

Phonological Adaptation of English Vowels with Persian from a Perceptual Perspective

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Abstract

Phonological adaptation refers to the phonological changes applied to loanwords to make them match the phonological system of the borrowing language. The present research addresses the phonological adaptation of English vowels with the Persian vowel space based on the theory of perceptual assimilation. The theory of perceptual assimilation assumes that phonological adaptations are minimal phonetic changes in the acoustic space. Thus, it is assumed that the adaptation of English vowels with the Persian sound system reflects the acoustic distances between vowels in a comparative vowel space (English-Persian). In this research, the first step in the phonological adaptation of vowels was carried out within the framework of laboratory phonology. To compute the Persian and English vowel spaces, we used natural spoken corpora (namely Farsdat for Persian and Oxford Bookworms for English). The two acoustic parameters F1 and F2-F1 were measured to compute the acoustic distances between vowels in each language and across the two languages. Results suggested that the adaptation of English vowels with those of Persian reflect the acoustic-perceptual distances between them in a comparative vowel space such that each vowel of the English language is mapped onto the vowel in the Persian vowel space with which it has maximal acoustic similarity.

Keywords: Phonological Adaptation, Theory of Perceptual Assimilation, Vowel Space, Acoustic Similarity, Acoustic Space