

Prosodic word deletion in coordinate structures

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Abstract

Prosodic word deletion in partially identical coordinate structures (DUI) is a rather general phenomenon across languages. In this paper, new data is presented that contributes to a cross-linguistic understanding of the deletion process. Its phonological nature is supported by an array of prosodic requirements on the deleted unit, its counterpart, the remnant, and the way the coordinate sequence is prosodically phrased, showing that a pure morpho-syntactic analysis of DUI is unattainable. On the other hand, it is also shown that syntax constrains DUI as well. These properties are argued to be general and the cross-linguistic variation found is shown to result from prosodic differences that the languages independently display. It is further argued that DUI is fundamentally different from syntactic ellipsis phenomena. The account proposed places this process at the syntax-phonology interface without any further addition to constrained models of syntax-phonology interaction.

0. Introduction

The topic under investigation in this paper is a deletion process that affects internal *parts of words* in partially identical coordinate structures. On the one hand, this phenomenon depends on the existence of coordinate structures, and thus it looks syntactic in nature, but on the other hand it targets phonological, rather than syntactic or morphological units, and is subject to phonological conditions.

Although the deletion process is found in several languages, as illustrated in (1), to our knowledge it has only been studied in depth in Dutch and in German (cf. Booij, 1985, 1988; Wiese, 1993; Kleinhenz, 1994).

- (1) landbouw en tuinbouw Dutch (Booij, 1985:147)
 ‘agriculture and horticulture’

Himbeeren und Brombeeren 'raspberries and blackberries'	German (Kleinhenz, 1994:16)
prewar or postwar	English (Siegel, 1974)
filosovietico o antisovietico 'philo-Soviet and anti-Soviet'	Italian (Peperkamp, 1997:137)
afroasiatic i euroasiatic 'afroasiatic and euroasiatic'	Catalan (Prieto p.c.)
únicamente y exclusivamente 'uniquely and exclusively'	Spanish (<i>Ideal</i> , 12 th Sep. 2001)
afroasiatique ou euroasiatique 'afroasiatic and euroasiatic'	French
exportar e importar 'to export and import'	Brazilian Portuguese (Moreno 1997, cited in Schwindt 2000)
pré-acentual e pós-acentual 'preaccentual and postaccentual'	European Portuguese

In languages like Portuguese, Spanish, or Catalan, the only references to this phenomenon are found in traditional grammars and are reduced to constructions involving adverbs formed with *-mente* (e.g. Cunha & Cintra, 1984; Fabra, 1956, respectively).

In this paper we will show that, despite the scarce descriptions of this phenomenon in Romance languages, it is well represented in these languages and displays remarkable similarities to the process described by Booij, Wiese and Kleinhenz for Dutch and German. Primarily on the basis of European Portuguese data, we will describe the conditions for the occurrence of *deletion under identity* (DUI) and argue for the (partial) phonological basis of the process (sections 1 and 2). Additionally, an account for some of the variation found among Romance languages and between these and Germanic languages will be proposed (section 3). In section 4, the deletion process is contrasted with ellipsis phenomena accountable on pure syntactic terms. Finally, in section 5, some conclusions are also drawn concerning the interface between syntax and phonology.

1. The phonological nature of DUI

Several facts of different nature clearly indicate that the process under discussion may not be accounted for on pure morphosyntactic terms. Many of these were previously noted in Booij (1985, 1988), Wiese (1993) and Kleinhenz (1994) for Dutch and German and concern the status of the deleted unit. European Portuguese data points in the same direction and thus strengthens the argument against the morphosyntactic nature of DUI.

1.1 The target of DUI: a phonological rather than morphosyntactic constituent

It is clear that the deleted unit is not a morphological constituent. As illustrated in (2)-(4), units with the same morphological status behave asymmetrically with regard to DUI depending on their prosodic nature. In all these examples, suffixes that can be shown to form a *prosodic word* (ω) independent from their base may be part of coordinate structures that undergo deletion, whereas suffixes that do not form independent prosodic words and thus belong to the same prosodic word as their morphological base do not delete (in the examples, prosodic word structure is indicated and suffixes are marked in italics).

- (2) a. (storm) $_{\omega}$ (~~*achtig*~~) $_{\omega}$ en (regen) $_{\omega}$ (*achtig*) $_{\omega}$ (based on Booij, 1985)
 ‘stormy and rainy’
 b. *(blauw~~*ig*~~) $_{\omega}$ en (rodi~~*g*~~) $_{\omega}$
 ‘bluish and reddish’
- (3) a. (erkenn) $_{\omega}$ (~~*bar*~~) $_{\omega}$ und (begreif) $_{\omega}$ (*bar*) $_{\omega}$ (based on Booij, 1985)
 ‘recognizable and comprehensible’
 b. *(Bestraf~~*ung*~~) $_{\omega}$ oder (Beförderung) $_{\omega}$
 ‘punishment of promotion’
- (4) a. (demorada) $_{\omega}$ (~~*mente*~~) $_{\omega}$ ou (rapida) $_{\omega}$ (*mente*) $_{\omega}$
 ‘slowly or quickly’
 b. *(isolam~~*ento*~~) $_{\omega}$ ou (revestimento) $_{\omega}$
 ‘isolation or cover’

Evidence for the prosodic structure of the coordinate members in (2-3) includes resyllabification facts, as resyllabification is blocked across prosodic words in both Dutch and German (cf. Booij, 1985, 1995; Wiese, 1996), pre-vocalic schwa deletion in Dutch, which applies within but not across prosodic words (Booij, 1985, 1995), and glotal stop insertion in German, which applies before vowel initial units that form independent prosodic words (Booij, 1985). The prosodic distinction between the structures that allow/do not allow deletion is also straightforward in European Portuguese (EP). In (4a), each member of the coordination is formed by two prosodic words, as shown by their respective word-level stresses: the stressed vowel of the first prosodic word of each coordinate element is low (see (5a-b)), whereas if it were stressless it should have been raised by the vowel reduction processes; the stress on *rapida* falls on the antepenultimate syllable, which is the marked stress pattern and can only be the result of word-level stress rules (see (5c)). By contrast, each of the coordinate elements in (4b) show a single word-level stress and the vowels that would bear stress if the morphological base formed a prosodic

word independent from the suffix were subject to vowel reduction (cf. (5d-e)).¹

- (5) a. demorada [a]/*[ɐ]
 b. rápida [a]/*[ɐ]
 c. rápida; *rapída
 d. isolamento *[ɔ]/[u] (but: is[ɔ]la ‘he isolates’)
 e. revestimento *[ɛ]/[i] (but: rev[ɛ]ste ‘he’)

Besides showing that the deleted unit is not a morphological constituent, the data presented in (2)-(4) also indicates that DUI may not be the result of a syntactic process, either. Note that the deleted unit corresponds to a suffix, which is not a proper syntactic object (see Zwicky, 1977, and Selkirk, 1982, for early proposals that the internal structure of words may not be seen by syntactic operations, and Booij, 1985, for a similar observation). The examples in (6) strengthen this point: each of the units that compose the coordinate structure may not be analysed as syntactic words, as they never occur independently. Given that they form independent prosodic words, however, deletion under identity is possible.

