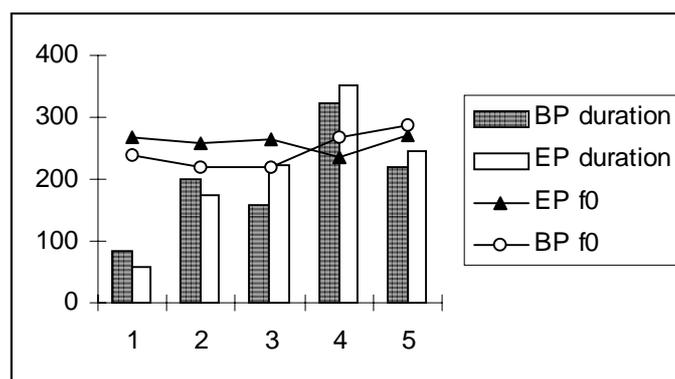


**Brazilian Portuguese and European Portuguese contrasted:  
an experimental acoustic study of speech segments in clash and non-clash conditions**

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Acoustic evidence regarding stress shift in English has been rather extensively discussed [4;7;12;13;14] and factors such as context dependency, subject variety, speech rate, nuclear stress placement, kinds of stress patterns and placement of pitch accent have been described as influential. English is considered to favor stress shift though exceptions have been pointed out in relation to different speech styles and rate [10;11]. Both in Brazilian Portuguese (BP) and European Portuguese (EP) experimental studies on stress shift are rather recent [2;3;8] and [5] respectively. In [8] stress shift in BP is considered to be an optional phenomenon applying independently of clash and non-clash conditions and a hypothesis is raised about stress shift productivity in languages, dialects or oral styles being related to the strength of the tendency to stress or syllable timing. A strong tendency to stress-timing was thought to determine the use of mechanisms to avoid the adjacency of two strong stresses or reduction of one of them, while a strong tendency towards syllable-timing would not require so. The fact that duration of syllables tend to be closer is compatible with the phenomenon of increasing duration of segments towards phrasal accent culmination rightwards in the prosodic phrase. The same for f0 peak displacement. In the present work this hypothesis is investigated experimentally and the two varieties of Portuguese (PB and EP) are compared so as to analyse strategies used to cope with adjacent strong stresses. EP is considered to exhibit a stronger tendency to syllable time depending on speech rate [1]. The main acoustic parameter of lexical and phrasal stress in BP is duration [1; 9]. Otherwise, f0 is a correlate of phrasal and sentence accents [1]. That duration increases towards the main stress in BP prosodic groups is showed in [1;2;3; 9]. For the purpose of investigating if there are changes in duration and f0 parameters of the segments of phonological phrases under clash and non-clash conditions a corpus containing 12 sentences repeated five times was recorded in studio conditions by six female subjects (three Brazilians and three Portuguese). The analysis takes into account speech rate, quantitative data and statistical analysis. Preliminary investigation indicate that in clash sentences EP tends to earlier f0 peak placement and BP to the increasing of duration towards the main stress in the prosodic group (Graphic 1). Results are discussed in relation to rhythmical characteristics and dynamical models [2].



**GRAPHIC 1** - Syllable duration measures (ms) and f0 (Hz), medial in syllable rhymes, are displayed for the five syllables in the sequence of words of the noun phrase *a TV França* as produced by two subjects. EP stands for European Portuguese and BP for Brazilian Portuguese.

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