

Agreement Restrictions and their realization in Basque morphology

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1 Introduction

In this paper, we discuss the syntax and morphology of agreement realization in finite auxiliaries in Basque by conducting a detailed study of the Bizkaian variety of Zamudio. Our main objective is to argue that the proper treatment of Basque verbal morphology must take into account both syntactic and postsyntactic (PF) principles and rules, as delineated in the framework of Distributed Morphology (DM, Halle and Marantz 1993, 1994 and much subsequent work.)

The general theoretical proposals we advance are the following:

- (1) a. The finite auxiliary is a complex that contains ergative, dative, and absolutive clitics.
- b. What is normally referred to as the “root” of the auxiliary is actually a T head that agrees with the absolutive argument in the clause.
- c. Basque has no third person absolutive clitics.

We show that an analysis along these lines has a number of positive consequences. First, it renders a syntactic “Person Case Constraint” (PCC) account of Basque clitic combinations otiose. In other words, contrary to what has been written, Basque does not have a bona fide PCC that disallows the syntactic combination of third person datives and first/second person accusatives. Rather, the apparent Basque PCC falls out from the fact that Basque has only one clitic position for internal arguments, and from the fact that Basque simply has no third person absolutive clitics.

Second, our analysis paves the way for an explanation of “ergative displacement” as the result of metathesis (cf. Harris and Halle (2005)), which turns out to provide an economical and explanatory account of “ergative doubling” with the same machinery. Third, our proposal explains “root allomorphy”, i.e. the distribution of root morphemes in the auxiliary, in terms of well-known restrictions on the locality of agreement. Finally, the approach adopted here allows for an explanation of the distribution of the plural *-e* suffix in the auxiliary, and in particular, why unlike all other second and third person plural arguments, third absolutive plural does not trigger *-e*: because only clitics do.

The present paper is the continuation of a project we started with Arregi and Nevins 2006a, in which we undertake a systematic and detailed study of the local variety of Zamudio. Except otherwise noted, all the data reported here are from Zamudio, and most of it has been taken from Gaminde 2000, a detailed descriptive grammar of this variety.¹ Example sentences from this work are cited by giving the page number in parenthesis.² In cases in where that work does not have relevant examples, we have consulted de Yrizar 1992, whose volume 1 (pages 585–625) contains a detailed inventory of finite auxiliary paradigms in this dialect (the original fieldwork was conducted in 1974 and 1979.) Zamudio Basque is spoken in the town of the same name.³ de Yrizar (1992)

¹An online version of Gaminde’s grammar can be found in <http://bips.bi.ehu.es/manwe-bideoteka/zamudio/>.

²Auxiliaries in example sentences are often written together with participles as a single word in Gaminde 2000. We are not sure to what extent this reflects any morphological or phonological cohesion between the two words in Zamudio. For ease of exposition, we transcribe them here as separate words.

³According to <http://www.eustat.es>, the official website of the Basque Government in charge of gathering and reporting statistical data from the Basque Country, 1,317 native speakers of Basque lived in Zamudio in 2001. The website does not report how many of these speak the local dialect or the standard *Batua*. As is often the case throughout Basque towns with a native variety, we assume that most older native speakers can only speak the local variety, and most younger speakers speak both the local variety and *Batua*. According to de Yrizar 1992, there were approximately 1,400 native speakers of Zamudio Basque in 1970. Gaminde’s grammar was written based on his own fieldwork with

classifies Zamudio Basque as belonging to the southern subvariety of the Plencia variety of the dialect of Bizkaia.

Previous work on Basque verbal morphology addressing these issues in the generative framework typically does not concentrate on any local variety of the language.⁴ However, we believe that significant progress can be made in understanding the division of labor between syntactic and postsyntactic operations by looking at specific dialects thoroughly.

All the verbal paradigms that are directly relevant to the present work are in tables 6–13 in the appendix.⁵ Nearly all the verbal forms have been taken from Gaminde 2000, and the gaps found in that work have been filled with data from de Yrizar 1992. The latter forms are represented in italics in the tables in the appendix. For ease of exposition, these tables and all diagrams and examples use the following abbreviations:⁶

- (2) a. *Person*: 1 (first), 2 (second), 3 (third).
- b. *Number*: Sg/S (singular), Pl/P (plural)
- c. *Case*: Abs/A (absolutive), Erg/E (ergative), Dat/D (dative)
- d. *Clitics*: ABS/ABS (absolutive), ERG/ERG (ergative), DAT/DAT (dative)
- e. *Tense*: PRS (present), PST (past)
- f. *Others*: DEF stands for “default agreement”, and PRE represents one of the special prefixes discussed in sections 5 and 7.

This paper is organized as follows. Sections 2 and 3 lay out some background on theory and Basque morphology, respectively. Section 4 introduces our basic claims about the syntax of Basque, and sections 5 and 6 argue that this syntax, coupled with certain postsyntactic operations, provide a satisfactory account of the morphosyntax of clitics and agreement in auxiliaries. Sections 7–8 discuss several instances in which the expected order of morphemes in the auxiliary is modified in specific ways, and propose an analysis in terms of metathesis. Section 9 addresses the issue of the derivational order of postsyntactic operations, and section 10 concludes the paper with a summary of the main contributions of the present work. We have also included an appendix at the end with all the finite auxiliary paradigms relevant to the paper, and discussion of some alternative forms found in Gaminde 2000.

35 native speakers of Zamudio Basque between the ages of 32 and 92.

⁴Rezac 2006 is an exception, in that it takes into account many different varieties of Basque. However, Rezac’s objective in this work is to analyze several phenomena in verbal morphology found in some or all varieties, and does not provide a thorough analysis of all the morphological details of any particular variety.

⁵The data are transcribed using the orthographic conventions in Gaminde 2000. The reader not familiar with Basque spelling rules should take into account the following. The palatal nasal consonant (IPA [ɲ]) is represented with *ñ*, the voiceless alveopalatal fricative [ç] with *x*, the voiceless alveopalatal affricate [tʃ] with *tx*, and *y* stands for a palatal phoneme that varies in its realization between voiced affricate [dʒ] and approximant [j]. Many dialects of Basque distinguish between laminal and apical voiceless alveolar fricatives/affricates, represented orthographically as *z/tz* (laminal) and *s/ts* (apical). In Zamudio, as in other Bizkaian varieties, this distinction has been neutralized in favor of apical *s* in fricatives, but in favor of laminal *tz* in affricates. For ease of exposition, we use these symbols, rather than the traditional IPA ones, in phonetic transcriptions.

⁶Other abbreviations used are: ALL (allocutive clitic; see section 6,) C (comitative), CL (clitic), COLL (colloquial), G (genitive), FUT (future), IMP (imperfetive), IMPER (imperative), IN (inessive), M (masculine), N (*-n* suffix; see section 3), NF (nonfinite inflection), NOM (nominative) PRF (perfective), REL (relativizing suffix), S (*-s* suffix; see section 3.)

2 Theoretical background

2.1 Syntactic operations

We assume the model of Chomsky (2000) in which the *Agree* operation establishes a syntactic relation between a functional category (a *Probe*) and a phrasal category within its c-command domain (the *Goal*). Importantly, the Agree relation respects syntactic locality, and no Probe-Goal relation may be established with a DP z if a higher DP x intervenes between the Probe and the Goal.

2.2 Postsyntactic operations

The general model of grammatical computation assumed here is one in which syntactic operations put together phrases and heads, and in which agreement involves copying of abstract morphosyntactic features with no phonological content. After syntactic operations are complete, terminal-by-terminal, phonological content is inserted for morphosyntactic features at PF.

In this paper, we propose several syntactic and postsyntactic operations. Implicit throughout is the assumption that the former always precede the latter. This follows from the DM model that we adopt, in which postsyntactic operations apply in a module called *Morphological Structure* (MS):

(3) Syntax > MS

In turn, MS is itself structured, in that it contains several modules that follow a fixed derivational order (see section 9). All the postsyntactic rules proposed here belong to one of these modules. They operate on the abstract terminal nodes of syntax, enacting either feature-deletion (*impoverishment*), *fusion* of two terminals into one position-of-exponence, and reversal of the linear order of terminals (*metathesis*). After all these operations apply, Vocabulary Insertion assigns phonological exponents to the terminal nodes, and readjustment rules modify these phonological exponents in specific ways. Our analysis makes full use of these postsyntactic operations, and we will discuss each of them as they become relevant throughout the paper.

The basic currency of agreement relations and impoverishment operations are abstract morphosyntactic features. We provide the inventory of features and their definitions that are relevant for this paper below. Note that $[+F] = \neg[-F]$.

(4) *Person* (Noyer 1992, Halle 1997, Nevins 2005)

- a. $[+Author]$ true iff the reference set contains the speaker.
- b. $[+Participant]$ true iff the reference set contains one of the discourse participants.

- (5) a. $[+Author, +Participant]$ = first person
- b. $[-Author, +Participant]$ = second person
- c. $[-Author, -Participant]$ = third person
- d. $[+Author, -Participant]$ = logically impossible

(6) *Number* (Harbour 2003): $[+Singular]$ true iff $|N| = 1$

(7) *Case* (Calabrese 2006)

- a. $[+Motion, -Peripheral]$ = ergative
- b. $[+Motion, +Peripheral]$ = dative

- c. $[-\text{Motion}, -\text{Peripheral}] = \text{absolutive}$

(8) *Tense* (Iatridou 2000): $[+\text{Past}]$ true iff the topic time excludes the reference time.

In finite auxiliaries, clitics have person, number and case features, and T has the tense feature as well as person/number (due to agreement with the absolutive argument.)

Vocabulary Insertion is a process of inserting phonological material (i.e. an exponent) that realizes a set of syntactic features present at a particular syntactic node. One of the most canonically-adopted principles governing the selection of an exponent to realize a particular set of ϕ -features at a node is the Subset Principle, based on the formulation in Halle 1997.

(9) a. **The Subset Clause**

A phonological exponent realizes a feature bundle (syntactic node) if the item matches all or a subset of the grammatical features specified in the syntactic node. Insertion does not take place if the Vocabulary item contains features not present in the syntactic node.

b. **The Maximal Subset Clause**

Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the syntactic node must be chosen.

In what follows, we adhere to the following division of labor between agreement mechanisms themselves and the principles that govern their realization. We assume that agreement *intervention* that is hierarchical in nature is syntactic. Thus, the syntax of a dative intervention is not the same as the syntax of non-intervention; in the latter, there is no syntactic agreement relation established between T and the absolutive argument. However, agreement restrictions that are demonstrably not hierarchical are postsyntactic. For example, the g-/z- constraint in Bizkaian Basque (Arregi and Nevins 2006a) bans first plural and second person on the same auxiliary, regardless of which argument those features are on. Although postsyntactic feature-deletion occurs in such cases, the syntax of an auxiliary repaired due to the g-/z- constraint is the same as the syntax of a non g-/z- configuration in terms of the agreement relations that take place during the syntax. Finally, syntax-phonology linear mismatches such as ergative displacement (ED), to be discussed in Section 7, are due to phonological deficiency of a particular morpheme and hence, being related to phonological deficiency, by their very nature postsyntactic. Thus, the syntax of an ergatively-displaced auxiliary is exactly the same as that of a non-ED configuration in terms of the agreement relations established in the syntax.

3 Background on Basque

One of the things that makes Basque auxiliary morphology interesting is apparent “agreement” with multiple arguments. We argue that the only true “agreement” is done by T, and the rest is clitics. Finite sentences in Basque typically contain an analytical verbal complex, with a participle inflected for aspect,⁷ and an auxiliary containing tense/agreement, clitics, and other inflectional

⁷The participle can also be inflected for future, as in (13).

affixes:^{8,9}

- (10) Su-k ni- \emptyset paño giau- \emptyset ekar- \emptyset d -o -su.
2S-E 1S-E than more-A bring-PRF PRE -PRS.3S -ERG.2S
'You have brought more than me.' (353)

As shown in this example, Basque is an ergative language. The subject of a transitive sentence is ergative, and the object absolutive. On the other hand, unaccusative sentences always contain an absolutive argument, and no ergative argument:

- (11) Bakotxa- \emptyset bere etze-an bixi d -a.
each-A.S 3S.G house-IN.S live PRE -PRS.3S
'Each person lives in their house.' (360)

In the spirit of Bobaljik 1993, Laka 1993b, we assume that absolutive case is assigned by *v* to the internal argument, and ergative by *T* to the external argument. In other words, what defines Basque as an ergative language is the fact that case assignment by *v* is obligatory in every clause, though case assignment by *T* is not.¹⁰ 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.

The examples above also illustrate how absolutive and ergative arguments are cross-referenced in the auxiliary. First, the root of the auxiliary, which we claim is in fact the realization of *T*, agrees with the absolutive argument in person and number. This is in fact a controversial claim, and much of the present paper is dedicated to establishing it. Second, certain morphemes in the auxiliary cross-reference absolutive, ergative and dative arguments in the clause (these morphemes are glossed as ABS, ERG and DAT in the examples.) Although these are commonly referred to as agreement morphemes (e.g. Ortiz de Urbina 1989), some authors have claimed that they are in fact clitics (see Laka 1993a, Rezac 2006). As explained in detail in later sections, we adopt the latter analysis.¹¹ (10) contains an example of an ergative clitic; absolutive and dative clitics are illustrated in the following sentences:¹²

- (12) *pro*_{1S.A} Lau aste-an ego-n n -as geixorik.
four week-IN be-PRF ABS.1S -PRS.1S.A sick
'I've been sick for four weeks.' (367)
- (13) *pro*_{1S.E} Bat-an bat-eri *pro*_{3S.A} emo-ngo d -o -tze -t.
one-G one-D give-FUT PRE -PRS.DEF -DAT.3S -ERG.1S
'I'll give it to someone or other.' (361)

⁸A very reduced number of verbs can also appear in simple tenses. See Gaminde 2000 for relevant examples from Zamudio.

⁹In the examples below, some auxiliaries contain the prefix *d*, glossed as PRE. On the status of this exponent, see section 5.

