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*Between Syntax and Phonology:
 On Phrasal Weight Effects in European Portuguese**

1. INTRODUCTION

Prosodic constituency has been widely motivated by the need to provide domains for phonological rules (as in Nespor and Vogel 1982 and 1986, or Hayes 1989). Its role in the association of the tunes of a melody, in rhythmic phenomena and in boundary strength phenomena is also well-established (cf., among others, Hayes and Lahiri 1991 for intonation, Nespor and Vogel 1989 for rhythm, and Ladd 1996 for boundary strength). Additionally, in recent work, phonological phrasing has also been shown to be relevant for the characterisation of certain *syntactic* phenomena (cf. Zec and Inkelas 1990, Schütze 1994, Inkelas and Zec 1995, Truckenbrodt 1995, and Guasti and Nespor 1997, among others).

This paper deals with four cases of prosodically constrained word order in European Portuguese (hereafter EP), in which phonological weight will be shown to play a relevant role: parenthetical placement, topicalization, complement shift, and pronominal clitic placement. This will be done in sections 2 through 5, respectively. To our knowledge, this issue has not been previously addressed in the literature on EP. Our principal aim in this paper is to present and discuss the available facts, state the relevant descriptive generalisations, and uncover the crucial role played by phonological weight. In the final section, some issues raised by the facts, that bear on the syntax-phonology interface, will be pointed out.

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This work builds on previous research on the prosody and intonation of EP, in which most of the prosodic features we will appeal to have been independently motivated.¹ The data presented here is partially taken from the syntactic literature, partially collected from spontaneous or written speech sources, and partially based on our own elicitation. For the latter kind, two other EP native speakers of the Lisbon area have provided judgements. Data sources will be indicated.

Before we begin our analysis of weight effects, we will first provide a brief outline of the prosodic phrasing above the Prosodic Word (PwD) level in EP. The formation of a Phonological Phrase (ϕ) in EP, as in other languages (cf. Nespor and Vogel 1986, Hayes 1989, Bickmore 1990), joins a lexical head and all elements on its non-recursive side within the head's maximal projection in a same domain. If the first 'complement' of the head is phonologically nonbranching, it can be included within the ϕ -domain that contains the head.² Examples of (im)possible ϕ s in EP are provided in (1).

- (1) a. [as alunas] ϕ [ofereceram flores] ϕ [aos amigos] ϕ
 the students gave flowers to-the friends
 'the students gave flowers to their friends'
- b. * [flores aos amigos] ϕ
- c. [as alunas africanas] ϕ 'the African students'
- d. * [ofereceram muitas flores] ϕ 'gave many flowers'

As for the formation of Intonational phrases (Is), in EP as in various languages strings such as topics, parentheticals or tags form I-phrases on their own (cf. Nespor and Vogel 1986, Rice 1987, Kanerva 1990, among others); strings of other kind which are adjacent in a root sentence are included in the same I-phrase. Further, factors such as length may lead to the division of basic I-phrases. The examples in (2) illustrate I-phrasing in EP.

- (2) a. [[esta introdução] ϕ [apresenta] ϕ [a hierarquia prosódica] ϕ]I
 this introduction presents the hierarchy prosodic
 'this section introduces the prosodic hierarchy'

¹ Cf. Viana 1987, for a first general account on EP intonation; Delgado-Martins 1977, Andrade and Viana 1988, for the phonetics of stress; Frota 1991, 1993a, and Vigário 1995, 1997a, 1997b, for the prosodic features of certain word classes, such as quantifiers, adverbs and negation; Frota 1991, 1993b, 1996, for the prosodic features of certain syntactic structures (such as parentheticals, topicalized phrases, 'moved' adverbials); and Frota 1995a, 1995b, 1997, and Vigário 1995, for the prosody and intonation of focus, and particular features of EP prosodic phrasing.

² We follow the common use of the notion of *complement* in prosodic phonology literature: *x* is a *complement* of *y* if it is subcategorised by *y* or if it modifies *y*.

- b. [esta introdução]_I [segundo as autoras]_I [apresenta a hierarquia prosódica]_I
 according to the authors
- c. [[o poeta]_φ [cantou]_φ [uma manhã angelical]_φ [perturbadora]_φ]_I
 the poet sang a morning angelic disturbing
 ‘the poet sang a disturbing angelic morning’
- d. []_I []_I []_I
- e. [[o nível actual]_φ [da inflação]_φ [é positivo]_φ]_I
 []_I []_I
- f. *[]_I []_I []_I
 the level present of-the inflation is good
 ‘the present level of inflation is good’

Finally, in EP phrasal prominence is rightmost at both the ϕ and I-levels, in the default case.

2. PARENTHETICAL PLACEMENT

Although there is no reference in the literature to prosodic restrictions concerning parenthetical placement in EP, the sentences in (3) to (6) show the presence of contrasts which cannot, in principle, be due to differences in syntactic structure.³

- (3) a. ?? O João comprou, segundo me disseram, livros
 the John bought to-me (they) said books
 ‘John bought books, so I heard’
- b. O João comprou, segundo me disseram, livros caros
 books expensive ‘expensive books’
- c. O João comprou, segundo me disseram, livros do Chomsky
 books of-the Chomsky ‘books by Chomsky’
- d. O João comprou, segundo me disseram, LIVROS (não revistas)⁴
 books (not magazines)
- (4) a. ?? O João é, segundo me disseram, mecânico
 the John is so to-me (they) said mechanic
 ‘John is a mechanic, so I heard’
- b. O João é, segundo me disseram, um bom mecânico
 ‘...a good mechanic’

³ Speakers’ judgements were not always consistent as far as parenthetical placement is concerned. Nevertheless, a clear pattern was present, and it is this pattern that is reflected in the data given in this section (‘??’ sums up ‘*’, ‘?/*’ and ‘?’; sentences noted as ‘okay’ were never judged otherwise). A collection of 50 parenthetical expressions found in newspapers’ articles from “O Independente” (of April, 9) was found to support the patterns in our data: 80% of the parentheticals are placed at I-phrase boundaries (e.g. beginning/end of utterance, before/after conjunctions, following topics or sentence initial adjunct adverbials), 12% at ‘particular’ ϕ -boundaries (e.g. between subject and verb), and 8% at other positions in which case they were always followed by a prosodic phrase with a heavy head.

⁴ In the examples, small caps indicate focus. As the terminology on stress patterns and focus is varied and sometimes confusing, we will keep the term focus only for narrow/contrastive focus, i.e. marked stress cases, and use neutral or default stress for the unmarked broad focus pattern.

- c. (?) O João é, segundo me disseram, um assassino ‘...a killer’
- (5) a. ?? A Joana sempre comeu, segundo me disseram, depressa
the Joan always ate so to-me (they) said fast
‘Joan has always eaten fast, so I heard’
- b. A Joana sempre comeu, segundo me disseram, bastante depressa ‘...quite fast’
- c. ?? O João comprou livros, segundo me disseram, caros
the John bought books so to-me (they) said expensive
‘John bought expensive books, so I heard’
- d. (?) O João comprou livros, segundo me disseram, muito caros ‘...very expensive’
- e. ?? O João comprou a fruta, segundo me disseram, madura
the John bought the fruit so to-me (they) said ripe
‘John bought the fruit ripe, so I heard’
- f. O João comprou a fruta, segundo me disseram, demasiado madura ‘...too ripe’
- (6) a. ?? O João comprou, segundo me disseram, flores
the John bought so to-me (they) said flowers
‘John bought flowers, so I heard’
- b. O João comprou, segundo me disseram, flores para a Maria
flowers to the Mary ‘flowers for Mary’
- c. ?? O João comprou, segundo me disseram, livros ontem ‘...books yesterday’

In each group of sentences the placement of the parenthetical expression remains unchanged, whereas the properties of the string to the right of the parenthetical vary. Different syntactic categories and different number of words, as well as different number and category of syntactic constituents to the right of the parenthetical have been considered. Examples such as (4a) and (5a), or (3a) and (6c), show that the contrasts found crosscut both syntactic category and number of syntactic constituents, and examples such as (3a) *versus* (3d), clearly suggest that the contrasts found are not syntactically-based, but rather prosodically-based. This is further shown by the examples in (7), where the syntactic structure of (7b, c, d, e, f, g) is the same as that of (7a, 3a, 4a, 5a, 5c, 6a), respectively, but the prosodic properties are different: in the former group of examples the rightmost syntactic terminal corresponds to two prosodic words (both in the case of compounds and in the case of *-mente* adverbs⁵), whereas in the latter group it corresponds to a single prosodic word.

