

L2 Perception of Arabic Pharyngealization Contrasts

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L2 learners face a difficulty in discriminating foreign speech contrasts. One such contrast is the pharyngealization contrast in Modern Arabic.

All modern Arabic dialects feature contrasting plain and pharyngealized alveolar obstruent pairs. The pharyngealized obstruents are manifested articulatorily by a retraction of the tongue root. Acoustically they are manifested as significant lowering of F2 in vowels in the immediate context of pharyngealized consonants (Card 1983; Jongman & Al-Masri 2004; Jongman *et al.* 2007). A question that has arisen from this is whether native English speakers can exploit their knowledge of English front and back vowel contrasts (particularly /æ/ vs. /a/), which differ primarily in F2, in order to discriminate the Arabic contrast. The prediction is that native English listeners will be sensitive to the lowering of F2 in neighboring vowels as a result of pharyngealization and be able to discriminate the foreign contrast.

Previous experimentation (Zaba 2007; Zaba *et al.* 2007) demonstrated a significant correlation between vowels perceived by subjects in an English vowel identification task and their discrimination of pharyngealized contrasts in onsets. Additionally, it found that subjects were better able to discriminate stimuli including the phoneme /a/, correlating closely with subject perception of [æ] in plain environments and [a] in pharyngealized environments. As was predicted by this research, there was a weaker association between discrimination performance and English vowel identification of /i/ and /u/-class stimuli. The results confirmed that native English speakers exploit their knowledge of English front and back vowel contrast when presented with pharyngealization contrasts.

The present research picks up where previous studies left off. This study is concerned with pharyngealization contrasts in coda position. A pilot study by the author revealed that although subjects performed with significantly greater than chance accuracy on a discrimination task, there was no correlation of performance to subject identification of front and back vowels in an English vowel identification task for any class of stimuli in this position. This indicates that subjects do not exploit their knowledge of front-back vowel contrasts to discriminate the contrast in coda position.

Initial acoustic analysis showed that there is a relatively small F2 lowering effect in /a/ and /u/-class stimuli, as compared to /i/-class stimuli. Additionally, these results

potentially confirm the hypothesis of Al-Khatib (2008), which seeks to explain leftward pharyngeal harmony perceptually, the primary assumption of which is that listeners will have differing error rates when identifying post-vocalic or pre-vocalic pharyngealization contrasts.

References

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