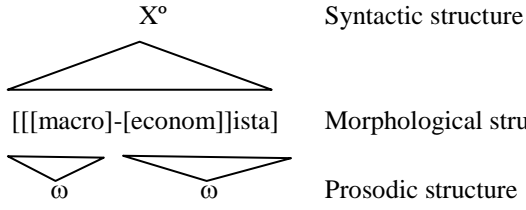
- (6) (mono)_ω (~~gâmico~~)_ω e (poli)_ω (gâmico)_ω
 ‘monogamous and poligamous’
 (mono)_ω (~~lingue~~)_ω e (multi)_ω (lingue)_ω
 ‘monolingual and multilingual’
 (homo)_ω (~~gênio~~)_ω ou (hetero)_ω (gênio)_ω
 ‘homogeneous or heterogeneous’
 (macro)_ω (~~scópico~~)_ω ou (micro)_ω (scópico)_ω
 ‘macroscopic or microscopic’

By the same token, an analysis of basic syntactic coordination or of syntactic ellipsis, as in (7), could not account for the facts described, since each member of the coordinate structure may not be analysed as containing two syntactic words (we will return to the distinction between DUI and syntactic ellipsis in section 4).

- (7) a. *[[mono]_{X°} e [poli]_{X°}] [gâmico]
 *[[mono]_{X°} e [multi]_{X°}] [lingue]
 a’. *[[mono]_{X°} [_]_{X°i}] e [[poli]_{X°} [gâmico]_{X°i}]
 *[[mono]_{X°} [_]_{X°i}] e [[multi]_{X°} [lingue]_{X°i}]

¹ The prosodic word in EP has been extensively studied in Vigário (2001). As the language offers wealthy evidence for this prosodic domain, the conclusions drawn on DUI are well supported by independent facts.

Cases where there is a mismatch between morphological (or syntactic) and prosodic structure also argue in favour of the phonological rather than morphological (or syntactic) analysis. This is illustrated by example (8). As noticed by Villalva (1994), the suffix *-ista* is attached to the morphological compound and not simply to the preceding root, since a *macro-economista* is not 'a big economist' but rather 'a person who deals with macro-economy'. Again, a syntactic analysis is also ruled out, given that a sequence like *macro-economista* corresponds to a single syntactic word. Only from a prosodic point of view does the deleted unit correspond to a constituent.

- (8) a.  Syntactic structure
 Morphological structure
 Prosodic structure
- b. ~~macro-economista~~ ou micro-economista
 'macro-economist and micro-economist'

Other facts rule out any attempt to treat DUI as a syntactic operation. In languages like German, there are examples of deletion in situations where either the two coordinate members or the deleted unit and its identical counterpart have different morphosyntactic status. As pointed out by Wiese (1993), deletion is possible in German when the phonologically identical units are marked with different case features, as in (9).

- (9) Wir müssen die Ritter~~schaften~~_{ACC} von den Bauernschaften_{DAT}
 unterscheiden
 Weil Leitun~~swasser~~_{NOM} von Mineralwasser_{DAT} zu unterscheiden ist, ...
 (from Wiese 1993: 145)

The examples in (10) provide additional illustration that DUI applies regardless of the coordinate members being morphosyntactically distinct.

- (10) a. [[Amerikaanse]_A [~~talen~~]_N]_{NP} en [[[Papoea]_N [~~talen~~]_N]_{NP}
 'American languages and Papua languages'
 (from Booij, 1985: 143)
- b. Verband Gebur~~tshinderter~~ und anderer Behinderter
 'Society of people handicapped at birth and other handicapped
 people'
 (from Kleinhenz, 1994: 16)

As highlighted in Booij (1985), cases like (10a) further show that sequences like [Amerikaanse en Papoea] may not be analyzed as resulting from basic syntactic coordination, since the two words belong to different syntactic categories.

A final argument first advanced by Booij (1985: 153-154) that clearly indicates that the phenomenon may not be accounted for in morphosyntactic terms is the presence of a *linking segment* in coordinate structures involving morphological compounds. Firstly, a *basic syntactic coordination* analysis may not explain the presence of the linking vowel (see (11a, c), respectively for Dutch and EP); secondly, although the linking segment does not morphologically form a constituent with any of the roots, since it links them, it is phonologically part of the first root and thus it is only deleted when the prosodic word that includes that root is deleted, as in (11b)

- (11) a. ~~pruimeboom~~ of appelboom
 ‘plum tree or apple tree’
 b. onderzoeksdoelstelling of onderzoeksbelangstelling
 ‘research goal or research interest’
 c. ~~israelo-palestiniano~~ ou afro-palestiniano
 ‘israelipalestinian or afropalestinian’

To sum up, there is clear evidence that the process under investigation here may not be purely syntactic or morphological since (i) units with the same morphological status behave asymmetrically depending on their prosodic status, (ii) the elements that are affected by DUI may be composed of units that form a constituent from a phonological but not from a syntactic or a morphological point of view, (iii) the phonologically identical portions of coordinate structures that undergo deletion may be morphologically (and syntactically) distinct, and (iv) two phonological requirements on DUI have been identified: phonological identity between the target and its counterpart and the prosodic word status of the deleted unit. Given that the deleted unit must correspond to a prosodic word and as there are no simplex words composed of more than one prosodic word in any language (a fact that follows from the algorithms of construction of prosodic words), it is predicted that we cannot find deletion under identity between two coordinate elements that are simplex words. As far as European Portuguese, Dutch and German are concerned this prediction is borne out.

1.2. Other phonological requirements on deletion under identity

Besides phonological identity and the prosodic word status of the deleted constituent, there are additional phonological conditions for the DUI to apply. Once again, these have to do with prosodic constituency.

1.2.1. The nature of the remnant: also a prosodic word

The observation of EP data suggests that prosodic constituency is not relevant only for characterizing the deleted unit, but also the remnant of deletion, which always corresponds to a prosodic word as well. This is shown by the

examples in (12), where deletion is impossible when the deleted unit is a prosodic word but the remnant is not. In the examples, we provide the prosodic structure associated to each prefixed word, according to independent evidence previously presented in Vigário (2001).

