Uvular consonants in Languages of the Caucasus

Uvular consonants are not a widespread phenomenon: only 17% of languages from the 567 language sample in Maddieson [2013] have one or more uvular consonants.[1] In his work on uvulars Ian Maddieson proposes the following typological classification. Languages can have:

- no uvulars
- uvular stops only
- uvular continuants only
- uvular stops and continuants

The typological labels that are relevant for the worldwide survey do not seem to be detailed enough, so they can not be used for the investigation of languages that have got a lot of uvulars.

In our talk, we will present a database of uvular consonant subsystems of indigenous languages of the Caucasus from all branches (Northwest Caucasian, East Caucasian and Kartvelian). Data for the database were collected from existing language descriptions and field work. All in all, 39 languages were analyzed. Are all indigenous languages of the Caucasus similar uvular systems? Are all differences within uvular subsystems of different indigenous languages of the Caucasus caused by some language-specific phonological features?

Uvular consonants differ in frequencies. Tab 1a. shows the uvulars from our database with the exact number of languages of the Caucasus that contain it. It is not so strange that the most frequent uvulars have less additional features, and the least frequent uvulars have more complex structure with additional articulation features such as labialization, pharyngealization and so on. There is an interesting fact about the Table 1a: we can expect some monotonic decrease of the frequency, but there is a detectable group of frequent sounds *ʁ*, *qʼ*, *q*, *χ*, a group with the frequency 13, 12 and 11 and the rest.

On Fig. 1b the tendency of languages to have uvulars is presented. Most of the languages have 4-7 uvulars, so we decided to provide some additional types for languages of the Caucasus (see the map on Fig. 1):

- small uvular inventories (<4): Laz, Mingrelian, Georgian, Ingush, Udi;
- average uvular inventories (4–7): Adyghe, Svan, Bats, Chechen, Khinalugh, Dargwa, Avar, Akhvakh, Karata, Chamalal, Godoberi, Bagvalal, Andi, Bezhta, Hunzib, Tsez, Tindi, Botlikh, Aghul, Budukh, Tabasaran;
- large uvular inventories (7>): Abaza, Kabardian, Abkhaz, Ubykh, Lak, Kajtak, Khwarshi, Hinuq, Rutul, Archi, Kryz, Lezgian, Tsakhur.

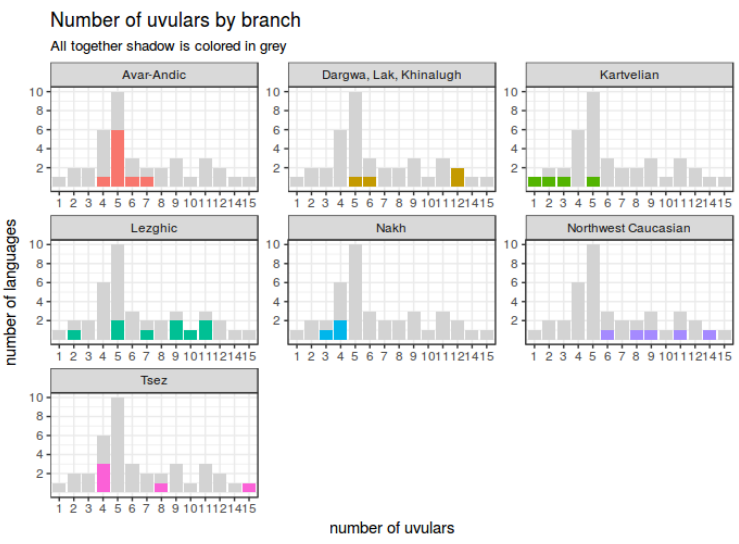
[1] The 19.1% reported in Maddieson [2013] is actually incorrect.

Table 1: Destribution of uvular consonants within our database (a) and within language branches (b)

(a) Uvulars frequency

ʁ 36	qʼ 33	q 31	χ 30	χʷ 13
χː 13	ʁʷ 12	qʷʼ 12	qʷ 11	qː 11
ɢ 8	χʲ 5	qʼː 4	ʁʲ 3	ɢʷ 3
qʲʼ 3	qχ 3	χʷː 3	ʁˤ 2	ʁʷˤ 2
qˤ 2	qˤʼ 2	qʷː 2	qʷˤʼ 2	qχʼ 2
qʲ 1	qʰ 1	qːʼ 1	qʷˤ 1	qʰʷ 1
qχʷ 1	χˤ 1	χʷˤ 1		

