A Principled Order to Postsyntactic Operations[*]

Karlos Arregi and Andrew Nevins

University of Illinois at Urbana-Champaign and Harvard University

Abstract

We discuss the relative order of the operations of cliticization, dissimilation, Linearization, Vocabulary Insertion, and morphological metathesis. We demonstrate a number of crucially ordered feeding and bleeding relations—in some cases leading to opacity—among morphological operations responsible for word-formation in the Basque auxiliary complex. The results argue for a multistratal derivational theory of inflectional word formation, in which separate modules have their own well-formedness principles and repair operations, sometimes in patent contradiction to the needs of one another. Their sequenced interaction is governed by a principled division between operations sensitive to hierarchical versus linear order.

1. Overview

Distributed Morphology is a modular theory where so-called morphological operations are distributed between syntax and a postsyntactic (post-Spellout) component, *Morphological Structure* (MS) (see Halle and Marantz (1993), Harley and Noyer (2003), Embick and Noyer (2007) for overviews). MS is itself in turn modular: operations at MS can apply before or after *Vocabulary Insertion* (VI), which provides abstract terminal nodes with phonological exponents. Spellout and Vocabulary thus define three kinds of operations, depending on their position in the derivation, as schematized below:

(1)   OP1 → Spellout → OP2 → Vocabulary Insertion → OP3

OP1 is a set of syntactic operations (Merge, Move, Agree), constrained by syntactic principles. OP2 is a set of postsyntactic operations that apply prior to Vocabulary Insertion, and are thus not sensitive to phonological properties of morphemes. OP3 is a set of postsyntactic operations that apply after Vocabulary Insertion, and hence are sensitive to phonological properties. This division of labor in DM is explored by Embick and Noyer 2001, who argue for this partitioning of operations within the realm of morpheme movement operations. Their framework makes predictions about derivational ordering, specifically that OP1 precedes OP2, which in turn precedes OP3.

In the present paper, we would like to advance the proposal that word-internal *Linearization* is a separate point in the postsyntactic derivation. Specifically, Linearization and Vocabulary Insertion

```
┌─────────────────────────────┐
│           SYNTAX            │
│         Merge & Move        │
│            Agree            │
│         Cliticization       │
│     Absolutive Promotion    │
└─────────────────────────────┘
              ↓
         ┌──────────┐
         │ SPELLOUT │
         └──────────┘
              ↓
┌──────────────────────────────────────┐
│             MORPHOLOGY               │
│   ┌──────────────────────────────┐   │
│   │    Feature/node deletion     │   │
│   │      2/1-Dissimilation       │   │
│   └──────────────────────────────┘   │
│                 ↓                    │
│   ┌──────────────────────────────┐   │
│   │      ┌──────────────┐        │   │
│   │      │ LINEARIZATION │←┐     │   │
│   │      └──────────────┘  │     │   │
│   │             ↓          │     │   │
│   │  ┌────────────────────┐│     │   │
│   │  │ VOCABULARY INSERTION││     │   │
│   │  └────────────────────┘│     │   │
│   │             ↓          │     │   │
│   │   ┌──────────────────┐ │     │   │
│   │   │ Linear operations │─┘     │   │
│   │   │ Enclitic Metathesis│      │   │
│   │   └──────────────────┘       │   │
│   └──────────────────────────────┘   │
└──────────────────────────────────────┘
```
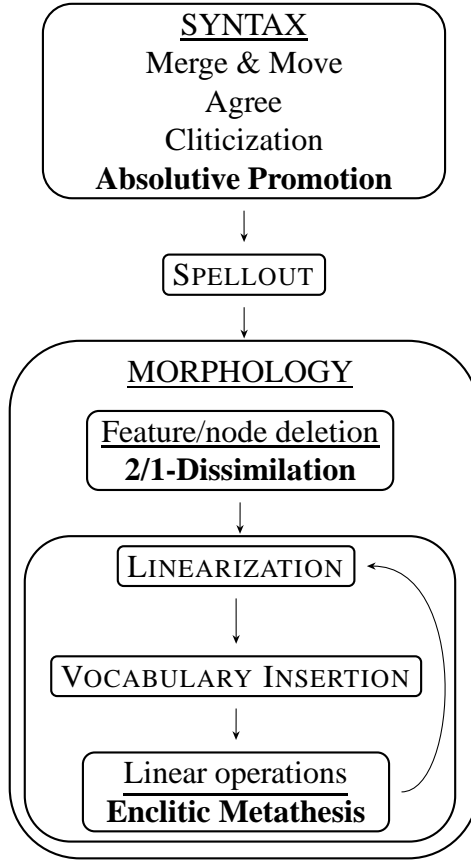
Figure 1: Order of operations

apply in that order as part of a word-internal cycle, and provide the abstract nodes in the structure with precedence relations and phonological exponence, respectively. Therefore, Linearization is another point with respect to which operations can be ordered. Rule application in this post-syntactic cycle will be explained in more detail in section 2 below. The resulting framework is schematized in the diagram in figure 1.

Our empirical focus in this paper is on three operations in Bizkaian Basque that affect the realization and placement of pronominal clitics. *Absolutive Promotion* applies before Spellout and is thus subject to syntactic principles. As a result of this operation, the absolutive clitic in some Basque dialects moves to a position higher than usual, cliticizing to C^0 rather than T^0. Among postsyntactic operations, we concentrate on two that apply in two separate modules of morphology. First, *2/1-Dissimilation* applies before Linearization and Vocabulary Insertion. 2/1-Dissimilation (called the *g/z-Constraint* in our earlier work) is a cover term for a number of impoverishment/obliteration rules affecting combinations of first plural with second person clitics, independently of their surface order and phonological realization. Finally, operations affecting linearized morphemes occur after Linearization. Among these, we concentrate on *Enclitic Metathesis*, which linearly displaces an ergative (and sometimes an absolutive) enclitic to proclitic position. This operation, we argue, applies as part of the module that includes Linearization and Vocabulary Insertion. Due to the cyclic nature of this module, Enclitic Metathesis applies after certain terminal

2

nodes have been provided with exponence and have been linearized, but before other instances of Vocabulary Insertion that occur in later cycles.

This sensitivity-to-structure-based modularization allows for a principled ordering of operations, as properties of a rule determine its position in the derivation. Specifically, for the clitic operations described above, the relative ordering with respect to syntax and linearization yields a transitive ordering:

(2)   *Predicted order of operations*
        Absolutive Promotion > 2/1-Dissimilation > Enclitic Metathesis

The structure of this paper is as follows. In section 2 we provide the requisite background on Basque finite auxiliaries that paves the way for the rest of the paper. The following sections introduce the three main operations discussed here in turn: the syntactic phenomenon of Absolutive Promotion (section 3); 2/1-Dissimilation, a postsyntactic operation on feature-cooccurrence (section 4); and Enclitic Metathesis, which is due to a word-internal morphotactic requirement on T (section 5). These three phenomena come together when we discuss the sequenced interaction of the operations in section 6. Section 7 provides the conclusion for the paper.

2.   The structure of Basque finite auxiliaries

Basque is a language in which external arguments of transitive verbs are marked with the ergative case. Finite sentences in Basque typically contain an analytic verbal complex, with a participle inflected for aspect, and an auxiliary containing tense/agreement, pronominal clitics, and other inflectional affixes. The following are illustrative examples from the Bizkaian dialect of Ondarru (clitics are glossed as ABS, ERG and DAT in all examples):[1]
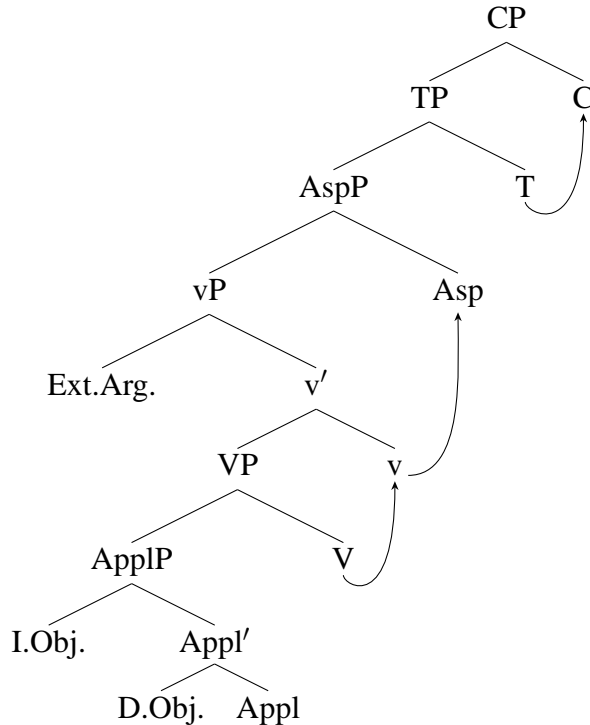
(3)   a.   Lau aste eo-n   **n**   -as gaixoik.
           four week be-PRF **ABS.1SG** -PRS sick
           'I've been sick for four weeks.'   (Ondarru)
      b.   Su-k   ni-∅ ikus-ten **n**   -a   **-su**.
           you.SG-E me-A see-IMP **ABS.1SG** -PRS **-ERG.2SG**
           'You(SG) see me.'   (Ondarru)
      c.   Es d -o **-tz**   **-t**   emo-n.   (d-o-tz-t > dotzat)
           not L -PRS **-DAT.3SG** **-ERG.1SG** give-PRF
           'I haven't given it to him.'   (Ondarru)

The external argument of a transitive verb is ergative, and the object absolutive. On the other hand, unaccusative sentences always contain an absolutive argument, and no ergative argument. Both absolutive and ergative arguments trigger the presence of clitics in the auxiliary complex, as well as datives.

---

[1]Other abbreviations used in this paper are: A (absolutive), C (comitative), D (dative), E (ergative), IMP (imperfective), L (epenthetic prefix; see section 5), PL (plural), PRF (perfective), PRS (present), N (see comments below (9)), PST (past), REL (relative clause marker), and SG (singular).

We assume the basic clause structure depicted in (4) below. Basque ergative case is an inherent case assigned by transitive v to its specifier (Woolford 2006, Holguín 2007).[2] We also assume that dative case is inherent, and assigned by $Appl^0$ to its specifier.[3] Absolutive case is the default case in Basque, and does not require case assignment of any sort. As Basque is not a split ergative language along tense or aspectual lines, the mechanisms outlined above hold regardless of the tense or aspect of the clause.

