

PROCLITIC CONTEXTS IN EUROPEAN PORTUGUESE AND
THEIR EFFECT ON CLITIC PLACEMENT

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Abstract

The preverbal and postverbal placement of clitic pronouns in European Portuguese (EP) is determined by any one of a specific set of words and phrases in preverbal position. Existing studies by Vigário (1999), Gerlach (2001) and Crysmann (2002) argue that an inflectional analysis of EP cliticisation is untenable on the grounds that proclitic triggers are not readily available to the morphology. This paper builds on an earlier analysis by Luís and Sadler (2003) and argues that the syntactic conditioning of proclisis can and should be accounted for without invalidating the inflectional status of the pronominal clitic system in EP. The proclitic contexts are defined in terms of f-precedence relations. These are mapped onto the morphology and put in correspondence with the morphological placement function. The interaction between inflectional morphology and f-structure information is formalised within the architecture of Lexical-Functional Grammar in combination with the realizational theory of Paradigm Function Morphology, following insights by Sadler and Spencer (2001), Luís and Sadler (2003), Sadler and Nordlinger (2004), Otoguro (2003) and Luís (2004). In connection with EP proclisis, we also discuss the c-structure representation of phrasal affixes. We assume that proclitics constitute phrasal inflections and argue that their partly syntactic and partly morphological properties follow from a mismatch between the morphological token structure and c-structure syntax.

1 Introduction

Given the evidence that shows cliticization in European Portuguese (EP) constitutes an essentially inflectional phenomenon, this paper attempts to reconcile two apparently irreconcilable facts about the EP clitic system: first, the fact that pronominal clitics are generated as verbal affixes and aligned to the left or right of the verb by a morphological alignment function; and second, the fact that this alignment function must have access to a specific set of syntactic contexts to determine whether affixal clitics should appear preverbally or postverbally.¹ At issue then is the question of how inflectional morphology interacts with the contexts triggering proclisis. In section 2, we present a heterogeneous group of proclitic contexts and survey previous inflectional treatments of the EP clitic system. Section 3 summarises the proposal sketched in Luís and Sadler (2003) for proclitic contexts, and section 4 presents our analysis: we offer an outline the basic phrase structure of EP (4.1) and investigate ways in which phrasal affixes may be represented within Lexical-Functional Grammar (LFG) (4.2). We then formulate the idea that proclitics (and their linear order) can be defined in terms of f-precedence relations between triggers and targets (4.3-4.4). Having laid out the necessary LFG machinery, section 4.5 examines in detail each one of the proclitic contexts. A short summary is provided in section 5.

2 Overview

2.1 Proclitic triggers

In most Romance languages (e.g., Spanish, French, Italian), the alternation between the preverbal and postverbal placement of pronominal clitics is conditioned by the finiteness of the verb. In contrast, clitic placement in European Portuguese is sensitive to words and phrases in preverbal position (Martins 1994). In the presence of such elements, pronominal clitics must occur preverbally. Compare the alternation between enclisis in the first clause and proclisis in the second clause found in (1a) and (1b).

- (1) a. O Pedro encontrou **-os**, *porque os* procurou.
the Pedro brought -3PL.ACC.M, because 3PL.ACC.M searched
'Pedro found them, because he searched for them.'

¹We are grateful to Louisa Sadler and Andrew Spencer for the discussions since the early stage of this work. Various parts of the paper have greatly benefited from the comments and clarifications by Ron Kaplan and Tracy Holloway King. We also thank Ash Asudeh, Joan Bresnan, Miriam Butt, Andrew Carstairs-McCarthy and Mary Dalrymple for their comments. Remaining errors are ours. Ryo Otoguro gratefully acknowledges the financial support of the University of Essex Sir Eric Berthoud Travel Grant and Department of Language and Linguistics, University of Essex.

- b. As professoras deram **-lhes** lápis, mas *não* **lhes** deram papel.
 the teachers gave -3PL.DAT pencils; but not 3PL.DAT gave paper
 ‘The teachers gave them pencils, but they didn’t give them paper.’

In (1), proclitic placement is determined by a clause-initial subordinating conjunction, *porque* ‘because’ (1a), and by the preverbal negation marker *não* ‘not’ (1b). In each one of the first clauses, clitics appear postverbally, in their default position. Other contexts triggering proclisis include embedded clauses introduced either by complementisers (2a) or relative pronouns (2b); fronted focus phrases (2c); operator/like adverbs, such as *também* ‘also’, *até* ‘even’ and *já* ‘already’ (2d); wh-phrases in main or embedded clauses (2e), and quantified subjects (2f).

- (2) a. Eu sei *que* ele **o** encontrará.
 I know that he 3.SG.MASC.ACC will-find
 ‘I know that he will still find it.’
- b. *A quem* **os** entregaste?
 to whom 2.PL.MASC.ACC give
 ‘Who did you give them to?’
- c. *Deste livro* **me** lembro bem.
 of-this book 1.SG.REFL remember well
 ‘I remember this book well.’
- d. As crianças *também* **o** viram.
 the children also 1.SG.MASC.ACC saw
 ‘The children saw him, too.’
- e. *Quantos presentes* **te** ofereceram?
 how-many gifts 2.SG.DAT gave
 ‘How many presents did they give you?’
- f. *Todas* as crianças **nos** disseram a verdade.
 all.PL.FEM the children 1.PL.DAT said the truth
 ‘All the children told us the truth.’

2.2 Clitics as affixes

Enclitics, as shown in (1), constitute the default case in EP. As argued in Crysmann (2002) and Luís (2004), verb-final clitics exhibit a significant number of affixal properties. In particular, they a) cannot be separated from the verb, b) may intervene between the verbal stem and tense/agreement suffixes, b) induce stem allomorphy and d) undergo non-productive phonological alternation. In combination with each other, pronominal clitics also display rigid ordering, idiosyncratic co-occurrence restrictions, fusion, syncretism, and cluster-internal allomorphy.

Unlike enclitics, proclitics display distributional and scopal properties that are untypical of verbal affixes: they can have wide scope over two conjoined VPs as in (3) and do not need to be strictly adjacent to the verb as in (4).

- (3) a. Apenas a minha mãe **me** [ajudou e incentivou].
 only the my mother 1.SG.ACC helped and encouraged
 ‘Only my mother helped me and encouraged me.’
- b. Acho *que* **lhes** [tinham lido uma história e tinham dado um livro].
 think.1.SG that 3.PL.DAT had read a story and had given a book
 ‘I think that they had read them a story and given them a book.’
- (4) Eu sei *que* ele **o** ainda não visitou.
 I know that he 3.SG.M.ACC yet not visited
 ‘I know that he still has not visited him.’

Given the syntactic behaviour of proclitics, Vigário (1999), Gerlach (2001) and Crysmann (2002) argue that the proclitic data seriously weakens the inflectional status of EP pronominal clitics. Luís (2002, 2004) however observes that proclitics and enclitics are formally exactly identical and display exactly the same range of cluster-internal allomorphy and rigid ordering.