- (7) a. ?? Uma estagiária processou, segundo os jornais, Clinton
a student sued according to the newspapers Clinton
‘A student sued Clinton, according to the newspapers’

⁵ That compounds and *-mente* adverbs form two prosodic words is shown by the presence of a strong secondary stress in the first prosodic word, as well as of an obligatory non-reduced vowel in that position.

number of prosodic words within I is neither a necessary nor a sufficient condition. The same applies to the number of phonological phrases within I, as illustrated in (9d). Therefore, only the weight of the ϕ heading I provides an accurate description of the data: both prosodic constituency, i.e. the phrasing of the material within the I-phrase, and prominence, i.e. the material which is the head of the I-phrase, are the relevant factors. The prosodic restriction on parenthetical placement in EP can thus be stated as in (10).

(10) The I-phrase right-adjacent to the I that contains the parenthetical requires a heavy head

Further, the definition of heaviness in EP has to include both focus and branchingness: a prosodic constituent is heavy if and only if it is focused or it branches. This is represented in (11), as an instance of a head-dependent asymmetry (in the sense of Dresher and van der Hulst 1995). That is, within the right adjacent I-phrase, the head has to be complex.

- (11) a. Branchingness
- | | | |
|---|--|---|
| i. I (see 9c)
/
... ϕ_w ϕ_s
... / \
ω ω | ii.(?) I (see 9b)
/
... ϕ_w ϕ_s
...
ω
/ \
σ ω | iii.* I (see 9a)
/
... ϕ_w ϕ_s
...
ω |
|---|--|---|
- b. Focus (two possible accounts)
- | | |
|---|---|
| I
/
... ϕ_w ϕ_s
... / \
x x
\ /
ω_{Foc} | I (see 9c)
/
... ϕ_w ϕ_s^S
...
ω |
|---|---|

Note that this complexity is locally defined, except in the marked case that involves a function word (see 11a_{iii}): in this particular case, complexity may only be achieved one level down in the tree. However, as the function word is not a Pwd

although some prosodic features of utterances with topicalized phrases, such as *pauses*, *heavy stress*, and *intonation contours*, are occasionally mentioned (cf. Duarte 1987, and Âmbar 1992).

As the sentences in (13) to (15) show, topicalization yields contrasts similar to those found in the cases of parenthetical placement.⁷

- (13) a. Expusemos aos nossos orientadores as dúvidas que tínhamos
 (we) told to-the our supervisors the doubts that (we) had
 'We have told our supervisors about the doubts we had'
- b.* As dúvidas que tínhamos, aos nossos orientadores, expusemos
- c. As dúvidas que tínhamos, aos nossos orientadores, expusemos detalhadamente
 'in detail'
- d. As dúvidas que tínhamos, aos nossos orientadores, EXPUSEMOS (não escondemos)
 'we told (we did not hide)'
- e. As dúvidas que tínhamos, aos nossos orientadores, nem sempre expusemos
 com suficiente clareza
 with enough clearness (we) not always told
- (14) a. Parece que pagaram o subsídio de Natal à Maria
 (it) seems that (they) paid the allowance of Christmas to-the Mary
 'It seems that they have paid the Christmas allowance to Mary'
- b.* À Maria, parece que, o subsídio de natal, pagaram
- c. À Maria, parece que, o subsídio de Natal, pagaram em Janeiro
 'in January'
- d. À Maria, parece que, o subsídio de Natal, não pagaram em Dezembro
 (they) not paid in December
 'they didn't pay in December'
- (15) a. O João leu esse livro
 the John read that book 'John read that book'
- b. (- Sabes se o João já leu "Os Lusíadas"?)
 'Do you know if John has already read "Os Lusíadas"?'
 - *Esse livro, o João leu
- c.* Ao João, esse livro, ofereci
 to-the John that book (I) offered 'I offered John that book'
- d. Ao João, esse livro, nunca ofereci
 (I) never offered 'I never offered John that book'

We observe that the string to the right of the topicalized phrase is subject to some constraint. That this constraint is not syntactic in nature is shown by examples such as (13c), (14c) and (15d), or by the contrast between (13b) and (13d), that illustrate

⁷ The examples (13c), (14d), and (15d) are taken from Duarte 1987. The examples (15b, c) are variations on data from Duarte 1987 and Mateus *et al.* 1989.

that neither syntactic category nor number of constituents to the right of the topicalized phrase are the relevant factors.

In (16), the prosodic structure of a sentence like (15c) is represented: as in the case of parentheticals, a topicalized phrase is obligatorily mapped into an I-phrase, and the string left to the right also forms an I.

(16) * [Ao João]_I [esse livro]_I [ofereci]_I

The observation of the right-adjacent I seems to indicate that this phrase is subject to a prosodic requirement. As illustrated in (17), the string right-adjacent to the topicalized phrase must contain at least one Pwd, or else a single focused Pwd.

(17) a. * [[ofereci]_φ]_I
 * [[expusemos]_φ]_I
 * [[o João]_φ [leu]_φ]_I

b. [[nunca ofereci]_φ]_I
 [[expusemos detalhadamente]_φ]_I
 [[EXPUSEMOS]_φ]_I

Moreover, this prosodic requirement does not apply over the entire string, but applies over the ϕ that heads the string, which is the rightmost one. This is shown in (17a). Like in the case of parenthetical placement, the role played by prosodic constituency and prominence is crucial for the definition of the weight requirement. We can thus formulate the prosodic restriction on Topicalization in EP as in (18).⁸

(18) The I-phrase that matches the clause from which a topicalized phrase was extracted requires a heavy head (i.e. the ϕ that heads the I-phrase has either to bear focus, or to be branching)

Interestingly, as documented by the examples in (19), (18) does not generalise to other cases of (left-)dislocated constructions and/or other instances of topic phrases. Unlike in (15b), in (19a) the moved phrase [esse livro] has a contrastive reading, yielding an exclamative sentence.⁹ In examples (19b and c)

⁸ Note that, unlike in the case of parenthetical expressions, here function words seem to fully count for branchingness, for all speakers. This unstable behaviour of function words may be due both to their non-Pwd status and to the fact that they are probably prosodized later than Pwds (cf. Vigário forthcoming). It should also be remarked that variation of the length of the topic phrase has no effect as long as the condition on the I-head is minimally satisfied, namely the topic phrase may be smaller or longer than the following I-phrase.

⁹ Dislocated constructions as in (19a), similarly to Wh-movement, have been analysed as involving movement of the relevant constituent to Spec,CP (cf. Âmbar 1992) or to Spec,FP (cf. Martins 1994).

there has been Wh-movement, and in example (19d) [o João] is a hanging topic. In all these cases (18) does not apply.

- | | |
|---|--|
| <p>(19) a. (- O João nem sequer leu esse livro)
 'John did not even read that book'
 - (Não, não.) Esse livro o João [leu]_φ !
 no no that book the John read
 '(That is not right.) That book John read'</p> | <p>c. Que livro [leste]_φ?
 which book (you) read
 'Which book did you read?'</p> |
| <p>b. Que livro o João [leu]_φ?
 which book the John read
 'Which book did John read?'</p> | <p>d. O João, esse fulano [viajou]_φ
 the John that guy travelled
 '(As for) John, that guy has travelled'</p> |

Therefore, it seems that (18) can not be generalised either to any case of left-movement, or to other instances of topic phrases. This strongly suggests that (18) is a constraint on a specific construction in EP, namely topicalization.