(4)   *Basic syntax of Basque sentences*

```
                              CP
                            /    \
                          TP       C
                        /    \     ↑
                     AspP      T __|
                    /    \
                  vP      Asp
                 /  \       ↑
           Ext.Arg.  v'  ___|
                   /   \
                  VP    v
                 /  \    ↑
             ApplP  V ___|
            /    \
        I.Obj.   Appl'
               /     \
           D.Obj.   Appl
```

On the basis of the morphology of the participle and the auxiliary, one can conclude that the verbal root forms a complex head with Asp, and that, separately, the auxiliary root forms a complex head with C.[4] The verbal forms in finite sentences are derived from the structure in (4) as follows (Laka 1990). The participle is formed by movement of V to v, and of the resulting V-v complex to Asp. This accounts for the appearance of an aspectual suffix on the main verb (e.g. *eo-n* in (3a)). We identify the root of the auxiliary with T, following Arregi and Nevins 2008. In addition to T, there are morphemes in the auxiliary word cross-referencing absolutive, ergative and dative arguments in the clause. Although these are commonly referred to as agreement morphemes (see, among others, Ortiz de Urbina (1989), Laka (1993a), Fernández and Albizu (2000), Rezac (2003)),

---

[2]Unergatives assign ergative to their argument, but Laka (1993b) shows that these are really transitives, as proposed by Hale and Keyser (1993).

[3]We assume that the indirect object is the specifier of a low applicative head whose complement is the direct object. See Larson (1988), Marantz (1993), Pesetsky (1995), and Pylkkänen (2002) for relevant discussion.

[4]Although C is always ∅ in matrix clauses, it is typically realized as a suffix at the end of the finite auxiliary in embedded clauses. For instance, *-n* in (36) (page 13, glossed as 'REL') is the suffixal complementizer found in relative clauses.

we claim that they are in fact pronominal clitics.[5] This immediately explains why these clitics do not vary in their realization in different tenses, as pronominal clitics are crosslinguistically characterized by being tense-invariant. The inventory of clitics is illustrated in the following table from the dialect of Ondarru:[6]

(5)   *Clitics in Ondarru Basque*[7]

	Absolutive	Ergative	Dative
First singular	n-	-t/-a	-st
First plural	g-	-gu	-sku
Second singular	s-	-su	-tzu
Second plural	s-…-e	-su-e	-tzu-e
Third singular	—	-∅	-ko/-tz
Third plural	—	-∅-e	-ko-e/-tz-e

The case, person and number features that underlie the categories in (5) are the following:

(6)   *Case* (Calabrese 2008)

    a.   [+Motion, −Peripheral] = ergative
    b.   [+Motion, +Peripheral] = dative
    c.   [−Motion, −Peripheral] = absolutive

(7)   *Person* (Halle 1997)

    a.   [+Author, +Participant] = first person
    b.   [−Author, +Participant] = second person
    c.   [−Author, −Participant] = third person
    d.   [+Author, −Participant] = logically impossible

(8)   *Number* (Harbour 2007)

    a.   [+Singular] = singular
    b.   [−Singular] = plural

The different clitics and T are linearly organized as (9) in the auxiliary. In our analysis, this template has no theoretical status, but is the result of the interaction of various syntactic and post-syntactic operations.

(9)   ABS - T - DAT - ERG

We note that the present analysis does not take into account two morphemes, realized as *-s* and *-an/en/n* (glossed as -N), that typically appear at the end of the auxiliary. These suffixes are traditionally described as realizing plural absolutive and past tense features, respectively. However, their distribution is much more complex than suggested by these claims. We leave the incorpora-

---

[5]The form of these morphemes resembles that of (nonclitic) pronouns. This justifies in part the adoption of the clitic analysis, and has been taken as evidence for the claim that these morphemes are historically derived from pronouns (Gómez and Sainz (1995) and references cited there).

[6]On the absence of third person absolutive clitics in (5), see below.

[7]Following Basque orthographic convention, we represent voiceless laminal alveolar fricatives/affricates as *(t)z* /(t)z/ in both the orthography and phonological representation, to distinguish them from their apical counterparts *(t)s*.

tion of these morphemes into a formal analysis for future work.

The basic syntax that underlies the positioning of morphemes in the auxiliary is shown in (4). Clitics are generated in argument position, and must be licensed by moving to certain functional heads that are only available in finite clauses. Specifically, dative and absolutive clitics must move to T, and ergative clitics must move to C.[8] Consider, for instance, the transitive sentence in (3b). The auxiliary contains the first singular absolutive proclitic *n-* and the second singular ergative enclitic *-su*. (3) also illustrates the obligatoriness of cliticization in Basque finite clauses. Basque allows absolutive, ergative and dative arguments to be null (e.g. (3a), (3c)). However, the clitics must be present on the auxiliary, irrespective of the presence or absence of an overt argument. This phenomenon of obligatory clitic doubling is found in many languages. For instance, it is obligatory with strong object pronouns in Spanish (Jaeggli 1982:chapter 1), subjects in some Northern Italian dialects (Poletto 2000:140–153) and Rhaeto-Romance (Haiman and Benincà 1992:179–181), and the quantifier *all* in several languages (Tsakali 2007).

We account for cliticization in Basque by adopting a form of the so-called *big DP* analysis, following Torrego (1992) and Uriagereka (1995) (see also van Koppen and van Craenenbroeck (2008), within a more elaborated DP structure). The clitic heads a DP whose complement is the DP argument (which can be null):

(10) $[_{DP}$ DP $D_{Cl}]$

D_{Cl} in this structure is the clitic, which must move to T (for absolutive/dative clitics) or C (for ergative clitics). With the exception of third person absolutive (see below), all arguments in Basque are generated as big DPs. This structure accounts for obligatory clitic doubling in this language.

Returning to the clause structure of transitive verbs Basque, the auxiliary in (3b) is derived by moving the absolutive clitic to T and the ergative to C:[9]

(11)

---
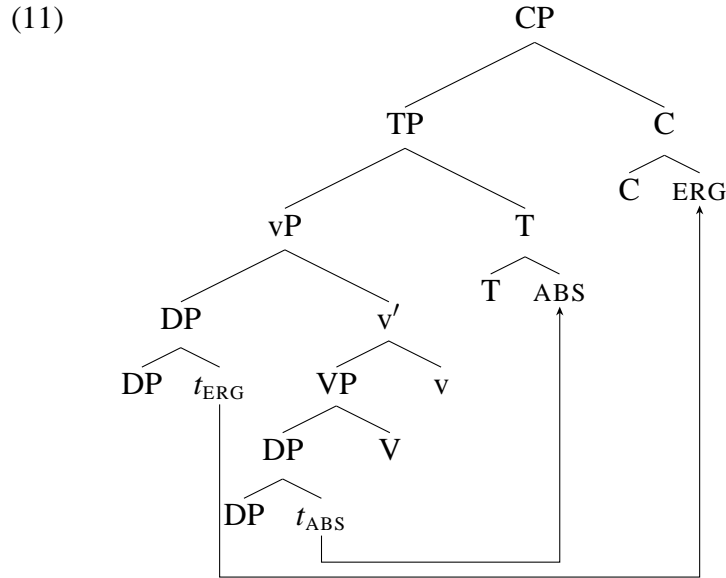
[8]Some evidence that ergative clitics require projection of CP might come from the fact, discussed in Preminger (2007), that the long-distance agreement pattern of Etxepare (2005) cannot occur when an ergative subject is present in the embedded clause, arguably because once the ergative is present, there is too much structure for the higher clause to probe into the lower one.

[9]We omit the Asp projection from (4) in all diagrams below for ease of exposition.

We assume that cliticization is a particular kind of head movement with certain properties. As illustrated in (11), it typically skips intervening heads (Kayne 1991). Furthermore, each clitic can adjoin only to a particular host: absolutive and dative clitics can only adjoin to T, and ergative clitics can only adjoin to C. An important consequence of this is that there are no intervention effects in clitic movement: the absolutive clitic in (11) skips the c-commanding ergative clitic on its way to T (since the ergative clitic cannot move to T), and the ergative clitic skips the absolutive clitic in T on its way to C (since T is not a potential landing site for ergative clitics). When there are two internal argument clitics (such as an Absolutive and Dative argument), they compete for the single host position of T, and only the higher one can make it (on the assumption that a clitic cannot adjoin to another clitic). As a result, the so-called Person-Case Constraint, banning the existence of an absolutive clitic in the presence of a dative clitic, is derived as the result of competition for a single clitic position. This aspect of the analysis is discussed in more detail in section 3.

The resulting structure formed by cliticization in the syntax is further modified by Head Movement of T (carrying any clitics adjoined to it) to C:

(12) $[_T \text{ ABS T}] [_C \text{ ERG C}] \rightarrow [_C[_T \text{ ABS T}] [_C \text{ ERG C}]]$

The result of these head movement operations generates a complex *M-Word*, as defined below together with the additionally useful concept X^{0max}:

(13)   *Morphosyntactic Word (M-Word)*:
         A node n is an M-Word iff n is a zero-level category not dominated by another zero-level category. (Embick and Noyer 2001:574)

(14)   A node n is an X^{0max} iff n is the highest zero-level projection of X. (Chomsky 1995:245)

In (12), the node $[_C[_T \text{ ABS T}] [_C \text{ ERG C}]]$ is an M-Word, since it is a zero-level category not dominated by another zero-level category. On the other hand, $[_C \text{ ERG C}]$ and $[_T \text{ ABS T}]$ are not M-words, but the later is an X^{0max}, since it is the highest zero-level projection of T. The derivation of an intransitive sentence is similar, the main difference being that there is no ergative clitic adjoined to C.

This complex head is the input to Morphological Structure. Aside from other operations discussed in later sections, this structure is subject to Linearization and Vocabulary Insertion in a cyclic fashion. In particular, we propose a complex cyclic *Linearization and Vocabulary Insertion* (LVI) operation, which has the following recursive definition:

(15)   *Cyclic Linearization and Vocabulary Insertion*
         For any node n, LVI(n) is the operation such that:
   a.   If n is branching,
         (i)   The daughters of n are linearized with respect to each other.
         (ii)   LVI is applied on the nonhead daughter of n.
         (iii) LVI is applied on the head daughter of n.
   b.   If n is terminal,
         (i)   VI is applied on n.
         (ii)   If morphotactic conditions on n are not met, enact repair.[10]

---

[10]The only relevant morphotactic condition relevant to this paper is Noninitiality, which is introduced and discussed

The base case to which this recursive algorithm applies is the root node of the M-word. LVI proceeds down the tree, by linearizing and applying VI to subconstituents of the word, starting with nonheads.

