THE *AFFIX-LIKE* STATUS OF CERTAIN VERBAL ELEMENTS

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This papers explains the syntactic behaviour of the verbal sequences of two verbs (V1+V2) —and specifically the sequences *haver* + participle, *va* + infinitive, and modal epistemic verbs + infinitive— in Catalan as the result of the syntactic and morphological characteristics of V1. These characteristics are given by the following specifications of affixal features: [+ syntactic/ - morphological]. With these we predict the behaviour attested if we follow Baker (1988)'s theory of *incorporation* with the modifications in Roberts (1991) and his *excorporation* proposal. The consequence of the given specifications for the features is that the two verbal elements in the sequences are always adjacent in Catalan as long as we assume that V1 selects V2 and that this selection implies morphological subcategorization. The result of this type of subcategorization is the creation of a slot in the structure which requires substitution in the course of the derivation. Three crucial predictions follow from considering V1 an affix: (a) that V2 cannot move once it has incorporated unless there is another X^0 which may replace it (another V); (b) that the selecting element cannot move either (by the *Stray Affix Principle*), and (c) that incorporation is compulsory.

1. Introduction

The unit-like behaviour or meaning of certain two word verbal sequences has been referred to in many studies. More than one author has referred to the fact that certain sequences of two verbs act like a unit (therefore display a syntactic behaviour which parallels that of a unit) or to the fact that the outcome of the combination of both of their meanings is semantically compact. The first remark applies basically to a "grammatical" verbal element and its main verb

companion —as in perfect tenses. The second statement is usually extended to sequences containing a verb which does not only contribute "grammatically" but which adds a different type of meaning to the lexical verb —causativization is a paradigmatic example. In this article I will not refer to the semantic considerations —therefore I will not provide an analysis for causative sequences or the like—; the semantic unity of the verbal sequences that I will provide an analysis for will follow from their syntactic and morphological characteristics. The analysis provided and the hypothesis hold for Catalan aspectual and epistemic auxiliaries, but it may be the case that other elements show identical characteristics in other languages, given the combinatorial possibilities of features of affixes in (19).

Baker's (1988) incorporation theory seems to be extendable to verbal sequences that have traditionally been regarded as complex tenses, i.e. as sequences of auxiliaries and main verbs. In this paper I will not provide an extensive analysis, as this has been provided elsewhere (cf. Llinàs i Grau (1990)), but instead, I will concentrate on the nature of the first verbal element in a Catalan sequence like (1), and extend the analysis to the sequences in (2) and (3):

(1)   a.   L'Aina ha descobert un estel

          the Aina has discovered a star

          'Aina has discovered a star'

      b.   L'Aina havia descobert un estel

          the Aina had discovered a star

          'Aina had discovered a star'

(2)   L' Aina va descobrir un estel

          the Aina PAST dicover a star

          'Aina discovered a star'

(3)   a.   L'Aina deu mirar molt el cel

          the Aina must look much the sky

          'Aina must look at the sky a lot'

(3)   b.   L'Aina devia mirar molt el cel

            the Aina must-PAST look much the sky

            'Aina must have looked at the sky a lot'

       A.   *Aina has to/ had to look at the sky a lot

       B.   Aina probably looks/looked at the sky a lot

2.   The Sequences and Their Behaviour

The sequences in (1a) and (1b) are examples of the perfect tenses in Catalan; (2) is a periphrastic past sequence, which in Catalan only expresses past, unlike in other Romance languages where it expresses future (*Je vais regarder le ciel* 'I am going to look at the sky'); (3a) and (3b) are epistemic modal sequences and, as is indicated by the paraphrases in A and B, only B is allowed in Catalan, a non-epistemic reading for the verb *deure* is not found.

As the examples in (4), (5) and (6) illustrate, the sequence cannot be interrupted by adverbs. The adverb (*sempre* 'always') I use to illustrate this phenomenon is purposely non-parenthetical; it is commonly regarded as a VP-initial adverb, and I will adopt this view (cf. section 3).