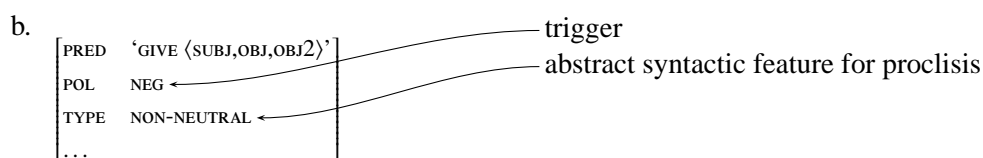
To capture the idea that enclitics and proclitics constitute the same affixal unit, Luís and Spencer (In press) generate enclitics and proclitics as one and the same affixal unit. Within a revised model of Paradigm Function Morphology (Spencer ms), the scopal and distributional differences are accounted for through a morphological placement function, which aligns affixal clitics either to the right edge of a verbal stem, for enclisis, or to the left of a phrasal node, for proclisis. Under this view, enclitics are derived as genuine verbal suffixes, while proclitics constitute *phrasal* affixes (i.e., affixes that do not form a morphological cohering unit with the verb, but instead attach to a phrasal position). This paper assumes an inflectional view of cliticisation and adopts the distinction between morphological suffixation and phrasal prefixation.

3 Previous LFG account of proclitic contexts

The need to reconcile the inflectional status of cliticisation and the syntactic aspects of proclitic placement has been investigated in Luís and Sadler (2003), within the theory of LFG. In particular, they have explored the idea that inflectional morphology may sometimes be just a reflex of a set of marked syntactic contexts.

To account for proclitic contexts, the view is taken that all proclitic constructions are mapped onto an abstract functional feature (\uparrow TYPE) = NON-NEUTRAL, which reflects the fact that proclisis is the marked placement in EP. In (5b), for example, this feature is associated with a negative construction.

- (5) a. O João *não* **me** deu o livro
 the João not 1.SG.DAT gave the book
 ‘João didn’t give me the book.’



The idea of mapping all proclitic contexts onto an abstract functional feature is motivated by the difficulty in finding a common configurational or semantic/discourse denominator for the set of syntactic contexts.

The analysis further suggests that the TYPE feature is placed in correspondence with the proclitic placement rule/function. (6) states that the linearisation rule ‘Proclitic-LR’, which ensures the clitic cluster is placed preverbally, applies only under the existence of (\uparrow TYPE) = NON-NEUTRAL feature in the f-structure of the verb.

- (6) Proclitic-LR iff (\uparrow TYPE) =_c NON-NEUTRAL

One of the problems with this proposal is that it merely assumes precedence relations between the verb and the triggers but does not make the relations explicit. The aim of our analysis is precisely to emphasise the importance of the ‘linear’ order between the triggers and the clitics (cf. Crysmann (2002) within HPSG).

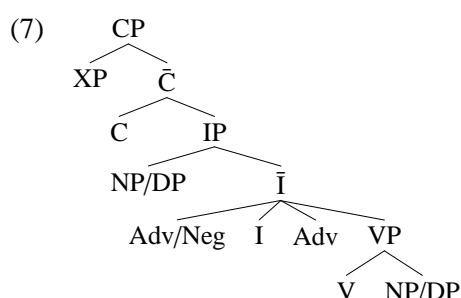
One further difficulty is that it is not clear how (\uparrow TYPE) = NON-NEUTRAL is associated with the various proclitic contexts. One possible option would be to specify the feature in the lexical entries of the triggering elements (e.g., negative markers, complementisers and relative pronouns). However, this approach would not work for all the relevant contexts. In particular, since various elements can be fronted as focused phrases, it would be implausible to specify ((FOCUS \uparrow) TYPE) = NON-NEUTRAL in the lexical entry of every word.

4 Proposal

The properties of proclitics and proclitic triggers in EP can be summarised as follows: a) proclitic triggers always precede the finite verb, but their preverbal position cannot be reduced to one single phrase structure position; b) in preverbal position, clitic affixes select a phrasal host and behave therefore like phrasal inflections; and c) proclitic triggers constitute a heterogeneous group of elements which contribute a wide range of information to f-structure (and other structures). Any account of EP proclisis must properly capture these three points. We start our analysis of EP proclitic triggers by laying out basic assumptions about EP phrase structure.

4.1 Basic phrase structure

The schematic c-structure for EP comprises the lexical projection VP and the functional projections IP and CP, as given in (7).



Briefly, we assume that finite verbs/auxiliaries are base-generated in I or C, whereas non-finite verbs are generated in V (cf. Kroeger (1993), King (1995), Bresnan (2001)). Adverbs are left-/right-adjoined to \bar{I} ; and negations are treated as a type of ADJUNCT (Sells 2001). Spec-IP is the position for the subject NP/DP, annotated as (\uparrow SUBJ) = \downarrow . Spec-CP is the position of a fronted focused phrase or a wh-phrase, both annotated as (\uparrow FOCUS) = \downarrow . We also assume that the discourse function TOPIC appears in Spec-CP (cf. Sells (2001) for Swedish). With respect to TOPIC, the data in (2) seem to suggest that it is adjoined to IP, as assumed for English (Bresnan 2001:180-3):

- (8) a. Ao João, a professora deu(-lhe) um livro.
 to João the teacher gave(-3.SG.ACC.M) a book
 'To João, the teacher gave a book.'
- b. Ao João, o livro, a professora deu-lho.
 to João the book the teacher gave-3.SG.DAT/3.SG.ACC.M
 'To João, the book, the teacher gave.'

In (8a) the fronted phrase *ao João* appears to be adjoined to IP; likewise, (8b) could be analysed as two topicalised phrases multiply adjoined to IP. However, other data suggest that the topicalised phrase appears in a higher c-structure position:

- (9) a. Este livro, dou-te eu
 this book give-2.SG.DAT/3.SG.ACC.M I
 'This book I give it to you.'
- b. Deste livro, lembro-me eu
 this book, remember-1.SG.REFL I
 'This book I remember.'

In each structure in (9), the fronted topic phrase is actually followed by the finite verb and the subject. For clauses in which both topicalisation and subject-verb inversion occur, we would like to propose that the subject is sitting in Spec-IP while the verb is base-generated at C. The verb's higher position makes the Spec-CP position available for the fronted topic.

Following standard LFG assumptions about c-structure/f-structure correspondence, we also assume that the functional head and its complement are f-structure co-heads. Therefore, V, \bar{V} , VP, I, \bar{I} , IP, C, \bar{C} and CP are all annotated as $\uparrow=\downarrow$ (Bresnan 2001:102). Finally, we treat the complement of V as an OBJ in the f-structure.

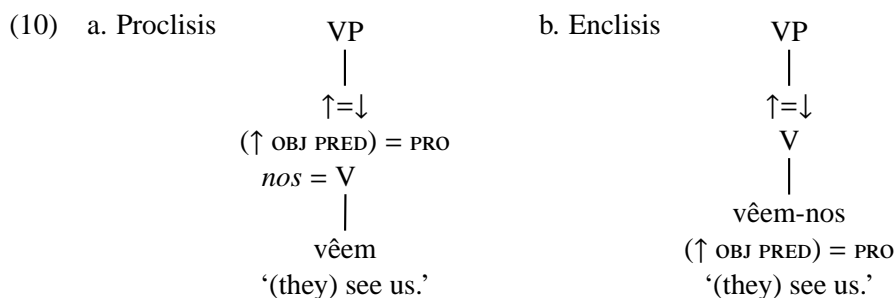
4.2 Phrasal affixation²

Before we look in detail at the contexts triggering proclisis, we will need to address the phenomenon of phrasal affixation and examine its representation within LFG. As summarised in section 2, both enclitics and proclitics in EP are verbal inflectional affixes. In particular, enclitics constitute genuine suffixes, while proclitics are regarded as phrasal affixes. In LFG terms, it appears to be uncontroversial that enclitics and proclitics contribute the same f-structure information (i.e., OBJ/OBJ2), however, at the level of c-structure it is not entirely clear how phrasal affixes ought to be analysed. The issue then is how to represent phrasal affixes within the LFG framework.

