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The Structure of Inflection: A case study in X⁰ syntax

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0. Introduction

This paper explores the structure of inflection in Basque, under the assumption that Inflectional Morphology is derived in the Syntax (Marantz 1984, Baker 1987 and Chomsky 1989).[1] Section 1 presents a description of case marking and agreement: inflection in Basque agrees with the three verbal arguments (ergative, dative and absolutive). Section 2 is concerned with the relation between V, Aspect and Infl: Verb raising is limited to a subclass of verbs ('synthetic' verbs). Verb raising to Infl is restricted further by the presence of certain types of Aspect. The proposal presented here postulates an Aspect Projection intervening between VP and IP. The Verb always raises to Aspect, but it only raises to Infl when Aspect is not present. Section 3 presents the clitics contained in Infl in Basque, and their relative ordering; section 4 contains a proposal regarding the nature of the clitic-cluster in Infl: it is argued that Infl is in fact a complex of three functional projections, each of them hosting an agreement clitic. Successive X⁰ movement yields the clitic cluster, which is argued to have internal structure. Section 5 argues that the relative placement of inflectional clitics can be derived by means of syntactic principles governing head movement, thus yielding the notions 'prefix', 'infix' and 'suffix' derivative. Sections 6 and 7 explore two different morphological phenomena that involve Basque Inflection, and an account is presented that relies crucially on the inflectional structure proposed in section 4. Section 6 studies third person absolutive clitics, which diverge from all other clitics in their dis-

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tribution and nature. It is argued that they are 'expletive' markers assigned by
functional heads (Tense and Modal). Section 7 explores cases that apparently
violate the structure proposed in sections 3 and 4: the ergative morpheme sur-
faces in the absolutive position in certain tenses. This phenomena is argued to
involve *move-alpha* within the complex X^o. The licensing constraints govern-
ing this movement provide support for the hypothesis that head-government is
a PF requirement (Aoun, Hornstein, Lightfoot & Weinberg 1987). Section 8
discusses the level at which these processes take place; it is argued that they
occur in the mapping from S-Structure to Phonetic Form.

1 . *Case marking and agreement*

1.1 *Case and thematic relations*

There are three grammatical cases in Basque: Ergative, Dative and
Absolutive. They are marked on the arguments by the following morphemes:
-k for the ergative, *-(r)i* for the dative and zero for the absolutive (see
examples in [1]).

Case marking is largely determined by D-Structure thematic relations.
Thus, themes and patients are assigned absolutive case, agents are assigned
ergative, and goals receive dative case.[2] Given this one to one correspondence
between D-structure thematic relations and case, the set of arguments that re-
ceive nominative case in English or Spanish divide into two groups in Basque,
according to the Unaccusative Hypothesis (Perlmutter 1978, Burzio 1986): the
single argument of unaccusative verbs like *etorri* "arrive" or *erori* "fall" re-
ceives absolutive case, similarly to the object of transitive verbs like *ikusi* "see"
or *jan* "eat". On the other hand, the only argument of intransitive verbs like *hitz
egin* "speak" or *lo egin* "sleep", shares ergative case with the subject argument
of transitive verbs (for a detailed discussion of ergativity, unaccusativity and
case marking in Basque, see Levin 1983 and Ortiz de Urbina 1989). Examples
of the three types of verbs are given in (1) (A: absolutive, E: ergative, and D:
dative):

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[2] Psychological verbs present an interesting subcase: the argument that is assumed to be a
'theme' in works like Belleti & Rizzi (1987) and Pesetsky (1990) receives ergative case:

(i)   *Eguraldiak   ni   kezkatzen   nau*
       weather-erg   me-abs worry   me-has-it
       "The weather worries me"

This could either mean that case marking in Basque is not totally determined by thematic
relations, or that the ergative argument in (i) is not a theme. I will not pursue this question
here.

(1) a. *emakumea   etorri   da*
         woman-the-A   arrived is
         "The woman has arrived"
     b. *emakumeak   emakumea   ikusi du*
         woman-the-E   woman-the-A   seen has
         "The woman saw the woman"
     c. *emakumeak   hitz egin   du*
         woman-the-E   word-made   has
         "The woman has spoken"

1.2 *Obligatory agreement clitics*

Verbal inflection obligatorily agrees with all three case-marked arguments (ergative, absolutive and dative), and if any of the corresponding agreement clitics is missing, the sentence is ungrammatical, as shown in the examples in (2):

(2) a. *zuk   ni   ikusi   na-u-zu*
         you-E   me-A   seen   me-have-you
         "You have seen me"
     b. **zuk   ni   ikusi   na-u*
         you-E   me-A   seen   me-have
         ("You have seen me")
     c. **zuk   ni   ikusi   (d)u-zu*
         you-E   me-A   seen   have-you
         ("You have seen me")
     d. *zuk   niri   etxea   eman   d-i-da-zu*
         you-E   me-D   house-the-A   given   it-have-me-you
         "You have given me the house"
     e. **zuk   niri   etxea   eman   d-u-zu*
         you-E   me-D   house-the-A   given   it-have-you
         ("You have given me the house")

The only exception to the obligatoriness of agreement clitics is found in Eastern dialects of Basque, where the dative agreement may be dropped in certain environments. It is not yet well understood what the conditions are that make the dative agreement optional (i.e. whether all kinds of dative arguments permit a missing dative clitic in inflection, or whether the presence versus absence of the agreement clitic induces any kind of semantic effect). For the purposes of this paper, I will ignore this phenomenon, for which I have no description or explanation, and concentrate on the behavior of Western dialects,

where dative agreement is obligatory in sentences containing dative arguments.[3]

1.3 *Three-way pro-drop*

Basque is a three way pro-drop language: ergative, dative and absolutive can be freely pro-dropped (Salaburu 1985 and Ortiz de Urbina 1989), presumably due to the presence of the agreement clitics. Sentences whose only phonologically overt elements are the verb and the inflected auxiliary are perfectly grammatical, as the comparison between (1a, d) and (3a, b) shows:

(3)   a. pro_i pro_j *ikusi*   *n-au-zu*
                          seen   me-have-you
                "You have seen me"
        b. pro_i pro_j pro_k *eman*   *d-i-da-zu*
                          given   it-have-me-you
                "You have given it to me"

Unlike languages like Warlpiri (Hale 1981, 1983) where arguments are marked in an ergative pattern but agreement markers follow an accusative system, Basque morphology displays a one to one correspondence between case on the overt arguments and the agreement clitics on Inflection, in that each agreement marker relates unambiguously to one grammatical case.[4]

1.4 *Non-argumental agreement clitics*

There are two instances of agreement in Basque that do not reflect a relation with an argument in the sentence. The first case of non-argumental agreement is 'addressee agreement': the inflected form displays a morpheme that agrees with the addressee of the speech situation (and therefore, it is always a second person agreement clitic). This type of agreement is optional, and it is usually reserved for situations of familiarity with the addressee, although in some dialects it can display varying degrees of formality. Examples of this 'addressee agreement' are given in (4):

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[3] Lafitte (1944), who describes Eastern dialects of Basque, does not provide any data on this topic. He simply notes that: "...même dans ce limites, il y a une forte négligence chez certains modernes à assurer l'accord du verbe avec le datif, et cela est particulièrement sensible chez les personnes qui lisent beaucoup de français" (359).

[4] For apparent exceptions to this rule, see the discussion below, particularly the section on 'Ergative displacement'.

(4) a. *irakaslea*   *etorri*   *d-u-k*
     professor-the-A   arrived   s/he-has-you(male)
     "The professor has arrived (male addressee)"
  b. *telebista*   *erosi*   *d-i-na-t*
     television-the-A   bought   it-have-you(female)-me
     "I have bought a television (female addressee)"

'Addressee agreement', unlike grammatical agreement, is restricted to main clauses in many dialects (see Rebuschi 1982 and Oyharçabal this volume for proposals relating this agreement type to the head COMP). In this paper, I will not be concerned with 'addressee agreement', which, unlike grammatical agreement, is not present in all varieties of the language.

The second instance of non-argumental agreement involves certain cases of absolutive agreement. It is often claimed that all inflected verbs in Basque must obligatorily contain absolutive agreement. The reason for this claim, which we will later in this paper call into question (cf. section 6), is that all inflected forms display either a real absolutive agreement that is related to some argument in the sentence, or otherwise they contain a third person singular agreement marker, even if there is no argument in the sentence that bears absolutive case.

Compare for instance the sentences in (5): (5a) and (5b) show 'true' absolutive agreement, in that the absolutive clitic is related to the absolutive argument of the sentence. In (5a), that argument is the second person singular pronoun, and hence the absolutive agreement is second person singular also. In (5b), the absolutive agreement is third person singular, and the morpheme *d* appears in absolutive agreement position. This morpheme is standardly assumed to be third person agreement.[5] Consider now (5c). Although there is no argument in the sentence that has absolutive case, the inflected form still displays the absolutive agreement clitic *d*.[6]

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[5] See later for a more detailed discussion of the status of third person agreement in Basque. See section 6 for a complete paradigm of absolutive clitics, and for a proposal regarding third person clitic variation.

[6] The examples in (5) illustrate the 'familiar' second person. The second person familiar pronoun is *hi* "you" In previous examples (i.e. examples [2] and [3]), I have used the neutral (non-familiar) second person, whose pronoun is *zu* "you". Close acquaintance and authority relations determine the appropriate usage of each of the pronouns, in those varieties of the language that use the familiar second person *hi* "you" (all varieties use *zu*). In earlier stages of Basque, the pronoun *zu* referred to second person plural and *hi* was the only second person singular. From the XVI century on, due to deferential usage of the plural to refer to singular individuals, *zu* progressively encroached upon the space of the original second person singular *hi*, which continued being used in casual and/or friendly speech. Eventually a new pronoun was created that took the value of second person plural. This pronoun is *zuek* "you guys".

(5)   a. *Hik   ni   ikusi n-au-k*
           You-E   me-A   seen me-have-you
           "You have seen me"
        b. *Hik   Irune   ikusi d-u-k*
           You-E   Irune-A seen her-have-you
           "You have seen Irune"
        c. *Hik   ongi dantzatu d-u-k*
           You-E   well danced   it-have-you
           "You have danced well"

1.5 *Agreement patterns*

The ergative clitic only appears in sentences that contain an ergative argument.[7] Hence, the agreement patterns that can be found are the following: there are inflected forms that contain only absolutive agreement, or only absolutive and dative agreement, as shown in (6):

(6)   a. *Hi   etorri   h-aiz*
           You-A   arrived you-is
           "You have arrived"

Nowadays, there are two singular second persons, *hi* and *zu*. Regarding inflectional morphology, though, the agreement marker corresponding to the pronoun *zu* is still inflected with plurality markers in it, unlike the agreement marker corresponding to *hi*, which is inflected as singular. Thus, there are two second person plural markers as far as agreement morphology is concerned. This divergence is illustrated in (i), (ii) and (iii):

    (i) *Nik   hi   ikusi h-au-t*
         I-E   you-A   seen   you-have-me
         "I have seen you (familiar)"
    (ii) *Nik   zu   ikusi z-ait-u-t*
         I-E   you-A   seen   you-plural-have-me
         "I have seen you (neutral)"
    (iii)*Nik   zuek   ikusi z-ait-u-zte-t*
         I-E   youguys-A seen you-plural-have-plural-me
         "I have seen you guys"

The inflected form in (ii) has the absolutive plurality marker it, which it shares with all other plural persons of the absolutive paradigm, including the second person plural person in (iii). The inflected form in (i), however, does not display such marker. Note also that the inflected form in (iii) contains yet another plurality marker, which appears only in forms inflected with the pronoun *zuek* "you guys". For extensive discussion on the history of the Basque verbal system see Lafon (1944).

[7] Recall that this argument need not be overt, since Basque is a three-way pro-drop language. When we say that there must be an argument of a given type in the sentence, we refer to syntactic representations (D-structure, S-structure and Logical Form), but not necessarily to phonologically overt material.

b. *Hi   niri   etorri   h-atzai-t*
   You-A   me-D   arrived   you-is-me
   "You have come to me"

There are also inflected forms that contain absolutive and ergative agreement clitics (5a, b, c), and forms that contain absolutive, ergative and dative clitics (7a).

