 'over-print **it** (acc.)'.

Secondly, an incorporated element leaves a trace or copy in its base position, which precludes the insertion of another element. However, it is possible to find a preposition in the place where the trace of the incorporated preposition is expected to be, as in **sobre**-*imprimir una letra **a** otra*, 'to **over**-print one letter **to** the other'.[13]

It is still true, however, that there is a meaning relation between the phrases *decir algo contra algo*, 'to say something against something' and *contradecir algo*, 'to

---

[13] For the many pieces of semantic evidence to make a distinction between prefixes and prepositions, we refer to Dal (2003).

contradict something', which is, in our mind, the most powerful reason to pursue an incorporation analysis. To give account of this property of the structure, instead, we propose that the prefix is in this case a preposition which does not select an external argument. It has conceptual semantics, in such a way that, when there is a PP in the structure, as this preposition is semantically weak and is c-commanded by the prefix, the prefix imposes the semantic interpretation on the dative. Let us note that the preposition which is materialised in the oblique argument is the weakest possible, *a*. In this way, *a* means *sobre* in *sobreimprimir*.

(19)   'To over-print the picture to the letters'.

PrefP *sobre-*, vP, v°, √P, √° *impr-*, PP, DP *la ilustración*, P, P° *a*, DP *las letras*

This control is semantic, and in fact it is present even in those cases in which the only argument of the verb is a DO, as in *contradecir* or *sobrevolar*. This shows that the prefix is semantically active, imposing an adverbial semantics on the event, but an incorporation analysis must be rejected.
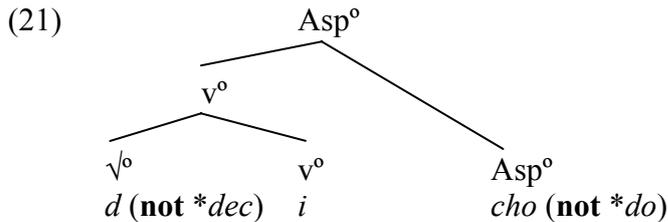
3.3.   *"Predecir": A Prefix Adjoined to F°*

In this case, we propose that the prefix is adjoined to the functional head:

(20)

AspP, Asp° *?do/?cho*, vP, v°, √P, √° *pre*, v° *Ø-i*, √° *dec-*, …
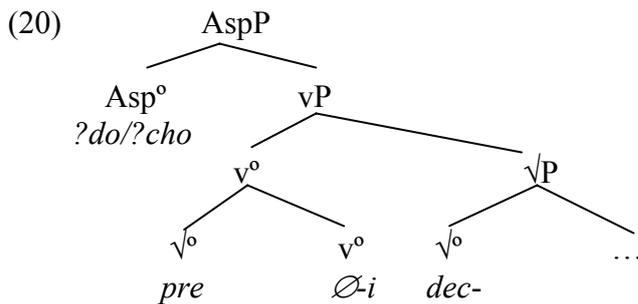
Let us note that these prefixes do not change the conceptual meaning of the root, because the words exhibit compositional meaning –*pre-decir* is to say something in advance and to *des-decir* is to go back on what was said–. Instead, they change the case checking properties of the verb: for example, the verb *decir* is transitive and assigns accusative case to its internal argument, while the verb *desdecir* is intransitive and needs a preposition to express the internal argument: *desdecirse **de** lo dicho*, 'to step back from what was said'. Also, these prefixes have a strong relationship with the verbal

event, contained in the head little *v*: *pre-* implies anteriority; *des-* may imply reversative action. Following the Adjunct Identification Criterion and taking into account the characteristics that these prefixes change, we expect that they are adjoined to little v.

Let us consider now the behaviour of the participle. In principle, the participle of a verb like this should be irregular, because the prefix is merged in a position where it does not intervene between the irregular root and the functional head. That is the reason why the regular form ?*desdecido* is not completely right. The reason why the irregular form is not right either is the following: the irregular participle is built merging three heads, $\sqrt{}^o$, v^o and Asp^o, that show special allomorphs (21).