4.2.1 Previous LFG analysis

Recent studies by Luís and Sadler (2003) and Otaguro (2003) assume that phrasal affixation must be stated in the placement rule/function provided by the morphological component. For EP proclitics, Luís and Sadler (2003) formulate the placement rule ‘Preverbal LR: <cl - [VP, V]>’ to ensure that proclitics are attached to the left of a syntactic verbal domain. That is, morphological placement rules attach inflectional exponents directly to a phrasal or preterminal node in the c-structure (whereas postverbal clitics combine with the verb in the morphology, like genuine verbal suffixes, as shown in (10b)).

In addition, Luís and Sadler (2003) assume that proclitics (i.e., phrasal affixes) constitute affixes without c-structure representation and associate pronominal f-structure information with either a V or a VP node (cf. (10a)).³ Among the arguments motivating this view, is the idea that the representation of affixes as c-structure terminals constitutes a serious violation of one of the building blocks of lexicalist syntax, namely the Lexical Integrity Hypothesis (cf. Bresnan (2001:92)). In this respect, the treatment of EP phrasal affixation sketched by Luís and Sadler (2003) presupposes an unconventional view of the LFG c-structure and f-structure correspondence. It assumes that the affixal proclitic selects a phrasal or preterminal node, but the exponent itself does not appear in the c-structure.



4.2.2 Alternative view

Building on the work by Luís and Sadler (2003), this section attempts to offer a solution to the problems posed by the c-structure representation of phrasal inflections. In our LFG treatment of phrasal affixes, we assume that the morphology generates inflectional strings as sequences of morphological tokens (i.e., the stem-affix combinations). We also suggest that these tokens and their corresponding boundaries constitute an additional morphological ‘structure’ which resides in the morphological component. Lexical

²We are indebted to Ron Kaplan for comments and suggestions which helped us formulate the ideas contained in this section.

³In Luís and Sadler (2003), proclitics attach to VP when they have wide scope over coordinated Vs or VPs (cf. (3)).

word boundaries may, but need not, coincide with morphological token boundaries, and their correspondence is defined at the interface between morphology and c-structure. Crucial for our analysis of phrasal affixation is the claim that, by introducing a new morphology-internal structure, placement rules do not need to refer to the c-structure configuration directly, as in previous LFG approaches, but they simply construct a well-formed string of exponents within the morphological component. Once the inflectional strings have been defined by the morphology, they will be properly mapped onto the c-structure (see below).

To begin with, the string of formatives defined by the morphology is independent of phrase structure. This is achieved within Paradigm Function Morphology (PFM) through the successive application of Realisation Rules (RRs) to the root of a given lexeme (Stump 2001). In the extended version of PFM found in Spencer (2000, ms), a cluster of affixes is independently defined by a composition of RRs and is attached to either the left or right of the stem by a placement function. The revised model of Paradigm Function Morphology (PFM) is adopted by Luís (2004) for EP pronominal clitics. Let us look at the two types of clitic-verb combinations in (11).

- (11) a. O João raramente me vê
 the João rarely 1.SG.DAT sees
 'João rarely sees me.'
 b. O João vê-me raramente
 the João 1.SG.DAT-sees rarely

It is the role of the morphology to specify each one of the above patterns of clitic alignment:

- (12) a. ⟨me, vê⟩
 b. ⟨vê, me⟩

At this stage, the difference between each pattern is mainly a question of linearisation, i.e. in (12a) the affixal clitic, *me*, is placed before the stem *vê*; in (12b) it is placed after it.

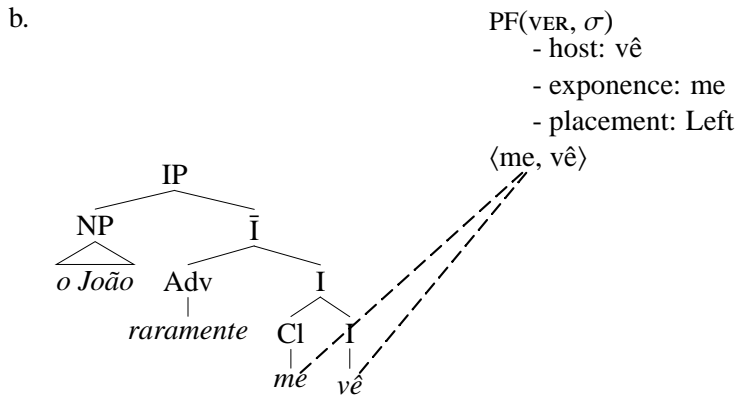
Let us now see how the inflectional strings defined by the morphology are mapped onto the c-structure.⁴ In most cases, a morphologically single token is mapped onto a single c-structure word. EP enclitics are of this type, as shown in (13a). However, sometimes two or more c-structure terminals correspond to a single morphological token. Phrasal affixation is an example of that. In this case EP proclitics are mapped onto c-structure as illustrated in (13b).^{5,6}

- (13) a. PF(VER, σ)
 - host: *vê*
 - exponence: *me*
 - placement: Right
-
- $$\begin{array}{c}
 \text{IP} \\
 \swarrow \quad \searrow \\
 \text{NP} \quad \quad \bar{\text{I}} \\
 \swarrow \quad \searrow \quad \swarrow \quad \searrow \\
 \text{o João} \quad \text{I} \quad \text{Adv} \\
 \quad \quad \quad | \quad \quad | \\
 \quad \quad \quad \text{vê-me} \quad \text{raramente}
 \end{array}$$

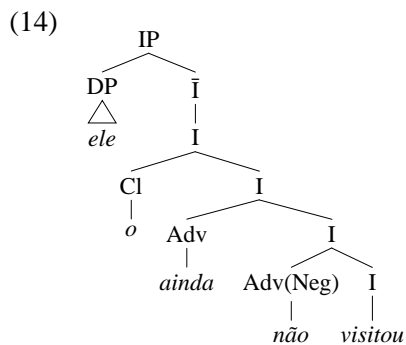
⁴This process is similar to tokenisation in XLE (e.g. Kaplan and Newman (1997), Butt et al. (1999), Kaplan et al. (2004)).

⁵On the surface, the current proposal appears to be similar to Sadock's (1991) Autolexical treatment of cliticisation. However, closer inspection shows that the morphological component in our paper is quite different from the one assumed by Sadock. First, unlike in Autolexical Syntax, the hierarchical organisation of stems and affixes is not assumed in PFM. Second, a morphological token is not an extension of the c-structure below X^0 , as found also in Andrews (1996), for example. In our paper, morphological tokens are produced by the Paradigm Function (PF) and reside therefore inside the morphological component.

⁶In (13), we represent the PF through abbreviated notations. For more detailed formalisation, see Luís (2004).