There is an important restriction that applies to this last group, however. Inflected forms with three agreement clitics can only have third person agreement in the absolutive (7a). It is not possible to have inflected verbs that agree with three arguments if the absolutive agreement is first or second person. This is illustrated in (7b), where the inflected form has been made up for this example. Although it is possible to combine different morphemes that would yield the desired output, the combination is nevertheless ungrammatical.[8]

(7)   a. *Zuk niri   liburua   saldu d-i-da-zu*
         you-E I-D book-the-A sold   it-have-you-me
         "You have sold me the book"
      b. **zuk harakinari ni   saldu n-(a)i-o-zu*
         you-E   butcher-D I-A sold   you-have-him-me
         "You have sold me to the butcher"

It is important to note that this restriction does not concern the thematic representation of the sentence. In fact, in infinitival sentences, which contain no overt Inflection or agreement clitics, it is possible to have sentences like (7b). Thus, consider (8):

(8)   *gaizki   iruditzen zait* [$_{IP}$ *zuk   ni   harakinari saltzea*]
      wrong look does-to me   you-E me-A butcher-D   sell-inf
      "It seems wrong (to me) for you to sell me to the butcher"

This restriction on the nature of the absolutive agreement in cases of triadic verbs looks extremely peculiar at first sight, and it has usually been regarded as an odd property of Basque inflection. However, similar restrictions appear in other languages as well; thus, for instance, French does not allow dative clitics combined with non-third person object clitics, and the same is true for Spanish:

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[8] Examples of the sort of (7b) can occasionally be found in literary works, and whether they ever existed in spoken language or are a literary creation has been a topic for debate among Basque grammarians for a long time. The modern varieties of Basque I am concerned with certainly do not allow forms like (7b).

(9)   a. *Me   has   vendido   al enemigo*
            me   have-you sold   to the enemy
            "You have sold me to the enemy"
        b. **me le has vendido al enemigo*
        c. **se me has vendido al enemigo*
        d. **le me has vendido al enemigo*

In the case of Spanish clitics, there is homomorphism between dative and accusative clitics in first and second person. However, note that the ill-formedness of (9b, c, d) could not derive from a strictly morphological well-formedness condition that permits only one dative clitic in a given inflection. This is shown by examples like (10), where more than one dative clitic appears. The crucial difference now, is that one of the dative clitics does not correspond to a thematic argument; it is an 'ethical dative':

(10)   *te me han vendido   al enemigo*
        you-me-have-they sold to the enemy
        "They have sold you to the enemy (on me)"

This indicates that, rather than a morphological constraint on number of morphemes, or some kind of idiosyncratic property of inflectional morphology, the grammaticality effects derive from syntactic structure, and, more importantly, that they are not at all language particular.

2. Incorporated and non-incorporated verbal forms

The verbal-inflectional complex consists generally of two words: one contains the lexical verb and the aspect marker, attached to the end of the verb; the other one is the inflected auxiliary, which encodes agreement clitics, mood and tense. This two-word pattern is illustrated in (11):

(11)   a. *(zuk) (gu) ikus-i   g-intu-zu-n*
            (you) (us) see-asp us-have-you-tns
            "You saw us"
        b. *(zuk) (niri) (hau) eros-i   d-i-da-zu*
            (you) (to me) (this) buy-asp   it-have-me-you
            "You have bought it to me"

Although in declarative sentences the inflected auxiliary must follow the main verb, there are certain conditions under which they can be far apart, indicating that they are separate constituents at S-structure. Thus, for instance, negative and emphatic sentences force the inflected auxiliary to appear preced-

ing the main verb, and any number of constituents can intervene between the
auxiliary and the verb, as shown in (12):

(12)   a.   *ez   g-intu-zu-n*   (*zuk*)   (*gu*)   *ikus-i*
            neg   us-have-you-tns   (you)   (us)   see-asp
            "You didn't see us"
       b.   *zuk d-i-da-zu*   (*niri*)   (*hau*)   *eros-i*
            you it-have-me-you   (to me)   (this)   buy-asp
            "You did buy it to me"

Following Laka (1988), I will assume that the verbal forms in (11) and
(12) involve no Verb raising to Infl; this explains why it is that the inflected
auxiliary usually follows the uninflected verb, given the fact that both V and
Infl are head final in this language. It also explains why leftward movement of
Infl as in (12a, b) leaves the uninflected verb behind.[9] Under this view, the
sentences in (11) and (12) are equivalent to verb forms that combine a past
participle and an auxiliary verb in Indo-European languages.

There is a small set of verbs, traditionally called *synthetic*,[10] where this
two-word pattern is substituted by a single inflected unit. That is, the lexical
verb occurs incorporated onto the inflected auxiliary.[11] Compare the verbal
forms in (13): (13a) is a periphrastic form, like the ones we have seen in pre-
vious examples; (13b) is an incorporated form of the same verb *ekar* "to
bring":

(13)   a.   *ekarr-i   na-u-zu*
            bring-perf me-have-you
            "You have brought me"

[9] For an analysis of sentence negation and emphatic fronting, see Laka (1990).

[10] Lafitte (1944) refers to them as *verbs forts* or *conjugaison forte*.

[11] The number of verbs that can be inflected in this manner is very small, and older stages of
the language had a much larger set of synthetic verbs (see Lafon 1944). The grammar of the
Royal Academy of Basque Language (Euskaltzaindia 1987) estimates that in modern spoken
Basque there are only about ten verbs that are used in synthetic form: *egon* "stay", *joan* "go"
etorri "arrive", *ibili* "walk", *jakin* "know", *eduki* "have", *ekarri* "bring", *eraman* "take",
ihardun "engage"...; some other verbs, like *atxeki* "attach", *jarraiki* "follow", *esan* "say",
eman "give" or *entzun* "hear", are occasionally used in synthetic fashion in literary language.
It is not at all clear what syntactic or semantic feature, if any, defines the set of synthetic
verbs; I will assume that it is a lexical idiosyncracy, and that synthetic verbs are already
marked as such in the lexicon. Traditionally, the name synthetic is used ambiguously to refer
either to an instance of an incorporated inflected form, or to an element of the set of synthetic
verbs. I will refer to the inflected forms as 'incorporated', and will reserve the name
'synthetic' for the lexical verbs that have the ability to inflect in an incorporated fashion.

b. *na-**kar**-zu*
me-bring-you
"You bring me"

2.1 *The Aspect Projection*

The crucial factor that distinguishes a non-incorporated form like (13a) from a synthetic one like (13b), besides their distinct morphology, is the verbal aspect. Whereas the form (13a) is perfective, the form in (13b) is punctual, non-perfective. Non-incorporated forms have a morpheme attached to the end of the verb (the morpheme *i* in (13a), for example). Incorporated forms however, do not have any such morpheme. Basque grammarians have traditionally referred to this morpheme as 'aspectual'. Let us assume that this morpheme, which is not present in incorporated verbs (cf. (13b)), projects a Phrase according to the X' schemata. Let us call this projection Aspect Phrase, following the spirit of the traditional terminology.[12] This extra projection between VP and IP is illustrated in (14) (Spec positions not represented):

(14)
```
                    IP
                   / \
              AspP    Infl
              / \
           VP    Asp
          / \
             V
```
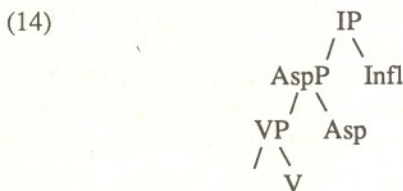
We can now account for the morphological difference between periphrastic and incorporated verbs. Incorporated forms are the result of verb raising to Infl at S-structure, as opposed to the non-incorporated (periphrastic) forms where movement to Infl does not take place. The element that determines when a verb raises to Infl is the head of AspP. In non-incorporated forms, the verb raises to aspect and the morphological unit [verb-aspect] is created at S-structure; no further raising to Infl takes place. The example in (13a) is an instance of this

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[12] Whether the head of this projection is truly an aspectual marker or whether the aspectual properties of the sentence are compositionally determined by combining this maximal projection with the auxiliary verb is a question that I will not address here, although I believe it to be an important issue: note that in English it is the auxiliary verbs that are called 'aspectual', despite the fact that auxiliary+past participle forms in this language are no different from the ones in Basque. The category of this element heading what I am here calling the Aspect Phrase appears to be the same as the category to which the past participle morphemes of Indo-European languages like English (*ed*) or Spanish (*do/da*) belong. It has often been pointed out that Basque participles have adjectival properties, much in the same fashion that Indo-European past participles do (Lafon 1944, Lafitte 1944).

raising of V to Asp. The verb and the aspect marker constitute a single word, distinct from the inflected auxiliary in Infl, as illustrated in (15):

(15)
```
              IP
             /  \
          AspP   Infl
          / \    nauzu
        VP  asp
          \  [ekarr]ᵥi
          t_v
```
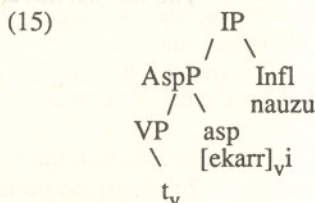
I assume that Basque lexical verbs are bound morphemes that need to attach to a base by S-structure.[13] In a case like (15), Aspect is providing such a base. However, if there is no Aspect head, as in (16), the verb must raise to Infl, thus generating a single inflected unit:

(16)
```
              IP
             /  \
          VP    Infl
          / \   na[kar]ᵥzu
        V   t_v
```
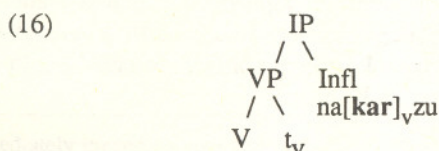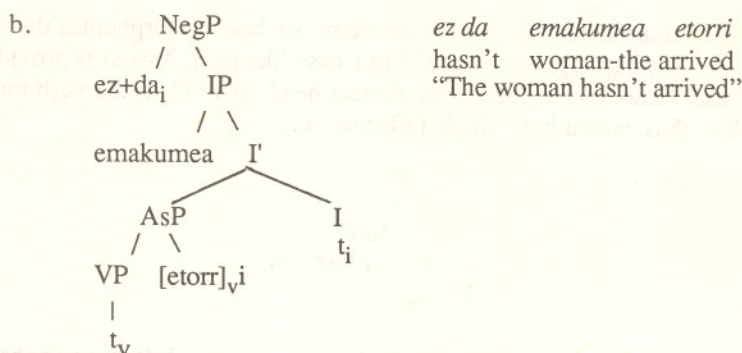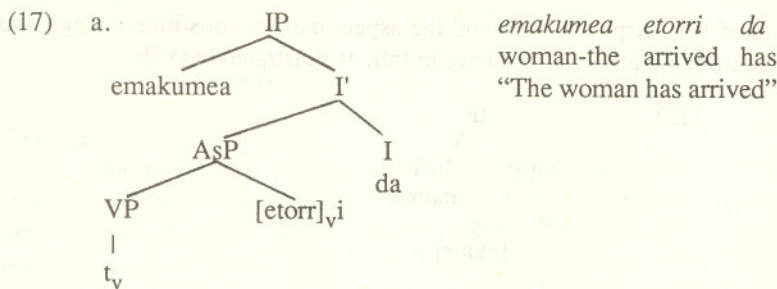
Thus, incorporated forms involve movement to Infl, but periphrastic forms do not. If this is correct, then whenever a syntactic operation affects the inflected auxiliary but not the lexical verb, an incorporated form will behave like the auxiliary, and not like the lexical verb.

2.2 *Evidence for Raising to Infl*

There is independent evidence showing that this is in fact the case. The evidence comes from sentence negation, which induces a leftwards movement of the inflected auxiliary to a Negative Phrase headed by the negative morpheme *ez*, and generated above IP (Laka 1989, 1990):

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[13] Following the morphological requirement stated by Lasnik (1981): "A morphologically realized affix must be realized as a syntactic dependent at surface structure." Here, 'surface structure' is taken to be S-structure.