Consider, for instance, the Ondarru auxiliary *n-a-su* in (3b). The input to Morphological Structure is the following, where subscripts are shorthand to indicate features on a node, and the nodes themselves exit the syntax completely unlinearized with respect to each other:

(16) Input to LVI: $[_C[_T \text{ABS}_{1SG} \text{ T}_{PRS}] [_C \text{ERG}_{2SG} \text{ C}]]$

LVI applies first to the root node, linearizing the two complex T and C heads with respect to each other. We assume that, by default, Linearization determines that nonheads precede heads in Basque words, unless some more specific condition overrides this default. This first application of Linearization results in the following (where '$\alpha * \beta$' is to be read as 'α precedes β'):

(17) LVI on C^{0max}: $[_C[_T \text{ABS}_{1SG} \text{ T}_{PRSG}] * [_C \text{ERG}_{2SG} \text{ C}]]$

LVI then applies to the complex T head (the nonhead daughter of the root) by first linearizing its two daughters and then applying VI to ABS and T (in that order):

(18) LVI on T^{0max}: $[_C[_T \text{ABS}_{1SG} * \text{T}_{PRS}] * [_C \text{ERG}_{2SG} \text{ C}]] \rightarrow$
      LVI on ABS: $[_C[_T \textbf{/n/} * \text{T}_{PRS}] * [_C \text{ERG}_{2SG} \text{ C}]] \rightarrow$
      LVI on T: $[_C[_T \text{/n/} * \textbf{/a/}] * [_C \text{ERG}_{2SG} \text{ C}]]$

Finally, LVI applies to the complex C head (the head daughter of the root) by first linearizing its two daughters and then applying VI to ERG and C (in that order):[11]

(19) LVI on intermediate C^0: $[_C[_T \text{n} * \text{a}] * [_C \text{ERG}_{2SG} * \text{C}]] \rightarrow$
      LVI on ERG: $[_C[_T \text{/n/} * \text{/a/}] * [_C \textbf{/su/} * \text{C}]] \rightarrow$
      LVI on terminal C^0: $[_C[_T \text{/n/} * \text{/a/}] * [_C \text{/su/} * \textbf{\O}]]$

The analysis thus correctly derives the fact represented in (9) that absolutive clitics precede, and ergative clitics follow, the T head. The syntax of auxiliaries with dative clitics is similar, except that a specific Linearization condition determines that a dative clitic follows its T sister, overriding the Basque head-final default. That is why, for instance, dative *-tz* follows the T exponent in (3c) (as opposed to absolutive *n-* above, which follows T):[12]

(20) Input to LVI: $[_C[_T \text{DAT}_{3SG} \text{ T}_{PRS}] [_C \text{ERG}_{1SG} \text{ C}]] \rightarrow$
      LVI on C^{0max}:: $[_C[_T \text{DAT}_{3SG} \text{ T}_{PRS}] * [_C \text{ERG}_{1SG} \text{ C}]] \rightarrow$
      LVI on T^{0max}: $[_C[_T \text{T}_{PRS} * \text{DAT}_{3SG}] * [_C \text{ERG}_{1SG} \text{ C}]] \rightarrow$
      LVI on DAT: $[_C[_T \text{T}_{PRS} * \textbf{/tz/}] * [_C \text{ERG}_{1SG} \text{ C}]] \rightarrow$
      LVI on Intermediate C: . . .

---

in section 5.

[11]Note that C is always $\emptyset$ in matrix clauses.

[12]This auxiliary, as all others with dative clitics, does not have an absolutive clitic. This fact is discussed in more detail in section 3. Note, furthermore, that the proclitic position usually occupied by an absolutive is in this case occupied by an epenthetic L morpheme (see (3c)). This is due to a repair operation triggered by a morphotactic condition on T (Noninitiality), which is explained in detail in section 5.

A large amount of the subsequent operations we will discuss can be understood more insightfully once the following important hypothesis is adopted (see Arregi and Nevins (2008) for justification):

(21)   Basque has no third person absolute clitics.

This systematic absence is reflected in the blank cells in table (5), and may be the result of either a lexical gap in the inventory, or alternatively the fact that third person absolutive DPs do not generate a clitic sister in a Big DP structure. While certain proclitics, such as *d-* in (3c) are at times described in the literature as realizing third person absolute we take this to be an epenthetic morpheme. As discussed in more detail in section 5, we argue that this epenthetic clitic functions to provide a left edge for the auxiliary root, which obeys a strict linear Noninitiality requirement.

A final important feature of Basque clitics is that proclitics and enclitics have different forms, such as first singular proclitic *n-*, as opposed to enclitic *-t/-st* in (5). We argue in sections 3 and 5 that the relevant allomorphy is conditioned by linear order with respect to the Tense auxiliary head. With these preliminaries in mind, we turn to Absolutive Promotion, our first phenomenon of interest.

3.   Absolutive Promotion: A syntactic process

The phenomenon of Absolutive Promotion occurs as a syntactic repair operation to the Person-Case Constraint (PCC). The effect of the Basque PCC can be described as follows:

(22)   If a dative argument is present, the absolutive must be third person

This constraint bans certain ditransitive combinations, as can be seen in the following Ondarru examples:

(23)   *The PCC in Ondarru Basque*
        a.   Ni-ri Jon-∅ gusta-ten **g** -a   **-st**.   (>gasta)
             me-D Jon-A like-PRF **L** -PRS **-DAT.1SG**
             'I like Jon.'   (Ondarru)
        b.   *Ni-ri su-∅   gusta-ten **s**   -a   **-st**.   (>sasta)
             me-D you.SG-A like-PRF **ABS.2SG** -PRS **-DAT.1SG**
             'I like you(SG).'   (Ondarru)

In Arregi and Nevins (2008), we argue that, unlike other instances of the PCC that are arguably due to feature-based intervention constraints on agreement (as in Romance and Greek), the Basque PCC is the result of a syntactic constraint on cliticization to T:

(24)   *Phrase-structural restriction leading to Basque PCC*
        T can only host one clitic

The restriction in (24) clearly presents no problem in a sentence with only one internal argument, and hence no competition for the cliticization position of T. However, when both the dative and absolutive arguments generate clitics that require a subsequent host, there is no way that both can be accommodated on T:

9

(25)   *Clitic hosting configurations in Basque clause structure*
    a. ✓ $[[_T$ ABS T $]$ $[_C$ (ERG) C $]]$
    b. ✓ $[[_T$ T DAT $]$ $[_C$ (ERG) C $]]$
    c. * $[[_T$ ABS T DAT $]$ $[_C$ (ERG) C $]]$

The fact that the Basque PCC only allows sentences with datives in which the absolutive is third person is the result of (21). In the presence of a dative clitic, the absolutive argument must be third, since there is no third absolutive clitic. The dative argument cliticizes to T and there is no competition for this position.

    Interestingly, there is a repair available for the PCC, specifically in psych verb absolutive-dative verb frames that lack an external ergative argument. Precisely in these contexts, in some dialects, there is a *syntactic* last resort operation (Arregi 2004, Rezac 2007b), called *Absolutive Promotion*. Specifically because the C clitic position is available due to the lack of an ergative argument, the absolutive clitic may cliticize to C when the clitic position in T is filled. This is the result of a nesting paths derivation: T attracts the higher dative clitic, and subsequently, the C position remains available for the lower absolutive clitic.

(26)   ABS *surfaces in the usual position of* ERG, *i.e. as enclitic*
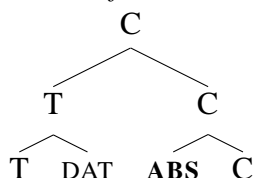
    The effects of Absolutive Promotion can be observed in the following Ondarru example (compare to (23b)):

(27)   *Absolutive Promotion allows realization of nonthird* ABS *in Ondarru PCC context*
    Ni-ri su-∅   gusta-ten d -o   **-st**   **-su**.   (> gustate stasu)
    me-D you.SG-A like-PRF L -PRS **-DAT.1SG -ABS.2SG**
    'I like you(SG).'   (Ondarru)

We can diagnose that the effect of absolutive promotion has occurred prior to Vocabulary Insertion, arguably in the syntax, as the promoted absolutive takes an enclitic form usually reserved for ergative (*-su*, not *s-* from (5)), even though the clitic has absolutive case features. This is due to the fact that the relevant vocabulary entries for clitics are underspecified for case, and what is relevant for the choice of exponent is relative position to T. The following are the relevant vocabulary entries for second person clitics in Ondarru:[13]

(28)   *Vocabulary entries for Ondarru second person clitics*
    a. /tzu/ ↔ [+Peripheral, +Participant, −Author] / T __
    b. /su/ ↔ [+Participant, −Author] / T __
    c. /s/ ↔ [+Participant, −Author] / __ T

---

[13]Note that none of the entries are specified for number. See Arregi and Nevins 2008 for more detailed discussion of underspecification in Basque clitics.

Entry (28a) is included here only for completeness, as it is specified as [+Peripheral] and thus only available for insertion in a dative clitic (see (6)). However, neither (28b) nor (28c) have case features. What is relevant for these is the relative position of the morpheme with respect to T: (28b) is inserted in enclitic position, and (28c) in proclitic position. In (27) the promoted absolutive is in enclitic position, which triggers the insertion of *-su* (28b) (which is otherwise the exponent for second singular ergative clitics, as in (3b)). In cases where it is not promoted, it receives the usual proclitic exponent *s-* (28c). As is made clear by this example, Absolutive Promotion must precede Vocabulary Insertion, and underspecification in the vocabulary entries accounts for the ergative-absolutive syncretism we find in PCC contexts. Since this is a general feature of all clitic exponents, the analysis predicts that we may also find syncretism in the opposite direction: an ergative that appears in proclitic position realized with an absolutive-looking exponent. This is indeed what we find in verbal forms with Enclitic Metathesis, as discussed in section 5.

Absolutive Promotion is not available if ERG cliticizes to C, i.e. in ditransitives with an overt ergative external argument:

(29) *Absolutive Promotion blocked in presence of* ERG:
Eur-ak su-ri   ni-∅ sal-du   …
they-E you.SG-D me-A sell-PRF
… **n*   -o -tzu   **-e**   / *d -o -tzu   **-t**.
   ABS.1SG -PRS -DAT.2SG **-ERG.3PL** / L -PRS -DAT.2SG **-ABS.1SG**
'They have sold me to you(SG).'   (Ondarru)

Absolutive Promotion cannot occur for verbs such as *etorri* 'come' and *joan* 'go' (Rezac 2007b:18–19) where the absolutive argument is independently established to be underlyingly higher than the dative based on control, causativization, and reflexive binding (Rezac 2007b:11–15). In the present model, Absolutive Promotion does not occur with such verbs because the absolutive, being the higher clitic, is attracted to T first. We conclude that absolutive Promotion is a repair operation due to a syntactic constraint, and that Absolutive Promotion occurs before Spellout.

4.   2/1-Dissimilation: A postsyntactic process

In this section we discuss 2/1-Dissimilation (which we called the *g/z-Constraint* in Arregi and Nevins 2007) in Bizkaian, the cause of which is the following: in certain contexts, first person plural and second person clitics cannot combine on the same finite auxiliary. We argue that this constraint is the result of morphological markedness constraint, and induces a process of morphological dissimilation: a structure with more than one [+Participant] clitic is marked.