(4)   a.   *L' Aina ha sempre mirat el cel

            'Aina has always looked at the sky'

       b.   *L'Aina havia sempre mirat el cel

            'Aina had always looked at the sky'

(5)   *L'Aina va sempre mirar el cel

            'Aina always looked at the sky'

(6)   a.   *L'Aina deu sempre mirar el cel

            'Aina must always look at the sky'

       b.   *L'Aina devia sempre mirar el cel

            'Aina must have always looked at the sky'   ·

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As the b. examples indicate, the ungrammaticality of the interrupted sequence cannot be made to follow from the mono-syllabic nature of the first verbal element, as is proposed in Suñer (1987) for Spanish.

These sequences show unit-like cohesion in syntactic processes such as verb movement. This general term may include V2 preposing (the a. sequences of (7-9)), and V1 movement to Comp position in questions (the b. sequences of (7-9)):

(7)   a.   *Crèiem que miraria el cel però mirat no l'ha

            thought-3PL that would-look the sky but looked not it-has

       b.   *Ha l'Aina mirat el cel?

            'Has Aina looked at the sky?'

(8)   a.   *Crèiem que miraria el cel però mirar no el va

            thought-1PL that would-look the sky but look not it PAST

       b.   *Va l'Aina mirar el cel?

            PAST the-Aina look the sky

(9)   a.   *L'Aina deu mirar el cel però mirar el mar no deu

            the-Aina must look the sky but look the sea not must

       b.   *Deu l'Aina mirar el cel?

            must the-Aina look the sky

It must be noted that in favour of a basic distinction between epistemic and root modals, relevant judgements are found in sentences like (10). The two modal readings are given in brackets: where both an E(pistemic) and a R(oot) reading are allowed for the non-interrupted sequence, only a R reading is allowed in Adverb interruption and V-movement constructions. This reveals a different status for non-epistemic and epistemic modal verbs in Catalan.

(10)   a.   El Josep pot cantar *La donna è mobile* (E/R)

            the Josep can sing *La donna è mobile*

(10) b. ?Pot el Josep cantar *La donna è mobile* ? (R)

can the Josep sing *La donna è mobile*

c. Cantar *La donna è mobile* sí que pot el Josep però tocar-la al piano

no (R)

to-sing *La donna è mobile* yes that can-3SG the Josep but play-it to-the

piano not

As the examples show, the sequence cannot be broken up. Since the three types of sequences behave identically, whichever mechanism is used to explain the *haver*-sequence will be extendable to the *va*-sequence, and the epistemic modal sequence. Consider, furthermore, that it is not the case that *all* verbal sequences in Catalan are non-separable, as the examples in (11-12) show. Therefore, the required adjacency that is seen in (4-9) is not a general characteristic of all verbal sequences and hence must be analysed as specific to the three sequences mentioned.

(11) a. La Montse volia sempre arribar a l'hora

the Montse wanted always arrive to the-time

'Montse always wanted to arrive on time'

b. ... però arribar a l'hora no podia mai

but arrive to the-time not could never

'... but arrive on time she never could'

c. Voldrà la Montse venir amb nosaltres?

want-FUT the Montse come with us

'Will Montse want to come with us?'

(12) ?El Josep feia sempre contestar el telèfon als seus fills

the Josep made always answer the phone to his children

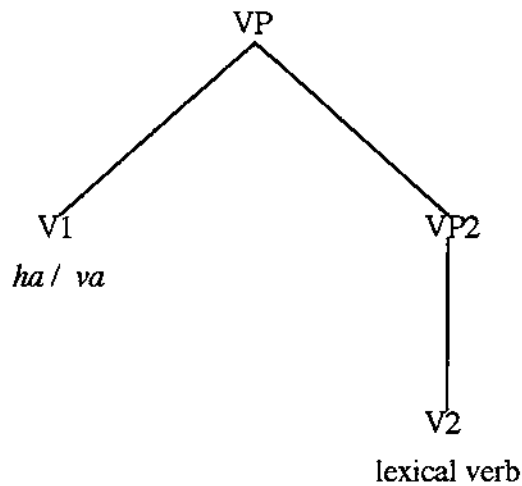'Josep always made his children answer the phone'

