

Microvariation in Turkic laryngeal systems: Synchrony and diachrony

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Cross-linguistic variation in the phonetics and phonology of laryngeal contrasts has been extensively studied following the emergence of Laryngeal Realism (Honeybone 2005) and responses to it. Two hypotheses central to LR are (i) languages can be classified into a small number of types and (ii) the phonological patterning and phonetic realisation of laryngeal categories are closely aligned. It has been shown, however, that cross-linguistic variation is not so restricted: the degree of phonetic variation does not neatly fit into the small number of categories proposed (e.g. Kirby & Tan 2023); there exist more or less drastic mismatches between phonological and phonetic patterning (e.g. Salmons 2020); and phonetic correlates other than VOT make the picture more complex (e.g. Kirby & Ladd 2019).

Much current theorising builds on evidence from a few, mostly European, languages. Here, we consider data from the Turkic language family which partially support current understanding within LR: in particular, morphophonological patterns are relatively stable despite extensive phonetic microvariation. They also cast light on the diachronic development of laryngeal systems. Turkic languages are usually analysed as contrasting ‘strong’ (*fortis*) and ‘weak’ (*lenis*) obstruents (Johanson 1984–1986), suggesting an ‘aspirating’ system under LR. Phonetically, the *fortes* are aspirated and/or long and the *lenes* are shorter and often only variably voiced, in line with the ‘aspirating’ prototype in LR (Turkish: Kallestinova 2004). The phonology also conforms to expectations: salient patterns include (progressive) devoicing (Kyrgyz [ata-**da**] ‘father-LOC’, [køɫ-**dø**] ‘lake-LOC’, [qonoq-**to**] ‘guest-LOC’) and a pattern of lenition where *lenes* follow long vowels and *fortes* follow short vowels (best preserved in Turkmen: *at* ‘horse’, *ād* ‘name’).

This basic description hides extensive variation. Traditional descriptions note categorically voiceless *lenes*, particularly in languages spoken in the Caucasus and China, and pre-closure glottal marking of *fortes* (preglottalisation, preaspiration), notably in Sayan Turkic. Many languages show patterns of voicing, such as intervocalic weakening (a poorly understood pattern, rare in aspirating languages [Kümmel 2007]) and perhaps vowel–consonant interactions allied to closure voicing (Vaux 2009). Some of this variation is traditionally linked to language contact.

We report an acoustic phonetic study of plosives in two closely related varieties, Turkish and Azeri. The data include historical *fortis* and *lenis* plosives in stem- and word-final position, controlling for right-hand context. We focus on VOT, closure voicing and F_0 .

For Turkish, we replicate earlier findings: *fortes* are postaspirated and *lenes* variably voiced. Word-finally, historical *lenes* (which are rare) show more closure voicing than historical *fortes*. In Azeri, we find variation in the *lenis* series and extensive pre-closure glottal activity (breathiness and/or preaspiration) in *fortes*, together with extensive manner lenition and systematically lower F_0 after *lenes*. See F. 1 for an illustration of the differing F_0 effects in the two languages.

We argue that the Azeri system is innovative relative to Turkish and interpret the F_0 effect as being *phonologised* in the sense of Bermúdez-Otero (2015), i.e. a language-specific phonetic rule that is synchronically arbitrary but historically derived from what was a mechanical by-product of closure voicing.

Similar microtypologies are known from elsewhere (e.g. Germanic: Beckman, Jessen & Ringen 2013) but evidence for their diachronic pathways is circumstantial, with little agreement on interpretation (Goblirsch 2005, Salmons 2020). Our results provide direct evidence for the diachronic typology of laryngeal systems, particularly those of the ‘aspirating’ type. Further, we propose that contact played a smaller role in the rise of the Azeri system than often thought, highlighting the heuristic value of the life cycle of phonological processes framework.

F. 1: F_0 in first half of vowels following target plosives