(21)

```
                        Aspº
               _____/   _____
             vº                      \
         ___/  \___                   \
       √º          vº                  Aspº
    d (not *dec)   i               cho (not *do)
```

This morphological merging is possible in the verb *contradecir*, because the prefix *contra-* is not merged between two heads. However, in the case under discussion, *pre-* is adjoined to the head, and, therefore, intervenes between the heads v^o and Asp^o, making impossible the operation of Morphological Merger, which is necessary to build the irregular form. We propose that the reason why a prefix in that position interrupts morphological merger is that prefixes have properties of roots, because, like roots, they lack a grammatical category and contain conceptual semantics. Let us assume the following principle (22).

(22)   A structure headed by a functional head cannot be morphologically merged with a root.

If this is correct, we expect that *pre-* interrupts merger between Asp^o and v^o, because v^o is a functional head; in contrast, in a verb such as *bendecir, ben-* does not interrupt merger between the root and v^o, because the prefix is adjoined to a root. Therefore, in these verbs, the irregular participle cannot be formed, either.

3.4.   "Inscribir": A Prefix Adjoined to $\sqrt{}^b$

The fourth possibility is that in which the prefix is an adjunct to the root head. We propose that this is the case with *inscribir*. This verb is not compositionally derived from the meaning of *escribir*, 'write', and *in-* –and in fact here there are phonological differences which cannot be derived unless idiosyncratically stipulated, as in *deponer,* 'to depose'–. In contrast with prefixes such as *ben-*, *in-* is not an independent word in Spanish, so we propose that it is adjoined to the root head.
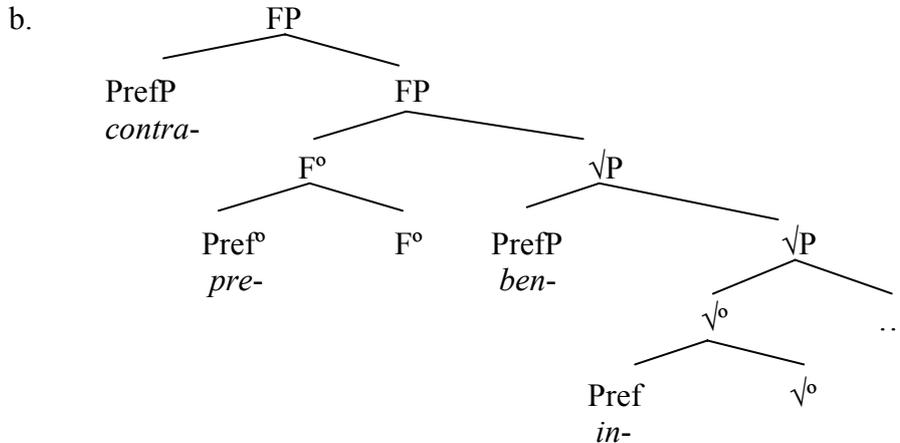
(23)

```
              vP
            /    \
         v°       √P
                /    \
             √°        …
            /   \
        Pref°     √°
```
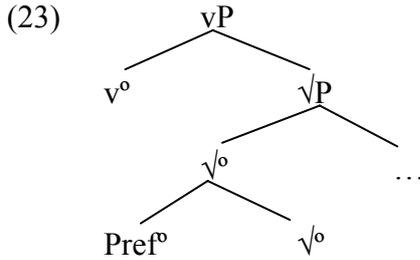
In this position, the prefix does not c-command √P, so little *v* has access to the information that the root is [irregular]. Therefore, little *v* can have the information that the root is irregular and Asp° can read this information from outside the MLD. The result is that the irregular form of the verbal participle is accessible.

(24)   *inscrito* (Engl. *inscribed*)

3.5.   *The Order of Morphemes*

Additional evidence that the system of prefixes that we are proposing is correct comes from the position of the different prefixes. In accordance with the LCA (Kayne 1994), we expect the following ordering (25a), as a reflection of the structure (25b).

(25)   a. Prefix adj. to FP − prefix adj. to F° − prefix adj. to √P − prefix adj. to √°

b.

```
                      FP
                   /      \
              PrefP         FP
             contra-      /    \
                        F°       √P
                      /    \    /   \
                  Pref°     F° PrefP    √P
                  pre-         ben-    /   \
                                     √°      …
                                    /   \
                                Pref      √°
                                in-
```

This ordering is in fact verified.

