# An Optimality Theoretic Account for "Ergative Displacement" in Basque

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*Abstract*

Under certain circumstances, an ergative DP is cross-referenced in Basque by means of an absolutive prefix with the same specification for person, instead of the expected ergative suffix. This phenomenon, currently known as "Ergative Displacement" (ED), does not have any syntactic and/or morphological consequences whatsoever. In this paper, an OT-analysis is developed for both ED and epenthetical prefixation in the Basque finite verb, in which these phenomena are viewed as violations, at the late level of lexical insertion, of two lower ranked Correspondence constraints —PARSE(FEATURE) and DEP ("No epenthesis"), respectively, in order to avoid a violation of the highly penalized OBLIGATORY PREFIX constraint.

## 1. Introduction

In this paper an analysis is developed for so called "Ergative Displacement" (ED) in Basque within the sub-theory of Optimality Theory (OT) (cf. Prince & Smolensky 1993) known as Correspondence Theory (McCarthy & Prince 1994, 1995). The analysis tries to derive the phenomenon from a hierarchy of well-founded, violable constraints —instead of using language-specific, ad hoc rules— and strongly supports two much debated theoretical issues: namely, late lexical insertion and the existence of an autonomous post-syntactic morphological component.

Section 2 introduces relevant features of Basque verbal morphology, and contains some basic assumptions on the morphology of Basque verbal inflected forms.

In section 3, ED in Basque is described as a mismatch between syntax/morphology and lexical insertion, by which, in some particular contexts, a syntactic AGR ergative node surfaces as an absolutive marker with the same specification for person. Two initial (and rather unnoticed) remarks on ED are also made and justified: first, "displaced" ergatives are consistently ergatives not only syntactically, but also morphologically; second, the existence of a prefixal "position of exponence" (cf. Noyer 1992) within Basque inflected verbs may account for the application of ED, as well as for another closely related property of the Basque verbal inflectional system, namely the insertion of "default prefixes."

Section 4 makes explicit OT-fundamentals, as well as a model of lexical insertion which incorporates some of the Correspondence Theory postulates on the relations that hold between inputs and outputs.

Our Correspondence Theory-based analysis for ED in (Standard) Basque is presented in section 5. In short, ED is viewed as a violation of a less penalized PARSE(FEATURE) constraint in order to obey a higher ranked OBLIGATORY PREFIX constraint. Putting it in other words, the obligatoriness of a prefixal position in the finite Basque verb will force the underspecification of the feature [ERG] with the result of an absolutive lexical entry being inserted under a morphosyntactic ergative node. The array of (morphological) circumstances under which either ED or the insertion of "default prefixes" take place in Standard Basque is then shown to result from a particular hierarchy of independently-motivated, very general constraints.

## 2. Basque verbal morphology: basic data

Basque is a fairly clear-cut head-final language which displays a rich array of phonetically realized case morphemes on NPs. It is also an ergative language (cf.

(1a-b).[1] Moreover, the language has ergative, absolutive and dative affixes on verbal forms, which agree with their corresponding subjects (cf. (1b-c)) and allow for a three-way pro-drop (cf. (1d)):[2]

(1) a. Ni-**Ø**   berandu etor-tzen   **N**-aiz
        I-**ABS** late        come-ASP  **1SGABS**-Aux
        *'I usually come late'*
    b. Ni-**K** Jon-**I**   ume-a-**Ø**     ekarr-i  **D**-i-**O**-**T**
        I-**ERG** John-**DAT** child-the-**ABS** bring   **DEF(3ABS)**-AUX-**3SGDAT**-**1SGERG**
        *'I have brought the child to John'*
    c. *Ni-**K** Jon-**I** ume-a-**Ø** ekarr-i   **D**-U-**T**
                                       bring-ASP **DEF(3ABS)**-AUX-**1SGERG**
        *'I have brought the child to John'*
    d. pro$_i$ pro$_j$ pro$_k$   ekarri  **D**$_k$-i-**O**$_j$-**T**$_i$

As the examples in (1a,b) also show, most verbal forms are analytic in Basque and, in that case, an aspectual morpheme is attached to the main verb, whereas all other inflectional markers show up on the auxiliary in a canonical order; up to now, that of (2):

(2) V-ASP   ABS-AUX-DAT-ERG

However, a very reduced number of verbs, such as *joan* 'to go' and *ekarri* 'to bring', shown in (3a) and (3b) respectively, have synthetic forms also, which convey a punctual aspectual meaning. As can be seen in (3c), the linear arrangement of agreement morphemes is one and the same for both analytic and synthetic forms:

(3) a. Etxera    **N**-oa-ki-**O**
        Home.to **1SGABS**-go-PREDAT-**3SGDAT**
        *'I am going to him (just now)'*

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[1]   However, subjects of unergative intransitive verbs are marked with an ergative morpheme in Basque. See Laka (1993b) for an analysis of Basque unergatives as non incorporated transitive predicates, which fits within the general picture of Basque as a morphologically ergative language.

[2]   The following abbreviations will be used in the glosses: AUX=Auxiliary; ERG=Ergative; ABS=Absolutive; ABS$_{ERG}$="displaced ergative"; ALLO=Allocutive; ASP=Aspect; DEF=Default prefix; DAT=Dative; PREDAT=pre-Dative; 1-2-3=First, second and third person; PL=Plural; SG=Singular; MASC=Masculine; FEM=Feminine; FORM=Formal, INF=Informal, TNS=Tense marker; PAST=Past; PRES=Present; IRR=Irrealis; MD=Mood, TEMP=Temporal epentheses. In the glosses (1b) and (1c) there is some ambiguity as regards the proper nature of some prefixal material in Basque verbal forms, that is, the prefix **D-** is characterized both as a third person singular absolutive morpheme and as a default prefix. We will maintain this ambiguity until we argue for the strictly default nature of this kind of prefix in section 3.