Based on the EP facts, and on data from other languages found in the literature, we will entertain the hypothesis that *only the constructions involving movement may be weight-restricted*, and that the different languages may specify different prosodic conditions on these particular constructions. In Serbo-Croatian, for example, movement to a CP-external position is only allowed if a topicalized phrase is heavy, that is if it branches (cf. Zec and Inkelas 1990, Schütze 1994). By contrast, movement to a CP-internal position is not weight restricted (cf. Xavar 1996). Further, CP-external base-generated adjuncts may be light (cf. Schütze 1994). Thus, both EP and Serbo-Croatian have weight-constraints on topicalization, although in the latter it is the moved phrase that is restricted while in the former the restriction affects the clause from which the phrase was extracted.

In what regards left-dislocation constructions in various languages, one of the major problems identified in the syntactic literature is whether the left-dislocated phrase is moved to or base-generated in its position (cf., for example, Riemsdijk 1997, and Wiltschko 1997). This has also been an issue in Romance, as work on Italian or Spanish has shown (cf. Cinque 1990, Zubizarreta 1994a,b, Escobar 1997, and Anagnostopoulou 1997). According to Duarte (1987, 1996), topicalization in EP displays different syntactic properties from left-dislocated constructions in other Romance languages. In the light of our hypothesis, this would predict that these constructions are not weight restricted in these languages namely if the *dislocated* phrase is base-generated (or if there is movement to a sentence internal position), unlike in EP.

In fact, and to our knowledge, there is no reference to weight-restrictions either of the EP or the Serbo-Croatian type both in syntactic or in prosodic work on these constructions, in Italian or in Spanish. In the case of Italian, there is phonological work that deals with topicalization or with weight effects on word order, such as Frascarelli (forthcoming) and Guasti and Nespor (1997), but no reference is found. As for Spanish, Zubizarreta (1994b) is a case in point, as prosody and word order are the issue, but again no reference is made.

Interestingly, Frascarelli's Italian examples show that left-dislocated topics have properties similar to adjuncts in Serbo-Croatian that are analysed as base-generated outside CP, according to Schütze (1994), and are followed by an I-boundary. When light, these adjuncts, like the Italian topics, may restructure as part of the root clause I-phrase and thus do not form an independent prosodic phrase (in Serbo-Croatian this is shown by the facts of second position clitics; in Italian by the behaviour of I-bounded phonological rules). This prosodic likeness is suggestive of the adequacy of a similar syntactic analysis.

Finally, hanging topics are generally analysed as base-generated structures. Thus, in the light of our hypothesis, similar cross-linguistic prosodic behaviour is expected. This seems to be true, as hanging topics always lead to clear I-boundaries and appear not to be subject to weight restrictions.¹⁰

The cross-linguistic observations above described are summarised in (20).

¹⁰ References to prosodic properties of hanging topics are not uncommon in syntactic literature and are often mentioned as distinguishing between hanging topic left-dislocation (HTLD) and other types of *left dislocation* structures. For example, in Cinque (1997) it is noted that in Italian HTLD 'may differ intonationally from CLLD [clitic left-dislocation] in that the left-hand phrase in the former is generally separated from the associated phrase by a longer pause and may have a rising intonation'; the same 'more pronounced break' is reported to characterise HTLD in Dutch (cf. Riemsdijk 1997, Anagnostopoulou 1997). A stronger distinction seems to be found in Greek, German and Spanish: according to Anagnostopoulou (1997), in Greek HTLD *dislocated* constituents are set off from the rest of the clause by a 'sharp intonation break', while such a 'pause' does not occur in clitic left dislocation structures; Wiltschko 1997 refers that HTLD constituents in German are uttered with 'comma intonation', while *left dislocated* constituents occur within a 'single contour'; and the same distinction may be inferred from the Spanish examples of HTLD and CLLD, provided by Escobar 1997 (while in the former construction a comma follows the *dislocated* constituent, no such marker is used in the latter).

(20)

Syntax	Prosody	Prosodic constraints (weight) on
Constituent-movement · 'Internal' (Spec,XP) · 'External' (Adjuncts)	NO I-phrase break I-phrase break	----- (e.g. SC, EP) · Moved phrase (e.g. SC) · Clause from which the phrase was extracted (e.g. EP)
Base-generation Adjuncts	I-phrase break	----- (e.g. SC, EP, It., etc)

It is important to note that, if we are on the right track, the previous discussion has consequences for the analysis of certain syntactic constructions: if a construction *C* has prosodic correlates of type *P* in various languages, then the presence or absence of *P* can be a useful contribution to the analysis of a certain construction as *C* or not. In other words, work on such phonology-syntax connections may increase the usefulness of phonological evidence in determining certain aspects of the *syntactic* structures of a language (cf. Inkelas and Zec 1995 for arguments in this direction and an illustrative case in Korean).

To conclude this section, we would like to suggest a possible motivation for the weight restriction that affects parenthetical placement and topicalization in EP. Taking into consideration the strong demarcative properties of I-phrasing in EP described in previous prosodic work and the fact that I-phrases display final prominence, a weight restriction which requires a rightmost heavy I-head can be seen as a re-grouping strategy for the *demarcation* of a semantic and a syntactic unit that has been broken by parenthetical insertion or topicalization (cf. Selkirk's 1984 and Pierrehumbert and Hirschberg's 1990 considerations on Is as 'semantic' units).

4. COMPLEMENT SHIFT

Heaviness can also be shown to play a role in complement shift phenomena, our third case of prosodically constrained word order in EP.

The syntactic literature mentions two instances of complement shift: sentential phrase complement shift and other phrases' complement shift (cf. Mateus et al. 1989). The former, exemplified in (21) is obligatory, and is not weight-

related.¹¹ The latter is optional, and is weight-related. Here we will be only concerned with the second case of complement shift.

- (21) a. O jornalista contou aos amigos [que lhe tinham censurado a reportagem]
 the journalist told to-the friends that (they) him had censored the news
 b. * O jornalista contou [que lhe tinham censurado a reportagem] aos amigos
 'The journalist told his friends that his newspaper report had been censored'

Both long/complex phrase complements and short/simple phrase complements may be shifted in EP, as (22a-b) and (22c-d) respectively show.

- (22) a. A Ana comprou ao Pedro [o quadro do vencedor do concurso]
 the Anne bought from-the Peter the painting of-the winner of-the contest
 b. ??/* A Ana comprou [o quadro do vencedor do concurso] ao Pedro
 'Anne bought from Peter the painting of the contest winner'
 c. O Zé deu à Maria UM LIVRO (não uma flor)
 the Zé gave to-the Mary a book (not a flower)
 d. O Zé deu um livro à Maria
 'Zé gave Mary a book'

However, while long complements tend to be shifted and do not trigger focus, a shifted short simple phrase complement seems to have to be focused. This contrast is illustrated in (23) *versus* (24).¹²

- (23) a. A quem é que a Ana comprou o quadro do vencedor do concurso?
 'From whom did Anne buy the painting of the contest winner?'
 (i) A Ana comprou AO PEDRO o quadro do vencedor do concurso
 (ii) A Ana comprou o quadro do vencedor do concurso AO PEDRO
 b. A Ana comprou ao Paulo o quadro do vencedor do concurso?
 'Did Anne buy from Paul the painting of the contest winner?'
 (i) Não. A Ana comprou AO PEDRO o quadro do vencedor do concurso
 (ii) Não. A Ana comprou o quadro do vencedor do concurso AO PEDRO
 c. O que é que aconteceu?
 'What happened?'
 (i) A Ana comprou ao Pedro o quadro do vencedor do concurso
 (ii) * A Ana comprou o quadro do vencedor do concurso ao Pedro

¹¹ Sentential phrase complement shift seems to be obligatory even if the other complement phrase has a similar relative weight. However, if the other complement phrase contains focus-related words, such as a focusing adverb, the sentential phrase complement may not shift regardless of relative weight considerations. Sentential complement shift looks thus different from phrasal complement shift. This is an issue for future research.

¹² According to our own judgements (23ai) and (23bi) are better than (23aii) and (23bii). This suggests that branchingness is preferred to focus in the fulfilment of the weight requirement.

