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INSTITUTE OF PHONETICS
AND SPEECH PROCESSING



The University of Manchester

On the acoustics and articulation of the affricates of Northern Tosk Albanian

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Introduction

- Description of (putative) affricate consonants of Northern Tosk Albanian



Acoustics



Articulation

- Of particular interest are **⟨q⟩** and **⟨gj⟩**
- Part of a wider project which includes an IPA Illustration



<https://osf.io/vry3h/>

Albanian and (Northern) Tosk



Consonant phoneme inventory

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar		Retroflex	Palatal	Velar	Glottal
					Apical	Laminal				
Plosive	p b			t d					k g	
Affricate				ts dz	tʃ dʒ	ʈ ɖʒ				
Nasal	m			n				ɲ		
Trill				r						
Flap							ɾ			
Fricative		f v	θ ð	s z		ʃ ʒ				h
Glide								j		
Lateral			ɬ ɮ	l						

Affricates of Northern Tosk

- Traditionally described as having two pairs of affricates (Beci 2004)

⟨c⟩ /ts/ *cica* /tsitsa/ ‘boobs’

⟨x⟩ /dz/ *xixa* /dzidza/ ‘sparkles’

⟨ç⟩ /tʃ/ *çaji* /tʃaji/ ‘tea’

⟨xh⟩ /dʒ/ *xhaja* /dʒaja/ ‘uncle’

- Less agreement regarding an additional pair of consonants (Beci 2004)

⟨q⟩ *qava* ‘cried’

⟨gj⟩ *gjaku* ‘blood’

Affricates of Northern Tosk

- ⟨q⟩ and ⟨gj⟩ – **manner** of articulation

- Plosives

(Bevington 1971; Newmark et al. 1982; Dodi 1996; Memushaj 2005, 2011; Jubani-Bengu 2011, 2012)

- Affricates

(Lowman 1932, Belluscio 2014)

Affricates of Northern Tosk

- ⟨q⟩ and ⟨gj⟩ – **place** of articulation

- Palatal, pre-palatal, alveolo-palatal, lamino-post-alveolar

(Lowman 1932; Bevington 1971; Newmark et al. 1982; Dodi 1996;

Kolgjini 2004; Memushaj 2005, 2011; Jubani-Bengu 2011, 2012;

Belluscio 2014)

Research question

What are the **place** and **manner** of articulation of the consonants **⟨c, x⟩**, **⟨ç, xh⟩** and **⟨q, gj⟩** in Northern Tosk Albanian?

Methodology



5 native speakers of Northern Tosk (3F, 2M; aged 25–33)



Word list, sentence list, short text



Elicited items also included words without target consonants



Target consonants coded for manner by 3 analysts based on visual inspection of the spectrogram and waveform