    b. **D**-akar-ki-**DA**-**ZU**
      **DEF(3ABS)**-bring-PREDAT-**1SGDAT**-**2ERG/FORMAL**
      *'You (formal) are bringing it to me (just now)'*
    c. ABS-V-DAT-ERG

There is also a three-way distinction with respect to tense in Basque—present, past, and irrealis, which is phonetically realized only when referring to the past, and surfaces at the rightmost edge of the verbal complex. This is all illustrated in (4):

(4) a. Ni    Madrilera  N-oa-**Ø**           larunbatean         (Present)
       I-ABS Madrid.to  1SGABS-go-**PRES** Saturday.on
       *'I am going to Madrid on Saturday'*
    b. Ni  Madrilera  N-indoa-**N**        larunbatean         (Past)
                       1SGABS-go-**PAST**
       *'I was going to Madrid on Saturday'*
    c. Ni  Madrilera  ba-N-indoa-**Ø**    larunbatean (Irrealis)
                      if-1SGABS-go-**IRR**
       *'If I was going to Madrid on Saturday'*
    d. ABS-Root-DAT-ERG-T

A Modal morpheme can also be present, which has phonetic content in the case of potentials and is null for indicative, subjunctive and imperative moods. As shown in (5), the modal affix appears between the dative and the ergative:

(5) Eman D-i-eza-GU-**KE**-ZU
    give  DEF(3ABS)-PREDAT-1PLDAT-**MD**-2ERG/FORMAL
    *'You (formal) can give it to us'*

The canonical order of Basque verbal affixes we have arrived at so far is represented in (6). Table (7) shows the whole array of person agreement morphemes in the language:[3]

(6) ABS-Root-DAT-M-ERG-T

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[3]    Within a certain degree of variation amongst dialects and social registers, verbal forms in Basque may also contain a non argumental "allocutive" marker, which refers discursively to a second person singular addressee and takes the phonetic form of a second person singular ergative or dative. Allocutive morphology in Basque shows a most curious mismatch between syntax and morphology: while having a syntax of its own (it does not appear in subordinate clauses and never cross-references a lexical NP), its morphology replicates that of 2nd person singular ergatives or datives in certain contexts (see Oyarçabal 1993 for an analysis).

(7)     Table 1: Person agreement markers.

|  | ABS | ERG | DAT |
|---|---|---|---|
| **1<sup>st</sup> sg.** | n- | -t / -da- | -t / -da- |
| **2<sup>nd</sup> sg. informal masc. / fem.** | h- | -k / -n<br>-a- / -na- | -k / -n<br>-a- / -na- |
| **3<sup>rd</sup> sg.** |  | Ø | o |
| **1<sup>st</sup> pl.** | g- | gu | gu |
| **2<sup>nd</sup> sg. formal** | z- | zu | zu |
| **2<sup>nd</sup> pl.** | z- | zu | zu |
| **3<sup>rd</sup> pl.** |  | Ø | Ø |

The empty slots in the table in (7) point to the fact that we believe that there are no lexical entries for third person absolutes in Basque.[4] Table 1 in (7) also shows how a certain amount of complexity is to be found within the paradigm of Basque second person verbal morphemes, in which oppositions regarding gender (masculine vs. feminine) and familiarity (formal vs. informal) are introduced. Gender distinctions only hold for ergative and dative second person informal markers, and not for the absolutive one. Formality, on the other hand, entails morphological plurality in Basque, and, therefore, prompts the occurrence of a plural marker (in the absolutive case); an extra plurality marker would then distinguish a true second person plural from a formal (singular) second person:

(8)   a. **H**-a-tor-Ø
        2ABS-TEMP-come-PRES
        *'You (inf.sg.) are coming'*
      b. **Z**-a-to-**Z**-Ø
        2ABS-TEMP-come-PL-PRES
        *'You (form.sg.) are coming'*
      c. **Z**-a-to-**Z**-**TE**-Ø
        2ABS-TEMP-come-PL-PL-PRES
        *'You guys are coming'*

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[4]   We share here Laka's (1993a) insight in this respect. As will become apparent on following sections, this assumption is crucial for our analyses both on Ergative Displacement and on Prefixal Epenthesis. Moreover, the table in (7) also shows that absolutives are prefixes, while the remaining person markers are suffixal.

The data in (8) also illustrate how person and number features of verbal agreement nodes may split into two different morphemes in Basque. This language has no marker for singularity, so that fission of person and number will only take place in instances of plural agreement. However, this splitting is not mandatory: it is not found when ergatives or datives are first plural or formal singular second person. In all other cases (namely, in second and third true plural ergatives and datives, as well as in all plural absolutives —including formal singular second person) fission of person and number features apply. The options are summarized in Table 2 in (9) (leftmost morphemes in Table 2 are always person markers, while plural affixes, if any, appear to their right):[5]

(9)  Table 2: Split between person and number markers

|  | **Absolutive** | **Ergative** | **Dative** |
|---|---|---|---|
| **1ˢᵗ Plural** | g-...(-z-,...) | -gu | -gu |
| **2ⁿᵈ sg. Formal** | z-...(-z-,...) | -zu | -zu |
| **2ⁿᵈ Plural** | z-...(-z-,...)...-te | -zu... -e | zu...-e |
| **3ʳᵈ Plural** | Ø...(-z-,...) | Ø... -te- | Ø... -e- |

*3. "Ergative Displacement": A description and initial remarks*

The phenomenon known as "Ergative Displacement" in Basque can be briefly described as follows: "Under certain conditions, agreement with ergative DPs is

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[5]   The dots within the parentheses in the slots corresponding to the absolutive plural marker indicate that there exists a variety of allomorphs for such a morpheme in Basque (at least */-z-/, /-it-/, /-zki-/* and */-tza-/*). An argument based on plural markers will be developed in section 3 in order to argue that the "displaced ergative" behaves morphologically as true ergatives do.