- | | | |
|--------------------|--|--|
| (24) ¹³ | a. Ele ofereceu-lhe um vestido ?
'Has he given her a dress ?'
(i) (Não) O Zé deu à Maria UM LIVRO
(no) the Zé gave to-the Mary a book
(ii) (Não) O Zé deu UM LIVRO à Maria | b. O que é que aconteceu ontem?
'What happened yesterday?'
(i) O Zé deu um livro à Maria
(ii) * O Zé deu à Maria UM LIVRO
(iii)* O Zé deu à Maria um livro |
|--------------------|--|--|

These facts, which are difficult to characterise in pure syntactic terms, follow naturally from a phonological weight restriction on complement shift like (25).¹⁴

(25) Shifted complements have to be heavy

As in the two former cases of parenthetical placement and topicalization, heaviness can be achieved by one of two means: branchingness, measured in number of ϕ s (i.e. more than one ϕ) or focus. This means that heaviness (and not focus by itself) is the crucial factor for shift in EP. Note that (i) a shifted nonbranching constituent has to be focused to comply with the weight requirement (see 24), (ii) a branching constituent may shift and not be focused (see 22a), and (iii) focus may be assigned regardless of complement shift, that is a focused phrase can be followed by a shifted complement, as in (23a-b).

In short, complement shift is triggered by weight in EP. In this respect, EP is unlike languages such as Italian or English, although for different reasons. It is unlike Italian in that a shifted complement in this language does not necessarily have to be heavy, according to Guasti and Nespors (1997), as (26a) shows. When the complements are both nonbranching, Italian seems to display free ordering, as the shifted phrase may be focused or not and thus convey either broad or narrow focus interpretation. However, Italian patterns like EP in cases of different complement heaviness: the heavier complement, that is one including more than one ϕ , tends to occupy the rightmost position regardless of focus, as in (26b).¹⁵

- | | | |
|------|--|---|
| (26) | a. Cosa hai fatto ?
(i) Ho dato un libro a Gianni
(ii) Ho dato a Gianni un libro | 'What have (you) done ?'
(I) have given a book to John |
|------|--|---|

¹³ The examples in (24) are taken or adapted from Mateus *et al.* 1989. The focus tests are our own.

¹⁴ By *shifted complement* we mean the constituent that ends up in the rightmost position. The details of the operation that yields this ordering are not crucial for us (cf. Rochemont and Culicover 1990 and Zubizarreta 1994b for discussion of different analyses).

¹⁵ The examples in (26) are taken from Guasti and Nespors 1997. '>' indicates the sentence that is preferred.

- b. Hanno spedito [dei fiori]_φ [molto belli]_φ [a una cantante]_φ
 > Hanno spedito [a una cantante]_φ [dei fiori]_φ [molto belli]_φ
 (they) have sent some flowers very nice to a singer

Both Italian and EP differ from English in that in the latter complement shift is not independent of focus interpretation, namely a complement is not shifted for being heavy but to be interpreted as narrow focused (see Rochemont and Culicover 1990, and Zubizarreta 1994b). This is shown in (27) and (28), that contrast with the Italian examples in (26b), and the Portuguese ones in (23).

- (27) a. What did John purchase for his wife?
 b. * For whom did John purchase a brand new fur coat?
 John purchased for his wife [a brand new fur coat]
- (28) John bought [a painting that he liked] for his mother

However, as long acknowledged in the English literature, there is a weight restriction on the shifted complement that gets the narrow focus interpretation. According to Zec and Inkelas (1990), it has to contain at least two phonological phrases, as (29) shows.¹⁶

- (29) a. * Mary saw in the room [the man]
 b. Mary saw in the room [the one man she had no desire to see]
 c. * Mark showed to John [some letters]_φ
 d. Mark showed to John [some letters]_φ [from Paris]_φ

While there is general agreement among authors that the length of the shifted phrase meets the weight restriction, the same is not true regarding prosodic focus: Zec and Inkelas do not consider it, Rochemont and Culicover observe that it marginally contributes to weight, and Guasti and Nespor consider it fully meets the weight restriction, as it seems to be the case in EP. We suspect that the differences in the features of the phonological expression of focus in the two languages may account for general focus-related heaviness in EP and for variation in focus

¹⁶ The examples (27), (28), (29a-b) are taken from Rochemont and Culicover 1990, and (29c-d) from Inkelas and Zec 1995. Note that Rochemont and Culicover 1990 observe that (29a) is improved if [the man] is made heavier by intonational and accentual means.

counting for weight in English. The issue will not be developed here for space considerations.¹⁷

The table in (30) sums up the main properties of complement shift in the three languages mentioned.

(30)

	“NP Shift”	“Heavy NP Shift”	“Focus (heavy) NP Shift”
Properties	Italian	EP	English
Shift for	-----	Weight	Focus interpretation
Shifted C must be	-----	Heavy	Narrow focused & heavy
Rightmost is heavier	if X longer than Y	Always	-----
Weight measurement	number of ϕ s (≥ 2)	$n^\circ \phi$ s (≥ 2) or focus	$n^\circ \phi$ s (≥ 2) or ?focus

Noticeably, and despite the differences, in all of these languages weight has a role to play in the ordering of complements. Weight constraints on ordering seem to be more conspicuously enforced in EP, not only because heaviness is the crucial factor for shift but also because EP displays alternative ways of meeting the weight requirement.

5. CLITIC PLACEMENT

Phonological weight can also be shown to enlighten a long-debated puzzle in the literature on EP syntax: pronominal clitic placement. There is extensive work on the syntax of pronominal clitics in EP (see among other recent work, Martins 1994, Duarte et al. 1995, Duarte and Matos 1995, and Rouveret 1995, for pure syntactic analyses, and Barbosa 1996, for a syntactic/phonological analysis). Focusing on the role phonology plays on clitic placement, our aim is to uncover some generalisations about the phonological side of the distribution of clitics that

¹⁷ In English, utterance-final narrow focus is (locally) ambiguous with the neutral (broad focus) reading (cf. Ladd 1980, 1996). In EP, there is no such ambiguity between a focus reading and a neutral reading (cf. Frota 1997, forthcoming). In the case of English, the ambiguity is seen as a consequence of either situation being characterised by the same phonological representation. Conversely, in the case of EP the fact that there is no ambiguity is interpreted as the result of a phonological difference expressed in terms of distinct prominence and intonational features. It is interesting to note that different varieties of Italian have also been reported to convey focus by means of a special pitch accent, similarly to EP (cf. Grice 1995, Grice and Savino 1997, and D’Imperio 1996). Further, like in EP, in Neapolitan Italian there is no ambiguity of the late nuclear accent pattern between the neutral and the focus reading, according to D’Imperio 1997 (we know of no data concerning other Italian varieties, in this respect).

the syntactic approaches have failed to notice. We will try to show that proclisis triggers share certain phonological properties, that proclisis is sensitive to prosodic restrictions, and that proclisis motivation may be phonological.

5.1. *For a phonological characterisation of proclisis triggers*

The distribution of enclisis and proclisis in EP is widely described in the literature, and is summarised in (31).¹⁸

- (31) 1. Enclisis (V CL)
 In unmarked finite and non-finite clauses
 2. Proclisis (CL V)
 When any of the following element precedes the clitic within a certain domain:
- a. negative markers
 - b. certain quantifiers
 - c. certain adverbs
 - d. overt complementizers / certain conjunctions
 - e. wh-phrases
 - f. left-dislocated phrases containing elements of type (a), (b), or (c), and associated with wh-movement-like properties¹⁹

Following a suggestion put forward in Frota (1994), and in accordance with some recent syntactic analyses (namely Duarte et al. 1995, Duarte and Matos 1995, and Rouveret 1995), we will assume that enclisis is the basic/unmarked pattern in EP, and that verb movement and clitic movement yield the basic (enclitic) pattern in this language (unlike in other Romance languages). As for proclisis, different motivations for the CL V order have been proposed in the syntactic literature, which generally involve the presence/strength of functional projections and/or the assumption of particular properties carried by the sub-class of operator-like elements that trigger proclisis (cf. Duarte and Matos 1995, for details and

¹⁸ It should be noted that here enclisis and proclisis only refer to the position of the clitic in relation to its syntactic host, the verb, and thus do not necessarily have the correspondent phonological implications. Although that is not the unmarked case, it is known from the literature that the directions of syntactic and phonological cliticization do not always coincide (cf. Klavans 1985, Nespor and Vogel 1986 and Nespor 1993).

