Person and Number Inflection in Basque[*]

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Abstract

In this paper, I concentrate on the similarities in realization that Basque person/number features have across categories (nominal environments and verbal agreement), arguing that these features are realized by using affixes which are not specified for the category they are inserted in. Within the framework of Distributed Morphology, I develop an analysis which makes crucial use of two devices provided by this framework: underspecification in the Vocabulary Items realizing the features, and the mechanism of Fission.

0. Introduction

In this paper I provide a unified account of the realization of person and number morphology in Basque within the framework of Distributed Morphology (henceforth, DM). I will concentrate on the dialect of the western coastal town of Ondarroa, although most of the properties of person and number morphology discussed here are shared by all dialects of Basque.

The main objective of the present work will be a unified account of the spellout of person/number morphology in Basque across categories. The similarities in form between pronouns and verbal agreement affixes have led many Basque scholars to hypothesize that agreement affixes are historically derived from pronouns.[1] In order to account for these similarities, I will show in §§2-3 that person/number features in Basque are realized by a set of affixes, most of which are not specified to be inserted in a particular type of node. This underspecification in their vocabulary entries will account for their uniform distribution across categories. Furthermore, I will also show that the similarities in the realization of person/number features go beyond the segmental content of the affixes involved. Thus, if a

[1] See Gómez and Sainz (1995) for a brief overview of the literature on this topic, and for the history of tensed verbal forms in general. The paper also highlights several problems with that hypothesis.

specific affix is a prefix in a given environment, it is also a prefix in all other environments. Furthermore, if a certain combination of person/number features is realized with a prefix and a suffix at the same time, this will be the case in all environments in which these features appear. Thus, the similarities do not only surface in the segmental content of the affixes involved, but also in how many of them are needed for a particular combination of person/number features, and in the relative linear order in which they surface.

Section 4 concentrates on the realization of these person/number affixes. There, I propose a fission account of the different cross-categorial generalizations that emerge from the realization of these affixes. Finally, §5 is devoted to the stems that these affixes attach to. The main purpose of this section will be to account for the linear order of morpheme exponents within the Basque inflected verb. A very interesting fact about Basque verbs is the appearance of certain pronominal stems in only some agreement morphemes. The distribution of these pronominal stems within the inflected verb will be shown to follow from certain natural assumptions about the mapping between syntactic structures and the linear order of morpheme exponents realizing the structure.

1. Theoretical Background

The framework assumed in this work is that of Distributed Morphology (Halle & Marantz 1993 1994, Halle 1997).[2] DM posits an autonomous, post-syntactic level of morphology, Morphological Structure (henceforth, MS). The syntactic component of the grammar manipulates terminal nodes containing bundles of syntactic and semantic features, called *morphemes*. At MS, certain operations apply to these morphemes, including Vocabulary Insertion, which provides the terminal nodes with phonological exponents. Thus, in this framework, the building of words is distributed among different components of the grammar. Words are built from abstract terminal nodes in the syntax via head movement, and they are provided with phonological features at MS. Thus, DM assumes Late Insertion, i.e. morphemes acquire phonological content late in the derivation, after syntactic operations apply to them.

Furthermore, some operations may apply at MS before Vocabulary Insertion which alter the structure of words further. These operations include Morphological Merger and Fusion.

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[2] See also Harley & Noyer (1998) and Noyer (1999) for an introduction to DM.

Morphological Merger combines terminal nodes under certain locality conditions (see Marantz 1988, Embick & Noyer 1999).[3] Under Fusion, two terminal nodes are combined (fused) into a single terminal node (see Halle & Marantz 1993, Halle 1997). Descriptively, this happens when two syntactic nodes correspond to a single exponent.

An important part of the analysis given in §4 will be the manner in which Vocabulary Insertion applies. As was mentioned above, this is the operation by which abstract morphemes are provided with phonological exponents. This is done via vocabulary items, which are pairings of phonological exponents and abstract features. A given vocabulary item may be inserted into a given terminal node only if it is specified for a subset of the features contained in that node. However, there are cases in which more than one vocabulary item meets this condition. Under these circumstances, these vocabulary items compete for insertion in a single teminal node. Which candidate wins this competion is decided by applying the Subset Principle, as defined in (1) (Halle's 1997 example (7)).

(1)   *The Subset Principle*

The phonological exponent of a Vocabulary item is inserted into a morpheme in the terminal string if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.

Finally, another mechanism, called Fission, will also be used in the analysis presented in §4. Fission is posited in DM when more than one vocabulary item corresponds to a single syntactic terminal node. Fission will be explained in more detail and exemplified in §4, where an analysis of Basque person/number morphology in terms of Fission is developed.

2. Nominal Inflection

In this section, I show that person and number features in Basque nominal environments are always realized as affixes. §§2.1-2.2 deal with third person inflection, showing that it has

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[3] §3.1 below contains an example of Morphological Merger in Basque. However, since it is not a crucial part of the analysis,

the same realization in all environments, i.e in pronouns and full DPs. §2.3 is dedicated to first and second person pronouns, showing that they follow the same pattern as third person.

2.1. Third person in nominal environments

The table in (2)[4,5] shows Basque third person pronouns in six different cases.[6]

(2)　*Third Person Pronouns*[7]

	ABS	ERG	DAT	GEN	BEN	COM
SG	ber-a	ber-a-k	ber-a-i	ber-a-n	ber-a-ntzako	bér-a-s
PL	éur-a-k	éur-a-k	éur-a-i	éur-a-n	eur-a-ntzáko	eur-á-kin

As can be seen in table (2), all third person pronouns end in the vowel *a* followed by some case ending. The same pattern is also found in full DPs, where the same inflectional endings appear suffixed to the last word in the DP, as illustrated in (3)-(4).[8,9]

(3)　a.　gixon-a　　　　　　　　b.　gixon　sarr-a

　　　man-ABS.SG　　　　　　　　　man　old-ABS.SG

　　　'*the man*' (Absolutive)　　　　'*the old man*' (Absolutive)

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it is not developed in great detail.

[4] All of the examples in this paper are from the Ondarroa dialect, unless otherwise noted. In the Basque examples I will be using standard Basque orthography. This will be clear in most cases, except in the following: *tz* is a voiceless predorso-alveolar affricate /ts/, *z* is a voiceless predorso-alveolar fricative, *x* is a voiceless alveopalatal fricative /š/, and tx is a voiceless alveopalatal affricate /tš/.

[5] In this paper, I will be using the following abbreviations: ABS(olutive), AGR(eement), ALL(ative), Aux(iliary), BEN(efative), COM(itative), DAT(ive), EMPH(atic), ERG(ative), GEN(itive), IMP(erfective), IN(essive), PL(ural), PR(esent), PRF (Perfective), PROX(imity plural), PST (Past), SG (singular).

[6] Note that some of the forms in (2) are accented, while others are not. Accentuation in Basque is a very interesting topic, and there is a clear relationship between inflectional morphology and stress (for instance, note that all plural pronouns are accented, while only some of the singular ones are). However, I will not try to account for this relationship in this paper. Relevant literature on the topic includes Hualde (1991 1996 1997), Hualde et al. (1994) and Elordieta (1997).

[7] In this paper I will not take into account locative cases (ablative, genitive locative, inesive and three different types of allative case), which will be left for future work.

[8] In the dialect studied in this paper, several phonological rules apply to this inflectional ending *-a*. For instance, it is raised to *e* when the previous vowel is high, and it is deleted when right adjacent to a high vowel. See Hualde (1991). As shown in Hualde (1996), there is quite strong evidence that in the cases in which this vowel is not present after a high vowel, it has been deleted by a phonological process.

[9] In very specific contexts, the inflectional ending *-a* is not present. For instance, certain weak determiners, like *asko* 'much, many', or *bat* 'a, one', are not compatible with it. With numerals, its presence is correlated with definiteness (cf. *iru gixon* 'three men' vs. *iru gixon-a-k* 'the three men'). However, there are clear cases in which a DP containing this suffix is not definite. For instance, it is obligatory in subjects of existential sentences, which can only be interpreted as indefinite. For a description of the distribution of this ending, see Laka (1996). See also Laka (1993b) for some interesting correlations between the presence of this vowel and the syntactic position and interpretation of DPs containing it. I will not attempt a full account of its distribution here, since it would involve examining complex relations between morphology, syntax and semantics which would go far beyond the scope of this paper. For the purposes of this paper, it is sufficient to note that it

(4) a. *gixon-a   sarr-a   b. *gixon-a   sarr

man-ABS.SG old-ABS.SG   man-ABS.SG old

'*the old man*' (Absolutive)   '*the old man*' (Absolutive)

The table in (5) shows the whole inflectional paradigm for nominal environments, exemplified with *gixon* 'man' and the third person pronoun *ber/eur-*.

(5) *Third Person Nominal Inflection*

	GIXON 'man'		*PRONOUN*	
	SINGULAR	*PLURAL*	*SINGULAR*	*PLURAL*
ABS	gixon-a	gixón-a-k	ber-a	éur-a-k
ERG	gixon-a-k	gixón-a-k	ber-a-k	éur-a-k
DAT	gixon-a-i	gixón-a-i	ber-a-I	éur-a-i
GEN	gixon-a-n	gixón-a-n	ber-a-n	éur-a-n
BEN	gixon-a-ntzako	gixon-a-ntzáko	ber-a-ntzako	eur-a-ntzáko
COM	gixón-a-s	gixon-á-kin	bér-a-s	eur-á-kin

As shown in (5), in the third person, nominal inflection always involves this *-a* suffix, even in pronouns. Traditionally, this *-a* suffix has been considered to be a determiner (see Laka 1993b 1996). Following the standard analysis of this suffix, I will assume that, in all DPs, *-a* is the realization of third person on the D head. This is illustrated with the structure in (6).