It is also worth noting that despite such a splitting of features, first and second person markers display different forms for singular and plural, as shown in the examples in (i)-(ii). In (ii) the true plural marker is the morpheme (*/-it-/*) of the auxiliary *gaitu*; still, first person singular and plural absolutive markers (*/n-/* and */g-/*) differ:

(i)   Ikus-ten   **N**-a-u-Ø-Ø
      see-ASP    1SGABS-TEMP-AUX-3SGERG-PRES
      *'He sees me'*

(ii)  Ikus-ten   **G**-a-**IT**-u-Ø-Ø
      see-ASP    1PLABS-TEMP-PL-AUX-3SGERG-PRES
      *'He sees us'*

marked on the verb by means of an absolutive affix which has the same specification for person, surfacing so in the canonical position of absolutives (namely, preceding the verbal root)."

ED shows up only when the following three conditions are met in an inflected form in Basque: first, the absolutive has to be third person; second, ergative agreement must be first or second person; and third, tense has to be either past or irrealis, two morphological contexts that can be uniformly characterized as [-Pres] on independent grounds. These three conditions are illustrated in the examples in (10), (11) and (12), respectively. In example (10a) a verbal form is introduced with a 2$^{nd}$ person absolutive that blocks the displacement of the Ergative, as opposed to (10b), where the Absolutive is 3$^{rd}$ person and ED takes place:[6]

(10)  a. Gu-k     zu-Ø              ikusi  **Z**-int-u-**GU**-n
           we-ERG  you(FORM)-ABS  see  **2SGABS/FORM**-PLABS-AUX-**1PLERG**-PAST
           *'We saw you (formal)'*
       b. Gu-k   Peru-Ø  ikusi  **G**-en-u-en
                                     **1PLABS**$_{ERG}$-PLERG-AUX-PAST
       *'We saw Peru'*

In (11), as compared to (10b), we see how the ergative morpheme has to be 1$^{st}$ or 2$^{nd}$ person in order to be displaced. On the other hand, whenever both the absolutive and the ergative are 3$^{rd}$ person, a "default prefix" is inserted. Such default prefixes may be viewed as "secondary exponents" (in Noyer's 1992 terms) of tense: as can be seen in (11a-c), the default prefix takes a different phonetic form depending on the tense of the inflected verb (some evidence will be offered below that points to the fact that the prefixes at hand are not alomorphs of 3$^{rd}$ person absolutive, but morphological epentheses that lack any morphosyntactic specification of their own, apart from their prefixal nature and their being secondary exponents of tense):

(11)  a. Peru-k    Miren-Ø  ikus-i  **D**-u-**Ø**
           Peru-ERG  Miren-ABS  see-ASP  **DEF**(**3ABS**)-AUX-**PRES**
           *'Peru has seen Miren'*
       b. Peru-k   Miren-Ø  ikus-i  **Z**-u-e**N**
                                            **DEF**(**3ABS**)-AUX-**PAST**
       *'Peru saw Miren'*

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6      Glosses such as the one in (10b) —that is, ABS$_{ERG}$— are meant to represent a "displaced ergative" (a morphosyntactic ergative which is lexically realized as an absolutive, as will become clear in this and following sections).

c. Peru-k  Miren-Ø  ikus-i  ba-**L**-u-**Ø**
                          if-**DEF(3ABS)**-AUX-**IRR**
   *'If Peru had seen Miren'*

Finally, the examples in (12) show how ED takes place in either past or irrealis, but not in the present tense:

(12)   a. Gu-k     Peru-Ø  ikus-i  **D**-u-**GU**-Ø
           we-ERG  Peru-ABS  see-ASP  **DEF(3ABS)**-AUX-**1PLERG**-PRES
           *'We have seen Peru'*
      b. Gu-k   Peru-Ø  ikusi  **G**-en-u-en
                       **1PLABS**ERG-PLERG-AUX-PAST
         *'We saw Peru'*
      c. Gu-k   Peru-Ø  ikusi  ba-**G**-en-u-Ø
                         if-**1PLABS**ERG-PLERG-AUX-IRR
        *'If we had seen Peru'*

However, the phenomenon is even more complex. Notice first that ED has no syntactic consequences.[7] This is shown, for instance, in (13a, b), where ergative verbal forms with and without "displacement" both require the same ergative marker on the subject DP, and share identical binding relations:

(13)   a. Gu-**K**   **geure burua** ikusten  d-u-**GU**
          We-**ERG**  ourselves     see-ASP  DEF(3ABS)-AUX-**1PLERG**-PRES
          *'We usually see ourselves'*
      b. Gu-**K**   **geure burua** ikusi   **G**-en-u-en
          We-**ERG**  ourselves     see-ASP  **1PLABS**ERG-PLERG-AUX-PAST
          *'We saw ourselves'*

In short, what we have here is an ergative Agr node in the syntax that, at some postsyntactic stage, behaves as if it were an absolutive marker. Hence, ED provides conclusive evidence for the existence of an autonomous postsyntactic morphological component (cf. e.g. Halle & Marantz 1993, 1994).

In order to capture such a mismatch between syntax and morpho(phono)logy, recent Distributed Morphology-oriented analyses on the topic (Bonet 1991, Albizu 1995, Eguren 1995) have claimed in different ways that "Ergative Displacement" results from the application, at the postsyntactic level of Morphological Structure (MS) in Basque, of a series of either readjustment or impoverishment rules, that

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7    Syntax-oriented analyses in which ED was considered to be either some kind of antipassive construction or an instance of split ergativity are convincingly discussed, and rejected, in Laka (1993a) and Gómez and Sainz (1995).

change the morphosyntactic feature matrix of the ergative agreement node, and make it equal to that of the absolutive. An absolutive lexical entry with the same specification for person would then be inserted under such a manipulated $M^0$.