I will refer to the sequences that behave like compact units in Catalan as complex verbs and to the others as complex predicates. I will not propose a specific analysis for root modal, aspectual and causative complex predicates, but I will note that the obligatory mechanism for complex verbs is not detected as obligatory in these other sequences. The alternative analyses for complex predicates are well-known and many. Ever since *restructuring* was proposed, the debate on bi- vs. monosentential constructions has been an issue. From the set of usual complex predicates though, I will propose an analysis for epistemic modals in Catalan, claiming that they are not complex predicates but rather complex verbs. This analysis of epistemic verbs is in line with Picallo (1990), who posits that epistemic modal verbs are Infl elements, therefore not contained in a biclausal structure. Her analysis plus the fact that the other verbal elements in the sequences considered are aspectual and tense elements seem to indicate that these may very well be claimed to be functional categories as opposed to lexical categories. Notably, one of the characteristics that Abney (1986) grants to functional categories, lack of *descriptive* content, holds for Catalan *haver* as opposed to English *have* and French *avoir* ('possess'). Nevertheless, I will not assess this claim, I will leave it open to further consideration and refer to the first verbs in the sequences as V1 for convenience.

3. The Structure of the Sequences

As mentioned, I take complex verbs to be generated in monoclausal structures. This assumption does not stand in opposition to the assumption that there is an Agr functional node intervening between the two verbs as proposed in several recent analyses (Chomsky (1989) among others). I will abstract away from it assuming that it is not an obstacle to the process that I will claim applies.

Following Zagona (1988), I assume that auxiliaries have full X-bar structure, and that they are heads which *select* their complement VPs. The structure for the *ha/va* sequences would be as in (13):
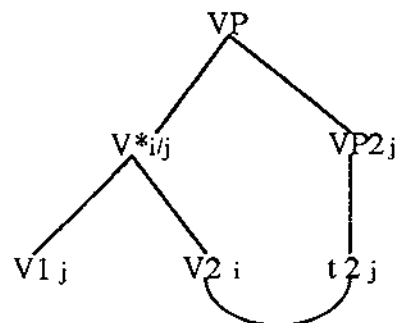
(13)

```
                    VP
                   /  \
                  /    \
                 /      \
               V1       VP2
              ha / va    |
                         |
                         |
                        V2
                    lexical verb
```

The structure in (13) is not essentially controversial; it is assumed quite generally, explicitly or implicitly.

4. The Analysis

4.1. Incorporation

In (13) head movement of V2 to V1 is allowed, and it instantiates the process of head-to-head movement that Baker redefines as *incorporation*. (14) illustrates this:

(14)

```
              VP
             /  \
            /    \
        V*i/j    VP2 j
        /  \      |
       /    \     |
     V1 j   V2 i  t2 j
            _____/
```

The movement in (14) follows the Head Movement Constraint; hence, the ECP is satisfied. Baker's indexing system allows proper antecedent government of the head trace assuming that the double-headed node (once incorporation has applied) bears the indexes of both the heads it

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contains, as the structure shows. VP2 is not a barrier because it is *selected* by V1, and therefore (theta-) indexed with it. The trace of the incorporated item is properly antecedent governed (by V*). (14) differs from other typical incorporation processes in terms of the direction of incorporation: an incorporated item usually adjoins to the left, but in (14) incorporation is to the right. In principle, nevertheless, there seem to be no restrictions on the direction of incorporation.

Baker (1988) assumes that all cases of incorporation are typically *adjunction* of heads; this is what seems to be occurring in (14). Nevertheless, upon closer consideration, and following essentially Roberts (1991), I will have to modify the structure in (14).