¹⁹ This construction seems to be restricted to phrases containing the elements mentioned and to a group of ‘lexicalized’ expressions, and it usually yields exclamative sentences with old-fashioned flavour. Martins 1994 reports that this construction became gradually less productive from the 17th century onwards (and topicalization increasingly more productive). We will not be concerned with this here.

discussion of the various proposals).²⁰ Here we would like to put forward a phonological contribution to the characterisation of proclisis triggers: they form the set of *strong* function words. For this definition we have used prominence-based phonological criteria, which in some instances are additionally supported by segmental phenomena. These prominence criteria are stated paradigmatically, and elaborate on Ladd's (1991) proposal that different parts of speech have different expected prominence patterns.

In (32) we present a phonological classification of different types of *words* in EP. By a *stressed element* we mean one that bears lexical word stress; a *stressable element* is one whose prominence may be promoted in one of two ways: by means of emphasis, which is a property of the initial position of a prosodic word, or by occupying the final position of a prosodic phrase; a *focusable element* is one that may bear the highest prominence within an I-phrase, irrespective of the position it occupies. The stressability due to emphasis is optional, it is not characterised by the presence of a pitch accent, and it is a gradient phenomenon. By contrast, the stressability due to the final position in a prosodic phrase is obligatory and is marked with a pitch accent. Finally, a focusable element may be assigned a special nuclear pitch accent, which is never associated with unfocusable elements (see Vigário 1995, forthcoming, and Frota 1997 for the details).

(32)

Criteria	Lexical Words	Strong Function Words		Weak Function Words	
		Type I	Type II	Type I	Type II
Stressable (for 'emphasis')				+	-
Stressable (by position)			+	-	-
Stressed (word stress)	+	+	-	-	-
Focusable	+	-	-	-	-

Thus, according to the relevant prominence properties, the EP the function words of EP may be grouped into different categories, as listed in (33).

²⁰ Note, however, that Duarte and Matos forthcoming depart from their previous analysis in assuming that proclisis may be phonologically driven, as proposed in Frota and Vigário 1996 (and further argued here).

- (33) Strong Function Words
 Type I: most quantifiers, wh-words, some conjunctions,
 some subordinators, negative words, simplex adverbs
 Type II: some conjunctions, some subordinators, complementizers,
 Weak Function Words
 Type I: articles, prepositions, pronominal proclitics
 Type II: pronominal enclitics

In many languages, lexical and function words display different phonological properties (see, for example, Selkirk 1984, 1995). In some languages, the phonological distinction almost exactly mirrors the categorical distinction. In other languages, the phonological behaviour of function words is various, thus yielding a more complex picture. We believe EP is such a case, as shown in (32) and (33).

Function words are generally regarded as closed class items with a grammatical function and little semantic content. These properties usually match with the following set of prosodic properties: function words are not subject to a minimal size requirement, are usually banned from prosodic head status, and are non-prominent (see, e.g. Dresher and van der Hulst 1995). In short, in the default case, function words are usually phonological clitics. There are however special cases in EP that do not follow the general default pattern and thus have to be marked. The first case, that we have called *strong function words of type II*, is characterised by occurring in a prosodically prominent position (namely in Intonation Phrase final position) and thus has the possibility of acquiring a prosodic word status by virtue of being a prosodic head. As these prominence features are exceptional, and we are dealing with a closed class, conditions are met for their lexicalization: we propose that these elements are lexically marked with a *strong* feature. As for the second case of *strong function words*, those of *type I*, it is characterised by having prominence regardless of its prosodic position, and by bearing word stress. These properties assign them prosodic word status and allow them to be prosodic heads. As we have seen, both stress and prominence features are exceptional in function words and again the conditions for the lexicalization of these properties are met. We propose that these elements are marked with the prominence features *stress* and *strong*.

An extensive exemplification of the phonological properties of each set of function words can not be given here for space limitations, but see (34) for an

illustration of the phonological contrast between *strong function words of type II*, such as the complementizers *de/que* (34b,d,e), and *weak function words of type I*, such as the preposition *de* (34a,c).²¹

- (34)
- | | | |
|----|---|-------------------|
| a. | A Maria gosta deles (*de eles; *d[j]eles)
the Mary likes of-them | 'Mary likes them' |
| b. | O facto de eles (*deles; d[j]eles/d[_]eles) partirem ...
the fact that they leave ... | |
| c. | *Entrevistei os frequentadores de] _I bares famosos da região do Norte
(I) interviewed the customers of bars famous from-the region of-the North
'I interviewed the customers of famous bars from the North' | |
| d. | O facto de] _I segundo o Paulo] _I eles partirem ...
the fact that according to Paul they leave ...
'The fact that, according to Paul, they will leave ...' | |
| e. | O João disse que] _I a Maria chegou atrasada ao aeroporto
the John said that the Mary arrived late to-the airport
'John said that Mary arrived late to the airport' | |

Further arguments for this view of function words come from their behaviour in various languages. We will only point out two examples. First, function words may regularly have two forms, i.e. a strong and a weak form, whose distribution has a prosodic basis. At least in some cases the two forms are listed in the lexicon (cf. Zwicky 1977, Selkirk 1984). The two possible realisations of the article *a* in English, given in (35a), constitute an example of such a case. Second, some special function words usually have to be analysed as marked, due to their particular phonological properties. Serbo-Croatian provides two interesting examples, that are given in (35b).

- (35)
- | | | |
|----|--|--|
| a. | English
[←̩] (* in prominent position) / [eɪ] (in prominent position) | article 'a' |
| b. | Serbo-Croatian
da
ali / ali (H tone) | complementizer 'that'
conjunction 'but' |

According to Zec and Inkelas (1990), all content words in this language correspond to prosodic words, as is shown by the fact that they bear stress and have a high

²¹ For details on the prosody of function words the reader is referred to the following works: Vigário forthcoming, on the prosody of 'stressless' function words (i.e. *weak function words* versus *strong function words of Type II*); Vigário 1997a, on the prosodic properties of sentential negation; Vigário 1997b, on the prosodic properties of simplex/focusing adverbs (versus Frota 1993a, on the prosodic properties of morphologically derived adverbs); and Frota 1991, on the prosodic properties of quantifiers.

tone.²² By contrast, function words are *not* prosodic words, i.e. they have no stress, no H tone, and no clitic hosting abilities. However, complementizers are not realised as stressed, and yet can host clitics. This drives Schütze (1994) to analyse them as *marked* Pwds, meaning that they are prosodically different from regular function words, and this difference is encoded by some lexical mark. In our terms, this would be a case similar to a *strong function word of Type II*. Further, there are two conjunctions that are reported to be optional Pwds, in that they can optionally host clitics in which case they surface as stressed and bear the H tone (cf. Inkelas and Zec 1990). In our terms, this would be a case close to our *Type I* class of *stressed* and *strong* function words, marked as such in the lexicon.

Cross-linguistic evidence for a *strong* lexical phonological feature carried by elements similar to EP proclisis triggers can also be found. According to Cho (1990), in Korean morphologically identical forms are distinguished by prominence-related phonological properties. The forms that bear these properties are wh-words and subject focus-case markers that contrast with indefinite pronouns and subject topic-case markers (see 36a).²³ Another example comes from a set of clitics in Bengali that share several properties with focusing adverbs such as ‘only’ or ‘even’. Although Bengali, like Korean, is not a tone or pitch accent language, and only stressed elements may bear pitch accent, this closed class of clitics has tonal information specified in its lexical representation (cf. Lahiri and Fitzpatrick-Cole 1997). Remarkably, as clitics these elements are not stressed and, nevertheless, can bear tonal information because they are lexically marked. In our terms, they would be *strong function words of Type II* (see 36b).