These proposals turn out to be inappropriate, we believe, on both theoretical and empirical grounds: first, they just develop a set of descriptive rules; and second, they wrongly predict that "displaced" ergatives behave morphologically as absolutives do.[8] Three different empirical arguments come in support of our claim that ("displaced") ergatives are not absolutives morphologically. Consider first the auxiliary alternation displayed in Basque by unaccusative verbs (always followed by the auxiliary *izan* 'to be') and transitive verbs (always accompanied by the auxiliary *\*edun* 'to have').[9] The contrast is shown in examples (14) and (15a). As can be seen, the selection of the auxiliary in this language is determined morphologically by the presence or absence of an ergative morphosyntactic specification on the verb.[10] If so, the use of the transitive auxiliary *\*edun* 'to have' with the "displaced" ergative in (15b) clearly points to its ergative nature:

(14)   Ni-Ø   berandu etor-tzen   **N**-a-**IZ**-Ø
       I-ABS   late        come-ASP **1SGABS**-TEMP-**IZAN**-PRES
       *'I usually come late'*

(15)   a. Gu-k    Peru-Ø    ikus-i   d-**U**-**GU**-Ø
          We-ERG  Peru-ABS  see-ASP  DEF(3ABS))-**\*EDUN**-**1PLERG**-PRES
          *'We have seen Peru'*

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b. Gu-k   Peru-Ø  ikus-i  **G**-en-**U**-en
  **1PLABS**<sub>ERG</sub>-PL-*****EDUN**-PAST
  *'We saw Peru'*

We come to the same conclusion if allomorphy of plural markers in Basque is taken into consideration. Let's look for instance at (16a-b), where independent person and plural markers can be isolated. In these two examples, both the absolutive and the ergative first person plural affixes take the same phonetic form */g-/*, namely the absolutive realization, but yet the plural markers associated to them differ —whereas in (16b), it is the affix **-EN-** that shows up with the "displaced" ergative, in (16a), it is the canonical plural allomorph **-IT-** that accompanies the absolutive:

(16)   a. Peru-k   gu-Ø     ikus-i   **G**-in**T**-u-Ø-en
     Peru-ERG we-ABS see-ASP  **1PLABS-PLABS**-AUX-3SGERG-PAST
     *'Peru saw us'*
   b. Gu-k    Peru-Ø   ikus-i   **G-EN**-u-en
     we-ERG Peru-ABS  see-ASP **1PLABS**<sub>ERG</sub>-PLERG-AUX-PAST
     *'We saw Peru'*

Still, the most conclusive evidence against an Impoverishment Rule approach, in which the ergative is changed into an absolutive, is the existence of instances of multiple ergative exponence in certain varieties of Basque, as illustrated in (17), where the ergative morpheme is discharged twice, once as an absolutive prefix, once as an ergative suffix:

(17)   Telebista-Ø   logelan      **G**-en-euka-**GU**-n
    television-ABS bedroom.the.in **1PLABS**<sub>ERG</sub>-PLERG-have-**1PLERG**-PAST
    *'We had our TV in the bedroom'*

Therefore, in the light of the data presented so far, we will hold the idea that "displaced" ergatives are true ergatives both syntactically and morphologically, and will explore henceforth a different alternative that locates the phenomenon of "Ergative Displacement" exclusively at the (late) stage of lexical insertion.

But before turning to that, let us first try to identify the underlying morphological motivation that triggers the application of "Ergative Displacement" in Basque. Such property becomes apparent if we put together three phenomena presented already. These are, first, the linear location of 1st and 2nd person absolutives (cf. (18a)); second, "displaced" ergatives (cf. (18b)); and third, the insertion of default material in pre-root position (cf. (18c)):

(18)    a. ikus-i    **N**-a-u-Ø-Ø
           see-ASP    **1SGABS**-TEMP-AUX-3ERG-PRES
           *'He has seen me'*
        b. ikus-i    **N**-u-en
           see-ASP **1SGABS**<sub>ERG</sub>-AUX-PAST
           *'I saw it'*
        c. ikus-i    **D**-u-t-Ø
           see-ASP **DEF**-AUX-1SGERG-PRES
           *'I have seen it'*

These three morphological processes have a complementary distribution in the language, thus conspiring to keep the pre-root position lexically realized in inflected forms: that is, a first or second absolutive is inserted if there is a first or second absolutive argument, whereas, whenever the absolutive is a third person, either ED takes place or a default prefix is inserted.

Following Noyer's (1992) analysis for Discontinous Bleeding in classical Arabic, we interpret these facts as evidence for the existence of a prefixal "position of exponence" in Basque inflected verbal forms, which has to be obligatorily filled by some prefixal lexical material.[11]

In order to strengthen this standpoint, let us consider an independent syntactic construction in which the default prefixal marker is obligatorily attached to the verb in spite of the fact that arguably no morphosyntactic absolutive feature is present. The case is illustrated in (19a-b). These sentences contain an instance of a class of verbs (*begiratu* 'to look', *eutsi* 'to hold', etc.) which are lexically marked as assigning dative Case to their Theme argument. Accordingly, agreement with the two verbal arguments is marked on the verb by means of ergative and dative affixes; since in these cases there is no absolutive agreement node, then the insertion of the default prefix (in a [+pres] context) or ED (in a [-pres] context) becomes mandatory:

(19)    a. Miren-i    begietara    begira-tu    **D**-i-**O**-**T**
           Miren-DAT eyes.the.to  look-ASP   **DEF**-PREDAT/AUX-**3SGDAT**-**1SGERG**
           *'I have looked at Miren's eyes'*

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[11]    In its strictest interpretation, which is the one we adopt here, by "position of exponence" a morphological position of obligatory realization is designated which is provided by some autonomous postsyntactic morphological structure. Besides their obligatory realization, positions of exponence are also typically characterized by being filled up by an heterogeneous group of affixes, and by always having an explicit default realization as well (see Noyer 1992). Crucially, these three attributes hold true for Basque: the language has default prefixes, namely /d-, z-, l-/ in (11); the pre-root position contains ergative as well as absolutive features; and finally, the complementarity in the insertion of all these affixes guarantees that the prefixal position is lexically realized across the board.

  b. Miren-i begietara  begira-tu  **N**-i-**O**-n
                                    **1SGABS**ERG-PREDAT/AUX-**3SGDAT**-PAST
  *'I looked at Miren's eyes'*

Recapitulating so far, we have arrived at two different generalizations as regards to Ergative Displacement in Basque: first, ED must be located at the very late stage of lexical insertion (it is neither a syntactic phenomenon, nor the result of postsyntactic morphological rules turning an ergative into an absolutive); and second, there exists a prefixal "position of exponence" in Basque inflected verbs which has to be mandatorily filled up by a lexical item. If these assumptions are on the right track, the ultimate reason both for ED and for the insertion of "default prefixes" would be the fact that this prefixal "position of exponence" has to be obligatorily filled (as a morphological well-formedness condition within the autonomous post-syntactic Morphological Structure of the language).[12] We will work out these ideas in section 5, but let us first briefly review our basic theoretical assumptions in the next section.