- (12) *(des(~~ocupadas~~)_ω)_ω e (re(ocupadas)_ω)_ω
 ‘non-occupied and re-occupied’
 *(re(~~feito~~)_ω)_ω e (des(feito)_ω)_ω
 ‘redone and undone’
 *(des(~~ocupado~~)_ω)_ω ou pelo menos (sub)_ω (ocupado)_ω
 ‘non-occupied or at least sub-occupied’

The prosodic requirement on the remnant stated in (13) is supported by all the tests that can be used as diagnostics for the prosodic word domain in EP. The data presented in the following examples illustrates how.

- (13) Prosodic requirement on the remnant
 The unit left as the remnant of deletion must form a prosodic word

Word-level stress is a crucial property of prosodic words in any language, and it is perceived for both elements within each coordination member in all cases where deletion applies in EP. Besides the perception facts, the absence of vowel reduction in the stressed syllable also constitutes evidence for the stressed status of a given unit and hence for its prosodic word status. The examples in (14) show that when the stressed vowel of the remnant is not subject to vowel reduction deletion is possible, whereas when the vowel that could bear stress is subject to vowel reduction deletion is not possible.

- (14) a. (pr[é])_ω (~~tónica~~)_ω e (p[ó]s)_ω (tónica)_ω
 ‘pretonic and posttonic’
 (pr[ó])_ω (~~fascista~~)_ω ou (anti)_ω (fascista)_ω
 ‘profascist or antifascist’
 ([á]fro)_ω (~~asiático~~)_ω ou (ib[é]ro)_ω (asiático)
 ‘afro-asian or iberio-asian’
 b. *(pr[i]fácio)_ω ou (p[u]sfácio)_ω
 ‘preface or postface’
 *(r[i] (~~feito~~)_ω)_ω e (d[i]s (feito)_ω)_ω
 ‘redone and undone’
 *([v]m[i]r~~índia~~)_ω ou (afro)_ω (índia)_ω
 ‘american-indian or african-indian’

Several other phonological facts point in the same direction, namely the blocking of vowel raising in non-final root compounds when the first root corresponds to a prosodic word (see (15)), the blocking of semivocalization of front vowels followed by vowel (see (16)), and the low realization of

stressless non-high vowels followed by a sonorant coda in prosodic word final position (see (17)).

- (15) a. (aut[ɔ])_ω (~~avaliação~~)_ω ou (heter[ɔ])_ω (avaliação)_ω
 ‘auto-evaluation or hetero-evaluation’
 (tel[ɛ])_ω (~~conferência~~)_ω ou (víde[ɔ])_ω (conferência)_ω
 ‘teleconference or videoconference’
 (bi[ɔ])_ω (~~química~~)_ω ou (físic[ɔ])_ω (química)_ω
 ‘biochemistry or physiochemistry’
- b. *(aut[u]eracia)_ω ou (dem[u]cracia)_ω
 ‘autocracy or democracy’
 *(tel[i]fonia)_ω ou (tel[i]grafia)_ω
 ‘telephony or telegraphy’
 *(bi[u]grafia)_ω e (disc[u]grafia)_ω
 ‘biography and disc collection’
- (16) a. (bi)_ω (~~anual~~)_ω ou (tri)_ω (anual)_ω [i]/*[j]
 ‘biannual or triannual’
 (pré)_ω (~~acentual~~)_ω ou (pós)_ω (acentual)_ω [ɛ]/*[j]
 ‘pre-accentual or post-accentual’
 (bio)_ω (~~química~~)_ω ou (físico)_ω (química)_ω [i]/*[j]
 ‘biochemistry or physiochemistry’
- b. *(preocupado)_ω e (des(ocupado))_ω [i]/[j]
 ‘preoccupied and unoccupied’
 *(biologia)_ω ou (sociologia)_ω [i]/[j]
 ‘biology or sociology’
- (17) a. (int[ɛ]r)_ω (~~racial~~)_ω ou (intra)_ω (racial)_ω
 ‘inter-racial or intra-racial’
- b. *(int[i]rnacional)_ω ou (intra)_ω (nacional)_ω
 ‘international or intra-national’

It is therefore well established that in European Portuguese the remnant must be a prosodic word similarly to the deleted unit. The Dutch and German data found in the literature suggest that this is also true for these languages.

1.2.2. The nature of the identical counterpart: also a prosodic word

We have seen that the coordinate member that includes the target of deletion must be formed by more than one prosodic word. It will now be shown that the coordinate member that includes the identical counterpart must contain more than one prosodic word as well. This is illustrated in (18).

- (18) *(intra)_ω (~~nacional~~)_ω e (internacional)_ω ([i])
 ‘intra-national and international’
 *(afro)_ω (~~índia~~)_ω ou (ameríndia)_ω ([v], [i])
 ‘afro-indian or american-indian’

The explanation for this fact seems straightforward, since we have already seen that deletion requires the presence of a unit phonologically identical in the second member of coordination. Thus, in order for DUI to obtain, the deleted unit, which is a prosodic word, must be prosodized similarly to its identical counterpart. The latter must therefore form a prosodic word.²

In conclusion, the phonological identity between the deleted unit and its counterpart must be expressed in terms of segmental material *and* prosodic constituency.

1.2.3. The relevance of phasal prosodic constituency and phonological distance

Similarly to Dutch and German (Booij, 1988; Wiese, 1993), in EP the deleted unit must be adjacent to a phonological phrase (ϕ) edge (see (19a)) and the ϕs that include each coordinate element must be adjacent within an intonational phrase (see (19a) vs. (19b)).³

- (19) a. (euro-asiáticos)_ϕ (e afro-asiáticos)_ϕ
 ‘euro-asian and afro-asian’
 b. *((Neste Natal)_ϕ (o João)_ϕ (só ofereceu corta)_ϕ)_I ((e pisa-
 -papéis)_ϕ)_I
 ‘This Christmas John only gave paper (knives) and paper weights.’

In addition, the EP data show that the number of intervening elements between the remnant and the identical counterpart also matters: as the length of the second phonological phrase increases, the acceptability of deletion decreases. This effect is illustrated in (20) – (21).⁴

² Interestingly, when the counterpart is a prosodic word included in an adjunction structure, DUI is not completely ruled out in EP (e.g. ?(sub)_ω(~~ocupado~~)_ω ou mesmo (des(ocupado))_ω ‘under employed or even unemployed’), thus supporting the importance of the prosodic word status of the counterpart. Similar cases are reported as acceptable in Dutch (Booij, 1985).

³ We assume the algorithm for the construction of the phonological phrase in EP proposed in Frota (2000: 365).

⁴ This seems to be also true for German, according to data presented in Kleinhenz (1994: 20-21), which can be interpreted as showing an effect of phonological distance on gradient acceptability judgments.