- (36) a. Korean
- | | |
|---------------------|---|
| nuku / nuku [+high] | ‘someone’ / ‘who’ |
| viv / nin [+high] | unmarked topic / contrastive focus |
| ka / ka [+high] | marked topic / exhaustive listing focus |
- b. Bengali
- | | |
|----|--------|
| H* | |
| | |
| =i | ‘even’ |

Another example, involving elements of our *Type II strong function words*, is found in Bulgarian, where the negative clitic *ne* carries an inherent stress that is

²² Note that Serbo-Croatian is a pitch accent language.

²³ The [+high] property associated with the subject focus-case markers is attributed to and realised in the case-marked NP. We thank Young-mee Cho for the detailed information on the Korean data.

realised in a following (previously) unstressed element (cf. Rudin et al. forthcoming). A final example, involving elements of our *Type I strong function words* is shown in (37). According to Zubizarreta (1994), negative polarity items cannot be deaccented in Spanish. For this reason, these elements cannot appear in constructions where, due to nucleus shift to the left, they would have to be deaccented, as in (37b). This entails that these particular elements have special prominence features.

- (37) a. Trajo JUAN el vino versus b. *No probó JUAN nada
 brought Juan the wine not try Juan anything

In conclusion, there is both intra- and cross-linguistic motivation for the notion of *strong* function words. Crucially, in EP the set of strong function words contains the proclisis triggers. In other words, it is the presence of a strong function word that, in the right configuration, triggers the CL V order. This means that a characterisation of the triggers calls for two different types of criteria: a morphosyntactic one - the function category - and a phonological one, defined in terms of stress and level of prominence. Thus lexical words do not trigger proclisis, in the same way as function words which are weak do not trigger proclisis.

5.2. *The phonological domain of proclisis*

Besides the phonological contribution to the characterisation of proclisis triggers, phonology can also be shown to play a role in the definition of the domain of proclisis.

Let us consider the configuration in which proclisis is blocked. There are at least two conditions on proclisis: a syntactic condition, which has been generally implicit in the syntactic analyses, and a prosodic condition, which has been generally overlooked:²⁴ the trigger and the clitic have to be contained within the same CP *and* within the same Intonational Phrase (I).

²⁴ Note that the proposal put forward in Barbosa (1996) includes a prosodic stipulation that does result in the necessary presence of an I-boundary to the left of the verb when enclisis occurs. Although Barbosa's account, like ours, relies on the importance of the I-phrase, the two analyses are crucially different: Barbosa derives clitic placement from an initial prosodic stipulation that bans pronominal clitics from I initial position and has to motivate the required presence of an I-boundary whenever an enclitic occurs (thus running into a number of empirical mismatches with I-phrasing in EP); we simply acknowledge that proclisis has the I-phrase as its phonological domain.

Although we will not concentrate here on the syntactic condition, we should precise the following. One of the reasons for considering the syntactic domain CP as relevant for the characterisation of the configuration under which proclisis arises is the fact that clausal coordinate conjunctions such as *mas* ‘but’, *e* ‘and’, and *ou* ‘or’ have the same phonological properties as the *strong function words of type II* and yet do not trigger proclisis when in the same I-phrase as the clitic. If we assume that in clausal coordination the conjunction is not internal to the relevant CP we can exclude this ‘proclitic’ on the basis of the CP-condition.²⁵ It is interesting to note that work on (prosodic word) Second Position (2P) clitics in several languages has also shown that both a phonological *and* a syntactic domain (namely, I and CP) may be relevant for clitic distribution (cf., for example, Schütze 1994, Billings 1996, Rudin et al. forthcoming, for Serbo-Croatian, Russian, and Bulgarian, respectively).²⁶ In EP disjunct coordination of the form *ou...ou / quer...quer* ‘either...or’, on the contrary, proclisis arises. Martins (1994) notes the

²⁵ An alternative to this proposal would be to distinguish the domain of cliticization of clausal coordinate conjunctions from the domain of cliticization of other conjunctions and complementizers. All these elements are prosodically defective, as shown by the fact that they lack word stress, and therefore they must cliticize to a prosodic constituent (cf. Vigário forthcoming). In Zec and Inkelas (1990, 1991), it is proposed that different constituents of the prosodic hierarchy may be selected as possible hosts for cliticization. So, if we assume that clausal coordinate conjunctions are attached via an adjunction structure to the I-phrase domain, while the remaining conjunctions and complementizers cliticize at the level of the phonological phrase, we could also exclude these cases from the set of proclisis configurations. Under this analysis, proclisis would arise only when the trigger and the clitic are dominated by the same I-phrase (adjuncts being excluded through the notion of *domination*, as defined in Chomsky 1986:7). However, we do not have independent evidence for this analysis. Besides, other facts, such as those related with restructuring constructions involving modal verbs (cf. Gonçalves 1994, 1997), also show the need for a CP domain. This is an issue for future work.

²⁶ A revealing example showing the relevance of the CP domain is the following Bulgarian case (taken from Rudin et al. forthcoming).

- (i) *V*le *ste* *go* *GLEdali* *li* *TOzi* *FILM*?
 you_{NOM,PL} are_{2,PL} it_{ACC} seen_{PL} Q this_{M,SG} film
 ‘Have you seen this film?’

(verbal clitics are in italic, the clausal question particle is in italic and in underline, and stressed syllables are in capitals)

li is a 2P (en)clitic to a preceding prosodic word. Although the topic phrase *vie* qualifies as an appropriate host for *li*, it is not within the CP domain of *li* and therefore *li* must encliticize to the following Pwd, the verb, which is the first Pwd within the relevant CP domain. That there is no prosodic (I) break in this sentence is shown by the position occupied by the verbal clitics *ste* and *go*. These clitics are only prohibited from appearing in a prosodic phrase initial position (presumably I), and thus they may appear preverbally in (i) but not in (ii).

- (ii) *V*le // *GLEdali* *li* *ste* *go* *TOzi* *FILM*?
 you_{NOM,PL} seen_{PL} Q are_{2,PL} it_{ACC} this_{M,SG} film
 ‘Have you seen this film?’

(// signals a ‘pause’ or a ‘prosodic break’)

We thank Loren Billings for discussion and confirmation of these facts.

similarity between this type of (*inter-dependent*) coordination and subordination structures, which is suggestive of a syntactic analysis different from *non-dependent* clausal coordination. A distinction between IP (Inflexional Phrase) and CP coordination is also found in Old Spanish, according to Fontana (1996): only in the former but not in the latter may the conjunction function as a host of a 2P clitic. Finally, it should also be observed that non-sentential coordination never triggers proclisis. In this case, the phonological properties of the conjunctions are different from those that characterise the sentential conjunctions in that they can never be in I-phrase final position, that is, they can never occur in phonologically prominent positions. Consequently, they are not expected to be assigned a phonologically *strong* status.

Let us now consider the facts regarding the prosodic condition. In sentences (38a, c, and g) both the syntactic and the phonological conditions are met and proclisis succeeds. In (38e-f) none of them is met and enclisis is the pattern found. Noticeably, in examples (38b, d, and h) it is only the prosodic condition that is not met and proclisis does not succeed.²⁷

- (38)
- a. Todos os rapazes se encontraram ontem
all the boys CL met yesterday
 - b. Os rapazes todos]I encontraram-se ontem
the boys all met-CL yesterday
 - c. Os rapazes]I todos se encontraram ontem 'All the boys met yesterday'
 - d. Os rapazes apenas]I encontraram-se ontem
the boys only met-CL yesterday 'Only the boys met yesterday'
 - e. A todos eles]I conheço-os bem
to all (of) them (I) know-CL well 'I know all of them well'
 - f. Eu não convenci o Pedro]I a encontrar-se com eles
I not convinced the Peter to meet-CL with them
' I did not convince Peter to meet them'
 - g. Eu convenci o Pedro]I a não se encontrar com eles
I convinced the Peter to not CL meet with them
' I have convinced Peter not to meet them'
 - h. Todos os homens que são sociáveis]I encontram-se perdidos quando
condenados à solidão
all the men that are sociable are-CL lost if
condemned to-the loneliness
' All the sociable men suffer if they are condemned to loneliness'

²⁷ The trigger is underlined in these and in the following examples.

