

Phonological resonance matters: diversity & rarity in Arabic & Nakh-Daghestanian

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The phonologies of the Nakh-Daghestanian (North-East Caucasian) languages are under-studied, yet provide a useful theoretical testing ground, not least because of the unusual behaviour of their ‘pharyngeal(ised)’ segments. On the other hand, much scholarly effort has been expended on various aspects of so-called pharyngealised segments – i.e. emphatics – and their behaviour across the varieties of Arabic, in which they are seen to pattern as part of a guttural class that also includes pharyngeals and uvulars. Yet theoretical analyses of Arabic emphatics frequently resort to regularising the data or avoiding the apparently odd behaviour of certain segments or environments in some dialects which look to be ‘lexical’ anomalies.

This paper seeks to show firstly that the phenomenon of the apparently rare ‘emphatic’-mimicking environments of some Arabic dialects (e.g. Baghdadi) is naturally captured under a less reductionist, more holistic view of the sound system. Rarity will be shown in this case to result from greater complexity. The second aim is to extend this analysis to Nakh-Daghestanian ‘pharyngealisation’, which to my knowledge has not previously been modelled theoretically; the holistic model reveals that the rarity of the Nakh-Daghestanian ‘pharyngeal’ type results from the antagonism of two phonological primes that could be argued to be underpinned by their auditory signatures.

I start with Arabic, setting ‘back’ consonants in the systemic context of their relationship with ‘front’ segments. In the variant Arabic systems, ‘backness’ (*tafxīm*) is a resonance contrast that interacts crucially and necessarily with ‘frontness’ (*imāla*) and in some dialects with ‘roundness’. An Element framework is adopted to demonstrate how the A, I and U resonances characterise this variance.

The model shows Damascene-type dialects to have a resonance dichotomy [A–I], while the Baghdadi type has a resonance trichotomy [A–I–U]. A resonance element is necessarily associated with each string of segments in Arabic, as in (1a-b) below.

(1a)	Damascene Arabic	(1b)	Baghdadi Arabic	
	<i>ṭābe</i>		<i>ṭōḇa</i>	‘ball’
	<i>baʔʔāliye</i>		<i>ḇaḡḡāl</i>	‘grocery’
	<i>kāzim</i>		<i>kāḏum</i>	Kadhim (name)

The ‘pharyngealisation’ of the Nakh-Daghestanian languages differs both phonetically and phonologically from Arabic-style ‘pharyngealisation’. Nakh-Daghestanian ‘pharyngealised’ vowels are comparatively centralised, an observation which led Trubetzkoy to term it, in his 1931 survey of Nakh-Daghestanian sound systems, *emphatische-mouillierung*.

I compare the typical acoustic effects of Nakh-Daghestanian ‘pharyngealisation’ with Arabic, and then set out phonological patterning. In Lak, velars and /l/ are palatalised in words with ‘pharyngealised’ vowels. In Bezhta, a harmony system comprises two opposing segmental series (2a-b, below); within a phonological word, segments from (2a) do not co-occur with those of (2b) containing pharyngealised vowels, pharyngeals and palatals.

(2a)	<i>a o u i s z c c'</i>	(2b)	<i>ä ö ü i e š ž č č' ʕ ħ</i>
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Further, where affixal vowel alternations in various Nakh-Daghestanian languages involve ‘pharyngealisation’, the trigger is either stem-final pharyngeals / (pharyngealised) uvulars, or pharyngealised stem vowels, as in Dargwa. The data clearly show the effect of ‘pharyngealisation’ to be more accurately characterisable as palato-pharyngealisation, i.e. [A+I] resonance.

The paper concludes by highlighting the different role of ‘pharyngeal’ in Nakh-Daghestanian as compared with the two Arabic systems: the [A+I] system is rarer than systems in which [A] and [I] are antagonistic; the more complex [A-I-U] system is rarer than the [A-I] system.

[491 words]

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