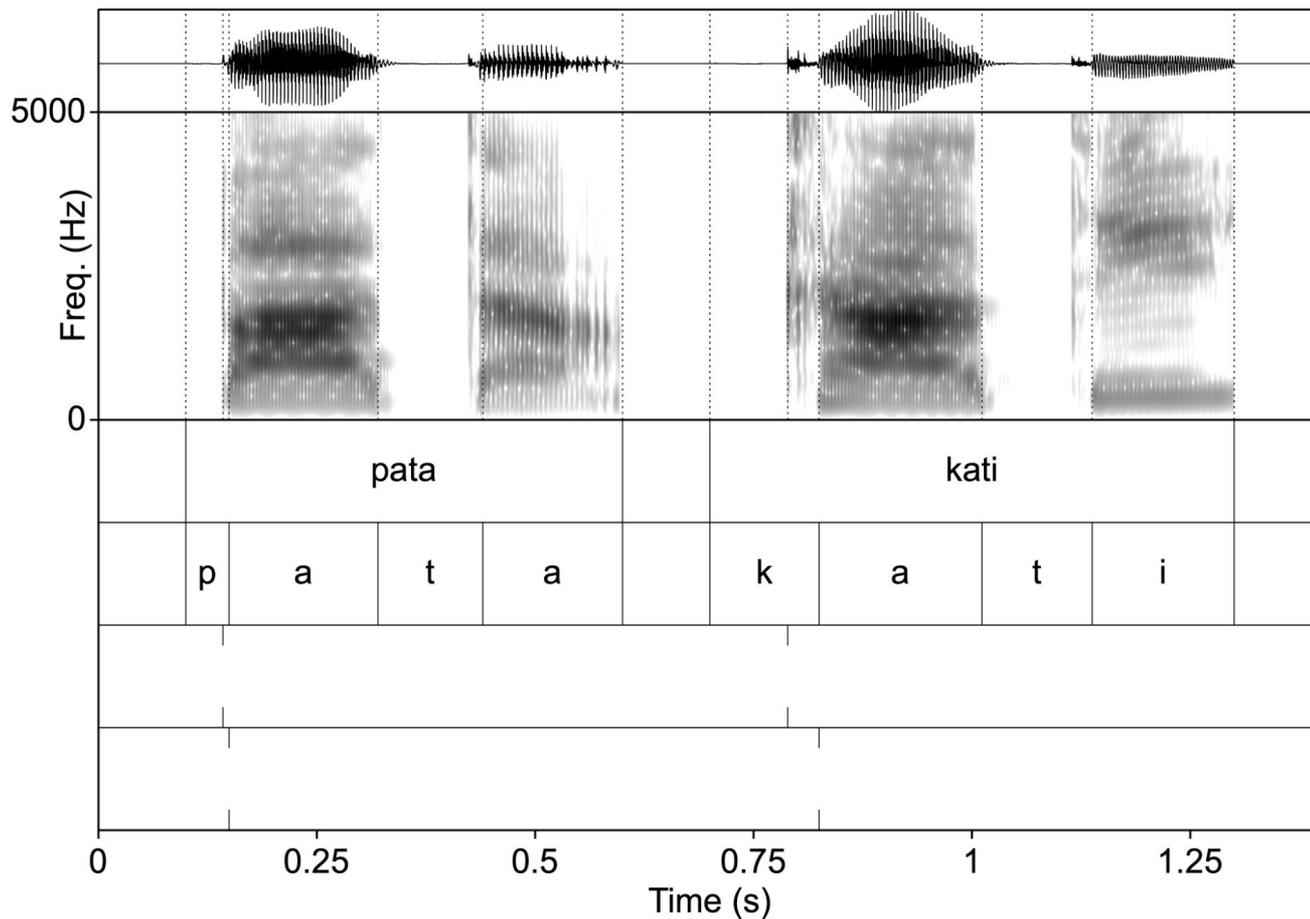


Spectral moments calculated within all fricated portions identified

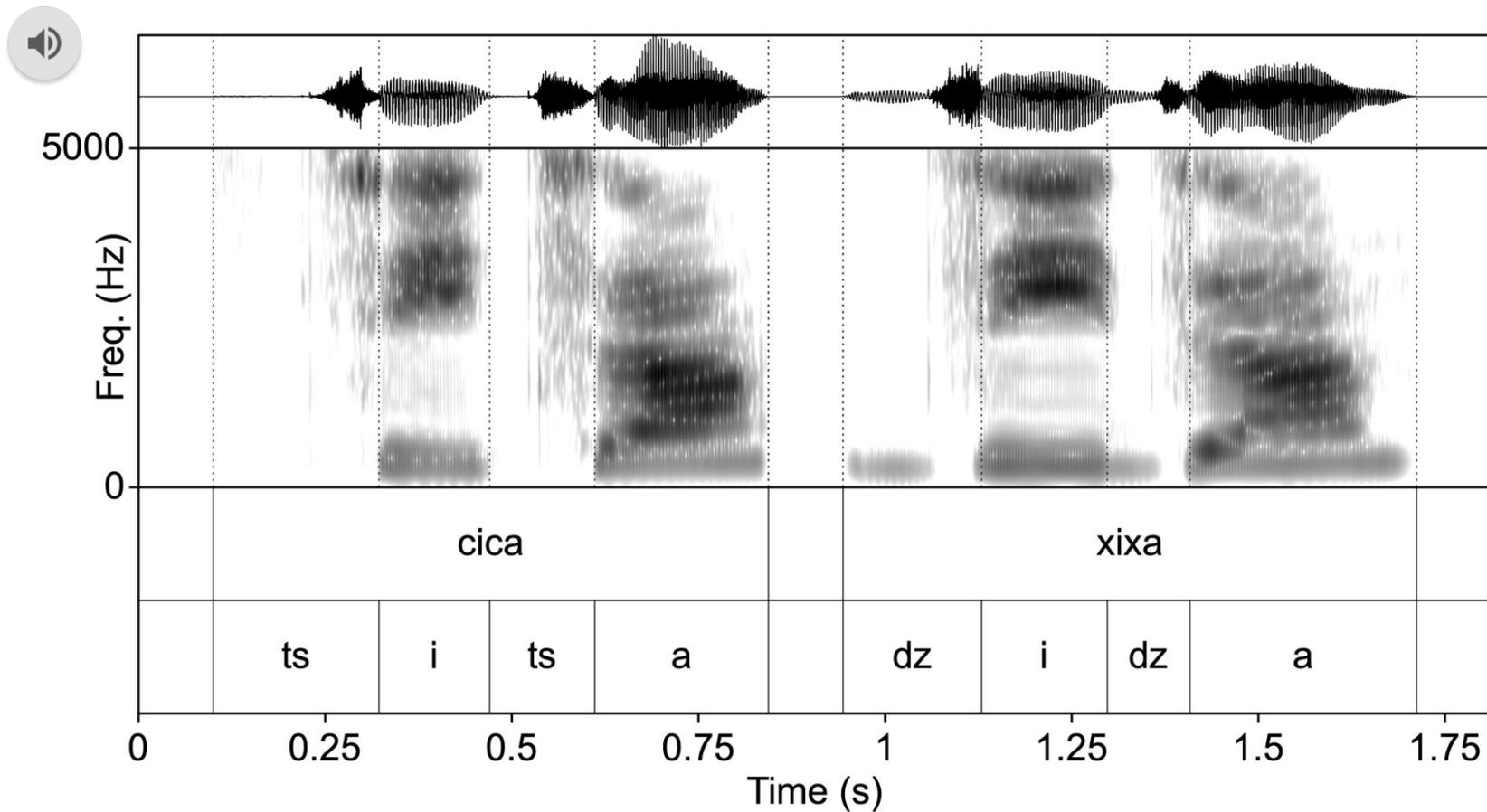
Methodology

-  Additional static palatographic data from another speaker (F; 41)
-  Nonce words elicited with target consonants flanked by low vowels
 -  *aca, axa, aça, axha, aqa, agja*