### 4. Theoretical background and lexical insertion

First of all, we will adopt a general model of grammar as the one depicted in (20), in which a postsyntactic Morphological Structure (MS) connects syntax with PF (e.g. Halle & Marantz 1993, Noyer 1992). MS is so advocated to be (partially) autonomous from both syntax and phonology, having its own primitives and principles:[13]

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[12]  Related ideas can be found in Ortiz de Urbina (1989), Laka (1993a) and Gómez and Sainz (1995).

[13]  It is just the kind of facts we are discussing in this paper —the existence of a strictly morphological prefixal "position of exponence" and the insertion of epenthetical prefixes— which call for the existence of an autonomous MS.

(20)

Lexicon

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Syntax

Morphological Structure (MS)

Phonetic Form (PF)                    Logical Form (LF)
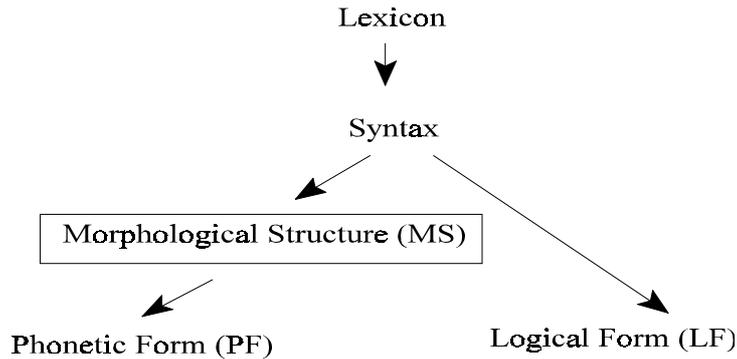
As for our theoretical framework, we will assume the basic tenets of Optimality Theory (e.g. Prince and Smolensky 1993, McCarthy & Prince 1994, Archangeli &.Langendoen 1997), amongst them:[14]

    a. Universality. Constraints are independently motivated and (mostly) universal.

    b. Ranking. Individual grammars are obtained by the imposition of a specific strict dominance order on constraints.

    c. Violability. Constraints may all be violated in principle. The winning candidate, namely the final output, does not have to be violation-free, but the one that best satisfies the constraint hierarchy, that is, the one that violates constraints which are ranked the lowest in the constraint hierarchy.

    d. Parallelism. Well-formedness constraints select among some candidate set of forms, which are evaluated in parallel. Consequently, there will be no rules nor serial derivations.
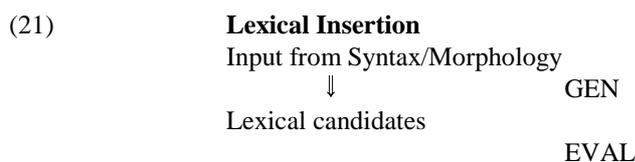
In particular, we will approach ED and prefixal epenthesis in Basque within the sub-theory of OT known as Correspondence Theory (McCarthy and Prince 1994, 1995). Correspondence Theory extends the set of constraints that regulate the relations between base and reduplicant in reduplication phenomena to the relation that holds between phonological inputs and outputs. Along these lines, the same correspondence constraints will be claimed to apply in the mapping from syntax/morphology to lexical insertion.

In section 3, we have tried to show that both ED and the insertion of prefixal epentheses in Basque inflected verbal forms must be located at the very late stage

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[14]    For an introduction to OT-approaches to morphology, see Russell (1997).

of lexical insertion within the MS of the language. In the spirit of Noyer (1993), the model of (late) lexical insertion we have in mind is represented in (21):

(21)             **Lexical Insertion**
                 Input from Syntax/Morphology
                            ⇓                      GEN
                 Lexical candidates
                                            EVAL


In (21), the syntax/morphology provides the input —a set of hierarchical feature matrices. The operation GEN —an array of inviolable grammatical principles— will then generate the set of lexical candidates that will be filtered out by the Evaluation procedure —a hierarchy of violable universal and/or language-particular constraints, so that the proper lexical entry is inserted under a particular $M^0$. Let us now develop in detail the model of lexical insertion we have in mind will be developed.

We will first assume the idea that terminal nodes (or morphemes) are complexes of semantic and morphosyntactic features, but lack phonological features. Terminal nodes are organized into hierarchical structures in the syntax, and therefore the formation of inflected words is partially determined by the principles and operations of the syntactic component. In this respect, we will postulate that the Agr terminal nodes in Basque (absolute and ergative) consist of hierarchical structures of morphosyntactic features such as those represented in (22):

(22)     i.    AGR  (Abs)            ii.    AGR     (Erg)
                                                |

                                             ERG


We will also assume that the supply of phonological features is achieved by "late" insertion of vocabulary items into the morpheme nodes (see for instance Halle & Marantz 1993, 1994). In (23) the vocabulary entries in Basque that might compete for insertion under the nodes in (22) are listed. In (24) the morphological characterization we assign to the default prefixes is added:

(23)   Lexical entries for Absolutive and Ergative person markers:

  i. Absolutive:

  | [+1] | ➔ | /n-/ |
  |---|---|---|
  | [+2, -Formal] | ➔ | /h-/ |
  | [+1] | ➔ | /g-/  in env. ___ [Pl] |
  | [+2] | ➔ | /z-/ |

  ii. Ergative:

  | [+1, ERG] | ➔ | /-t, -da-/ |
  |---|---|---|
  | [+2, ERG, -formal, +masculine] | ➔ | /-k, -a-/ |
  | [+2, ERG, -formal] | ➔ | /-n, -na-/ |
  | [+1, Pl, ERG] | ➔ | /gu/ |
  | [+2, Pl, ERG] | ➔ | /zu/ |
  | [+3, ERG] | ➔ | /Ø/ |

(24)   Lexical entries for default prefixes:

  | ➔ | /d-/ | in env. ___ +...+ [+Pres] |
  |---|---|---|
  | ➔ | /z-/ | in env. ___ +...+ [-Pres, +Past] |
  | ➔ | /l-/ | in env. ___ +...+ [-Pres, -Past] |

Three facts are specially relevant for our purposes in the list in (23)-(24). First, this characterization of Vocabulary items parallels to some extent that of terminal nodes in (22), insofar as, for instance, Abs person markers are also less specified than Erg person vocabulary items: the former lack the feature [ERG], the latter have. A second point that has to be stressed as regards the list in (23)-(24) is that we are assuming that Basque has no vocabulary entry for $3^{rd}$ person absolutives (see sections 2 and 3). And third, as the lexical entries in (24) show, we believe that default prefixes are not just phonetic epentheses; on our view, these default prefixes are lexical entries which are 'morphologically' characterized as being prefixes and as being conditioned by tense, although they do not discharge any $M^0$.

We will finally assume that the insertion of vocabulary items, that is the relation between morphosyntactic input (morphological nodes) and lexical outputs (phonological forms), is regulated at least by the following violable Correspondence constraints, which tend to ensure the identity between input and output (cf. McCarthy & Prince 1995):[15]

  a. MAX — "No deletion"
     Every element of $S_1$ has a correspondent in $S_2$.
  b. DEP — "No epenthesis"
     Every element of $S_2$ has a correspondent in $S_1$.

---

[15]   In addition, a set of Generalized Alignment constraints (cf. McCarthy & Prince 1993, 1994) will properly linearize the affixes with respect to the base and to each other, that is, will ensure for instance that prefixes and suffixes surface as such.

   c. UNIFORMITY — "No Coalescence"
   No element of $S_2$ has multiple correspondents in $S_1$.
   d. INTEGRITY — "No Breaking"
   No element of $S_1$ has multiple correspondents in $S_2$.

## 5. Proposal

Our basic insight on ED in Basque is the following: instances of ED are just cases in which a PARSE(FEATURE) constraint is violated, so that an [ERG] feature on Ergative morphosyntactic nodes is underspecified, therefore allowing for the insertion of an absolutive prefix instead of a more specified ergative suffix. This may be so just in order to avoid a violation of a higher condition in the ranking of constraints, namely, the fact that a prefixal position of exponence has to be obligatorily filled in Basque inflected verbs. As for default prefixes in Basque verbal forms, we believe they are inserted —whenever they are— for the very same reason also: the prefixal position of exponence has to be lexically filled.[16]

In our view, ED follows basically from the interaction of two different constraints —PARSE(FEATURE) and OBLIGATORY PREFIX— at the point in which (late) lexical insertion takes place. The first one is a universal constraint that belongs to the MAX family of Correspondence constraints (see section 4), that is, those constraints which ensure that every element in the input has a correspondent in the output:

    1. **PARSE(F):** *Every feature in the morphosyntactic input has a correspondent in the lexical output.*

The second constraint is language-specific and imposes the obligatory lexical realization of a prefixal "position of exponence" in Basque (see Noyer 1992, and section 3):[17]

    2. **OBPREF:** *Basque finite verbal forms must have a prefix.*

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[16]   The leading idea will then be that a less penalized constraint (either PARSE(F) or an "Avoid Epenthesis Condition") is violated in Basque inflected verbal forms in order to prevent a violation of a more penalized constraint ("Fill the Prefixal Position of Exponence"). Remember also that the prefixal position of exponence can be filled by three kinds of verbal prefixes in Basque: first or second absolutives, "displaced" ergatives, and default prefixes. As mentioned in section 3, these three types of prefixes show a complementary distribution in Basque inflected verbs: it will become apparent below how this complementarity follows from a specific hierarchy of constraints in Standard Basque.

[17]   Such a constraint might be viewed as a morphologization of an ancient phonetic and/or syntactic constraint that blocked sentence-initial verbal roots in proto-Basque (see Gómez and Sainz 1995).

The two constraints are hierarchically ordered in Basque as shown in (25):

(25)    Standard Basque: **OBPREF >> PARSE(F)**

Such a hierarchy accounts for much of the data we have been discussing in this paper as regards ED in Standard Basque. Take for instance (26) below, where the input from the syntax is the verb *eraman* 'to bring' which has an Absolutive agreement node specified as 2nd person singular informal, an Ergative agreement node defined as 1st person singular and a past tense node. (Recall from section 3 that the presence of a 1st or 2nd person absolutive blocks the application of ED):

(26)    Input from Syntax: **Root-2sgAbs(informal)-1sgErg-Past**

| *2sgAbs(formal)-1sgErg-Past* | OBPREF | PARSE(F) |
|---|---|---|
| ☞ a. **H**-inderama-**DA**-n <br> [2,-formal]-Root-[1Erg]-[Past] | | |
| b. **N**(e)-**H**-inderama-n <br> [1]-[2,-formal]-Root-[Past] | | *! |

For the sake of simplicity, just two candidates are considered in (26): *hinderamadan* 'I was bringing you (informal)' and *n(e)hinderaman*. Both candidates fulfill the OBPREF constraint, but the one in (26b), in which ED has taken place, violates PARSE(F). The winning candidate in Basque is *hinderamadan* in (26a), which violates none of the well-formedness conditions in the tableau. Accordingly, the ranking of constraints we are proposing in (25) will correctly account for the blocking effect of 1st and 2nd person absolutive affixes on the application of ED, that is, ED would always be "more expensive" than just inserting a 1st or 2nd person absolutive lexical entry.[18]

Let us consider now the tableau in (27). As opposed to (26), the input from the syntax provides now a 3rd person absolutive morpheme, that is, the proper morphological environment for ED to take place in Standard Basque (see section 3.):

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[18]    Any other alternative would be more expensive. For instance, the insertion of an extra prefixal epenthesis (**Z-**) would violate DEP. See below.