(6) [_DP [NP] [_D *a*]]

This suffix is always attached to the last word in NP, i.e. the one which is immediately to its left. I will assume that this is achieved by the process of *Morphological Merger* (see Marantz 1988, Embick & Noyer 1999), i.e. in the morphology, the suffix realizing third person is merged with the last word of the constituent to its left. In third person pronouns, the structure is much simpler: I will assume, following Abney (1987), that pronouns are Ds with no complement. It is in this D node that *-a* is inserted. The main difference between the third person pronouns and other nominal environments is that in the former, the inflectional suffix

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appears in most third person DPs, including pronouns.

has nothing to attach to. However, as can be seen in (5) above, third person pronouns do have a stem: *ber* in the singular and *eur* in the plural. For the moment, I will leave aside any other syntactic and morphological properties these pronominal stems may have, and will simply assume that they are epenthetic stems inserted to fulfill the affixal requirements of the determiner *-a*.[10] One obvious analysis of Basque third person pronouns would take these stems to be the realization of an NP complement of D, contrary to what I have assumed above. A fuller analysis of these stems will be given in §5, where I justify the assumption that they are best seen as epenthetic stems. Thus, although this pronominal stem is different depending on number (*ber* in the singular, and *eur* in the plural), it does not directly encode number. Rather, in the present analysis, number is a property of D, although in the third person D is always realized as *-a*, and does not show number contrasts.[11] The two forms of the pronominal stem are allomorphs whose distribution depends on the number specification on the D suffix. The similarity between full DPs and pronouns suggests that this is the right analysis for third person pronouns. Thus, nominal inflection in third person pronouns is identical to the one appearing in other nominal contexts.

Finally, there is another affix appearing in third person inflection that has not been mentioned so far. This is the so-called *proximity plural* suffix *–o*. For reasons of space, I will not include a full paradigm for the proximity plural. Thus, for the purposes of this paper, it is enough to know that words inflected for the proximity plural are the same as the non-proximity plural cases in (5), except that the proximity plural suffix *–o* appears instead of the non-proximity plural suffix *–a*. The conditions under which the proximity plural are used are quite complex (see Laka 1996), having to do with the spatio-temporal location of the entity referred to by the DP with respect to the speaker. For the purposes of this paper, what is important is the fact that the proximity plural suffix alternates with the third person suffix *–a* in nominal inflection. I will simply assume that, in the relevant contexts, D is specified for a feature [+Prox], in addition to person and number.

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[10] A possible objection to the assumption that *ber* and *eur* are epenthetic stems might be the standard assumption in the Basque linguistics literature that these morphemes are *emphatic*, and that, accordingly, what I am calling *third person pronouns* are in fact emphatic pronouns. However, as I show in §2.2, this assumption is in fact wrong, i.e. the pronouns *bera* and *eura* are not emphatic forms; they are simply third person pronouns. Thus, it is fairly natural to assume, as I have in the text, that the suffix *-a* is the realization of the features in D, and that *ber* and *eur* are simply epenthetic stems.

[11] A very common assumption in the Basque literature is that, contrary to what I am assuming here, plural number in DPs is realized by the suffix *–k* that appears in the absolutive. However, as shown in (5), this suffix only appears in the absolutive plural (and in both the ergative singular and plural). This strongly suggests that, in this case, it is in fact a suffix realizing absolutive case in the context of plural number, not the realization of plurality itself. As we will see in §2.3, in the second person plural, the affix *–e* realizes plural number (cf. singular *su* vs. plural *sue*); even in this case, the suffix *–k* appears in the absolutive plural (and, as expected, in the ergative singular and plural), which strengthens the conclusion that this suffix is

2.2. On third person pronouns

In the previous section, I have discussed the morphological properties of Basque third person pronouns *bera* and *eura*. As pointed out to me by one of the reviewers, a usual claim in the literature on Basque is that, in fact, there are no third person pronouns in this language, and that demonstrative pronouns are used instead (see, for instance, Laka 1996; Hualde, Elordieta & Elordieta 1994). This claim is in clear conflict with my assumption that *bera* and *eura* are third person pronouns. In fact, these words are usually described as *emphatic* forms of demonstratives, rather than personal pronouns. As I show immediately below, this assumption is not warranted by the data: *bera* and *eura*, in the uses that are described for them in the literature, are neither demonstratives nor necessarily *emphatic*.

The idea that *bera* and *eura* are emphatic demonstratives is based on the fact that they seem to be etymologically derived from demonstratives containing an emphatic morpheme. Thus, the distal demonstrative in Ondarroa Basque is *a*, and the stems *ber* and *eu(r)* are used elsewhere to introduce some kind of emphasis (see below). Thus, *bera* and *eura* are standardly analyzed into *ber-/eur-*, an empathic marker, and *-a*, a distal demonstrative. In order to see whether this analysis is correct, we have to see (i) whether these pronouns are emphatic, and (ii) whether they are demonstratives.

First, we need to spell out in some detail what *emphatic* means. In first and second person pronouns, the emphatic marker *eu* (etymologically related to *eur*)[12] is used when the pronoun is in the preverbal focus position (see Laka 1996). This is illustrated in (7).[13]

(7) a. Jon-ek neu   /   *ni   ikusi n-au-Ø.
         Jon-ERG me.EMPH.ABS / me.ABS seen 1SG.ABS-Aux-1SG.ERG
         'Jon has seen ME.'
     b. Ni   /*Neu   Jon-ek ikusi n-au-Ø.
         me.ABS /me.EMPH.ABS Jon-ERG seen 1SG.ABS-Aux-1SG.ERG
         'JON has seen me.'

As shown in (7), the emphatic version of the personal pronoun is grammatical only when focused, and the non-emphatic version is grammatical only when it is not focused. However,

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not the realization of plural number, but an allomorph of absolutive case in the context of plural number.

[12] The morphology of first and second person emphatic pronouns is discussed in §2.3.

[13] The distribution of emphatic pronouns is more complex than illustrated here. See Laka 1996. This fact is irrelevant to the

bera and *eura* clearly do not behave this way. They can be used both in focus positions and in non-focused positions, as illustrated in (8)-(9).

(8) a. Jon   bera-k ikusi rau-Ø.   b. Jon   eura-k   ikusi rab-e.
         Jon.ABS he-ERG seen Aux-3ERG.SG   Jon.ABS they-ERG seen Aux-3ERG.PL
         'HE has seen Jon.'   *'THEY have seen Jon.'*

(9) a. Bera-k Jon   ikusi rau-Ø.   b. Eura-k   Jon   ikusi rab-e.
         he-ERG Jon.ABS seen Aux-3ERG.SG   they-ERG Jon.ABS seen Aux-3ERG.PL
         'He has seen JON.'   *'They have seen JON.'*

Thus, even though the stems *ber* and *eur* are etymologically related to emphatic markers in other words, they clearly do not have emphatic meaning.

Furthermore, *bera* and *eura* do not seem to be demonstratives either. First, the similarity between the suffix *-a* and the distal demonstrative *a* is only apparent in the absolutive singular. In other cases, they are clearly different. In non-absolutive cases, an [r] is added to the stem of the demonstrative (e.g. ergative singular *a-r-ek*, commitative singular *a-r-eas*), but this is not the case with the suffix *-a*, as we saw in the previous section (cf. ergative singular *ber-a-k*, commitative singular *ber-a-s*). Thus, it is not at all clear that the *-a* suffix in *bera* and *eura* is a distal demonstrative. Perhaps more convincing is the fact that the pronouns *bera* and *eura* cannot be used as demonstratives. The distribution of these pronouns can be described as follows: they can be used whenever the individual referred to has been previously mentioned in the discourse. If the individual referred to has not been mentioned, but is sufficiently salient (e.g. by physically pointing to them), a demonstrative (such as the distal *a*) is used. In other words, the pronouns *bera* and *eura* can be used anaphorically, but not deictically. Even though this is a clear difference between these pronouns and pronouns in other languages like English (where third person pronouns can be used deictically), it hardly seems like a good reason not to call them *pronouns*. On the other hand, it does seem like a good reason not to call them *demonstratives*.

What I have shown in the previous paragraphs is that *bera* and *eura* behave semantically like English pronouns (with minor differences), and not like emphatic pronouns like *neu* or

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point.

like demonstratives. Thus, I conclude that, as was assumed in the previous section, *bera* and *eura* are third person pronouns, i.e. Ds without a complement.

2.3. First and second person pronouns

The table in (10) contains first and second person pronouns in all cases.

(10) *First and Second Person Pronouns*

	1SG	*1PL*	*2SG*	*2PL*
ABS	ni	gu	su	súe-k
ERG	ni-k	gu-k	su-k	súe-k
DAT	ni-ri	gu-ri	su-ri	súe-i
GEN	ni-re	gu-re	su-re	súe-n
BEN	ni-tzat	gu-tzat	su-tzat	sué-ntzat
COM	ní-as	gú-as	sú-as	sué-kin

These pronouns are in fact very similar to absolutive agreement in verbal inflection, as can be seen in (11), where *V* stands for the verbal stem.[14]

(11) *First and Second Person Absolutive Agreement*

	1	*2*
SG	n-V	s-V
PL	g-V	s-V-e

The Agr_{Abs} affixes shown in (11) attach to the verbal stem, as exemplified in (12). These examples also illustrate the similarities between pronouns and Agr_{Abs}.

(12) a. **G**u   kale-a   **g**-us.
          we(ABS) street-ALL **1PL.ABS**-go
          '*We are going outside.*'

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[14] For third person absolutive agreement, see §3.1.

b. **N**i-k   sue-k   atrapa   **s**-atxu-**e**-t.
    I-ERG   **you.PL**-PL.ABS   caught   **2ABS**-Aux-**PL.ABS** -1SG.ERG
    '*I caught y'all.*'

The similarities between pronouns and Agr$_{Abs}$ suggest that they should have a similar analysis. Specifically, I propose that first and second person in both pronouns and Agr$_{Abs}$ are realized with the same set of affixes, i.e. the ones in (11). Furthermore, these affixes attach to the verbal stem in the case of absolutive agreement, and to the pronominal stems *i* (in the first singular) or *u* (elsewhere) in pronouns.[15] Thus, I argue that first and second person pronouns should be analyzed as in (13).

(13) *First and Second Person Pronouns*

	1	*2*
SG	n-i	s-u
PL	g-u	s-u-e

Under this view, there are thre prefixes available for the realization of person and number features in nominal environments and in Agr$_{Abs}$: *n-* for first person singular, *g-* for first person plural, *s-* for second person. Furthermore, there is a plural suffix, *-e*, which, as can be seen by the contrast between the second singular and second plural forms, realizes plural number. As we will see in the next section, *-e* is a common realization for plural number in Basque.[16] Accounting for its complex distribution, including the fact that it never appears in the first person plural, is one of the objectives of the analysis given in §4. As we will see there, this fact is intimately related to the fact that, while in the second person, the prefix does not encode number distinctions (i.e. it is always *s-*), in the first person, it does (i.e. it is *n-* in the singular and *g-* in the plural).

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[15] For a full analysis of these stems, see §5.