The result of syntactic combinations that would yield first plural and second person clitics on the same word triggers repairs operations of postsyntactic *obliteration* (deletion of a clitic) and *impoverishment* (deletion of a feature that leads to the realization of the clitic in a less marked form). Within Bizkaian, while the core configuration of first plural and second person together being banned remains constant, there is considerable dialectal variation, both in the triggering context and repair. In particular, 2/1-Dissimilation always applies to combinations of an absolutive or dative clitic with a clitic in C (the latter is typically ergative, but can also be absolutive due to

Absolutive Promotion; see subsection 6.4).[14] However, the target of deletion may be either clitic, and either the first plural or second person clitic, depending on the dialect. We show the variation below for six representative dialects:[15]

(30) *2/1-Dissimilation I: obliteration of first plural* DAT *in the context of second* ERG
Su-k   gu-ri emo-n   d -o   **-sku**   **-su**   → d -o   **-su**
you.SG-E us-D give-PRF L -PRS **-DAT.1PL** **-ERG.2SG** → L -PRS **-ERG.2SG**
'You(SG) have given it to us.'   (Zamudio, Alboniga, Ondarru, Butroi)

(31) *2/1-Dissimilation II: obliteration of first plural* ERG *in the context of second* DAT
Ni-k su-ri   emo-n   d -o   **-tzu**   **-u**   → d -a   **-tzu**
we-E you.SG-D give-PRF L -PRS **-DAT.2SG** **-ERG.1PL** → L -PRS **-DAT.2SG**
'We have given it to you(SG).'   (Zamudio, Gallartu)

(32) *2/1-Dissimilation III: obliteration of first plural* ABS *in the context of second* ERG:
Su-k   gu-∅ ikus-i **g**   -aitxu **-su**   → **d** -o   **-su**
you.SG-E us-A see-PRF **ABS.1PL** -PRS **-ERG.2SG** → L -PRS **-ERG.2SG**
'You(SG) have seen us.'   (Ondarru)

(33) *2/1-Dissimilation IV: impoverishment of second* ERG *in the context of first plural* ABS:
Su-k   gu-∅ ikus-i **g**   -aittu **-su**   → **g**   -aittu **-∅**
you.SG-E us-A see-PRF **ABS.1PL** -PRS **-ERG.2SG** → **ABS.1PL** -PRS **-ERG.3SG**
'You(SG) have seen us.'   (Maruri, Alboniga)

Note that all of these are combinations of an ergative clitic in C with some other clitic in the auxiliary. However, what is crucial for the rule is not its ergative case feature, but the fact that it is adjoined to C. Evidence for this interpretation of the data is given in subsection 6.4, where it is shown that promoted absolutive clitics in C also trigger the same 1/2-Dissimilation rules.

When the first plural clitic is affected, it may undergo either impoverishment (deletion of the [+Participant] feature only) or obliteration (deletion of the entire clitic). When the second person clitic is affected, it may only undergo impoverishment. This asymmetry between the types of repairs available for first plural vs. second person clitics is discussed in Arregi and Nevins (2007).

There are a number of arguments that 2/1-Dissimilation is postsyntactic and applies before Linearization and Vocabulary Insertion. First, 2/1-Dissimilation affects only the clitics realized on the verb: arguments doubled by the clitics are unaffected. Second, there is variation in triggering context and repair: cf. (30) vs. (31); (32) vs. (33). This is not something we would expect of a syntactic constraint; and given that symmetric versions of the constraint are repaired even in the same dialect (e.g. Zamudio has both (30) and (31)), it cannot be due to person/case hierarchies. Rather, it is postsyntactic obliteration/impoverishment triggered by markedness. 2/1-Dissimilation occurs before Linearization and Vocabulary Insertion: it is sensitive to abstract features and is not triggered to satisfy some linear template. In addition, obliteration repairs in which the ergative

---

[14]Combinations of absolutive with dative clitics are not possible due to the PCC, as shown in section 3.

[15]In the examples below, we give two auxiliary forms separated by an arrow. The form to the left of the arrow is the one expected if 2/1-Dissimilation did not apply; the one to the left of the arrow is the actual form which is the result of of the dissimilatory process. The data in the examples are from the following sources: de Yrizar 1992 for Alboniga (vol. 1, p. 466–467), Butroi (vol. 1, p. 637, originally from Gaminde 1982), Gallartu (vol. 2, p. 130, originally from Gaminde 1983) and Maruri (vol. 1, p. 651), Gaminde 2000:374–375 for Zamudio, and our own field work for Ondarru.

node is completely deleted condition a voice-sensitive allomorphy in T, yielding a spurious unaccusative, in which an overt ergative argument co-occurs with a form of T otherwise unexpected in transitive contexts. Specifically, the allomorph of T in (31) is *a*, as opposed to *o*, which is the typical realization of T in the context of an ergative argument (cf. (30), and also (23a), where *a* appears in its typical intransitive context). Deletion of the ergative clitic in the auxiliary results in this apparent voice-sensitive allomorphy in T (see Arregi 2004, Arregi and Nevins 2008, 2007). The fact that voice in T mismatches with the very presence of an ergative argument is evidence that it is a postsyntactic effect induced by the obliteration of the entire ergative clitic terminal on the auxiliary root.

5. Enclitic Metathesis: A late postsyntactic process

The third operation affecting clitics we discuss is *Enclitic Metathesis* (EM; often referred to as *Ergative Displacement*; see Azkue 1923, Bossong 1984, Laka 1993a, Albizu and Eguren 2000, Fernández and Albizu 2000, Béjar and Rezac 2004, Arregi and Nevins 2008). Descriptively, in forms with Enclitic Metathesis an ergative clitic is realized as a proclitic, i.e. the position typically reserved to absolutive clitics.

   We argue that this is a repair operation that is triggered by the following morphotactic condition on Basque finite T:

(34)   *Noninitiality: a morphotactic condition on T*
       T in a finite verb cannot be the leftmost morpheme within the word.

Normally, (34) is satisfied by cliticization of a first or second person absolutive to T within the syntax, which provides a left edge to the auxiliary root.

(35)   *Normal satisfaction of Noninitiality by* ABS *proclitic*
       Ni-k su-∅   ikus-i   **s**   **-aitxu** -t.
       I-E   you.SG-A see-PRF **ABS.2SG -PRS**   -ERG.1SG
       'I have seen you(SG).'   (Ondarru)

However, there are two cases where no absolutive clitic is present. First, there are verbs that do not have absolutive arguments, such as *jo* 'hit', which has the exceptional case assigning pattern ergative-dative (example from Gaminde 2000:285):

(36)   *Missing absolutive in ergative-dative case frame*
       bonete-agas jo-te   **∅** -o   -sku   -∅   -n   a-∅
       hat-C.S   hit-IMP **L** -PST -DAT.1PL -ERG.3SG -REL that-A
       'that person who used to hit us with a hat'   (Zamudio)

Furthermore, since Basque has no third person absolutive clitics (21), the situation of the output of the syntax and Linearization creating a potential problem for Noninitiality of T also arises when the absolutive argument is third.

   In these cases, one of two repair strategies applies. The first is Enclitic Metathesis, which occurs in past tense contexts. This repair involves morphological metathesis of a enclitic in C to proclitic position to provide a left edge for T. Given our assumptions about Basque syntax, this

metathesized clitic is typically ergative, although it can also be a promoted absolutive (sectrion 3; on the interaction of Enclitic Metathesis and Absolutive Promotion, see subsection 6.3).[16]

In the case of first person singular, this metathesized clitic is realized as proclitic *n-* instead of enclitic *-t* (cf. (35)):

(37)   *Enclitic Metathesis places clitic in unexpected leftmost position*
      Au-∅ ei-txen **n**   -eb   -an.
      this-A do-PRF **ERG.1SG** -PST -N
      'I used to do this.'   (Ondarru)

The second repair is morphological epenthesis, which we call *L-support*. It involves epenthetic insertion of a prefix L (which has a few different allomorphs), as in (36) above and the following example with a third person absolutive argument:

(38)   *L-support furnishes left edge when Enclitic Metathesis does not apply*
      Ni-k liburu-∅ ekarr-i   **d** -o   -t.
      me-E book-A.S bring-PRF **L** -PRS -ERG.1SG
      'I have brought the book.'   (Ondarru)

This epenthesis occurs when all else fails, namely, when there is no ergative clitic to metathesize, or in the present tense, in which Enclitic Metathesis cannot apply.[17] In this respect, the relationship between Enclitic Metathesis and L-support is much like the relationship between Affix Hopping and *do*-support in English, where a morphotactic requirement is satisfied either by linear displacement or morphological epenthesis.

Noninitiality and its repairs show a number of properties related to their derivational timing. First, they are postsyntactic, as realization of the ergative clitic in the apparent wrong position has no effects on c-command relations of arguments (Laka 1993a). Second, they must be occurring prior to Vocabulary Insertion in the metathesized clitic, as its form depends on its position relative to T. Compare in-situ *-t* (35), (38), and metathesized *n-* (37). As discussed in section 3, this linear-based allomorphy is due to the fact that the vocabulary entries for clitics are underspecified for case features. The relevant exponents for first person singular clitics in Ondarru are the following:

(39)   *Vocabulary entries for Ondarru first singular clitics*
      a.   /st/ ↔ [+Peripheral, +Participant, +Author, +Singular] / T ___
      b.   /t/ ↔ [+Participant, +Author, +Singular] / T ___
      c.   /n/ ↔ [+Participant, +Author, +Singular] / ___ T

The entries in (39b)–(39c) are not specified for case, which accounts for the syncretism found in Enclitic Metathesis contexts. In its usual enclitic position, an ergative clitic is realized as *-t* (39b).

---

[16]In addition, the enclitic that metathesizes need not be argumental; in some cases, an *allocutive* clitic (a type of second person solidarity clitic; see Oyharçabal 1993) can provide the metathesizing element. This fact lends further credence to the claim that Enclitic Metathesis is a linear based morphotactic condition occurring late in the derivation, a point also made in Albizu and Eguren 2000.

[17]There is at least one dialect that does in fact enact metathesis of the ergative in the present tense (Berriatua; see Aramaio 2001:chapter 1, p. 17). Others enact metathesis of a *dative* clitic to proclitic position. For instance, metathesis of the dative occurs for first singular and plural forms in Lekeitio (Hualde et al. 1994:p.125). See Rezac (2007a) for further exemplification.

When metathesized to proclitic position, *n-* (39c) is inserted instead, which is the usual realization of absolutive clitics (3a). As predicted by the analysis, Basque clitics display in certain contexts ergative-absolutive syncretisms in both directions. Again, this provides evidence for an analysis in which Enclitic Metathesis precedes Vocabulary Insertion in the metathesized clitic, as first argued explicitly in Laka (1993a).

Importantly, Noninitiality and Enclitic Metathesis must be sensitive to a representation present after Linearization, since the requirement and repairs target the left edge.[18] Enclitic Metathesis thus displays a crucial difference with respect to 2/1-Dissimilation—the latter is not sensitive to linear order at all and thus applies before Linearization.

