

Acoustic Correlates of Stress In Unaccented, Accented and Focused Words of Persian

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Abstract

This experiment is conducted to determine the acoustic correlates of stress in Persian words in unaccented, accented, nuclear accented and focused positions, and to reveal the significance of each correlate. There is substantial amount of work on prosody and stress in Persian. However, there is no agreement about the acoustic correlates of stress in the literature, and there is no reliable precise experimental research in this area. Furthermore, none of the previous works make distinction between prominence in accented and in unaccented positions. Therefore this study tries to answer the two following questions: i) What are the acoustic correlates of stress in each of the above positions, ii) To what extent does each of these correlates contribute to the prominence of the stressed syllable?

This experiment contains two tests, namely articulatory and perception tests. In the articulatory test, target words which are controlled for vowel type and syllable type are embedded in carrier sentences in unaccented, accented, nuclear accented, and focused positions. Native Persian speakers are asked to read out the sentences and in each utterance, the syllables of target words are annotated as measurement intervals. All the acoustic measurements for the obtained intervals are performed and finally statistical analyses are conducted on results of these measurements to answer the questions of the research.

In the perception test, ambiguous carrier sentences are used in which the embedded target word can be interpreted either as accented or unaccented. Each of the three main correlates (F_0 , intensity and duration) are gradually manipulated in several stages and native speakers are asked to decide at which point the target word is interpreted as accented.