¹⁰Unergatives assign ergative to their argument, but Laka (1993b) shows that these are really concealed transitives, as proposed by Hale and Keyser (1993).

¹¹The 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 (see Gómez and Sainz 1995 and references cited there.)

¹²These examples also illustrate the fact that all DPs that are cross-referenced in the auxiliary can be pro-dropped.

- (14) *pro*_{2S.D} *pro*_{3S.A} Ondo etor-Ø d -a -tzu.
 well come-PRF PRE -PRS.DEF -DAT.2S
 ‘You’ve deserved it.’ (413)

Before we introduce our main proposals, we would like to discuss three aspects of Basque verbal morphology that play little or no role in the analysis defended here. First, many Basque dialects make certain distinctions in the second person that are not made elsewhere in the language. In particular, there is a colloquial/formal distinction in the second singular, reflected both clitic and nonclitic pronouns. However, Gaminde 2000, our main source of data, contains very few colloquial auxiliary forms. As in many other dialects, the formal/colloquial contrast is being lost in Zamudio in favor of formal forms. For the sake of ease exposition, we have omitted all colloquial forms from the analysis.

Second, the present paper only discusses indicative auxiliary paradigms. Although Zamudio Basque does have nonindicative auxiliary forms, the corresponding paradigms are greatly leveled (see Gaminde 2000.) Furthermore, as mentioned in footnote 8, a reduced number of verbs can appear in simple tenses, that is, they have finite forms. The paradigms for these nonauxiliary finite forms are greatly leveled as well. Although a complete analysis of Zamudio finite verbal forms should include both nonindicative and nonauxiliary forms, we have decided not to take them into account due to the lack of sufficient data.

Finally, there are two morphemes in finite auxiliaries that are ignored by the analysis. All finite auxiliaries follow this template:¹³

- (15) absolutive clitic - tense/absolutive agreement - dative clitic - ergative clitic - **S** - **N**

The two auxiliary-final morphemes, glossed as **S** and **N** in our examples, are always realized as *s* and *n*, respectively. Both morphemes have a quite irregular distribution, and we discuss both of them directly below.

The morpheme **S** is traditionally considered to be a plural absolutive agreement morpheme. For instance, it consistently appears in all third plural absolutive forms in the absolutive-dative paradigms in table 7 in the appendix. However, as can be seen in tables 8–9, it does not always appear in the presence of a plural absolutive clitic. For instance, it appears in the first plural absolutive/second singular ergative present form *g-o-su-s*, but not in the first plural absolutive/third singular ergative form *g-aitu-Ø*. Furthermore, it is also present in some second singular absolutive forms, as in the second singular absolutive/third singular ergative form *s-aitu-Ø-s*.¹⁴

Even if we ignored these irregularities in its distribution, it is not clear to us how **S** should be analyzed. Its final position within the auxiliary suggests that it corresponds to a high head in clause structure (see section 4). This might suggest that it is a complementizer-related morpheme that

¹³As will be shown in later sections, this template has no theoretical status in our analysis. It is an emergent property of Basque finite auxiliaries due to certain syntactic and morphological principles.

¹⁴Second singular forms in Basque often pattern with plural forms, though not always, as witnessed by the fact not all the second singular absolutive forms in tables 8–9 have the morpheme **S**. The assumption that what we call second singular forms are in some sense morphologically plural (much like French *vous*) is standard in the Basque literature, but it has never been implemented formally. This assumption is highly problematic. For instance, all second plural clitics trigger the insertion of plural enclitic *-e* in the auxiliary, but second singular clitics never do (see section 5.) Nevertheless, apart from the (irregular) distribution of **S**, this assumption plays no role in the data discussed in this paper.

agrees with the absolutive argument. However, there are two objections to this hypothesis. First, although complementizer agreement is a well-attested phenomenon, it is typically only present in embedded clauses. *S* appears in all relevant finite forms, both matrix and embedded. Second, if this were indeed a high head that agrees with absolutive arguments, we would expect intervening (nonabsolutive) arguments to block agreement. As we argue in sections 4 and 8, agreement between *T* and absolutive arguments in Zamudio Basque is blocked by intervening dative DPs. However, as can be seen in tables 7 and 10–13 in the appendix, *S* is present even in auxiliaries that contain dative clitics. This agreement pattern suggests that *S* is in fact the morphological reflex of a low syntactic head that is above the absolutive argument, but below dative (and ergative) arguments (see the structure in (19).) This seems to conflict with the position of *S* within the auxiliary verb. Thus, this morpheme resists a uniform analysis that takes into account both its syntactic and morphological properties.

The distribution of *N* is also somewhat puzzling. It is often referred to as an inflectional suffix realizing past tense (see, among others, Laka 1993a and Rezac 2006.) Indeed, in the tables in the appendix to the present paper, *N* only appears in the past tense, and never in the present. However, *N* is not present in embedded forms (e.g. example (74),) where finite forms always end in a complementizer-related suffix (*-ela* in (74).) Furthermore, it is present in certain nonindicative forms that are not past tense (e.g. the subjunctive forms reported in Gaminde 2000, p. 372.) Finally, there is good reason to believe that tense is located elsewhere in the finite auxiliary. As we argue in section 6, the morpheme often referred to as the root of the auxiliary is in fact a *T* head that conflates both tense and agreement features. The final position of *N* within the auxiliary and its relation to tense suggests an analysis in terms of Rizzi’s (1997) Finite head, but we have not explored this possibility in enough depth to make an explicit proposal.

4 The syntactic structure of the auxiliary complex

One of our central hypotheses are that the morphemes often referred to as “agreement” in Basque finite auxiliaries are in fact pronominal clitics. 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. Furthermore, we propose that what is standardly referred to as the root of the auxiliary is in fact *T*, which agrees with an absolutive argument. This is illustrated in examples (12)–(13), repeated here:

- (16) *pro*_{1S,A} Lau aste-an ego-n **n** -as geixorik.
four week-IN be-PRF **ABS.1S** -**PRS.1S** sick
‘I’ve been sick for four weeks.’ (367)
- (17) *pro*_{1S,E} Bat-an bat-eri *pro*_{3S,A} emo-ngo **d** -o -tze -t.
one-G one-D give-FUT **PRE** -**PRS.DEF** -**DAT.3S** -**ERG.1S**
‘I’ll give it to someone or other.’ (361)

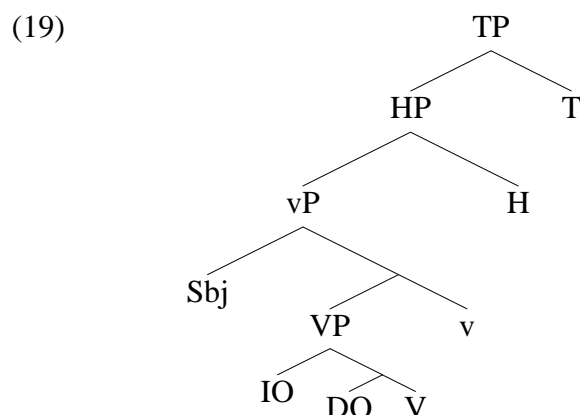
In (16), *T* is realized as *as*, which is specified as present tense and agrees with the first singular absolutive argument. In (17), *o* is a default realization of tense/agreement. Furthermore, the auxiliary in (16) contains the first singular absolutive proclitic *n*, and the one in (17) the third singular dative enclitic *tze* and the first singular ergative enclitic *t*.

The claim that the root of the finite auxiliary is in fact a T morpheme that agrees with an absolutive argument is not completely new. Certain pieces of this morpheme are often identified as exponents of plural agreement with an absolutive argument. The novelty of our analysis lies in two claims: (i) the morpheme that agrees is in fact T, and (ii) it is agreement in both person and number. As we discuss in detail in sections 5 and 8, the form of this morpheme is highly dependent on both the tense of the clause and on the person and number features of the absolutive argument. An analysis that does not adopt the two claims above cannot explain these observations without highly *ad hoc* mechanisms.

All finite auxiliaries follow this template:¹⁵

(18) absolutive clitic - tense/absolutive agreement - dative clitic - ergative clitic¹⁶

In our analysis, this template has no theoretical status. The basic syntax that underlies the positioning of morphemes in the auxiliary is the following:^{17,18}



Basque pronominal clitics can have ergative, dative, or absolutive case. These clitics are generated in argument position, and must be licensed by moving to certain functional heads that are only available in finite clauses.¹⁹ Specifically, dative and absolutive clitics must move to H (a Host position) and ergative clitics must move to T in (19).

Consider, for instance, the following transitive sentence:

¹⁵As discussed in the previous section, we do not include here the two auxiliary-final morphemes S and N.

¹⁶There is a well-defined class of exceptions to this template. In certain environments, the absolutive clitic position is occupied by certain special prefixes or by an ergative clitic. The morphological operations responsible for these cases are discussed in sections 5 and 7.

¹⁷We omit here a possible aspectual projection, which is responsible for the realization of the aspectual suffix on the main verb (Laka 1990.)

¹⁸We assume that the indirect object is generated higher than the direct object. The exact details of the syntax of direct and indirect objects beyond this are not crucial for our analysis. See Larson 1988, Marantz 1993, Pesetsky 1995, Pytkäinen 2002 for relevant discussion.

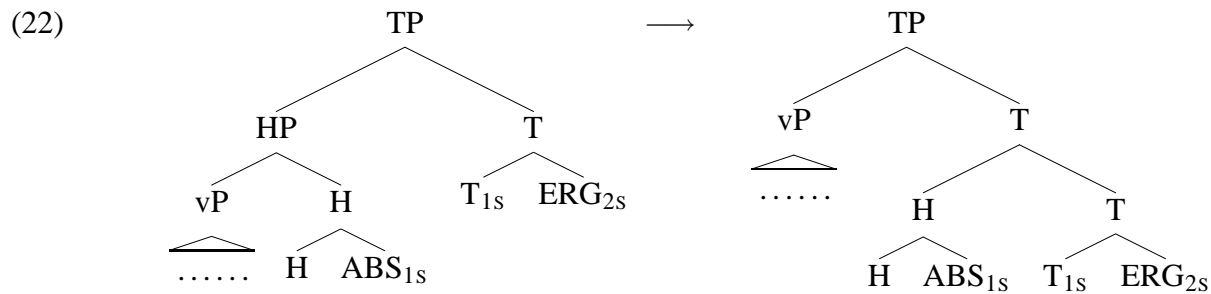
¹⁹As illustrated in (10)–(14) clitic doubling is possible in Basque. In fact, it is obligatory whenever possible. We assume Torrego's (1992) 'big DP' analysis of cliticization (see also Uriagereka 1995), in which the clitic and argument are base-generated as sisters and the clitic moves.

- (20) su-k *pro*_{1S.A} gure ba -n -o -su
 2S-E want if -ABS.1S -PRS.1S -ERG.2S
 ‘if you want me’ (419)

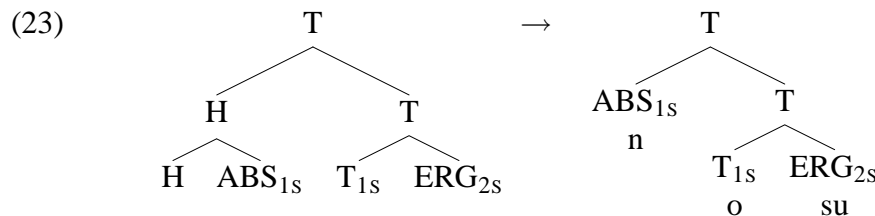
The auxiliary in this sentence is derived as follows:²⁰

- (21) a. The first singular absolutive clitic moves to H:
 [HP [vP ERG_{2S} *t*_{ABS} ...]vP H-ABS_{1S}]HP
 b. The third plural ergative clitic moves to T:
 [TP [HP [vP *t*_{ERG} *t*_{ABS} ...]vP H-ABS_{1S}]HP T-ERG_{2S}]TP
 c. T agrees with the absolutive clitic in H:
 [TP [HP [vP *t*_{ERG} *t*_{ABS} ...]vP H-ABS_{1S}]HP T_{1S}-ERG_{2S}]TP

The resulting structure is the input to Morphological Structure, which modifies it by merging the complex H and T heads, resulting in a single morphological word (Marantz 1988, Embick and Noyer 2001:)



Another important fact about the morphology of finite auxiliaries in Basque is that the head H is systematically ignored by all postsyntactic rules. We implement this by positing a postsyntactic fusion operation that conflates the terminal node H with its sister. When applied to the structure in (22), this results in the fusion of terminal H with ABS into a single node:



As we will see throughout this paper, the sister of H is not always an absolutive clitic. In some cases, it is a dative clitic, and in others, T (due to the lack of dative/absolutive clitics in the sentence.) As a notational convention, we label the node resulting from fusion with the label of the node that is fused with H. This reflects the fact that vocabulary insertion into the fused node is not affected in any way by whatever features are present in H.

²⁰For ease of exposition, we represent ergative, dative and absolutive clitics in these diagrams as ERG, DAT, and ABS, respectively, and with a subscript specifying the person and number of the clitic. Simple lines represent agreement relations, and arrows, movement.

	Absolutive	Ergative
1Sg	n-	-t/0a
1Pl	g-	-u
2Sg	s-	-su
2Pl	s-...-e	-su-e
3Sg	—	-0/-o
3Pl	—	-0-e/-o-e

Table 1: Absolutive and ergative clitics

In later sections, we show that T in this structure is spelled out according to its feature content (i.e. tense and person/number features), ABS is realized as a proclitic to T (and in one case, as an enclitic), and ERG as an enclitic to T. The linear order of morphemes in (18) is thus derived via syntactic head movement in a right-headed structure, coupled with the postsyntactic operations of merger (22) and fusion (23).

