

Acoustic characteristics of ejectives / unaspirated in Udi

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Udi is a Lezgian language of the Nakh-Dagestani family spoken in Nij and Vartashen (Azerbaijan), Zinobiani (Georgia) as well as by a large number of immigrants in southern regions of Russia. The language divides into two dialects: Nij (spoken in Nij and in Russia) and Vartashen (spoken in Vartashen, in Georgia and in Russia).

From a genealogical perspective, its stop system is unusual for a Lezgian language: it has a three-way stop system instead of a four-way system typically found in related languages (cf. Table 1 which shows stop systems in Udi and Agul). It includes voiced and voiceless aspirated as well as a set of stops which are characterized either as ejectives (Alice Harris, Wolfgang Schulze) or as voiceless unaspirated (Sandro Kodzasov). From my own perceptual experience, I am more inclined to the latter interpretation.

Table 1. Agul and Udi stop systems.

	Agul				Udi			
	labial	alveolar	velar	uvular	labial	alveolar	velar	uvular
voiced	b	d	g	—	b	d	g	—
aspirated	p	t	k	q	p	t	k	q
unaspirated	pː	tː	kː	qː	pː / pʼ	tː / tʼ	kː / kʼ	qː / qʼ
ejective	pʼ	tʼ	kʼ	qʼ				

This paper presents preliminary results from a first acoustic phonetic investigation into ejective/unaspirated stops in Udi. Data for this study come from both the Nij and Vartashen dialects of Udi. In this pilot study, I look at the following characteristics of ejectives/unaspirated stops: (i) voice onset time (VOT), (ii) closure duration, (iii) overall duration, (iv) post-burst power, as well as several properties of the following vowel: (v) pitch, (vi) amplitude, (vii) voice quality. Ejectives are then compared with voiceless aspirated stops with regard to (i-vii). Udi results are compared to published descriptions of ejectives in several other languages, and a preliminary experimental study of two other Nakh-Dagestani languages Agul and Dargwa.

In addition, I will present results of two perceptual experiments: (a) how Agul minimal pairs containing ejective vs. unaspirated stops are perceived by Udi speakers (i.e. which one is perceived as more similar to Udi ejectives/unaspirated stops), and (b) how Udi ejectives/unaspirated stops are perceived by Agul speakers (i.e. whether they are more similar to Agul ejectives or Agul unaspirated stops). The results of the acoustic phonetic study and two perceptual experiments are compared.