The relevance of the prosodic condition for proclisis is further shown by the data in (39).²⁸

- (39) a. O João disse que a viu (*viu-a)
 the John said that CL saw 'John said that he saw her'
- b. O João disse]I que a Maria lhe deu (*deu-lhe) um beijo
 the John said that the Mary CL gave a kiss
- c. O João disse que]I a Maria deu-lhe um beijo
 'John said that Mary gave him a kiss'
- d. O Pedro disse que o livro te foi (*foi-te) entregue ontem
 the Peter said that the book CL was given back yesterday
 'Peter said that the book was delivered to you yesterday'
- e. O Pedro disse que o livro encomendado à Biblioteca Nacional]I foi-lhe entregue ontem
 the Peter said that the book that (he) ordered from-the National Library was-CL given back yesterday
 'Peter said that the book that he ordered from the National Library arrived yesterday'
- f. Tem chovido tanto que os campos se alagaram (*alagaram-se) excessivamente
 (it) has rained so much that the fields CL flooded too much
- g. Tem chovido tanto que, quanto à região do Mondego]I os campos
 alagaram-se excessivamente
 (it) has rained so much that as for-the region of-the Mondego the fields flooded-CL too much
 'It has rained so much that, in the Mondego region, the fields are too flooded'
- h. E imagina tu que, aos gerentes]I o tipo trata-os o melhor que pode
 and imagine you that to-the managers the guy treats-CL the best that (he) can
 'And can you imagine, the guy treats the managers as well as he can'

Enclisis is possible in the following cases: when a pause intervenes between trigger and clitic (see 39b *versus* c), or a heavy constituent (see 39d *versus* e), or a parenthetical (see 39f *versus* g), or a topic phrase (see 39h). The common trait of all these cases is the presence of an I-boundary between the trigger and the clitic. Therefore, we have to conclude that sensitivity to prosody characterises clitic placement in EP. This fact, undealt with in most syntactic approaches, certainly reinforces the argument for the role phonology plays in clitic placement.²⁹

5.3. A phonological motivation for proclisis

²⁸ The examples (39f-g) are taken from Martins 1994, and (39h) is taken from Mateus *et al.* 1989. It should be noted that we are not considering differences in clitic distribution that may be due to properties associated with different verb classes or different moods (for example, structures involving the subjunctive form appear to be less permissive regarding the enclitic pattern in cases equivalent to (39e) - we thank Charlotte Galves for drawing our attention to this point). The discussion of those differences would lead us too far.

²⁹ Note, however, that (39) is different from (38) in two respects: first, in (39) when enclisis is possible it may alternate with proclisis; second, the I-phrases in (39) are either due to grammatical phenomena that are weight-sensitive, or due to prosodic phrase length, which is also weight-determined. These two aspects will be discussed in the final section of this paper.

The facts of both the phonological properties of triggers and clitics, and the phonological conditions on the domain of proclisis suggest that phonology may also have something to say as to *why* the clitic moves.

It is well-known that EP pronominal clitics *syntactically* require a verbal host. We have already seen that proclisis triggers are the strong function words, whereas the clitic is a pure stressless element in EP (section 5.1). We will entertain the hypothesis that such heavy triggers attract the weak clitic and thus proclisis arises so that the *phonologically* dependent clitic is placed as CLOSE to the trigger as it can be. This hypothesis leads to the idea that pronominal clitics have the set of strong function words specified as their *phonological hosts*.

Although clitic attraction by such a restricted set of triggers is not, as far as we can tell, a common pattern cross-linguistically, similar cases do exist. We can mention three of such cases: (i) in Macedonian, verbal clitics only affect the stress of certain types of words, like wh- interrogative stems and verbal adverbs, what is taken to indicate that they encliticize to these special words (cf. Rudin et al. forthcoming); (ii) in Serbo-Croatian, the auxiliary 2P clitic does not have to be in the second position only when preceded by *ne*, the sentential negative marker (cf. Schütze 1994); (iii) in Gurindji (a Ngumpin language, Northern Australia) initial interrogative focus constituents, negative particles, and subordinate complementizers replace the auxiliary as clitic hosts where they occur (cf. McConvell 1996, that notes the similarity with pronominal cliticization in EP).

However, in EP the clitic can never be placed next to the trigger and away from the verb, as shown in (40a-c), contrary to what happened in Old Portuguese (see 40d, an example taken from Martins 1994).

- (40) a. O João disse que lhe deram o recado
 the John said that CL (they) gave the message
 ‘John said that they have given him the message’
 b. O João disse que eles lhe deram o recado
 they
 c. O João disse que *lhe eles deram o recado
 d. ... não possamos negar (...) que as del não recebemos
 (we) not can deny that CL from-him (we) not received
 ‘ we cannot deny that we have not received them from him’

This can be explained by the presence of a dual requirement on clitic hosting in EP. As clitics also require a verbal host, whenever both the verb and the trigger co-occur in the relevant domain, a conflict may arise. If the trigger is adjacent to the Verb-Clitic sequence, the dual requirement can be fully met, as in (40a); if there is no adjacency, we have a conflict and the dual requirement can only be partially met, that is the clitic is placed as close as possible to the trigger without detaching from the verb, as in (40b). This means that the conflict is resolved on behalf of syntax: although attracted by the trigger, the clitic must remain a verbal guest. Moreover, it is the preservation of the syntactic requirement that determines the way in which the clitics are prosodized in EP: if in postverbal position, they are phonologically encliticized to the verbal host; if in preverbal position, they are phonologically procliticized to the verbal host (cf. Vigário forthcoming). These prosodization facts follow naturally from the necessary adjacency between clitic and verb, as the prosodization of clitics occurs in the phonology proper, that is after clitic ordering is obtained. That clitic ordering is achieved prior to phonology proper is seen by the presence of allomorphy that is sensitive to clitic position, as shown in (41a). This means that at the point where clitic morphemes are inserted clitic ordering has already been obtained. Another argument in the same direction concerns the application of phonological rules that distinguish between enclitics and proclitics, as illustrated in (41b).

- | | | | |
|------|--|--------|---|
| (41) | a. <i>comemo-la</i>
(we) ate-CL
'we ate it' | versus | (já) <i>a comemos</i>
(already) (we) CL ate
'we have already eaten it' |
| | b. <i>ouvi-e objectar</i>
(I) heard-CL object
'I heard you object'
(obligatory Pwd-final vowel deletion) | versus | (não) <i>te ouvi objectar</i>
(I) (not) CL heard object
'I didn't hear you object'
(a glide may surface) |

The present phonological contribution to an analysis of clitic placement in EP can be shown to have some interesting consequences for three different episodes of the clitic story.

From a diachronic perspective, the idea that clitics have the set of strong function words specified has their phonological hosts seems to make sense as a residue of a phonological dependency on early elements of the clause (cf., for example, Rivero 1986, and Fontana 1996 for phonological encliticization in Old Spanish, and Martins 1994 for Old Portuguese data). Moreover, work on several languages has shown that in the

historical change of cliticization systems, in addition to the complete change from one system to another, languages in which there is variation between different systems are expected, and this variation may instantiate different stages in an ongoing change (cf., among others, Renzi 1989, Wanner 1996, and McConvell 1996). This can be illustrated by the Pama-Nyungan language family (spoken in Northern Australia), in which the second position clitic system is being lost and the verbal clitic system is taking over. The dominant pattern in this language family is the cliticization to the first word or constituent, but in a sub-group of these languages/dialects cliticization to the verb/auxiliary (not in 2P) has completely taken over. However, in some other languages as Gurindji and Mudburra, there is a mixed system with 2P as a “marked” type of cliticization restricted to a class of elements/constructions (cf. McConvell 1996). As it was already pointed out, the intermediate stage attested by Gurindji has similarities with the EP case, although EP seems to be closer to ‘pure’ verbal cliticization in that the clitic is not allowed to leave the verb.³⁰ These facts are expected under the assumption of the following pattern of diachronic relations: in a first stage an item becomes phonologically weak, and a phonological dependency is developed; then a syntactic dependency is developed, along with the phonological one (and syntactic and phonological hosts do not necessarily have to coincide); in the next stage, the phonological dependency is lost, though residues may persist; finally, the syntactic dependency (that defines at this stage the phonological hosting) may be reanalysed as affixation (see also Klavans 1985, Nespor 1993, and Duarte and Matos 1995 for suggestions along these lines).³¹

The recent regression of proclisis in EP also fits nicely into our view of clitic placement and follows straightforwardly from these diachronic relations: it seems that EP is moving into a ‘purely’ verbal clitic system and thus the residual cases of the earlier stage are being lost. EP is therefore (finally) resolving the phonology/syntax conflict on clitic placement in favour of the syntactic requirement, and consequently enclisis is spreading. However, note that not all the contexts of proclisis are being simultaneously affected: the strong function words of Type II are the first to lose their specification as phonological hosts, and those

³⁰ As data reported in Martins 1994 show, in Old Portuguese there was phonological evidence for the encliticization of the clitic to a non-verbal host. Interestingly, this is still visible in some archaic dialects of EP (in which the clitic may also detach from the verb, in certain cases - see also Barbosa 1996). This can be taken to mean that there was a stage in which the clitic, besides requiring a Pwd host, was also phonologically specified as enclitic, a common trait in 2P systems.