5 Absolutive and ergative clitics

Basque has a system of proclitics and enclitics for the various person-number features of the argument they correspond to. In this section, we account for the realization of absolutive and ergative clitics. The forms of these clitics appear in table 1 (see also the full paradigms in tables 6–9 in the appendix.)²¹ The vocabulary entries that result in these clitics are the following:²²

(24) *Vocabulary entries for first person*

- | | | |
|----|--|-------------|
| a. | /g/ ↔ [+Participant, +Author, −Singular] / ___ T | 1Pl.Abs |
| b. | /u/ ↔ [+Participant, +Author, −Singular] / T ___ | 1Pl.Erg |
| c. | /n/ ↔ [+Participant, +Author, +Singular] / ___ T | 1Sg.Abs |
| d. | /t/ ↔ [+Participant, +Author, +Singular] / T ___ | 1Sg.Erg/Dat |

(25) *Vocabulary entries for second person*

- | | | |
|----|--|-------|
| a. | /s/ ↔ [+Participant, −Author] / ___ T | 2.Abs |
| b. | /su/ ↔ [+Participant, −Author] / T ___ | 2.Erg |

(26) *Vocabulary entry for third person*

- | | | |
|---|-----------------------------------|-------|
| 0 | ↔ [−Participant, −Author] / T ___ | 3.Erg |
|---|-----------------------------------|-------|

In these entries, what distinguishes absolutive and ergative clitics is their position with respect to T. This is not unique to Basque. For example, in Paduan (Poletto 2001:p. 55, Cardinaletti and Repetti 2006), the second person clitic is realized as *te* preverbally and *to* postverbally (27).

²¹We have only included the clitics present in auxiliaries that do not contain a dative clitic. The syntax and morphology of auxiliaries containing dative clitics is somewhat more complex, and is dealt with in section 8. That section includes discussion of the *a* and *o* allomorphs of first singular and third person ergative clitics (see table 1,) as well as the fact that *t* (24-d) is both an ergative and a dative enclitic.

²²As can be seen in table 8 in the appendix, the first plural ergative clitic is missing in the context of a second person absolutive clitic. This is due to the g-/z- constraint, discussed in Arregi and Nevins 2006a. See also footnote 26.

- (27) a. te magni
 you eat
 ‘You eat.’ Paduan
 b. magni-to
 eat-you
 ‘Do you eat?’ Paduan

On the current analysis, Basque clitics behave the same. The syntax is responsible for clitic placement with respect to the auxiliary, and the realization of a clitic’s features depend on its position with respect to the auxiliary root:

- (28) *pro*_{1S.A} Lau aste-an ego-n **n** -as geixorik.
 four week-IN be-PRF **ABS.1S** -PRS.1S sick
 ‘I’ve been sick for four weeks.’ (367)
 (29) *pro*_{1S.E} Bat-an bat-eri *pro*_{3S.A} emo-ngo d -o -tze **-t.**
 one-G one-D give-FUT PRE -PRS.DEF -DAT.3S **-ERG.1S**
 ‘I’ll give it to someone or other.’ (361)

As can be seen in the structure in (22), the absolutive clitic precedes T, and the ergative clitic follows it. Since ergative and absolutive clitics can be identified as proclitic or enclitic in this way, it is not necessary to specify case features in the vocabulary entries. The lack of case specification, especially in the proclitics, will be crucial in accounting for the phenomenon of ergative displacement in section 7.

All second and third person ergative clitics also contain the exponent *-e*: the second plural ergative clitic is *-su-e* (as opposed to singular *-su*), and the third plural ergative clitic is *-θ-e* (as opposed to singular *-θ*.) We account for this fact by positing the following vocabulary entry:

- (30) *Vocabulary entry for plural*
 /*-e*/ ↔ [−Singular] Pl

Basque is not unique in having a clitic dedicated to realizing number features; Noyer (2001) provides an extensive analysis of the Nunggubuyu nonsingular clitic *wa*. In Basque, the discontinuous appearance of the clitic *-e* along with other clitics is the result of fission. We propose that vocabulary insertion into clitics in Basque is subject to fission (Noyer, 1992, Halle, 1997). After insertion of the entry whose feature specification matches the most features in the morpheme (in accordance with the Subset Principle), fission splits off the remaining (i.e. unrealized) features into a separate terminal-of-exponence. Vocabulary insertion then proceeds onto this morpheme as usual. In particular, fission accounts for the fact that all second and third plural clitics contain the vowel *e*, as discussed above. For instance, in the second plural ergative enclitic *su-e*, *su* matches the features [+Participant, −Author], and *-e* matches [−Singular]:

- (31) *Fission in second plural ergative*
 [+Participant, −Author, −Singular] $\xrightarrow{(25-b)}$ *su* [−Singular] $\xrightarrow{(30)}$ *su-e*

Note that the plural suffix *-e* never appears in first plural clitics. This is due to the fact that the more specific exponents *g/u* already match [−Singular]:

- (32) *No fission in first plural ergative*
 [+Participant, +Author, –Singular] $\xrightarrow{(24-b)} u$

Another peculiarity of the entry in (30) is that it is not contextually restricted to precede or follow T, which entails that it can also be used to realize the [–Singular] feature of absolutive clitics. This is indeed the case, although perhaps not as transparently as with ergative clitics. Consider, for instance, the second plural auxiliary form *s-ara-e* (cf. singular *s-ara*). As with the second plural ergative clitic, the absolutive clitic in this auxiliary is realized with two exponents: *s* matches the features [+Participant, –Author], and *-e* matches [–Singular]. Note, however, that *-e* appears *after* T, even though all other exponents for absolutive clitics precede T, as predicted by the structure in (22). This is due to the fact that the exponent in (30) is specified as a suffix. It must therefore follow the root (T) rather than precede it, thus overriding the requirements imposed by the structure in (22).

We now turn to the realization of third person absolutive, which brings us to another central hypothesis in this paper:

- (33) Basque has no third person absolutive clitics.

This explains the lack of exponents for third person absolutive in (26). The only entry in (26) can only be inserted in a clitic that follows T, and can thus never spell out an absolutive clitic. What we find preceding the root when there is no available proclitic is a special prefix, which can be *d*, *s* or \emptyset (see, for instance, all the cells corresponding to third person absolutive in tables 7–9 in the appendix.) This phenomenon is intimately tied to the phenomenon of ergative displacement, in that both seem to satisfy a requirement that T be non-initial within the finite auxiliary. We postpone a formal treatment of these prefixes (and ergative displacement) to section 7.

The proposal is thus that third person absolutives do not require clitic doubling and thus no clitic is generated. The main clue that (33) is on the right track is the fact that the presence of a third plural absolutive argument does not trigger the insertion of the plural enclitic *-e*. If (33) did not hold and the special prefixes mentioned above were in fact the realization of a third person absolutive clitic, we would also expect the insertion of plural *-e* in the context of a third person absolutive argument. As can be seen throughout the paradigms in this paper, this is never the case. As we will see in section 8, (33) is further supported by PCC effects in Basque.

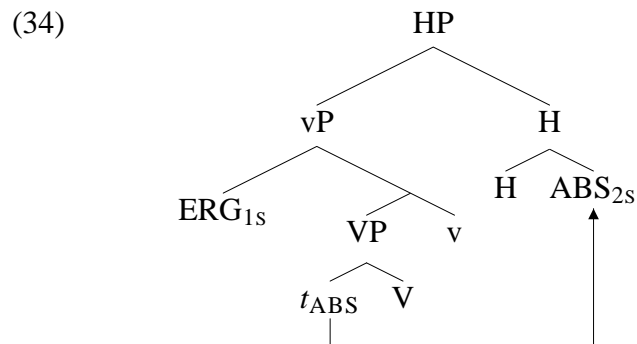
6 Agreement by T with the absolutive, and its realization

As discussed above, we identify the root of the finite auxiliary as the realization of the head T. Furthermore, this head agrees with the absolutive argument in the sentence. In order to understand how agreement affects the realization of the root, we first discuss sentences with a first or second person absolutive argument, and then sentences with a third person absolutive argument. As in the previous section, we postpone discussion of auxiliaries with dative clitics to section 8.

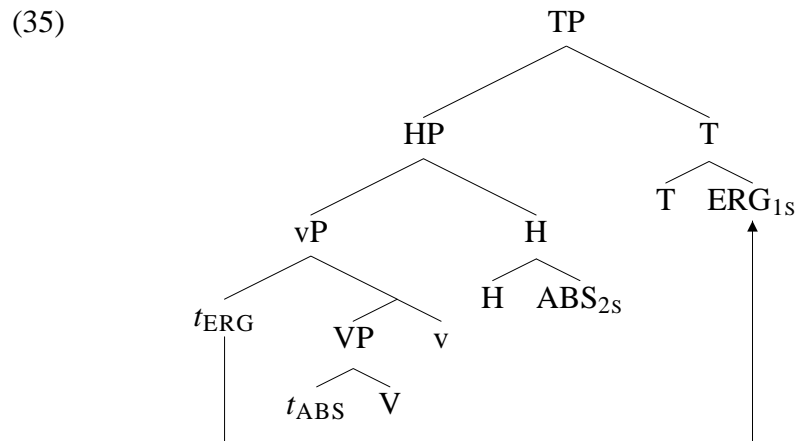
6.1 The syntax of agreement

When a finite sentence contains a participant (first or second person) absolutive argument, it must cliticize, that is, it must move to the head H. (Third person absolutives do not generate a syntactic

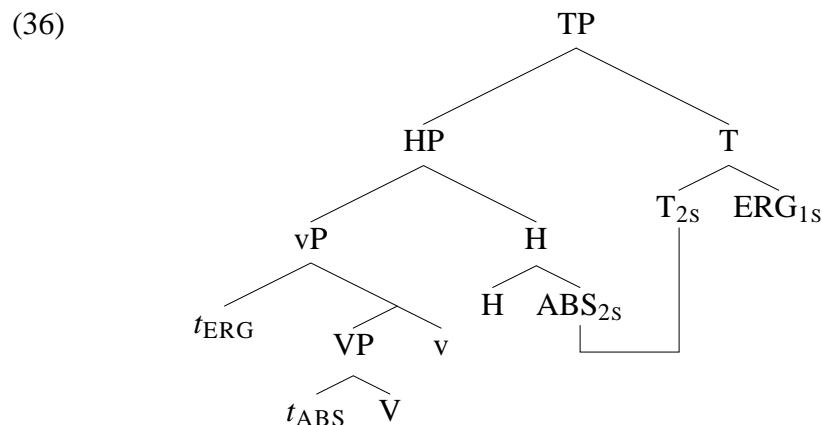
clitic and hence do not move to H.) For instance, a sentence with a second person singular absolutive argument and a first person singular ergative argument has the following structure at the point in the derivation in which the absolutive clitic moves to H:



After T is merged, it triggers two operations. First, the ergative clitic moves to T:



Furthermore, T agrees with the absolutive clitic in T:

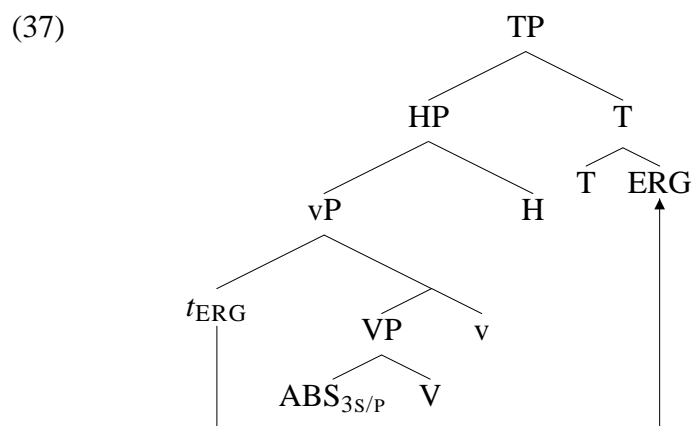


In an intransitive sentence, the derivation is the same, except for the fact that there is no ergative argument, so there is no clitic movement to T.

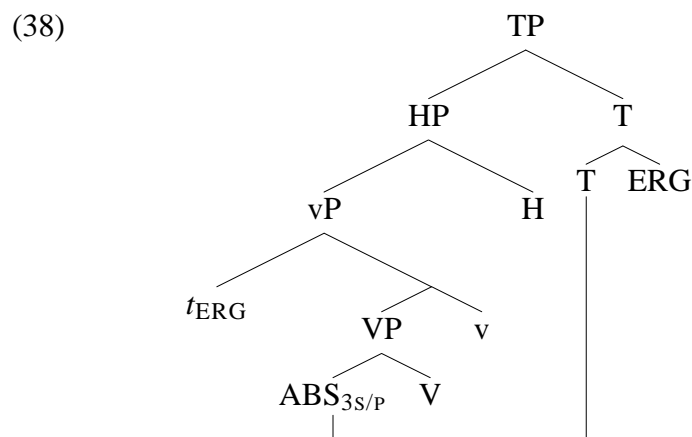
This agreement operation satisfies standard restrictions on agreement. Specifically, T can only agree with the closest nominal in its c-command domain. Furthermore, this nominal must have

absolute case. (This is very much like the fact that only nominatives can trigger T agreement in nominative-accusative languages). Although in the type of example discussed above this requirement is satisfied, we will see below that this is not always the case, namely when a dative argument intervenes, which results in lack of agreement.

The derivation of a sentence with a third person absolute argument is slightly different, since, by hypothesis (33), there are no third person absolute clitics. In an intransitive sentence, there are no clitics, and T agrees with the only nominal in the clause, which is the third person absolute argument within vP. If the sentence is transitive, the ergative clitic first moves to T:



Next, T must agree with the closest nominal in its c-command domain, which furthermore must be absolute. Although there is an absolute nominal in its c-command domain (the complement of V), the trace of the ergative clitic intervenes. However, under the assumption that traces do not block agreement relations (Chomsky, 2001), T agrees with the absolute argument in VP.



To summarize so far, in sentences with no dative arguments, T agrees with an absolute nominal in both transitive and intransitive clauses. If this nominal is a participant, then T agrees with a clitic in H; if it is third person, then T agrees with a VP-internal argument.