(26)   a. *contra-pre-decir* 'to predict something against what someone predicted before'
     b. *contra-mal-decir* 'to curse someone back (in resp. for a previous cursing)'
     c. *contra-in-scribir* 'to inscribe someth. in response for a previous inscription'
     d. *pre-ben-decir* 'to bless someone in advance'
        des-ben-decir 'to reverse a previous action of blessing'
     e. *des-in-scribir* 'to reverse an event of inscription'
     f. *mal-in-scribir* 'to inscribe someone in a bad way'
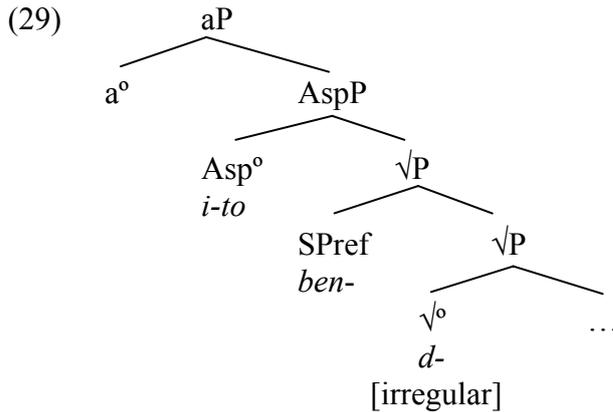
4. Adjectival Participles and Verbal Participles

Many verbs which do not display an irregular verbal participle, have nevertheless an adjectival irregular participle.

(27)　*bendito,　　maldito, corrupto*
　　　lit. blessed, cursed,　corrupted

This is a fact which also needs to be explained. The difference between a verbal and an adjectival participle is the lack in the second structure of a little *v* projection. (28a) represents the verbal participle; (28b), the adjectival one.

(28)　a.　AspP　　　　　　　　b.　aP

Asp°　　　vP　　　　　　　　a°　　　AspP

v°　　　√P　　　　　　　Asp°　　　√P

√°　　…　　　　　　　√°　　…
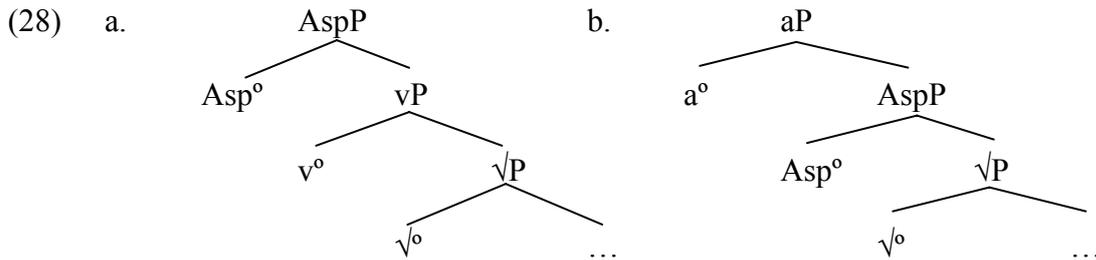
　　　　Let us note that MLD's theory predicts that a suffix unable to assign a grammatical category may appear inside and outside the MLD, depending on the order in which the different heads are merged in the structure. This is the case of appreciative morphemes, as argued in Fábregas (2005: 289-292). If Asp° is a functional head unable to categorise a root we expect that it may appear inside or outside the MLD. Indeed, there are reasons to propose that Asp does not assign a grammatical category, because the notion that it expresses is trans-categorial and Asp° combines with verbs, adjectives, nouns and prepositions. Apart from verbs, adjectives also have aspectual information, as evidenced by the opposition between stage-level adjectives (such as *descalzo*, 'barefoot') and individual-level adjectives (such as *mortal*, 'mortal') (Luján 1980). Some nouns contain also aspectual information (Cf. Musan 1995), for there are nouns which can be combined with aspectual adverbs such as *ya*, 'already', or *dos veces*, 'twice', and, finally, prepositions may be telic (central coincidence) or atelic (terminal coincidence) (Hale & Keyser 1993, 1998, 2002). From here it follows that Asp° is a head whose information is functional, but unable to determine the grammatical category of the word with the consequence that in (25b) Asp does not define a MLD; the MLD is defined, instead, by the head little *a°*. This means that Asp is inside the MLD in an adjectival participle. The immediate consequence of this is that, by virtue of the principle that claims that inside an MLD all the information is accessible, Asp will always be able to read the information that the root is [irregular].

