

## Perception of Greek Vowels by Arabic-Greek Bilinguals: An Experimental Study

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**Abstract :** Infants are able to discriminate a number of sound contrasts in most languages. However, this ability is not available in adults who might face difficulties in discriminating accurately second language sound contrasts as they filter second language speech through the phonological categories of their native language. For example, Spanish speakers often struggle to perceive the difference between the English /ɛ/ and /æ/ because both vowels do not exist in their native language; so they assimilate these vowels to the closest phonological category of their first language. The present study aims to uncover the perceptual patterns of Arabic adult speakers in regard to the vowels of their second language (Greek). Still, there is not any study that investigates the perception of Greek vowels by Arabic speakers and, thus, the present study would contribute to the enrichment of the literature with cross-linguistic research in new languages. To the purpose of the present study, 15 native speakers of Egyptian Arabic who permanently live in Cyprus and have adequate knowledge of Greek as a second language passed through vowel assimilation and vowel contrast discrimination tests (AXB) in their second language. The perceptual stimuli included non-sense words that contained vowels in both stressed and unstressed positions. The second language listeners' patterns were analyzed through the Perceptual Assimilation Model which makes testable hypotheses about the assimilation of second language sounds to the speakers' native phonological categories and the discrimination accuracy over second language sound contrasts. The results indicated that second language listeners assimilated pairs of Greek vowels in a single phonological category of their native language resulting in a Category Goodness difference assimilation type for the Greek stressed /i/-e/ and the Greek stressed-unstressed /o/-u/ vowel contrasts. On the contrary, the members of the Greek unstressed /i/-e/ vowel contrast were assimilated to two different categories resulting in a Two Category assimilation type. Furthermore, they could discriminate the Greek stressed /i/-e/ and the Greek stressed-unstressed /o/-u/ contrasts only in a moderate degree while the Greek unstressed /i/-e/ contrast could be discriminated in an excellent degree. Two main implications emerge from the results. First, there is a strong influence of the listeners' native language on the perception of the second language vowels. In Egyptian Arabic, contiguous vowel categories such as [i]-[e] and [u]-[o] do not have phonemic difference but they are subject to allophonic variation; by contrast, the vowel contrasts /i/-e/ and /o/-u/ are phonemic in Greek. Second, the role of stress is significant for second language perception since stressed vs. unstressed vowel contrasts were perceived in a different manner by the Greek listeners.

**Keywords :** Arabic, bilingual, Greek, vowel perception

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