- (20) (Os rapazes)_φ (trabalharam lenta)_φ (e cuidadosamente)_φ
 ‘The boys worked slowly and carefully.’
 ?(Os rapazes)_φ (trabalharam não só lenta)_φ (mas também cuidadosamente)_φ
 ‘The boys worked not only slowly but also carefully.’
- (21) (Neste Natal)_φ (o João)_φ (só ofereceu corta)_φ (e pisa-papéis)_φ
 ??(Neste Natal)_φ (o João)_φ (não só ofereceu corta)_φ (como também pisa-papéis)_φ
 ‘This Christmas John not only gave paper (knives) but also paper weights (to people).’

Thus phonological distance should be added to the conditions on DUI, further supporting the phonological nature of this process.

2. Non-phonological requirements on deletion under identity

In the previous section, a number of phonological requirements on DUI was established: (i) the deleted unit, the remnant and the identical counterpart must all be prosodic words, and (ii) phrasal prosodic constituency together with phonological distance constrain DUI. However, there seems to be a *syntactic* requirement on DUI, as well. In EP, unlike in Dutch or German, deletion is only possible when coordinate structures are involved. The examples in (22) from the latter languages contrast with the Portuguese examples in (23b).

- (22) a. Hij verwisselde de dagbladjournalistiek voor de weekbladjournalistiek
 ‘He exchanged the dailyjournalism for the weekklyjournalism.’
 (from Booij 1988: 73)
- b. Sie ersetzten Orangensaft durch Apfelsaft
 ‘They replaced orange juice by apple juice.’ (from Kleinhenz 1994: 21)

In his account of the data in (22), Booij (1988) suggests that what is relevant is not the presence of a given syntactic structure but rather a specific prosodic configuration. He proposes a pure prosodic analysis where deletion must occur at either edge of the phonological phrase and the two phrases with identical phonological words must be adjacent. As it was shown above, this generalization holds for EP as well, but, nevertheless, it does not account for the *impossibility* of deletion in syntactic constructions *without* coordination (see the contrast between (23a) and (23b)).

- (23) a. (conheceu afro-asiáticos)_φ (e euro-asiáticos)_φ
 ‘(He) knew afro-asian and euro-asian (people)’

- (comia rapidamente)_φ (lentamente)_φ (ou indiferentemente)_φ
 ‘(He) used to eat quickly, slowly or carelessly’
 b. *(apresentou afro-asiáticos)_φ (a euro-asiáticos)_φ
 ‘(He) introduced afro-asian to euro-asian (people)’
 *(come velozmente)_φ (frequentemente)_φ
 ‘(He) eats quickly frequently’

Other types of coordination that allow deletion are shown in (24). Interestingly, DUI is also possible in syntactic structures that have not been standardly assumed as coordinate, like apposition constructions or comparative constructions (see (25)), but which can be shown to have a coordinate nature (see Matos & Brito, 2002, for a coordinate structure analysis of comparatives in EP).⁵

- (24) tanto afro-asiáticos como euro asiáticos
 ‘either... or...’
 não só afro-asiáticos mas também euroasiáticos
 ‘not only... but also...’
 quer afro-asiáticos quer euroasiáticos
 ‘either... or...’
 ora afro-asiáticos ora euroasiáticos
 ‘now... now...’
- (25) a. Ele faz isto lenta, embora seguramente.
 ‘He does this slowly, although effectively.’
 b. Ele é mais pró do que anti-americano.
 ‘He is more pro (american) than anti-american.’

Consequently, the coordination requirement on DUI makes this process an indicator of the coordinate nature of syntactic structures.

In conclusion, deletion under identity is not a pure phonological process in EP, as it requires both reference to phonological and syntactic properties.

3. Crosslinguistic variation

It was shown in the previous sections that languages like Dutch, German and European Portuguese behave in a remarkably similar way with respect to deletion under identity (to the exception of the syntactic restriction, if at all). In this section, we will consider data that is apparently not accounted for simply on the basis of the conditions proposed so far.

⁵ We thank Inês Duarte for calling our attention to this point and providing the examples in (25). It remains to be shown whether the Dutch and German cases reported in the literature are amenable to a similar account.

3.1. *Particular cases where the phonological and the syntactic conditions are met but deletion is impossible*

In Dutch and German, syntactic (word+word) compounds may undergo deletion under identity. In EP, by contrast, not only syntactic compounds but also derived words with *z*-evaluative suffixes, which form independent prosodic words, do *not* allow deletion. This is shown in (26) and (27) for ω -members of syntactic compounds and *z*-evaluative suffixes, respectively.

- (26) a. ?*Visitou (escolas) _{ω} -(~~modelo~~) _{ω} e (cantinas) _{ω} -(modelo) _{ω}
 ‘(He) visited model schools and model canteens.’
 a’. Visitou escolas e cantinas-modelo.
 ‘(He) visited schools and model canteens.’
 b. ?*Disseram-se muitas (palavras) _{ω} -(~~chave~~) _{ω} e (ideias) _{ω} -(chave) _{ω} .
 ‘(They) told themselves many key words and key ideas.’
 b’. Disseram-se muitas palavras e ideias-chave.
 c. ?*O mar estava entre (verde) _{ω} -(~~água~~) _{ω} ou (azul) _{ω} -(água) _{ω} .
 ‘The sea looked between water green or water blue.’
 c’. O mar estava verde ou azul-água
- (27) a. ?*Era um fulano (bom) _{ω} (~~zinho~~) _{ω} mas (estupido) _{ω} (zinho) _{ω} .
 ‘(He) was a nice(AFFECTIVE) but stupid(AFFECTIVE) guy.’
 a’. Era um fulano bom mas estupidozinho.
 ‘(He) was a nice guy, but kind of stupid.’
 b. ?*Pode escolher-se entre (café) _{ω} (~~zito~~) _{ω} e (chá) _{ω} (zito) _{ω} .
 ‘One can choose between a little coffee and a little tea.’
 b’. Pode escolher-se entre café e chazito
 ‘One can choose between a coffee and a little tea.’

These cases are apparently problematical, since they could be seen as exceptions to DUI. However, there is a condition that explains these data and therefore allows us to characterize DUI as a general and exceptionless process. In all the examples given in (26-27) the result of deletion would coincide with a string that independently exists in the language, as shown by the sequences in (a’) and (b’). In other words, DUI would create ambiguity. Under such conditions the process is blocked.

The same explanation accounts for cases where the deletion of the first prosodic word of the second member of coordination is not allowed in EP, as such deletion would result in a sequence ambiguous with a structure independently formed (see (28)). This explains as well some German cases noted in Wiese (1996) where DUI is impossible although the other conditions for deletion are met. In fact, all such cases are always reported to result in ambiguous readings.

- (28) ~~pós~~-sintáctico e ~~pós~~-fonológico / ~~pós~~-sintáctico e fonológico
 ‘postsyntactic and postphonological’ / ‘postsyntactic and
 phonological’
 euro-asiático e ~~euro~~-africano / euro-asiático e africano
 ‘euro-asian and euro-african’ / ‘euro-asian and african’

Given that deletion under identity is a stylistic kind of operation, the fact that it is blocked when its result coincides with a syntactic structure independently obtained in the language may be seen as an instance of a more general principle that rules out stylistic operations that create ambiguity, namely the “up-to-ambiguity principle” (cf. Chomsky, 1965).

