A note on the prosody of focalized structures in Brazilian Portuguese *

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This paper discusses the prosody of focalized constituents in Brazilian Portuguese. In his classical 1997 paper, Rizzi presents semantic reasons to posit a requirement of uniqueness on the focus of the sentence. Here we provide an extra argument for this restrictive hypothesis on the basis of intonational properties of focalized sentences.

1. Introduction
In the literature concerning focalization, we can find two contradictory assertions: on the one hand, there are reasons to suppose that the focalized constituent in a sentence must be unique, since the counterpart of the focalized portion of the sentence is the presupposition, and the presupposition part of the sentence could not contain another focalized element, by the very definition of presupposition (i.e., in the sentence partition, presupposition is what is not the focus of the sentence). Rizzi’s (1997) seminal work defends this idea, also providing a large set of syntactic arguments for this restrictive assumption.

On the other hand, other scholars, such as Benincà (2004), have argued that it may be the case that different types of focalized elements occupy different positions in the sentence and hence may co-occur. However, it is quite hard to build concrete examples of this sort in an experiment, for example.

In this paper we examine the prosodic structure of sentences with focalized elements, looking for the phonetic properties that these structures must exhibit in order to be interpreted as focalized structures.

The paper is organized as follows: in section 2, we present a description of the intonation of focalized structures available in the literature on acoustic phonetics and intonational phonology in Brazilian Portuguese. Section 3 discusses some facts concerning specifically the focalization of pre-verbal subjects, showing an interesting

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generalization about the prosody of these structures. Section 4 speculates on possible extensions of the ideas presented as well as on future research directions. A final warning is necessary: this research has an initial character and takes into consideration only Brazilian Portuguese data. The preliminary conclusions we arrive at here must be tested with a large number of native speakers of other Brazilian dialects and also with native speakers of other languages, so that we can achieve a real generalization.

2. The prosody of focalized constructions

In a well known paper on the intonation patterns of Brazilian dialects of Portuguese, Moraes (1998) presents a set of observations taking into consideration the articulation of the sentence in its theme/rheme subparts (which roughly corresponds to presupposed and non-presupposed information), summarized as follows:

1. The rheme part (where the focus of the sentence lies) typically shows a descendent pitch movement on the final stressed syllable, in the case of declarative sentences. The example in (1) shows this movement – italics represent the syllable in which the pitch accent L* falls:

(1) (What happened?)
    O Pedro escondeu a pessegada
    “Peter hid the peach preserves”

Figure 1: Wave form, energy and the pitch contour (processed by the MOMEL script) of the out of the blue declarative O Pedro escondeu a pessegada. (Peter hid the peach preserves)

2. The theme’s intonation pattern depends on its position in the utterance: when it precedes rheme, its prosody contrasts with that of the rheme in that there is a rise on

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Following Zubizarreta (1998), we use the term “stress” to make reference to lexical prominence, while “accent” stands for prosodic prominence in terms of pitch.
the final stressed syllable in the case of a statement – represented here by capitals, where the H* pitch accent is located; the L* accent is on the final stressed syllable:

(2) (What exactly was it Peter hid?)
O Pedro escondeu [a passegada]
“Peter hid the peach preserves”

Figure 2: Wave form, energy and the pitch contour (processed by the MOMEFL script) of the declarative O Pedro escondeu a passegada (Peter hid the peach preserves) with a focalized direct object.

On the other hand, when theme follows rheme, the same pattern of pitch showed by the rheme is reproduced by the theme (even if the L* accent of the rheme is ‘higher’ than the L* accent of the theme tonic), resulting in a falling contour in the intonation of a statement – represented by the italics where two instances of L* are located:

(3) (And what about the peach preserves?)
O Pedro escondeu a passegada
“Peter hid the peach preserves”

Figure 3: Wave form, energy and the pitch contour (processed by the MOMEFL script) of the declarative O Pedro escondeu a passegada (Peter hid the peach preserves) with a direct object theme.
In the cases of “emphasis for contrast” (what we know as contrastive focus), more specifically, contrast with exclusive reading (cf. Moraes 2006), we observe four features in the most frequent prosodic profile for the structure:

(a) the stressed syllable of the focalized constituent exhibits low pitch;  
(b) the syllable that immediately precedes the stressed syllable exhibits high pitch, producing a contrast between these two syllables;  
(c) the intonation pattern of the part of the utterance preceding the stressed word is the same we find in (out-of-the-blue) declarative sentences, while the intonation pattern for the part of the sentence which follows the focalized constituent displays a low parenthetical tone;  
(d) the intensity and the duration of the stressed syllable are greater than normal.

The relevant example is in (4) below:

(4)  (Pedro hid the banana preserves yesterday)  
         O Pedro escondeu A PESSEGADA ontem  
         “Peter hid the PEACH PRESERVES yesterday”

*Figure 4:* Wave form, energy and the pitch contour (processed by the MOMEL script) of the declarative *O Pedro escondeu a pessegada ontem* (Peter hid the peach preserves yesterday) with a contrastively focalized object (H* on -sse- and L* on –ga–)

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2  As Moraes (2006) notes, it may be the case that there is some dialectal variation here: while in the Rio de Janeiro variety the rise usually starts on the pre-tonic syllable, in the São Paulo variety the rise is located on the accented syllable.

