

# A first approach on the phonology of Mirandese language: the neutral declaratives and interrogatives

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**Introduction** Mirandese is a minority and Romance language that belongs to the Asturleonese language family, which is the result of the evolution of vulgar Latin in Miranda do Douro [1]. With close to 5000 speakers [2], this asturleonese enclave in Portugal is currently spoken by a fraction of the population in Miranda do Douro, despite a centuries-old history. Mirandese is currently spoken by a relatively small and old community, which difficult the data collection. This paper describes nuclear contours in the neutral declaratives and interrogatives of two Mirandese varieties: the *Central* (central region of Miranda do Douro), and the *Raiano* (the frontier region). Our major goal aims to provide a phonological analysis of the Mirandese intonation. Our project is motivated for the inexistence phonologic description of the phonological grammar, despite the traditional phonetic approach [3]. This analysis presents a tonal inventory of the nuclear contours of neutral declaratives and interrogatives and its distribution across varieties.

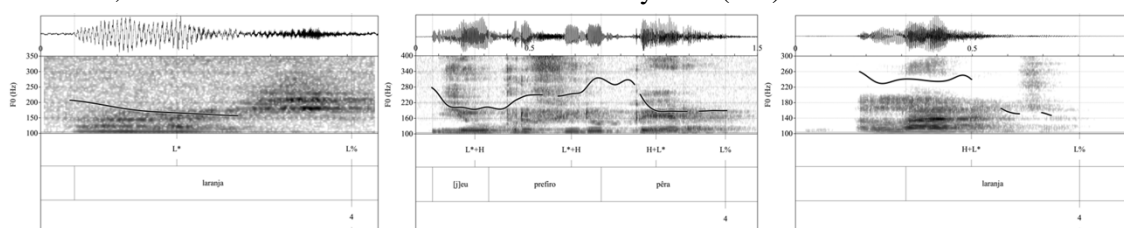
**Methods** The analytical framework followed here is the Autosegmental Metrical approach [4]. The tones associated with the stressed syllable of words bearing prominence were annotated following the latest version of the P\_ToBI [5]. For the transcription and annotation, we used the Praat software [6], that provides an acoustic display of  $f_0$ , with time-aligned labelling fields. The data is a selection of 32 neutral declarative broad focus and information-seeking yes-no-questions (4 sentences x 2 randomizations x 2 speakers x 2 varieties). The utterances were elicited via Discourse Completion Task [7] once it is cross-linguistically compared in terms of methodology and theoretical approach. All the materials were collected in *loco*, and the audio files were segmented by utterance and labelled. Our participants are female native speakers, aged above 65 years old.

**Results** Drawing up a tonal inventory of nuclear contours, a cross-dialect variation is apparent. The exact distribution of nuclear contours is presented in Table 1. Considering the declaratives broad focus, we can notice that both dialects evidence a different nuclear pitch accent (NPA) and a cross-varietal difference in the intonational structure: a  $L^* L\%$  and a  $H+L^* L\%$  for the Central variety and a  $H+L^* L\%$  for the Frontier variety.

Nuclear contour Variety	Declaratives		Interrogatives			
	$L^* L\%$	$H+L^* L\%$	$H+L^* L\%$	$H+L^* HL\%$	$L^*+H L\%$	$L^* HL\%$
Central	43%	57%	50%	-	50%	-
Raiano	-	100%	-	29%	-	71%