We therefore propose that Enclitic Metathesis always applies after Linearization and before Vocabulary Insertion of the ergative clitic, due to the cyclic model introduced in section 2:

(40) *Cyclic Linearization and Vocabulary Insertion*
      For any node *n*, LVI(*n*) is the operation such that:
      a. If *n* is branching,
          (i)   The daughters of *n* are linearized with respect to each other.
          (ii)   LVI is applied on the nonhead daughter of *n*.
          (iii) LVI is applied on the head daughter of *n*.
      b. If *n* is terminal,
          (i)   VI is applied on *n*.
          (ii)   If morphotactic conditions on *n* are not met, enact repair.

Important for the current discussion is the fact that the node T in Basque contains the morphotactic condition of Noninitiality. When there is an absolutive node to the left of T, this condition is satisfied, as exemplified for *n-a-su* in section 2, and repeated here:

(41) Input to LVI: $[_C[_T \text{ABS}_{1SG} \text{ T}_{PRS}] [_C \text{ERG}_{2SG} \text{ C}]] \rightarrow$
      LVI on C^{0max}: $[_C[_T \text{ABS}_{1SG} \text{ T}_{PRS}] * [_C \text{ERG}_{2SG} \text{ C}]] \rightarrow$
      LVI on T^{0max}: $[_C[_T \text{ABS}_{1SG} * \text{T}_{PRS}] * [_C \text{ERG}_{2SG} \text{ C}]] \rightarrow$
      LVI on ABS: $[_C[_T \text{/\textbf{n}/} * \text{T}_{PRS}] * [_C \text{ERG}_{2SG} \text{ C}]] \rightarrow$
      LVI on T^{0min}:
      a. VI on T: $[_C[_T \text{/n/} * \text{/\textbf{a}/}] * [_C \text{ERG}_{2SG} \text{ C}]]$
      b. **Noninitiality** satisfied on T: $[_C[_T \text{/\textbf{n}/} * \text{/a/}] * [_C \text{ERG}_{2SG} \text{ C}]] \rightarrow$
      c. LVI on Intermediate $C^0 \ldots$

However, when there is no absolutive node to the left of T, a repair operation takes place immediately when Noninitiality is violated, before any further Vocabulary Insertion can happen. We illustrate this first for the case of L-support as in *d-o-t* from (38):

(42) Input to LVI: $[_C \text{T}_{PRS} [_C \text{ERG}_{1SG} \text{ C}]] \rightarrow$
      LVI on C^{0max}: $[_C \text{T}_{PRS} * [_C \text{ERG}_{1SG} \text{ C}]] \rightarrow$
      LVI on T:
      a. VI on T: $[_C \text{/\textbf{o}/} * [_C \text{ERG}_{1SG} \text{ C}]] \rightarrow$

---

[18]See Adger 2006 for a similar phenomenon in Old Irish.

b. **Noninitiality** not Satisfied on T, repair applies in the form of L-support:
$[_C[_T$ **L** $* $ /o/ $]$ $*$ $[_C$ ERG$_{1SG}$ C $]]$ $\rightarrow$

c. VI on epenthesized node: $[_C[_T$ **/d/** $*$ /o/ $]$ $*$ $[_C$ ERG$_{1SG}$ C $]]$

d. LVI on intermediate C ...

In the derivation in (42), evaluation of the linear morphotactic condition on T induces morphological epenthesis of a node L to the left of T. VI then applies to the epenthesized node, before LVI returns to other nodes in the M-word.

Finally, we consider the case in which Enclitic Metathesis applies, as in the past tense form *n-eb-an* from (37):[19]

(43) LVI on C^{0max}: $[_C$ T$_{PST}$ $*$ $[_C$ ERG$_{1SG}$ C $]]$ $\rightarrow$
LVI on T:

a. VI on T: $[_C$ **/eb/** $*$ $[_C$ ERG$_{1SG}$ C $]]$ $\rightarrow$

b. **Noninitiality** not satisfied on T, repair applies in the form of Metathesis:
$[_C[_T$ **ERG$_{1sg}$** $*$ /eb/ $]$ $*$ C $]$ $\rightarrow$

c. VI on metathesized node: $[_C[_T$ **/n/** $*$ /eb/ $]$ $*$ C $]$

d. LVI on terminal C ...

We note that Enclitic Metathesis cannot be treated as a phonological phenomenon of metathesis outside of the morphological component altogether, since first of all, it feeds allomorphic choice in the displaced clitic, thereby preceding Vocabulary Insertion in this element, as shown in (43). In light of the same facts, Laka 1993a, Albizu and Eguren 2000 offer a similar treatment, but crucially argue that Noninitiality must be satisfied by an overt exponent. However, since there is no lookahead before Vocabulary Insertion as to whether a given morphological node will be realized with overt phonetic content or not, we cannot appeal to such a filter. Noninitiality is a well-formedness condition at the level of linearized M-words: the auxiliary root must have another morphological terminal to its left.

Further evidence for this approach comes from the fact that in some cases, epenthetic L can be realized as ∅ (example from Gaminde 2000:413):

(44) Ondo etor-∅   ∅ -a   -tzu   -n.
      well   come-PRF L -PST -DAT.2SG -N
      'You(SG) deserved it.'   (Zamudio)

In this case, epenthetic insertion of an L node satisfies the morphotactic condition on T. Cyclic Vocabulary Insertion on the L node itself happens to yield a zero exponent under this particular combination of tense and clitic features. However, what (35)–(38) and (44) have in common is that all have provide a terminal node to the left of T. The present account captures the fact that Noninitiality and repairs are independent of phonological realization.

Summarizing this section, there is a linear-based morphotactic on the T node in the Basque auxiliary complex that is necessarily directly evaluated after the linearization of the T node itself. Given the overall model of linearization developed in this paper, this result entails that the eval-

---

[19]We set aside the details of LVI related to final *-an* in this auxiliary, whose theoretical status, as noted in section 2, is not clear to us yet.

uation of Noninitiality on T and its concomitant repairs (i.e. Enclitic Metathesis and L-support) necessarily follow Linearization, and by transitivity, all operations prior to Linearization.

6. Order of operations: Derivational Interactions

Having demonstrated how each of the three operations discussed in this paper work independently, in this section we turn to environments in which they interact. Recall that based on intrinsic properties of the three operations, we can locate them in one of the strata of auxiliary word-formation:

(45)   *Three distinct levels of structure-sensitivity in auxiliary word-formation*
    a.   Operations prior to Spellout that refer to hierarchical structure.
    b.   Operations after Spellout but prior to Linearization that do not refer to hierarchical structure or linear order, but do refer to co-occurrence of features within the same M-word.
    c.   Operations after Linearization that refer to linear order.

The flow of representations generated by successive application of these operations in turn is schematized in Figure 1 on page 2.

Given that we localize the three operations of Absolutive Promotion, 2/1-Dissimilation, and Enclitic Metathesis to specific places in the derivation based on principled properties of their structural descriptions, we now may examine specific feeding and bleeding relationships among them that are predicted as a result of the following general ordering:

(46)   *Order of operations*
         Absolutive Promotion > 2/1-Dissimilation > Enclitic Metathesis

In the following subsections we examine four specific pairwise interactions, showing how in each case the data confirm the predictions of the hypothesis. In the fifth subsection we show a sequenced interaction of all three operations.

6.1. 2/1-Dissimilation feeding Enclitic Metathesis

The first prediction is that 2/1-Dissimilation feeds Enclitic Metathesis. In one of the instantiations of the former operation, an absolutive proclitic marked as [+Participant] is deleted as the result of dissimilation with a co-occurring [+Participant] clitic in C. For instance, in Ondarru, a first plural absolutive clitic is deleted in the context of a second person ergative clitic in C (32). This takes place at the level of the featural markedness module, and occurs without lookahead, in other words blind to the fact that, by obliterating the proclitic to the left of T, this instance of 2/1-Dissimilation specifically incurs a subsequent violation of the Noninitiality condition on T. This in turn creates a structural description ripe for the application of Enclitic Metathesis, which would otherwise be inapplicable in the presence of a first person absolutive argument.[20]

---

[20]Recall that Enclitic Metathesis can only occur in the past tense, due to a parochial condition on its application (see section 5). In the present tense, L-support applies, inserting the epenthetic prefix *d-* (32).

(47)　　*Deletion of absolute proclitic requires subsequent Enclitic Metathesis*
　　　　ABS.1PL -T -ERG.2 $\xrightarrow{2/1}$ __ -T **-ERG.2** $\xrightarrow{\text{EM}}$ ERG.2 -T

This is a feeding relationship: obliteration of the absolutive proclitic makes the initial position empty. The relevant Ondarru form displays the predicted feeding order:

(48)　　*2/1-Dissimilation feeds Enclitic Metathesis in Ondarru Basque*
　　　　Su-k　　　gu-∅ ikus-i　**g**　　　　-aitxu **-su**　　　-n → **s**　　　-endu -n
　　　　you.SG-E us-A see-PRF **ABS.1PL** -PST　**-ERG.2SG** -N → **ERG.2SG** -PST　-N
　　　　'You(SG) saw us.'　　　　　　　　　　　　　　　　　　　　　　　　　(Ondarru)

In a theory with the opposite derivational order, Enclitic Metathesis would have the chance of applying first, but would not, due to the presence of the absolutive proclitic. The specific predictions of such a theory would depend on it committing to two other separate factors: (i) details of the application of 2/1-Dissimilation in this dialect, and (ii) the order of L-support in the derivation.

　　The only Ondarru forms where only 2/1-Obliteration is relevant are present tense. Since forms with Enclitic Metathesis are necessarily past tense, there would be no independent evidence in this theory that 2/1-Obliteration applied in the past. If it did not, the predicted form would be *g-aitxu-su-n* 'ABS.1PL-PST-ERG.2SG-N', contrary to fact. If, on the other hand, 2/1-Obliteration did apply in the past in the alternative theory, the absolutive proclitic would be obliterated, resulting in the unattested form *endu-su-n* 'PST-ERG.2SG-N'.

　　The other factor mentioned above in evaluating the result of an opposite ordering from what we posit is the placement of L-support in the derivation. Consistent with the theory defended in this paper, it was implicitly assumed in the previous paragraph that L-support would apply at the same stage as Enclitic Metathesis in the alternative theory, i.e. before 2/1-Obliteration, which is why the predicted form would not have an epenthetic L prefix. If, on the other hand, L-support applied after 2/1-Obliteration, L would be inserted. However, the resulting form would be *d/s/∅-endu-su-n* 'L-PST-ERG.2SG-N', also unattested (L in past transitive forms in Ondarru can be *d*, *s*, or ∅, depending on other features in the auxiliary). Thus, irrespective of the details of when L-support applies, a theory with the opposite derivational order of 2/1-Dissimilation and Noninitiality repair does not make the correct prediction.

