

Speech rhythm as durational marking of prosodic heads and edges

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One of the unsolved issues in the phonetic sciences is the quest for reliable acoustic correlates of perceived differences in linguistic rhythm present in the speech signal and which allow listeners to distinguish languages according to rhythmic classes. One of the leading views on this issue is that the rhythm percept reflects language-specific phonological properties, which in turn are signaled by the acoustic/phonetic properties of speech. Production data from a total of 24 speakers reading a set of controlled utterances from Catalan, English, and Spanish show that differences in rhythm metrics emerge even when syllable structure and vowel reduction are controlled for in the experimental materials, strongly suggesting that important differences in timing exist in these languages that are not dependent on their segmental/phonological properties. Further analyses of the data indicate that the rhythmic distinctions under consideration finely correlate with differences in the way languages instantiate two prosodic timing processes, namely durational marking of prosodic heads (prominent positions) and prosodic edges (ends of prosodic constituents). A prosody-based hypothesis of rhythm will be presented that stresses the role of prosodic structure in the durational planning of sentences across languages and in the perception of rhythmic contrasts.