(17) a.   IP   *emakumea   etorri   da*
            _____|_____   woman-the   arrived has
        emakumea   I'   "The woman has arrived"
                     _____|_____
                  AsP   I
            _____|_____   da
         VP   [etorr]$_v$i
         |
        t$_v$

      b.   NegP   *ez da   emakumea   etorri*
              /   \   hasn't   woman-the arrived
         ez+da$_i$ IP   "The woman hasn't arrived"
                        /   \
                 emakumea   I'
                        _____|_____
                     AsP   I
                    /   \   t$_i$
                 VP   [etorr]$_v$i
                 |
                t$_v$

Given the free order displayed by arguments in Basque, subject placement
does not provide direct evidence to determine whether Inflection has moved
higher than IP in (17b, d). Negative Polarity Item (NPI) licensing provides
such evidence, however. In (17b), negation has scope over the whole IP at S-
structure. This correlates with the fact that there are no subject/object asymme-
tries in NPI licensing in Basque, unlike in English, where NPI's in [Spec,IP]
are not licensed. The contrast is shown in (18):[14]

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[14] It is also possible to have NPIs licensed in [Spec,NegP], as shown in (i):
    (i) a. *inor   ez   da   etorri*
            anybody not has arrived
            "Nobody has arrived"
        b. *inori   ez   diot   ezer   esan*
            anyone-to not it-have-me anything told
            "I haven't told anything to anyone"
        c. *inoiz ez dut ogirik jan*
            ever not it-have-me bread-partitive eaten
            "I have never eaten bread"
  As the examples in (i) illustrate, this [Spec,NegP] position can be occupied by elements
other than the subject. The ungrammatical examples in (ii) show that it is only the position

(18) a. *$[_{IP}$ *anybody has* $[_{NegP}$ *not arrived*]]

      b. $[_{NegP}$ *ez+da$_i$* $[_{IP}$ *inor   etorri* t$_i$]]
               not+has   anybody arrived
          "Nobody has arrived"
          (Literally: "hasn't anybody arrived")

This minimal pair is accounted for under the assumption that NPI's are licensed under c-command at S-structure.[15] In the English sentence, c-command of the subject NPI by Negation does not obtain because NegP is generated below IP (Pollock 1989); in the Basque case, however, the entire IP is in the c-command domain of Negation at S-structure and no subject/object asymmetry is expected. This is indeed the case, provided the subject NPI remains within the scope of NegP, as in (18b).

      This S-structure licensing condition on NPIs also predicts that if the object is dislocated outside the domain of the NegP, as in (19), the licensing cannot take place, because negation does no longer c-command the NPI:[16]

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immediately preceding Neg that admits an NPI element. No other pre-sentential position does:

      (ii) a. *inor   berandu ez   da   etorri*
              anyone late   not has arrived
              ("Nobody has arrived late")
          b. *inoiz   emakumea   ez   da   berandu etorri*
              ever   woman-the-A not has late   arrived
              ("The woman hasn't ever arrived late")

[15] See Laka (1990) for more evidence that a c-command requirement on S-structure representations is needed to account for NPI licensing at least in English and Basque. Here, c-command is defined in terms of branching nodes, as in Reinhart (1976).

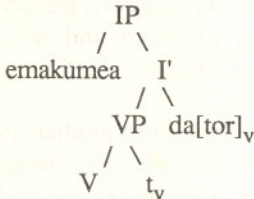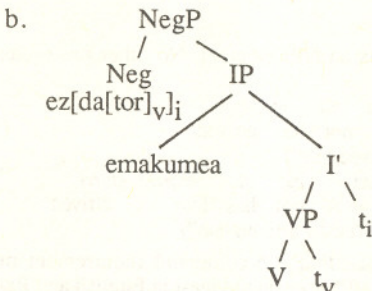[16] The only way to salvage the sentence in (13) is to attach a constituent negation to the stranded NPI, as in (i):

      (i) $[[_{NegP}$*ez dut$_j$* $[_{IP}$ t$_i$ *esan* t$_j$]][*ezer   ere   ez*]$_i$]
              not have   said   anything even   not
          "I haven't said anything"
          Literally: "I haven't said not even anything"

This type of construction involving NPI+even+not is the closest equivalent in Basque to English lexical items like "nothing". Thus, for instance, in an elliptical negative reply, it is not possible to use the NPI *ezer* "anything" alone in Basque, much like in English. Given the lack of lexical items that are universal negative quantifiers in Basque, it is this type of complex nominal that takes the place of English 'nothing' in a reply to a question like "What did you see?":

      (ii)   a. *Zer ikusi duzu?*   b. **ezer*   c. *ezer ere ez*
                what seen have-you   anything   anything even not
                'What have you seen?'   ("nothing")   "nothing"

(19)   *[$_{NegP}$*ez dut$_i$* [$_{IP}$pro t$_j$ *esan* t$_i$]]   *ezer$_j$*
            neg have-me   said   anything
        ("I haven't said anything")

Negative sentences involving an incorporated verb are identical to the one in (17b), except for the fact that the verb does not stay inside the AspP, but it raises to Infl and from there it raises to Neg together with Infl. This derivation is illustrated in (20), which shows the declarative and negative version of a sentence with an incorporated verb:

(20)   a.   IP   *emakumea   dator*
                       / \   woman-theA   she-arrives
                 emakumea   I'   "The woman arrives"
                            / \
                          VP   da[tor]$_v$
                         / \
                        V   t$_v$

        b.   NegP   *ez da-tor   emakumea*
                       /   \   not she-arrives woman-the-A
                    Neg   IP   "The woman isn't arriving"
              ez[da[tor]$_v$]$_i$ / \
                        emakumea   I'
                                       / \
                                     VP   t$_i$
                                    / \
                                   V   t$_v$

In the case of an incorporated verb, therefore, this analysis predicts that a subject NPI following the inflected verb will be licensed, because in this case the inflected verb is in a pre-IP position (i.e. NegP), and thus the NPI that follows it is not necessarily outside IP. In fact, it can be sitting in its D-structure IP internal position. If the incorporated verb were sitting in V or in Infl at S-structure, a postverbal NPI would necessarily be outside the c-command domain of negation, given the fact that both V and Infl are head-last in Basque.[17] Now consider (21), which contrasts minimally with (19):[18]

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[17] Thanks to Jon Ortiz de Urbina (p.c.) for bringing this argument to my attention.

[18] Under the proposal in Lasnik & Uriagereka (1988) that Negative Polarity Items cannot be A'-moved at S-structure, the contrast between (21) and (19) would still be evidence that in

(21)   a. [$_{\text{NegP}}$ *ez dakit$_i$* [$_{\text{IP}}$ *ezer t$_i$*]]
           not   know-me   anything
           "I don't know anything"

This evidence confirms that incorporated verbs are hosted in the same node as inflected auxiliaries, this node being INFL, whereas non-inflected lexical verbs do not raise to INFL at S-structure.

Considered from a strictly morphological perspective, incorporated forms are identical to inflected auxiliaries of non-incorporated forms: agreement clitics, mood, tense and all other morphemes surface in the same manner and order in both kinds of inflected forms (cf. (13)). The only difference between the two is their verbal root: in incorporated forms the root happens to be the lexical verb itself; in inflected auxiliaries this root is *have* or *be* depending on the properties of the lexical verb.[19] In what follows, whenever I refer to inflected forms or to inflection, both types of inflected forms are included: incorporated forms and the inflected auxiliary of non-incorporated forms.

3. *The ordering of clitics in inflection*

The relative ordering of the morphemes within an inflected form is fixed and uniform across all varieties of Basque. The order in which the inflectional morphemes appear is schematized in (22):

(22)   absolutive   verb   dative   modal   ergative   tense
       agreement   root   agreement   marker   agreement   marker.

3.1 *On number agreement*

A few remarks about (22) are in order. First, it does not include number agreement markers, which are separate from person agreement clitics. Number agreement in Basque is restricted to absolutive arguments, and it does not appear with dative or ergative arguments, which agree only for person. This number agreement is illustrated in the examples in (23):

---

(19) the NPI has been moved outside its D-Structure position, whereas the NPI in (21) is sitting in its D-Structure A-position.

[19] The root of the auxiliary is also sensitive to tense and mood, and it is not always a straightforward matter to determine what verb the root stands for, since some of those verbs do not exist independently in modern Basque. Nevertheless, a two-way selection of the auxiliary root (parallel to the have/be partition in the indicative mood) is consistently maintained in all moods and tenses.

(23) a. *Zuk   liburua   irakurri d-u   -zu*
          you-E   book-the   read   it-have-you
          "You have read the book"
      b. *Zuk   liburuak   irakurri d -it-u   -zu*
          you-E   book-the-pl read   it-pl-have-you
          "You have read the books"
      c. *Zuk   liburua   irakurri d-i   -gu-zu*
          You-E   book-the   read   it-have-us-you
          "You have read the book to us"
      d. *Zuk   liburuak   irakurri d -i   -zki -gu-zu*
          You-E   book-the-pl read   it-have-pl   -us-you
          "You have read the books to us"
      e. *Zuk   gu etxera   eraman ga-it-u   -zu*
          You-E   us home-to   brought us-pl-have-you
          "You have brought us home"

The pluralizer morpheme is independent from agreement, in various re-
spects: a) as shown in (23b) and (23d), the plural clitic differs from agreement
markers in that it has different forms in different auxiliary types; b) the plural
marker appears in different positions in Inflection: it can appear preceding the
auxiliary root (23b), or it can appear following it (23d). Moreover, the plural
marker may surface even if absolutive agreement does not (see section 7.2 for
instances of number agreement with no person agreement). There are signifi-
cant dialectal differences in the use of this morpheme: its placement within the
inflected form varies across dialects,[20] and there are varieties which do not
display them at all. For the purposes of this paper I will be ignoring this type
of number agreement, which is so clearly distinct from person agreement. I

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[20] Thus, for example, Biscayan dialect places the plural marker at the very end of the
inflected form. Compare the forms in (i) to the ones in the text:
  (i)   a. *Zuk   liburua   irakurri d-o-zu*
            you-E   book-the   read   it-have-you
            "You have read the book"
        b. *Zuk   liburuak   irakurri d-o-zu-z*
            You-E   book-the-pl read   it-have-you-pl
            "You have read the books"
        c. *Zuk   guri   liburua   irakurri d-eus-ku-zu*
            you-E   we-D   book-the   read   it-have-us-you
            "You have read us the book"
        d. *Zuk   guri   liburuak   irakurri d-eus-ku-zu-z*
            You-E   we-D   book-the-pl read   it-have-us-you-pl
            "You have read us the books"
Note that although the phonological content of the morphemes involved may vary, the
relative ordering is identical to the one in other dialects (as shown in the text). It is only the
pluralizer that behaves differently, in that it is placed at the very end of the auxiliary.

will simply note that the facts from Basque morphology appear to support a theory of agreement where person and number are separate entities (Schlonsky 1989).

3.2 *On the dative clitic*

Secondly, (22) does not make any distinction between the dative agreement marker and the dative agreement itself. In certain cases, when an inflected form contains a dative person agreement clitic, a 'dative marker' appears, distinct from the person marker. This is illustrated in (24):

(24) a. *da-kar-ki-zu*
          s/he-bring-dat-you
          "to you"
      b. *ekarri   d-i-zu-gu*
          brought   it-root-you-we
          "We have brought it to you"

This morpheme *ki* appears in forms that do not have -*i*- as the root. Thus, (24a), whose root is *kar* "bring", displays the marker *ki* before the dative agreement, whereas the form in (24b) does not have the marker *ki* (but now the root is -*i*-). The evidence considered in this paper does not indicate that there is any reason to distinguish between the two dative morphemes in (24a); thus, I will assume they are a single unit, for the purposes of the discussion. See however Ortiz de Urbina (1989) for a different view on this issue.

Finally, (22) leaves out addressee agreement, which was mentioned in the previous section, and which does not have the same behavior as argumental agreement.

3.3 *Linearity and hierarchy: Morphology and Syntax*

Baker (1985) argues for a unified view of Inflectional Morphology and Syntax, based on the tight relation between phonological and syntactic effects of grammatical function changing processes. If, as argued by Baker, Inflectional Morphology is part of Syntax, a correlation between Syntactic and Morphological structure will necessarily hold in natural languages because they are not independent processes but one and the same. On the contrary, without an assumption along these lines, our model of the Grammar will be missing a clear generalization about natural languages, namely, the fact that inflectional structure correlates with syntactic structure. This is, in essence, the spirit of Baker's (1985) 'Mirror Principle': the relative closeness of a given morpheme to the root determines the relative application of the syntactic process that morpheme is related to.

