

Pharyngealization and pharyngeals in Tashlhiyt Berber: A descriptive and comparative study

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Berber is an Afro-Asiatic language spoken in large parts of North Africa, mainly in Morocco and Algeria. Tashlhiyt, the variety investigated here, is spoken in the Southern part of Morocco. The phonemic inventory of this language is argued to include the following set of dorsopharyngealized phonemic consonants, all of which are coronals: /t^ʕ, d^ʕ, s^ʕ, z^ʕ, n^ʕ, l^ʕ, r^ʕ, ʃ^ʕ, ʒ^ʕ/. Each of these consonants has a geminate counterpart, yielding thus a system of eighteen pharyngealized consonants. These phonemes spread emphasis to all the other segments present in a word or even a sequence of words (Elmedlaoui 1985, Boukous 1987). In addition, Tashlhiyt also has the so-called pharyngeal fricatives, which may be either singletons /ħ, ʕ/ or geminates /ħħ, ʕʕ/.

In this presentation, I will first provide a brief survey of the distribution of these consonants, and show that while some pharyngealized consonants are very common (i.e. /t^ʕ, d^ʕ, s^ʕ, z^ʕ/), others are quite rare and found mainly in some Arabic loanwords (e.g. /n^ʕ, l^ʕ, r^ʕ/). The productivity of their geminate counterparts will also be discussed. The core of this presentation is concerned with the phonetic characteristics of these segments. The phonetic study is divided in two parts.

The first part is concerned with the phonetic description of the following pharyngealized consonants: /t^ʕ, d^ʕ, s^ʕ, z^ʕ/ and their geminate counterparts /tt^ʕ, dd^ʕ, ss^ʕ, zz^ʕ/. The aim is to determine how these segments are phonetically implemented and how they differ from their non pharyngealized counterparts /t, d, s, z/ as well as from the uvular consonants /q, ɣ, ʁ/. I will present some acoustic, fiberoptic and ultrasound data to tackle this issue. The acoustic data, based on the productions of five subjects, concern both the temporal characteristics of these consonants and their qualitative effects on the surrounding vowels /i, u, a/. Fiberoptic data, based on the production of two speakers, show how voiceless pharyngealized consonants /t^ʕ, s^ʕ/ are produced at the laryngeal level. The aim is to show how the timing and the amplitude of glottal opening may account for the differences observed at the acoustic level between these segments and their non-pharyngealized counterparts /t, s/ and the uvulars /q, ɣ/ (namely with respect to the feature [spread glottis] and the shorter VOT displayed by /t^ʕ/ and /q/, compared to /t/). The ultrasound data, based on the productions of three speakers, provide lingual measures of dorsopharyngealized consonants compared to their plain counterparts as well as to uvulars /q, ɣ, ʁ/. The results will be presented concerning tongue root activity, timing of articulatory events, overall tongue shape, and interactions between vowels and lingual consonants.

The second part of the phonetic study provides fiberoptic data during the production of /ħ, ʕ/ and their geminate counterparts. Based on the laryngeal model developed by Esling and colleagues (e.g. Esling 1996, Edmondson & Esling 2005), the aim is to determine whether these fricatives are real pharyngeals or whether they are best described as epiglottals

or ayepiglottals. To conclude, a brief comparative study will be provided where data from Tashlhiyt are compared to data from Moroccan Arabic, a national language with which Berber has been in contact for centuries and which resembles it in many respects. Data from Moroccan Arabic are based mainly on findings by C. Zeroual (2002) on the variety of Moroccan Arabic spoken in Oujda area.