6.2.　2/1-Dissimilation bleeding Enclitic Metathesis

In the past tense, Enclitic Metathesis normally applies whenever there is a third person object. However, in a ditransitive sentence, for dialects that enact 2/1-Obliteration specifically targeting a [+Participant] (ergative) clitic in C in the presence of a [+Participant] dative, the prediction is that the erstwhile ergative proclitic gets wiped out before it has a chance to fill the void to the left of T.

　　One of the results of the ordering of 2/1-Dissimilation specifically before Noninitiality and its repairs are evaluated/enacted is that L-support, the morphological epenthesis process that normally does not occur in the past tense if there is a clitic in C, takes place in the past tense precisely when the ergative clitic has been eradicated by a previous module. Again, we see a case of lack of lookahead at work: if only the 2/1 module knew that the ergative clitic would be later needed to fill the left-edge for T, it might not have gotten rid of it. But the modular organization of the postsyntactic component is blind to such global optimizations.

Consider a case with a first plural ergative argument in the context of a second person dative. The predicted form would have no ergative clitic, and L-support would apply instead of Enclitic Metathesis:

(49)   *2/1-Dissimilation destroys structural description for Enclitic Metathesis*

    _ -T -DAT.2 **-ERG.1PL** $\xrightarrow{2/1}$ _ -T -DAT.2 → No Enclitic Metathesis

    $\xrightarrow{\text{L-supp.}}$ L -T -DAT.2

This prediction is confirmed in Gallartu, which independently has the requisite obliteration of first plural ergative in the presence of second dative (see (31)):[21]

(50)   *2/1-Obliteration bleeds Enclitic Metathesis in Gallartu Basque*
    Gu-k su-ri   emo-n **y** -a **-tzu**   -n.
    we-E you.SG-D give-PRF **L** -PST **-DAT.2SG** -N
    'We gave it to you(SG).'   (Gallartu)

The opposite derivational order would metathesize the ergative to proclitic position first. Again, the specific predictions of this alternative theory would depend first on the details of 2/1-Dissimilation in this dialect. If it did not apply in the past, the resulting form would be **g-on-tzu-n* 'ERG.1PL-PST-DAT.2SG-N', which is not correct for this dialect. If it did apply, the result would be **a-tzu-n* 'PST-DAT.2SG-N', also incorrect. The only way in which the alternative theory would make the right prediction is in the case where L-support applied after 2/1-Repair, in which case the former would fill the initial position emptied by the latter, as in the present analysis.

To summarize so far, the order of operations predicted by our theory predicts the attested interaction between the 2/1-Dissimilation and Noninitiality. A theory that reversed the order of the two operations would only make correct predictions in one particular case, and this at the cost of ordering L-support after 2/1-Dissimilation, thereby missing the fact that L-support and Enclitic Metathesis serve the same repair function, and thereby should be tightly connected in their application, as assumed in most analyses of the phenomenon.

On the other hand, in the cases considered thus far, a nonderivational theory in which all constraints on the morphology of auxiliaries had to be met in parallel would make the right predictions. This is because, in these particular examples, ((48) and (50)), both 2/1-Dissimilation and Noninitiality are surface-true. In particular, the offending first plural clitic is deleted in both examples due to the 2/1-Dissimilation, and Noninitiality is satisfied in both examples as well: with Enclitic Metathesis in (48), and with L-support in (50), due to the absence of an ergative clitic. However, the interactions discussed in the following two subsections, which display a great deal of opacity, will prove to be highly problematic for a monostratal theory.

6.3.   Absolutive Promotion feeding Enclitic Metathesis

Recall that in PCC contexts with a nonthird absolutive in a dative-absolutive psych verb, one repair to the PCC is Absolutive Promotion (section 3), which cliticizes the absolutive all the way up to C, removing the absolutive clitic from host-competition with the dative in T. We have posited that this

---

[21]Data from Gaminde 1983, cited in de Yrizar 1992:vol. 2, 147.

operation takes place in the syntax, where hierarchical but not linear structure is visible. As such, the launching of the absolutive away from "proclitic position" (i.e. what would eventually become proclitic position upon linearization) satisfies a hierarchical syntactic constraint on cliticization, but will cause a linear problem downstream, as it is specifically leaving the left edge of T in the lurch, with nothing to satisfy Noninitiality.

When Linearization occurs for a past tense form, once it is detected that there is an enclitic in the C position that is eligible for metathesis, the hierarchically-promoted absolutive clitic will now be linearly transposed to the left of T in order to provide a proclitic host. This is a ping-pong derivation: each module acts according to its own well-formedness, without regard to the needs of other modules, a classic argument for encapsulation. The absolutive argument would normally be expected to be a proclitic, if not for the syntactic presence of the dative. In the syntax, it moves away from its "eventual" proclitic position, and in the late post-syntax, it is moved back to proclitic position:

(51)   *Absolutive Promotion feeds Enclitic Metathesis*
         ABS.1/2 -T -DAT $\xrightarrow{\text{Abs.Prom.}}$ __ -T -DAT **-ABS.1/2** $\xrightarrow{\text{EM}}$ ABS.1/2 -T -DAT

The result, illustrated by the following Ondarru example, is a very opaque form: the absolutive clitic is promoted to enclitic position (because of the dative clitic), then back to its usual proclitic position (Enclitic Metathesis).

(52)   *Ping-pong derivational placement of absolutive clitic*
         Ni Jon-ei gusta-ten **n**   -a   **-ko**   -n → **n**   -e   **-tz**   -an
         I-A Jon-D like-IMP **ABS.1SG** -PST **-DAT.3SG** -N → **ABS.1SG** -PST **-DAT.3SG** -N
         'John used to like me.'   (Ondarru)

In this example, there is apparent lack of absolutive promotion, since the absolutive clitic *n- does* appear as a proclitic even though it is a PCC context where this is unexpected. This is explained in the current theory by the hypothesis that Absolutive Promotion is followed by Enclitic Metathesis, which undoes its effects.

In the opposite derivational order, Enclitic Metathesis would be ordered first. Since this is an argument-structural combination without an ergative clitic, enclitic metathesis of the ergative would not apply. Thus, only Absolutive Promotion would apply, resulting in either **e/o-tz-t-n* 'PST-DAT.3SG-ABS.1SG-N' or **d-o/e-tz-t-n* 'L-PST-DAT.3SG-ABS.1SG-N', depending on whether L-support were ordered before or after Absolutive Promotion. In either case, (52) shows that this is not the correct prediction.

Readers inclined to question this type of derivational argument might wonder whether this result is just an artifice of the derivational architecture of the grammar assumed here. After all, the absolutive clitic in (52) is in its usual proclitic position, and one might simply stipulate that Absolutive Promotion does not apply in this particular context, i.e. in the past tense. The obvious response to this criticism is that this would be a stipulation with no explanatory value, since past tense is precisely the context where we independently expect Enclitic Metathesis to apply and thereby have the potential to undo the effects of Absolutive Promotion. The attested form is predicted by the current derivational analysis without recourse to any additional assumptions.

One might avoid the no-Absolutive-Promotion stipulation in a nonderivational theory by rank-

ing the Noninitiality constraint above the PCC, in an Optimality-Theoretic fashion: the absolutive would remain in proclitic position, in violation of the PCC, but satisfying the higher-ranked Non-initiality constraint.[22]

However, there is independent morphophonological evidence that establishes that the derivational analysis of (52) is the correct one. In particular, the Ondarru allomorph of the third person singular dative clitic in this example (*-tz*) is highly specific, occurring in auxiliaries that contain a clitic in C. In forms without a clitic in C, the dative clitic form used is *-ko*. The relevant vocabulary entries are the following, where "Cl$_C$" stands for a clitic dominated by a C node:

(53) *Vocabulary entries for Ondarru third person dative clitics*
    a.   /tz/ $\leftrightarrow$ [+Peripheral, −Participant, −Author] / __ Cl$_C$
    b.   /ko/ $\leftrightarrow$ [+Peripheral, −Participant, −Author]

Thus, the use of *-tz* in (52) is evidence that, in some representation of this M-word, there is a clitic in C to condition this allomorphy. More specifically, the relevant portion of the derivation of the auxiliary in (52) is as follows:

(54)   Input to LVI: [$_C$ [$_T$ DAT$_{3SG}$ T$_{PST}$] [$_C$ ABS$_{1SG}$ C]] $\rightarrow$
              LVI on C^{0max}: [$_C$ [$_T$ DAT$_{3SG}$ T$_{PST}$] * [$_C$ ABS$_{1SG}$ C]] $\rightarrow$
              LVI on T^{0max}: [$_C$ [$_T$ T$_{PST}$ * DAT$_{3SG}$] * [$_C$ ABS$_{1SG}$ C]] $\rightarrow$
              LVI on DAT: [$_C$ [$_T$ T$_{PST}$ * **/tz/**] * [$_C$ ABS$_{1SG}$ C]] $\rightarrow$
              LVI on terminal T:
    a.   VI on T: [$_C$ [$_T$ **/e/** * /tz/] * [$_C$ ABS$_{1SG}$ C]] $\rightarrow$
    b.   Noninitiality not satisfied on T, repair applies in the form of Metathesis:
        [$_C$ [$_T$ **ABS$_{1SG}$** * /e/ * /tz/] * C]
    c.   VI on metathesized node . . .

The crucial step is VI on the dative clitic: since there is a (promoted absolutive) clitic in C, the *tz* allomorph is inserted. This is followed by Enclitic Metathesis, which hides the trigger for dative allomorphy. This auxiliary should be compared to an auxiliary without a clitic in C at any stage in the derivation, as in the following psych-verb configuration, where the absolutive argument is third person and thus does not undergo Absolutive Promotion:

(55)   Miren-∅ Jon-ei gusta-ten g -a   **-ko**   -n.
        Miren-A Jon-D like-IMP L -PRS **-DAT.3SG** -N
        'Jon used to like Miren.'   (Ondarru)

(56)   Input to LVI: [$_C$ [$_T$ DAT$_{3SG}$ T$_{PST}$] C] $\rightarrow$
              LVI on C^{0max}: [$_C$ [$_T$ DAT$_{3SG}$ T$_{PST}$] * C] $\rightarrow$
              LVI on T^{0max}: [$_C$ [$_T$ T$_{PST}$ * DAT$_{3SG}$] * C] $\rightarrow$
              LVI on DAT: [$_C$ [$_T$ T$_{PST}$ * **/ko/**] * C] $\rightarrow$
              LVI on terminal T:

---

[22]Furthermore, the analysis would need a way to rule out **d-e/o-tz-t-n* 'L-PST-DAT.3SG-ABS.1SG-N', where both constraints would be satisfied: the PCC by Absolutive Promotion, and Noninitiality by L-support. This could presumably be achieved by the correct ranking that in general disfavors L-support in the past (and which results in Enclitic Metathesis in other forms).

    a.   VI on T: $[_C \, [_T \, \textbf{/a/} * /ko/ \,] * C \,] \rightarrow$

    b.   Noninitiality not satisfied on T, repair applies in the form of L-support: $[_C \, \textbf{L} * /a/ * /ko/ \,] * C \,]$

    c.   VI on epenthesized node . . .