Linear order effects in Syntax are the surface manifestation of structure-dependent hierarchical relations.[21] If inflectional morphology is derived in the Syntax (Marantz 1984, Chomsky 1989), the null hypothesis is that, also in Inflectional Morphology, linear order reflects hierarchical relations. More specifically, if Inflectional Morphology is derived via X^0 movement in the mapping from D-structure to S-structure (in the spirit of Baker 1987, Chomsky 1989), then we may expect that, parallel to cases of XP movement, the output of X^0 yields structures where dominance relations take place.

Once we accept that Inflectional Morphology is derived in the syntactic component, and that the relative closeness of the inflectional morphemes to the base reflects the history of the syntactic derivation in some fashion, the issue of why a given clitic appears in a given place acquires a new dimension. The answer to this question will be necessarily linked to the question of what the syntactic status of that clitic is. More specifically, given (22), it makes now sense to ask: a) what the structure of the string of clitics is; and b) what kind of syntactic derivation yields it as an output.

4. *The structure of inflection*

I will now present a specific proposal concerning the answer to questions (a) and (b) above. I will argue that the placement of inflectional morphemes can be derived from the properties of (head) adjunction. The internal structure of the inflected form is illustrated in (25):
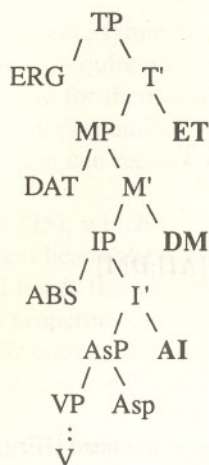
(25)
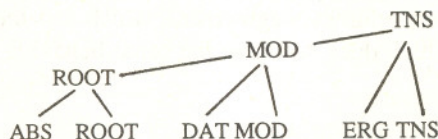
This structure is derived via head movement in the mapping of D-structure to S-structure, given the D-Structure of the clause presented in (26):[22]

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[21] Typically, linearity plays a more important role in spoken languages than it does in signed languages, indicating that it is the physical medium, rather than the structural mechanisms, that constrains the output of Syntax.

[22] Where TP stands for Tense Phrase, MP stands for Modal Phrase, and the name IP has been kept to designate the projection of the root. In the heads, E stands for ergative, T for tense, D for dative, M for modal, A for absolutive and I for the verbal root.

(26)
```
                    TP
                   /  \
             ERG      T'
                     /  \
                  MP      ET
                 /  \
              DAT    M'
                    /  \
                  IP    DM
                 /  \
              ABS    I'
                    /  \
                 AsP    AI
                /  \
             VP    Asp
             :
             V
```
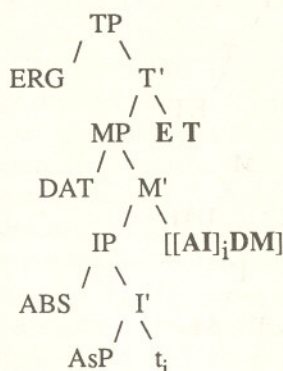
The structure in (26) shows three layers of functional projections on top of the Aspect Phrase, instead of a unique INFL projection. The idea that the category INFL is structurally more complex than assumed in the previous literature has been recently pursued by a large number of works, after Pollock's (1989) seminal proposal. The structure in (26) follows the spirit of Pollock's work, although it departs from it in various respects: there are three inflectional projections instead of two, and agreement does not head any of them. Rather, I assume that agreement elements do not head projections of their own. If this assumption is correct, then the only categories able to head projections would be: a) lexical categories, that is, categories bearing [+/-N] and [+/- V] features, and b) functional categories in the sense of Laka (1989), that is, categories that operate on the event of the clause and bear no anaphoric relation to arguments in the clause.

The agreement clitics in (26) are adjoined to the functional category that heads the projection whose specifier is taken by the argument they agree with. I will leave open the question of where arguments are generated. They could be generated inside VP (Kitagawa 1986) and then moved to the specifiers of the inflectional projections at S-structure, or they could be generated in the Specifiers by D-Structure. See Cheng and Demirdash (this volume) for a proposal regarding this issue.
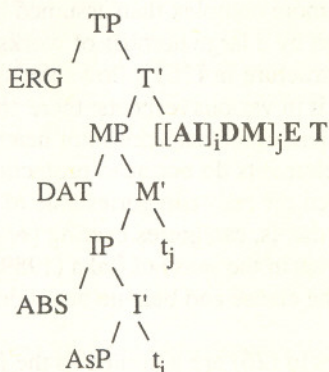
In the mapping from D-Structure to S-Structure, X^0 movement takes place, successive cyclically: the head [[Abs]Infl] adjoins to the head [[Dat]Mod], as illustrated in (27). The complex head [[[A]I][D]M] is thus created. The trace t_i left by this movement satisfies the ECP, in that it is antecedent governed.

(27)
```
                        TP
                       /  \
                  ERG      T'
                          /  \
                       MP     E T
                      /  \
                  DAT     M'
                         /  \
                      IP     [[AI]ᵢDM]
                     /  \
                 ABS     I'
                        /  \
                     AsP    tᵢ
```

Next, the head [[[A]I][D]M] moves to the head [[Erg]Tns], as illustrated in (28). The output of this movement operation is precisely the structure in (25). Note that although the output is highly complex, the operation that brings it about is extremely simple and central to the Grammar: move-α.

(28)
```
                        TP
                       /  \
                  ERG      T'
                          /  \
                       MP     [[AI]ᵢDM]ⱼE T
                      /  \
                  DAT     M'
                         /  \
                      IP     tⱼ
                     /  \
                 ABS     I'
                        /  \
                     AsP    tᵢ
```

The derivation is a standard case of head movement as in Baker (1987). For the purposes of the present paper, I will not pursue an argument for this syntactic derivation. Instead, I will argue that there is strong evidence on morphological grounds for a structure like (25). Nevertheless, note that in a derivation like the one illustrated in the examples (26), (27), (28), the three arguments that agree with inflection each sit in the specifier of the projection where their agreement occurs, and each agreement position is adjoined to the functional head of its projection. The fact that the three verbal arguments are specifiers is consistent with the behavior of these arguments in the Syntax:

there are no subject-object asymmetries in Wh-extraction. It has been argued that all three arguments require antecedent government because lexical government is not available for them (Laka & Uriagereka 1987); all three arguments license the empty pronominal *pro*, and in a structure like (28), both *pro* licensing and agreement can receive a unified explanation in terms of Spec-head relations.

The structure in (25), which is the output of the S-structure derivation, exhibits the agreement heads alternating with the functional ones. As we will see later, functional heads (henceforth F-heads) (in the sense of Laka 1989) have morphological properties different from agreement heads (henceforth A-heads). Only A-heads undergo head internal movement, and only F-heads can license this movement (section 7).

5. *Deriving clitic placement*

When describing the agreement clitics in the inflected form, it is standard to say that the absolutive marker is a prefix, dative is an infix and ergative is a suffix. The assumption is that all agreement morphemes are attaching to one and the same base, which is the root of the auxiliary verb. Similarly, the Modal marker is taken to be an infix and the Tense marker to be a suffix. Notwithstanding this characterization of the facts, Basque is generally agreed to be a suffixal language: case markers, determiners, the equivalent of English prepositions, complementizers and aspectual morphemes, all occur as suffixes.

I will argue that Basque is a strictly suffixal language even in the inflectional system. Moreover, I will argue that prefix, infix and suffix are derivative notions which do not play any primitive role in the grammar.

5.1 *Clitic ordering and the head parameter*

The issue at stake is whether some general principle governs the linear order of clitics in inflection. Taking a strong view of the spirit in Baker (1987), I follow Chomsky (1989) in assuming that Inflectional Morphology is a by-product of head adjunction in the Syntax. I also want to argue that the ordering properties of inflectional morphemes are governed by a general condition on X^0 adjunction. Consider the following condition:

(31) The head-parameter condition on adjunction:
    If X and Y are heads
        a. $*[_x [X] Y]$ if X is final
        b. $*[_x Y [X]]$ if X is initial

The condition in (31) states simply that head adjunction respects the head parameter. If this condition is part of the Grammar, the shape of inflected forms follows from it under the assumptions above. Alternative proposals on morpheme ordering (Selkirk 1982) appeal to language particular and construction specific rules for the placement of different affixes.[23]

Work in recent years of generative grammar has lead us to the conclusion that there are no language particular and construction specific rules in S-structure or in LF, but rather, the Grammar consists of a set of principles and parameters interacting. If this is a correct view of the human faculty for language, a move towards a principled account of Morphology is also desirable, if feasible. In this respect, the condition in (31) is conceptually preferable, because it relies on the general principle that adjunction respects the relative position of the head, this latter aspect being a parametrized one.

Let us confront (31) with the data. Basque is a head final language. Under (31), then head adjunction must conform to (31a). The agreement markers are generated adjoined to the functional heads, and all the cases satisfy (31a). In the mapping of D-structure to S-structure, two successive head adjunctions take place, as shown in (26) and (27): [Abs-Root] adjoins to [Dat-Mod] and the whole complex adjoins further to [Erg-Tense]. Both adjunctions satisfy (31a).

The condition in (31) predicts that, if there is an initial head in Basque, the X^0 adjunction will satisfy (31b). Negation in Basque is an initial head, to which the inflected verb adjoins (see Laka 1988, 1990). This adjunction satisfies (31b), as shown in the following examples:

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[23] Selkirk (1982), in a model of morphology as a separate component including derivational and inflectional morphological processes, proposes the following rule schemata for morphology:

(i)   a. $X^n \dashrightarrow Z\ Y^m\ X^{af}\ W$

         b. $X^n \dashrightarrow Z\ Y^{af}\ X^m\ W$

         c. $X^n \dashrightarrow Z\ X^m\ Y^{af}\ W$

         d. $X^n \dashrightarrow Z\ X^{af}\ Y^m\ W$

         where $O > n > m$, $n+af$; and Z, W are variables over sequences of category symbols.

Selkirk suggests that languages may choose from these schemata, provided by UG, but that particular languages have particular morphological rules. The position taken is hence that the schemata in (29) are 'a set of universally provided abstract "templates" to which the word structure rule systems of languages will (more or less) conform' (Selkirk [1982:66]. With respect to morpheme placement, Selkirk takes the view that it is determined by construction specific rules. Selkirk also argues that deriving inflected forms in the Syntax "makes it impossible for a grammar to express real generalizations about their shape" (Selkirk 1982:69).

(32)   a.   *ez[didazu]*
                neg[3A-have-1D-2E]
         b.   **[didazu]ez*
                [3A-have-1D-2E]neg

Assuming (31) to be correct, we predict that head initial languages and head final languages will display mirror morphological images, to a certain extent. Although it is far beyond the realm of this paper to consider a cross-linguistic analysis to explore the prediction, I want to point out one case which displays the mirror image of the data we are considering in the paper. The Oceanic language Nineuan is ergative like Basque, but it is head initial. Compare the way in which plural and case are marked in these languages:

(33)   a.   Basque: *haur-ag-ek -> haurrek*
                              child-pl-E
                              "The children (E)"
         b.   Nineuan: *he tau fanau*
                              E pl child
                              "The children (E)"

Nineuan is a noun incorporating language. Under the analysis of noun in-corporation proposed in Baker (1987), the noun adjoins to the verb in the mapping from D-structure to S-structure. Nineuan being a head initial lan-guage, and under (31), this adjunction should attach the noun to the right of the verb. The examples in Baker (1987) show that this is the case:

(34)   a.   ***Volu** nakal he te fanau e   fua niu?*
                grate   Q   erg-pl-child abs-fruit coconut
                "Are the children grating (the fruit of the) coconut?"
         b.   ***Volu niu** nakal e tau fanau?*
                grate-coconut Q abs-pl-children?
                "Are the children grating coconut?"

