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Nasalisation in the Production of Iraqi Arabic Pharyngeals

Ghada Khattab Jalal Al-Tamimi Wasan Alsiraih

Speech and Language Sciences, King George VI Building, Newcastle University, Newcastle upon Tyne, UK

Abstract

Aim: This paper presents the auditory and acoustic investigations of pharyngeal consonants in Iraqi Arabic (IA). While the contested place and manner of articulation of these sounds have been the subject of investigation in many studies, the focus here is novel: we set out to investigate the extent to which pharyngeals in IA are accompanied by auditory nasalisation and how widespread the effect is across oral and nasal contexts. ***Methods:*** Auditory and acoustic properties of nasalization, as produced by nine male speakers of IA, were investigated in target words with oral, nasal, and pharyngeal environments. ***Results:*** When combined with oral consonants, pharyngeals exhibit little or no nasalisation; however, when pharyngeals are combined with nasals, they exhibit various degrees of nasalisation, sometimes beyond what is found for a nasal environment alone. This is especially so for voiced pharyngeals, which display more nasalisation than their voiceless counterparts. A principle component analysis combining all the acoustic correlates examined demonstrates a definite contribution of pharyngeals to the presence of nasalisation. ***Conclusion:*** The epilaryngeal constriction and variability in the articulation of pharyngeals are thought to be responsible for the nasalisation effect and may act as potential drivers for sound change in IA pharyngeals.

1. Pharyngeal Consonants: A Diverse Category of Sounds

Interest in pharyngeal consonants /ħ/ and /ʕ/ has been significant due to their varying realisations across dialects, especially in voiced target (Ghazeli, 1977; Laradi, 1983; Butcher and Ahmad, 1987; Hassan et al., 2011; Heselwood, 2007; Heselwood and Al-Tamimi, 2011; Esling, 1999, 2005). While these sounds are officially classified as pharyngeal fricatives on the IPA chart, their reported manner of articulation varies from open approximation to full closure, and their reported place of articulation varies from pharyngeal to laryngeal or even epiglottal. Some researchers maintain that the voiceless and voiced counterparts share the same manner of articulation, which ranges from approximant in some studies (e.g., Catford, 1977; Shahin, 2002; Heselwood, 2007;

E-Mail karger@karger.com
www.karger.com/pho

Ghada Khattab
Speech and Language Sciences, King George VI Building,
Newcastle University, Queen Victoria Road
Newcastle upon Tyne, NE1 7RU, UK
Email ghada.khattab@newcastle.ac.uk