(29)

```
                aP
              /    \
           a°       AspP
                  /      \
              Asp°        √P
              i-to      /    \
                    SPref     √P
                    ben-    /    \
                          √°      …
                          d-
                       [irregular]
```

There are independent reasons to propose that Asp° is external in a verbal participle, and internal in an adjective. Let us note that a verbal participle is part of one of the forms of the verb in a regular paradigm: every verb, independently of its Aktionsart, has a verbal participle. In contrast, aspect is not part of an adjective's paradigmatic information. Each adjective is associated with a particular aspectual value: some are stage-level and some are individual-level. Even if some adjectives may be stage- or individual-level, this is usually related with a difference in meaning, as is shown, for example, by the constrast between *aburrido* (individual-level), 'boring', and *aburrido* (stage-level), 'bored' (Cf. Varela 2003).

5. Other Forms of the Paradigm

In this section we will take a view to the rest of the paradigm of these verbs. We will focus precisely in two contrasts. The first one is the fact that the aorist ('pretérito indefinido' in the traditional grammars of Spanish) behaves differently from the verbal participle, even though they are semantically related. The aorist is irregular, while the verbal participle isn't (30).
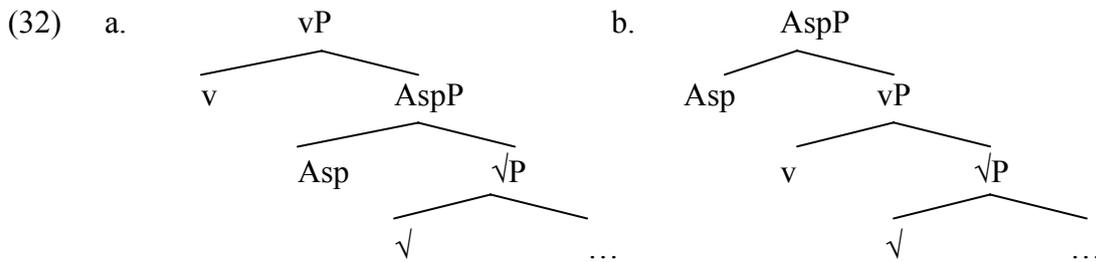
(30) a. *bendecido*   vs. *bendije, bendijiste, bendijo, bendijimos…*
          blessed (regular) vs. bless.past.irregular…

      b. *?predicho*   vs. *predije, predijiste, predijo, predijimos…*
          predicted (irregular) vs. predict.past.irregular

The second is the fact that the future behaves exactly like the verbal participle. The verb *decir* has an irregular future (31a). The verbs from the first group make a regular future and the irregular is impossible (31b), while the verbs from the second group have a regular future (31c), the verbs from the third group don't admit any of them, regular or irregular (31d), and the verbs from the fourth group produce an irregular future (31e).

(31) a. *decir − diré*
          say   − say.future.irregular

      b. *bendeciré − *bendiré*
   bless.future.regular − bless.future.irregular

c.   *contradiré – *contradeciré*
     contradict.future.irregular – contradict.future.regular

d.   *?predeciré – ?prediré*
     predict.future.regular – predict.future.irregular

e.   *contendré – *conteneré*
     contain.future.irregular – contain.future.regular

These forms should be explained according to our theory of MLD's. Let us consider first the difference between the two perfects. In this case, we will propose that the difference is to be found in the two positions which can be occupied by the node Asp, which is [perfective] in both cases. In the case of the aorist, we propose that there is an internal Aspº head, which is inside the MLD and therefore can have access to the information that the root is [irregular]. In contrast, the participle has an external Aspº, this is, an Aspº which is outside the MLD.