On the other hand, Greenlandic Eskimo, which is mainly suffixal (and is therefore at least mainly head final under our assumptions), incorporates the noun by attaching it to the left of the verb, following (31a). Examples are taken from Baker (1985b):

(35)   a.   *Sapanga-mik kusanartu-mik pi-si-voq*
                bead-instr   beautiful-instr O-get-indic/3sS
                "He bought a beautiful bead"

b. *Kusanartu-mik* **sapangar-si**-*voq*
    beautiful-instr   bead-get-indic/3sS
    "He bought a beautiful bead"

Speas (1990) notes that the condition in (31) is clearly not met in the verbal morphology of most Indo-European languages (she cites Dutch, and examples can be reproduced for Romance). I am assuming that a condition like (31) holds only for those cases where a clear-cut distinction can be made between the different morphemes involved; eventually, I am appealing to the traditional notion of 'agglutinative' morphology, where clitics are put together next to each other, and no morpheme-merging takes place in the paradigm. Of course, what 'agglutinative' morphology means in the Theory must be spelled out more explicitly. See section 8.3 for a discussion.

5.2 *On the notions 'prefix', 'infix' and 'suffix'*

It follows from (31) that all X^o's (i.e. all clitics and morphemes) are governed by the same ordering condition. Thus, specifying different X^o's as prefixes, or infixes, or suffixes in the lexicon is redundant: their relative order is determined by the syntactic derivation. In the case of Basque, the clitics in inflection behave exactly like other clitics (determiners, case markers and postpositions): they are all final heads involved in adjunction processes in the Syntax. Under this view, knowledge of Basque does not involve the notions prefix, infix and suffix. Rather, it involves knowledge of the X^o's that constitute the repertoire of clitics and the value of the head parameter; everything else is already there, in UG.

Whether (31) holds indeed of natural languages or not is a straightforward empirical question once the data one is confronted with have been analyzed in detail and their structural properties are clear. Thus, for instance, even the facts of Basque inflection run contrary to it at first glance, and it is only when a detailed analysis of its structure is worked out that it can be confronted with the adjunction condition in (31).

Some of Greenberg's statistical universals reflect strong correlations between word order and morphology: verb initial languages are prefixal, whereas verb final languages are suffixal. Terms like 'verb initial' and 'verb final' correspond roughly to opposite values in the head parameter. The condition in (31) can explain this strong statistical effect, and it may also explain why it is not an exceptionless generalization: languages do occasionally display different head-parameter values for different heads (see Basque negation above, for example). If true, a condition like (31) states strong constraints on possible morphological forms, without resorting to an independent morphological subthe-

ory as in Baker (1985), which would impose further well-formedness conditions on the forms independently from their syntactic derivation. Rather, Inflectional Morphology is totally incorporated into a model of the Grammar consisting of four components: D-Structure, S-Structure, Phonetic Form and Logical Form.

6. On the nature of third person absolutive clitics

In this section, I will argue that there are no third person absolutive clitics, and that the markers that are standardly considered third person agreement clitics are best accounted for as tense and modality markers. I will then present a proposal regarding their distribution, which makes crucial use of the structure in (25).

6.1 *Peculiarities in the third-person clitic paradigm*

The paradigm showing the different absolutive agreement clitics is illustrated in the chart below:

(36)   a.   Singular   b.   Plural

1person	*NI* "me"	*N*		1person	*GU* "us"	*G*	
2person	*HI* "you"	*H*		2person	*ZU* "you"	*Z*	

	hau "this"	D (present)
3person	*hori* "that"	Z (past)
	hura "yonder"	L (irrealis)
	bera "the one"	B (imperative)

As (36) illustrates, third person agreement clitics are unlike all other agreement clitics in several respects. First and second person clitics are invariable: they always have the same independently of other elements in the inflected form they are contained in. However, third person clitics vary depending on the tense or the mood of the inflected form: thus, for instance, the clitic *D* appears in present tense forms, but in past tense forms the clitic for third person absolutive is *Z*. Another important difference is that, whereas first and second person clitics resemble the pronouns for first and second person, third person clitics do not bear any resemblance with third person demonstratives or pronouns. Finally, whereas first and second person clitics vary from the singular paradigm to the plural, third person clitics remain invariable in that respect.

6.2 *Third person absolutive: Tense and Modality*

The claim I want to put forward is that there are no third person clitics in the absolutive paradigm at all, and that those markers customarily described as third person markers are in fact Tense and Modality markers. Marking of the third person with zero is a widely attested fact in natural languages; even within Basque, there are no ergative clitics for third person. The absolutive clitic paradigm I propose is shown in (37):

(37) a. Singular   b. Plural
      1person *N*   1person *G*
      2person *H*   2person *Z*

The markers that occur in the absolutive position when it is marked for third person are four, as shown in (36). Their distribution is the following:

(38) 1- Morpheme *D* occurs in present tense forms
      2- Morpheme *Z* occurs in past tense forms
      3- Morpheme *L* occurs in irrealis forms
      4- Morpheme *B* occurs in imperative forms

There are two tense markers: present, which is a phonologically null morpheme, and past, which is marked by the morpheme *N*. Structural representations of present and past inflected forms are illustrated in (39):[24]

(39)

	TNS				TNS		
ROOT				ROOT			
abs	root	erg	tns	abs	root	erg	tns
N	aU	ZU	+	N	indU	ZU	N

To be specific, the claim here put forward is that in the case of an inflected form generated in a sentence with a third person absolutive agreement, the absolutive slot is simply left empty. Once the S-structure X^0 movements have taken place, TNS, the dominating head of the structure, assigns a marker to the empty position. This assignment takes place in the mapping from S-Structure to Phonetic Form. Present tense assigns *D* and past tense assigns *Z*.

The two options are illustrated in (40). (40a) illustrates the derivation of two present tense forms: the structure on the left is the S-Structure representa-

---

[24] The structure is of course the one in (25). Dative and modal are not represented, since the form does not contain them. I assume that the Modal Projection is only present when either one of the elements that have it as a host are generated. I will follow this practice below; thus, for instance, third person ergative forms will not display the ergative node in the structure, since there are no third person ergative clitics.

tion, with an empty absolutive node; in the mapping to PF, TNS (represented by a '+' sign) assigns a D morpheme to that position. (40b) illustrates the same phenomena, but now it is a past tense head that assigns the marker:

(40) a. Present tense: *dabil*   *darama*
                          3-walk   3-bring-3
                          "it walks"   "it brings it"

        S-Structure   Phonetic Form

              T   T
           R/ \T   R/ \T
        A/ \R \T   A/ \R \T
           BIL   +   D   aBIL   +
           RAMA   +   D   aRAMA +

      b. Past tense: *zebilen*   *zeraman*
                       3-walk-past   it-bring-it-past
                       "it walked"   "it brought it"

        S-Structure   Phonetic Form

              T   T
           R/ \T   R/ \T
        A/ \R \T   A/ \R \T
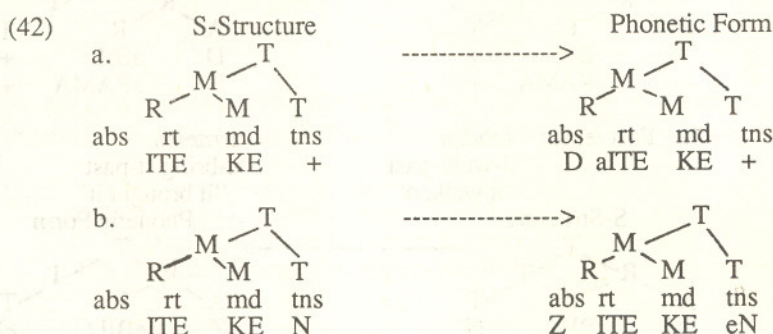   BIL   N   Z   eBIL   eN
           RAMA   N   Z   eRAMA eN

Let us now consider the markers L and B illustrated in (36). We have stated that L occurs in third person absolutive position in irrealis forms, but we have not been explicit about what an irrealis inflected form is. In order to do that, it is necessary to consider modals.
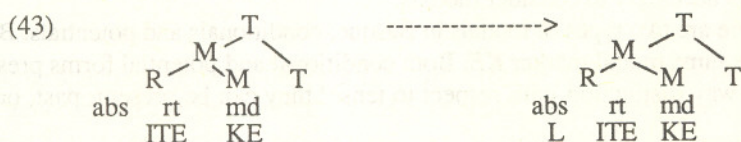
There are two types of modals in Basque: conditionals and potentials. Both bear the same modal marker KE. Both conditional and potential forms present a three-way distinction with respect to tense: they can be present, past, or irrealis:

(41) a. *Irune joan daiteke*
          Irune-A leave 3A-root-MOD
          "Irune can leave"
      b. *Irune joan zitekeen*
          Irune-A leave 3A-root-MOD-tns
          "Irune could (have) leave (left)"
      c. *Irune joan liteke*
          Irune-A leave 3A-root-MOD
          "Irune might leave (hypothetically)"

As illustrated by the examples in (41), modal forms in the present take the morpheme D in the absolutive position; modals in the past tense take the morpheme Z. Only hypothetical or irrealis modals, which are neither present nor past, take the marker L. Thus, the inflected forms in (41a) and (41b) have the same derivation as the forms in (40), where tense, the dominating head, assigns a marker to the empty absolutive position. The derivation of the forms in (41a) and (41b) is illustrated in (42), where the head Modal is now present, since it is headed by the modal marker KE (equivalent to English "can"):

(42)

             S-Structure   Phonetic Form

a.

```
                 T                                          T
            M___/ \                                    M___/ \
        R__/ `M   \T                              R__/ `M   \T
      abs  rt   md   tns                        abs   rt   md   tns
           ITE  KE   +                          D  aITE  KE   +
```

b.

```
                 T                                          T
            M___/ \                                    M___/ \
        R__/ `M   \T                              R__/ `M   \T
      abs  rt   md   tns                        abs  rt   md   tns
           ITE  KE   N                          Z   ITE  KE   eN
```
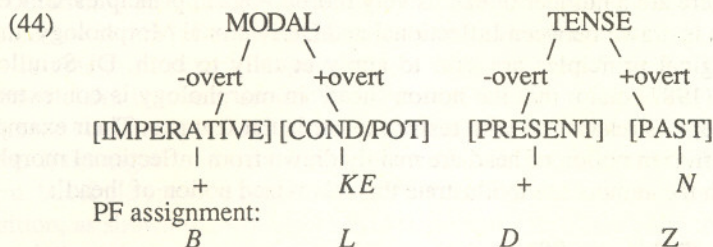
The irrealis forms like (41c) are those that lack present or past tense (see Iatridou (1990) for independent evidence in this respect); now, it is the Modal head itself which assigns the marker to the empty absolutive position. The derivation is shown in (43):

(43)

```
                 T                                          T
            M___/ \                                    M___/ \
        R__/ `M   \T                              R__/ `M   \T
      abs  rt   md                              abs  rt   md
           ITE  KE                              L   ITE  KE
```

The derivation of the form depends crucially on the structure of the inflected form; it is always the highest functional head which assigns the marker to the empty absolutive position. Hence, the presence of the Modal does not affect the ability of Tense to assign the marker (as shown in (42)), but the presence of Tense does prevent the modal from assigning the marker L.
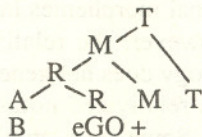
Consider now the imperative forms, which assign B to the absolutive position, if empty. Imperative forms, like irrealis forms, are not specified for Tense, and I assume that they have a phonologically null Modal morpheme. This assumption yields a symmetric characterization of Tense and Modal

heads: Tense has a phonologically null marker for present and an overt morpheme (*N*) for past; Modal has a phonologically null marker for imperative, and an overt marker (*KE*) for conditional/potential. The paradigm is laid out in (44):

(44)

```
              MODAL                        TENSE
            /       \                    /       \
        -overt    +overt            -overt    +overt
          /         \                 /         \
   [IMPERATIVE]  [COND/POT]      [PRESENT]   [PAST]
        |           |                |          |
        +          KE                +          N
  PF assignment:
        B           L                D          Z
```
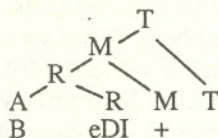
Thus, an imperative form will be derived similarly to all the other forms above, except that the head now is the non-overt Modal morpheme, which assigns the marker *B*. Consider the following examples and their corresponding PF representations (45):

(45)   a.   B-eGO
            3A-stay
            "Let it stay"

```
                              T
                          M /   \
                      R /   \    \
                  A /   \R   M    T
                  B   eGO   +
```

       b.   B-eDI
            3A-be
            "Let it be"

```
                              T
                          M /   \
                      R /   \    \
                  A /   \R   M    T
                  B   eDI   +
```

We can now qualify the description given in (38), and substitute it by the condition in (46):

(46)   An F-head assigns a marker to an empty absolutive position iff it is the head of the structure.