We position the pronominal clitic under Cl in the c-structure and adjoin it to X^0 (cf. Sadler and Arnold (1994), Sadler (1997), Toivonen (2003)). We also assume that proclitic clusters appear under one Cl node. They are generated as a sequence of clitics (Luís 2004) and mapped onto one single phrase-structure position. Interpolated elements, such as adverbs and the negation marker, exemplified in (4) are allowed to undergo multiple X^0 adjunctions, following the proposal by Luís and Sadler (2003).



Under this proposal, morphological formatives are allowed to behave as syntactic objects. Even though this idea appears to be in contradiction with the principles of realisational morphology, closer inspection shows that it is not.⁷ Let us consider, for example, Beard's (1995) Lexeme-Morpheme Base Morphology, in which inflectional formatives, as generally assumed, are defined as grammatical morphemes distinct from lexemes. For the present discussion, what is important is that his theory also assumes that grammatical morphemes can be realised as words (i.e., free grammatical morphemes, such as auxiliaries) and placed in syntactic positions (Beard 1995:44). It is therefore worth emphasising that there is no necessary correlation between the phrase structure status and the grammatical morpheme/lexeme status of a given formative.

The upshot of our proposal is that we have four types of mappings between morphological token structure and c-structure. In the first type of mapping, we have simple affixation: affixes attach to the stem and the whole stem-affix string is mapped onto a single c-structure terminal, as in EP enclisis. In the second type, we find periphrastic inflections: here the morphology uses free grammatical morphemes to realise morphosyntactic properties (cf. Ackerman and Webelhuth (1998), Spencer (2001, to appear)). In this case, the lexeme is mapped onto a lexical head and the free grammatical morpheme is mapped onto a node in the extended projection of that lexical head (cf. Otaguro (2004)). The two last types constitute mismatch patterns: either a morphologically single token corresponds syntactically to two terminals, as in EP proclisis, or the opposite holds (as in some types of compounding). We leave the details of each one of these mappings for further research.

⁷Our proposal may be incompatible with Anderson's (1992) model of morphology in which realisational processes involve essentially phonological rules.

4.3 F-precedence

Having examined the representation of EP proclitics (i.e., phrasal affixes) within LFG's c-structure, this section will briefly outline the basic ideas of our LFG-treatment of proclitic contexts in EP. As observed earlier, the triggers display two crucial properties: a) they constitute a heterogeneous group of elements and b) they always precede the clitic host. We will show that LFG's f(unctional)-precedence is suitable for capturing these two generalisations (Bresnan 2001:195):⁸

- (15) F-precedence ($<_f$)
 $\alpha <_f \beta$ if the rightmost node in $\phi^{-1}(\alpha)$ precedes the rightmost node of $\phi^{-1}(\beta)$

F-precedence is defined in terms of the linear precedence relation between c-structure nodes contributing particular information to the f-structure. For instance, the constraint $(\uparrow \text{SUBJ}) <_f (\uparrow \text{OBJ})$ describes the situation where the rightmost c-structure node among the nodes corresponding to SUBJ in the local f-structure ($\phi^{-1}(\uparrow \text{SUBJ})$) linearly precedes (c-precedes) the rightmost c-structure node among the nodes corresponding to OBJ in the same f-structure ($\phi^{-1}(\uparrow \text{OBJ})$).

By applying f-precedence to EP cliticisation, we can neatly describe the effect of proclitic contexts on clitic placement. In particular, we will assume that the information contributed by each trigger f-precedes the information provided by the pronominal clitic. Some f-precedence relations are expressed below:

- (16) $(\uparrow \text{FOCUS}) <_f (\uparrow \text{OBJ}(2))$
 $(\uparrow \text{ADJE}) <_f (\uparrow \text{OBJ}(2))$
 $(\uparrow \text{SUBJ SPEC}) <_f (\uparrow \text{OBJ}(2))$
...

For example, for clitic structures with preposed focus we will say that FOCUS f-precedes OBJ and/or OBJ2 in the same f-structure. This can also be expressed as $(\uparrow \text{FOCUS}) <_f (\uparrow \text{OBJ})$. Each proclitic context will be discussed in detail in section 4.5, including those which require a slightly more complex descriptions.

4.4 Morphology-syntax interface

To begin with, we adopt the distinction between s(yntactic)-features and m(orphological)-features, as proposed in Sadler and Spencer (2001)⁹ In LFG terms, s-features are operative at f-structure; these s-features include grammatical function (SUBJ, OBJ, etc.), TENSE, PRED and so on. M-features constitute purely formal features which are crucial for defining a lexemes' morphological paradigm. Sometimes the same feature can be operative at both levels of grammar (e.g., PERSON/NUMBER features not only play a crucial role in syntactic agreement, but they also determine the structure of inflectional paradigm).

The distinction between both types of features is formalised in Luís and Sadler (2003) and Sadler and Nordlinger (2004) who postulate a morphology-syntax interface level where explicit mappings from f-descriptions to m-features are described.¹⁰ In this paper we adopt the mappings proposed in Luís and Sadler (2003):

- (17) a. {Case:Acc, Pers:3, Num:Sg, Gen:M} b. {Case:Acc, Pers:3, Num:Pl, Gen:M}
 $(\uparrow \text{OBJ PRED}) = \text{PRO}$ $(\uparrow \text{OBJ PRED}) = \text{PRO}$
 $(\uparrow \text{OBJ PERS}) = 3$ $(\uparrow \text{OBJ PERS}) = 3$
 $(\uparrow \text{OBJ NUM}) = \text{SG}$ $(\uparrow \text{OBJ NUM}) = \text{PL}$
 $(\uparrow \text{OBJ GEN}) = \text{M}$ $(\uparrow \text{OBJ GEN}) = \text{M}$

⁸Kaplan and Zaenen's (1989) definition is slightly different. This, however, does not affect our argument.

⁹In effect, the mismatch between s-features and m-features is virtually absent in our data and therefore nothing in our analysis hinges on the distinction between these features.

¹⁰Under different assumptions about morphology, a similar approach can be found in XLE's lexical entries where tags assign f-descriptions, e.g. +Masc GEND TAG $(\uparrow \text{GEND}) = \text{MASC}$ (Butt et al. 1999:165)

In addition, we assume that the contexts defined by the f-precedence constraints in (17) are mapped onto the morphological markedness feature [Restricted:Yes], as schematically represented in (18):

$$(18) \quad \left. \begin{array}{l} (\uparrow \text{ FOCUS}) <_f (\uparrow \text{ OBJ}(2)) \\ (\uparrow \text{ ADJ}\epsilon) <_f (\uparrow \text{ OBJ}(2)) \\ (\uparrow \text{ SUBJ SPEC}) <_f (\uparrow \text{ OBJ}(2)) \\ \dots \end{array} \right\} \Rightarrow \quad [\text{Restricted:Yes}]$$

As the arrow shows, at the morphology-syntax interface, a formal morphological feature is linked to the contexts triggering proclisis, capturing the fact that clitic placement is determined by syntactic principles. F-precedence constraints, on the left hand side, serve as input to the morphology. The formal feature, on the right hand side, triggers the morphological placement function which aligns affixal clitics to the left of the clitic host, delivering proclisis.

Even though purely formal features should be avoided, EP is not the only language in which morphological alternations are the reflex of phrasal properties (Luís 2004). A formal feature [Restricted:Yes] also appears to be necessary in Somali inflectional morphology where a ‘special’ conjugation class is selected whenever the subject is focused (Svolaccia et al. 1995). Under the current proposal, the syntactic selection of the conjugation class is captured by assuming that $(\uparrow \text{ SUBJ}) = (\uparrow \text{ FOCUS})$ maps onto [Restricted:Yes] at the morphology-syntax interface.