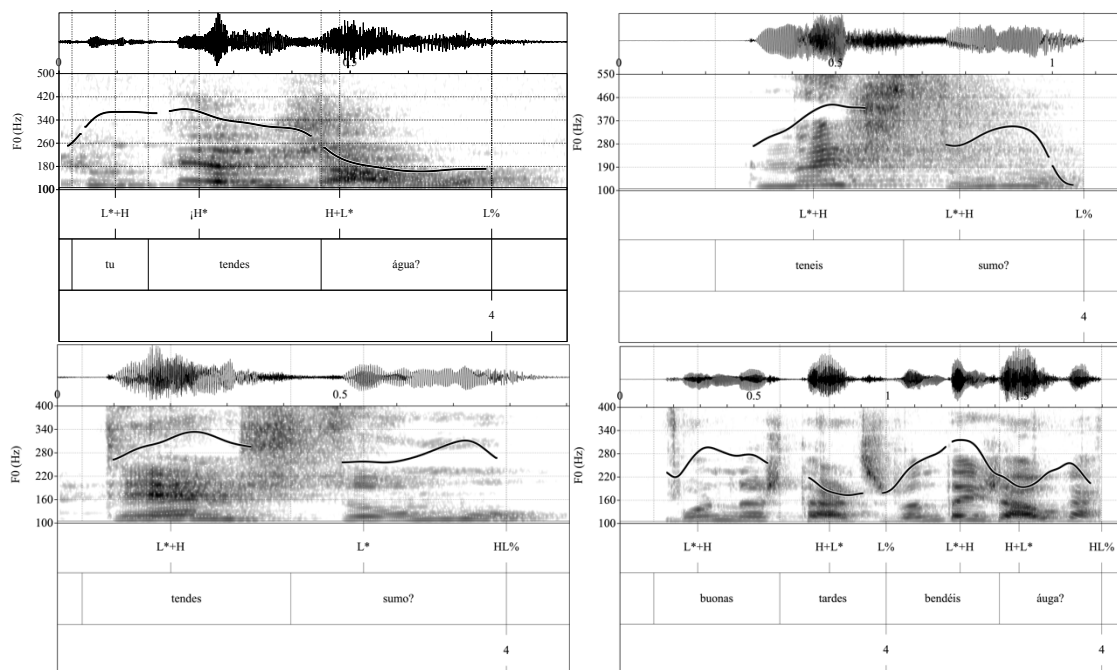
**Table 1** Distribution of nuclear contours in declaratives and interrogatives of both Mirandese

In Bal de Mira (central variety), the NPA is composed by a low pitch accent associated to the nuclear syllable ( $L^*$ ; fig. 2). In Cérceno (Central variety), and Cicuiro and San Martino (Frontier varieties), neutral declaratives are produced with a falling pitch accent ( $H+L^*$ ; fig. 2). Whether a monotonal or a bitonal NPA, neutral declaratives end with a low boundary tone ( $L\%$ ).



**Fig. 2**  $f_0$  of the declaratives; left panel: Laranja (orange), produced by a speaker from Bal de Mira; middle panel: *Eu prefiro pêra* (I prefer pear), produced by a speaker from Cérceno; right panel: *Laranja* (orange), produced by a speaker from Cicuiro

Considering the yes-no question (y-n-q), both dialects evidence a different alignment the nuclear contours. A falling and a rising-falling contour in the Central varieties and a rising-falling and a falling-rising-falling contour in Frontier varieties (Fig. 3).



**Fig. 3** *f*<sub>0</sub> of the yes-no questions; upper left panel: *Tu tendes água?* (Do you have water?), produced by a speaker from Bal de Mira; upper right panel: *Teneis sumo?* (Do you have juice?), produced by a speaker from Cérceno; bottom left panel: *Tendes sumo?* (Do you have juice?), produced by a speaker from Cicuiro; bottom right panel: *Buonas tardes, bendéis água?* (Good afternoon, do you sell water?), produced by a speaker from San Martino

**Conclusion** Considering the nuclear contour, we observed that there are some differences across varieties. The analysis of declaratives shows a preference of falling contour (H+L\*) and a low boundary tone (L%), but L\* L% is also possible. For the yes-no questions, we can notice that there is a preference of a low boundary tone in the central varieties and a falling boundary tone in the frontier varieties. In the central varieties, we can notice a H+L\* and a L\*+H NPA, and in the frontier varieties L\* and a H+L\* NPA.

**Final remarks** Our phonological interpretation suggest a falling nuclear contour for the neutral declarative, which is denoted as unmarked in languages [8]. The yes-no questions show a great variability, which is also noted in languages [9,10]: (i) a preference of a rising-falling contour on frontier variety; (ii) in central variety, there is more variability: a falling contour, also found in asturleonese [11] and a rising-falling contour, which may be being influenced by the frontier variety. However, yet there is not still enough evidence to extract a solid conclusion. We need to collect more data to ensure our phonological interpretation of Mirandese, including the variety spoken in Sendim and the Portuguese variety spoken in Miranda do Douro to measure the influence of Portuguese in Mirandese varieties.

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