In Baker (1988)'s terms, subsequent movement of a part of the incorporated sequence to other head positions is prevented by an independent morphological constraint on traces of parts of words: (15a), which is referred to in other places as the Head Opacity Condition, as in (15b):
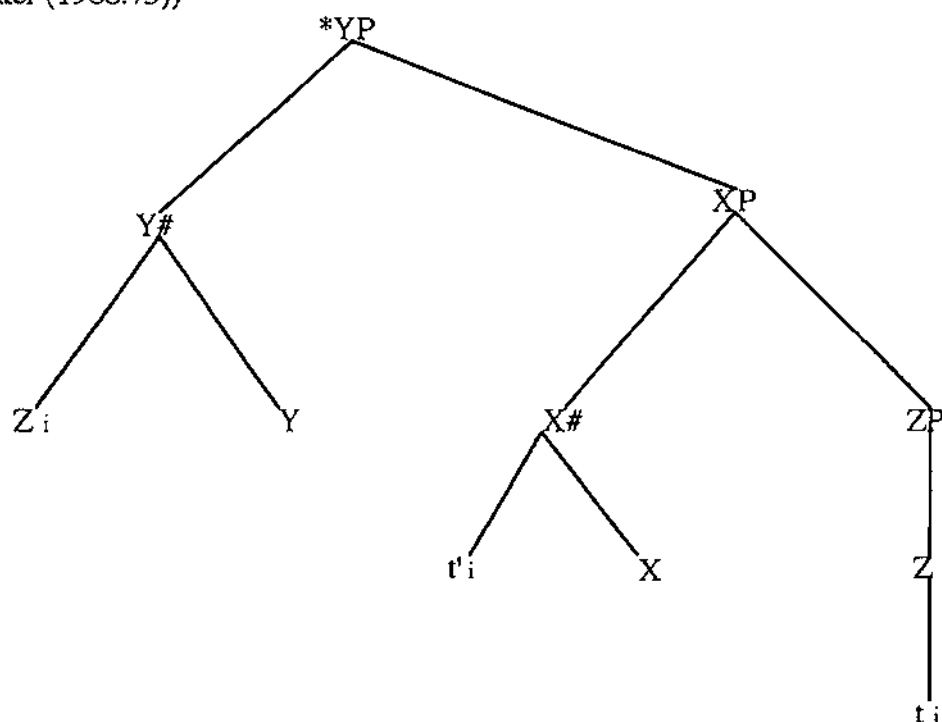
(15) a. $*[X^0 \ldots t_i \ldots]$

b. *Head Opacity Condition*

The internal structure of X^0 categories is opaque to move-α (Ouhalla (1988:15)).

(15) would rule out a structure like (16) where Z undergoes a type of 'successive cyclic movement' from head to head, moving out of an incorporated constituent:

(16) (Baker (1988:73))

*YP

Y#   XP

Z'i   Y   X#   ZP

t'i   X   Z

t i

Baker points out in a footnote that (16) may also be ruled out by a version of minimality, if X is granted a head status. The head status of X, the trigger of incorporation, is hence already seen in Baker (1988) as a potential blocker of *excorporation*, i.e. the movement out of an incorporated item . The relevance of intervening potential governors (and thus of minimality) is something which Roberts (1991) will capitalize on to distinguish between different types of incorporation. If minimality may prevent *excorporation*, then the Head Opacity Condition may be seen to follow from it, therefore redundant for these incorporation structures.

Considering the Catalan data, if we assume the incorporation hypothesis is correct, examples (7-9) show that *excorporation* of V2 is not allowed. This could be accounted for by the Head Opacity Condition (15), but given the new framework of head-movement, it will have to be ruled out in terms of impossibility of excorporation.

Nevertheless, note that the structures in (4-6) may not be ruled out by the Head Opacity Condition if we assume that the adverb is in VP2 initial position (as in Pollock (1989)). What

these structures show is that V2 *must* move to incorporate to V1, it may not remain in its position as the head of VP2.