3.2. *The prosodic nature of the remnant: are some languages more liberal than others?*

In section 1, we have proposed that the target of DUI must be a prosodic word, following an initial proposal by Booij (1985) also adopted by Wiese (1993) and Kleinhenz (1994), and that the same prosodic requirement is imposed on the remnant as well (see (13) above). The prosodic word status of the remnant was put forward as a general requirement on DUI, as it is not only supported by the EP data, but is also apparent in the Dutch and German data. There are some Standard Italian and Brazilian Portuguese facts, however, that seem to cast doubt on the general nature of this requirement. We will consider each case in turn, and show that under a more careful analysis of the facts these languages are as strict as EP is as to the prosodic nature of the remnant.

According to Peperkamp (1997: chap. 3: 71-74), monosyllabic prefixes do not form independent prosodic words in Italian. Nevertheless, some of them may be involved in DUI, as (29) shows.

- (29) ~~pre~~bellico o postbellico
 ‘pre or postwar’ (Peperkamp, 1997: 137)

The arguments given in Peperkamp against the prosodic word status of monosyllabic prefixes in Italian are not entirely convincing of their non prosodic word status. Monosyllabic prefixes are said not to satisfy the minimal word requirement that prosodic words are minimally composed of a disyllabic foot. Peperkamp assumes this principle to be active in Italian because the large majority of words in this language are not monosyllabic. However, Italian is not different in this respect from (both varieties of) Portuguese, where there is clear evidence that such requirement is not active (cf. Bisol, 2000, for Brazilian, and Vigário, 2001, for European Portuguese; see also Bafile, 1997, who argues against minimal word requirements in Italian). Peperkamp also notes that the vowel of the prefix *pre-* is mid whereas similar etymological vowels (*ae*) surface as low in stressed position. However, this sort of argument is not convincing in synchronic terms. So, if minimal word requirements

are excluded, there is no compelling evidence against the prosodic word status of some monosyllabic prefixes in Standard Italian, like *pre-*.

Unlike *pre-* or *post-*, prefixes such as *ri-* and *dis-*, which are also assumed not to form independent prosodic words in Italian, do not admit DUI (see the contrast between (29) and (30)). This seems to indicate that *pre-* and *post-* but not *ri-* and *dis-* have prosodic word status in this language.

- (30) *(ri(~~fare~~)) e (dis(fare))
'redo and undo'

In short, all these facts strongly suggest that the prosodic condition on the remnant holds for Italian as well.

Brazilian Portuguese (BP) facts appear to suggest that DUI in this language is not subject to the same requirements as the other languages under observation. Examples like those in (31) are reported in Moreno (1997) (cited in Schwindt, 2000) to be possible in BP.

- (31) ~~exportar~~ e importar
'export and import'
in~~clusive~~ e exclusive
'includive and exclusive'

In EP, by contrast, the exact same coordinate words do not allow deletion. This is so, because these prefixed words are not formed of two prosodic words in EP (as shown by the fact that the prefix is not perceived as stressed and the vowel of *ex-* surfaces as a schwa or is deleted).

Schwindt (2000) argues that the BP prefixes, like the EP ones, are not prosodic words and are incorporated into the prosodic word of the morphological base. Under such an analysis, our requirement that the remnant must form an independent prosodic word would not apply to BP. To support his claim on the prosodization of prefixes, Schwindt observes their behavior with respect to a number of phonological processes: word final stressless vowel neutralization, external vowel sandhi, pretonic stressless vowel neutralization, vowel harmony and nasal assimilation. Interestingly, the only process that could support the incorporated status of *one* of these prefixes (*in-*) is the behavior of nasal consonants, which is not a pure phonological process and therefore may not be used as an argument for the prosodization of this prefix (see Vigário, 2001, for the demonstration of the latter point with EP data). By contrast, the fact that vowel harmony does not apply in *exclusive* [e]/*[i], but applies in *estimulo* [e]/[i] or *estudioso* [e]/[i], suggests that the prefix is not prosodically incorporated into the prosodic word of the morphological base.

Like in Italian and EP, other prefixes exist in BP whose prosodic status is clear. This is the case of *re-* and *des-* that do not form independent prosodic words, as shown in Schwindt (2000) – e.g. *re-* does not undergo prosodic

word final neutralization (see (32a)) nor external vowel sandhi (see (32b)). These facts show that it does not behave like an independent prosodic word.

- (32) a. r[e]lembrar *r[i]lembrar
 ‘remember again’
 b. r[e]analisar *ranalisar
 ‘reanalyze’

As predicted by our analysis, this sort of prefixes does not allow DUI (cf. (33a)): given that they do not form independent prosodic words, they may not function as remnants. Notice that Schwindt (2000) claims that deletion is not found with these suffixes because they do not contrast semantically with other prefixes. However, this is not accurate, as shown in (33b), where the structure is good without deletion. In short, the BP data also confirms the prosodic condition on the remnant.

- (33) a. *des~~fez~~ e refez a análise mil vezes
 *re~~fez~~ e desfez a análise mil vezes
 b. desfez e refez a análise mil vezes
 ‘(He) undid and redid the analysis a thousand times’

We conclude that all the facts we are aware of converge towards the validity of the prosodic requirement in (13), here repeated under (34), in all the languages observed:

- (34) The constituent left as the remnant of deletion under identity must form a prosodic word

3.3. Suffixed words in Portuguese and Spanish vs. French and Italian

Several languages allow DUI with suffixed words, such as Dutch and German (see examples (2-3) above), and EP and Spanish (see (35)).

- (35) aleg~~mente~~ ou tristemente EP
 ‘happily or sadly’
 únic~~mente~~ y exclusivamente Sp.
 ‘only and exclusively’

However, in languages like Italian and French, which also allow DUI (see the examples in (1) above), there are no suffixed words that accept deletion. This is illustrated by the contrast between (35) and (36).

- (36) *normal~~mente~~ e logicamente It.
 ‘normally and logically’
 *lentem~~ent~~ mais surement Fr.
 ‘slowly but confidently’

It could be thought that these languages are subject to different conditions on DUI, namely morphological instead of prosodic conditions. We propose that this is not the case, and that the difference results instead from the dissimilar prosodic structure associated to suffixed words in these languages. In fact, according to the work of Hannahs (1995) and Peperkamp (1997) on the prosodic word structure of French and Italian, respectively, in these languages there are no suffixes that form prosodic words independent of their morphological base. Thus, in these languages suffixes like *-mente* behave like suffixes that do not form independent prosodic words in EP, such as *-mento*, which does not allow deletion under identity either (see (37)).