(32)   a.

```
          vP
        /    \
       v     AspP
            /    \
          Asp    √P
                /   \
               √    …
```

b.

```
          AspP
        /     \
      Asp      vP
             /    \
            v     √P
                 /   \
                √    …
```

This situation is not surprising; every verb has a verbal participle, but some verbs do not have an aorist. This depends partially from the properties of the verb, in such a way that a verb such as *saber,* 'to know', when it appears in the aorist, has another meaning. Another property of aorists is that they can be expressed with suppletive roots, as *ser – fui, ir – fui*, etc.

        As for the future, we assume Oltra's (1999) proposal that the future is modal in nature and therefore is the result of the structure in (33), where the future morpheme has to be expressed in Moodº. Let us note that future tenses are opaque contexts where, among other things, it is possible to have an unspecific interpretation of indefinite arguments, as in *encontraré un lápiz,* 'I wil find a pencil', which does not even imply that there exists a pencil. The configuration in (33) is the same as in the case of the participle, so we expect precisely the same pattern of forms.

(33)

```
          MoodP
        /      \
      Moodº     vP
              /    \
            vº     √P
                 /    \
                √º    …
```
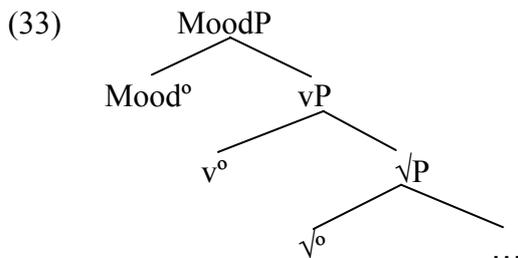
Imperative forms are also 'modal' forms where indefinite arguments may have a non-specific interpretation: in *encuentra un lápiz*, 'find a pencil', there is no implication that there even exists a pencil. It is not implausible to think that the structure of the imperative may be parallel to the structure of the future. Let us note that the relationship of these forms with irregularity is similar to the one that we find with verbal participles:

(34)   a.   *decir – di*
               to say – say!

       b.   *bendecir – bendice, not *bendí*
               to bless – bless!

       c.   *contradice – contradí, not *contradice*
               to contradict – contradict!

       d.   *predecir – ?predice / ?predí*
               to predict – predict!

However, our proposal is not a general proposal about irregularity inside the verbal paradigm, because there are other irregularity phenomena that are, at least at this point, different from the cases we are considering, such as irregularity in imperfect past tenses, or in different forms of the present tense.

6.   Consequences for Irregularity

Our proposal presents irregularity as a phenomenon that interacts with the internal structure of the word. The same base behaves regularly or irregularly depending on the internal structure, arguably syntactic, so, in our mind, is not clear how to account for these data in a paradigmatic approach. Consequently, in our proposal irregularity is rather a characteristic of individual items that is inherited by the word as a whole if its internal structure allows it. In those cases in which irregularity cannot be projected to the whole, it is lost, because it is not accessed by the elements that have to spell out the items.

References

Anderson, S. (1992), *A-morphous Morphology*, Cambridge, Cambridge University Press.
Aronoff, M. (1976), *Word Formation in Generative Grammar*, Cambridge (Mass.), MIT Press.
Aronoff, M. (1994), *Morphology by Itself*, Cambridge (Mass.), MIT Press.
Baker, M.C. (1985), *The Mirror Principle and morphosyntactic explanation*, «Linguistic Inquiry», 16 (3), 373-416.
Baker, M.C. (1988), *Incorporation. A Theory of Grammatical Function Changing*, Chicago, University of Chicago Press.
Bauer, L. (1978), *The Grammar of Nominal Compounding. With Particular Reference to Danish, English and French*, Odense, Odense University Press.

Bonami, O. & G. Boyé (2003), *Supplétion et classes flexionnelles dans la conjugaison du français*, «Langages», 152, 102-126.

Borer, H. (1999), *Endo-Skeletal vs. Exo-Skeletal Explanations in Linguistics*, ms., USC.