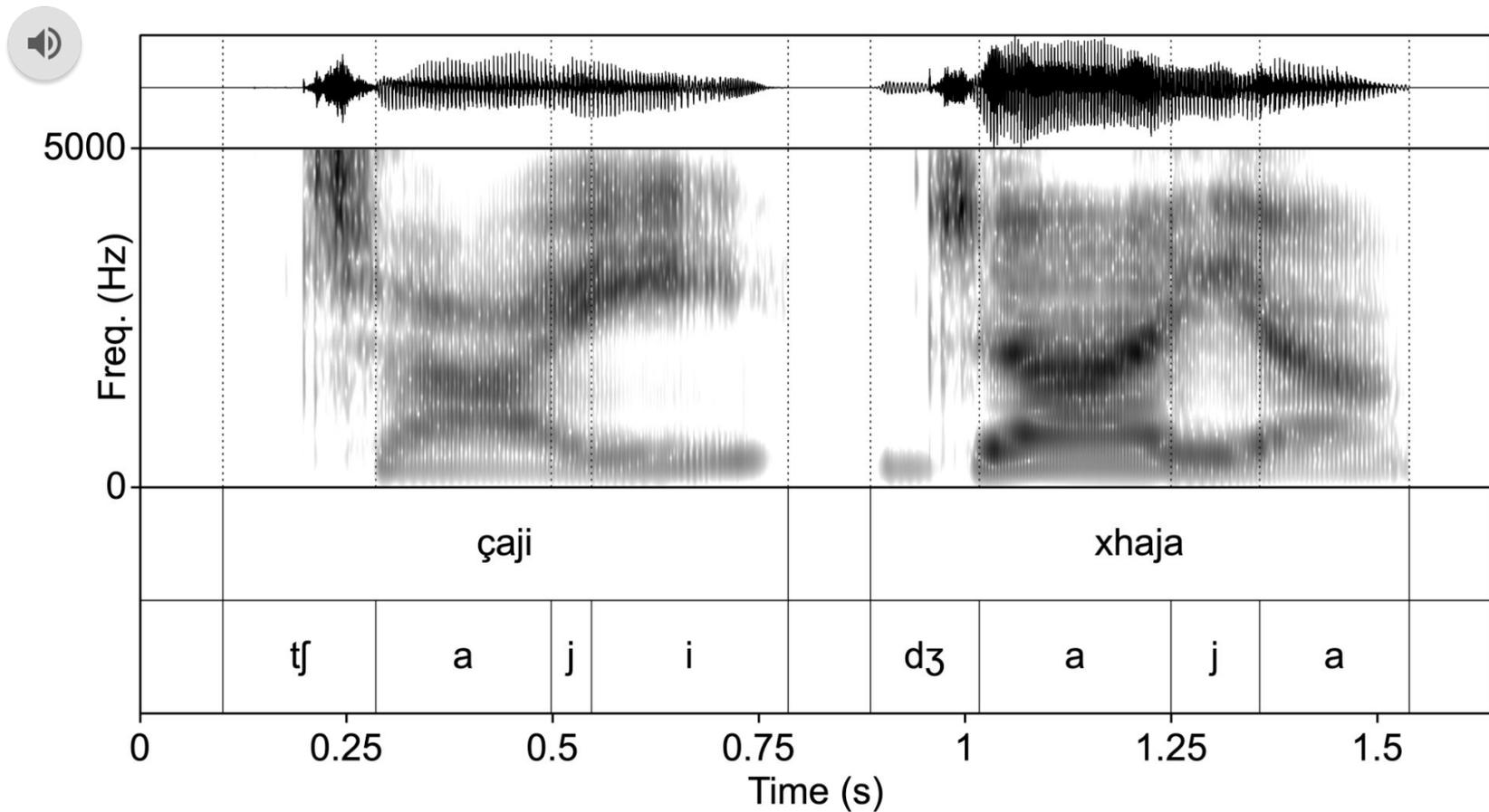
Manner of articulation



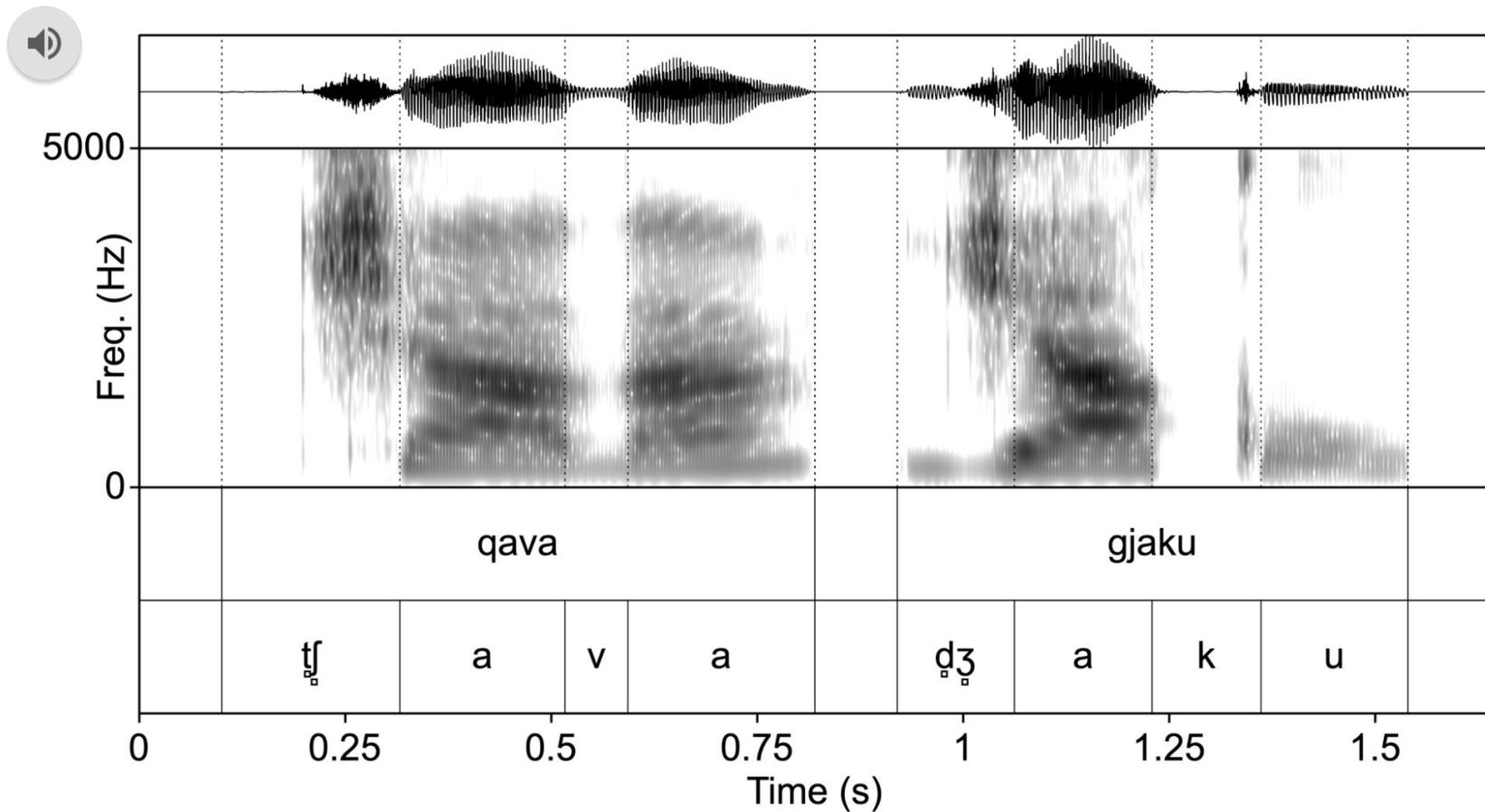
Manner of articulation



Manner of articulation



Manner of articulation

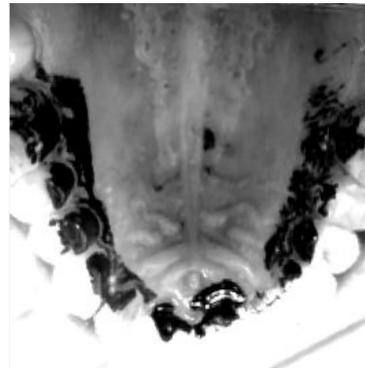


Place of articulation

<t>



<d>



<c>