- (37) *(isolamento)₀ ou (revestimento)₀
 ‘isolation or cover’

Once again, the phonological conditions on DUI can be shown to hold cross-linguistically.

3.4. *The position of the deleted unit: German and Dutch vs. Romance languages*

The preceding cases showing differences among languages are related to different prosodizations of complex words, but other sources of cross-linguistic variation on DUI structures also exist. In this section, the position of the deleted prosodic word is examined.

Whereas in European Portuguese and most other Romance languages only the final prosodic word of the first coordination member may delete under identity, in Dutch and German the first prosodic word of the second member may be deleted as well, as illustrated in (38).

- (38) landbouw en tuinbouw Dutch (from Booij 1985: 147-8)
 ‘agriculture and horticulture’
 regelordening en ~~regel~~toepassing
 ‘rule ordering and rule application’

This difference in behavior could result from an independent parametrical choice. However, we will argue that this results instead from differences in other properties of the languages at stake.

It could be hypothesized that the reason for the difference resides in the fact that in Romance, but not in Germanic languages, syntactic structures exist that are identical to the ones that arise from deletion under identity. In such cases deletion would be blocked simply because it generates ambiguity (see section 3.1). The contrast between Romance and Germanic languages would therefore follow from the different syntactic properties of the two groups of languages. However, ambiguity cannot explain all cases where the first member of the second coordinate is never deleted in Romance. In (39) there is no

syntactic structure identical to the output of deletion, as the corresponding string without deletion is syntactically ill-formed.

- (39) *um vestido verde-seco e ~~verde~~-garrafa
 (*um vestido verde-seco e garrafa)
 ‘A dark green dress and bottle (green)’
 *um casaco azul-petróleo e ~~azul~~-mar
 (*um casaco azul-petróleo e mar)
 ‘A coat petrol blue and sea (blue)’

We propose that the observed difference between Germanic and Romance languages results from a prosodic difference between the two language groups, namely, the stress pattern of complex words formed by more than one prosodic word. These sort of complex words are shown in Vigário (2001) to be prosodized under a compound prosodic word.⁶ In languages like Dutch, the main stress of the compound prosodic word is assigned to its leftmost prosodic word (see (40)). In languages like EP, by contrast, the prominent unit of the prosodic compound is its last prosodic word (see (41)).

- (40) Compound stress in Dutch
 (vakántie)_ω (fòto)_ω (compound word) (Zonneveld et al., 1999)
 ‘holiday snapshot’
 (kléur)_ω (lòs)_ω (derived word) (Booij, 1995:115)
 ‘colourless’
- (41) Compound stress in EP (Vigário, 2001)
 (pòrta)_ω (óculos)_ω (compound word)
 ‘eyeglasses case’
 (alègre)_ω (ménte)_ω (derived word)
 ‘happily’

We hypothesize that the first prosodic word of the second coordinate member may only delete if it bears compound prosodic word stress (and the result of deletion is not ambiguous). As only in Germanic, but not in Romance languages, compound stress is initial, we predict that only in the languages of the former group, but not in those of the latter, deletion may target the first prosodic word of the second coordinate member. The motivation for the prominence condition proposed is likely to be the following. In languages like Dutch and German, when a stressed prosodic word is deleted, the remnant receives the level of stress of the deleted prosodic word, that is, a level of stress higher than the one that it would have if deletion had not applied (cf.

⁶ In Vigário (2001) it is shown that the internal prosodic words of these constructions do not behave like being directly dominated by the phonological phrase, and thus are proposed to be grouped under a node of the same level, in a recursive structure.

(42a)). In languages like European Portuguese, by contrast, if the deleted unit were the first prosodic word of the second member of the coordination, the resulting stress pattern would be similar to the one found in structures without deletion (cf. (42b)). Note, however, that the deletion of the final prosodic word of the first coordination member, which is the only acceptable pattern in EP, yields a promotion of the prominence level of the remnant, just like in Germanic languages (cf. (42c)).

- (42) a. ✓(~~vakantie~~)_ω (fòto)_ω → (fóto)_ω Dutch
 b. *(~~porta~~)_ω (óculos)_ω = (óculos)_ω EP
 c. ✓(alègre)_ω (~~ménte~~)_ω → (alégre)_ω

Given that in all of the cases surveyed the remnant always ends up with a higher level of prominence, we have to conclude that this promotion in prominence is a property of the deletion process. In other words, we propose the following prominence condition on DUI:

- (43) *Prominence condition*: DUI changes the prominence pattern by promoting the remnant to a level of prominence higher than the one it would bear in structures without deletion.

This prominence condition may well serve the goal of enhancing the recoverability of deleted information (see Booij, 1985, for a suggestion along these lines, and Frota and Vigário, 2002, for a parallel case in constructions such as topicalization, which induce prominence effects on the remnant).

3.5. Prominence on the remnant

In Booij (1985), it is shown that the remnant (and its counterpart) is stressed and must function as a focus constituent in Dutch and German. Kleinhenz (1994) further argues that the assignment of focus to the remnant in German is a result of deletion under identity. In EP (and in Romance languages in general), by contrast, we find no focus on the remnant.

The following facts show that neither the remnant nor its counterpart are focused in EP: there is no focus pitch accent (H*L) on these units, there is no I-level prominence shift in sequences with non-final stressed units and no narrowing of the pitch range after the non-final stressed unit within its intonational phrase, unlike in all cases of phonological focus assignment (Frota, 2000; Vigário, 1998). This absence of focus on the remnant seems to be also true for other Romance languages, like Italian, where native speakers agree on the non-focused status of the remnant (Avesani, p.c.).

The difference between languages like EP or Italian and languages like Dutch and German can be accounted for on the basis of their distinct stress patterns and the prominence condition on DUI. We propose that the variation found results from the *interaction* between the different stress patterns of

complex words in the two groups of languages (see (41-42) above) and the requirement that the remnant must bear a level of prominence higher than the one it would have in similar structures without deletion (see (43)). As stress in complex words is often initial in Germanic languages (e.g. Booij, 1995; Wiese, 1996; Nespor, 1999), the deletion of the final ω of the first coordinate member does not result *per se* in the assignment of extra prominence to the remnant. This is shown in (44a), where *kleur* bears both the compound stress and the ϕ -level stress before and after deletion.

- (44) a. $((\text{kléur})_{\omega} (\text{des})_{\omega})_{\phi} = ((\text{kléur})_{\omega})_{\phi}$ Dutch (Germanic languages)
 b. no stress-level modification \rightarrow focus

In Romance languages, by contrast, complex words are never stress-initial. This was demonstrated in Vigário (2001) for European Portuguese on the basis of various phonological arguments (e.g. stress perception, blocking of vowel deletion rules, focus assignment). Consequently, the deletion of the final ω of the first coordinate member leads to the assignment of ϕ -level stress to the remnant, which gets promoted from (secondary) word-stress to ϕ -level stress, as shown in (45a).