[16] As was noted in footnote 11, the fact that I am not analyzing the suffix *-k* that appears in the second absolutive plural as the realization of plural number goes against standard assumptions in the Basque literature. For reasons that I explained in there, it is clear that this suffix in this context is not realizing plural number, but absolutive case in the context of plural number. The only reason to think that *-k* realizes plural number is that it appears in the absolutive plural. However, this argument is in effect nullified by the fact that it does not appear in the context of any other grammatical case, and the fact that, in the second person *su-e*, the suffix *-e*, not *-k*, is clearly the exponent of plural number (i.e. unlike *-k*, it appears in all second person plural forms).

There are some interesting alternations in the pronominal paradigm which justify this analysis of pronouns as divided into stems and affixes. First, in so-called *emphatic* pronouns (see §2.2), what I have identified as the stem (*i* and *u*) changes, while what I claim are the affixes realizing person and number remain the same: *n-eu* for 1SG, *g-eu* for 1PL, *s-eu* for 2SG, and *s-eu-e* for 2PL.

Second, the suffix *-e* in the second person plural pronoun *sue* alternates with the proximity plural suffix *-o* (see §2.1), i.e. in the relevant contexts, the second person plural pronoun is *suo*, not *sue*. This alternation is similar to the one found in the third plural, where the suffix *-a* alternates with the proximity plural *-o*. This strongly suggests that *-e* in the second person plural pronoun is an independent suffix specified for plural number. If *sue* were analyzed as a single piece, the obvious generalization would be lost. Similarly, an analysis in which *s...e* in the second person plural were a circumfix would not be able to account for this generalization. As mentioned before, we still need to account for the fact that this plural suffix *-e* does not appear in all plural contexts (especially in the first plural). As we show in §4, this follows from the analysis proposed there without any specific stipulation.

In the previous section, I proposed that all cases of third person nominal inflection share the same realization: a stem, which in full DPs is the last word contained in them, and in pronouns, *ber-* or *eur-*; and the suffix *-a*, which realizes the person/number features on D. In this section, I have shown that first and second person features in both pronouns and Agr$_{Abs}$ also have the same kind of realization: as affixes which attach to some stem (the verbal stem in the case of absolutive agreement, and *i/u* in pronouns). In sum, I have shown that person/number inflection in Basque contains the pieces shown in (14).[17]

(14) *The Pieces of Basque Inflection*

PREFIX (PERSON/NUMBER)	STEM	SUFFIX (PERSON/NUMBER)
g- (1ST PL)	i, u, eu, eur,	-a (3RD)
n- (1ST SG)	ber, V, X	-e (PL))
s- (2ND)		-o (PROX.PL)

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[17] The X in (14) stands for the relevant stem in full DPs.

3. Agreement Morphology

The main objective of this section is to show that all agreement morphemes follow the same pattern as DPs in terms of the realization of person/number features. For most verbs in Basque, all finite tenses are analytic, i.e. they consist of the main verb with some aspect/future suffix (the *participle*), and a light verb inflected for tense and agreement. There are three different agreement morphemes in the tensed verb: absolutive, ergative, and dative.[18] (15) is an example of an analytic tense, in this case the perfective past.

(15) Su-k   Boston-ea   ju-n   s -iñ -an.
      you(ABS.SG) Boston-ALL   go-PRF   2SG.ABS-Aux-PST
      '*You went to Boston.*'

There are, however, a few verbs which can also appear in synthetic tenses. In this case, there is no auxiliary and it is the main verb which is inflected for tense and agreement.[19] (16) illustrates synthetic tenses with the present of *erun* 'carry'.

(16) Ni-k   liburo   bat   d-aru-t-Ø.
      I-ERG book   one.ABS   3ABS-carry-1SG.ERG-PR
      '*I am carrying a book.*'

3.1. Absolutive agreement

As we already saw in §2.3, the affixes used to realize first and second person Agr_{Abs} are the same ones that are used in pronouns, i.e. those in (11), repeated below as (17). As shown in §2.3, the only difference between Agr_{Abs} and pronouns is in the stem these affixes attach to: the verbal stem in Agr_{Abs}, and a pronominal stem in pronouns.

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[18] There are certain mismatches between case and agreement in Basque morphology. A well-studied case is Ergative Displacement, where the morpheme which ususally agrees with the absolutive argument agrees with the ergative argument. Ergative Displacement is discussed briefly in §3.1 (see also Ortiz de Urbina 1989, Laka 1993a, Fernández 1999 and Albizu & Eguren 2000 for different analyses of this phenomenon). Another case in Ondarroa Basque occurs in clauses with an absolutive argument, a dative argument and no ergative argument. In this case, if the absolutive argument is first or second person, it triggers agreement with what is usually ergative agreement on the tensed verb. Since the nature of these mismatches does not seem to be crucial for the realization of agreement, I will not take them into account, and use the labels *absolutive*, *dative* and *ergative* for the agreement nodes, even though in some cases the DP they agree with does not have the corresponding case.

[19] For analyses of the difference between synthetic and analytic tenses, see Laka (1990) and Arregi (2000).

(17)   *First and Second Person Absolutive Agreement*

	1	*2*
SG	n-V	s-V
PL	g-V	s-V-e

However, third person absolutive agreement is more problematic. There seem to be certain pieces in the tensed verb which could be good candidates for third person absolutive agreement markers. There are two kinds of inflectional pieces that need to be discussed: (i) certain prefixes which appear whenever third person Agr_{Abs} is expected, and (ii) certain affixes which appear to be plural Agr_{Abs}. For both types, I argue below that they are really not agreement morphemes, and thus fall outside the scope of the analysis defended here.

There is a set of affixes which seem to realize third person Agr_{Abs}, since they appear only in finite verbs with third person absolutive agreement, and their position is the same as the first and second person Agr_{Abs} prefixes in (17). These prefixes are *d-*, *Ø-*, *s-*, *g-*, and *l-*. Which specific prefix is used depends on tense and the presence or absence of other types of agreement within the tensed verb.[20] Despite the fact that they are in complementary distribution with Agr_{Abs}, several authors since Laka (1993a) (see, for instance, Albizu & Eguren 2000, Fernández 1999) have assumed that they are not the realization of third person Agr_{Abs}. The main argument for this position is that it allows these authors to account in a principled manner for the phenomenon of Ergative Displacement. Under certain specific circumstances, including the presence of a third person absolutive argument, what is usually Agr_{Abs} actually agrees with the ergative argument, and these apparent Agr_{Abs} prefixes are not present. In order to account for the complementary distribution between these prefixes and Ergative Displacement, and in order to explain the fact that Ergative Displacement does not occur with first or second person absolutive agreement, these authors assume that third person Agr_{Abs} is *absent* in some sense in the structure of the verb.[21] Assuming that some version of this hypothesis about Ergative Displacement is right, I shall assume that third person Agr_{Abs} is absent from the structure. We can simply assume that this is due to an impoverishment rule in

[20] More specifically, and simplifying somewhat, *g-* appears in verbs which have dative agreement but no ergative agreement, *d-* elsewhere in the present, *s-* and *Ø-* elsewhere in the past (depending on the verb root), and *l-* in *irrealis* tenses (potential and conditional). These details are not important for the analysis.

[21] For Laka (1993a), *absent* means that it is realized as zero; for Albizu & Eguren 2000, it means that no affix is inserted in the terminal node; and, finally, for Fernández (1999), it means that there is actually no third person Agr_{Abs} features, so that there is, in effect, no Agr_{Abs} terminal node in this case.

the morphological component.[22] Again, this means that the prefixes under discussion are not the realization of third person Agr$_{Abs}$. Hence, in what follows, I will ignore third person Agr$_{Abs}$.

Another set of affixes which are apparently related to absolutive agreement is formed by certain affixes which have been traditionally thought of as plural agreement markers. In Ondarroa Basque, there are two such affixes, *-s* and *-tx-*. Consider the suffix *-s* first. Its distribution, although vaguely related to the presence of a plural absolutive argument, is quite irregular. Consider, for instance, the following present tense paradigms for the verbs *ixan* 'be' and *jun* 'go'.

(18)   *IXAN* 'be'   *JUN* 'go'

1SG	na-s / na
2SG	sa-s / sa
3SG	da
1PL	ga-s / ga
2PL	sa-s-e
3PL	di-s / di

1SG	nu
2SG	su-s
3SG	du
1PL	gu-s
2PL	su-s-e
3PL	du-s

As can be seen in these paradigms, there is no clear sense in which *-s* is plural agreement. First, in the case of the verb *jun*, it is present in all instances of plural Agr$_{Abs}$, but it is also present in the context of second person singular Agr$_{Abs}$. In the case of the verb *ixan*, the distribution of *-s* is even more complicated: first, it is possible in all cases except in the third singular; second, it is furthermore obligatory only in the second plural. Ignoring the case of *ixan* for now, one could argue that, in the case of *jun*, *-s* appears only in the plural, if we could somehow assume that the second person singular in Basque is *morphologically* plural. In fact, this is a quite standard assumption in the literature on Basque.[23] However, making this assumption explicit is not a trivial matter. Saying that the second person singular is *morphologically* plural is not enough, since that would predict that second person singular

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[22] Whether this is actually the case, or whether, as argued for in Fernández (1999), the absence of third person absolutive agreement is syntactically motivated is not important for the morphological analysis defended in this paper.

[23] More specifically, the standard assumption is that the second person singular pronoun (and agreement) we have discussed so far is morphologically plural. In many other dialects, this pronoun and agreement is restricted to formal contexts, while the pronoun *hi* (which is no longer in use in Ondarroa Basque) and the agreement it triggers is strictly singular. Thus, for the dialects which have these two second person singular forms, the discussion below on second person singular should be read as a discussion on *formal* second person singular. Otherwise, the point I am trying to make for Ondarroa Basque can be extended to all other dialects.

and plural forms would be identical. However, this is clearly not the case. As we have seen so far, the second person plural is always associated with the plural suffix *-e*, while the second person singular is never associated with this suffix. Compare this case with French, where the second person singular pronoun in formal contexts is *vous*, which is homophonous with the second person plural pronoun, and accordingly triggers plural agreement in finite verbs. In this case, we can say that the second person singular in formal contexts in French is morphologically plural (even though it is semantically singular). Second person pronouns and agreement morphemes in Basque clearly do not behave this way. In fact, as far as I can tell, the only possible argument in favor of this assumption is the fact that they trigger the presence of this *-s* suffix (and similar ones) in verbs. Thus, there is no advantage in trying to develop an analysis of Basque inflection under the assumptions that the second person singular is *morphologically* plural, and that the suffix *-s* is plural agreement. One would need to explain why the second person singular is *morphologically* singular for some morphological processes (such as the affixation of plural *-e*), but *morphologically* plural for others (such as the affixation of the so-called *plural* affix *-s*). It seems to me that this analysis offers no advantage over one in which the second person singular is strictly singular, and in which *-s* is treated as a suffix which is inserted in the presence of plural Agr_{Abs} or second person singular Agr_{Abs}. Although, at first, the assumption that second person singular is *morphologically* plural might be seen as advantageous, further consideration of the facts show that the assumption is not supported, in that it offers no insight into Basque inflectional morphology. Furthermore, the distribution of *-s* in verbs like *ixan* (see (18)), where it also appears in the first singular, and where it is optional in all cases except in the second plural, the assumption is weakened even more. It seems that, even though at some point in the history of Basque affixes like *-s* where plural markers, they are not so any more.[24] As far as I can tell, this affix, and similar ones, is nothing but a historical relic.