I will thus claim that incorporation is obligatory in *ha/va* sequences in Catalan. In order to specify what it is that triggers incorporation in these sequences, I will make use of Roberts (1991)'s proposal.
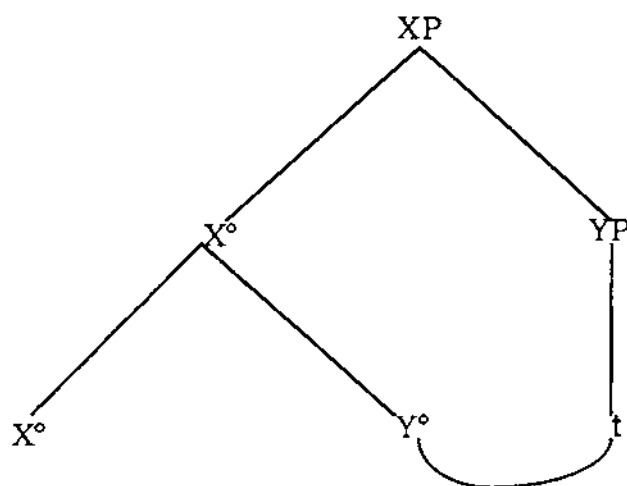
4.2. Excorporation

Roberts (1991) posits two essentially different types of incorporation: adjunction and substitution incorporation.

Adjunction incorporation is instantiated in clitic climbing structures, if clitics climb head-to-head, as proposed in Kayne (1989); substitution incorporation is instantiated in V-to-I movement.

A crucially different characteristic is the allowance of *excorporation* in clitic climbing structures and the disallowance of it in V-to-I movement. To explain this difference, Roberts uses Selkirk (1982)'s integer notation for word structure primitives, and claims that affixes also have morphological subcategorization frames. The two types of incorporation structures are given in (17):

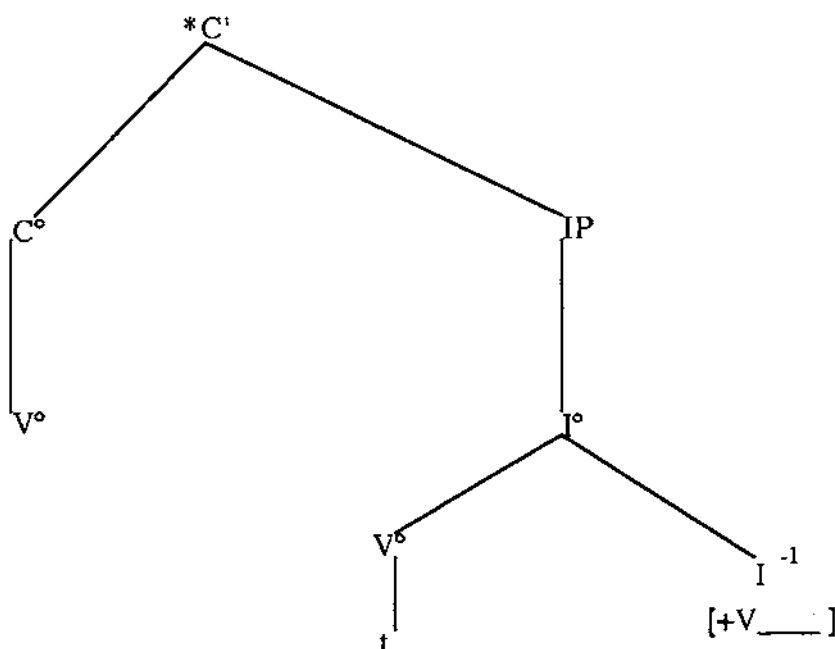(17)   (Roberts (1991), (6))