Borer, H. (2004), *Structuring Sense. An Exo-Skeletal Trilogy. Vol. 1: In Name Only*, Oxford, Oxford University Press.

Bosque, I. (1999), *El sintagma adjectival. Modificadores y complementos del adjetivo. Adjetivo y participio*, in Bosque, I. & Demonte, V. (dirs.), *Gramática Descriptiva de la Lengua Española*, Madrid, Espasa, 217-311.

Cartstairs-McCarthy, A. (2003), *Paradigm Irregularity as the Basis for Morphology's Existence*, electronic ms. available at:
URL: http://lings.ln.man.ac.uk/Info/staff/KEB/Conferences/Irregularities. html

Chomsky, N. (1995), *The Minimalist Program*, Cambridge (Mass.), MIT Press.

Chomsky, N. (2000), *Minimalist Inquiries: the framework*, in Martin, R. *et alii* (eds.), *Step by Step: Essays in Honour of Howard Lasnik*, Cambridge (Mass.), MIT Press, 89-155.

Chomsky, N. (2001), *Derivation by Phase*, in Kenstowicz, M. (ed.), *Ken Hale: A Life in Language*, Cambridge (Mass.), MIT Press, 1-52.

Chomsky, N. (2004), *Beyond explanatory adequacy*, in Belletti, A. (ed.), *Structures and Beyond. The Cartography of Syntactic Structures*, Vol.3, Oxford, Oxford University Press, 104-131.

Dal, G. (2003), *Arguments pour un préfixe contre-*, «Recherches Linguistiques», 26, 172-201.

DiSciullo, A.-M. (1993), *The Complement Domain of a Head at Morphological Form*, «Probus», 5, 95-125.

DiSciullo, A.-M. (1997), *Prefixed Verbs and Adjunct Identification*, in Di Sciullo, A.M. (ed.), *Projections and Interface Conditions*. New York: Oxford University Press, 52-73.

DiSciullo, A.-M. & E. Williams (1987), *On the Definition of Word*, Cambridge (Mass.), MIT Press.

Embick, D. (2000) *Features, syntax and categories in the Latin Perfect*, «Linguistic Inquiry», 31 (2), 185-230.

Embick, D. (2004) *On the structure of resultative participles in English*, «Linguistic Inquiry», 35 (2), 355-392.

Fábregas, A. (2005), *The Definition of the Grammatical Category in a Syntactically Oriented Morphology. Nouns and Adjectives*, unpublished doctoral dissertation, Madrid, IUIOG / UAM.

Fábregas, A., E. Felíu Arquiola & S. Varela (2006), *The Lexical Integrity Hypothesis and the notion of irregularity: the case of Spanish participles*, in G. Booij *et alii*, *Electronic Proceedings of the 5th Mediterranean Morphology Meeting*.

Hale, K. & S. J. Keyser (1993), *On argument structure and the lexical expression of syntactic relations*, in Hale, K. & S. J. Keyser (eds.), *The View from Building 20. Essays in Honor of Sylvain Bromberger*, Cambridge (Mass.), MIT Press, 111-176.

Hale, K. & S. J. Keyser (1998), *The basic elements of argument structure*, MITWPL, 32, 73-118.

Hale, K. & S. J. Keyser (2002), *Prolegomena to a Theory of Argument Structure*, Cambridge (Mass.), MIT Press.

Harley, H. & R. Noyer (2000), F*ormal vs. encyclopaedic properties of Vocabulary. Evidence from nominalisations*", in Peeters, B. (ed.), *The Lexicon/Encyclopedia Interface*, Amsterdam, Elsevier Press, 349-374.

Kayne, R. (1994), *The Anti-Symmetry of Syntax*, Cambridge (Mass.), MIT Press.

Kratzer, A. (1996), *Severing the external argument from its verb*, in Rooryck, J. & L. Zaring (eds.), *Phrase Structure and the Lexicon*, Dordrecht, Kluwer.

Lieber, R. (1980), *On the Organization of the Lexicon*, doctoral dissertation, Cambridge (Mass.), MIT.