The distribution of what are traditionally considered third person absolutive clitics is a process by which a functional head marks an empty position. It is crucial for this account of the data that the head of the form be defined configurationally, and not contextually as in Di Sciullo & Williams (1987).

6.3 *On the notion of head in Inflectional Morphology*

Di Sciullo & Williams (1987) argue that Morphology and Syntax are different subtheories of the grammar, with different atoms and rule formation properties. The claim is that the notion 'head' is shared in both components, but that there are a number of exclusively morphological principles. Since no distinction is drawn between Inflectional and Derivational Morphology, those morphological principles are said to apply equally to both. Di Sciullo & Williams (1987) claim that the notion 'head' in morphology is contextually determined; it is relativized with respect to particular features. Their examples of the relativized notion of head are mainly drawn from inflectional morphology, which the authors use to illustrate this relativized notion of 'head':

(47)   *ama bi*$_{[+fut]}$ *tur*$_{[+passive]}$

Under Di Sciullo & Williams' proposal, the verbal form in (47) has two heads, where *bi* is the head (future) and *tur* is the head(passive). As a result of the relativized notion of head, each inflectional morpheme happens to be the head relative to all features borne in its matrix, which amounts to saying that all inflectional morphemes in an inflected form are equally heads. If that is the case, however, the relativized notion of head fails to explain why Latin morphology does not generate forms like, say, *turbiama* or *biamatur*, which, (under a relativized notion of head) are equal to *amabitur* in all relevant respects. Some extra proviso must therefore be added to the theory that will account for ordering facts.

The phenomenon we are considering here relies crucially on a configurational notion of head; (46) has not only more explanatory adequacy than (38), but it is also descriptively more adequate. In fact, as we will now see, (46) makes correct predictions that a traditional description like (38) fails to capture. More interestingly, these predictions rely again on the proposed structure, and on the concept of 'head of the structure', which must be defined in terms of dominance relations; that is, in configurational terms.

In accounting for how the tense and modal markers that occur in the absolutive position are assigned, I have avoided forms with ergative agreement. This has mainly been done for ease of exposition. However, under a description like (46), ergative agreement becomes a crucial test ground, because in the structure proposed the ergative marker is structurally higher than the modal, since it belongs in a higher projection (recall (26)).

When a Tense morpheme is present, the presence of the ergative marker, adjoined to Tense, does not affect the hierarchical relation of Tense with respect to the inflected form. But when the Tense morpheme is not present, and

thus it is the modal head that assigns the marker to the empty absolutive, the presence of the ergative should prevent the assignment under (46), since the modal would no longer be the head of the structure.

Let us consider the imperative first. There are two descriptive claims that are commonly found in the literature on Basque: the first and most widely accepted one is that inflected forms must have an absolutive marker; the second one is that third person absolutive is always marked *B* in the imperative. Neither claim is totally accurate, however. Consider an imperative form in a sentence containing a third person absolutive argument and an ergative argument. If the ergative is also a third person, the marker *B* occurs in the inflected form, but if the ergative is not third person, no marker occurs in the absolutive position, as shown in (48), where *egin* is the main verb "do", and the inflected form follows it:

(48) a. *egin B-eZA*
      "let him do it"
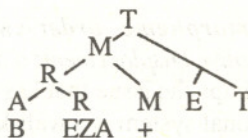
b. *egin eZA-ZU*
   "You do it"
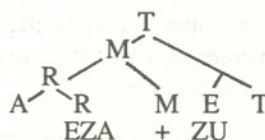
In (48a), there is no third person ergative clitic, and therefore nothing prevents the Modal from being the head of the structure. Hence, the marker *B* can be assigned to the absolutive position. In (48b), however, the presence of an ergative clitic does prevent this assignment, because it belongs in the projection of Tense, higher than Modal. The ergative clitic is not a functional head, though, and according to the condition in (46), it cannot assign a marker to the empty initial position. Therefore, the absolutive position remains empty. Note that whereas (46) predicts that this will be the case, (38) wrongly predicts that (48b) should display an initial *B*.

The facts discussed above confirm that the notion of head is central to the interaction between elements in a complex form; the notion of head at play is a strictly configurational one, not relative or contextual. Furthermore, the different types of features borne by each morpheme do not affect the structural relations at all. Thus, it could be claimed that Modal and Tense are both functional heads as opposed to the clitics, and that this explains why Tense prevents

Modal from assigning its marker. The fact that a higher anaphoric head (ergative clitic) can also prevent the Modal from assigning its marker could not be explained along these lines, however. Under a feature percolation theory as in Lieber (1983), it would be problematic to explain why in these cases the features of the modal cannot percolate up in the structure, thus allowing the assignment of the marker L to the empty position.

Note on the other hand, that the facts above also argue in favor of a distinction between phonologically null morphemes and empty nodes. Non-overt morphemes are those which have a non-empty feature matrix but are phonologically empty; the present tense morpheme and the imperative marker are instances of non-overt morphemes. These elements are as active as overt morphemes. Empty nodes have empty feature matrices; third person absolutive and ergative clitics are instances of this class.

7 . A morpheme order-switching phenomenon
7.1 Ergative Displacement: a description

Perhaps the issue that has drawn most attention to the study of the Basque inflectional system is a well-known phenomenon which alters the order of the agreement morphemes under certain circumstances. This phenomenon has received a number of names, depending on the point of view taken to analyze it; for convenience, I will refer to it as 'Ergative Displacement'. It is traditionally described as follows:

(49)   ERGATIVE DISPLACEMENT:
    if an inflected form has
         a)   a third person absolutive agreement clitic and
         b)   a non-third person ergative agreement clitic and
         c)   it contains either the past tense morpheme
                or the modal morpheme
                or the conditional morpheme
    then
         a)   the clitic corresponding to the ergative appears in the canonical
             place of the absolutive, and
         b)   the absolutive clitic does not appear.

To illustrate some cases that meet the conditions in (49), consider the examples in (50), where present and past tense alternations are presented; the present tense column (50a) displays the standard clitic ordering, and the past

tense column illustrates the corresponding forms after having undergone Ergative Displacement.[25]

(50)   a.   present tense
           D-U-T
           3A-have-1E
           D-U-ZU
           3A-have-2E
           D-I-DA-ZU
           3A-have-1D-2E
           D-I-O-GU
           3A-have-3D-1plE

       b.   past tense
           N-U-eN
           1E-have-Tns
           Z-enU-eN
           2E-have-Tns
           Z-enI-DA-N
           2E-have-1D-Tns
           G-enI-O-N
           1plE-have-Tns

The inflected forms in column (50a) show the canonical order of inflectional morphemes according to (25), where the absolutive agreement clitic *D* occurs before the inflectional root and the ergative clitic after it. The present Tense marker is a zero morpheme, which I have not encoded in the gloss. When the past tense morpheme *N* is present (50b), the third person absolutive clitic is substituted by a clitic of the absolutive paradigm corresponding to the person features of the ergative clitic of the corresponding present Tense form (50a). The ergative clitic disappears from its canonical position and so does the third person absolutive clitic.

If the absolutive clitic agrees with a non-third person argument, no clitic order altering process takes place, and clitic order conforms to (25), as illustrated in (51):

(51)   a.   present tense
           N-aU-ZU
           1A-have-2E
           Z-aitU-T
           2A-have-1E

       b.   past tense
           N-indU-ZU-N
           1A-have-2E-tns
           Z-indU-DA-N
           2A-have-1E-tns

There are no syntactic consequences related to the Ergative Displacement process: it does not affect the case of overt arguments in the sentence, which remain marked for ergative and absolutive independently of what happens inside the inflected form; neither does this morphological process alter the syntactic properties of the arguments at all. This total lack of syntactic conse-

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[25] For ease of exposition, epenthetic vowels and tense-sensitive root parts are represented in lower case letters, whereas the relevant elements are displayed in capital letters. I will not provide translations of the forms, because at this point they become irrelevant. Instead, the glosses provide all necessary information: 1, 2, 3, are the grammatical persons; pl means "plural"; A, D, E mean "absolutive", "dative" and "ergative" respectively.

quences is partially illustrated in (52) for Case marking and Binding Theory. The same sentence is given in present and past tense. The inflected auxiliary undergoes Ergative Displacement but the arguments and their syntactic properties remain unchanged, in that they receive the same case, and the Binding relations are not affected.

(52) a. *Nik neure   burua   ikusten D-U-T*
           I-E my-own head-the-A see-impf 3A-have-1E
           "I see myself"
    b. *Nik neure   burua   ikusten N-U-eN*
           I-E my-own head-the-A see-impf 1E-have-tns
           "I saw myself"

7.2 *Heath (1976) and Ortiz de Urbina (1989).*

Heath (1976) treats Ergative Displacement (henceforth ED) as an instance of antipassive, based on the fact that the ergative subject agrees with what is apparently an absolutive clitic, and that the third person absolutive clitic disappears from the inflected form. However, this process does not share any of the relevant characteristics of standard antipassives: thus, the subject of the sentence remains marked for ergative. Moreover, as Ortiz de Urbina (1989) notes, it is not clear why this antipassive would take place precisely under the conditions it does in Basque. This antipassive would have a radically different character from what it has in other languages, where it is either intertwined with syntactic processes like Wh-movement or it is related to theme/rheme relations. Another property shared by antipassives and lacking in ED is the intransitivization of the verb. In cases of ED, the inflected form does not become unaccusative (i. e. only absolutive agreement form which typically takes "be" as root, cf. the introductory description). Forms that have undergone ED are still transitive. Consider the examples in (53):

(53) a. *N-aIz*   b. *D-U-T*
           1A-be   3A-have-1E
    b. *N-INTZ-eN*   c. *N-U-eN*
           1A-be-tns   1E-have-tns

The forms in (53) illustrate the difference between unaccusative auxiliaries (53a), which bear only absolutive clitics, and transitive auxiliaries (53b), which bear ergative clitics. Whereas (53a) bears the root of the verb *izan* "to be", (53b) displays the root of *ukan* "to have". The forms in (53c) and (53d) are past tense forms. (53d) has undergone Ergative Displacement; however, it has not become an unaccusative form like (53c). It still has the same root as its

correlate in present tense; that is, it is still a transitive "have" auxiliary verb root.

Ortiz de Urbina (1989) analyzes Ergative Displacement as an instance of Split Ergativity. Under this account, Basque inflection displays a consistently ergative pattern, but it turns into an accusative marking system in the case of Ergative Displacement. Hence, according to Ortiz de Urbina's approach, Basque patterns like Warlpiri in these instances: arguments are marked ergative and absolutive, but inflection agrees only with the subject via an absolutive marker, as if it where nominative agreement. As Ortiz de Urbina notes, however, this phenomena differs from other instances of split ergativity in a number of ways. Splits are generally characterized by one of these two factors: grammatical person or aspect/tense. Basque would be unique in displaying a split that takes both person and tense in consideration. Furthermore, splits conditioned by grammatical person usually are marked on the overt argument case system, precisely where Basque shows no sign of change. Languages with an aspect/tense split normally display the ergative marking on the past/perfective tense, and the accusative marking otherwise.[26] Basque would be unique again in displaying the accusative marking in the past tense and the ergative otherwise.