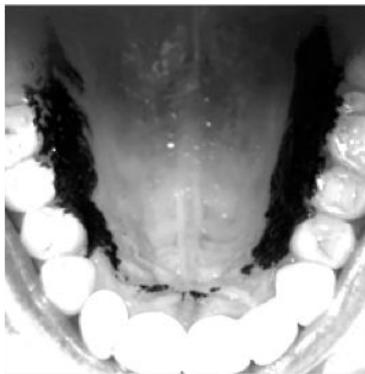


<x>

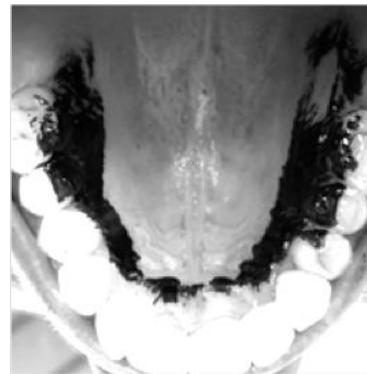


Place of articulation

⟨ç⟩



⟨xh⟩



⟨c⟩

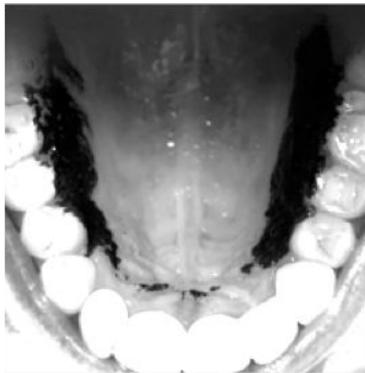


⟨x⟩

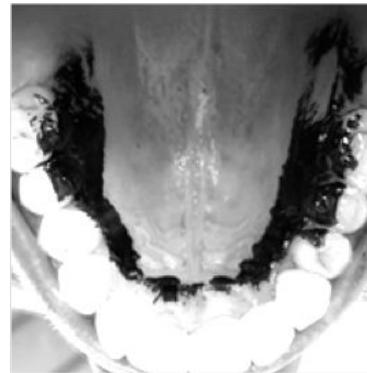


Place of articulation

⟨ç⟩



⟨xh⟩



⟨q⟩