a.   *Adjunction incorporation*

XP
|
X°
|
X°   Y°   t
YP

b.   *Substitution incorporation*

XP
|
X°
|
X⁻¹   Y°   t
YP

[+ ___ Y°]
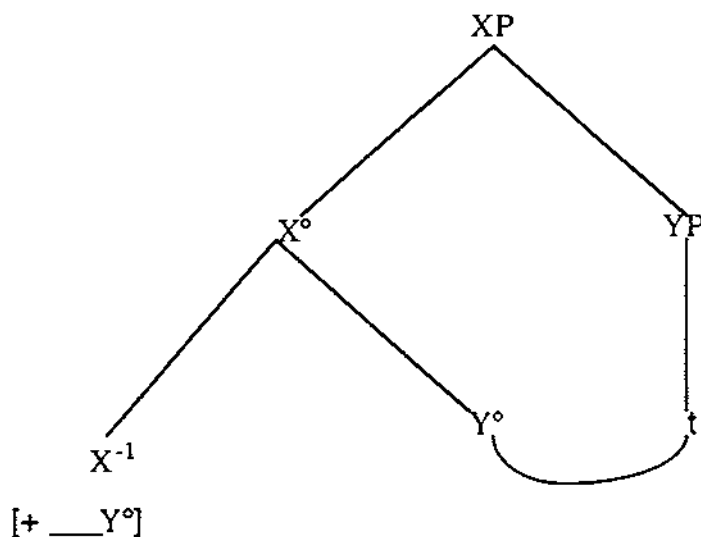
(17a) has the following properties: incorporation is not obligatory, there is no morphological

subcategorization for the *incorporee* , and the process is adjunction of a head. The result is a

non-amalgamated constituent. Furthermore, as mentioned, *excorporation* is allowed (as in clitic

climbing from head to head), because the host head is realized as two segments neither of

which can be considered the head, following assumptions on adjunction in May (1985).

Minimality does not block 'successive cyclic' movement to another head, because there is no

intervening head that counts as a potential governor.

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(17b) has other properties: namely, that a structural slot is created for the *incorporee* , and this requires substitution in the course of the derivation. The result is an amalgamated unit. The X^{-1} incorporation trigger is crucially assumed to have head status, and therefore to block successive movement of the *incorporee* to other head positions because it (X^{-1}) functions as a potential governor of the trace, thus preventing antecedent government by its antecedent, by minimality. This is assumed to block structures like (18c), for (18b) where the affix is left stranded and the structure is not saved even if do-support applies:

(18) a. Was the monster killed?

b. *Be* the monster *did* killed?

c.

```
                    *C¹
                  /      \
                 /        \
                /          \
              C°           IP
              |            |
              |            |
              V°           I°
                          /  \
                         /    \
                       V°      I⁻¹
                       |       [+V___ ]
                       t
```

A part from the structures in (17), another possibility may be suggested which would give rise to the Catalan *ha/va* sequences. The fact that excorporation is blocked seems to indicate that it is not a case of adjunction incorporation; the fact that it is obligatory adds an argument in this direction. Nevertheless, the lack of amalgamation as is typical of other substitution incorporation processes makes it different.

If we assume that affixes may be ± syntactic and ± morphological then this third possibility is predicted. If we take [+syntactic] to mean that it triggers incorporation (therefore it is syntactically relevant) and [-syntactic] to mean that it does not trigger incorporation (therefore it is not syntactically relevant) and [+morphological] to mean that there is amalgamation of incorporated items, and [-morphological] to mean that there is no amalgamation, the possible combinations are given in (19):

(19)

	syntactic	morphological
1.	+	+
2.	+	—
3.	—	—
4.	—	+

(1.) would correspond to typical inflectional affixes that trigger incorporation as in V-to-I structures and are amalgamated. (2.) would correspond to the Catalan *ha/va* elements in complex verb sequences: they trigger incorporation, but do not amalgamate. (3.) seems to be an impossible option (as far as the syntax is concerned): nonsyntactically relevant affixes (for instance derivational affixes in a language like Catalan) are necessarily amalgamated and therefore must be [+morphological], as in option (4.).

