Tonal Association in Brazilian Portuguese Compounds

Marina Vigário¹ & Flaviane Fernandes-Svartman²
¹Universidade de Lisboa & ²Universidade de São Paulo
marina.vigario@mail.telepac.pt; flaviane@gmail.com

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Introduction

1. The prosodic units that must bear pitch accent (PA) vary cross-linguistically:
   - Standard European Portuguese: (i) the head of the intonational phrase (I) always bears PA, (ii) other PWS, including the heads of phonological phrases (φ), are often not assigned PA, except in I-initial position – e.g. Frota 2000, Elordieta & Vigário 2005
   - Spanish and Cairene Arabic: every PW tends to bear PA – e.g. Elordieta & Vigário 2005, Hofmann 2007

2. In at least some languages where a weak PW within may bear a PA, compounds formed of more than one PW have been reported to allow only one PA, assigned to the stressed PW of the compound (e.g. English, Dutch and Swedish – Ladd 1996, Gussenboven 2004, Bailey 1990).

Vigário (2009, to appear) proposes that in these cases the domain of PA assignment is the Prosodic Word Group (PWG) instead of the PW, as depicted in (1).

(1) PWG PW PW T*

(phas goes to the head of PWG, corresponding to these languages to the intial PW)

3. Tonal assignment in Brazilian Portuguese (BP): the head of every φ tends to bear a PA (Frota & Vigário 2010, Tenani 2004, Fernandes 2007a, b)

- instances of PWs with PA within φ in non-head position have also been reported (Frota 2007a, b, Tenani & Fernandes-Svartman 2008)

- optional initial (H) tones also reported in these studies; crucially, initial tones are sensitive to the distance between the beginning of the word and the prosodic boundary

Results

Note: only PAs identified by the two transcribers are considered

1. PA distribution in φs containing non-branching PWGs (="mon-compound words, e.g. virus’ virus’)

   > 100% of the sentences show a PA in the head of φ (final φ of PWG of the sentence, as expected (total number of sentences in this condition=78)

   C(e[prompting]...[promising]promised)φ

   > 97.2% of the sentences show a PA in the head of φ in I-initial position (total number of sentences in this condition=72)

   (As process)φ (abortion)φ—> C

   > 60% of φs in I-internal position are pitch accented – NB: Only 5.3% of the sentences in this condition were marked by both transcribers without PA. Also, all φs in this condition are non-branching, which may explain the drop in PA assignment/transcription (total number of φs in this condition=150)

   (Figure 1: contour of the sentence Os guarda-costas engana malandros ‘the bodyguard deceives rogues’, produced by speaker N.)

2. Initial H(L) in non-branching PWGs (>2 φs or 2φs with PA) > 28% of the PW with 3 pretonic φs (plus possible digitics) (N=120); only 2 cases out of 126 tokens with pretonic φ and 3 out of 42 tokens with 2 pretonic φs

3. PA distribution in φs containing branching PWGs (="compound words, like matte-toasted") by position and size condition

1. I-initial position & short branching PWG (both SU and O formed of branching PWGs)

   - the head of PWG-head of φ always bears PA (N=36)

   - the non-head of PWG bears PA in 92% of the sentences (N=12)

   > Reversed pattern

   NB: distance from the beginning of PWG /φ to the head of the PWGφ—>5α

   (O médico-reitor-φ)φ

   > 92%

   (Figure 2: F0 contour of the sentence O vice-reitor promove mini-tortuose ‘the vice-dean promotes short contests’, produced by speaker K.)

2. I-initial position & long branching PWG (including double branching)

   - the head of PWG-head of φ always bears PA (N=36)

   - the non-head of PWG bears PA in 61.5% of the sentences (N=36)

   > 5α

   (Figure 3: contour of the sentence As jovens abrimam o porta-malas ‘the teenagers opened the luggage carrier’, produced by speaker K.)

3. I-final position & short branching PWG (including double branching)

   - the head of PWG-head of φ of head of I always bears PA (N=36)

   - the non-head of PWG bear PA in 44.4% of the sentences (N=36)

   > 5α

   (Figure 4: contour of the sentence Os homens temiam o macro-endivida ‘they feared great indebt’, produced by speaker G.)

4. Optional PWφ initial tonal marking

   - Initial H(L) may occur in the second member of the prosodic compound (do macro-endivida-mo)

   > 44%

   (Figure 5: contour of the sentence Os homens temiam o macro-endivida ‘they feared great indebt’, produced by speaker G.)

Results (contd.)

- H(L) is found in 44% of the cases where PW contains 4 pretonic syllables (N=18)

- by contrast, H(L) is never found in PWs with 2 pretonic syllables (N=42), and only 2 cases are attested in PWs with 3 pretonic syllables (N=34)

3. Acronyms – tendency for PAs in alternating syllables – 9 final PWs always bear PA and the non-head of PW must often does not (58%); in 3 and 4 letters acronyms, PAs are often associated with the antepenultimate PW (58%, and 100% considering data from at least one trancriber)

4. Proper names – each noun bear a PA (Frota 117%)

Discussion

1. By every PW tends to have a PA above 99%)

   > Every PW that is the head of a prosodic constituent tends to bear a PA (idem)

2. Every PW that is formed of a single PW (non-branching PWGφ in φ weak position) bear a PA (100%)

   This contrasts with PWs in weak position of branching PWGs, where PA is optional, and less frequent when the PW is shorter > 30% when the distance from the beginning of the PW to the head is less than 5α

3. PAφ size effect: PWφ in weak position of long branching PWGs attract significantly more PAs than those in the same position of short branching PWGs (65% vs 50%)

   No such effect is found in PWs that bear PWφ prominence whether branching or non-branching (identical), where PAs are obligatory

4. There seems to be a preference for having a PA at the beginning of I (and possibly lower domains) within a 4-syllable-window

5. Initial H(L) seems to mark PWφ rather than PWφ initial position since it is often found at the beginning of the second PW of a branching PWG

6. Different metrics for the occurrence of initial tonal marking: at the beginning of a PWφ /PWφ (e.g. a non-branching PWφ) H(L) is frequent in PWs with 3 pretonic φs (25%), in PWφ internal position H(L) only becomes frequent when the second PW has 4 pretonic φs (44%) → initial marking of PWφ 3 pretonic φs; initial marking of PW 4 pretonic φs

7. Proper names: some initial tonal marking is found in PWs and show no size restrictions: 2 PWφ → 1 PWφ split into 2 PWGs

Conclusions

1. The domain of obligatory PA assignment in BP is the PWφ

2. PAφ is optional at the PW level, and dependent on specific metrics

3. A difference in knot between the PWS inside a prosodic compound and the node that dominates them

4. The compound that groups prosodic compounds is not a recursive PWφ, but rather an independent prosodic domain