6.2 The realization of agreement on T

The person/number features acquired by T via agreement with the absolutive argument are crucial in understanding its realization by vocabulary entries. As can be seen in tables 2–4, the form of T is highly dependent on the features of the absolutive argument, as well as the feature $[\pm\text{Past}]$.²³ Furthermore, these tables also show that the realization of T is also dependent on the presence or absence of an ergative clitic (and, to a limited extent, on its feature content.) We implement this latter fact with the following rule, which applies prior to vocabulary insertion:

- (39) Insert the feature $[+\text{Have}]$ in T the context of an ergative clitic. Insert $[-\text{Have}]$ otherwise.

For ease of exposition, we refer to T specified as $[+\text{Have}]$ as *transitive T*, and to T specified as $[-\text{Have}]$ as *intransitive T*.

We turn to a brief discussion of the allomorphy conditions determining the form of T (the root of the auxiliary). The fact that the form of the root depends on the presence/absence of an ergative clitic might lead to the hypothesis this is the same phenomenon as the *have/be* alternation in Romance and Germanic languages, where auxiliary *have* is used in transitive sentences and *be* in intransitive sentences. However, Arregi (2004) presents thorough argumentation that the alternation in Basque is based on *the presence/absence of an ergative clitic on the auxiliary*, and not on the ergative DP argument (i.e. transitive/intransitive syntax). That this is the case can be best detected when ergative cliticization and ergative arguments part ways.

One demonstration comes from *allocutive* auxiliary forms in Zamudio. In many dialects of Basque, a distinction is made between second singular formal and colloquial forms. In Zamudio, as in other dialects, this distinction is being neutralized in favor of colloquial forms. Due to the marginal status of this opposition in Zamudio, we have only reported formal forms (glossing them simply as second singular.) However, Gaminde 2000 has collected some colloquial forms, including allocutive ones. Allocutive finite forms in Basque are unique in that they contain a second person clitic that agrees with the addressee when the latter is someone who would be addressed using colloquial forms (see Oyharçabal 1993.) Importantly, *this clitic does not cross-reference any DP in the clause*, hence the name ‘allocutive’.

What is of interest to us is the particular form that allocutive clitics have. In an intransitive auxiliary with only an absolutive clitic, the allocutive clitic is realized as an ergative clitic. This is illustrated in the following forms, where (41) is the allocutive counterpart of (40):²⁴

- (40) *pro*_{1S.A} Lau aste-an ego-n n -as geixorik.
four week-IN be-PRF ABS.1S -PRS.1S sick
‘I’ve been sick for four weeks.’ (367)
- (41) *pro*_{1S.A} Lau aste-an ego-n n -o -k geixorik.
four week-IN be-PRF ABS.1S -PRS.1S -ALL.2S.COLLM sick
‘I’ve been sick for four weeks.’

²³As in all dialects of Basque, reflexive auxiliary forms (first with first, second with second) are not possible in Zamudio Basque. This is reflected in tables 3–4 and all other tables in this paper by the symbol ‘X’ in the relevant cells. On the underlined forms in table 3, see footnote 26.

²⁴Unfortunately, Gaminde 2000 does not have any relevant sentence containing allocutive forms, which reflects the fact that these forms are not in much use any more. Gaminde lists the allocutive form *n-o-k* in (41) on page 382.

Abs	Present	Past
1Sg	as	entz
1Pl	ara	intz
2Sg	ara	intz
2Pl	ara	intz
3Sg	a	a
3Pl	ire	ire

Table 2: Intransitive T

It is important to note that both sentences have the same syntax and meaning. Both are syntactically intransitive, in the sense that they contain a single absolutive argument. The only difference is that (41) is used whenever addressing a single male friend, and (40) otherwise. The auxiliary in both examples contains, as expected, the proclitic *n*, which cross-references the first singular absolutive argument. However, the allocutive auxiliary in (41) also contains the allocutive enclitic *k*, which does not crossreference any DP in the sentence.²⁵ Furthermore, this allocutive clitic has the same form and occupies the same position as an ergative clitic.

What is relevant to us is the fact that T (the root) takes a different form in both examples. In both, T agrees with the first singular absolutive argument. However, T in the nonallocutive auxiliary (40) is intransitive *as*, as expected, but T in the allocutive auxiliary (41) is transitive *o* (see below for the relevant vocabulary entries.) Even though the sentence lacks transitive syntax and an ergative argument, the syntactically unmotivated presence of a clitic with the form and position of an ergative clitic triggers the insertion of transitive T. Thus, (41) shows that ergative cliticization, and *not* an ergative argument, triggers the presence of the transitive.

To conclude so far, transitivity alternation in T in Basque is determined by the presence of an *ergative clitic* in the auxiliary, and is thus is a postsyntactic determination of allomorphy. For ease of exposition, we refer to T specified as [+Have] as *transitive T*, and to T specified as [−Have] as *intransitive T*. As a result of agreement and rule (39), the vocabulary entries to be inserted in T are sensitive not only to tense features, but also both the person/number features copied from the absolutive argument, and on the value of the feature [\pm Have].

The vocabulary entries for intransitive T are the following (see table 2:)

(42) *Vocabulary entries for first person*

- | | | |
|----|---|-------------|
| a. | /entz/ \leftrightarrow [−Have, +Past, +Participant, +Author, +Singular] | 1Sg.Past |
| b. | /as/ \leftrightarrow [−Have, −Past, +Participant, +Author, +Singular] | 1Sg.Present |

(43) *Vocabulary entries for first and second person*

- | | | |
|----|---|---------------|
| a. | /intz/ \leftrightarrow [−Have, +Past, +Participant] | 1Pl/2.Past |
| b. | /ara/ \leftrightarrow [−Have, −Past, +Participant] | 1Pl/2.Present |

(44) *Vocabulary entry for third person*

- | | |
|---|-----|
| /ire/ \leftrightarrow [−Have, −Participant, −Author, −Singular] | 3Pl |
|---|-----|

²⁵Oyharçabal 1993 provides several arguments that the presence of an allocutive clitic in the auxiliary does not signal the presence of an additional argument in the sentence. For instance, this alleged argument cannot bind anaphors. Oyharçabal interprets these arguments as showing that the clitic cross-references a *pro* in a high A'-position.

Ergative	Absolutive					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	X	X	aitu	aitu	o	o
1Pl	X	X	<u>ara</u>	<u>ara</u>	o	o
2Sg	o	o	X	X	o	o
2Pl	o	o	X	X	o	o
3Sg	eu	aitu	aitu	aitu	eu	eitu
3Pl	eu	aitu	aitu	aitu	eu	eitu

Table 3: Present transitive T

Ergative	Absolutive					
	1Sg	1Pl	2Sg	2Pl	3Sg	3Pl
1Sg	X	X	<i>endu</i>	<i>endu</i>	endu	endu
1Pl	X	X	<i>endu</i>	<i>endu</i>	endu	endu
2Sg	<i>endu</i>	<i>endu</i>	X	X	endu	endu
2Pl	<i>endu</i>	<i>endu</i>	X	X	endu	endu
3Sg	endu	endu	endu	endu	eu	eitu
3Pl	endu	endu	endu	endu	eu	eitu

Table 4: Past transitive T

- (45) *Default vocabulary entry*
/a/ ↔ [−Have]

These vocabulary entries account for the forms of T in table 2 in a straightforward way. The following are the entries relevant to transitive T (see tables 3–4):²⁶

- (46) *Vocabulary entry for first/second person*
/aitu/ ↔ [+Have, −Past, +Participant] 1Pl/2.Present
- (47) *Vocabulary entries for third person*
a. /eitu/ ↔ [+Have, −Participant, −Author, −Singular] 3.Pl
b. /eu/ ↔ [+Have, −Author] 3.Sg
- (48) *Default vocabulary entries*²⁷
a. /endu/ ↔ [+Have, +Past] / [+Motion, +Participant] ____

²⁶The underlined forms of T in table 3 are in fact intransitive. This is due to the g-/z- constraint (Arregi and Nevins 2006a,) which bans certain combinations of first plural with second person clitics. In this particular case, it triggers the deletion of a first plural ergative clitic in the context of a second person absolutive clitic. As predicted by the analysis of the *have/be* alternation in Arregi 2004 outlined above, this triggers the insertion of the feature [−Have] in the auxiliary. Despite being derived from a transitive syntax, the auxiliary is, in the sense defined above, morphologically intransitive.

²⁷(48-a) is a default entry in the sense that it does not realize person and number features of T. However, it has a very specific context that limits its insertion to forms with ergative displacement. The relevance of this fact will not become clear until subsection 8.2, and can be ignored for now.

- b. /o/ ↔ [+Have]

The entries in (47) assign the correct exponents to T in the third person (*eu*, *aitu*,) except in the environment of a participant ergative clitic. In the latter context, T is realized as the default *o/endu* (in the present and the past, respectively; see (48),) due to the following impoverishment rule, which deletes person features in T:

- (49) *Third Impoverishment*
 [+Have, –Participant] → [+Have] / ____ [–Peripheral, +Participant]

This rule applies after (39) and prior to vocabulary insertion. The following example illustrates this rule:

- (50) *pro*_{1S,E} Beskari-e i-n d -o -t.
 lunch-A.S make-PRF PRE -PRS.3S -ERG.1S
 ‘I’ve made lunch.’ (388)

In the syntax, the first singular ergative clitic moves to T, and the latter agrees with the third singular absolutive argument. The presence of this ergative clitic triggers the application of (39), so that T is specified for the following features:

- (51) [+Have, –Past, –Participant, –Author, +Singular]

Since the following first singular ergative clitic matches the context specified for rule (49), the latter applies, which results in the following feature specification:

- (52) [+Have, –Past, –Author, +Singular]

Since T in this case lacks the specification for [–Participant], *eu* (47-b) cannot be inserted, and it is realized with the default *o* (48-b).

In the present, second person is realized as *aitu* (46). In the past, there are no particular entries applying to second person, so T is realized as the default *endu* (48-a). The same is true for first person singular in the past. However, in the present tense, the auxiliary shows a syncretism between first singular and third singular agreement. This is arguably due to a markedness-based impoverishment rule like that of German (Müller 2005.) In Basque, first person singular is impoverished in the present so that its postsyntactic feature composition is identical to that of third singular, due to the following rule, which applies before (49):

- (53) *1Sg impoverishment*
 [+Have, –Past, +Participant, +Author, +Singular] →
 [+Have, –Past, –Participant, –Author, +Singular]

Due to this rule, first person singular is realized as *eu* or *o*, just like the third person singular.

Finally, first person plural is realized as default *endu* in the past. In the present, the realization of first plural is affected by the following impoverishment rule, which applies before (49):

- (54) *1Pl impoverishment*
 [+Have, –Past, +Participant, +Author, –Singular] →
 [+Have, –Past, –Participant, –Author, –Singular] / ____ [–Peripheral, +Participant]

This rule impoverishes first person plural to third person in the present in the context of a participant ergative clitic. As a consequence, T is realized as *o* (48-b) in this context (due to the further application of (49).) Otherwise, first person plural is realized as *aitu* (46) in the present tense.

This section thus demonstrates that the form of the Basque root is basically agreement just like German verbal inflection: there is *have* vs. *be*, there are agreement morphemes based on what features were acquired under Agree, and there are a few impoverishment rules affecting first and third person. To summarize, the analysis of Basque inflectional morphemes as clitics and the root as a T-head agreeing with the absolutive, despite its seeming complexity, can be given a natural analysis once the conditions for allomorphy and syncretism in the root are understood.

7 Ergative displacement: A repair to the lack of third absolutive clitics

We turn to one of the thrilling things about Basque agreement combinations. As we have said, there are no third person absolutive clitics in Basque. There is a requirement in Basque that T (i.e. the root of the auxiliary) not be word-initial; call it a kind of second-position requirement. Normally when there is a third person absolutive object, an “expletive” prefix (*d*, *s* or \emptyset , as discussed below) is used to satisfy this non-initiality requirement.

When the object (i.e. the absolutive argument) is third person, the features of the ergative clitic are “borrowed” the past tense. In (55), for example, the clitic *s*- in initial position corresponds to the features of the ergative argument, but it is in the place that the absolutive clitics normally show up, and it takes the same form that absolutive clitics normally have. Following Laka 1993a, we call this phenomenon *ergative displacement* (ED).

- (55) *pro*_{2S,E} I-ten *s* -endu -n au- \emptyset .
 do-PRF **ERG.2S** -PST.3S -N this-A
 ‘You used to do this.’ (387)

The observation that third person absolutive is somehow defective in Basque, and its relation to ED, is due to Azkue 1923. This insight is crucial in understanding several aspects of Basque verbal morphology, and has been adopted in one way or another by virtually previous formal accounts of verbal inflection in Basque since Bossong 1984 and Laka 1993a (see, among others, Gómez and Sainz 1995, Albizu and Eguren 2000, Fernández and Albizu 2000, Rezac 2003, Béjar and Rezac 2004, Rezac 2006.)²⁸

We propose that, prior to Vocabulary Insertion, the features of the ergative clitic (in fact, the entire node) metathesize to word-initial position in order to satisfy the second-position condition on the root. Clearly, this operation must occur after linearization of all of the terminal nodes, but before Vocabulary Insertion.

Our analysis of ergative displacement stands in contrast to the syntactic or featural notion that attributes ergative displacement to some morphosyntactic deficiency of third person arguments. Third-person arguments in Basque have a full set of morphosyntactic feature specifications, and

²⁸For other accounts of ED, see also Ortiz de Urbina 1989, Heath 1976 and Hualde 2002.

could very well behave just as third-person arguments do in Spanish, namely undergoing clitic doubling. The absence of a clitic form for third person arguments interacts with a prosodic requirement on Basque auxiliary roots to yield “ergative displacement”. There is nothing syntactic about the phenomenon, on this account, and it is in a way, no different from the “Tobler-Mussafia” law operative in European Portuguese:

(56) Ninguem o-viu
 Nobody CL-saw
 “Nobody saw him”

(57) Viu-o o João
 saw-CL the João
 “João saw him”

Object clitics have a similar *non-initiality* requirement in European Portuguese. They are arguably hosted in a functional head above the verb, as in (57). However, when the clitic would be sentence-initial (because the subject noun phrase is postposed, for example), the verb moves left, around the clitic, in order to precede it (and satisfy the clitic’s *non-initiality* requirement). This is arguably exactly what’s happening in Basque. T has a *non-initiality* requirement (stated over the domain of the word, not the phrase), and when needed, the ergative morpheme moves left.

