INTONATIONAL PHONOLOGY OF BRAZILIAN PORTUGUESE

João Antônio de MORAES, UFRJ/CNPq (jamoraes2@br.inter.net)

Abstract

This paper presents the most common nuclear and pre-nuclear contours in Brazilian Portuguese (BP) intonation. Thirteen melodic patterns of single IP utterances have been analyzed from an AM perspective; a phonological representation for eleven distinct nuclear contours and three pre-nuclear contours is proposed.

The intonational grammar of Brazilian Portuguese (BP) can be briefly characterized as follows:

1. Phonological utterances (U) are made up of intonational phrases (IP), which are in their turn made up of phonological phrases (φ); there isn't an intermediate level between these two last constituents.

2. There is always a nuclear accent in the final position of an IP, even if the utterance focus is anticipated, that is, if it is located in a non final position, which entails a dissociation between focal accent and nuclear accent, as in European Portuguese [2] and Italian [3].

3. Nuclear accents are formed by two types of tonal events, pitch accents and boundary tones.

4. Boundary tones are associated basically with the right edge of intonational phrases and are realized on the final poststressed syllable(s), or on the final part of the last stressed syllable, if there aren't poststressed ones; there are no phrase accents.

4.1 There are only two boundary tones, L and H.

4.2 The L% is by far the most common boundary tone in BP, but there are a few cases of contrastive opposition between low and high boundary tones, as observed in progredient *vs*. yes/no question intonation patterns, or between echo (metalinguistic) wh-questions *vs*. repeated wh-questions, what motivates us to postulate the boundary tone.

5. Pitch accents (PA) are associated with stressed syllables; they are only bitonal accents, and present always a leading tone, followed by the starred tone. No trailing tones neither singleton tones are allowed. Leading tones are always realized on the syllable immediately preceding the stressed syllable.

5.1. Different from the poor productivity of the boundary tone, there is a large variety of pitch accents, which means that the intonational contrasts lie specifically on the last stressed syllable and its preceding syllable, specially in the IP final position.

5.2 Besides the basic contrast between tones L *vs*. H on the three final IP syllables (prestressed, stressed and poststressed), which characterize its nuclear contour, the participation of three other parameters is occasionally necessary to render the distinctions between the various patterns observed.

5.2.1 The diacritics ! and ¡ are used not really to indicate a systemic upstep or downstep phenomenon, but rather to make possible the representation of occasional non-binary contrasts.

5.2.2 The temporal alignment of H and L tones in the stressed syllable, indicated by the diacritics < and >, will be sometimes responsible for differentiating the meaning/function of certain patterns [7].

5.2.3 Beside the "simple" PAs from a durational point of view, there are certain melodic patterns, mainly attitudinal, that not only require an important lengthening of the stressed vowel, but also may present a melodic modulation on this lengthened vowel. We will name these PAs "lengthened", and we will place their starred syllable between square brackets.

5.3 In order to describe the main melodic patterns of BP we propose eleven nuclear and three pre-nuclear contours .

NUCLEAR CONTOURS

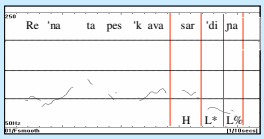

Fig. 1a: nuclear low fall in a neutral statement

Fig. 1b: nuclear low fall in a wh-question

1. Low fall – Key features: slight melodic drop from the final pre-stressed syllable, located at a phonetically medium level, to a low level on the stressed syllable; the melodic level on the stressed syllable remains low on eventual post-stressed ones; typical of statements, wh-questions and commands. (/H+L* L%/) (Fig. 1a and 1b) :

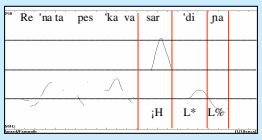

Figure 2: nuclear high fall in a contrastive assertion

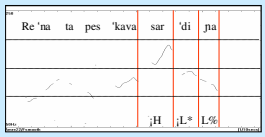

Figure 3: nuclear medium fall in a self-evident statement

2. High fall – Key features: important drop from the final pre-stressed to the final stressed syllable; it appears typically in contrastive assertion and confirmative questions. (/¡H+L* L%/) (Fig. 2)

3. Medium fall – Key features: the fall from a high level on the final pre-stressed syllable stops at a medium level on the last stressed syllable; typical of suggestions and the self-evident statements. (/¡H+¡L* L%/) (Fig. 3).

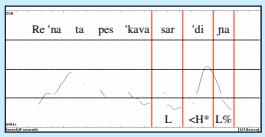

Figure 4: nuclear rise - fall in a neutral yes-no question

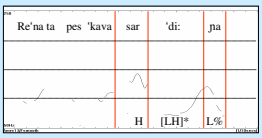

Figure 5: nuclear fall - delayed rise - fall in an incredulous yes-no question

4. Rise-fall – Key features: final pre-stressed syllable at a low level and a high peak in final stressed syllable; typical of neutral yes-no questions. (/L+<H*L%/) (Fig. 4).

5. Lengthened fall - delayed rise - fall – Key features: high pre-stressed syllable followed by a rise on the final stressed syllable, which is lengthened; not only the F0 peak is aligned at the right portion of the stressed vowel (as in neutral yes-no question), but the rise is delayed; typical of yes-no questions conveying disbelief about what has just been said. (/ H+[LH]*L%/). (Fig. 5).