(27)    Input from Syntax: **Root-3sgAbs-1sgErg-Past**

| *3sgAbs-1sgErg-Past* | OBPREF | PARSE(F) |
|---|---|---|
| ☞  a. **N**-erama-n<br>[1]-Root-[Past] |  | * |
| b. erama-**DA**-n<br>Root-[1Erg]-[Past] | *! |  |

Two candidates are included in the tableau above by now. The competition is that between *neraman* ' I was bringing it' in (27a) and *eramadan* in (27b). In the latter, the lexical entry */da/* is inserted into the ergative node, fulfilling PARSE(F). Yet, the prefixal "position of exponence" is empty, so violating the OBPREF condition. Compare this to the evaluation of the winning *neraman*. In this case, it is the lowest ranked PARSE(F) that is violated, since an absolutive prefix has been inserted under the Ergative morphosyntactic node and the [ERG] feature has been underspecified; however, the higher OBPREF constraint is crucially satisfied, therefore determining its selection as the optimal output.

In (27), our view on ED is clearly illustrated: ED is just a violation of the lower ranked PARSE(F) constraint in order to prevent a violation of the higher ranked OBPREF condition. Notice that, for this idea to work, it has to be crucially assumed that there is no lexical entry for 3rd person absolutives in Basque (see sections 2 and 4). Were this not the case, the insertion of a (phonetically empty, but morphologically active) 3rd person absolutive lexical item under a 3rd person absolutive morphosyntactic node would violate no constraint, as it is the case with 1st or 2nd absolutives in (26), and, contrary to the facts, that outcome would always be preferred to any other alternative (either ED or default epenthesis). [19]

But in (27) two potential candidates generated by GEN have been intentionally ignored; and this has been so because their exclusion requires the addition of two new Correspondence constraints to the hierarchy. The two additional well-formedness conditions are DEP ("Avoid epenthesis") and INTEGRITY (see section 4). These two fairly natural constraints point to the fact that both the insertion of epenthetical lexical material (and $X^0$ with no $M^0$) and the duplication of morpheme

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[19]    Some other potential candidates in (27) like **DA-**erama-n ([1Erg]-Root-[Past]), in which a suffix has filled the prefixal position of exponence would be ruled out by specific Alignment constraints that would dominate PARSE(F) in the ranking. On the other hand, notice that the non-existence of a 3rd person absolutive lexical entry also violates PARSE(F) —the 3rd person of the Absolutive morphosyntactic node is not parsed. This might be handled by means of the joint effects of a Recoverability condition on deletion (see Bonet 1991) and some kind of an Economy constraint ("The fewer affixes, the better" (cf. Noyer 1993)). We will not go into the details of this insight here.

realizations (two $X^0$s for the one $M^0$) are marked phenomena, which have to be motivated in order to happen. The constraints might be formulated as follows for the correlations between morphosyntactic inputs and lexical outputs:

3. **DEP**: *Every Vocabulary Item must correspond to a morphosyntactic node.*

4. **INTEGRITY**: *No morphosyntactic node corresponds to more than one lexical entry.*

Such two constraints rank between OBPREF and PARSE(F) in Standard Basque, with INTEGRITY dominating DEP. (The motivation for this latter ranking will become clear below when dealing with present forms.)

(28)    Standard Basque: **OBPREF >> INTEGRITY >> DEP >> PARSE(F)**

Consider now the tableau in (29). The input from the syntax is the same as in (27), but two new candidates are taken now into consideration. These two are *neramadan* in (29c), where the ergative morpheme is discharged twice as */n-/* and */da/*, and *zeramadan* in (29d), with insertion of the default prefix */z-/*:

(29)    Input from Syntax: **Root-3sgAbs-1sgErg-Past**

| *3sgAbs-1sgErg-Past* | OBPREF | INTEGRITY | DEP | PARSE(F) |
|---|---|---|---|---|
| ☞  a. **N**-erama-n<br>[1]-Root-[Past] | | | | * |
| b. erama-**DA**-n<br>Root-[1Erg]-[Past] | *! | | | |
| c. **N**-erama-**DA**-n<br>[1]-Root-[1Erg]-[Past] | | *! | | |
| d. **Z**-erama-**DA**-n<br>def-Root-[1Erg]-[Past] | | | *! | |

The first two candidates both satisfy DEP and INTEGRITY, so the addition of such constraints will make no difference with respect to the results in (27). Take now the form *neramada*n in (29c). This form will exhibit a violation of INTEGRITY because of the double lexical insertion into the Ergative node. As for *zeramadan* in (29d), the insertion of the default prefix violates the higher DEP constraint. Accordingly, the candidate *neraman* in (29a), which only fails to satisfy the lowest constraint of PARSE(F) will be chosen as the optimal output.