A similar phenomenon occurs in the comparison of Danish. In Danish, the determiner cannot be initial in its phrase. This is the result of metathesis. That is, underlying /en hest/ is realized as [hest-en]:

(58) hest-en
 horse-the
 “the horse”

We might think of modeling this as the result of metathesis as well. Notably, however, when an adjective intervenes a structure as in (58), metathesis seems to be blocked. The actual result, when there is an adjective, is that the determiner’s *non-initiality* requirement must be satisfied by an expletive morpheme *d-*.

(59) d-en gamla hest
 d-the old horse
 “the old horse”

It is thus clear that the *non-initiality* requirement for determiners is very strong in Danish (as it also is in Macedonian, Romanian, and Bulgarian, incidentally), and, like Basque, can be resolved by either metathesis or by a dummy element. Finally, the reader will note the obvious parallelism with the competition between affix-hopping and do support of Chomsky (1957).

7.1 On the relationship between metathesis and reduplication

We view the implementation of this movement not as the result of actual syntactic movement (i.e. no dominance relations actually change in a tree), but rather as the operation of a metathesis rule. Following Harris and Halle (2005), we implement metathesis as a copying-plus-deletion operation,

which we elaborate on below. In essence, the Halle-Harris theory of metathesis is that it is partial reduplication “with a twist”. The framework is as follows. In a linearized string of elements, square brackets denote a string to be reduplicated (i.e. repeated). Thus, in (60), the brackets around BC indicate an instruction to repeat a contiguous substring.

(60) A [B C]D → ABCBCD

Partial reduplication is the result of angle brackets inside of a set of reduplication junctures. Material enclosed inside an angle bracket is to be “skipped” in one copy of the output:

(61) a. A [B] C]D → ACBCD
 b. A [B< C]D → ABCBD

In (61-a), the substring BC is to be copied, but the left angle bracket specifies that B is to be omitted in the first copy. In (61-b), the substring BC is to be copied, but the right angle bracket specifies that C is to be omitted in the second copy.

Given these formal possibilities for partial reduplication, if they are combined, the result will be skipping B the first time around and skipping C the second time around:

(62) A [B]<C]D → ACBD

Thus, in this framework, metathesis is viewed as a special case of partial reduplication: it is the result of a copying operation on a substring, but one in which half of the substring is copied only the second time around, and hence ends up linearly following what it underlyingly preceded.

The reader might ask what motivation there is for adopting this particular implementation of metathesis. While it is interesting that the same formal machinery for partial reduplication *can* be employed to express metathesis, it would be nice to find evidence that it should, i.e., that a metathesis process actually does involve a seemingly abstract underlying reduplication structure.

One of the advantages of expressing metathesis as in (62) is that it remains formally quite close to (61-a), and hence, one might expect some parametric variation in terms of whether the addition or subtraction of a single angle-bracket occurs. Halle and Harris show that the Spanish second plural imperative with an enclitic of the underlying string in (63-a), where *-n* is a plural agreement suffix, can become either (63-b) or (63-c):

(63) a. vénda -n -lo
 sell.IMPER -P -CL
 “Sell (2Pl) it!”
 b. vénda -lo -n
 sell.IMPER -CL -P
 c. vénda -n -lo -n
 sell.IMPER -P -CL -P

That is, some speakers say (63-b) and some say (63-c). The phenomena (of doubling the verbal plural marker *-n* onto the end of an object clitic, and either retaining the *-n* in its original position or not) are clearly related. Formally, they correspond to:

(64) a. venda[n]<lo] → vendalon

- b. $venda[n\langle lo \rangle] \rightarrow vendanlon$

The high degree of formal similarity between (64-a) and (64-b), then, lends itself to the prediction that speakers might vary only in the presence of the left angle bracket, yielding the observed variation.

Halle and Harris only apply their formalism to cases in which phonological exponents of morphemes are metathesized or doubled, but not to cases affecting abstract morphemes prior to vocabulary insertion. The former is clearly what is needed for the Spanish example above: the form of the displaced plural exponent n is what is expected if it is inserted as a verbal agreement suffix. If displacement occurred before vocabulary insertion, we would expect the affix to take the form it normally takes when suffixed to a clitic (s).

We argue that ergative displacement in Basque calls for application of metathesis/doubling prior to vocabulary insertion. That is, in Basque, the rule applies to hierarchically arranged abstract structures, which results in different exponents for the same clitic depending on whether the rule has displaced it or not. This aspect of metathesis/doubling in Basque is discussed immediately below, as well as in sections 7.2 and 9.

7.2 Metathesis and reduplication in Basque

Turning to Basque, we propose that the basic rule of metathesis is as follows:²⁹

- (65) *Ergative Metathesis*
 $\# T \text{ ERG} \rightarrow \# [T] \langle \text{ERG} \rangle$
 Condition: T is $[+Past]$

The derivation of the ED example (55), repeated below as (66), proceeds as follows. In the syntax, T agrees with the third singular object, and the ergative clitic moves to T . After merger and fusion in the morphological component, the finite auxiliary has the structure in (67):

- (66) $pro_{2S.E} \text{ I-ten } s \text{ -endu -n au-}\emptyset$.
 do-PRF **ERG.2S** -PST.3S -N this-A
 ‘You used to do this.’ (387)

- (67) $[T \text{ T}_{PST.3S} \text{ ERG}_{2S}]$

Crucially, no clitic is adjoined to the left of H , due to the fact that the absolutive argument is third person. This is the structure that feeds metathesis, which results in the following:

- (68) $\text{ERG}_{2S} \text{ T}_{PST.3S}$

Following linearization and this metathesis operation, these terminal nodes are assigned exponents through the process of Vocabulary Insertion. The relevant vocabulary entries are repeated here (see section 5):³⁰

²⁹In many dialects of Basque, there are particular exceptions to this metathesis rule. In Zamudio, metathesis does not apply when the ergative clitic is second person and there is a first singular dative clitic (see tables 12–13 in the appendix.) We assume that this is due to dialect-particular conditions on the application of metathesis.

³⁰Past tense T in the example contains third singular absolutive agreement, which is realized as *endu* (see section 6.)

(69) *Vocabulary entries for clitics in Zamudio*

- a. /s/ ↔ [+Participant, –Author] / ____ T
- b. /su/ ↔ [+Participant, –Author] / T ____

The reader will notice that the vocabulary items *s* and *su* differ only in terms of their linear position, not case features. In non-ED contexts, the absolutive clitic precedes T, and the ergative clitic follows it, so (69-a) is the realization of second person absolutive and (69-b) realized second person ergative in these contexts. However, the lack of case features in the vocabulary entries predicts that this correlation between the case of the clitic and its realization might be disturbed if some rule alters the linear order of clitics in a relevant way. This is precisely what happens when metathesis (65) applies.

In particular, metathesis results in the structure in (68). Since the ergative clitic precedes T, the entry for enclitic *su* (69-b) cannot apply, and the proclitic *s* (69-a) is inserted instead. The end result is that, on the surface, the ergative clitic is realized in the same position and with the same form as an absolutive clitic in non-ED contexts.

As a formal notation, (65) does the trick in terms of expressing the metathesis rule. It also leads us to expect that some variations might exist, namely ones in which the left angle bracket is missing

(70) *Ergative Doubling*

$$\# \text{ T ERG} \rightarrow \# [\text{ T } \rangle \text{ ERG}] \rightarrow \# \text{ ERG T ERG}$$

Exactly such *ergative doubling* phenomenon indeed occurs, as reported in Albizu and Eguren (2000). Before we show a relevant example, consider what is predicted by a derivation that uses doubling (70) instead of metathesis (65). When the doubling rule applies to an auxiliary like the one in (66), there is a copy of the ergative clitic on both sides of T:

$$(71) \quad \text{ERG}_{2s} \text{ T ERG}_{2s}$$

When vocabulary insertion applies to the clitic terminals, the result will be:

$$(72) \quad s\text{-T-su}$$

Ergative Doubling occurs in the presence of certain ergative clitics in several varieties, including Bizkaian ones (see Rezac 2006 for a listing of all attested doubling forms.) We report here on a single example from the Bizkaian variety of Oñate, taken from de Yrizar 1992 (volume 2, p. 468).³¹

³¹We have found a single example of Ergative Doubling in Zamudio, although the example is not as transparent as the one discussed in the text. Gaminde (2000) (p. 375) reports that the past auxiliary containing a third singular dative clitic and a third singular ergative clitic can be either $\emptyset\text{-o-tze-n}$ or $\emptyset\text{-o-tze-o-n}$ (>*otzon*). In both, there is an ergative proclitic that finds no realization, since there are no vocabulary entries available for third person proclitics (what appears instead of the proclitic is the special prefix \emptyset ; see section 7.3.) The form $\emptyset\text{-o-tze-n}$ does not contain an ergative enclitic, which entails that it undergoes Ergative Metathesis. The form $\emptyset\text{-o-tze-o-n}$, however, does have the third singular ergative enclitic *-o*, that is, it has undergone Ergative Doubling.

The auxiliary form is the same as in (66), except that T agrees with a third plural absolutive argument:³²

- (73) s -ittu **-su** -n
 ERG.2S -PST.3P **-ERG.2S** -N

In this auxiliary, the ergative argument is crossreferenced by both the proclitic *s* and the enclitic *su*. The existence of forms such as (73) motivates our decision to express metathesis in terms of the Halle-Harris formalism.

7.3 Ergative displacement and third person

Our metathesis rule (65) predicts that ED applies to ergative clitics regardless of their feature specification. However, due to an observation made independently by Bossoning 1984 and Ortiz de Urbina 1989, it is a standard claim in the literature that ED does not apply when the ergative clitic is third person. In this subsection, we reexamine this claim, and show that the data do not support such a claim; ED applies to third person ergative clitics too.

Bossoning and Ortiz de Urbina's crucial observation is that, in ED contexts, a third plural ergative argument is cross-referenced by an enclitic, rather than a proclitic. In Zamudio Basque, this can be illustrated in the following example, in which the (pro-dropped) third plural ergative subject triggers the presence of enclitic plural *e* in the matrix auxiliary:

- (74) baye *pro*_{3P,E} [CP almuda-n igual ollosko-a forme-ta s -a -la]
 but [CP pillow-IN.S perhaps chicken-A.S materialize-IMP PRE -PST.3S -COMP]
 esa-te ∅ -eur **-e** -n.
 say-IMP PRE -PST.3S **-ERG.P** -N
 'but they say that perhaps a chicken used to materialize on the pillow' (403)

These authors correctly observe that a third person absolutive proclitic never triggers plural enclitic *e* (see section 5.) Their conclusion is that the auxiliary in (74) does not contain a proclitic; the ergative is realized as an enclitic, and there is no ED. In terms of our analysis in section 5, this would entail that the ergative clitic in this example is realized as $-\emptyset-e$.

However, under our analysis of clitics in section 5, this conclusion is not warranted. Consider the derivation of the auxiliary in (74) under the assumption that ED in fact does apply. The output of the syntax and merger and fusion of H and T is an auxiliary with an ergative clitic adjoined to a past tense T with third singular features (due to agreement with the absolutive argument:)

- (75) [_T T_{PST.3S} ERG_{3P}]

Metathesis applies to this structure, resulting in the following:

- (76) ERG_{3P} T_{PST.3S}

³²de Yrizar's original source for this Oñate form is Gaminde 1984 (volume 3, p. 568–570,) and fieldwork done by José de Otarola. de Yrizar's work is a collection of auxiliary forms in all varieties of Basque, and it does not contain full sentences. Note that the form of third plural T in Oñate is *ittu*, which is similar to Zamudio's *eit* ((46) in section 6.)

Since none of the vocabulary entries for proclitics in section 5 match the third person specification of the ERG node, the auxiliary is simply left with no exponent for the proclitic position. On the other hand, the vocabulary entry for enclitic *e* (30) does match the [–Singular] feature in ERG. The net result is that the ergative clitic is realized with only enclitic *e*.

What we have just seen is that the fact that a third person ergative argument triggers the presence of enclitic *-e* in ED contexts is perfectly compatible with the assumption that ED applies to all ergative clitics regardless of their feature content. Thus, there is no need to complicate our metathesis rule to account for these cases.

This brings us to another issue related to third person clitics that was only partly addressed in section 5. Since there are no third person absolutive clitics, sentences with a third person argument do not have a proclitic. However, as discussed at the beginning of the present section, Basque has a requirement that T not be word-initial within the finite auxiliary. In non-ED contexts, as discussed in section 5, this requirement is satisfied by inserting a prefix, which can be *d*, *s* or \emptyset (see tables 6–13 in the appendix.) In ED contexts, metathesis satisfies this requirement by placing the ergative clitic in word-initial position. However, as we just saw, ED does not solve the problem when the ergative clitic is third person, since no vocabulary entry can be inserted in proclitic position in this case. Thus, the non-initiality requirement is also satisfied with one of the prefixes in this case.

We implement this fact by positing three readjustment rules, which apply after vocabulary insertion.³³

- (77) a. $\emptyset \rightarrow /s/ / [T \text{ — } \left\{ \begin{array}{l} [T\text{—Have, +Past, —Participant, —Author}] \\ [T\text{+Have, +Past, —Participant, —Author, —Singular}] \end{array} \right\}]$
 b. $\emptyset \rightarrow /\emptyset/ / [T \text{ — } [T\text{+Past}]]$
 c. $\emptyset \rightarrow /d/ / [T \text{ — } T]$

These rules insert the “epenthetic” or “expletive” prefixes that are necessary when there is no proclitic and the ED rule of metathesis cannot apply. Given their contextual restrictions, these epenthesis rules are disjunctively ordered as shown. Once a more specific rule applies, it satisfies the non-initiality requirement, and the less specific rules cannot apply.