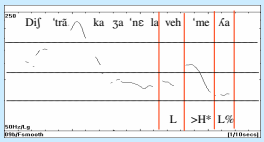

Figure 6: nuclear early rise - fall in a request

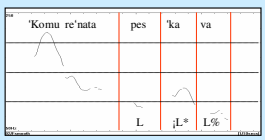

Figure 7: nuclear low rise - fall in a wh-exclamation

6. Early rise - fall – Key features: final pre-stressed syllable in a low level, and a rise to a medium-high level in the final stressed syllable; differently from the rise-fall contour, the F0 peak on the stressed syllable is located at the first third of the vowel, what makes its intrasylabic configuration over the last stressed syllable be falling, not rising; typical of requests and rhetorical questions. (/L+>H*L%/). (Fig. 6).

7. Low rise-fall – Key features: pre-stressed syllable at a low level and rise to a medium level on the last stressed syllable; typical of wh-exclamations. (/L+¡L*L%/). (Fig. 7).

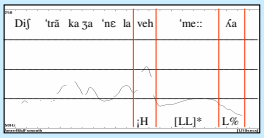

Figure 8: nuclear lengthened fall in a warning

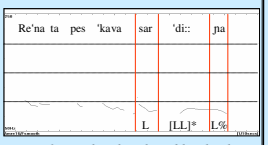

Figure 9: nuclear lengthened low level in a disbelief statement.

8. Lengthened fall – Key features: high level on the pre-stressed syllable, followed by a fall to a medium level on the final stressed syllable, which presents an important lengthening; low level on the post-stressed syllable; typical of warning statements. (/¡H+[LL]*L%/). (Fig. 8).

9. Lengthened low level – Key features: low level on the pre-stressed, stressed and post stressed final syllables, showing also a lengthening on the stressed one; typical of disbelief.
(/ L+[LL]*L%/). (Fig. 9).

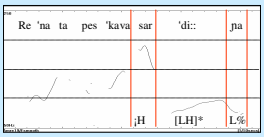

Figure 10: nuclear fall - smooth rise - fall in an ironic statement

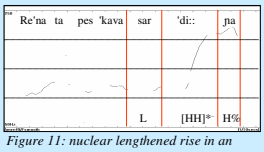

Figure 11: nuclear lengthened rise in an emphatic statement

10. Lengthened fall - smooth rise - fall – Key features: high pre-stressed syllable followed by a fall on the stressed syllable, showing a slight rising movement from low to medium; the stressed syllable is lengthened and the post-stressed remains at a low level; typical of ironical statements. (/¡H+[LH]*L%/). (Fig. 10).

11. Lengthened rise – Key features: low level on the pre-stressed and a rising reaching an extra high level on the stressed syllable; the post-stressed maintains the high level; typical of intensifying emphasis over quantifiable nouns and verbs. (/L+[HH]* H%/). (Fig. 11).

PRE-NUCLEAR CONTOURS

Figure 12a: pre-nuclear rise in a statement

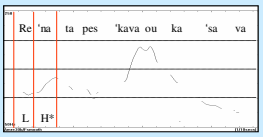

Figure 12b: pre-nuclear rise in an alternative question.

12. Pre-nuclear rise – Key features: rising melodic movement from pre-stressed syllable to the stressed one, and a variable, rising or falling, movement over the post-stressed syllable, which justifies considering this pitch accent as L+H*, instead of the L*+H generally proposed; typical of statements, yes-no questions, alternative questions. (/L+H*/). (Fig. 12).

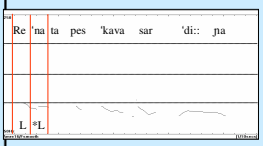

Fig 13: pre-nuclear low in a disbelief st..

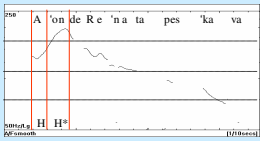

Fig. 14: pre-nuclear high in a wh-question

13. Pre-nuclear low – Key features: both pre-stressed and stressed syllables are pronounced at a low pitch level; typical of disbelief statements. (/L+L*/). (Fig. 13).

14. Pre-nuclear high – Key features: both pre-stressed and stressed syllables are pronounced at a high pitch level; typical of wh-questions, commands, requests, and wh-exclamations. (/H+H*/). (Fig. 14).

The patterns:

Nuclear contours

#	Label	Contour	Contexts
1	low fall	H+L* L%	statement, wh-question, command
2	high fall	¡H+L* L%	contradiction, confirmative y-n question
3	medium fall	¡H + ¡L* L%	suggestion, self-evident statement
4	rise-fall	L+<H*L%	neutral y-n question, echo wh-question
5	fall - delayed rise - fall	H+[LH]* L%	incredulous y-n question
6	early rise -fall	L+>H*L%	request, rhetorical y-n question
7	low rise - fall	L+ ¡L* L%	wh-exclamation
8	lengthened fall	¡H+[LL]* L%	warning
9	lengthened low level	L+[LL]* L%	disbelief
10	fall - smooth rise - fall	¡H+[LH]* L%	irony
11	lengthened rise	L+[HH]* H%	intensifying emphasis

Pre-nuclear contours

#	Label	Contour	Contexts
12	rise	L+H*	statement, y-n question
13	low	L+L*	disbelief
14	high	H+H*	wh-question, command, wh-exclamation

Intonational Phonology Workshop ICPhS 2007