4.5 Analysis

In section 4.3 we looked briefly at the precedence relations between triggers and targets in EP, and suggested that they should be captured through f-precedence constraints. In this section, we look in detail at each one of triggering contexts referred to in section 2.1.

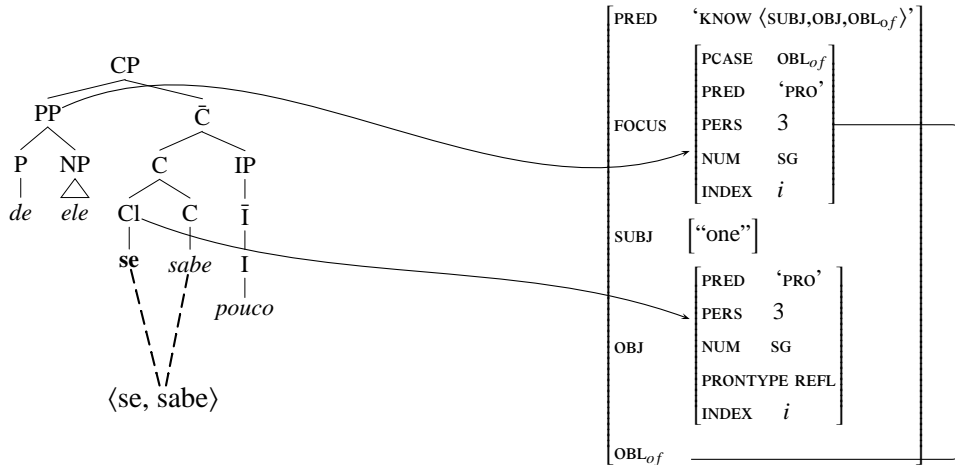
4.5.1 Fronted focus

As referred to before, clitics must be placed preverbally if a clause contains a focused element preceding the verb:

- (19) a. *Dele se sabe pouco.*
of him 3.SG.REFL knows little
‘One knows little about him’
b. **Dele sabe-se pouco.*

The c-structure and f-structure associated with (19a) are given in (20). Based on this representation, the effect of focus fronting on proclisis is ensured by well-formedness constraints in (21). The first line describes the f-precedence relation between the proclitic trigger and the clitic pronoun. This information is mapped onto the formal feature [Restricted:Yes] at the morphology-syntax interface. The second line says that, in the morphology, any verb form associated with the feature [Restricted:Yes] triggers the alignment function ‘align (Left)’. The third line captures the idea, formulated in section 4.2, that one single morphological token (in this case the cliticised verb form *se-sabe*) can correspond to two nodes in the c-structure. We recall that under the current proposal, preverbal affixes are X^0 adjunctions in the c-structure.

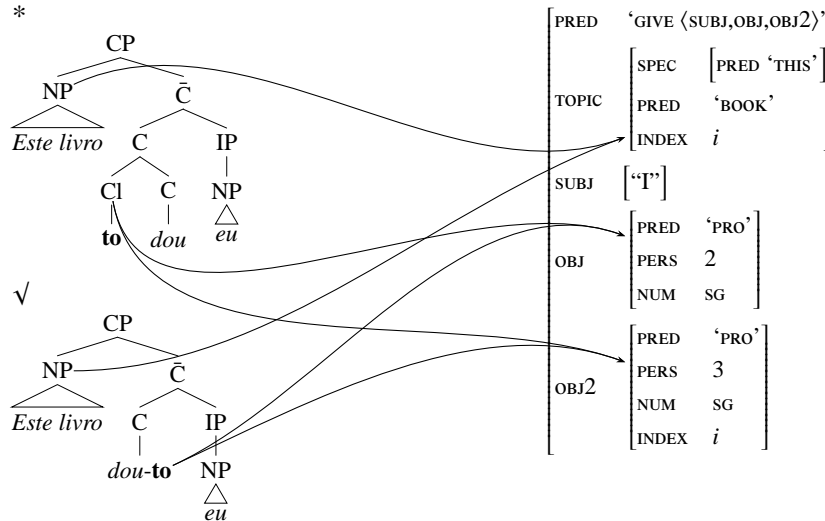
(20)



- (21) a. $(\uparrow \text{ FOCUS}) <_f (\uparrow \text{ OBJ}) \Rightarrow [\text{Restricted:Yes}]$ (morphology/syntax interface)
 b. $[\text{Restricted:Yes}] \Rightarrow \text{align(Left)}$ (morphology)
 c. $\text{aff-V}_{\text{stem-aff}} \Rightarrow [X [\text{Cl aff } [X \text{ V}_{\text{stem-aff}}]]]$ (morphology/c-structure interface)

Interestingly, unlike focused phrases, a fronted topic phrase does not trigger proclisis. So, only (22a) with a postverbal pronominal clitic is grammatical. The c-/f-structures associated with the constructions in (22a, b) are shown in (22c):¹¹

- (22) a. *Este livro, dou-to eu.* eu.
 this book give-2.SG.DAT/3.SG.ACC.M I
 'This BOOK, I give it to you'
 b. **Este livro, to dou eu.*
 c. *



The data suggest that EP grammar does not contain the rule associating $(\uparrow \text{ TOPIC}) <_f (\uparrow \text{ OBJ}(2))$ with $[\text{Restricted:Yes}]$ at the morphology-syntax interface level. Therefore, the structure where the pronominal clitic is placed preverbally is morphologically ill-formed. In the absence of the formal feature $[\text{Restricted:Yes}]$, the default placement 'align(Right)' must apply. Since the stem and suffix string corresponds to a single c-structure terminal, the lower c-structure in (22c) is well-formed.

4.5.2 Wh-questions

Wh-questions also constitute proclisis triggers. If a wh-phrase is fronted, the pronominal clitic must appear in front of the verb as shown in the contrast between (23a) and (23b):

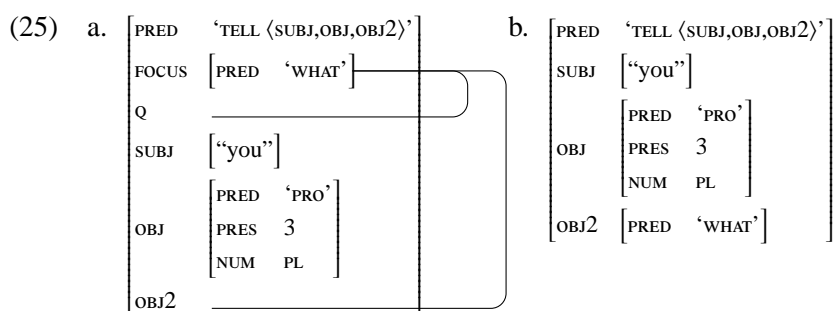
¹¹For ease of exposition, TOPIC does not take a set value here.

- (23) a. *O que lhes* contaste?
 the what 3.PL.DAT tell
 ‘What did you tell them?’
 b. **O que* contaste-**lhes**?

If the wh-phrase is *in situ*, as an echo question, clitic placement must instead be postverbal:

- (24) a. ***Lhes** contaste o *quê*?
 b. Contaste-**lhes** o *quê*?