- (45) a. $((\text{alègre})_{\omega} (\text{mente})_{\omega})_{\phi} \rightarrow ((\text{alègre})_{\omega})_{\phi}$ EP (Romance languages)
 b. change in the stress-level of the remnant \rightarrow no focus

Thus, whereas in Romance languages a higher level of stress in the remnant immediately results from deletion (see (45b)), in Germanic languages the remnant is focalized to bear extra prominence (see (44b)). The different ways the languages have to comply with the prominence requirement on DUI are summarized in (46).

- (46) Prominence promotion of the remnant
 a. Prominent position as a direct result of deletion – available in Romance and Germanic languages
 b. Focus assignment – available in Germanic languages

The proposal just presented has two consequences. First, it predicts that in languages like Dutch the deletion of the first ω of the second coordinate member does not entail focus assignment, since it is already licensed by (46a), i.e. the remnant gets the higher level of stress that was carried by the target unit (see section 3.4). Second, the unmarked way of complying with the prominence condition on DUI is (46a), whereas (46b) should be regarded as a last resource measure and be only active when a structure needs to be saved. If these considerations are on the right track, DUI universally targets the final ω of the first coordinate member and some languages, like Germanic languages, get the deletion of the first ω of the second member for free, just because their stress patterns make it directly prominence compliant.

4. On the separation between DUI and pure syntactic ellipsis phenomena

In the previous sections, we have seen that deletion under identity may not be accounted for in pure morphosyntactic terms. It could thus be hypothesized that all syntactic ellipsis phenomena could be accommodated under the same phonologically based approach. Examples like (47), from Booij (1985), suggest that V-deletion may be an instance of prosodic word deletion under identity.

- (47) ...dat Jan [~~eerst appelsap dronk~~]_{VP} en [daarna druivesap]_{VP} dronk
 ‘that John first apple-juice drank and then grape-juice drank’
 ...dat [Jan ~~appelsap dronk~~]_S en [Piet druivesap dronk]_S
 ‘that John apple juice drank and Peter grape juice drank’

Furthermore, Wiese (1993) explicitly claims that the German counterpart of the Dutch examples above are the result of the application of deletion under identity, and leaves open the question as to whether all cases previously treated as resulting from syntactic operations can be analysed as instances of deletion under identity. There are at least three arguments from European Portuguese that clearly show that such an approach is wrong and that DUI and syntactic ellipsis are governed by different conditions.⁷

First, in EP sentences analysed as verb ellipsis cases, like the one in (48) from Mateus, Brito, Duarte & Faria (1989), a whole constituent may intervene between the two partially identical phonological phrases. As this is never the case with DUI in any of the languages described in the literature, we should conclude that we are not facing an instance of DUI.

- (48) (O João)_φ (bebeu sumo)_φ (e o Pedro)_φ (~~bebeu~~ água)_φ
 ‘John drank juice and Peter (drank) water.’

Second, the position of the deleted constituent is not the same. As we have seen in the previous sections, in Romance languages, EP included, it is not possible to delete the *first* prosodic word of the second coordinate member. This is illustrated again in (49).

- (49) *um casaco azul-petróleo e azul-mar
 *um casaco azul-petróleo e mar
 ‘A coat petrol blue and sea (blue)’

By contrast, and according to Mateus *et al.* (1989: 260), when a structure with two identical units undergoes syntactic ellipsis, it is the *second* identical

⁷ A further argument from Serbo-Croatian is offered by Godjevac (2000: 195), where it is shown that VP ellipsis may affect discontinuous constituents, unlike phonological processes which require constituent adjacency to operate.

unit that is not phonetically realized, and not the first one. This is shown by the example in (48) above. Finally, syntactic units that are *not* prosodic words, namely phonological clitics, may also be absent from the phonetic string, as shown by the following examples (example (51) is taken from Matos, 1997: 707).⁸

- (50) Todos *o* aplaudiram e festejaram
 all 3-Sg-ACC applauded and celebrated
 ‘(they) all applauded and celebrated it’
- (51) Eles tinham-*nas* ouvido às avós e contado – aos filhos
 they had 3-Sg-ACC-FEM heard to-the grand-mothers and told to-the
 sons
 ‘They had heard them from their grand-mothers and told them to their
 sons’

Since the target of DUI must be a prosodic word, it follows that the deletion of phonological clitics cannot be an instance of the same phenomenon.

The two phenomena can be distinguished in a principled way if their proper objects are considered: in DUI, the deleted unit is a prosodic word, not a morphological constituent or a syntactic word; by contrast, in ellipsis the deleted unit is a syntactic word, which does not have to coincide with a prosodic word. DUI, which has the properties of a phonological process, targets phonological objects, whereas ellipsis, which has been described as a syntactic process, manipulates syntactic objects.

5. Conclusion

In this paper, new data was presented that contributes to a cross-linguistic understanding of deletion under identity. The phonological nature of this process is supported by an array of prosodic requirements on the deleted unit, its counterpart, the remnant, and the way the coordinate sequence is prosodically phrased, which is summarized in Table 1 (first row). A pure morpho-syntactic analysis of DUI is therefore unattainable. It was also seen that the variation found across languages is not due to differences in the way DUI operates, but instead to prosodic differences that the languages independently display, namely the prosodic constituency of suffixed words in Romance languages and the stress patterns of compound prosodic words typical of Romance and Germanic languages. On the other hand, it was also shown that DUI cannot be seen as a pure phonological phenomenon either, as syntax constrains DUI as well (Table 1, second row). However, no reference to mor-

⁸ See Vigário (2001) for the demonstration that pronominal clitics are not prosodic words in EP.

phonological or semantic properties is needed to account for DUI. This interplay between phonology and syntax calls for a look at syntactic ellipsis phenomena. We believe to have shown that DUI is fundamentally different from syntactic gapping (Table 1, third row).

Table 1. Deletion under identity: summary

1. <i>Prosody</i> does mater	deleted unit= prosodic word; remnant = prosodic word; counterpart= phonologically identical to the deleted unit; prosodic phrasing is relevant; phonological distance counts prominence promotion of the remnant
2. <i>Syntax</i> also maters	coordinate structure required
3. <i>Ellipsis</i> is different	deleted unit= syntactic word; ≠ position of deleted unit may affect discontinuous constituents intervening prosodic constituents possible

The interplay between phonology and syntax in DUI includes it in the set of phenomena already known to require *both* syntactic and phonological information (cf. Zec & Inkelas, 1990; Guasti & Nespors, 1999; Frota & Vigário, 1996, 2002).