Lieber, R. (1992), *Deconstructing Morphology*, Chicago, University of Chicago Press.

Luján, M. (1980), *Sintaxis y semántica del adjetivo*, Madrid, Cátedra.

Maiden, M. (2005), *Morphological autonomy and diachrony*, in Booij, G. & J. van Marle (eds.), *Yearbook of Morphology 2004*, Dordrecht, Kluwer, 137-177.

Marantz, A. (1984), *On the Nature of Grammatical Relations*, MIT Press, Cambridge MA.

Marantz, A. (1997), *No Escape from Syntax: Don't Try Morphological Analysis in the Privacy of Your Own Lexicon*, in Dimitriadis, A. *et alii* (eds.), *Penn Working Papers in Linguistics,* 4.2., 201-225.

Marantz, A. (2001), *Words*, ms., Cambridge (Mass.), MIT.

Marantz, A. (2003), *Subjects and Objects*, ms., MIT.

Mateu, J. (2002), *Argument Structure. Relational Construal at the Syntax-Semantics Interface*, doctoral dissertation, Barcelona, Universidad Autónoma de Barcelona.

Musan, R. (1995), *On the Temporal Interpretation of Noun Phrases*, doctoral dissertation, MIT.

Oltra, I. (1999), *On the Notion of Theme Vowel: A New Approach to Catalan verbal Morphology*, master's thesis, MIT.

Oltra, I. & K. Arregi (2005), *Stress-by-Structure in Spanish*, "Linguistic Inquiry", 36:1, 43-84.

Ralli, A. (2002), *Prefixation vs. compounding*, in DiSciullo, A.M. (ed.), *Asymmetry in Grammar*, vol. 2., Amsterdam & Philadelphia, John Benjamins, 37-63.

Rothstein, S. (1999), *Fine Grained Structure in the Eventuality Domain: the Semantics of Predicative Adjective Phrases and Be*, "Natural Language Semantics", 7, 347-420.

Scalise, S. (1984), *Generative Morphology*, Dordrecht, Foris.

Siegel, L. (1974), *Topics in English Morphology*, doctoral dissertation, Cambridge (Mass.), MIT.

Spencer, A. (1999), *Transpositions and argument structure*, in Booij, G. & J. van Marle (eds.), *Yearbook of Morphology 1998*, Dordrecht, Kluwer, 73-102.

Stowell, T. (1981), *Elements of Phrase Structure*, doctoral dissertation, Cambridge (Mass.), MIT.

Stump, G. (2001), *Inflectional Morphology. A Theory of Paradigm Structure*, Cambridge, Cambridge University Press.

Svenonius, P. (to appear), *Russian Prefixes are Phrasal,* "Proceedings of FSDL 5".

Van Hout, A. & T. Roeper (1998), *Events and Aspectual Structure in Derivational Morphology*, in *MITWPL* 32, 175–200.

Varela, S. (2003), *Lexical Morphology revisited: Form / meaning correspondences in Psych adjectival participles*, in Booij, G. *et alii* (eds.), *Topics in Morphology. Selected Papers from the 3rd MMM*, Barcelona, Universitat Pompeu Fabra, 51-75.

Varela, S. (2004), *La regularización léxica como proceso funcional y formal: cambio diacrónico, variación dialectal y préstamo*, "Hispanismo", I, 17-36.

Varela, S. (2005), "Lexicalización y cambio categorial", en L. Santos Río *et alii*, (eds.), *Palabras, norma, discurso. En memoria de Fernando Lázaro Carreter*, Salamanca, Ediciones Universidad de Salamanca, pp. 1133-1145.

Varela, S. & L. Haouet (2001), *For a morphological analysis in the privacy of the lexicon: prefixed verbs*, "Cuadernos de Lingüística del Instituto Universitario Ortega y Gasset", 8, 53-69.

Williams, E. (1981), *On the notions 'lexically related' and 'head of a word*, "Linguistic Inquiry", 12: 2, 245-274

Williams, E. (1994), *Remarks on lexical knowledge*, "Lingua", 92, 7-34.

Zwicky, A. (1985), *Clitics and Particles*, "Language", 61, 283-305.