³¹ For the sake of completeness, the stage preceding affixation may include two moments, as proposed in Booiij 1996: postlexical cliticization and lexical cliticization.

of Type I follow, as illustrated in (42a) (see also Martins 1992 and Frota 1994). This is as expected under a phonological account, as Type I words are *heavier* than Type II words. An additional factor that interacts with the regression of proclisis is adjacency (see 42b versus a): the cases in which the trigger is not adjacent to the CL V sequence are the conflicting ones, namely it is in these cases that the phonological requirement is not fully met. Therefore, the loss of proclisis is predicted to occur first in these cases, and this prediction is born out.³²

- (42) a. i. Type II O Pedro disse que a Maria deu-lhe o recado
 the Peter said that the Mary gave-CL the message
 ‘Peter said that Mary gave him the message’
 ii. Type I ?? Todos os alunos deram-lhe uma prenda
 All the students gave-CL a gift
 ‘All the students gave him a gift’
 b. i. Type II ?? O Pedro disse que deram-lhe o recado
 the Peter said that (they) gave-CL the message
 ‘Peter said that he was given the message’
 ii. Type I * O Pedro não deu-lhe o recado
 the Peter not gave-CL the message
 ‘Peter didn’t give him the message’

Finally, the account we have put forward may also provide a straightforward explanation for the absence of proclisis in acquisition data until around age four:³³ as proclisis triggers have mixed properties, it is possible that they are first categorised as weak function words (in the case of Type II triggers), or as lexical words (in the case of Type I triggers). Hence enclisis is generalised in the early stages of acquisition.

Summing up, on the basis of the phonological properties of the triggers and the clitic, the phonological conditions on the proclisis domain, and the weight-related factors involved in clitic attraction, we hope to have shown that phonology has a role to play in clitic placement in EP. A mixed syntactic and phonological

³² The authors have gathered a collection of over 200 spontaneous utterances in which all cases of clitic ‘misplacement’ (tongue-slips, vanguard dialects) produce enclisis in contexts of proclisis and never the opposite (see Frota 1994 for details and discussion).

³³ This observation is based on acquisition data gathered by the authors and a group of undergraduate students, that amounts to hundreds of cases produced by several children. In the data, proclisis starts around 4 years of age and shows unstable behaviour (cf. Frota 1994, for a report and discussion of these data). This acquisition pattern was confirmed by data reported in Duarte et al. 1995.

approach to clitic placement seems therefore promising in providing broader descriptive coverage, and a unified account of the facts.

6. CONCLUSIONS AND SUGGESTIONS ON THE INTERFACE

The four cases of prosodically constrained *syntax* discussed in this paper demonstrate the relevance of phonology to the understanding of some word order phenomena in EP.

One of the main issues raised by the facts presented bears on the nature of the phonology-syntax interface. All the four cases dealt with in this paper crucially involve interactions between word order and phonological weight-related information. In the light of this, the first question to be addressed concerns the definition of the range within which phonology is able to constrain word order. The EP facts add support to the generally accepted idea that prosodic restrictions on word order refer only to the properties that are relevant for phonological phrasing, such as phrasal weight and prosodic phrase edges (see, among others, Zec and Inkelas 1990, Hayes 1990, and Inkelas and Zec 1995). The converse question concerns the range within which word order can be constrained by phonology (see also Guasti and Nespors 1997). Lexical prosodic restrictions apart, the EP facts lend support to the idea that word order sensitivity to prosody is confined to a cluster of phenomena in which semantic and/or discursive factors are crucially involved.³⁴ According to various authors, these phenomena have in common their locus of application in the grammar: they are described, although in a non-homogeneous way, as not belonging to “core syntax”.³⁵ Note, crucially, that this picture of word order/phonology interactions is highly constrained. Interactions such as those in (43) are not allowed, as either the properties of the construction involved or the

³⁴ Examples of constructions that have been reported to be phonologically constrained are Extraposition of PP from NP, Relative Clause Extraposition, Topicalization, Right Node Raising, Heavy NP Shift, Non-restrictive Clause Placement, Parenthetical Placement, Particle Separation, and Clitic Placement (cf. e.g. Halpern 1995, Schütze 1994, Hale 1996, Hock 1996, Radanovic-Kocic 1996, Taylor 1996, and Rudin et al. forthcoming, for Clitic Placement, and Emonds 1979, McCawley 1982, Rochemont and Culicover 1990, Zec and Inkelas 1990, Zubizarreta 1994b, Truckenbrodt 1995, Guasti and Nespors 1997, for the other constructions).

³⁵ These phenomena have been called “stylistic”, “discourse-related”, “order-changing transformations”, or movements which are not part of “syntax proper”.

phonological properties involved are not of the right kind, namely they are not within the range that can be accessed by the syntax-phonology interface.

- (43) a. *a TOP-phrase starts with a labial consonant
 b. *Verb-raising for feature checking iff the Verb minimally contains two syllables

Last but not least, if phonology is constraining word order, how does the interface work? We would like to propose that the EP interactions here considered, and arguably any interaction, can be accommodated within a two-stage approach to the syntax-phonology interface, along the lines of Dresher's (1994) view of the interface in Tiberian Hebrew, or Schütze's (1994) view of the interface in Serbo-Croatian. The following should be regarded as a working hypothesis, and many details still have to be worked out.

In Stage I, both syntactic and phonological information are available during a mapping process of prosodic domain construction in which the two structures co-exist and are working to match, according to principles such as those in (44a). Prosodic well-formedness matching requirements (i.e. prosodic restrictions on word order) are scanning the two structures, and therefore prosodically ill-formed structures are avoided: whether they are filtered out as sketched in (45a), or preempted as sketched in (45b), is a question we will leave open (cf. Zec and Inkelas 1990, and Inkelas and Zec 1995 for discussion on a derivational *versus* a copresence view of prosodic restrictions). In Stage II, prosodic readjustments may occur on the prosodic structure to satisfy pure phonological requirements, which may involve constituent length, balance, or speech rate effects, as indicated in (44b).

- (44) a. STAGE I
Mapping principles *Prosodic well-formedness matching constraints*
] CP → I (frozen) (i.e. prosodic conditions on word order)
] XP → ϕ (frozen)

- b. STAGE II
Prosodic adjustments on p-structure : division / simplification of phrases
 . Length . Balance . Speech rate
- (45) a. { TOP } { NP V _ }_{CP} *Filters*
 | | ↓ | ↓TOP-matching requirement (checks on remaining I-head weight)

met. Interestingly, the examples in (47c) look like a counterexample to our proposal: in this case, Stage II prosody seems to interact with clitic ordering, against our predictions. However, the crucial factor at work in (47c ii.) is probably not Stage II information but simply the intervening distance between trigger and clitic: as we have seen before (see section 5.3), and irrespective of the presence/absence of Stage II prosodic boundaries, distance is one of the factors that is favouring the loss of proclisis.

Our account of the facts has many ramifications and consequences which we left unexplored. However, we hope to have laid out a fruitful basis for further discussion and future research on phonological weight-related constraints on word order and what they can teach us about the phonology-syntax connections.

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