Something similar can be said about the other affix under discussion, namely *-tx-*. Its distribution is similar to *-s*, in that it appears in the context of plural Agr_{Abs} and second person singular Agr_{Abs}. For instance, in the present tense, the transitive auxiliary *edun with third person singular ergative agreement is *g-a-**tx**-u* with first person plural Agr_{Abs}, *s-a-**tx**-u-e* with second person plural Agr_{Abs}, *do-**tx**-u-s* with third person plural Agr_{Abs}, and *s-a-**tx**-u* with

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[24] Thus, I am not trying to argue against the view that at some point in the history of Basque the pronoun *su* (*zu* in Standard Basque) was morphologically plural, or that suffixes like *-s* where plural suffixes. This might very well be true (and it probably is), but this is irrelevant to the point I am making.

second person singular Agr_{Abs}. On the other hand, it is *dau* with third person singular Agr_{Abs}, and *n-au* with first person singular Agr_{Abs}. I believe that the point should be clear by now: there is no sense in which the second person singular is *morphologically* plural, hence there is no sense in which *-tx-* is plural agreement. Again, as in the case of *-s*, this affix seems to be just a historical relic. Furthermore, this conclusion is strengthened by the fact that some speakers find the form *n-a-**tx**-u* (along with the more traditional *n-au*) grammatical as a first person singular absolutive form.

Thus, for the rest of the paper, I will simply assume that Agr_{Abs} is as has been described so far, that is, there is no Agr_{Abs} for third person (as opposed to first and second person, in which case Agr_{Abs} is as shown in (17)), and suffixes like *-s* and *-tx* are neither absolutive agreement markers nor plural markers. As for the latter, I will simply assume that they are inserted in the context of certain forms of Agr_{Abs}. Since spelling out in detail their distribution is rather complicated, and, as far as I can tell, would not contribute to further our understanding of Basque morphology, I will ignore them henceforth.

3.2. Ergative agreement

Ergative agreement is realized with the pieces shown in (19).

(19) *Ergative Agreement*

	1	*2*	*3*
SG	V-t	V-s-u	V-Ø
PL	V-g-u	V-s-u-e	V-e

Note that the exponents in (19) are strikingly similar to pronouns and Agr_{Abs} (cf. (14)). Specifically, both second and third plural contain the plural suffix *-e*, which is also the plural suffix used in nominal environments and in Agr_{Abs}. Furthermore, second person *s-u(-e)* and first person plural *g-u* are identical to pronouns. It seems that in these cases Agr_{Erg} is using the same person/number affixes as in nominal environments and Agr_{Abs}. What is more striking about *g-u* and *s-u(-e)* is that they include the pronominal stem *u*, which is used for the same person/number combinations in pronouns.

In order to account for these similarities, I propose that Agr_{Erg} in fact uses the same affixes as Agr_{Abs} and nominal environments for the realization of person/number features, i.e. the

ones in the table in (14). The only exception to this is the first person singular, which is *-t* in Abs$_{\text{Erg}}$, as opposed to the prefix *n-* used elsewhere (see (14)).

Note that, unlike Agr$_{\text{Abs}}$, Agr$_{\text{Erg}}$ is always realized to the right of V. In Agr$_{\text{Abs}}$, the position of a specific affix with respect to the verbal stem only depends on its status as a suffix or a prefix. However, in Agr$_{\text{Erg}}$ both prefixes and suffixes follow the verbal stem. Nevertheless, prefixes do not lose their status as prefixes. As shown in (19), the prefixes that follow the verbal stem are prefixes with respect to the *pronominal stem u*. This puzzling behaviour of Agr$_{\text{Erg}}$ affixes with respect to linear order and the stem they attach to will be the topic of §5. What is important to keep in mind for now is that the affixes used for Agr$_{\text{Erg}}$ are the same ones as in Agr$_{\text{Abs}}$ and nominal environments (with the exception of first singular *-t*).[25] Furthermore, this is true not only in terms of the segmental content of the affixes, but also in their status as prefixes or suffixes. For instance, second person is realized as the prefix *s-* in all instances of person/number inflection seen so far. Thus, we can extend the table in (14) to the one in (20), once Agr$_{\text{Erg}}$ *-t* has been added.

(20) *The Pieces of Basque Inflection*[26]

PREFIX (PERSON/NUMBER)	STEM	SUFFIX (PERSON/NUMBER)
g- (1$^{\text{ST}}$PL)	i, u, eu, eur,	-t (1$^{\text{ST}}$SG)
n- (1$^{\text{ST}}$SG)	ber, V, X	-a (3$^{\text{RD}}$)
s- (2$^{\text{ND}}$)		-e (PL)
		-o (PROX.PL)

Finally, it is important to note that, under this view, the terms *prefix* and *suffix* are used in a very specific technical sense. What has been assumed in the description made so far is that being a prefix or a suffix is a *lexical* property of individual vocabulary items such as *s-* or *-t*. Specifically, if a vocabulary item has the property of being a prefix, then it must be attached to the left of some stem. If on the other hand, it is a suffix, it must be attached to the right of a stem. This has some important consequences for the analysis to be developed below. As we

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[25] Another exception is the proximity plural, which, as shown in (i), does not appear in agreement inflection.
(i)   Orrek gixon-o-k   liburu   irakurr-i d-ab-e.
        those man-PROX.PL-ERG book(ABS) read-PRF 3PRF-Aux-3PL.ERG
        '*Those men have read the book.*'
As shown in (i), plural agreement is always *-e* even when agreeing with an argument inflected for proximity plural. I will assume that this is a consequence of the process of agreement: it copies person and number features, but it does not copy the feature [±Prox].
[26] Note that (20) does not contain all the relevant information. In particular, as we have already seen, third person *-a* only appears in nominal environments, and *-t* only appears in Agr$_{\text{Erg}}$.

have seen above, in several instances of Agr$_{Erg}$ (as in other morphemes containing person/number features), it is possible that more than one piece is realizing person/number features. Thus, second person plural Agr$_{Erg}$ (*s-u-e*) is realized by three different pieces: the prefix *s-* (second person), the suffix *-e* (plural), and the stem *-u-*. Thus, the fact that *sue* appears after the verbal stem cannot mean that it is a suffix, at least in the technical sense that I am using this term here. This is due to the fact that being a suffix or a prefix is a lexical property of a specific item.[27] Since *sue* is formed by more than one item, it cannot be a prefix or a suffix.[28] Although this is only a terminological point, it is important to bear it in mind. Since, as we have seen, agreement realizations such as *sue* are formed by more than one piece, we cannot account for their linear distribution within the verb by saying that they are *prefixes* or *suffixes*, since these are properties of individual vocabulary items. Thus, an important part of the analysis in §5 will be devoted to account for the linear position of agreement realizations such as *sue* within the verb.

3.3. Dative Agreement

Dative agreement, like Agr$_{Erg}$, always appears to the right of the verbal stem. However, as shown in (21), the pieces used to realize Agr$_{Dat}$ seem to be quite different from those used in Agr$_{Erg}$.

(21) *Dative and Ergative Agreement*[29]

	AGR_{Dat}	AGR_{Erg}
1SG	V-sta	V-t
1PL	V-sku	V-gu
2SG	V-tzu	V-su
2PL	V-tzue	V-sue
3SG	V-tza/ko	V-Ø
3PL	V-tze/koe	V-e

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[27] Of course, the order within the string *s-u-e is* accounted for in these terms: the stem *-u-* is preceded by the prefix *s-* and followed by the suffix *-e*. In the case of *s-* and *-e*, since they *are* individual vocabulary items, we can attribute them the property of being a prefix or a suffix.

[28] Of course, one can use informally the term *suffix* in this case to describe the fact that *sue* follows the verbal stem. But this usage of the word 'suffix' is not the one I am using here.

[29] The allomorphy in third person Agr$_{Dat}$ depends on the presence of Agr$_{Erg}$: it is *-tza/e* if Agr$_{Erg}$ is present, and *-ko(e)* otherwise.

Nevertheless, it can be argued that Agr$_{Dat}$ uses the same affixes as Agr$_{Erg}$, despite appearances. Consider the examples in (22)-(23), from Standard Basque and the Ondarroa dialect, respectively.

(22) *Agr$_{Dat}$ in Standard Basque*

Gu-ri   liburu-a   eror-i   zitza-i-gu-n.

we-DAT   book-ABS.SG   fall-PRF   Aux-DAT-1PL.DAT-PST

'*We dropped the book.*'

(23) *Agr$_{Dat}$ in Ondarroa Basque*

Gu-ri   liburu   jaus-i   ga-sku-n.

we-DAT   book(ABS)   fall-PRF   Aux-1PL.DAT-PST

'*We dropped the book.*'

As can be seen in (22), a verb containing dative agreement in Standard Basque always has an additional morpheme, *-i*, which I have glossed as DAT. As shown in (23), Ondarroa Basque seems to lack this morpheme. However, as I show immediately below, this morpheme is present in this dialect. What I have glossed so far as *dative agreement* can be divided in two parts. All the forms can be derived from *tz/ko* plus something else, as shown in (24). The actual output is due to phonological processes (affricate simplification, stop devoicing and vowel epenthesis) which apply elsewhere in the language.[30]

(24) a.   1st singular: *tz+t = sta* (affricate simplification, vowel epenthesis)

b.   1st plural: *tz+gu = sku* (affricate simplification, stop devoicing)

c.   2nd: *tz+su(e) = tzu(e)*

d.   3rd singular: *tz+Ø = tza* (vowel epenthesis)

ko+Ø = ko

e.   3rd plural: *tz+e = tze*

ko+e = koe

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[30] See Hualde (1991). Côté (1998) discusses epenthesis and affricate simplification in Ondarroa Basque.