The modified structure for the complex verb sequence would be as in (20):

(20) a. he fet

        have-1SG done

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(20) b.
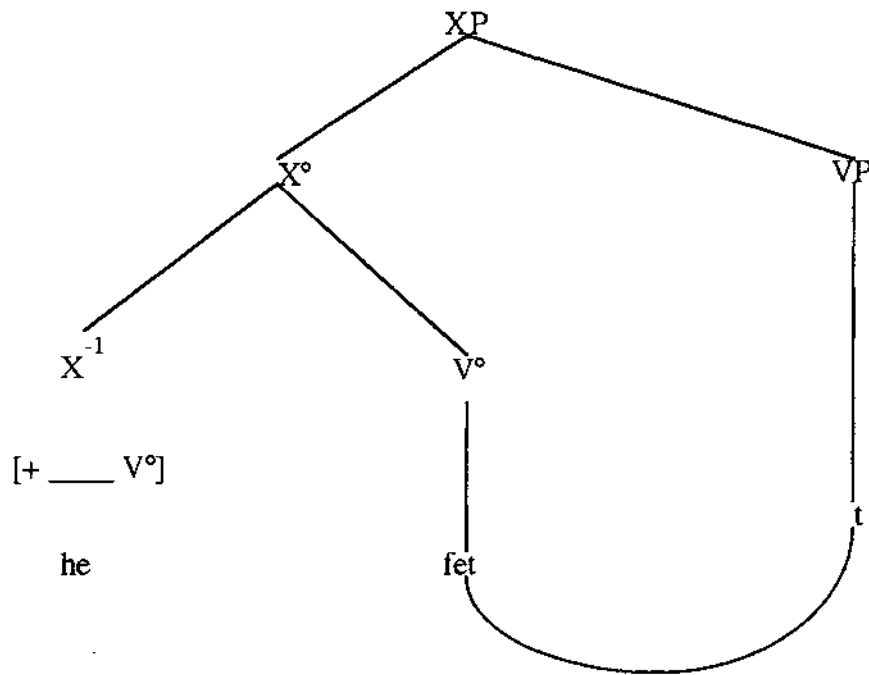
This structure, essentially one of substitution, blocks excorporation as desired if we assume that it applies as in V-to-I movement, where X^{-1} is a head. Note that this would be a further argument to grant the V1 in *ha/va* sequences a functional status, as they behave on a par with other inflectional affixes, but nevertheless and unlike them, do not amalgamate with the stem they attract. The lack of inflectional prefixes in the language seems to be a significant factor. The formation of future tenses in both Spanish and Catalan could be accounted for by an incorporation process of V2 as in (21):

(21) a. faré = fer + he

       will-do-1SG = do + have-1SG

(21) b.
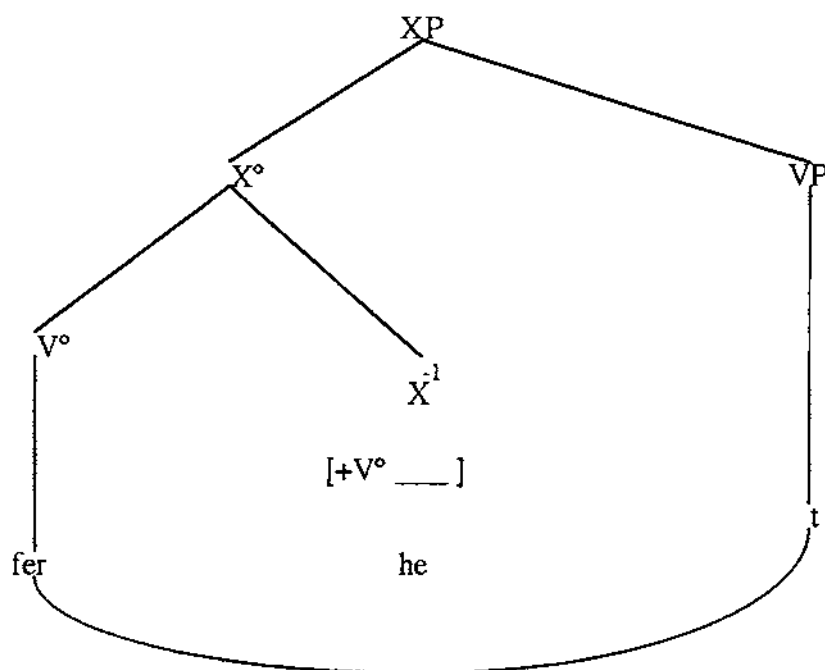
This structure is crucially different from (20) in terms of the direction of incorporation. The existence of inflectional suffixes may have independently allowed amalgamation.