8 Dative clitics, agreement and the PCC

In this section, we discuss the agreement realization and agreement restrictions that occur when there is a dative argument. The presence of a dative clitic yields competition for occupancy of HostP, inducing a ban on co-occurrence of dative clitics and absolutive clitics. This yields the apparent Person Case Constraint in Basque, as discussed in section 8.1. Dative clitics have a variety of phonological realizations, many of which resemble those of the corresponding ergative clitics, but some do not, as discussed in section 8.2. As dative clitics are hierarchically below T but their surface position is to the right of T, we propose that the placement of dative clitics in the

³³Readers may verify that these rules account for the distribution of these prefixes. The only complication is the distribution of *s*: it appears when past T is intransitive, and when it is transitive and third person plural. A crucial point in understanding the distribution of these prefixes is the fact that, as argued in the next section, T does not agree with the absolutive argument when there is a dative clitic. Given its contextual specification, the rule inserting *s* cannot apply in the presence of a dative clitic, and the prefixes *d* or \emptyset must be used instead (see tables 7 and 10–13 in the appendix.)

auxiliary root is the consequence of a metathesis rule. Finally we discuss the effect of dative clitics in blocking the T-absolutive *Agree* relation, with the result that in the presence of a dative clitic, the otherwise rich realization of absolutive agreement does not occur, and a default Vocabulary Item is inserted instead.

8.1 Dative clitics and the PCC

The Person Case Constrain (PCC) is a condition on the combination of clitics and agreement morphemes that holds in many languages (see Perlmutter 1971, Bonet 1991 and much subsequent work.) In Basque, it is instantiated by banning first and second person absolutive clitics in the presence of a dative clitic (see Azkue 1923, Laka 1993a, Albizu 1997, Ormazabal and Romero 2006, Rezac 2006.) This can be seen in the contrast between (13) (repeated here as (78)) and (79).

- (78) *pro*_{1S,E} Bat-an bat-eri *pro*_{3S,A} emo-ngo d -o -tze -t.
 one-G one-D give-FUT PRE -PRS.DEF -DAT.3S -ERG.1S
 ‘I’ll give it to someone or other.’ (361)
- (79) *Eur-ek su-ri ni- \emptyset sal-du n -o -tzu -e.
 3S-E 2S-D 1S-A sell-PRF ABS.1S -PRS.DEF -DAT.2S -ERG.3P
 ‘They have sold me to you.’

Both auxiliaries contain a dative clitic. However, (78), with a third person absolutive argument is grammatical, while (79), with a first person absolutive argument, is not. In tables 7 and 10–13 in the appendix, this is reflected in the fact that cells corresponding to nonthird person absolutive arguments are completely missing.³⁴

As should be clear by now, this follows in our analysis from the basic structure proposed in (19) and hypothesis (33), both of which we repeat here:

- (80)
- $$\begin{array}{c}
 \text{TP} \\
 \swarrow \quad \searrow \\
 \text{HP} \quad \text{T} \\
 \swarrow \quad \searrow \\
 \text{vP} \quad \text{H} \\
 \swarrow \quad \searrow \\
 \text{.....}
 \end{array}$$

- (81) Basque has no third person absolutive clitics.

³⁴Gaminde 2000:372 has some forms that apparently violate the PCC. Specifically, these are present tense intransitive forms with a dative clitic and a first singular absolutive clitic. We do not take these into account for two reasons. First, the paradigm is greatly leveled, and is limited to the aforementioned forms (e.g. there are no past tense forms or ones containing a first plural absolutive clitic.) Second, as has been noted for many other dialects in the literature on Basque, they are limited to intransitive sentences, and are not allowed in sentences that have the structure in (19), where both the dative and absolutive are internal arguments generated under vP, such as unaccusative psych verb sentences and ditransitive sentences (see Rezac 2006 for discussion.) Since the syntax of dative and absolutive arguments is crucial in our explanation of PCC effects in Basque, and it is not clear to us what the syntax of these apparent PCC violating sentences should be, we leave this as a matter in need of further research. We would like to thank Iñaki Gaminde for clarifying the data for us.

(82) *pro*_{3S,E} *pro*_{1P,D} bonete-agas jo-te Ø -o -sku -n a-Ø
 hat-C.S hit-IMP PRE -PST.DEF -DAT.1P -REL that-A
 ‘that person who used to hit us with a hat’ (285)

8.2 The realization of dative clitics

(83)

```

      TP
     / \
   vP   T
  / \  / \
  /  \ DAT T
 /  \
.....
      T  ERG

```

(84) absolutive clitic - tense/absolutive agreement - dative clitic - ergative clitic

28

	Intransitive T	Transitive T
1Sg	-t	-st
1Pl	-ku	-sku
2Sg	-tzu	-tzu
2Pl	-tzu-e	-tzu-e
3Sg	-ko	-tze
3Pl	-ko-e	-tze-e

Table 5: Dative clitics

We propose that this is due to the following metathesis rule, which applies before vocabulary insertion:

- (85) *Dative Metathesis*
 DAT T → [DAT] < T]

As a result of this rule, the dative clitic and T are inverted, which accounts for the attested order of morphemes within the auxiliary:

- (86) T DAT

All theories that identify the root as T and subscribe to some version of the mirror principle will have to account for why the dative clitic is syntactically lower than T but linearly to the right. That the dative is lower than T has been shown by the fact that it competes for H, yielding a ban on participant absolutive clitics, and by the intervention effects for T-absolutive agreement, which we discuss in the next section.

The form of dative clitics can be seen in table 5.³⁶ In some cases, a dative clitic can have distinct allomorphs depending on whether T is transitive or intransitive. Note that some of the dative clitics are identical to the corresponding ergative clitics (e.g. *t* is both dative and ergative first person singular; compare tables 1 and 5.) Furthermore, as can be seen by comparing tables 8–9 and 10–11 in the appendix, the form of some ergative clitics depends on the presence or absence of dative clitics. The following are the relevant vocabulary entries for both dative and ergative clitics (including those already present in (24)–(26) and (30):)

- (87) *Vocabulary entries for first person*
- a. /sku/ ↔ [+Peripheral, +Participant, +Author, –Singular] / [T+Have] ____ 1Pl.Dat
 - b. /ku/ ↔ [+Peripheral, +Participant, +Author, –Singular] / T ____ 1Pl.Dat
 - c. /u/ ↔ [+Participant, +Author, –Singular] / T ____ 1Pl.Erg
 - d. /st/ ↔ [+Peripheral, +Part, +Author, +Singular] / [T+Have] ____ 1Sg.Dat
 - e. /a/ ↔ [+Participant, +Author, +Singular] / tze ____ s 1Sg.Erg
 - f. /t/ ↔ [+Participant, +Author, +Singular] / T ____ 1Sg.Erg/Dat

³⁶As shown in tables 10–13, a first plural clitic is often missing in the context of second person clitics, due to the g-/z- constraint (see footnote 26.)

- (88) *Vocabulary entries for second person*
- a. /tzu/ ↔ [+Peripheral, +Participant, –Author] / T ____ 2.Dat
b. /su/ ↔ [+Participant, –Author] / T ____ 2.Erg
- (89) *Vocabulary entries for third person*
- a. /tze/ ↔ [+Peripheral, –Participant, –Author] / [T+Have] ____ 3.Dat
b. /ko/ ↔ [+Peripheral, –Participant, –Author] / T ____ 3.Dat
c. /o/ ↔ [–Participant, –Author] / tze ____ 3.Erg
d. ∅ ↔ [–Participant, –Author] / T ____ 3.Erg
- (90) *Vocabulary entry for plural*
- /-e/ ↔ [–Singular] Pl

Recall from section 5 that the main property distinguishing absolutive from dative/ergative clitics is their position with respect to T: the former are proclitics, and the latter, enclitics.³⁷ This is implemented in the vocabulary entries by specifying absolutive clitics to be inserted before T, and ergative/dative clitics, after T. In addition, dative and ergative enclitics are distinguished by specifying case features in the former (e.g. dative *ku* (87-b) vs. ergative *u* (87-c).)

Just like absolutive and ergative clitics, vocabulary insertion into dative clitics is subject to fission (see section 5.) This explains the fact that the enclitic *e* is added to second and third plural dative clitics. Two other relevant facts are encoded in the entries above. First, the transitivity-related allomorphy present in first and third person dative clitics in table 5 is due to the presence of the feature [+Have] in the context of some entries. Second, the *a* (87-e) and *o* (89-c) allomorphs of first and third singular ergatives (table 1) are inserted in the context of the dative clitic *tze* (89-b).

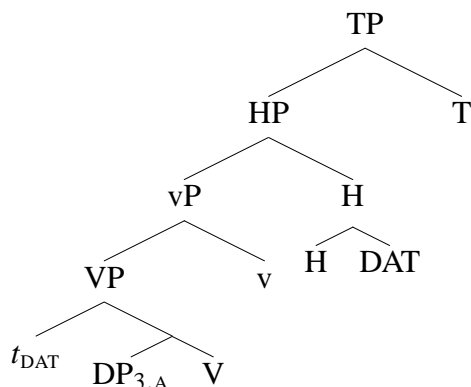
8.3 Agreement and dative intervention

The combination of absolutive and dative arguments in Basque sentence give rise to a separate phenomenon within the finite auxiliary. One of the central claims made in this paper is that the root of the auxiliary is T, which must agree with the absolutive argument. As discussed in section 6, this agreement operation satisfies standard locality conditions. T agrees with an absolutive DP *x* in its c-command domain as long as there is no intervening DP *y* between T and *x*. Sentences with both absolutive and dative arguments illustrate one such case where an intervener (the dative clitic) blocks agreement between T and the absolutive argument.

Due to the PCC, the only type of sentence that is relevant contains a dative argument and a third person absolutive argument. Prior to the agreement operation, this type of sentence has the following structure, where the dative clitic moves to H:

³⁷Of course, the exception is verbs with ED (section (65).) where ergative clitics are realized as proclitics due to Ergative Metathesis.

(91)



Given this configuration, T cannot agree with the VP-internal absolutive argument, since the dative clitic intervenes.³⁸ Thus, the analysis predicts that T must take a default form whenever the auxiliary contains a dative clitic.

This prediction is borne out, as can be seen in tables 7 and 10–13 in the appendix. In most cases, T takes one of the default forms (45) and (48-b), repeated here:

(92) *Default vocabulary entries*

- a. /a/ ↔ [−Have]
- b. /o/ ↔ [+Have]

The distribution of the different forms of T in the context of dative clitics can be summarized as follows:³⁹

(93) *Forms of T in the context of a dative clitics*

- a. Intransitive T: *a* (92-a) (table 7)
- b. Present transitive T: *o* (92-b) (tables 10–11)
- c. Past transitive T: *o* (92-b) or *eun* (94-a) (tables 12–13)

Cases (93-a)–(93-b) are straightforward: if there were no intervention by dative clitics, we would expect T to agree with the absolutive argument; however, T has a default form in both cases. Case (93-c) also confirms the prediction, but is somewhat more complicated, and merits some discussion. The relevant vocabulary entries are (94-a), which is new, and (92-b) and (48-a), repeated here as (94-c)–(94-b).

(94) *Default vocabulary entries*

- a. /eun/ ↔ [+Have, +Past] / [+Motion, +Participant] ____ [+Peripheral]
- b. /endu/ ↔ [+Have, +Past] / [+Motion, +Participant] ____
- c. /o/ ↔ [+Have]

³⁸As is standard on any syntactic account of head movement, we assume that a head *x* adjoined to another head *y* c-commands whatever nodes *y* c-commands. See Matushansky 2006 for a recent implementation.

³⁹In some of the underlined forms in tables 10–13, the specific allomorph of default T that is used is different from what is described below due to the g-/z- constraint (see footnote 26.) For instance, in the context of a second person dative and a first plural ergative clitic, the latter is deleted. This triggers the insertion of [−Have] in T, which is realized as the default intransitive form *a* (92-a).

All these entries are potential candidates to realize default past transitive T in case (93-c), since none of them are specified for any agreement feature. Of relevance here is the fact that past transitive auxiliaries undergo Ergative Metathesis (section 7), which places ergative clitics before T. This explains the contextual restriction needed for *eun* (94-a) and *endu* (94-b): they apply only if a nonthird person ergative clitic precedes T. In the specific case of (93-c), where the auxiliary contains a dative clitic, *eun* is inserted if T is preceded by a nonthird person ergative clitic, and *o* otherwise (i.e. if it is preceded by a third person ergative clitic.)⁴⁰ The default form *endu* is limited to cases where there is no dative clitic.

To conclude, the realization of T in the context of a dative clitic provides a strong argument for the claim that the root is in fact a head (T) that agrees with the absolutive argument. As expected, intervention by the dative clitic blocks this agreement relation, and T takes a default form.

8.4 Interim summary: Dative competition and dative intervention

To conclude this section, we have discussed two syntactic effects that dative clitics may have on the realization of absolutive arguments. The first concerned the fact that as datives and absolutives are in the same syntactic domain, their clitics compete for HostP. Thus, when there is a dative clitic, the absolutive clitic cannot be hosted. This yields the apparent Person-Case Constraint on clitics in Basque. There is a wide range of “repair” strategies that various dialects of Basque use in order to circumvent the Person Case Constraint, but the ultimate fact is that a combination of both absolutive and dative clitics in Basque simply cannot surface. Thus, “Dative Competition”, the blocking an absolutive clitic from HostP, results in an absolute ban on absolutive clitics in the presence of datives.

When it comes to the higher head T whose attempt at *Agree* with the third person absolutive argument is blocked by the intervening dative, the result of this failure-to-*Agree* is not absolute ungrammaticality, but rather simply a failure to record the agreement features of the absolutive argument on T. Thus, as in Icelandic, blocking of T’s agreement path yields default agreement (i.e. no agreement, and Vocabulary Insertion of the elsewhere item). Thus, for the purposes of “Dative Intervention”, the blocking of an *Agree* relation between T and the absolutive argument does not result in absolute ungrammaticality, but simply failure to copy the features of the absolutive and hence a default Vocabulary Item for T.