I assume that *tz* and *ko* are the realization of a morpheme which I label as DAT, and which obligatorily appears in a finite verb when it has Agr_{Dat}.[31] The appearance of *tz* or *ko* as the realization of DAT depends on two factors. Specifically, *ko* is used when Agr_{Dat} is third person and there is no Agr_{Erg} (cf. *gustaten ga-ko-e* 'it pleases them'), and *tz* is used elsewhere (cf. *emo tz-e-t* 'I gave it to them'; *gustaten ga-tz-u* 'it pleases you').

What is important to note is that, as can be seen in (24), what follows *tz/ko*, i.e. Agr_{Dat}, is in fact identical to Agr_{Erg}. Thus, the affixes used for both Agr_{Dat} and Agr_{Erg} are the ones in (19), repeated here as (25).

(25) *Dative and Ergative Agreement*

	1	*2*	*3*
SG	V-t	V-s-u	V-Ø
PL	V-g-u	V-s-u-e	V-e

As a consequence of this analysis, Agr_{Dat} is identical in form to Agr_{Erg}. In Ondarroa Basque, this is obscured by certain regular phonological processes (cf. (24)) which apply to the string realizing DAT+Agr_{Dat}.

3.4. Interim Conclusion

In this section I have shown that person/number inflection is quite uniform across categories (i.e. in nominal contexts and in agreement). With minor differences, all categories use the same pieces for the realization of these features, both in terms of the segmental content that is used and in their status as prefixes or suffixes. For instance, it has been shown that first person plural is always realized only with the prefix *g-* in all categories. The result is that all categories realizing person/number inflection follow the template in (20), repeated here as (26).

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[31] As I show in §5.1, it is not clear what exact role this morpheme plays within the verb.

(26) *The Pieces of Basque Inflection*

PREFIX (PERSON/NUMBER)	STEM	SUFFIX (PERSON/NUMBER)
g- (1^{ST}PL)	i, u, eu, eur,	-t (1^{ST}SG)
n- (1^{ST}SG)	ber, V, X	-a (3RD)
s- (2ND)		-e (PL)
		-o (PROX.PL)

4. Accounting for Cross-Categorial Generalizations

In this section I provide an analysis of Basque Person/Number inflection. The main objective of this analysis will be to account for the cross-categorial generalizations I have presented in the previous section, and others that are discussed in §4.1. The analysis, which is presented in §4.2, treats these differences as a result of a template imposed on the realization of person/number inflection, and of the competion for insertion among vocabulary items.

4.1. Cross-Categorial Generalizations

As was shown in §§2-3, person/number inflection always follows the same template (cf. (26)), i.e. the one in (27).

(27) *Person/Number Inflection*
       (Prefix)–Stem–(Suffix)

What the stem is depends on the particular category in which the features appear. Person/number features are realized in the affix positions. As indicated in (27) both affix positions are optional in the sense that whether a specific position is filled depends on the particular person/number features to be realized, and on the context in which these features appear. (28) is a summary of the realization of each person/number combination which we saw in the previous sections.

(28) a. First Singular: prefix (*n-*) in Agr$_{Abs}$ and nominal environments,
                            suffix (*-t*) in Agr$_{Dat}$ and Agr$_{Erg}$.

       b. First Plural: prefix (*g-*).

       c. Second Singular: prefix (*s-*).

    d.   Second Plural: prefix (*s-*) and suffix (*-e*),

                          prefix (*s-*) and suffix (*-o*) in proximity plural contexts.

    e.   Third Singular: suffix (*-a*) in nominal environments,

                          Ø in agreement.

    f.   Third Plural: suffix (*-a*) in nominal environments,

                          suffix (*-e*) in agreement,

                          suffix (*-o*) in proximity plural contexts.

There are several generalizations that emerge from (28). First, there are two affixes which are clearly not specified for any particular category: (i) the prefix *s-* always appears in the second person; and (ii) the prefix *g-* always appears in the first person plural. These prefixes always realize these features, both in nominal environments and in verbal agreement. Furthermore, the plural suffix *-e* can appear in any category (e.g. D, in Agr_{Erg}), but it does not appear in all cases in which there is a plural feature: (i) it is not present in the context of first person; (ii) it is not present in the context of third person in nominal environments; and (iii) it is not present in proximity plural contexts. Thus, the distribution of this suffix is rather puzzling: even though it can appear in any category, its distribution is highly restricted. Finally, other affixes are restricted to certain categories: (i) first person singular *-t* (only in Agr_{Dat} and Agr_{Erg}) and *n-* (elsewhere), (ii) third person *–a* (only in nominal environments), and (iii) proximity plural *-o* (see footnote 25). In the following section, I offer an analysis of the morphology of person/number inflection in Basque which will account for all these generalizations. In particular, I show that several of the generalizations stated above follow from underspecification of morphological features, and from the fact that the relevant vocabulary items compete for insertion in person/number morphemes. Thus, many of the puzzling properties of Basque person/number inflection examined so far will be accounted for without specific stipulations.

4.2. Fission in Basque Person/Number Inflection

In this section, I provide an analysis of Basque person/number inflection which uses the mechanism of Fission. The main idea behind the analysis will be that most of the facts

presented in the previous section can be seen as a consequence of a template imposed on the realization of person/number inflection.

One of the facts that we need to account for is the fact that in the template in (27) neither of the affix positions needs to be overtly expressed. Thus, in some cases only the prefix position is overt (e.g. *g-* in the first plural); in other cases only the suffix position is overt (e.g. *–e* in the third person plural); in others neither position is filled (e.g. in third singular agreement); and, finally, in the second person plural, both positions are overt (*s-* and *–e*). This fact is relevant because we have to determine what is the relation between these positions and morphemes (i.e. terminal nodes) in the syntactic tree. For instance, one could assume that for each position that is filled there is a distinct corresponding terminal node in the tree. Under this assumption, second person plural in Basque would involve two terminal nodes, while first person plural would involve only one node.

On the other hand, the analysis presented in this section works on a different assumption, which is stated in (29).

(29) In Basque, all the person/number features of an argument (or of agreement with a single argument) are bundled into a single terminal node.

If we take into account the assumption in (29), we are forced to say that there is some syntax-independent mechanism which ensures the differences in realization mentioned above. Basically, this mechanism has to somehow split the terminal node in some cases (i.e. in the second plural) so that two exponents will be used. This is what in the DM literature has been called *Fission*. As I show below, an account in terms of Fission allows us to explain certain distributional properties of the affixes involved in person/number inflection in Basque.

There are several versions of Fission in the literature (see Halle & Marantz 1993, Noyer 1992, Halle 1997). For the purposes of this paper, I will assume the one advanced in Noyer (1992), although the data to be examined are also basically compatible with the one defended in Halle (1997). The basic idea behind Noyer's (1992) view of Fission is that, in the unmarked case, a single terminal node corresponds to a single position in the string of exponents (i.e. a single morpheme is realized by a single exponent), but that there are marked cases in which a single terminal node can correspond to more than one position. Under this

view of Fission, it is not the case that a terminal node is split into two terminal nodes; rather, a single terminal node can be realized by inserting more than one exponent.

What specific vocabulary items (VIs) are inserted in a terminal node subject to Fission depends on what VIs are available. According to the Subset Principle (cf. (1)), the first VI to be inserted is the specific item specified for a subset of the features in the terminal node. In Noyer's (1992) terms, this application of Vocabulary Insertion *discharges* the features it is specified for. As a consequence, further applications of Vocabulary Insertion can only apply to items that are specified for (a subset of) the features not discharged by the previous VI.

The number of items that can be inserted into a terminal node will be determined by (i) the list of VIs (they can only discharge features that have not been discharged by previous applications of Vocabulary Insertion); and (ii) language particular constraints. Thus, as shown in Noyer (1992), Arabic T/Agr is subject to a template according to which this terminal node is realized in two different obligatory positions. In this case, only two VIs can (indeed, must) be inserted (one in each of the two positions). On the other hand, Noyer (1992) also shows that there are languages in which there are no restrictions apart from those resulting from the list of available VIs.

I would like to propose a very similar analysis for Basque person/number inflection. First, I propose that Basque inflection is subject to a template very similar to the one proposed by Noyer for Arabic, according to which the T/Agr node must be realized in two different positions. The template I propose for Basque is basically the one in (27), repeated here as (30).

(30) *Template for Person/Number Inflection*

(Prefix)–Stem–(Suffix)

A node containing person/number features is realized in two optional[32] positions, one preceding the stem and another one following the stem.[33]

As we saw in §4.1, person/number inflection can be realized by a prefix (e.g. in the first person plural *g-*), a suffix(e.g. first person singular *-t*), both a prefix and a suffix (e.g. second

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[32] Of course, *optional* here means that the realization of each position is not forced by the template, i.e. whether either position is filled depends solely on the person and number features present on the terminal node.
[33] What specific stem is used in each case is a matter which I will leave for §5.

person plural *s-...-e*), or neither (e.g. third person singular in Agr$_{Erg}$). Thus, there can be at most one affix in either position, and at least zero. (30) is a formalization of this fact.[34]

Each affix to be inserted is specified to go in either the prefix or the suffix position. The VIs that I will assume are the ones in (31). The features used for person specifications are those in (32), taken from Halle (1997).[35] The number features are [+Pl] for plural and [-Pl] for singular.

(31)   *Vocabulary Items for Person/Number Inflection*[36]

    a.   /g-/ ↔ [+Auth, +PSE, +Pl]   ('first person plural')

    b.   /-t/ ↔ [+Auth, +PSE] / in Agr$_{Erg}$ and Agr$_{Dat}$[37]   ('first person singular')

    c.   /n-/ ↔ [+Auth, +PSE]   ('first person singular')

    d.   /-o/ ↔ [+Pl, +Prox]   ('plural proximate')

    e.   /s-/ ↔ [+PSE]   ('second person')

    f.   /-a/ ↔ [–PSE] / in D   ('third person')

    g.   /-e/ ↔ [+Pl]   ('plural')

(32)   *Person Features*

	1ST	2ND	3RD
Participant in Speech Event (PSE)	+	+	−
Author in Speech Event (Auth)	+	−	−

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[34] Note that the assumption that these positions are optional is a departure from Noyer's (1992) system. Basically, he assumes that there can be two types of fission: (i) fission is forced by a template containing obligatory positions, and (ii) fission is not constrained, i.e. there is no limit to the number of VIs that can be inserted (only the VIs themselves impose this limit). My departure from these assumptions is justified for Basque because (i) as we saw above, these positions are optional, and (ii) as I will argue below, in cases in which we would expect to have more than one suffix, we in fact only have one, which means that Fission in Basque cannot be constrained only by the VIs that can be inserted.