Ortiz de Urbina (1989) also notes that number agreement is completely 'blind' to this process. As shown in section 3.1, Inflection displays number agreement with absolutive arguments. Forms that have undergone Ergative Displacement still contain the number agreement, which reflects the plurality of the absolutive agreement, despite the fact that the clitic in the absolutive slot agrees with the ergative argument. Examples of number agreement under Ergative Displacement are given in (54):

(54)   a. *Nik liburuak irakurri d-it-u-t*
           I-E books-A   read   3A-pl-have-1E
           "I have read the books"
       b. *Nik liburuak irakurri n-it-u-en*
           I-E books-A   read   1E-pl-have-past
           "I read the books"

In (54a), inflection shows the absolutive clitic *d*, followed by the number agreement marker *it*, which appears when the absolutive argument is plural. In (54b), the absolutive clitic *d* has disappeared, and instead we find the clitic *n*, agreeing with first person ergative. However, the plural marker is still there,
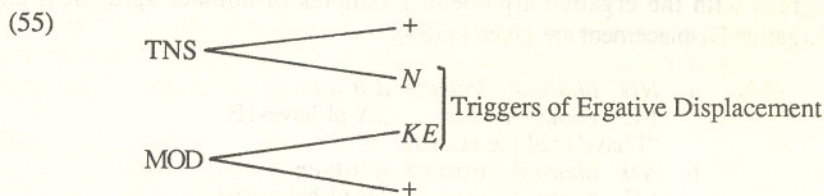
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[26] Such is the case in Hindi, for instance (cf. Mahajan 1990).

marking the plurality of the absolutive argument. It must be noted, also, that the presence of the plural marker is obligatory in both cases. These facts suggest two things: first, that number agreement and person agreement are distinct, as argued in section 3.1; second, that what is involved in Ergative Displacement is not some syntactic operation that affects the ability of syntactic arguments to agree with Inflection, since the absolutive argument is still 'visible' to Inflection for number agreement.

Under the view that inflectional morphology is the result of X^0 movement, a phenomenon like Ergative Displacement is particularly challenging: it is a morpheme order altering phenomena, but it does not have any syntactic effect. It looks indeed like a language-particular and structure-specific morphological transformation. The phenomenon does not seem to correlate in any relevant respect with other cases of inflectional morphology altering processes, like antipassive or split ergativity, which do have syntactic consequences. Moreover, the conditions that trigger Ergative Displacement do not appear to fall under a single general factor.

7.3 A Case of Subatomic Move -α.

As shown in the paradigm in (44), the F-heads Tense and Modal have one overt and one non-overt value each. That is, the node can be headed by an element with phonological content, or an element with no phonological content at all. Both phonologically overt functional morphemes trigger Ergative Displacement, and none of the phonologically empty ones does, as illustrated in (55):

(55)

$$
\begin{array}{c}
\text{TNS} \begin{cases} + \\ N \end{cases} \\[2ex]
\text{MOD} \begin{cases} KE \\ + \end{cases}
\end{array} \Bigg]\ \text{Triggers of Ergative Displacement}
$$

On the other hand, we have concluded in the previous section that there are no third person clitics; rather, their positions are empty. We can now look back at the traditional description of Ergative Displacement, and remake it, in terms of overt F-heads and empty A-heads:

(56)   *Ergative Displacement.*
   If an inflected form has:
                1. An empty initial A-head
                2. An ergative clitic
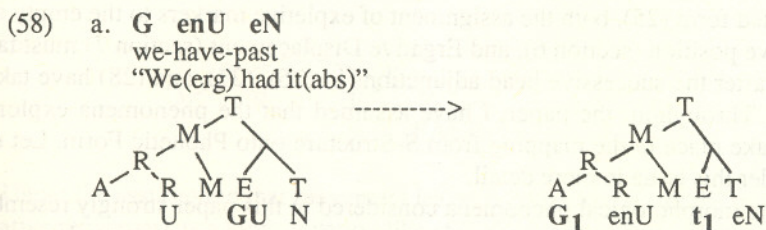   3. An overt F-head
            The ergative clitic surfaces in the initial A-head position.

This characterization of the conditions that trigger Ergative Displacement is more general than the one in (49), because it involves empty positions, and overt A-heads and F-heads.
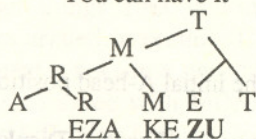
Let us now look at the result of Ergative Displacement; I want to propose that Ergative Displacement is an instance of subatomic clitic movement, that is, clitic movement inside a complex X^o. The proposal is this: when the conditions in (56) are met, the ergative clitic undergoes 'move-α' in the mapping from S-Structure to Phonetic Form, placing itself in the empty absolutive node, as illustrated in the derivation in (57):

(57)   S-Structure   ---------->   Phonetic Form
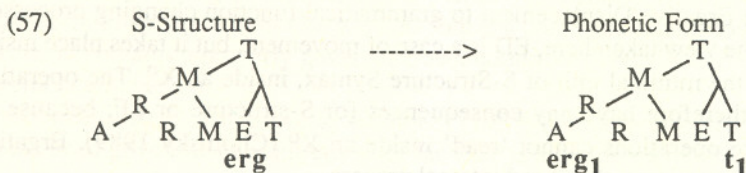
The examples in (58) show some actual inflected forms, where the movement has taken place:

(58)   a. **G enU eN**
                we-have-past
                "We(erg) had it(abs)"

b. **Z   enEZAKE**
you-have-pot
"You can have it"

```
            T                                          T
       M  /  \                                    M  /  \
    R /  \    \                ---------->      R /  \    \
  A / \R  M E  T                             A / \R  M E  T
  EZA   KE ZU                                Z₁ enEZA KE t₁
```
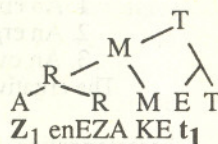
Under this view, Ergative Displacement involves movement of clitics to an empty position within the complex head, that is within a Syntactic atom (X^o), and this movement is licensed by an overt F-element. The movement takes an element from an A-head and moves it to another A-head. In this respect, the movement can be thought of as meeting the Structure Preservation Hypothesis (Emonds 1976).

This movement approach to Ergative Displacement departs from the general view taken by previous analyses in the literature, which have attempted to relate Ergative Displacement to grammatical function changing processes. Under the view taken here, ED is a case of movement, but it takes place inside what is the minimal unit of S-Structure Syntax, inside an X^o. The operation cannot therefore have any consequences for S-structure or LF, because S-Structure operations cannot 'read' inside an X^o (Chomsky 1989). Ergative Displacement is purely a head internal process.

8. *The mapping from S-structure onto phonetic form*

Following the assumptions made in the paper about the generation of the inflected form (25), both the assignment of expletive markers to the empty absolutive position (section 6), and Ergative Displacement (section 7) must take place after the successive head adjunctions in (26), (27), and (28) have taken place. Throughout the paper, I have assumed that the phenomena explored here take place in the mapping from S-Structure onto Phonetic Form. Let me consider this issue in more detail.

The morphological phenomena considered in this paper strongly resemble standard syntactic operations: they are structure-dependent, they involve *move-α*, and certain licensing conditions must be met. Some other crucial factors involved, however, have no direct correlate in the Syntax (i.e. in S-Structure Syntax).

Consider Ergative Displacement. The structure preserving character of this movement makes it look similar to syntactic movement; more specifically, it resembles NP movement. However, the licensing conditions pay attention to

phonological content in a way that does not seem to have a parallel in Syntax: the movement only takes place if there is a *phonologically* overt F-head in the structure (cf. [56]).
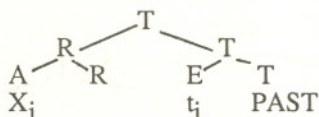
This sensitivity to phonological factors can be explained under the view that these head-internal processes take place in the mapping of S-structure to PF. Movement operations in the mapping from S-structure to Logical Form are conditioned by semantic factors like scope (May 1985); in the same manner, we should expect that mapping from S-structure to PF be conditioned by phonological factors.

8.1 *Head government at PF: WAHL (1987).*

Ergative movement is a downward movement (cf. (57) and (58)), a type of movement that is usually ruled out by the ECP. However, there is no principle of the Grammar independently forbidding *move-α* to apply downwards. It is the requirement that the trace of the movement be properly governed that determines whether a given movement is licit or not. Usually, this means that downward movement will not be possible, but if a configuration of downward movement contains a properly governed trace, nothing will be violated, and the movement will be licit.

Aoun, Hornstein, Lightfoot & Weinberg (1987) (henceforth WAHL) argue that the head government requirement of the ECP is a requirement on Phonetic Form representations, whereas antecedent government is an LF requirement. Ergative Displacement provides strong evidence that antecedent government is not required at PF, whereas head government is.[27] Consider a case of Ergative movement like (59):

(59)

$$
\begin{array}{c}
\text{R} \overset{\displaystyle \overbrace{\hspace{2.5cm}}^{\displaystyle T}}{} \\
\text{A} \overset{\displaystyle \overset{\displaystyle R}{\diagdown}}{\diagup} \text{R} \qquad \text{E} \overset{\displaystyle \overset{\displaystyle T}{\diagdown}}{\diagup} \text{T} \\
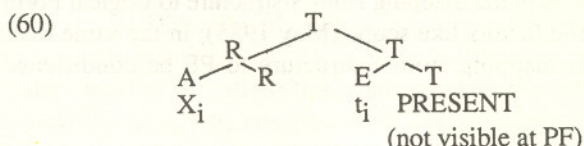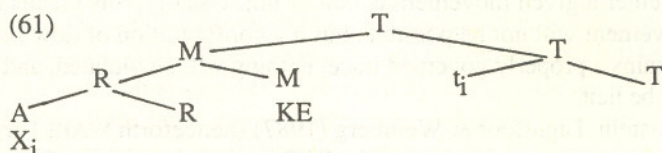\text{X}_i \qquad\qquad\qquad t_i \quad \text{PAST}
\end{array}
$$

Under the assumption that movement leaves a coindexed trace, the result of Ergative movement is a representation like (59). X_i does not antecedent govern its trace, but the structure is grammatical. If the ECP is a principle governing movement traces, the trace in (59) must satisfy it somehow. The PAST head governs it, and under WAHL's proposal this is all that is required at the level we are in, Phonetic Form.

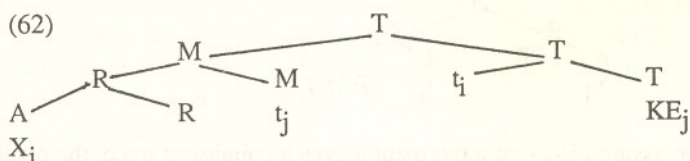[27]Thanks to Noam Chomsky for bringing this argument to my attention.

Recall that the phonologically empty present Tense and Imperative (Modal), do not license Ergative movement. We can now account for this fact: these heads are not visible at PF, because they have no phonological representation. If Ergative movement took place, the trace would not be head-governed, and it would thus violate the ECP:

(60)

$$
\begin{array}{c}
\text{T} \\
\text{R} \qquad \text{T} \\
\text{A} \quad \text{R} \qquad \text{E} \quad \text{T} \\
X_i \qquad\qquad t_i \quad \text{PRESENT} \\
\text{(not visible at PF)}
\end{array}
$$

The overt value of the Modal head (the morpheme *KE*) can license Ergative movement without the presence of past Tense, as shown in section 7. However, the Modal head does not govern the trace of the moved clitic, as shown in (61):

(61)

$$
\begin{array}{c}
\text{M} \qquad\qquad\qquad \text{T} \\
\text{R} \qquad \text{M} \qquad\qquad \text{T} \\
\text{A} \qquad \text{R} \quad \text{KE} \qquad t_i \qquad \text{T} \\
X_i
\end{array}
$$

But this representation can be salvaged if move-α takes place again. Suppose the Modal head moved to Tense, which is available.[28] From this position, it can head govern the trace of the moved Ergative and its own trace, thus satisfying the ECP:

(62)

$$
\begin{array}{c}
\text{M} \qquad\qquad\qquad \text{T} \\
\text{R} \qquad \text{M} \qquad\qquad \text{T} \\
\text{A} \qquad \text{R} \quad t_j \qquad t_i \qquad \text{T} \\
X_i \qquad\qquad\qquad\qquad\qquad \text{KE}_j
\end{array}
$$

I will assume that this is the derivation of instances of Ergative Movement in the presence of a modal head. Now we can simplify further the rule of Ergative Movement, and state in the following way:

---

[28] Recall that the modal KE can only license Ergative movement when there is no Tense morpheme, i.e. when the Tense head is available for movement.

(63) If the absolute position is empty, move the ergative clitic there.

The condition requiring a phonologically realized Functional Head now follows from the ECP, a principle otherwise required throughout the Grammar.