A wh-fronted sentence and a wh-in-situ echo sentence have different f-structures. Only the former has a wh-phrase which is mapped onto FOCUS and identified with one of the GFS. This f-structural difference is illustrated in (25a, b) for (23a, b) respectively:



Returning now to the f-precedence relations and to the description of the conditions triggering proclisis, (25a) shows that we do not need an additional constraint to account for proclisis in clauses with wh-fronted phrases. Instead, the well-formedness constraints adopted in (21) to account for the effect of focus fronting on proclisis can also be adopted for the wh-context. In particular, we assume that the f-precedence relation – formulated as $(\uparrow \text{FOCUS}) <_f (\uparrow \text{OBJ})$ in (21a) – also applies to fronted wh-phrases; this information is mapped onto the formal feature triggering clitic left alignment as specified in (21b); finally, we also assume a mismatch between the morphological token boundary and the lexical word boundary (21c). In effect, the well-formed constraints given in (21b) and (21c) apply invariably to all contexts. In the remaining discussion about proclitic contexts, we will therefore not repeat these constraints but simply assume that they are part of our LFG account of phrasal affixation.

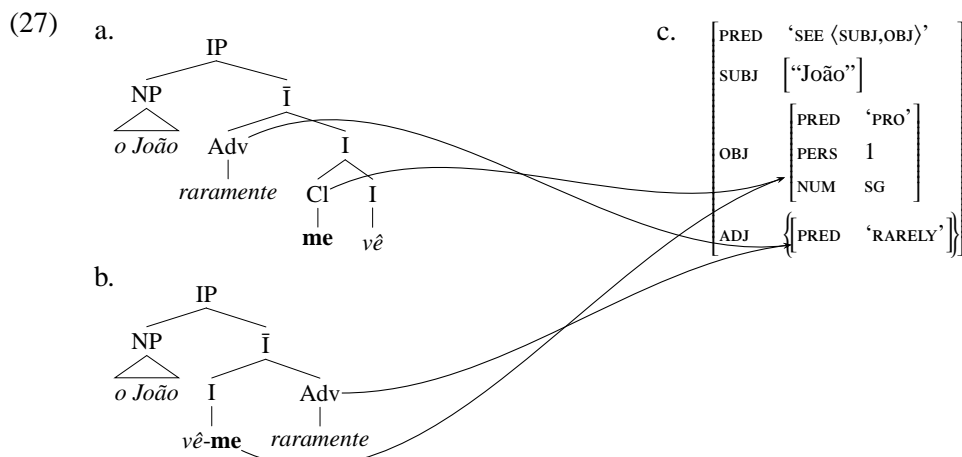
4.5.3 Adverbs and negation marker

Adverbs nicely illustrate how decisive the precedence relation between the trigger and the target can be in determining where the affixal clitic will appear. While some adverbs can only appear preverbally, other adverbs can appear both preverbally and postverbally either with the same or with a different meaning. Particularly revealing are those adverbs which can occur in both positions with the same meaning. If we take the minimal pairs in (26) with preverbal adverbs and post-verbal adverbs, we notice that proclisis can only occur if the adverb appears preverbally:¹²

- (26) a. *O João raramente me* vê.
 the João rarely 1.SG.DAT sees
 ‘João rarely sees me.’
 b. **O João raramente vê-me*.
 c. *O João vê-me raramente*.
 d. **O João me vê raramente*.

¹²Semantically, it is interesting to observe that adverbs like *raramente* are placed in preverbal position for emphatic purposes, while the unmarked position is generally postverbal.

The f-structure for the adverbial clauses in (26a) and (26c) is identical, but each clause must be assigned a distinct c-structure:



The syntactic information required to license the proclisis seems to be like (28):

$$(28) (\uparrow \text{ADJ}\epsilon) <_f (\uparrow \text{OBJ})$$

However, upon closer inspection, this f-precedence is insufficient, given that not all preverbal adverbs trigger proclisis (e.g., *ontem* 'yesterday'). What we will assume for the present analysis is that adverbs triggering proclisis (including the negation marker) belong to a set of adverbials sometimes referred to as operator-like modifiers. We will therefore need to add more constraints to (28). This is what we want to say: a) the adverb which is mapped onto ADJUNCT in f-structure linearly precedes the c-structure node mapped onto OBJ; b) adverbs triggering proclisis are operator-like modifiers. This idea is formulated in (29):

$$(29) (\uparrow \text{ADJ}\epsilon) = \% \text{OPADJ} \wedge (\% \text{OPADJ}) <_f (\uparrow \text{OBJ}) \wedge (\% \text{OPADJ} \text{ PRED}) = \text{OpMOD}$$

$$\text{OpMOD} \equiv \{ \text{'RARELY'} \mid \text{'NOT'} \mid \text{'NEVER'} \mid \text{'ONLY'} \mid \text{'ALREADY'} \mid \text{'ALSO'} \mid \dots \}$$

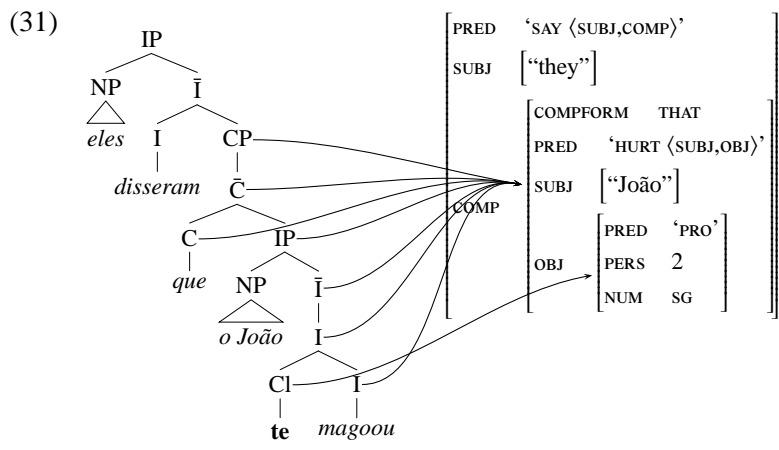
Since ADJUNCT constitutes a set, we need to specify the f-structure corresponding to the triggering adverb by using a local name (Kaplan and Maxwell 1996), here %OPADJ. So, (29) says that the ADJUNCT corresponding to the trigger f-precedes the OBJ and the PRED value of this ADJUNCT is OpMOD. The variable OpMOD can be any PRED value associated with the operator-like modifiers such as *raramente* 'rarely', *não* 'not', *nunca* 'never', *só* 'only', *já* 'already' and *também* 'also'. (29) properly conditions the syntactic context licensing proclisis which is mapped onto [Restricted:Yes].