[35] Note that many of these vocabulary entries are underspecified, as expected in a framework assuming Late Insertion. Thus, the fact that *s-* in (31e) is not specified as [-Auth] does not necessarily mean that it cannot be the realization of second person, or that it can be the realization of first person. Whether it is or not depends on the whole list of items that compete for insertion in the relevant node, and on the Subset Principle. Several examples illustrating this are given below.

[36] It is important to note that all the vocabulary entries in (31) encode something that has been assumed so far, namely, that each affix realizing person/number features is specified as being a prefix or a suffix (see §3.2). Their linear order with respect to the stem they attach to is only determined by this idiosyncratic property of each affix. As I will show in §5, this is not enough for certain instances of agreement. As we will see there, the relevant affixes in these instances of agreement must also be ordered with respect to other material within the verb.

[37] This vocabulary entry can also be stated as in (i):

(i)   /-t/ ↔ [+Auth, +PSE] / V*[__]

where *V*[__]* means that the item is inserted in a node that must follow the verbal stem. This is probably a better formulation for this entry, under the assumption that all agreement categories in a given language are instances of the same morpheme, so that labels like *absolutive agreement* or *ergative agreement* make no sense (see Chomsky 1993). However, I have chosen the more descriptive formulation in (31b), which uses these labels, for clarity. Not much hinges on this detail.

There are several properties of the VIs in (31) that need mentioning. First, several of the vocabulary items are not specified to be inserted in any specific category. Thus, both first person plural *g-* and *s-* are not specified for any category. This accounts for the fact that first person plural and second person are always realized with these items, independently of the environment. Thus, underspecification of VIs allows us to account for this fact. On the other hand, the fact that some other VIs, i.e. first person singular *-t* and third person *-a*, are restricted to appear in certain categories is directly encoded in their entries. However, there are other restrictions that were mentioned in §4.1 that are not directly encoded in (31), namely, restrictions on the distribution of the plural suffix *-e*. Nevertheless, as we will see below, these restrictions are derived from the properties of Vocabulary Insertion and the template in (30). Thus, these restrictions need not be stated explicitly in its vocabulary entry.

First consider the distribution of the plural suffix *-e*. As we saw in §4.1, this suffix is used in the second person, but not in the first person. A related fact is that the prefix position encodes number in the first person (i.e. singular *n-* vs. plural *g-*), while the same is not true for second person (i.e. the prefix is *s-* for both the singular and the plural). This is reflected in the VIs in (31) in that *g-* is specified as plural and *s-* is not specified for number. Vocabulary Insertion for first person plural would then proceed as shown in (33).

(33) *First Person Plural*

Input	[+Auth, +PSE, +Pl]	_-stem-_
(31a)	[ ]	*g*-stem-_

In (33), the first column represents what specific rule is being applied. The second column is the feature specification of the terminal node; after each application of Vocabulary Insertion, the features that are discharged by the VI are removed from the second column. Finally, the third column represents the VI that is inserted by each rule.

Thus, in the case of first person plural, the first affix to be inserted is *g-*, which, accordingg to (31a), discharges both first person (i.e. [+Auth] and [+PSE]) and plural features. Since there are no features left to be discharged, and there is no VI in the list which can be inserted

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On the requirement that ergative and dative agreement morphemes must follow the verbal stem, see §5.2.

in this context, Vocabulary Insertion stops at this point. In particular, the plural suffix *-e* cannot be inserted, since the plural feature has been discharged by the prefix.[38]

On the other hand, in the second person, two VIs are inserted, the prefix *s-* and the suffix *-e*. Vocabulary Insertion proceeds as in (34).

(34) *Second Person Plural*

Input	[–Auth, +PSE, +Pl]	_-stem-_
(31e)	[–Auth, +Pl]	*s*-stem-_
(31g)	[–Auth]	*s*-stem-*e*

In this case, the prefix *s-* is only specified for person ([+PSE]) features, and not for number features. [39] As a consequence, the suffix *-e* can be inserted, discharging the plural feature of the terminal node.[40] Thus, in the first person, the insertion of the first person plural prefix bleeds the insertion of the plural suffix in (33). On the other hand, this does not happen in the second person in (34), since the prefix does not realize number features. This is an example of what Noyer (1992) terms *discontinuous bleeding*: the realization of a specific feature (here, the plural) in one position (here, the prefix) prevents the realization of the same feature in another position (here, the suffix).

Thus, the basic difference between the first and the second person is that in the former, the prefix encodes number, while the latter does not. Note that this is a distinction that has to be made independently of whether a suffix is needed or not. In the present analysis, a direct consequence of this fact is that the plural suffix cannot be inserted in the first person, while it can in the second person. As a result, we do not need to specify that the plural suffix cannot be inserted in the context of first person. This allows us to simplify the feature specification for the suffix *-e*; its complex distribution follows from independently motivated properties of Basque person/number inflection. This is a direct consequence of the hypothesis that Fission is involved in the realization of person/number in Basque.

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[38] The fact that insertion of *g-* occurs before insertion of *-e* can apply is due to the Subset Principle: the former is specified for more features than the latter.

[39] Again, note that the prefix *s-* is only specified for the person feature [+PSE], not for [-Auth]. This is not a crucial ingredient of the analysis. In particular, this does not change the fact that the node it is inserted in *is* fully specified for second person features (i.e. [+PSE] and [-Auth]). This is just as expected in a framework assuming late insertion.

[40] Note that in this case the order of application of VI cannot be determined by the Subset Principle, since both affixes are specified for the same number of features. Nevertheless, if Vocabulary Insertion had applied in the inverse order, the result would have been the same.

Another restriction on the insertion of the plural suffix *-e* has to do with the third person. In nominal environments, third person plural is not realized with this suffix. Rather, only the third person suffix *-a* is used (i.e. in nominal contexts, third person singular and plural are segmentally identical). The derivation for third person plural is as shown in (35).

(35) *Third Person Plural D*

Input	[–Auth, –PSE, +Pl]	_-stem-_
(31f)	[–Auth, +Pl]	_-stem-*a*

In this case, insertion of the third person suffix discharges the suffix position of the template. As a consequence, no more suffixes can be inserted. In particular, the plural suffix *-e* cannot be inserted. Note that in this case, the ordering of *-a* before *-e* is crucial. If the order were reversed, we would expect third plural to be *-e*, rather than *-a*. Both affixes are specified for the same number of features, so in this case their order of application must be stipulated. Furthermore, note that bleeding of *-e* by *-a* only occurs in nominal environments, as reflected in the entry for *-a* in (31f). In agreement, *-a* is not posssible, so in the third plural *-e* is inserted.

Therefore, the restrictions on the distribution of the plural suffix *-e* are accounted for without the need to specify them in its lexical entry. They follow from the fact that this suffix is competing with the other affixes in (31), both in terms of the features that they realize and in the position in which they are inserted. It is in cases like these that we can see that the template proposed in (30) is necessary. Without it, more than one suffix would be inserted, given the VIs in (31).

Finally, there is another restriction related to the third person which is not directly encoded in (31). It has to do with proximity plural contexts. In these contexts, the only possible suffix is *-o*. Thus, the second person plural pronoun in this context is *s-u-o*, and the third person plural pronoun is *eur-o*. The lack of the plural suffix *-e* in the second plural is due to the fact that *-o* is specified for two features, [+Pl] and [+Prox]. Since *-e* is only specified for a subset of these, i.e. [+ Pl], only *-o* can be inserted. Similarly, due to the template, insertion of *-o* in the suffix position in the third person plural prevents the insertion of third person *-a* in the same position. In these cases, the order of *-o* before *-e* and *-a* follows from the Subset

Principle, since the former is specified for more features than the latter. The derivation for these two cases is as in (36).

(36) a. *Second Person Plural in Proximity Contexts*

    Input   [–Auth, +PSE, +Pl, +Prox]   _-stem-_

    (31d)   [–Auth, +PSE]   _-stem-*o*

    (31e)   [-Auth]   *s*-stem-*o*

  b. *Third Person Plural in Proximity Contexts*

    Input   [–Auth, –PSE, +Pl, +Prox]   _-stem-_

    (31d)   [–Auth, –PSE]   _-stem-*o*

To conclude, in this analysis, several of the restrictions on particular affixes mentioned in §4.1 are a consequence of the hypothesis that person/number nodes in Basque are subject to Fission due to the template in (30). This allows us to simplify greatly the entries for the relevant VIs, accounting for those restrictions in a uniform manner.

5. Stems in Basque Person/Number Inflection

In previous sections, I have concentrated on the realization of person/number features as affixes, ignoring what stems they attach to and in which manner this attachment occurs. The present section is devoted to these stems. First, §5.1 discusses the structure of finite verbal forms in Basque. This structure is important in the analysis developed in §5.2, which accounts for the different kinds of stems that the affixes attach to, both in nominal and verbal environments. Furthermore, the analysis will also account for certain puzzling similarities between pronouns and Agr_{Erg}/Agr_{Dat} that were noted in §3.

5.1. The structure of tensed verbs in Basque

As was shown in §3, all finite verbs in Basque contain absolutive, dative, and ergative agreement morphemes. In this section, I provide an analysis of the structure of finite verbs in which all these agreement morphemes are assigned a position.

In Laka (1990) (see also Arregi 2000), it is proposed that the basic structure of finite verbs in Basque is as in (37).[41]

(37)

```
        T
       / \
      V   T
```
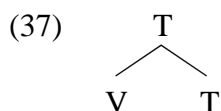
In (37), V is the main verb in synthetic forms and the auxiliary in analytical forms. In the former, V adjoins to T via head movement; in the latter, V is inserted to meet the requirement that T must be 'supported' by a verbal category.[42]

What is important for the present analysis is to locate the different agreement morphemes that appear in the structure of tensed verbs in (37). In order to determine this, it is helpful to see what the linear arrangement of these morphemes is with respect to others in the verbal complex. (38) contains some relevant examples.

