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The prosodic correlates of stress in European and Argentinian ‘Porteño’ Spanish

Kata Baditzné Pálvölgyi
Eötvös Loránd University, Budapest

The objective of this research is to study and compare the characteristic prosodic correlates of stress in some main dialects of Spanish. The analyzed corpus come from the 'Map Tasks' of the *Interactive Atlas of Romance Intonation*, by Prieto et al. [8], as well as from spontaneous interviews uploaded to YouTube, and represent the northern and southern dialects of European Spanish (100 utterances, with 297 stressed syllables in the sample), as compared to the Argentinian ‘Porteño’ variety of Buenos Aires (100 utterances as well, with 279 stressed syllables in the sample). Porteño Spanish was selected in comparison with European variants as it is reported to be melodically different from Peninsular Spanish dialects as far as stress realization is concerned.

The three prosodic features that can play a prominent role in stress perception are tone, intensity and duration, but until today there has been no complete unanimity in the literature on whether the stressed Spanish syllable is pronounced in a higher tone, with longer duration or with greater intensity as compared to its adjacent context. According to Navarro Tomás [6], the stressed syllable is indicated by greater intensity, according to Llisterri et al. [5], by higher fundamental frequency (f_0), and the latter complemented by a longer duration according to Ortega-Llebaria [7].

In this study I am focusing on the comparison of the intonational aspect: I will analyze my corpora to determine what relative tonal values characterize the stressed syllables as compared to the previous and the next syllables in the contrasted dialects. Regarding previous studies on the melodic characteristics of Buenos Aires Spanish, Sosa [9] mentions about the dialect the characteristic tautosyllabic falls from a high syllable, causing the effect of “vowel prolongation”. Kaisse [4] also describes Porteño intonation with “long” descending inflections. In this study I try to discover the specific melodic cues that make the listener identify Porteño stressed syllables as high long falling, based on Cantero's Prosodic Speech Analysis (PAS) model [3], in which the fundamental frequency values in case of each syllable are first identified using an acoustic analysis program such as Praat [2] and then are standardized in order to obtain objectively comparable melodic patterns.

The first phase of the PAS analysis guarantees that we get rid of irrelevant micromelodic variations, by the reduction of each syllable to a characteristic tonal value. In case of tonal instability within syllables, the extreme values of f_0 are taken. The standardized contour is represented by a line which starts with an arbitrary value of 100% and anchors in each syllable, which is itself characterized by a percentage based on its tonal position as compared to the previous syllable. If the syllable is located lower, it is a negative percentage, and if it is higher than the previous syllable, it is a positive one. Both curves (the absolute one and the standardized copy) are melodically identical, though in order to validate whether the standardized copy sounds the same as the original, it can be synthesized in Praat and submitted to a perceptive test. If correction is needed, it can be realized as a final phase. The standardized curve thus ensures that the described melodies are objectively comparable to each other, regardless of the individual

tonal characteristics of the speakers; what would matter are the proportions of the tonal movements.

According to my results, the main differences between European dialects and ‘Porteño’ Spanish lie in the fact that ‘Porteño’ Spanish is characterized by a greater proportion of inner inflections (i.e. tonal movements higher than 10%) within the stressed syllables than the European dialects: 33,33% of the stressed syllables in my Porteño corpus bear an inner inflection as compared to the European proportion (only 4,71%). Stressed syllables in Porteño Spanish are typically realized with a combination of a rise and a fall within the same syllable (cf. Figure 1; as shown in the standardized curve, there are two inner inflections, represented by dots within the syllable).

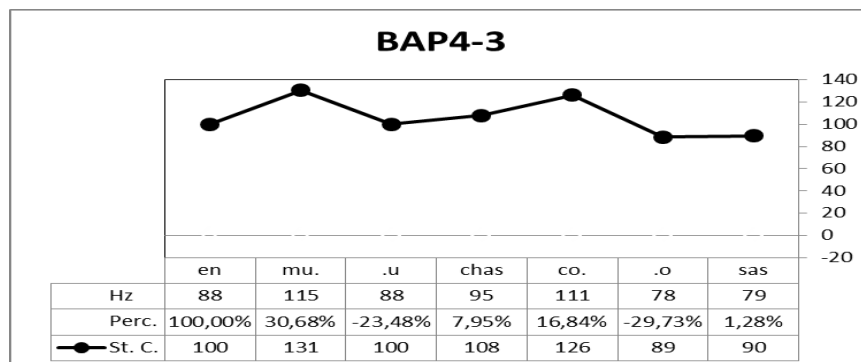


Figure 1: Tautosyllabic high falls on stressed syllables in Porteño Spanish in the utterance *En muchas cosas* ‘In many things’

The tonal changes to and from the stressed syllables in Porteño Spanish are accompanied by more intense melodic movements than in European Spanish. The average values of tonal rise to the stressed syllable are higher in the Porteño variant, 19,69% in comparison with the European mean value (6,97%). Stressed syllables in European Spanish are typically followed by a moderate rise (2,47% as a mean value), whereas in Porteño Spanish, they are rather accompanied by a fall (-7,13% as a mean value), cf. Figure 2.

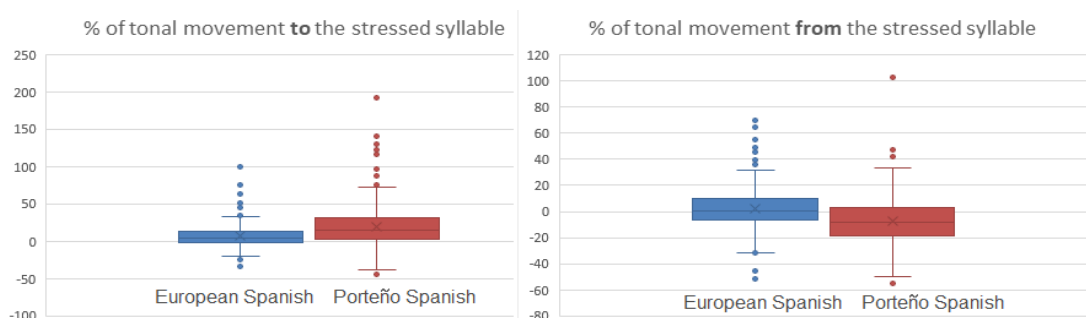


Figure 2: Boxplot diagrams representing the % of the tonal movement to and from the stressed syllables (European Spanish and Porteño variants), generated by Excel (version 2009)

The average proportion of the tonal rise and the fall (in percentages) within the stressed syllables, with the sensation of long tautosyllabic intense falls, shows a plausible Italian influence, also attested by historical reasons: the massive Italian immigration to Buenos Aires from the beginning of the 20th century on (cf. also Baditzné, [1]).

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