4.3. How Is V1 Movement Ruled Out?

The analysis proposed in Roberts (1991) accounts for the non-excorporation of incorporating items — *incorporees* —, but it says nothing about the non-excorporation of the incorporation triggers. If we interpret excorporation as the movement out of *any* of the members in an incorporation constituent, then something must be said in order to account for the ungrammatical examples in (7b-9b).

As explained, minimality blocks V2 excorporation because the incorporation trigger remains a head in terms of the ECP, but since V2 is not the head of the incorporated constituent, then we cannot have recourse to minimality in order to explain the impossibility of V1 movement. I believe that an explanation can be given which parallels any process that would strand an affix. A condition on affixes like the *Stray Affix Principle* assumed to be relevant in structures of do-support in English for instance may come into play.

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If incorporation does not apply, the structure is ungrammatical because the morphological subcategorization demanding substitution is not satisfied; but if incorporation does apply and V1 moves out, there is no dummy element equivalent to *do* which could save the structure. In (18b) *do* cannot save the structure by attaching to the stranded affix; an ECP violation still arises. But if I moves up to C alone, then do-support applies, and there is no Stray Affix Principle violation, nor ECP violation — V-movement to I has not applied (as is general for lexical verbs in English — cf. Pollock (1989)—) and therefore there is no trace requiring proper government. If V1 moves to C alone (as in (7b-9b)), there is no do-support available and a Stray Affix Principle violation arises. It seems relevant that Catalan has structures like the ones in (22b-24b) which are, if not parallel at least comparable to do-support constructions in English. The verb *fer* in Catalan is similar to a dummy verb; if the V2 is separated from the V1 by mechanisms like dislocation, then *fer* counts as a dummy V^0 satisfying the morphological requirements of V1. The use of *fer* in the b. sentences below implies a stronger emphasis on the lexical verb.

(22)   a.   *S'ha divorciat* el Joan?

       PRON-has divorced the Joan

       'Has John divorced?'

       b.   Ho *ha fet* el Joan de *divorciar* -se?

       it has done the John of to-divorce-PRON

(23)   a.   *Va divorciar* -se el Joan?

       PAST to-divorce-PRON the John

       'Did John divorce?'

       b.   Ho *va fer* el Joan de *divorciar* -se?

       it PAST-do the John of to-divorce-PRON

(24)   a.   *Deu anar* a missa la Pepa?

       must go to church the Pepa

       'Does Pepa go to church?'

(24) b. Ho *deu fer* la Pepa d'*anar* a missa?

it must do the Pepa of to-go to church

This mechanism of *fer* -support is not general for all sequences of verbs, proper 'main' verbs need no *fer* -support when dislocation applies, as the following example shows. The occurrence of *fer* is marginally acceptable :

(25) a. En Joan va *prometre divorciar* -se

the Joan PAST promised to-divorce-PRON

b. Ho va *prometre* en Joan de *divorciar* -se?

it PAST promise the Joan of to-divorce-PRON

c. *?Ho va *prometre fer* en Joan de *divorciar* -se?

This contrast indicates that only elements with the morphological characteristics that the V1 has in complex verb structures require *fer* -support. This phenomenon adds another argument to our claim that *haver, va* and epistemic modals in Catalan have an affixal status in complex verb sequences.

By way of summary we may conclude that the particular affix-like behaviour of V1 in complex verb sequences is characterized by the fact that they are [+syntactic] in that they trigger incorporation of the selected main verb, but [-morphological] in that they do not amalgamate with the V^0 they attract. This language specific phenomenon adds further evidence to the incorporation theory proposed in Baker (1988) with the modifications in Roberts (1991).

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