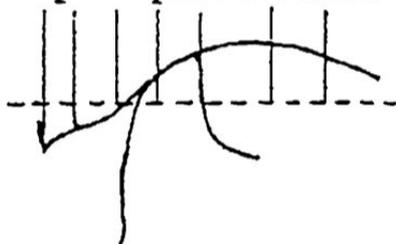


⟨gj⟩



Place of articulation

Apical post-alveolar



Laminal post-alveolar

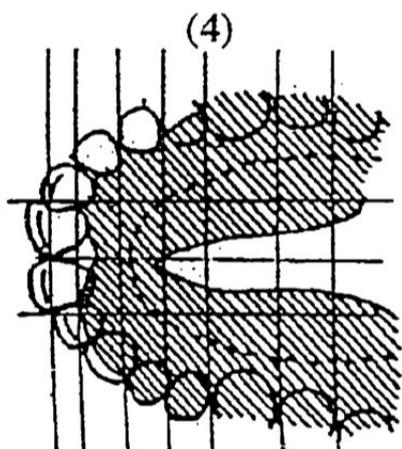
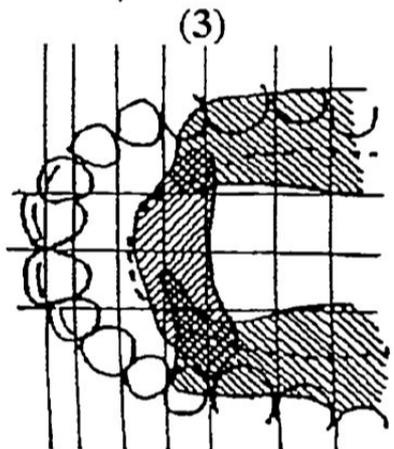
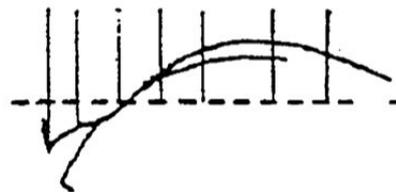
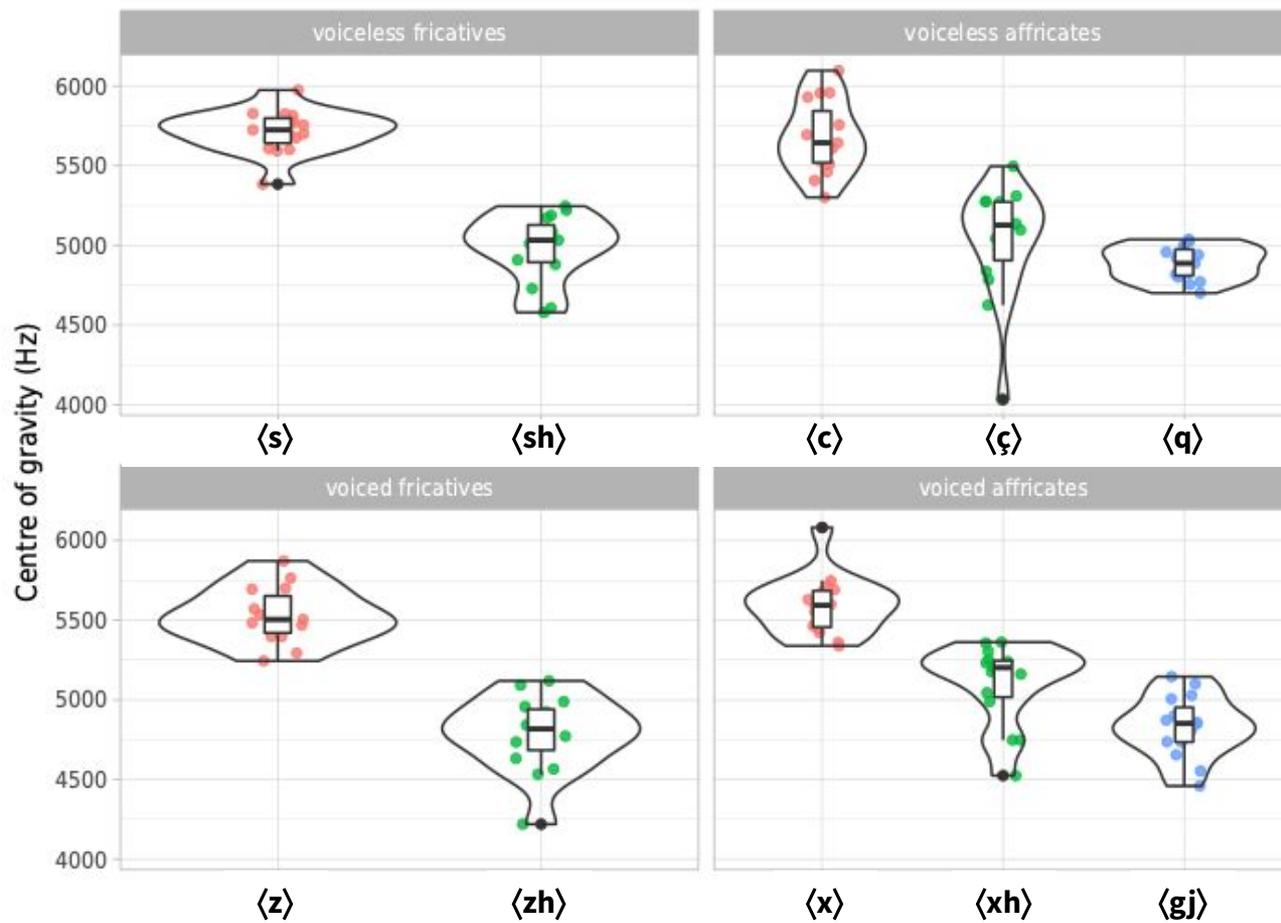