In (56), the dative allomorph is *-ko* because there is never a clitic in C. If (52) had not involved Absolutive Promotion and Enclitic Metathesis, but instead the absolutive clitic stayed in proclitic position throughout, we would incorrectly predict *-ko* instead of *-tz* as the realization of the dative clitic.

    Summarizing, as predicted only by the derivational ping-pong analysis, the movement of the absolutive to enclitic position for syntactic reasons and then back to proclitic position for morphotactic reasons yields an opaque form. Even though the absolutive clitic appears on the surface in its typical proclitic position, a morphophonological flag in its conditioning of the dative allomorph allows us to detect that it once occupied an enclitic position in C (only to be moved back later). Nonderivational analyses would not predict this fact, since, as a matter of principle, they would not posit an intermediate stage where the absolutive would be in enclitic position.

    These first three derivational interactions we have seen confirm the prediction that Enclitic Metathesis follows other operations. This provides strong evidence that Enclitic Metathesis is a late postsyntactic operation, and against theories in which it is analyzed as a syntactic phenomenon (see Fernández and Albizu 2000 and Béjar and Rezac 2004, among others).

6.4.   Absolutive Promotion feeds 2/1-Dissimilation

The next case we will consider again involves cases in which a psych verb with a nonthird argument enacts Absolutive Promotion as a PCC repair. Due to Absolutive Promotion, the absolutive clitic will now reside adjoined to C. Therefore, in dialects in which 2/1-Dissimilation applies among a dative clitic and a clitic in C, the promoted absolutive now occupies a clitic position where it conditions obliteration of the dative. Note that 2/1-Dissimilation of this kind typically deletes an ergative clitic in C, as in (30). However, what triggers obliteration is not the case of the ergative clitic, but the fact that the clitic is in C. It is thereby predicted that Absolutive Promotion creates a new structural description for 2/1-Obliteration, even though there is no ergative argument in the syntax of the clause. The predicted result in this particular case is obliteration of the dative due to the presence of the promoted enclitic absolutive:

(57)   *Promoted Absolutive conditions 2/1-Obliteration of dative*:

    $\textbf{ABS.2}$ -T -DAT.1PL $\xrightarrow{\text{Abs.Prom.}}$ __ -T $\textbf{-DAT.1PL}$ -ABS.2 $\xrightarrow{2/1}$ __ -T -ABS.2
    $\xrightarrow{\text{L-supp.}}$ L -T -ABS.2

This creates a very opaque surface form, for the following reason. The only reason that Absolutive Promotion occurs is because there is competition for the clitic host position of T with the dative. The triggering context for Absolutive Promotion is a dative clitic. But due to the syntactic repair that is chosen, a subsequent context is created in which the dative is deleted. The result is apparent overapplication of Absolutive Promotion, which normally only occurs in the presence of a dative clitic argument, but which in this case is not found on the surface. This interaction is exemplified in Ondarru, which has 2/1-Obliteration of the first plural dative in the context of a second person

ergative clitic in C (30). As shown in the following example, Obliteration also applies when the enclitic is a promoted absolutive.

(58) *Absolutive Promotion feeds obliteration of dative in Ondarru*
      Gu-ri su-∅   gusta-ten **s**   -a **-sku**   → d -o **-su**   (> gustate su)
      me-D you.SG-A like-PRF **ABS.2SG** -PRS **-DAT.1PL** → L -PRS **-ABS.2SG**
      'We like you(SG).'   (Ondarru)

Note that if there were lookahead and it was known that the dative would be deleted, there would be no reason to move the absolutive to C in the first place; in fact doing so needlessly voids Non-initiality and therefore creates the structural description for L-support. Nonetheless, Absolutive Promotion is a syntactic operation, blind to the eventual fact that the dative clitic will be deleted in morphology—a stage that is too late, since the time to ensure a host for every clitic is in the syntax.

On the other hand, the predictions of an analysis with the opposite derivational order are not borne out by the data. The predicted form would depend on whether 2/1-Dissimilation can apply to delete a first plural dative clitic in the context of a second person proclitic (this form never surfaces due to the PCC). If it did apply in this case, the environment for application of Absolutive Promotion would be removed, resulting in *s-a* 'ABS.2SG-PRS', with the absolutive in proclitic position. Alternatively, if 2/1-Dissimilation did not apply, the resulting form would retain the dative clitic and Absolutive Promotion would apply: *d-o-sku-su* 'L-PRS-DAT.1PL-ABS.2SG' if L-support applied after 2/1-Dissimilation, and *o-sku-su* 'PRS-DAT.1PL-ABS.2SG' otherwise. Clearly, all three predictions are contrary to fact.

Consider next the predictions of a nonderivational theory where all constraints had to be met in parallel. The relevant conditions in this case would be the PCC and the 2/1-Dissimilation. A form such as *s-a-sku* 'ABS.2SG-PRS-DAT.1PL', with no Absolutive Promotion or 2/1-Obliteration would violate both constraints. However, the attested form *d-o-su* would be only one of three different candidates that could satisfy both constraints, which shows that their relative ranking is irrelevant:

(59) *Candidates that satisfy both PCC and 2/1*
      a.   d-o-su 'L-PRS-ABS.2SG': 2/1-Obliteration of dative, Absolutive Promotion, L-support
      b.   *s-a 'ABS.2SG-PRS': 2/1-Obliteration of dative
      c.   *g-a-sku 'L-PRS-DAT.1PL': 2/1-Obliteration of absolutive, L-support

Of these, (59c) is ruled out by the proper ranking of whatever constraint would ensure that the dative, not the absolutive (or ergative), is obliterated in this particular context in Ondarru. However, it is hard to see what would make (59a) the winning candidate over (59b). In particular, both satisfy all relevant constraints (PCC, 2/1-Dissimilation and Noninitiality), so there is no reason for Absolutive Promotion to apply in (59a). In other words, (59b) should be the winning candidate because it does the same job as (59a) in a more economical way; deletion of the dative clitic satisfies both the PCC and the 2/1-Dissimilation in a single operation, so there is no need for gratuitous application of Absolutive Promotion.

On the other hand, this application of Absolutive Promotion is as predicted by the derivational theory: at the stage where it applies, the triggering dative clitic is present, which forces movement of the absolutive to C. The later deletion of the dative is irrelevant at the point in which Absolutive

Promotion applies.

Therefore, the type of opacity exemplified in this interaction of operations provides strong evidence for a derivational/multistratal theory, and confirming evidence that Absolutive Promotion is not a late morphological adjustment.

6.5. Absolutive promotion feeds both 2/1-Dissimilation and Enclitic Metathesis

This is a past tense version of (58). It therefore has the Duke-of-York property of (52), in that the absolutive clitic is syntactically promoted to C and then linearly displaced back to its proclitic position by EM, combined with the fact that it leaves evidence for having been in C by conditioning 2/1-Obliteration while in C, as in (58):

(60) *Promoted absolutive conditions dative obliteration, then moves "back" to left of T*

$$\textbf{ABS.2}\text{ -T -DAT.1PL} \xrightarrow{\text{Abs.Prom.}} \_\_ \text{ -T } \textbf{-DAT.1PL}\text{ -ABS.2} \xrightarrow{2/1} \_\_ \text{ -T } \textbf{-ABS.2} \xrightarrow{\text{EM}} \text{ABS.2 -T}$$

In order to find a host for the clitic in psych-verb configurations, in (60), the first person absolutive is hierarchically promoted to C. That is all that concerns this clitic in the syntax. In the input to the markedness module of MS, the presence of this clitic in C creates the conditions on co-occurring within the same M-Word as another [+Participant] clitic. The specific repair operation in Ondarru deletes a dative [+Participant] clitic when there is another [+Participant] clitic in C. The result of this operation is the total absence of a dative clitic on the auxiliary. Subsequently, in the stage of LVI, the absence of any clitic to the left of T in the past tense attracts the only remaining clitic left, namely the absolutive, back over to proclitic position.

(61) *Sequenced application of Absolutive Promotion, 2/1-Obliteration and Enclitic Metathesis*
Gu-ri su-∅   gusta-ten **s**   -a   **-sku**   -n → **s**   -endu -n
me-D you.SG-A like-PRF **ABS.2SG** -PST **-DAT.1PL** -N → **ABS.2SG** -PST -N
'We used to like you(SG).'   (Ondarru)

The resulting surface form is missing a dative clitic, although there is an overt dative pronominal argument; likewise the form appears to be one of the sole cases in which a [+Participant] theme argument clitic manages to survive as a proclitic in dative-absolutive verb frames. The violation of an otherwise surface-true generalization that absolutive proclitics vanish and dative clitics persist in psych-verbs is achieved here by the fact that each modular stage (hierarchical clitic placement, markedness co-occurrence, linear morphotactics) operates without looking backwards or looking forwards. There is no surface-true set of statements to be made in the grammar of Basque auxiliary morphotactics; rather, the surface sequence represents the accumulative result of three independent stages of well-formedness.

6.6. Interim Summary

The general claim in this section of the paper has been that there are three distinct strata of word-formation in Basque finite auxiliaries, and that the ordering of the operations of Absolutive Promotion, 2/1-Dissimilation, and Enclitic Metathesis is an intrinsic consequence of the general stream of transformations from hierarchical structure without linear order to a linearly ordered sequence of

terminals within an M-word. Word-formation in the Basque auxiliary is the result of a principled division of labor between syntactic processes and morphological processes.

A more general conclusion may be made about where the operation of Spellout occurs. Clearly, syntactic operations, such as Merge, Move, Agree, and Cliticization occur before the syntactic structure is Spelled Out, meaning shipped off to another grammatical module, that of Morphological Structure. Morphological Structure is the host to postsyntactic operations on terminals and features, such as impoverishment and obliteration. Our novel claim has been that these particular MS-internal operations occur prior to Linearization of the constituent terminals themselves, based on the follow hypothesis:

(62)   All postsyntactic operations that do not need linear order occur before Linearization

Linearization converts directionless sisterhood relations into left-right ordering statements for each pair of sisters. Linearization itself must precede Vocabulary Insertion, as clitic realization is dependent on left- or right-adjacency to particular elements (see also Adger 2006 for Old Irish allomorphy). Conditions that depend on linear order (e.g. Noninitiality repairs such as EM) are clearly ordered after Linearization.