(38) a. n   -u   b. s   -atxu -t

         1SG.ABS -go   2ABS -Aux   -1SG.ERG

     c. s   -atos -e   d. s   -atxu **-e**   **-t**

         2ABS -come -PL.ABS   2ABS -Aux   **-PL.ABS** **-1SG.ERG**

As was shown in §2.3, absolutive agreement is realized affixed to the verbal stem. This can be seen clearly in all the examples in (38). Absolutive agreement prefixes immediately precede the relevant verbal stem, while the plural absolutive suffix *-e* immediately follows the verbal stem. Furthermore, as shown in the transitive examples in (38), ergative agreement

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[41] In Arregi (2000) I also assume that in certain tensed forms there is also an Asp head adjoined to T, but which is never realized overtly. Since this covert head will have no effect on the analysis, I will ignore it here for the sake of exposition.
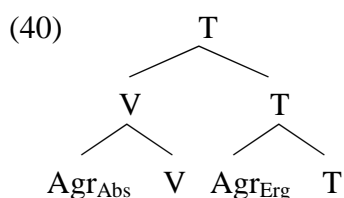
[42] In fact, it is very plausible that what I am identifying as V is in fact more complex. Thus, in a form like *n-a-u-Ø* (1SG.ABS, 3SG.ERG), the verbal stem is *-au-*. The initial *-a-* in this stem varies according to tense and agreement. However, the conditions under which this affix and related ones appear is far more complicated that might seem at first. It seems to be related to tense in some manner. Thus, in standard Basque, it is used only in present forms, while *-i(n)-* appears in past forms (as in *n-in-du-en*, 1SG.ABS, 3SG.ERG). In the Ondarroa dialect the facts are more complicated, *-i(n)-* (or *-e-*) appearing only in some past forms, and *-a-* appearing in other past forms and always in the present. Thus, at least in this dialect, it does not seem to be the direct realization of tense. Although a full analysis of Basque verbal inflection should take all these facts into account, to provide an analysis for them would be well beyond the scope of this paper, which concentrates only on the spellout of agreement morphemes. As far as I can tell, there is no satisfactory analysis of this morpheme in the literature. Probably, this is simply because there is nothing to say about it, except for the fact that its distribution is irregular. For instance, Rotaetxe (1978) gives a somewhat detailed description of verbal inflection in Ondarroa Basque, but has nothing to say about this specific morpheme.

Another affix which I assume is part of what I am calling the verbal stem is the so-called *plural -tx-* affix. As I argued for in §3.1, this affix is not the realization of plural agreement, and I assume that it is simply adjoined to verbs in the context of certain cases of absolutive agreement.

follows both the verbal stem and the plural absolutive suffix. Finally, consider the examples in (39), which contain the overt past morpheme -*n*.

(39) n   -a   -sue   **-n**

     1SG.ABS -Aux -2PL.ERG **-PST**

The examples in (39) show that the tense morpheme is final in the verbal complex. I shall assume that this linear order is derived from the structure in (40).

(40)

$$
\begin{array}{c}
\text{T} \\
\diagup\ \diagdown \\
\text{V} \qquad \text{T} \\
\diagup\ \diagdown \quad \diagup\ \diagdown \\
\text{Agr}_{\text{Abs}} \ \ \text{V} \ \ \text{Agr}_{\text{Erg}} \ \ \text{T}
\end{array}
$$

Note that the left-to-right order in which the nodes are arranged in (39) is irrelevant at the level of the syntactic structure. What is important about this structure is that, since absolutive agreement is sister to V and ergative agreement is sister to T, it correctly derives the fact that absolutive agreement is closer to the verbal stem than ergative agreement. This is the right result, since, as we saw above, when absolutive agreement is realized as a suffix, it precedes ergative agreement. The fact that ergative agreement and tense are sisters in (40) derives the fact that these two morphemes are always adjacent.[43]

Finally, we need to determine the position of dative agreement in the structure of the inflected verb. As was shown in §3.3, what looks like a single Agr_{Dat} morpheme is in fact a string composed of Agr_{Dat} and DAT, where the latter is a morpheme which always appears in finite verbs containing Agr_{Dat}. Thus, we now need to determine the location of two different morphemes: DAT and Agr_{Dat}. As illustrated in (41)), the string derived from these two morphemes surfaces between the verbal stem and Agr_{Erg}.

---

[43] In this paper I do not offer an analysis of the syntax of agreement in Basque, i.e. I have nothing to say about what determines the appearance of agreement morphemes in the verbal structure. Note that the structure in (32) might be seen as compatible with theories in which absolutive case and agreement are verb-related, while ergative case and agreement are tense-related (see Chomsky 1993, Bobaljik 1993, Arregi 1998). However, this is not straightforward, since, at least in analytical forms, the verbal stem in inflected verbs is neither the main verb nor the *v* projected above the main verb, as I argue in Arregi (2000). Whether these proposals can be made compatible with the morphologically motivated structure in (32) is a question that I leave for future research.

(41) Es   to-**tzu**-t   emo-n   liburu.

      Not Aux-**DAT+2SG.DAT**-1SG.ERG give-PRF book(ABS)
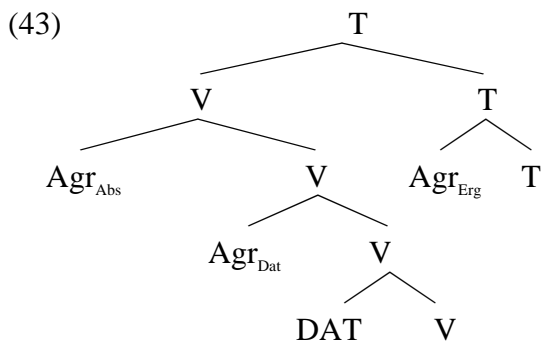
      '*I have not given you the book.*'

However, we also need to know where these morphemes are located with respect to the Agr_{Abs} plural suffix -*e*, which is also located between the verbal stem and Agr_{Erg}. Unfortunately, there is no evidence in this respect in the dialect studied here. Two factors conspire to make this impossible. First, the plural suffix -*e* appears only when Agr_{Abs} is second person plural.[44] Second, in this dialect, as in many other Basque dialects, a strong version of the Person-Case Constraint holds, i.e. when there is dative agreement, absolutive agreement has to be third person. As a result, Agr_{Dat} and absolutive -*e* cannot co-occur in the same verb in this dialect. However, in Standard Basque, this constraint holds only if Agr_{Erg} is present, so it is possible to have both absolutive -*e* and Agr_{Dat} in the same verb if there is no Agr_{Erg}. This is illustrated in (42).[45]

(42) Etorr-i   z-atza-**i**-zki-**gu**-te.   (*Standard Basque*)

      come-PRF   2ABS-Aux-**DAT**-ZKI-**1PL.DAT**-PL.ABS

       '*Y'all have come to us.*'

(42) shows that both DAT and Agr_{Dat} precede the plural Agr_{Abs} -*te* (the standard equivalent to plural -*e* in Ondarroa). This means that these two morphemes are closer to the verbal stem, i.e. more embedded, than Agr_{Abs}. Therefore, I conclude that the structure of a Basque verb inflected for the three types of agreement must be as in (43).

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[44] In the third person, there is no -*e* because, by hypothesis, there is no third person absolutive agreement (see §3.1). In the first person plural, there is no -*e* for reasons that were discussed in §4.2.

[45] Note that the Standard Basque example in (42) contains a morpheme –*zki*- (glossed as *ZKI*) which intervenes between DAT and Agr_{Dat}. This is an allomorph of the so-called plural morpheme discussed in section §3.1. For reasons discussed there, this is in fact not a plural agreement affix, but simply a historical relic which can simply be analyzed as an 'extension' of the verbal stem in certain contexts.

(43)

```
                        T
              ┌─────────┴─────────┐
              V                   T
        ┌─────┴─────┐        ┌────┴────┐
      Agr_Abs       V      Agr_Erg     T
               ┌────┴────┐
             Agr_Dat     V
                     ┌───┴───┐
                    DAT      V
```

In this structure, Agr_{Dat} is adjoinded to the verbal stem (which contains, among other things, DAT), and Agr_{Abs} is adjoined above Agr_{Dat}. This whole structure is in turn adjoined to the T+Agr_{Erg} complex. Of course, as mentioned before, the linear order in (43) is irrelevant. This structure only reflects hierarchical relationships among nodes in the structure of the verb, which only partially determine linear order among these nodes. Thus, according to the structure in (43), Agr_{Dat} must be closer to the stem than Agr_{Abs}. However, this structure does not imply that, for instance, Agr_{Abs} must precede Agr_{Dat}, or that it must follow it. The structure in (43) is compatible with both linear orders. What specific linear order among these nodes is realized is the result of other constraints. This will be, in part, the topic of §5.2.

In this section I have presented morphological evidence for the structure of tensed verbs in (43). Nevertheless, I have not tried to relate this structure to the syntax of case and agreement in general. As was noted in footnote 43, trying to relate this structure to theories where absolutive is verb-related and ergative is tense-related is not without problems. The same kind of problems arise with DAT and Agr_{Dat}. One could be tempted to equate DAT to some kind of applicative head (see Marantz 1993). This would run into the problems mentioned in footnote 43, and would also not be able to account for cases in which a direct object has dative case. This tends to occur in many dialects, including Ondarroa, whenever the direct object is first or second person. In these cases, the direct object is dative, and agreement with the direct object is done with Agr_{Dat}. Furthermore, the tensed verb also contains DAT. Thus, there is a correlation between DAT and Agr_{Dat}, but the correlation between DAT and indirect objects is not as straightforward as one would expect if this head were an applicative head. Thus, the morphologically motivated structure (43) seems to be somewhat related to the structure of the clause, but it is not clear what this relation should be. However, for the purposes of this paper, it is enough to assume the structure in (43), and its relation to the syntax of case and agreement is a topic that I will leave for future work.

5.2. Epenthetic Stems in Basque

In the previous sections I have shown that the similarities in spell out of person/number features found across categories justifies having vocabulary items realizing these features that are not specified to be inserted in a particular node. Still, there are important differences between the different categories which we must still account for.

The most important difference is exemplified by the contrast between the stem used in nominal environments and the one used in Agr_{Abs}. In the latter, the affixes realizing person/number features attach to the verbal stem. However, in nominal environments, the stem used depends on the specific context in which the affixes are inserted. Thus, in full XPs, the third person suffix -*a* attaches to the last word in the XP. However, in pronouns (including third person pronouns), which are bare Ds, no stem is available within the DP, so a set of special stems (*i*, *u*, *eu*, *ber*, *eur*) is used. This interpretation of these facts seems reasonable; since the affixes which are inserted in D need to attach to some stem and none is available, a special *epenthetic* stem is inserted. Something similar occurs in other constructions in other languages. Consider the case of the English comparative suffix -*er*. It can only be attached to stems of a particular phonological shape (i.e. monosyllabic); if such a stem is not available, the default stem *mo* is inserted to satisfy the requirement that -*er* must be a suffix.