4.5.4 Complementisers and subordinate conjunctions

When a clause is introduced by a complementiser or a subordinate conjunction, the pronominal clitic is also placed before the verb as in (30a, c):

- (30) a. Eles disseram *que* o João **te** magoou.
 they said that the João 2.SG.ACC hurt
 'They said that João had hurt you.'
- b. *Eles disseram *que* o João magoou-**te**.
- c. A Ana ficou contente *quando* ele **a** convidou.
 the Ana was happy when he 3.SG.ACC.F invited
 'Ana was happy when he invited her.'
- d. *A Ana ficou contente *quando* ele convidou-**a**

One way of analysing the sentences in (30) would be to treat the complementiser/conjunction as a C projecting into CP. This assumption gives us the following structure:

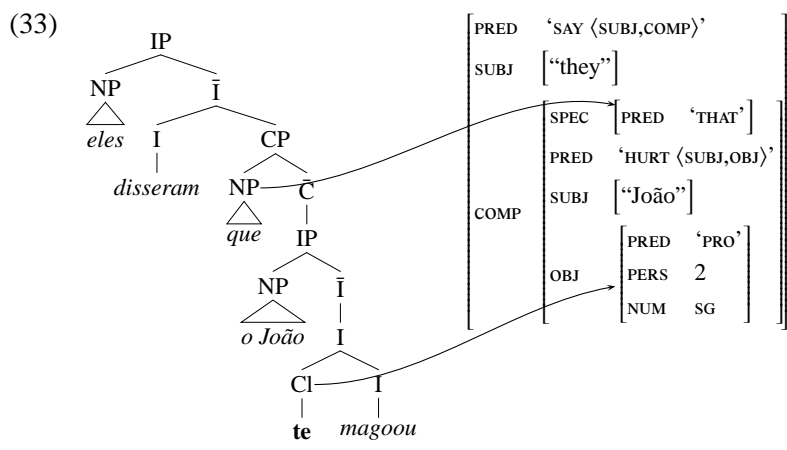


In (31), the complementiser *que* is an f-structure co-head to its complement headed by the verb. This means that both are mapped onto the COMP in the f-structure. Based on this c-structure to f-structure mapping, we formulate the proclisis context as in (32):

(32) (COMP ↑) ∧ (↑ COMPFORM) = THAT

The constraint in (32) says that the verb must occur within a clause headed by a complementiser. In LFG, this idea is stated through an inside-out path (COMP ↑) which defines an f-structure bearing the value COMP. The inside-out path designates the higher f-structure, namely the f-structure containing the verb's own f-structure. Finally, since only the overt complementisers license proclisis, an additional constraint is introduced identifying COMPFORM as (↑ COMPFORM) = THAT.

An alternative approach might be adopted by treating complementisers as specifiers of COMP. Under this assumption, the c-/f-structures would be like (33):



Here, *que* is in Spec-CP and mapped onto SPEC of COMP in the f-structure. It makes a semantic contribution to the complement clause, specifying the type of clause. Given this syntactic representation, we define the proclitic context with the following constraints:

(34) (COMP ↑) ∧ (↑ SPEC) <_f (↑ OBJ)

Again, (COMP ↑) designates the higher f-structure containing the verb's f-structure as a value of COMP. Within COMP, SPEC f-precedes OBJ.

For the sake of space, we will not discuss subordinate conjunctions here. Except for minor modifications (such as ADJUNCT instead of COMP), the set of constraints just formulated for complementisers also applies to conjunctions.

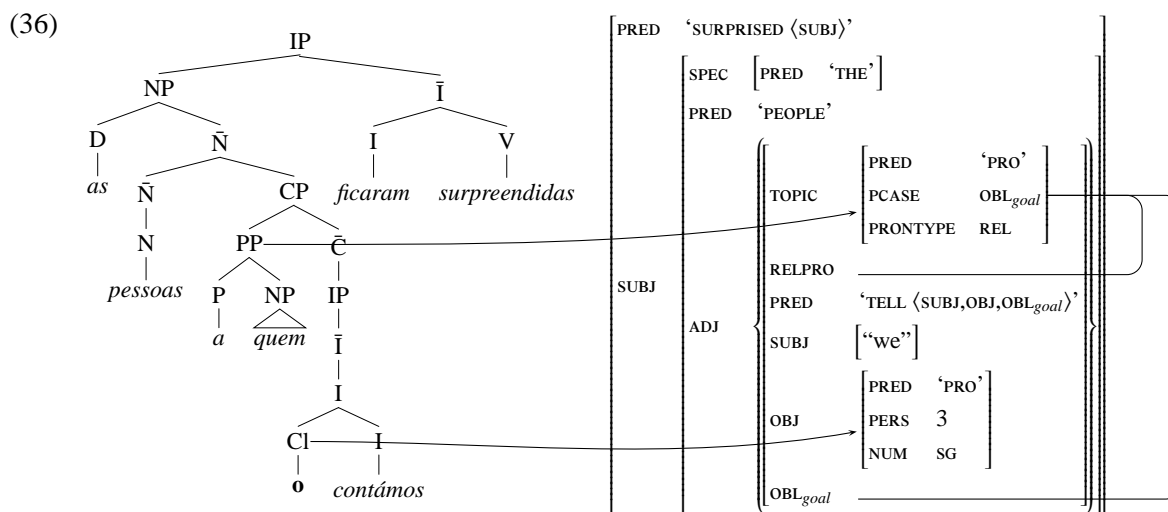
4.5.5 Relative pronouns

Even though relative clauses share similarities with both subordinate clauses and wh-fronted clauses (at a purely descriptive level), within LFG they are treated as specific syntactic constructions. This means that in accounting for proclisis triggering, we need to postulate a different set of constraints. Let us first look at the data:

- (35) a. As pessoas a *quem* **o** contámos ficaram surpreendidas.
 the people to whom 3.SG.ACC.M told were surprised
 ‘The people we told it to were surprised.’
 b. *As pessoas a *quem* contámo-**lo** ficaram surpreendidas.

As (35) illustrates, within relative clauses, pronominal clitics must appear before the verb. This supports the claim that clause-initial relative pronouns constitute proclisis triggers.

Given the c-structure in (36), we represent relative clauses as CPs adjoined to \bar{N} (or NP). The fronted prepositional phrase *a quem* is placed in Spec-CP. At the f-structure level, the fronted PP is mapped onto the discourse function TOPIC, following standard LFG assumptions. The TOPIC is also linked to one of the GFS through the constraint $(\uparrow \text{TOPIC}) = (\uparrow \text{RTOPICPATH})$ annotated on the relevant PS rule. In addition, the value of the RELPRO attribute must appear at the end of the RELPATH within the TOPIC f-structure, as required by $(\uparrow \text{RELPRO}) = (\uparrow \text{TOPIC RELPATH})$. The exact properties of RTOPICPATH and RELPATH in EP are not crucial for clitic placement.



To account for the fact that relative pronouns constitute proclisis triggers, we may start by proposing a constraint which says that relative pronouns must linearly precede the clitic host. This can be straightforwardly formalised as $(\uparrow \text{TOPIC}) <_f (\uparrow \text{OBJ})$. However, an additional constraint is necessary, given that fronted topicalised phrases cannot trigger proclisis (cf. (22)). To ensure that the TOPIC, which f-precedes the OBJ is associated with the relative pronoun, we formulate an additional constraint, namely $(\uparrow \text{TOPIC PRONTYPE}) = \text{REL}$. A complete description of the precedence relation between relative pronouns and clitic pronouns is given in (37):

- (37) $(\uparrow \text{TOPIC}) <_f (\uparrow \text{OBJ}) \quad \wedge \quad (\uparrow \text{TOPIC PRONTYPE}) = \text{REL}$

4.5.6 Quantified subjects

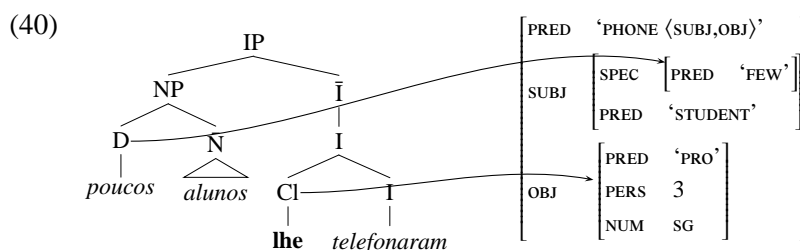
We conclude our overview of proclitic triggers by looking at quantified subjects. In EP, if the subject is modified by certain quantifiers, the pronominal object clitic must appear preverbally. This is illustrated in (38) with the quantifier *poucos* ‘few’ which triggers proclisis.