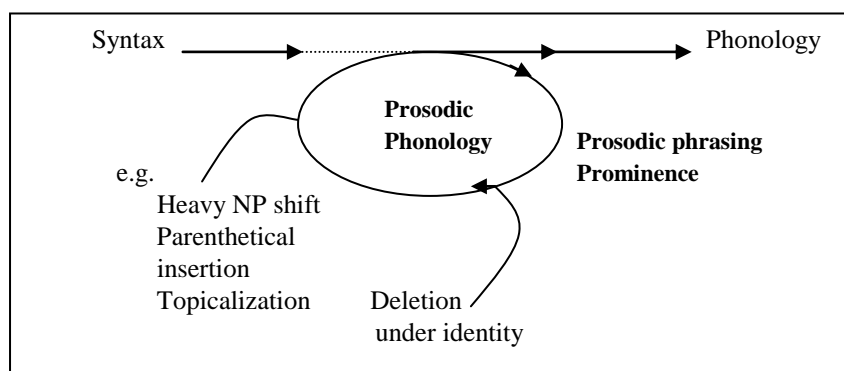


Figure 1. A view of the syntax-phonology interaction

Like in the other cases mentioned in the literature, the syntactic information at stake seems to be available in the 'stylistic' component of the grammar (see Rochemont & Culicover, 1990; Guasti & Nespors, 1999, among others), and the phonological information involved (namely prosodic phrasing and prominence) is restricted to prosodic phonology, which is precisely an interface component between syntax and phonology (see Fig.1).

In conclusion, the present account of deletion under identity places it at the syntax-phonology interface without any further addition to a constrained model of syntax-phonology interaction.

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References

- Bafile, L. (1997) Parole grammaticali e struttura prosodica: dati dell'italiano e del napoletano. *Lingua e Stile* a. XXXII, 3: 433–469.
- Bisol, L. (2000) O Clítico e o seu Status Prosódico. *Revista de Estudos de Linguagem UFMG* 9(1): 5–30.
- Booij, G. (1985) Coordination Reduction in Complex Words: A case for prosodic phonology. In *Advances in Nonlinear Phonology*. (H. van der Hulst and N. Smith, editors), pp. 143–160. Dordrecht: Foris.
- Booij, G. (1988) On the relation between lexical and prosodic phonology. In *Certamen Phonologicum*. (P.M. Bertinetto and M. Loporcaro, editors), pp. 63–76. Torino: Rosenberg and Sellier.
- Booij, G. (1995) *The Phonology of Dutch*. Oxford: Clarendon Press.
- Chomsky, N. (1965) *Aspects of the Theory of Syntax*. Cambridge, Mass.: MIT Press.
- Cunha, C. and L. Cintra. (1984) *Nova Gramática do Português Contemporâneo*. Lisboa: Edições Sá da Costa (2nd ed.).
- Fabra (1956) *Esbozo de una nueva gramática de la lengua española*. Real Academia Española.
- Frota, S. (2000) *Prosody and Focus in European Portuguese. Phonological Phrasing and Intonation*. New York: Garland Publishing.
- Frota, S. and M. Vigário (1996) On Weight Effects in European Portuguese. Paper given at the *Glow Workshop On Weight Effects*, Athens.
- Frota, S. and M. Vigário (2002) Efeitos de peso no Português Europeu. In *Homenagem à Professora Henriqueta Costa Campos, Revista da FCSH-UNL* (M.H. Mateus & C.N. Correia, editors), pp. 315–333. Lisboa: Colibri.
- Godjevac, S. (2000) *Intonation, word order, and focus projection in Serbo-Croatian*. PhD dissertation, Ohio State University.
- Guasti, M.T. and M. Nespor (1999) Is syntax phonology-free? In *Phrasal Phonology* (R. Kager & W. Zonneveld, editors). Dordrecht: Foris.
- Hannahs, S. (1995) *Prosodic Structure and French Morphophonology*. Tübingen: Max Niemeyer Verlag.
- Kleinhenz, U. (1994) *Focus and Phrasing in German*. Arbeitspapiere de Sonderforschungsbereichs 340.

- Mateus, M. H., A. Brito, I. Duarte and I. Faria (1989) *Gramática da Língua Portuguesa*. Lisboa: Caminho (2nd ed.).
- Matos, G. (1997) Configurações sintáticas em estruturas de colocação simultânea de clítico. In *Sentido que a vida faz. Estudos para Óscar Lopes* (A. Brito et al., editors), pp. 705-717. Porto: Campo das Letras.
- Matos, G. and A.M. Brito (2002) On the syntax of canonical comparatives in European Portuguese. *Journal of Portuguese Linguistics* 1(1), 41-81.
- Moreno, C. (1997) *Morfologia nominal do português: um estudo de fonologia lexical*. Dissertação de Doutoramento, Pontifícia Universidade Católica do Rio Grande do Sul.
- Nespor, M. (1999) Stress Domains. In *Word Prosodic Systems in the Languages of Europe* (Harry van der Hulst, editor), pp. 117-159. Berlin: Mouton de Gruyter.
- Peperkamp, S. (1997) *Prosodic Words*. HIL Dissertations 34. The Hague: Holland Academic Graphics.
- Rochemont, M. and P. Culicover (1990) *English focus constructions and the theory of grammar*. Cambridge: Cambridge University Press.
- Schwindt, L.C. (2000) *O prefixo no Português Brasileiro: análise morfofonológica*. Dissertação de Doutoramento, Pontifícia Universidade Católica do Rio Grande do Sul.
- Vigário, M. (1998) *Aspectos da Prosódia do Português Europeu: estruturas com Advérbios de Exclusão e Negação Frásica*. Braga: Universidade do Minho/CEHUM.
- Vigário, M. (2001) *The prosodic word in European Portuguese*. Dissertação de Doutoramento, Universidade de Lisboa (to appear in Mouton de Gruyter Interface Explorations Series).
- Villava, A. (1994) *Estruturas Morfológicas. Unidades e Hierarquias nas Palavras do Português*. Dissertação de Doutoramento, Universidade de Lisboa.
- Wiese, R. (1993) Prosodic phonology and its role in the processing of written language. *Konvens 92* (G. Görz, editor). Springer-Verlag, 139-148.
- Wiese, R. (1996) *The Phonology of German*. Oxford: Clarendon Press.
- Zec, D. and S. Inkelas (1990) Prosodically Constrained Syntax. In *The phonology-syntax connection* (S. Inkelas & D. Zec, editors), pp. 365-378. Chicago: UCP.
- Zonneveld, W., M. Trommelen, M. Jassen, G. Bruce, and K. Árnason, (1999) Word-stress in West-Germanic and North-Germanic languages. In *Word Prosodic Systems in the Languages of Europe* (H. van der Hulst, editor), pp. 477-603. Berlin: Mouton de Gruyter.
- Zwicky, A. (1977) *On Clitics*. Bloomington: Indiana University Press.

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