9 The ordering of postsyntactic operations

In this paper, we have proposed several syntactic and postsyntactic operations. All postsyntactic operations apply at MS. The latter apply at MS in separate modules that follow a fixed derivational order:

- (95) *Morphological Structure*
Pre-VI rules > Vocabulary Insertion > Readjustment Rules

⁴⁰There is an apparent exception: transitive past T in the context of a second person ergative clitic and a first singular dative clitic is *o*, rather than *eun* (see tables 12–13.) However, this is due to the fact that, as discussed in footnote 29, Ergative Metathesis is blocked in precisely this context in Zamudio, so that the ergative clitic is in its original enclitic position. Since the vocabulary entry for *eun* only applies to contexts where the ergative clitic precedes T, it cannot be inserted in this case, and default *o* is used instead.

Pre-VI rules operate on abstract structures fed by the syntax by rearranging and deleting morphemes and/or their features; Vocabulary Insertion provides terminal nodes with phonological exponents, and readjustment rules operate on these phonologically specified terminal nodes.

Of special interest to us is the ordering among pre-VI rules. We have proposed three different kinds of pre-VI rules:

- (96) a. *Impoverishment*: Third Impoverishment (49), 1Sg Impoverishment (53), 1Pl Impoverishment (54)
- b. *Merger* of H and T (22)
- c. *Fusion* of terminal H and its sister (23)
- d. *Metathesis/Doubling*: Ergative Metathesis (65)/(70),⁴¹ Dative Metathesis (85)

Impoverishment deletes features in terminal nodes, and the other operations manipulate nodes in several ways. The ordering of some of these rules is crucial. In particular, the impoverishment rules are ordered in a specific manner with respect to each other, and the same is true of the five other rules. We discuss both of these cases in turn.

As briefly discussed in section 6.2, Third Impoverishment must follow both 1Sg and 1Pl Impoverishment. This accounts for the fact that both first singular and plural agreement are realized by default exponents in certain contexts. The relative ordering of the latter two rules is not crucial, since their structural descriptions do not overlap.

The other rules in (96) are ordered as shown below:

- (97) *Merger* > *Fusion* > *Dative Metathesis* > *Ergative Metathesis*

Merger of T and H is what forms the complex head that we refer to as ‘auxiliary’. It must precede all other postsyntactic operations, since the latter operate on precisely this complex head. As discussed in section 4, *Fusion* implements the fact that all other postsyntactic operations except *Merger* systematically ignore the terminal node H. It must therefore precede them.

This brings us to the relative ordering of Dative and Ergative Metathesis. In order to understand the interaction of these two rules, we must first discuss certain aspects of metathesis rules that were left unspecified in previous sections. As discussed in section 7, we extend Harris and Halle’s (2005) formalism for metathesis to formalize merger rules that result in the inversion (and doubling) of abstract nodes in the syntactic structure of words. Since these metathesis rules operate on hierarchically organized structures, we assume that they alter these structures in specific ways. We propose the following two conditions on the application of metathesis rules:

- (98) In a structure $[\alpha \dots \alpha \dots]_{\alpha}$, if the structural description of a metathesis rule refers to α ambiguously, then the structural description can only analyze the lower node α .
- (99) A metathesis rule cannot alter adjacency relations not explicitly altered in the rule.

Constraint (98) disambiguates cases in which a metathesis rule could apply to different nodes of the same category, and (99) implements the intuition that metathesis only alters the relative linear order of the nodes explicitly mentioned in the rule’s structural description.

⁴¹Recall that the phenomenon of ergative doubling (70) is the result of the same type of operation that yields ergative metathesis (65) (see section 7.)

Consider Dative Metathesis first, which was formulated as follows in section 8:

- (100) *Dative Metathesis*
 $\text{DAT T} \rightarrow [\text{DAT T}] \rightarrow \text{T DAT}$

In auxiliaries where DAT is the only clitic, its application is trivial. The structure feeding the rule is the following:

- (101)
- ```

 T
 / \
 DAT T

```

Dative Metathesis simply inverts the two daughter nodes:

- (102)
- ```

      T
     / \
    T   DAT
  
```

Both constraints are satisfied trivially in this case, since there is only one T node that follows DAT in the input, and, within the auxiliary, there is no adjacency relation apart from the one holding between DAT and T.

The relevance of the two constraints to Dative Metathesis can be seen in an auxiliary containing both a dative and an ergative clitic:

- (103)
- ```

 T
 / \
 DAT T
 / \
 T ERG

```

(98) dictates that DAT must invert with the terminal T node (the lowest one following DAT) in this structure. Furthermore, due to (99), the adjacency between T and ERG cannot be disturbed. The only output structure that satisfies both conditions is the following:

- (104)
- ```

      T
     / \
    T   ERG
   / \
  T   DAT
  
```

In this structure, DAT is “lowered” to be right-adjoined to the lowest T, and ERG is right-adjacent to T (thus preserving the input order T ERG.) Other imaginable outputs of metathesis would violate one of the constraints:

- (105)
- ```

 T T T
 / \ / \ / | \
 T DAT T T T DAT ERG
 / \ / \ |
 T ERG DAT ERG DAT

```

The leftmost tree violates (98), since it inverts DAT with a T node that is not the lowest one following DAT in the input. The other two trees violate (99), since ERG is not right-adjacent to T  
 Consider next Ergative Metathesis (section 7:)

- (106) *Ergative Metathesis*  
 $\# T \text{ ERG} \rightarrow \# [T] \langle \text{ERG} \rangle \rightarrow \# \text{ERG} T$   
 Condition: T is [+Past]

If the auxiliary only contains an ergative clitic, both constraints are satisfied trivially:

- (107)
- $$\begin{array}{ccc} T & \rightarrow & T \\ \swarrow \quad \searrow & & \swarrow \quad \searrow \\ T \quad \text{ERG} & & \text{ERG} \quad T \end{array}$$

On the other hand, matters are more complicated if the auxiliary contains both a dative and an ergative clitic:

- (108)
- $$\begin{array}{ccc} & T & \\ & \swarrow \quad \searrow & \\ \text{DAT} & & T \\ & \swarrow \quad \searrow & \\ & T \quad \text{ERG} & \end{array}$$

In this structure, both Dative and Ergative Metathesis apply. As illustrated in the following example, in past forms with ERG and DAT, the former precedes T, and the latter follows it (see also tables 12–13 in the appendix:)

- (109)      n            -eun    -tzu    -n  
                   ERG.1S -PST.3S -DAT.2S -N (375)

This means that, as schematized in (97), Dative Metathesis precedes Ergative Metathesis. The latter has the requirement that T be initial in the auxiliary, but DAT precedes T in the input (108). If Dative Metathesis applies first, the result is a structure that feeds Ergative Metathesis:

- (110)
- $$\begin{array}{ccccc} & T & \xrightarrow{\text{Dat. Met.}} & T & \xrightarrow{\text{Erg. Met.}} & T \\ & \swarrow \quad \searrow & & \swarrow \quad \searrow & & \swarrow \quad \searrow \\ \text{DAT} & & T & & \text{ERG} & & T \\ & \swarrow \quad \searrow & & \swarrow \quad \searrow & & \swarrow \quad \searrow & \\ & T \quad \text{ERG} & & T \quad \text{DAT} & & \text{T} \quad \text{DAT} \end{array}$$

It is easy to see how both operations satisfy (98) and (99). The first step is the same as described above in (103)–(104). The second step satisfies (98), because it inverts ERG with the only T node that is left-adjacent to ERG (i.e. the one immediately dominating terminals T and DAT);<sup>42</sup> (99) is also satisfied, since adjacency between T and DAT is preserved in the output.

Finally, consider how the two constraints can be satisfied in Ergative Doubling:

<sup>42</sup>Constraint (98) would be violated if the output structure were  $[_T [T \text{ ERG} T]_T \text{ DAT}]_T$ , since ERG is not inverted with the node immediately dominating the terminals T and DAT.

- (111) *Ergative Doubling*  
 $\# T \text{ ERG} \rightarrow \# [ T \langle \text{ERG} \rangle ] \rightarrow \# \text{ERG} T \text{ ERG}$

When applied to (112), all of the output structures in (113) satisfy both constraints:

- (112)
- ```

      T
     / \
    T  ERG
  
```
- (113)
- ```

 T T T
 / \ / \ / \
 ERG T ERG ERG T T ERG
 / \ / \
 T ERG ERG T

```

Although it would be interesting to disambiguate this case, it is not clear to us whether the different structures in (113) entail any testable empirical differences. Indeed, the application of Ergative Doubling is highly restricted in the dialects where it applies, and it is subject to great dialectal variation (see Rezac 2006.) It seems that evidence bearing on this particular issue will have to come from other languages with similar doubling rules.

## 10 Contributions

### 10.1 The division of labor between syntactic and postsyntactic operations

The Basque auxiliary shows a number of agreement restrictions. We have proposed that some of these are due to syntactic operations and some are due to post-syntactic operations.

The only syntactic operations that occur in Basque are clitic-doubling of ergative, dative, and (nonthird) absolutive arguments, and an Agree operation between T and the absolutive argument. When clitic-doubling yields two internal-argument clitics, one source of agreement restrictions is the competition for occupying the clitic HostP. When the dative clitic intervenes between T and the absolutive argument, another source of agreement restrictions is the intervention condition on Agree. These two agreement restrictions find a number of crosslinguistic parallels and can be understood in terms of well-motivated limitations on the syntactic computation.

A number of postsyntactic operations occur in the Basque auxiliary, which fall into two basic categories. One set of operations are impoverishment rules, which are rules of postsyntactic feature-deletion that are largely motivated by considerations of morphological markedness. A second set of operations are metathesis rules, which are responsible for the mismatch between the hierarchical and surface position of the dative clitic, and which play a crucial role in understanding the phonologically-motivated rule of ergative clitic displacement. Both sets of operations find numerous crosslinguistic parallels: impoverishment rules yield syncretism in the realization of agreement in a wide range of languages, and metathesis rules occur to satisfy second-position requirements in a number of domains. Importantly, neither of these operations are responsible for “agreement restrictions” per se; they are operations that yield a number of syntax-morphology mismatches and which operate over the currency of phi-features, but they do not refer to hierarchical structure in the way that the syntactic operations above do.

## 10.2 Basque has a T head and syntactic intervention

It has not previously been proposed that Basque has a T head that agrees in person and number with the absolutive argument. We have shown that this is plausible and coherent, given well-motivated conditions on allomorphy and syncretism within the auxiliary root. Moreover we have shown that the reason that the default root always shows up in the presence of a dative can be understood as the consequence of regular syntactic intervention. Basque's dative intervention thus resembles Icelandic, in which plural datives block agreement between T and a nominative (Holmberg and Hróarsdóttir, 2004).

- (114) thadh finnst mörgum stúdentum tölvurnar ljótar  
 there find.S/\*find.P some student.D.P computers.NOM.P ugly  
 ‘Some students find the computers ugly.’ *Icelandic (some speakers)*

In Basque, *all* datives block agreement between T and a nominative. The failure of an *Agree* operation to successfully target the absolutive argument in ditransitive constructions yields insertion of default agreement for T's phi features. This aspect of the distribution of root agreement morphemes in Basque thus receives its most natural account on the assumption that dative clitics are hierarchically higher than absolutive clitics within the domain of T's *Agree* search, and constitute interveners.

### 10.3 Third person “irregularities” are not due to the features of third person

Although third person arguments in Basque behave in funny ways (i.e., allowing ditransitive constructions, and inducing ergative displacement), we have not attributed this to anything funny about the morphosyntactic features of third person. It is simply due to the lack of a clitic realization of this argument, which has consequences only because of the nature of the clitic-hosting head, and because of the non-initiality requirement of the Basque root.

We have proposed that there is only one host projection for clitics that double internal arguments, and thus attempted to reduce the ban on two internal-argument clitics to a ban on a doubly-filled HostP. It is only because third person absolutive arguments do not require clitic doubling that ditransitives with 3rd person absolutives yield a convergent derivation. Thus, the nature of the clitic HostP and of the clitics is what yields the difference between 3rd and non-3rd absolutives. Nothing about the syntax of the Agree operation is different in ditransitives with [+Participant] vs. [−Participant] arguments.

Similarly, while Ergative Displacement have been given syntactic accounts in the literature in terms of the mechanisms of syntactic agreement, we have proposed that the Agree operation taking place in 3rd person absolutive contexts is exactly the same as it is in the context of other absolutives. The only difference comes in the postsyntactic component, where the fact that 3rd person absolutives do not undergo clitic doubling results in a root without a proclitic, requiring a postsyntactic repair operation of enclisis-to-proclisis of the ergative clitic.

## Appendix: Indicative auxiliary paradigms in Zamudio Basque

This appendix contains tables with all the finite indicative auxiliary paradigms in Zamudio Basque. We have only included underlying forms of auxiliaries in the tables. We refer the reader to Arregi and Nevins 2006b for the surface forms, as well as the readjustment and phonological rules that derive them.

Gaminde 2000 reports some alternative forms not included in these tables, or in the analysis developed in the paper. We discuss these forms below, as well as the necessary additions to the analysis.

| Abs | Present | Past       |
|-----|---------|------------|
| 1S  | n-as    | n-entz-n   |
| 1P  | g-ara   | g-intz-n   |
| 2S  | s-ara   | s-intz-n   |
| 2P  | s-ara-e | s-intz-e-n |
| 3S  | d-a     | s-a-n      |
| 3P  | d-ire   | s-ire-n    |

Table 6: Absolutive auxiliary

In the absolutive auxiliary (table 6) we find the following alternative forms:

- In the present, the T form *ara* can be replaced by *are*. In terms of our analysis, this would imply replacing the exponent *ara* with *are* in (43-b).
- In the past, the form of first singular T *entz* can be replaced by *itz* or *intz*. In our analysis, the former alternative would imply replacing *entz* with *itz* in (42-a), and the latter, removing the entry (42-a) altogether.
- Also in the past, the form of first plural T *intz* can be replaced by *entz*. This would imply modifying (42-a) by removing the feature [+Singular].
- In the present and past, the T form *ire* can be replaced by *ie*. In terms of our analysis, this would imply replacing the exponent *ire* with *ie* in (44).