Figure 2.12 Palatograms and inferred articulatory positions for intervocalic coronal stops in Eastern Arrernte (courtesy of Andrew Butcher). The words illustrated are (1) *aɬəmə* 'burst', (2) *aɬəmə* 'grind', (3) *kwəʃa* 'smoke', (4) *aɬəməʃə* 'mother's father'.

Place of articulation



Summary

- We found that, in addition to ⟨**c, x, ç, xh**⟩, the consonants ⟨**q, gj**⟩ were also affricated in Northern Tosk Albanian
- The affricates ⟨**q, gj**⟩ have a different place of articulation to ⟨**ç, xh**⟩
 - Whereas ⟨**ç, xh**⟩ are **apico**-post-alveolar
 - Whereas ⟨**q, gj**⟩ are **lamino**-post-alveolar
- Nevertheless, further, more detailed work is still warranted

Ongoing and future work

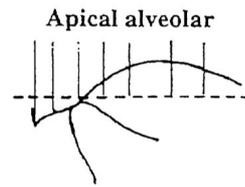
- More extensive investigation of Northern Tosk
- Branch out to other varieties of Albanian
 - IPA Illustration of Gheg
 - Perceptual studies
 - Sociolinguistic aspects

Faleminderit!

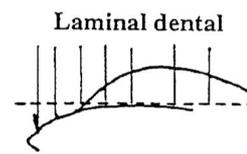
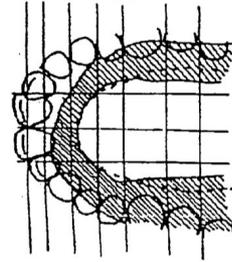
Thanks!

References

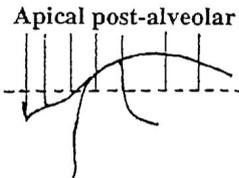
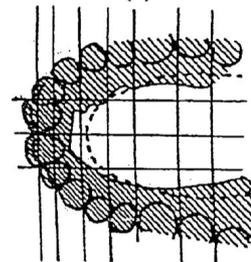
Beci 2002
Beci 2004
Belluscio 2014
Bird & Simons 2003
Bowern 2015
Chelliah 2010
Dryer 2007
Eslie & Gross 2009
Gawne et al. 2017
Gippert et al. 2006
Gjinari 1988
Haspelmath 2010
Himmelmann 2006
Jubani-Bengu 2011
Memushaj 2005
Thieberger 2004



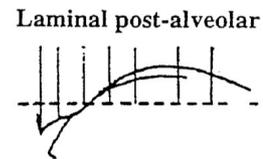
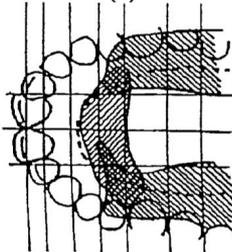
(1)



(2)



(3)



(4)

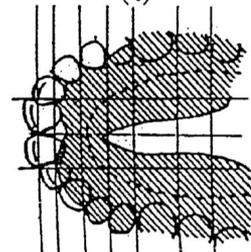


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