(b) Number of uvulars by branch



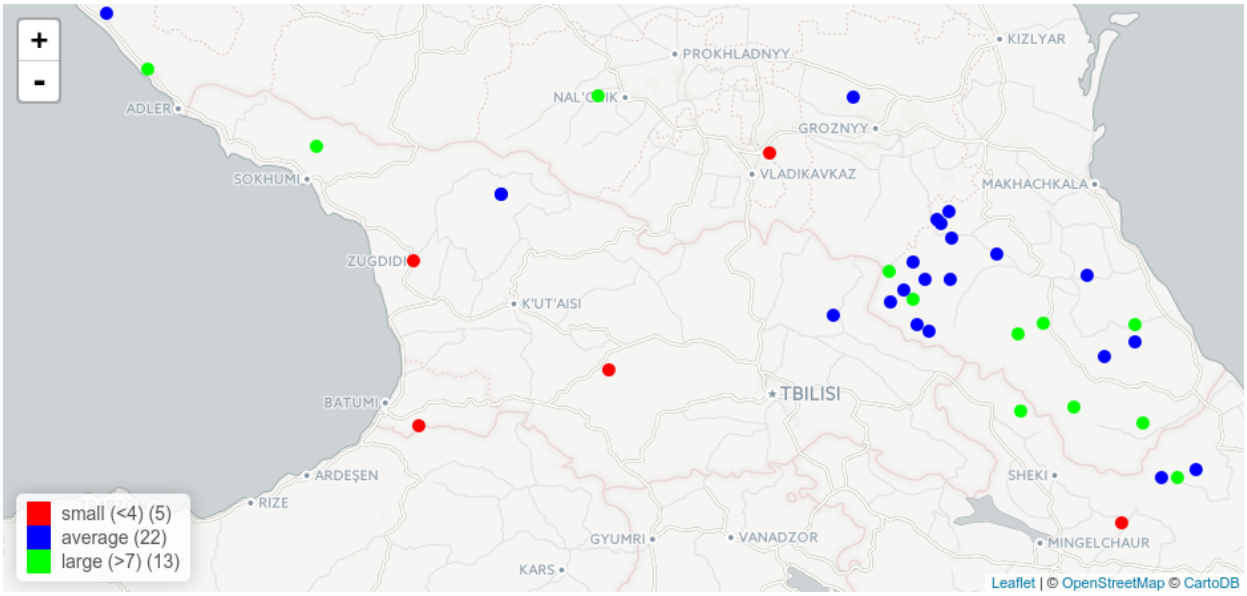


Figure 1: Typological map of languages of the Caucasus: size of the uvular inventory

This division partly correlates with the genealogical characteristics of the languages. Svan is the only language of the Kartvelian branch with an average rather than a small inventory. Northwest Caucasian languages tend to have large uvular inventories. Avar-Andic languages mostly have average uvular systems. There is no correlation between type and branch in East Caucasian languages: all types are presented in that language family.

We also investigated the co-occurrence of consonants. Table 2. presents the results of the investigation. There are 65536 possible combinations of all consonants. After removing the duplicates and analysis of the 561 unique possible candidates only 313 remain.

These data allow us to make a predictive model. What is the probability that a language has a particular sound if it has a certain other sound? These data give us an opportunity to make a predictive model based on data from languages of the Caucasus, and then use it with other data from distinct language branch to test the model. This approach is different from the classical typological work with samples of languages from different language families. Additionally, this approach allows to look at interfamily diversity and then compare it with diversity within the whole language sample. In our talk we will show the advantages of this approach.

References

Ian Maddieson. *Uvular Consonants*. Max Planck Institute for Evolutionary Anthropology, Leipzig, 2013. URL http://wals.info/chapter/6.

Table 2: Matrix of the uvular co-occurrence

	ɢ	ʁ	ʁʲ	ɢʷ	ʁʷ	ʁˤ	ʁʷˤ	q	qˀ	qˀː	qʷ	qː	qʰ	qʲ	qˤ	qʲˀ	qˤˀ	qʷˀ	qːˀ	qʷˤ	qʷː	qʰʷ	qʷˤˀ	qχ	qχˀ	qχʷ	χ	χʲ	χː	χˤ	χʷ
ʁ	8																														
ʁʲ		3																													
ʁˤ		2	1		2																										
ʁʷ	2	12	3	2																											
ɢʷ	3	3																													
ʁʷˤ		2	1		2	2																									
q	8	35	3	3	12	2	2																								
qˀ	8	31	3	3	11	2	2	34																							
qˀː		3			1			4	4																						
qʷ	3	14	3	3	12	2	2	14	13	1																					
qˤ		2	1		2	2	2	2	2		2			1																	
qʲ		3	3		3	1	1	3	3		3																				
qː	2	1		1	2			11	9	3	3																				
qʰ		1			1			1	1		1																				
qˤˀ		2	1		2		2	2	2		2			1	2	1															
qʲˀ		3	3		3	1	1	3	3		3			3	1																
qʷˀ	3	12	2	3	1	1	1	12	12	1	12	3	1	2	1	2	1														
qːˀ		1						1				1																			
qʷˤ		2	1		2	2	2	2	2		2			1	2	1	2	1													
qʰʷ		1			1			1	1		1		1					1													
qʷː		2			1			2	2		2	2						2													
qʷˤʼ		2	1		2	2	2	2	2		2			1	2	1	2	1		2											
qχ		3			1			3	1		1	1						1													
qχˀ		2						2				1												2							
qχʷ		1			1			1	1		1							1						1							
χ	8	33	2	3	11	1	1	32	28	3	13	9	1	2	1	2	1	12	1	1	2	1	1	3	2	1					
χʲ		4	2		4			4	3		4			2		2		3						1		1		4			
χː	4	13		2	3			13	11	3	4	6					1	4	1		1			1	1		13				
χʷ	3	13	2	3	11	1		13	12	1	13	3	1	2	1	2		12		1	2	1	1	1		13		4	4	1	
χˤ		1			1	1	1	1	1		1				1		1	1		1			1				1				1
χʷˤ		1			1	1	1	1	1		1				1		1	1		1			1				1			1	1
χʷː	1	3		1	2		1	3	3	1	3	1						3			1						3		3		3