In the absolutive-dative auxiliary (table 7) we find the following alternatives:

- All past forms can have the special prefix *y* instead of  $\emptyset$ . This is also true of past absolutive-dative-ergative auxiliary forms (tables 12–13.) This would require the addition of a special prefix /y/ to those in (77) specified to be inserted in the context of past T and a dative clitic.
- The form of the first singular dative clitic can be *st* instead of *t*. This would involve removing the feature [+Have] from T in the context of rule (87-d).

In the absolutive-ergative auxiliary (tables 8–9) we find the following alternatives:

| Dative | Present<br>Absolutive |             | Dative | Past<br>Absolutive |               |
|--------|-----------------------|-------------|--------|--------------------|---------------|
|        | 3Sg                   | 3Pl         |        | 3Sg                | 3Pl           |
| 1Sg    | d-a-t                 | d-a-t-s     | 1Sg    | 0-a-t-n            | 0-a-t-s-n     |
| 1Pl    | d-a-ku                | d-a-ku-s    | 1Pl    | 0-a-ku-n           | 0-a-ku-s-n    |
| 2Sg    | d-a-tzu               | d-a-tzu-s   | 2Sg    | 0-a-tzu-n          | 0-a-tzu-s-n   |
| 2Pl    | d-a-tzu-e             | d-a-tzu-e-s | 2Pl    | 0-a-tzu-e-n        | 0-a-tzu-e-s-n |
| 3Sg    | d-a-ko                | d-a-ko-s    | 3Sg    | 0-a-ko-n           | 0-a-ko-s-n    |
| 3Pl    | d-a-ko-e              | d-a-ko-e-s  | 3Pl    | 0-a-ko-e-n         | 0-a-ko-e-s-n  |

Table 7: Absolutive-dative auxiliary

| Ergative | Absolutive |            |              |                |          |              |
|----------|------------|------------|--------------|----------------|----------|--------------|
|          | 1Sg        | 1Pl        | 2Sg          | 2Pl            | 3Sg      | 3Pl          |
| 1Sg      | X          | X          | s-aitu-t     | s-aitu-e-t     | d-o-t    | d-o-t-s      |
| 1Pl      | X          | X          | <u>s-ara</u> | <u>s-ara-e</u> | d-o-u    | d-o-u-s      |
| 2Sg      | n-o-su     | g-o-su-s   | X            | X              | d-o-su   | d-o-su-s     |
| 2Pl      | n-o-su-e   | g-o-su-e-s | X            | X              | d-o-su-e | d-o-su-e-s   |
| 3Sg      | n-eu-0     | g-aitu-0   | s-aitu-0-s   | s-aitu-e-0     | d-eu-0   | d-eitu-0-s   |
| 3Pl      | n-eu-0-e   | g-aitu-0-e | s-aitu-0-e   | s-aitu-e-0-e   | d-eu-0-e | d-eitu-0-e-s |

Table 8: Present tense absolutive-ergative auxiliary

| Erg | Absolutive           |                      |                      |                        |            |              |
|-----|----------------------|----------------------|----------------------|------------------------|------------|--------------|
|     | 1Sg                  | 1Pl                  | 2Sg                  | 2Pl                    | 3Sg        | 3Pl          |
| 1Sg | X                    | X                    | <i>s-endu-da-s-n</i> | <i>s-endu-e-da-s-n</i> | n-endu-n   | n-endu-s-n   |
| 1Pl | X                    | X                    | <i>s-endu-gu-s-n</i> | <i>s-endu-e-gu-s-n</i> | g-endu-n   | g-endu-s-n   |
| 2Sg | <i>n-endu-su-n</i>   | <i>g-endu-su-n</i>   | X                    | X                      | s-endu-n   | s-endu-s-n   |
| 2Pl | <i>n-endu-su-e-n</i> | <i>g-endu-su-e-n</i> | X                    | X                      | s-endu-e-n | s-endu-e-s-n |
| 3Sg | n-endu-0-n           | g-endu-0-s-n         | s-endu-0-s-n         | s-endu-e-0-s-n         | 0-eu-n     | s-eitu-s-n   |
| 3Sg | n-endu-0-e-n         | g-endu-0-e-s-n       | s-endu-0-e-s-n       | s-endu-e-0-e-s-n       | 0-eu-e-n   | s-eitu-e-s-n |

Table 9: Past tense absolutive-ergative auxiliary

| Erg | Dative                 |                         |                         |                           |              |                           |
|-----|------------------------|-------------------------|-------------------------|---------------------------|--------------|---------------------------|
|     | 1Sg                    | 1Pl                     | 2Sg                     | 2Pl                       | 3Sg          | 3Pl                       |
| 1Sg | X                      | X                       | d-o-tzu-t               | d-o-tzu-e-t               | d-o-tze-t    | d-o-tze-e-t               |
| 1Pl | X                      | X                       | <u>d-a-tzu</u>          | <u>d-a-tzu-e</u>          | d-o-tze-u    | d-o-tze-e-u               |
| 2Sg | d-o-st-su              | <u>d-o-su</u>           | X                       | X                         | d-o-tze-su   | d-o-tze-e-su              |
| 2Pl | d-o-st-su-e            | <u>d-o-su-e</u>         | X                       | X                         | d-o-tze-su-e | d-o-tze-e-su-e            |
| 3Sg | d-o-st- $\emptyset$    | d-o-sku- $\emptyset$    | d-o-tzu- $\emptyset$    | d-o-tzu-e- $\emptyset$    | d-o-tze-o    | d-o-tze-e- $\emptyset$    |
| 3Pl | d-o-st- $\emptyset$ -e | d-o-sku- $\emptyset$ -e | d-o-tzu- $\emptyset$ -e | d-o-tzu-e- $\emptyset$ -e | d-o-tze-o-e  | d-o-tze-e- $\emptyset$ -e |

Table 10: Present tense absolutive-dative-ergative auxiliary (3Sg absolutive)

- In the present, the first singular ergative clitic *t* can be replaced by its allomorph *a* when followed by the morpheme *s*. This would imply modifying (87-e) so that *a* can also be inserted in the context *o\_\_s*.
- In the present, the T form *eitu* in the 3Sg.Erg-3Pl.Abs auxiliary can be replaced by *otu*. This would require adding a vocabulary entry for *otu* specific to this context only.
- In both the present and the past, the T form *eitu* can be replaced by *itu*. This would require replacing the exponent *eitu* with *itu* in (47-a).
- In both the present and the past, the T form *eitu* can be replaced by *eu*. This would imply removing the vocabulary entry *eitu* and/or adding an impoverishment rule deleting [–Singular] from transitive T.
- In both the present and the past, the T form *aitu/endu* in 1Pl.Abs-3.Erg auxiliaries can be replaced by *eitu*. This would require removing the feature [+Past] and the contextual restriction from (54).
- In the past, the T form *endu* in 1Sg.Erg-3.Abs can be replaced by *eu*. This would imply adding the following impoverishment rule, which would precede (49):  
[+Have, +Past, –Participant, –Author] →  
[+Have, +Past, –Author] / \_\_\_\_ [–Peripheral, +Author, +Singular]
- In the past, the forms taken from de Yrizar 1992 have 1Sg.Erg clitic *da* instead of *a* or *t*, and 1Pl.Erg clitic *gu* instead of *u*.

In the absolutive-dative-ergative auxiliary (tables 10–13) we find the following alternatives:

- In the present, the ergative plural enclitic *e* can be missing from the 3Pl.Erg-1Pl.Dat forms. This is due to an impoverishment rule deleting [–Singular] from a 3Pl ergative clitic when preceded by a 1Pl dative clitic.
- In the present, the dative plural enclitic *e* can be missing in the 3Pl.Abs-3Pl.Dat-1Sg.Erg form. This is due to an impoverishment rule deleting [–Singular] from a 3Pl dative clitic when preceded by a 3Pl.Dat clitic and followed by a 1Sg.Erg clitic and *s*. This triggers the insertion of *a* (87-e) instead of *t* (87-f) in the ergative clitic.



| Erg | Dative                   |                           |                           |                             |                |                             |
|-----|--------------------------|---------------------------|---------------------------|-----------------------------|----------------|-----------------------------|
|     | 1Sg                      | 1Pl                       | 2Sg                       | 2Pl                         | 3Sg            | 3Pl                         |
| 1Sg | X                        | X                         | d-o-tzu-t-s               | d-o-tzu-e-t-s               | d-o-tze-a-s    | d-o-tze-e-t-s               |
| 1Pl | X                        | X                         | <u>d-a-tzu-s</u>          | <u>d-a-tzu-e-s</u>          | d-o-tze-u-s    | d-o-tze-e-u-s               |
| 2Sg | d-o-st-su-s              | <u>d-o-su-s</u>           | X                         | X                           | d-o-tze-su-s   | d-o-tze-e-su-s              |
| 2Pl | d-o-st-su-e-s            | <u>d-o-su-e-s</u>         | X                         | X                           | d-o-tze-su-e-s | d-o-tze-e-su-e-s            |
| 3Sg | d-o-st- $\emptyset$ -s   | d-o-sku- $\emptyset$ -s   | d-o-tzu- $\emptyset$ -s   | d-o-tzu-e- $\emptyset$ -s   | d-o-tze-o-s    | d-o-tze-e- $\emptyset$ -s   |
| 3Pl | d-o-st- $\emptyset$ -e-s | d-o-sku- $\emptyset$ -e-s | d-o-tzu- $\emptyset$ -e-s | d-o-tzu-e- $\emptyset$ -e-s | d-o-tze-o-e-s  | d-o-tze-e- $\emptyset$ -e-s |

Table 11: Present tense absolutive-dative-ergative auxiliary (3Pl absolutive)

| Erg | Dative                   |                        |                        |                          |                        |                          |
|-----|--------------------------|------------------------|------------------------|--------------------------|------------------------|--------------------------|
|     | 1Sg                      | 1Pl                    | 2Sg                    | 2Pl                      | 3Sg                    | 3Pl                      |
| 1Sg | X                        | X                      | n-eun-tzu-n            | n-eun-tzu-e-n            | n-eun-tze-n            | n-eun-tze-e-n            |
| 1Pl | X                        | X                      | <i>g-eun-tzu-n</i>     | <i>g-eun-tzu-e-n</i>     | g-eun-tze-n            | g-eun-tze-e-n            |
| 2Sg | $\emptyset$ -o-st-su-n   | <u>s-endu-n</u>        | X                      | X                        | s-eun-tze-n            | s-eun-tze-e-n            |
| 2Pl | $\emptyset$ -o-st-su-e-n | <u>s-endu-e-n</u>      | X                      | X                        | s-eun-tze-e-n          | s-eun-tze-e-e-n          |
| 3Sg | $\emptyset$ -o-st-n      | $\emptyset$ -o-sku-n   | $\emptyset$ -o-tzu-n   | $\emptyset$ -o-tzu-e-n   | $\emptyset$ -o-tze-n   | $\emptyset$ -o-tze-e-n   |
| 3Pl | $\emptyset$ -o-st-e-n    | $\emptyset$ -o-sku-e-n | $\emptyset$ -o-tzu-e-n | $\emptyset$ -o-tzu-e-e-n | $\emptyset$ -o-tze-e-n | $\emptyset$ -o-tze-e-e-n |

Table 12: Past tense absolutive-dative-ergative auxiliary (3Sg absolutive)

| Erg | Dative                     |                          |                          |                            |                          |                            |
|-----|----------------------------|--------------------------|--------------------------|----------------------------|--------------------------|----------------------------|
|     | 1Sg                        | 1Pl                      | 2Sg                      | 2Pl                        | 3Sg                      | 3Pl                        |
| 1Sg | X                          | X                        | n-eun-tzu-s-n            | n-eun-tzu-e-s-n            | n-eun-tze-s-n            | n-eun-tze-e-s-n            |
| 1Pl | X                          | X                        | <i>g-eun-tzu-s-n</i>     | <i>g-eun-tzu-e-s-n</i>     | g-eun-tze-s-n            | g-eun-tze-e-s-n            |
| 2Sg | $\emptyset$ -o-st-su-s-n   | <u>s-endu-s-n</u>        | X                        | X                          | s-eun-tze-s-n            | s-eun-tze-e-s-n            |
| 2Pl | $\emptyset$ -o-st-su-e-s-n | <u>s-endu-e-s-n</u>      | X                        | X                          | s-eun-tze-e-s-n          | s-eun-tze-e-e-s-n          |
| 3Sg | $\emptyset$ -o-st-s-n      | $\emptyset$ -o-sku-s-n   | $\emptyset$ -o-tzu-s-n   | $\emptyset$ -o-tzu-e-s-n   | $\emptyset$ -o-tze-s-n   | $\emptyset$ -o-tze-e-s-n   |
| 3Pl | $\emptyset$ -o-st-e-s-n    | $\emptyset$ -o-sku-e-s-n | $\emptyset$ -o-tzu-e-s-n | $\emptyset$ -o-tzu-e-e-s-n | $\emptyset$ -o-tze-e-s-n | $\emptyset$ -o-tze-e-e-s-n |

Table 13: Past tense absolutive-dative-ergative auxiliary (3Pl absolutive)

- In the present, the first singular ergative clitic *t* can be replaced by its allomorph *a* when preceded by a 2Sg.Dat clitic and followed by the morpheme *s*. This would imply modifying (87-e) so that *a* can also be inserted in the context *tzu\_\_s*.
- In the past, the default T form *eun* can be replaced with *on*. This would require replacing the exponent *eun* with *on* in (94-a).
- In the past, the special prefix *y* can replace  $\emptyset$ . This is also true of past absolutive-dative auxiliary forms discussed above.
- In the past, the 3Sg.Abs-3Sg.Dat-1Pl.Erg, the auxiliary can optionally fail to undergo Ergative Metathesis (65). This can be implemented by adding a further restriction to the metathesis rule (see footnote 29.)
- In the past, the default T form *eun* can be replaced with *in* or *en* in the context of a first singular ergative proclitic and a third singular dative clitic. This would require a default entry for T assigning the exponent *en/in* in this specific context.

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