Let us next offer an account for the non application of ED with 3$^{rd}$ person ergatives (not even in those cases in which all other conditions are met, that is, whenever Abs is 3$^{rd}$ person and tense in [-Pres]):

(30)   Input from Syntax: **Root-3sgAbs-3sgErg-Past**

| *3sgAbs-3sgErg-Past* | OBPREF | INTEGRITY | DEP | PARSE(F) |
|---|---|---|---|---|
| a. erama-**Ø**-n<br>Root-[3Erg]-[Past] | *! | | | |
| ☞ b. **Z**-erama-**Ø**-n<br>Def-Root-[3Erg]-[Past] | | | * | |

Unlike with 1$^{st}$ and 2$^{nd}$ person ergatives, OBPREF may not be satisfied through the underspecification of the [ERG] feature in this case, just because of the absence of a lexical entry for 3$^{rd}$ person absolutives in Basque. The position of exponence may then be left empty, as in *eraman* in (30a), in clear violation of the OBPREF constraint, or may be filled by an epenthetic prefix, as in *zeraman* in (30b). The higher ranking of OBPREF relative to DEP correctly determines the choice of the latter as the optimal output.

Still, we have not explained the present forms pattern yet. Unlike [-Pres] (past and irrealis) forms, [+Pres] inflected verbs do not undergo ED, but insert a default prefix in pre-root position instead (see section 3). As it stands, the ranking in (28) predicts no asymmetry between [+Pres] and [-Pres] forms, so favoring the application of ED across the board. Such a puzzle might be solved in a straightforward manner by assuming that, in the case of present verbal forms, an additional *HOMOPHONY constraint is playing an active role in the evaluation of the morphological outputs:[20]

5. **\*HOMOPHONY**: *Avoid homophony.*

The relevance of such a constraint for present forms in Basque appears to be well-founded on the basis of at least two different instances of *HOMOPHONY that would arise had ED taken place in the context of a present tense. These are shown in (31) and (32). The examples in (31a)-(32a) reproduce the actual output in Standard Basque, with the insertion of the epenthetic prefix */d-/*; the examples in (31b-c) and (32b-c), on the other hand, illustrate the pairs of homophonic forms that would have been created by the application of ED. In (31), there arises a conflict

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[20]   *HOMOPHONY belongs to a family of global surface Correspondence constraints that would handle the fact that languages tend to show a one-to-one correspondence between sound patterns and meanings ("One Form, One Function". See Russell 1997.)

between two homophonic present forms (verbs with 3$^{rd}$ person absolutive and 1$^{st}$ or 2$^{nd}$ person ergative, on the one hand, and forms with 1$^{st}$ or 2$^{nd}$ person absolutive and 3$^{rd}$ person ergative, on the other); in (32), the identity is between present and irrealis tense forms.

(31)    a. **D**-arama-**T**         b. **N**-arama-**Ø**          c. \***N**-arama
            **DEF**-bring-**1SGERG**      **1SGABS**-bring-**3SGERG**        **1SGABS**$_{ERG}$ -bring
            *'I am bringing it'*      *'He is bringing me'*         *'I am bringing it'*

(32)    a. **D**-u-**T**            b. ba-**N**-u-**Ø**            c. \***N**-u-**Ø**
            **DEF**-have-**1SGERG**      if-**1SGERG**-have-**IRR**         **1SGERG**-have-**PRES**
            *'I have it'*             *'If I had it'*               *'I have it'*

On the basis of these data, we will assume that an \*HOMOPHONY condition is relevant for the evaluation of present forms in Basque. This constraint will rank between OBPREF and INTEGRITY:

(33)    Standard Basque:
        **OBPREF >> \*HOMOPH >> INTEGRITY >> DEP >> PARSE(F)**

The Evaluation procedure for the selection of the optimal output for present forms is represented in tableau (34):

(34)    Input from Syntax: **Root-3sgAbs-1sgErg-Pres**

| *3sgAbs-1sgErg-Pres* | OBPREF | \*HOMOPH | INTEGRITY | DEP | PARSE(F) |
|---|---|---|---|---|---|
| a. **N**-arama-**Ø** <br> [1]-Root-[Pres] | | \*! | | | \* |
| b. **N**-arama-**T**-**Ø** <br> [1]-Root-[1Erg]-[Pres] | | | \*! | | |
| c. arama-**T**-**Ø** <br> Root-[1Erg]-[Pres] | \*! | | | | |
| ☞ d. **D**-arama-**T**-**Ø** <br> Def-Root-[1Erg]-[Pres] | | | | \* | |

In the tableau in (34) only the four relevant candidates are evaluated. In (34a), the candidate *narama*, which shows ED, is highly penalized because of its violating \*HOMOPHONY, as just argued; in its turn, the form *aramat* in (34c) is filtered out, as it violates OBPREF. The competition between the two remaining candidates

*naramat* in (34b) (in which the ergative has been discharged twice) and *daramat* in (34d) (in which a default prefix has been inserted) is determined in favor of the latter, as INTEGRITY is crucially ordered higher than DEP in the constraint hierarchy of Standard Basque.


## 6. Conclusion[21]

In this paper, we have argued for an Optimality-theoretic account of so called "Ergative Displacement" in Basque, which might have relevant implications for both verbal inflectional morphology of Basque and general morphological theory. For Basque, we have established, first, that ED is confined to the mapping between Morphology and PF —namely, to the process of Vocabulary Insertion, and second, that there exists a prefixal "position of exponence" within Basque verbal inflected forms whose obligatory lexical realization motivates either the application of ED or the insertion of "default prefixes". As to the general theory of morphology, in this paper we have tried to shown the superiority of a constraint-based approach to ED over a rule-based analysis. In addition, our proposal strongly supports both late lexical insertion and the existence of an autonomous post-syntactic morphological component.

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[21] In work in progress we are going through an more in-depth analysis of ED and prefixal epenthesis, considering cases in which it might be argued that no prefix shows up in Basque, namely auxiliaries of unaccusative verbs in the present tense with a $3^{rd}$ person absolutive node and a dative morpheme ("zait"), and imperative auxiliaries with a $3^{rd}$ person absolutive morphosyntactic node and a $2^{nd}$ person ergative ("ezazu"). We are also dealing with some problematic dialectal variants (e.g. Biscayan forms with no prefix) and are trying to give an account for the absence of potential cases of "Dative Displacement". Dialectal and acquisition data, as well as the phenomenon known as "Allocutive Displacement" in some dialects, are also being addressed.

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