However, one could argue that these pronominal stems are not epenthetic in the sense described above. It could be that pronouns are not bare Ds, as was assumed in §2; rather, it could be that pronouns are Ds with some kind of NP complement, whose realization is these stems. Under this view, these stems would not be epenthetic, nor would they be inserted so that the D affixes attach to them. Rather, they would be realizations of some nominal category present in all pronouns.

The realization of Agr_{Dat} and Agr_{Erg} suggests that this cannot be the case, and that the analysis of the pronominal stems as epenthetic is on the right track. As we saw in §3.2, a striking property of certain realizations of these nodes is that they need the same stem as is used in pronouns, i.e. *u*. The table in (44) contains the relevant forms.

(44) *'Pronominal' Stems in Agreement Nodes*

	1	*2*	*3*
SG	-t	-s-**u**	Ø
PL	-g-**u**	-s-**u**-e	-e

The generalization that can be drawn from (44) is the one stated in (45).

(45)   The stem u is inserted in Agr_{Erg}/Agr_{Dat} if a prefix is inserted in Agr_{Erg}/Agr_{Dat}.

That is, the stem u is needed only when a prefix (i.e. s- or g-) is used. The fact that the stem which is inserted in this case is u and not any other one is not surprising: it is the same one that is inserted in pronouns when they have the same person/number features (i.e. first person plural or second person).

If the stems that are inserted in pronouns were the realization of some nominal category inside DPs, the fact that these stems are also necessary in some agreement nodes would be very puzzling. Still, one could argue that in fact, Agr_{Dat} and Agr_{Erg} are pronominal clitics. However, this would not explain why only some instances of agreement require this stem. Therefore, an account of these stems in which they realize some kind of nominal category would not be satisfactory. In the remainder of this section I will argue that analyzing these stems as epenthetic can account for their distribution in both pronouns and agreement in a satisfactory way. The analysis will follow from independently needed assumptions on the mapping between the syntactic hierarchical structure and linear order.

Why these epenthetic stems are needed in pronouns is straightforward. Since pronouns are bare Ds with no complement, there is no stem to which the affixes that realize D can attach. Thus, some kind of stem must be inserted in order to satisfy the affixal requirement of the pieces in D. I will assume that these stems are introduced by some kind of readjustment rule (see Halle & Marantz 1993), i.e. after vocabulary insertion, since the application of the relevant rule depends on the fact that the specific vocabulary items that are inserted in D need a stem. Thus, I propose the rules of *stem insertion* in (46).

(46)   a. $\emptyset \rightarrow$ eu / __[+PSE, +Emph]   ('emphatic first and second persons')

b. $\emptyset \rightarrow$ i / __[+Auth, –Pl]   ('first person singular')

c. $\emptyset \rightarrow$ u / __[+PSE]   ('first person plural and second person')

d. $\emptyset \rightarrow$ eur / [+Pl]   ('third person plural')

e. $\emptyset \rightarrow$ ber   ('third person')

These rules must be understood as a sort of repair rules, i.e. they apply only if necessary to satisfy the affixal requirement of some vocabulary item.

On the other hand, the default stem is necessary in agreement only in some cases. Specifically, they are never necessary in Agr_{Abs}, and they are necessary in Agr_{Dat} and Agr_{Erg} only if they contain a prefix (i.e. generalization (45)). Why a default stem is not necessary in Agr_{Abs} is straightforward. As we saw in §5.1, Agr_{Abs} is adjoined to V, i.e. the verbal stem. Therefore, as one would expect, the affixes inserted in Agr_{Abs} simply attach to the verbal stem. In Agr_{Dat} and Agr_{Erg} there are two patterns: (i) if the agreement node contains a prefix, the affixes attach to a default stem, not the verbal one; and (ii) otherwise, the affix (i.e. suffix) attaches to the verbal stem. Case (ii) is not surprising; it is what we expect. Case (i) is the surprising one. Somehow, the presence of a prefix in Agr_{Dat} and Agr_{Erg} blocks their attachment to the verbal stem.

These facts can be stated as the generalization in (47).

(47) Agr_{Dat} and Agr_{Erg} must follow the verbal stem.[46]

(47) simply states the generalization that Agr_{Dat} and Agr_{Erg} always follow the verbal stem. Thus, there seems to be a requirement on the linear position of Agr_{Dat} and Agr_{Erg} which is independent of the affixes that are inserted in them. On the other hand, nothing like this is true of Agr_{Abs}; whether a particular affix precedes or follows the verbal stem only depends on its status as a prefix or a suffix. In fact, there are cases in which Agr_{Abs} both precedes and follows the verbal stem, since a prefix and a suffix have been inserted in the agreement node.

In order to make that requirement on Agr_{Dat} and Agr_{Erg} precise, we need to make explicit our assumptions on the mapping between hierarchical syntactic structures and linear oder. I assume that this is achieved through some version of Marantz's (1988) Mapping Principle. Basically, this principle states that a relation between α and β at level X corresponds to some other relation between α and β at level Y. For our purposes, the relevant levels are the hierarchical syntactic structure and the string of vocabulary items realizing the nodes in that structure. The relations between the nodes in the structure include, among others, sisterhood. In the string of vocabulary items, the relevant relation is linear adjacency. Thus, the mapping

[46] As should be clear by now, I am using the term *verbal stem* here, as elsewhere in the paper, meaning 'verbal root plus any other morphemes that have been realized so far.' Thus, the fact that ergative agreement follows the verbal stem means that it follows the verbal root plus absolutive agreement and dative agreement (if there is any).

principle states that syntactic sisterhood relations can be mapped to phonological adjacency relations.

This is precisely what seems to be hapenning with Agr_{Dat} and Agr_{Erg}, according to (47). The sisterhood relation between V and Agr is mapped onto an adjacency relation where V is left adjacent to Agr. This is presented schematically in (48) (where $\alpha*\beta$ means 'α is left adjacent to β').

(48) $[[V][Agr]] \rightarrow V*Agr$

Furthermore, I will assume that this is a requirement only on Agr_{Dat} and Agr_{Erg}, not on Agr_{Abs}.[47] As a consequence, the linearization of the two types of agreement will depend on different factors. In the case of Agr_{Abs}, it only depends on the prefix or suffix status of the pieces inserted in it, so their ordering with respect to the verbal stem is straightforward, as shown above. As for Abr_{Dat} and Agr_{Erg}, it depends on (48), as well as the particular requirements of the specific affixes inserted in them.

In order to see how this accounts for the insertion of the epenthetic stems in Agr_{Dat}/Agr_{Erg}, consider first the case of the first person singular, in which no epenthetic stem is necessary. (49) provides a specific example, with first person singular Agr_{Erg} (the derivation for first person singular Agr_{Dat} would be identical in the relevant respects).[48]

(49) a. s   -atxu -t
          2ABS -Aux -1SG.ERG

      b. $[[V][Agr_{Erg}]] \rightarrow [[s\text{-}atxu] * [\text{-}t]] \rightarrow s\text{-}atxu\text{-}t$

In this specific case, the requirement imposed by the suffix inserted in Agr_{Erg} and requirement (48) on Agr_{Erg} are in effect the same: the affix has to be right adjacent to the verbal stem. The same thing happens in the other case when only a suffix is inserted in Agr_{Erg} and Agr_{Dat}, i.e. *-e* in the third person plural.

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[47] It is not clear what this difference between the two kinds of agreement might derive from, so for the moment this is simply a stipulation.

[48] In the structure in (49), the V node also contains Agr_{Abs}, but this is not relevant for the realization of the Agr_{Erg} node. I have also ignored T for the same reason.

However, things are quite different when a prefix is inserted in these agreement nodes. (50) is a relevant case, with first person plural Agr_{Dat}.

(50) a. d   -o   -tz   -gu   (> dosku)
         3ABS -Aux -DAT -1PL.DAT

  b. $[[V][Agr_{Dat}]] \rightarrow [[\textit{d-o-tz}] * [\textit{g-}]]$

As shown in (50b), the two requirments on the linear order of Agr_{Dat} are contradictory in this case. On the one hand, the prefix *g-* must be to the left of a stem. On the other hand, the mapping requirement in (50) requires it to be to the right of the verbal stem. The only way to satisfy both requirements is to insert an epenthetic stem, which will be *u* (cf. (46)).[49] Thus, the complete derivation is as in (51).

(51) $[[V][Agr_{Dat}]] \rightarrow [[\textit{d-o-tz}] * [\textit{g-}]] \rightarrow \textit{d-o-tz-g-\textbf{u}}$

Thus, the basic idea is that a default stem is inserted whenever an affix has no other stem to attach to. In pronouns, this is always the case, since they are bare Ds. In Agr_{Abs}, the affixes can always attach to the verbal stem. Since there is no ordering requirement on the node Agr_{Abs}, only the requirements of the affixes must be met. In Agr_{Erg} and Agr_{Dat}, they affix to the stem only if it does not violate (48); otherwise, an epenthetic stem is inserted. This last case occurs only if a prefix is inserted in the agreeement node: prefixing to the verbal stem would violate (48). This does not happen with Agr_{Abs}, since (48) does not hold for Agr_{Abs}. Thus, (48), together with independently motivated properties of Basque inflection, explains why certain cases of agreement, and not others, look like pronouns in that they contain *pronominal* stems.

6. Conclusion

In this paper I have provided a unified analysis of person/number inflection in Basque. The main generalization that has been captured is that the realization of these features in Basque is

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[49] In fact, there is another way in which both requirements could be satisfied, i.e. through Morphological Merger (see Marantz 1988, Embick & Noyer 1999). Why it does not apply in this case is a question that I will leave for future research. Note, however, that the answer would depend on a theory that would explain the different motivations for the application of this operation, and the differences between languages which in the same type of contexts differ on whether they use Merger or not. However, no such theory has been advanced yet.

quite uniform across categories, i.e. in nominal environments and in verbal agreement. Within the framework of DM, I have implemented this by having a set of VIs most of whose members are not specified to be inserted in nodes of a particular category. In §4, a Fission analysis based on this assumption was presented, in which the details of the distribution of person/number affixes were explained. Thus, a principled account has been offered for the distribution of person/number affixes in Basque, based on the crucial notions of underspecification and late insertion.

Furthermore, I have also shown that all the items realizing person/number features are affixes that attach to some stem. What stem is used depends on the context. If none is available, as in pronouns, I have proposed that an epenthetic stem is inserted. This, together with plausible assumptions about the mapping between syntax and linear order, allowed us to explain onne of the most puzzlings properties of Basque agreement, namelly, that only certain cases of agreement are identical to pronouns.

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