By transitivity, the ordering of a number of these processes and whether their interaction will be one of feeding, bleeding, counterfeeding, or counterbleeding is a result of whether these processes are (a) sensitive to hierarchical structure but not linear order or M-word co-occurrence, (b) sensitive to M-word co-occurrence but not hierarchical structure or linear order, or (c) sensitive to linear order. The Basque dialects chosen to exemplify these interactions have the advantage of possessing the relevant operations at each stratum of word-formation, but it is by no means a universal that a language must have, for example, linear order sensitive conditions on morphotactics interacting with impoverishment (or indeed linear order based morphotactics at all). However, the predictions of the account here are intended to be universal in nature: if a language indeed does have three such word formation operations, their interaction is predicted only to be possible in the ordering shown above.

7.   Outlook

The intricate predictions of the model developed here as borne out in environments in which more than one operation can apply, given intermediate representations, provide support for a modular theory of syntax-morphology in which certain formal properties of an operation determine its derivational order with respect to Spellout, Linearization and Vocabulary Insertion.

This derivational order makes predictions about rule interaction. Absolute Promotion, 2/1-Dissimilation and Enclitic Metathesis in Basque apply in separate modules, and their interaction in word formation is as predicted by a derivational theory. In this respect we deem it useful to compare the overall architecture of a stratally ordered morphological component with the stratal architecture of Lexical Phonology (Kiparsky 1982, Hargus and Kaisse 1993), in which phonological computation is divided into two blocks. In Lexical Phonology's division between lexical and postlexical rules, at least four important differences are characterized: lexical rules apply only in derived environments, are structure preserving, apply to lexical categories only, and may have exceptions, whereas postlexical rules apply also to nonderived environments, may be non-structure-preserving, may apply to all categories, and are automatic (i.e. blind to lexical exceptions). The spirit of Lexi-

cal Phonology's predictive nature was that by inspecting whether a rule had these properties or not, one could then conclude whether it was in the lexical or postlexical block, and thereby, since all lexical rules precede all postlexical rules, impose a predictive order on the interaction of the varied phonological processes within a language. Our model in this paper, exemplified for Bizkaian Basque auxiliaries, bears the same goal: by inspecting whether a morphological operation relevant for the word formation process has some one set of properties or another, its assignment to a submodule of grammar allows for a principled determination of its order relative to other such processes.

References

Adger, David. 2006. Post-syntactic movement and the Old Irish verb. *Natural Language and Linguistic Theory* 24:605–654.

Albizu, Pablo, and Luis Eguren. 2000. An optimality theoretic account for "ergative displacement" in Basque. In *Morphological analysis in comparison*, ed. Wolfgang U. Dressler, Oskar E. Pfeiffer, Markus A. Pöchtrager, and John R. Rennison, 1–23. Amsterdam: John Benjamins.

Aramaio, Itziar. 2001. Berriatuako aditz laguntzailea. BA Thesis, Universidad de Deusto, Bilbao.

Arregi, Karlos. 2004. The *have/be* Alternation in Basque. Ms., University of Illinois at Urbana-Champaign. Available at http://uiuc.edu/~karlos/have.pdf.

Arregi, Karlos, and Andrew Nevins. 2007. Obliteration vs. Impoverishment in the Basque g-/z- constraint. In *The Proceedings of the Penn Linguistics Colloquium 30*, U. Penn Working Papers in Linguistics 13.1, 1–14. Department of Linguistics, University of Pennsylvania, Philadelphia. Also available at http://ling.auf.net/lingBuzz/000280.

Arregi, Karlos, and Andrew Nevins. 2008. Agreement and clitic restrictions in Basque. In *Agreement restrictions*, ed. Susann Fischer Roberta D'Alessandro and Gunnar Hrafn Hrafnbjargarson. New York: Mouton de Gruyter. To appear.

Azkue, Resurrección María. 1923. *Morfología vasca*. Bilbao: Euskaltzaindia.

Béjar, Susana, and Milan Rezac. 2004. Cyclic Agree. Ms., University of Toronto.

Bossong, Georg. 1984. Ergativity in Basque. *Linguistics* 22:341–392.

Calabrese, Andrea. 2008. On absolute and contextual syncretism: remarks on the structure of paradigms and how to derive them. In *Inflectional identity*, ed. Asaf Bachrach and Andrew Nevins, 156–205. Oxford: Oxford University Press.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.

Embick, David, and Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32:555–595.

Embick, David, and Rolf Noyer. 2007. Distributed morphology and the syntax/morphology interface. In *The Oxford handbook of linguistic interfaces*, ed. Gillian Ramchand and Charles Reiss, 289–324. Oxford University Press.

Etxepare, Ricardo. 2005. Number long distance agreement in (substandard) Basque. *International Journal of Basque Linguistics and Philology (ASJU)* 303–350.

Fernández, Beatriz, and Pablo Albizu. 2000. Ergative displacement in Basque and the division of labor between morphology and syntax. In *The Proceedings from the Panels of the Chicago Linguistic Society's Thirty-Sixth Meeting*, 103–117. Chicago Linguistic Society, University of Chicago, Chicago, Ill.

Gaminde, Iñaki. 1982. Butroiko euskara. *Fontes Linguae Vasconum* 14:403–460.

Gaminde, Iñaki. 1983. Orozkoko aditzak. *Fontes Linguae Vasconum* 15:37–96.

Gaminde, Iñaki. 2000. *Zamudio berbarik berba*. Bilbo: Labayru Ikastegi. Available online at http://bips.bi.ehu.es/manwe-bideoteka/zamudio/.

Gómez, Ricardo, and Koldo Sainz. 1995. On the origin of the finite forms of the Basque verb. In *Towards a history of the Basque language*, ed. José Ignacio Hualde, Joseba A. Lakarra, and R. L. Trask, 235–274. Amsterdam: John Benjamins.

Haiman, John, and Paola Benincà. 1992. *The Rhaeto-Romance languages*. London: Routledge.

Hale, Kenneth, and Samuel Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In *The view from Building 20: Essays in honor of Sylvain Bromberger*, ed. Kenneth Hale and Samuel Jay Keyser, 53–109. Cambridge, Mass.: MIT Press.

Halle, Morris. 1997. Impoverishment and Fission. *PF: Papers at the Interface, MITWPL* 425–450.

Halle, Morris, and Alec Marantz. 1993. Distributed Morphology and the Pieces of Inflection. In *The View from Building 20*, 111–176. Cambridge, Mass.: MITWPL.

Harbour, Daniel. 2007. *Morphosemantic number: From Kiowa noun classes to UG number features*. Dordrecht: Springer.

Hargus, Sharon, and Ellen Kaisse. 1993. *Studies in Lexical Phonology*. Academic Press.

Harley, Heidi, and Rolf Noyer. 2003. Distributed morphology. In *The second Glot International State-of-the-Article book*, ed. Lisa Cheng and Rint Sybesma, 463–496. Berlin: Mouton de Gruyter.

Holguín, Justin. 2007. The Status of Ergative Case in Basque: A Minimalist Approach. Bachelor's thesis, Reed College. Available at http://ling.auf.net/lingBuzz/000449.

Hualde, José Ignacio, Gorka Elordieta, and Arantzazu Elordieta. 1994. *The Basque Dialect of Lekeitio*. Bilbo: Euskal Herriko Unibersitatea.

Jaeggli, Osvaldo. 1982. *Topics in Romance syntax*. Dordrecht: Foris.

Kayne, Richard. 1991. Romance clitics, verb movement and PRO. *Linguistic Inquiry* 22:647–686.

Kiparsky, Paul. 1982. Word formation and the Lexicon. In *1982 Mid-America Linguistics Conference papers*, ed. Frances Ingemann, 3–29. Department of Linguistics, University of Kansas, Lawrence.

van Koppen, Marjo, and Jeroen van Craenenbroeck. 2008. Pronominal doubling in Dutch dialects. In *Doubling*, ed. Sjef Barbiers, Olaf Koeneman, and Marika Lekakou. Amsterdam: Elsevier. To appear.

Laka, Itziar. 1990. Negation in syntax: On the nature of functional categories and projections. Doctoral dissertation, Massachusetts Institute of Technology.

Laka, Itziar. 1993a. The structure of inflection: A case study in X^0 syntax. In *Generative studies in Basque linguistics*, ed. José Ignacio Hualde and Jon Ortiz de Urbina, 21–70. Amsterdam: John Benjamins.

Laka, Itziar. 1993b. Unergatives that assign ergative, unaccusatives that assign accusative. In *Papers on Case and Agreement I*, ed. Jonathan D. Bobaljik and Colin Phillips, number 18 in MIT Working Papers in Linguistics, 149–172. Cambridge, MA: MITWPL.

Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19:335–391.

Marantz, Alec. 1993. Implications of asymmetries in double object constructions. In *Theoretical aspects of Bantu grammar*, ed. Sam Mchombo. Stanford: CSLI.

Ortiz de Urbina, Jon. 1989. *Parameters in the grammar of Basque: A GB approach to Basque syntax*. Dordrecht: Foris.

Oyharçabal, Bernard. 1993. Verb agreement with non arguments: On allocutive agreement. In *Generative studies in Basque linguistics*, ed. José Ignacio Hualde and Jon Ortiz de Urbina, 89–114. Amsterdam: John Benjamins.

Pesetsky, David. 1995. *Zero Syntax*. Cambridge, Mass.: MIT Press.

Poletto, Cecilia. 2000. *The Higher Functional Field*. Oxford University Press.

Preminger, Omer. 2007. Number-LDA in Dialectal Basque - Determiners Probing into Clauses. Ling-Lunch Presentation, MIT. Available at http://web.mit.edu/omerp/www/MIT/Talks.html.

Pylkkänen, Liina. 2002. Introducing arguments. Doctoral dissertation, Massachusetts Institute of Technology.

Rezac, Milan. 2003. The Fine Structure of Cyclic Agree. *Syntax* 6:156–182.

Rezac, Milan. 2007a. The forms of dative displacement: From Basauri to Itelmen. This volume.

Rezac, Milan. 2007b. The syntax of eccentric agreement: The Person Case Constraint and Absolutive Displacement in Basque. *Natural Language and Linguistic Theory* To appear. Available at http://members.lycos.co.uk/loargann/PCC-AD.pdf.

Torrego, Esther. 1992. Case and agreement structure. Ms., University of Massachusetts, Boston.

Tsakali, Vina. 2007. Pseudo-doubling constructions. Paper presented at the Workshop on Greek Morphosyntax, MIT, May 2007.

Uriagereka, Juan. 1995. Aspects of the syntax of clitic placement in Western Romance. *Linguistic Inquiry* 25:79–123.

Woolford, Ellen. 2006. Lexical Case, Inherent Case, and Argument Structure. *Linguistic Inquiry* 37.1:111–130.

de Yrizar, Pedro. 1992. *Morfología del verbo auxiliar vizcaino: estudio dialectológico*. Bilbao Bizkaia Kutxa: Euskaltzaindia.