3  “Normal” here means “when there is informational focus” only, and not “contrastive focus”.
3. Subject focalization and a generalization on focused constructions
Specifically with regards to the focalization of subjects, Figueiredo Silva & Seara (2006) and also Seara & Figueiredo Silva (2008) show that Moraes (1998) is correct with respect to the intonation of out of the blue declarative sentences, although it is also possible to have an H* tone on the subject (cf. Tenani, 2002).

However, the most interesting conclusion of these papers for our purposes is that it is not necessary to have contrastive focus in order to have the so called “parenthetic intonation” mentioned by Moraes (1998) – a conclusion that Moraes (2006) also endorses. As a matter of fact, if a sentence has a non-final focalized constituent, the remaining part of the sentence after this element is always pronounced with this parenthetic intonation.

Figures 5 and 6 below illustrate the similarities:

Figure 5: Wave form, energy and the pitch contour (processed by the MOMEL script) of the declarative
O Pedro escondeu a pessegada (Peter hid the peach preserves) with a contrastive focalized subject
Figure 6: Wave form, energy and the pitch contour (processed by the MOMEL script) of the declarative
*O Pedro escondeu a pessegada* (Peter hid the peach preserves) with an informationally focalized
subject

As we can see, the same phenomenon is attested in both cases of focalized subjects. Roughly
speaking, what happens is that after the focalized subject all of the remaining part of the sentence is spoken in a zone of the pitch range which is consistently lower than the zone in which the focalized part of the sentence is pronounced. We can use a term borrowed from musical theory to describe more precisely this phenomenon: the part of the sentence that follows the focalized element must be realized in another *tessitura*.

If our observations are on the right track, a generalization emerges with respect to focalized structures: the difference between the types of focus, as far as intonation is concerned, concerns (at best) the prosodic profile of the focused constituent, and not of the part of the sentence following it. What happens after a focus is always the same: the zone of the pitch range is considerably lower w.r.t. the rest of the sentence. And it seems that this lowering of the pitch zone can be done only once per unit of utterance (excluding parentheticals, for example). Why should it be so? We will speculate about this question later.

For now, notice that if it is true (as it intuitively seems to be), this generalization is perfectly consistent with the semantic generalization suggested by Rizzi (1997): it is not possible to have two focalized elements in a single sentence, because the focus projection takes the presupposition part of the sentence as its complement and because the lowering of the zone of pitch range, once done, cannot be done once again in the same unit of utterance – it would be necessary to come back to the original *tessitura* in order for a new lowering to be possible.

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4 This is not a new observation: in a very different theoretical framework, Zubizarreta (1998) has noticed that in French (and in Brazilian Portuguese) the lexical material which follows a focalized subject is metrically invisible (i.e, it is not visible to the rule that assigns nuclear stress).
On the other hand, the construction with left dislocation of the subject, for example, shows a very distinct intonational profile, as shown in Figure 7 below:

**Figure 7:** Wave form, energy and the pitch contour (processed by the MOMEL script) of the declarative *O Pedro, ele escondeu a pessegada* (Peter, he hid the peach preserves) with a left dislocated subject

According to Callou et alii (1993), the left dislocated constituent containing presupposed information (the topic in Rizzi’s terms) may exhibit different intonation patterns, although the informants tend to use the simple descendent pattern to express left dislocation. Now, this pattern is similar to that described by Moraes (1998) and also Tenani (2002) for simple declaratives (as the out-of-the-blue statement showed by Figure 1). Hence, a left dislocation construction exhibits the same intonational structure twice, as seen above in Figure 7.

Clearly, the same kind of prosodic restriction that applies to focalized structures does not apply to topic structures: since topics do not alter the tessitura of the sentence, it is always possible to come back to the same zone of pitch range and restart with the same pitch value. This may explain why an unbounded number of topics can be added to the structure – again, a conclusion very consistent with Rizzi’s one concerning the reiterative character of topics.

4. Possible extensions of the idea
This analysis makes a very interesting prediction: the construction in which more than one focalized constituent are supposed to exist must be interpreted in the same way in which we interpret multiple interrogatives.

A first pilot experiment was conducted to verify this prediction and the results are very interesting even if it is not clear that we are really testing multiple contrastive foci (rather than multiple contrastive topics, because the information must first be given in order to be corrected); these preliminary results are shown below in Figures 8 and 9.

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5 I thank Beatriz Santana and Flávio Martins for drawing my attention to these data.
Figure 8: Wave form, energy and the pitch contour (processed by the MOMEL script) of the declarative *A Ana lavou a meia e a Maria lavou a luva* (Anne washed the socks and Mary washed the gloves) as answer to the multiple question *Quem lavou o quê?* (who washed what?)

As we can see, the first part of the utterances is very similar, and even the basic contour of the second conjunct is similar, the differences being reserved to the deepness of the valley following the higher pitch accent of the utterances, very pronounced in the case of the contrastive focus, a difference reminiscent of what we observed between informational focus and contrastive focus in simples sentences.

Figure 9: Wave form, energy and the pitch contour (processed by the MOMEL script) of the declarative *A Ana lavou a luva e a Maria lavou a meia* (Anne washed the gloves and Mary washed the socks) as a correction to the declarative *A Ana lavou a meia e a Maria lavou a luva* (Anne washed the socks and Mary washed the gloves).
A final observation concerns the apparent impossibility of lowering the tessitura twice in the same utterance. Clearly, the reason is not physiologic since the lowering is about a fifth, and a normal human being has a range of at least two fifths (or even two octaves). We speculate that the reason is in fact linguistics, in the sense that the formants of vowels would be in a region which renders the distinctions very difficult. However, this is only the first line of an explanation to that fact.

References