8.2 *Economy of Derivation and Representation (Chomsky 1989)*

If we adopt the view in Chomsky (1989), that the fundamental principle in the design of human Grammars favors those representations and derivations that are most economic, we can radically simplify our account of all the phenomena at play in Basque Inflection, as well as gaining a broader understanding of them. According to Chomsky, grammatical operations have a certain relative cost: no operation at all is less costly than *move-α*, one application of *move-α* is less costly than more than one, and lexical insertion is more costly than any number of *move-α* applications. Grammars always favor the 'cheapest' representation and/or derivation.

In the spirit of this principle, all we have to do to explain both the 'expletive' marking of the absolute position in section 6, and Ergative Displacement (sections 7 and 8.1), is assume that something to the effect of (64) is at play at Phonetic Form (at least in Basque Grammar):

(64)   Avoid: Abs
                  [Ø]

(64) states that Abs heads that are assigned empty phonological matrices must be avoided. Whenever there is a non-third person argument bearing absolutive case in the sentence, the Abs position will be filled by an agreement clitic, thus satisfying (64). When the sentence contains a third person absolutive, or not absolutive at all, the Abs position will be empty, unless some grammatical operation can take place. The cheapest grammatical operation is *move-α*. *Move-α* does indeed apply when Abs is empty; it applies whenever there is some element that can be moved (an ergative clitic), and whenever the trace of that element can satisfy the ECP by being head-governed by a phonologically contentful head. When *move-α* cannot apply, because there is either no ergative clitic available, or no available head-governor, the grammar resorts to lexical insertion (*insert-α*), and the 'expletive' markers fill the empty Abs

position. Only when all these mechanisms fail do forms with empty Abs occur (cf. (48b)).[29]

At this stage, it is unclear to me what the nature of (64) is, except that it only refers to Phonetic Form representations, since S-Structure and LF representations do contain empty Abs positions. Ideally, one would want to derive (64) from a more general principle, maybe connected to the Head Parameter Condition on Adjunction in (31).[30]

8.2 *Assignment of phonological matrixes at PF*

The evidence brought up in the paper supports the hypothesis that phonological matrices are assigned in Phonetic Form, and that they are not present at D-Structure and S-Structure. Only categorial and semantic information is present at those levels of representation.

Ergative Movement provides this evidence. The ergative clitic paradigm is as in (65), where the morphemes in the paradigm are underlying forms, and some surface forms are displayed at the right of the paradigm:

(65)   Singular:
           1   *D*   d-u-*T*   /zint-u-*D*a-n
                                               3A-R-1E   /2A-R-1E-T

           2msc.   *G*   d-u-*K*   /nind-u-a-n
                                                                  (deletion)
                                               3A-R-2E   /1A-R-2E-T

           2fem.   *N*   d-u-*N*   /nind-u-*N*a-n
                                               3A-R-2E   /1A-R-2E-tns

---

[29] Incidentally, it is precisely because of forms like (47b) that we cannot substitute the statement in (60) by the stronger (i):

(i)   * Abs
           [ ]

Which would rule out all instances of Abs heads that do not receive a phonological matrix.

[30] As a possible alternative, it might be interesting to note some similarities between this initial Abs position and the subject position of the sentence: [Spec, IP] can contain a thematic element in it, and it can also contain an expletive element. Similarly, the absolutive head of the inflectional structure can contain an absolutive clitic, or an 'expletive' assigned by an F-head. Secondly, [Spec, IP] is a landing site for the moved ergative clitic, an A-head. Perhaps the roots of (64) lie on some kind of 'subatomic' Extended Projection Principle.

Plural:

1	*GU*	d-u-*GU*	3A-R-1plE
2	*ZU*	*d-u*-ZU	3A-R-2plE

Once Ergative Displacement has taken place, the clitic signaling the moved ergative 'looks like' an absolutive clitic (Cf. the paradigm in (37)), not like the forms in (65). This is illustrated by the examples in (50), repeated here:

(50) a. present
        D-U-T
        1A-root-1E
        D-U-ZU
        1A-root-2E
        D-I-DA-ZU
        3A-root-1D-2E
        D-I-O-GU
        3A-root-3D-1plE

    b. past
        N-U-eN
        1E-root-tns
        Z-enU-eN
        2E-root-tns
        Z-enI-DA-N
        2E-root-1D-tns
        G-enI-O-N
        1plE-root-tns

If Ergative Displacement takes place in the mapping from S-Structure to PF, and if phonological matrices are assigned in the PF component, it follows that Ergative Movement takes place *before* the phonological matrix has been assigned to the ergative clitic. What kind of information does the moved X^o have in its matrix, prior to the assignment of the phonological specifications?

One main conclusion that follows from the different points made in this paper is that each clitic (ergative, dative and absolutive) has a canonical position in the structure of the inflected form (cf. (25)). Therefore, what morphological case a clitic agrees with derives from its position in the structure. Making this information explicit in the categorial-semantic matrix of the clitic would then be redundant. That is, a matrix like "[X^o, 1st person singular, Ergative]" provides us with information that is determined elsewhere as well. A first person ergative clitic 'is ergative' because of its being generated in the ergative position (that is, in the projection of Tense). Since the feature [Ergative] need not be specified in the matrix, I will assume it is not, following the general idea of *Economy of Representation* (Chomsky 1989). The only information we are left with is syntactic category and grammatical person, the latter being the only feature not derivable from the structure.

Hence, each clitic has just the categorial information and the grammatical person specified in it. At Phonetic Form, the phonological matrices are as-

signed. Absolutive clitics do differ from dative and ergative clitics in their phonological shape, as shown in the paradigms in (66):

(66)		ABSOLUTIVE	DATIVE/ERGATIVE
	1st.	N	D
	2nd.	H	K/N
	1st.pl.	G	GU
	2nd.pl.	Z	ZU
	2nd.pl.	Z	ZUE

The simplest assumption to make with respect to the assignment of phonological matrices is that it will depend on: a) the position the morpheme occupies in the structure, and b) the person feature it bears. This assignment is illustrated in (67):

(67) Assignment of phonological specifications at PF:


```
                              T
                    R _____/ _____
              A __/   R     E      T
            [1sg]
            +nasal
            +cor
```
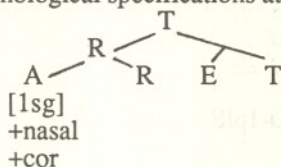
PF assigns the corresponding phonological matrix to the [1sg.] morpheme it finds in the absolutive position; this matrix happens to be [+nasal, +coronal]: N.[31] Note that as far as this assignment is concerned, the derivational history of the clitic is irrelevant. Thus it follows that a clitic moved form the Ergative position would receive the same phonological matrix as a clitic originated in the Absolutive position. As far as Phonology is concerned, it is only the relative position at Phonetic Form that matters.

However, as far as all other grammatical components are concerned (D-Structure, S-Structure and Logical Form), a moved ergative clitic is ergative: it agrees in person and number with the ergative argument in the sentence; whereas a 'genuinely' absolutive clitic agrees with the absolutive argument of the sentence.

Parallels of this process are found elsewhere in the Grammar. Take unaccusative verbs: for what matters to D-structure processes, they are objects [V, NP], but for what matters to S-structure, they are subjects [NP, I']. Similarly,

---

[31] This phonological matrix is of course meant as an example; what the abstract phonological representation is that gets actually assigned depends on other issues of Phonological Theory well beyond the realm of this paper.

with respect to S-structure, the moved morpheme is ergative; with respect to PF, it is an absolutive and receives the corresponding phonological features. Under the approach pursued here, then, the fact that Ergative Displacement does not have consequences for S-Structure and Logical Form follows directly, as it does the fact that the moved clitic does not carry its phonological matrix with it. This view has as a natural result what was a paradoxical situation in previous analyses: namely, the fact that the ergative marker occurs in absolutive position and with absolutive form, whereas it is still an ergative agreement in the S-Structure Syntax.

8.3 On 'Agglutinative' Morphology

As noted earlier (section 5.1), a condition like (31) appears not to be met in some languages. Consider for instance Spanish verb morphology:

(68) a. *COM-O*
          eat-1sg/present/indic
          "I eat"
      b. *CANT-ASTEIS*
          sing-2pl/past/perf
          "You sang"

Both V and Infl are head initial in Spanish, and V raises to Infl. Therefore, the ordering in (68) violates the Head Parameter Condition on Adjunction (31), since we would expect to find the inflectional morphemes preceding, and not following the Verb.

There is another property of Spanish (and Romance) Inflection that I believe is at the core of this apparent counterexample. Romance Inflectional Morphology cannot be characterized as a one-to-one mapping from a set of morphemes M and a set of grammatical categories C. Rather, a given morpheme typically corresponds to a combination of grammatical categories. Thus, for instance, if we consider the examples in (68), the ending *-o* in (68a) encodes not only [first person singular], but also [present tense] and [indicative]. Similarly, the ending *-asteis* in (68b) encodes not only [second person plural] but also [past tense] and [perfective]. This is a pervasive property of Romance verbal morphology. Phonetic Form representations do not preserve a discrete division between Tense, Agreement, Modality, Aspect and Mood. However, S-Structure representations do distinguish (at least some of) these elements as separate categories.

The only way to reconcile Phonetic outputs like (68) with our most recent assumptions about S-Structure representations and the nature of Inflectional

Morphology (Marantz 1984, Baker 1987, Pollock 1989, Chomsky 1989, Laka 1990, among others) is to accept one of these two solutions:

a) After the assignment of a phonological matrix to each of the elements contained in Inflection, several phonological processes take place such that the boundaries of the morphemes disappear,

b) It is not the case that each inflectional element receives a distinct phonological matrix; rather, the entire string of elements is assigned one single phonological matrix.

Whichever solution we choose,[32] the result is an output where the effects of the condition in (31) cannot be detected, even though it is satisfied at S-Structure. Essentially, then, it is only in 'agglutinative' grammar like Basque, where each of the elements of the set of inflectional morphemes corresponds only to one syntactic category that the effects of (31) can be detected in the phonetic output. That is, only languages where there is a one-to-one assignment of phonological matrices to inflectional categories reflect the existence of The Head Parameter Condition on Adjunction (31).

9. Conclusions

This paper has given an account of inflected forms and agreement clitics in Basque, by assuming they have a certain hierarchical structure derived in the Syntax. It has been shown that certain puzzling facts about the inflected form can be explained straightforwardly through the structure proposed, and appealing to general principles of the Grammar, like the ECP and the Principle of Economy of Derivation and Representation. This is the case of the deviant third person absolutive agreement system, which, under the traditional description displays four different markers sensitive to tense and mood in an apparently ungeneralizable manner. By assuming that third person clitics in fact do not exist, and under the structure proposed, it has been shown that the markers surfacing in the absolutive position can be accounted for without stipulations. The account makes crucial use of the notion head in a configurational sense, thus providing evidence against the relativized notion of head proposed by Di Sciullo & Williams (1987).

---

[32] Note that in order to maintain solution (a), one would have to argue that the phonological processes at play apply to other kinds of strings as well, thus showing independent evidence for the hypothesized phonological changes. I believe that the most likely solution is indeed (b), which indicates that speakers of these languages associate phonetic matrices with combinations of category-values, whereas speakers of agglutinative languages associate phonetic matrices with category values.

The conditions on the shape of inflected forms have also been considered. Specifically, it has been argued that notions like prefix, infix and suffix can be derived from the properties of head adjunction. Essentially, the proposal is that head adjunction must respect the head parameter, so that a head adjoining to a final head must do so by adjoining to the left of the head, and a head adjoining to an initial head must do so by adjoining to its right.

The paper also explores a morpheme order altering process, Ergative Displacement (section 7). After a description and a brief discussion of previous analyses in the literature (7.2), an analysis in terms of morpheme movement is proposed in section 7.3. The properties of this movement and the other processes studied in the paper are considered, with respect to the level of representation in which they take place (section 8). Based on syntactic-like properties and the phonological sensitivity exhibited by the phenomena, it is argued that they take place in the mapping of S-structure to PF, prior to the assignment of phonological matrices, which takes place in the PF component. This explains without stipulations why the moved ergative morpheme behaves syntactically as an ergative marker, whereas the phonological form it surfaces in is identical to the absolutive clitic. The phenomenon also provides evidence that whereas head government holds at Phonetic Form, antecedent government does not (WAHL 1987).

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