- (38) a. *Poucos* alunos **lhe** telefonaram.
 few students 3.SG.DAT phoned
 ‘Few students phoned him.’
 b. **Poucos* alunos telefonaram-**lhe**.

Other quantifiers inducing preverbal cliticisation include *nenhuns* ‘none’, *todos* ‘all’, *cada* ‘every’ and so on. They have been classified as ‘downward entailing quantifiers’ given that their semantic property appears to be downward monotonicity (Crysmann 2002). On the contrary, non-downward entailing quantifiers such as *alguns* ‘some’ do not seem to trigger proclisis:

- (39) a. *Alguns* alunos telefonaram-**lhe**.
 some students phoned-3.SG.DAT
 ‘Some students phoned him.’
 b. **Alguns* alunos **lhe** telefonaram.

We propose the following c-/f-structures for the quantified subject sentence (38):



The proclisis context is defined through the f-precedence relation $(\uparrow \text{SUBJ SPEC}) <_f (\uparrow \text{OBJ})$ which ensures that the quantified subject linearly precedes the clitic. In addition, we also need to exclude non-downward entailing quantifiers. We therefore need to specify that the PRED values of SUBJ SPEC is associated with the natural class of downward entailing quantifiers. This specific set of PRED values, we propose, belong to the natural class of the metavariables DEQUAN which comprise ‘FEW’, ‘ALL’, ‘EVERY’, etc. The constraints are summarised as follows:

- (41) $(\uparrow \text{SUBJ SPEC}) <_f (\uparrow \text{OBJ}) \quad \wedge \quad (\uparrow \text{SUBJ SPEC PRED}) = \text{DEQUAN}$
 $\text{DEQUAN} \equiv \{ \text{'FEW'} \mid \text{'ALL'} \mid \text{'EVERY'} \mid \text{'NO'} \mid \dots \}$

Before summing up our paper, we will briefly refer to the case of quantifier floating. This type of syntactic phenomenon also illustrates the idea, put forward in this paper, that precedence relations are crucial in accounting for EP proclisis. In particular, the contrast between (42a-b) illustrates that a dislocated quantifier can only trigger proclisis if it remains in preverbal position (cf. (42a)). If a floating quantifier occurs in postverbal position, then the affixal clitic must be realised as a verbal suffix:

- (42) a. *Os* alunos *todos* **lhe** telefonaram.
 the students all 3.SG.DAT phoned
 ‘All the students phoned him.’
 b. **Os* alunos *todos* telefonaram-**lhe**.
 c. *Os* alunos telefonaram-**lhe** *todos*.
 d. **Os* alunos **lhe** telefonaram *todos*.

The observed effect of quantifier floating on proclisis might be accounted for in two ways. Under one analysis, we map the dislocated quantifier onto to the same f-structure as a non-floating one, i.e. $(\uparrow \text{SUBJ SPEC})$. This treatment would account for the contrast in (42), given the constraints formulated in (41) for quantified subjects. Another option would be to treat the floating quantifiers as an \bar{I} adjunction, regardless of whether it appears preverbally or postverbally. Given this hypothesis, the proposal made in section 4.5.3 for adverbial triggers would straightforwardly account for the contrast between (42a) and (42c).

5 Conclusion

In this paper, we looked at a heterogeneous group of preverbal syntactic contexts in EP and examined their effect on clitic placement. Given our assumption that a) cliticization constitutes an inflectional phenomenon and that b) pronominal clitics are generated as affixes, we have argued that i) the morphology must have access to the information associated with the proclisis triggers (Luís and Sadler 2003) and that ii) the ‘linear’ position of proclitic triggers must be defined in terms of f-precedence relations:

$$(43) \quad (\uparrow \text{FOCUS}) <_f (\uparrow \text{OBJ}) \\ (\uparrow \text{ADJ}\epsilon) = \% \text{OPADJ} \quad \wedge \quad (\% \text{OPADJ}) <_f (\uparrow \text{OBJ}) \quad \wedge \quad (\% \text{OPADJ PRED}) = \text{OpMod} \\ (\text{COMP } \uparrow) \quad \wedge \quad (\uparrow \text{COMPFORM}) = \text{THAT} \quad / \quad (\text{COMP } \uparrow) \quad \wedge \quad (\uparrow \text{SPEC}) <_f (\uparrow \text{OBJ}) \\ (\uparrow \text{TOPIC}) <_f (\uparrow \text{OBJ}) \quad \wedge \quad (\uparrow \text{TOPIC PRONTYPE}) = \text{REL} \\ (\uparrow \text{SUBJ SPEC}) <_f (\uparrow \text{OBJ}) \quad \wedge \quad (\uparrow \text{SUBJ SPEC PRED}) = \text{DEQUAN}$$

An explicit mapping has been proposed, which puts f-precedence relations in correspondence with the morphology. So, for each one of the conditions in (43), a placement function of the type align(Left) aligns affixal clitics to the left of the host (proclisis). In the default case, affixal clitics attach to the right of a verbal stem, through align(Right) (enclisis). By making use of f-precedence, our paper shows that neither purely configurational nor purely f-structural information can define proclisis contexts. Instead, both c-structural linear order and f-structural function provide an account of the alternation between enclisis and proclisis.

In our attempt to understand the grammar of proclisis, we also investigated the phenomenon of phrasal affixation. The first results of our study lend support to the view, formulated in Luís and Sadler (2003), that this type of affixation requires a somewhat complex interface between c-structure syntax and the morphology. To capture both the morphological and syntactic properties of phrasal affixes, we have proposed an additional structure within the morphological component which identifies the morphological token boundaries of a cliticised verb (as opposed to the lexical word boundaries represented under c-structure terminals). We show that the behaviour of phrasal affixes, as partly inflectional and partly syntactic units, results from a mismatch between these two structures.

One of the issues we have not touched up in this paper refers to the proclitic’s ability to take wide scope. Proclitics can be optionally shared over a coordinated verb phrase, as in (3a), or over a coordinated auxiliary-verb structure, as in (3b). In both these constructions, the clitic functions as the object of two argument-taking verbs. Wide scope reading is not available for enclitics, as would be expected of genuine suffixes which must attach to each one of the members of a verbal/auxiliary conjunct. The scopal behaviour of proclitic may pose problems to our c-structure analysis of phrasal affixation, given that we suggest that proclitics adjoin to X^0 . This assumption predicts, contrary to evidence, that proclitics must appear on each conjunct, i.e., adjoined to each I or C under a coordinated \bar{I} or IP (\bar{C} or CP). To correctly capture the data, we need to provide a mechanism by which distributed features receive formal manifestations on only one of the conjuncts. This investigation will be left for further research.

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