On Palatalization Typology. Postalveolar Palatalization and its Avoidance: Circassian

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1. Introduction

There are two classifications of palatalizations. On the one hand, three types of palatalization are distinguished: *coronal*, *dorsal* and *labial*. On the other, palatalization may be *full* (when consonant sements change their primary place (and possibly manner) of articulation) vs *secondary* (segments receive a secondary articulation in the palatal area). There are a lot of works, where changes into ʃ, ʒ, tʃ or dʒ is treated as palatalization.

	labial	coronal	dorsal
full	f → ʃ	t → tʃ	k → tʃ
secondary	p → pʲ	t → tʲ	k → kʲ

[Trask 1996, 254], [Bhat 1978, 49–51], [Jacobs and van de Weijer 1992, 125–126], [Bateman 2007, 2–3]

3. New Definition and Typology

Palatalization means raising of the front of the tongue towards **the back of hard palate** as accompanying a primary articulation (secondary palatalization) or substituting the primary articulation (full palatalization). Under this definition, secondary palatalization velars and postalveolars is impossible, because they are too close to the back of hard palate.

	labial	alveolar	postalveolar	velar
full	f → ɕ	t → tɕ	ʃ→ ɕ	k → c k → tɕ
sec.	p →pʲ	t → tʲ	impossible	impossible

Polish

(1)　naʃ-ɛ　　　　　　(2)　naɕ-i
　　　our-NOM.SG.N　　　　our-NOM.PL.H.M

Lithuanian

(3)　maʒ-as　　　　　　(4)　maʒ-ej
　　　little-NOM.SG.M　　　little-ADV
　　　'little'　　　　　　　'little, few'

4. Avoidance of Palatalization

Since secondary palatalization on velars and postalveolars is impossible, co-articulation triggers palatalization of velars and postalveolars followed by i, e, y, ø or j. In such cases, both the vowel and the consonant 'seek' to preserve its place of articulation. There are three possibilities:
- ✧ palatalization (k → c/tɕ)
- ✧ vowel backing (i → ɪ/ə/ɨ, e → ɛ)
- ✧ avoidance of palatalization (i→ɪi/əi/ii)

References

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2. Cross-linguistic variation

Palatals through the eyes of grammar writers:
Based on **PHOIBLE** ([Moran et al. 2014]), 1,672 languages

	postalveolar	alveolo-palatal	palatal	palatalized
nasal	n̠ (46)	ɲ(1064)		
plosive	t̠ (21), d̠ (6)	c (304), ɟ(277)		
fricative	ʃ(862), ʒ(310)	ɕ(27), ʑ(13)	ç(108), j(48)	Cʲ(861)
affricate	tʃ(1016), dʒ(647)	t̠ɕ(24), d̠ʑ(13), cç(7), ɟʑ(2)	cç(115), ɟj(103)	
approximant	l̠ (13)		j(1901)	

Based on **LAPSyD** ([DDL-CNRS and Maddieson 1999]), 307 languages)

	postalveolar	alveolo-palatal	palatal	palatalized
nasal	n̠ (23)	ɲ(93)		
plosive	t̠ (20), d̠ (3)	c (37), ɟ(25)		
fricative	ʃ(122), ʒ(45)	ɕ(6), ʑ	ç(10), j(5)	Cʲ
affricate	tʃ(140), dʒ(70)	cç(2), ɟʑ	cç, ɟj	
approximant	l̠(7)		j(269)	

PHOIBLE	j	ɲ	tʃ	ʃ		ʒ	c	ɟ	ç	j	ɕ		cç
	1901	1064	1016	862		310	304	277	108	48	27		7
LAPSyD	j		tʃ	ʃ	ɲ	ʒ	c	ɟ	ç		ɕ	j	cç
	269		140	122	93	45	37	25	10		6	5	2

✧ There are only **13 languages** from PHOIBLE and **3** LAPSyD, where ʃ (or tʃ) and ɕ (or tɕ) cooccur (and most of them located in Africa):
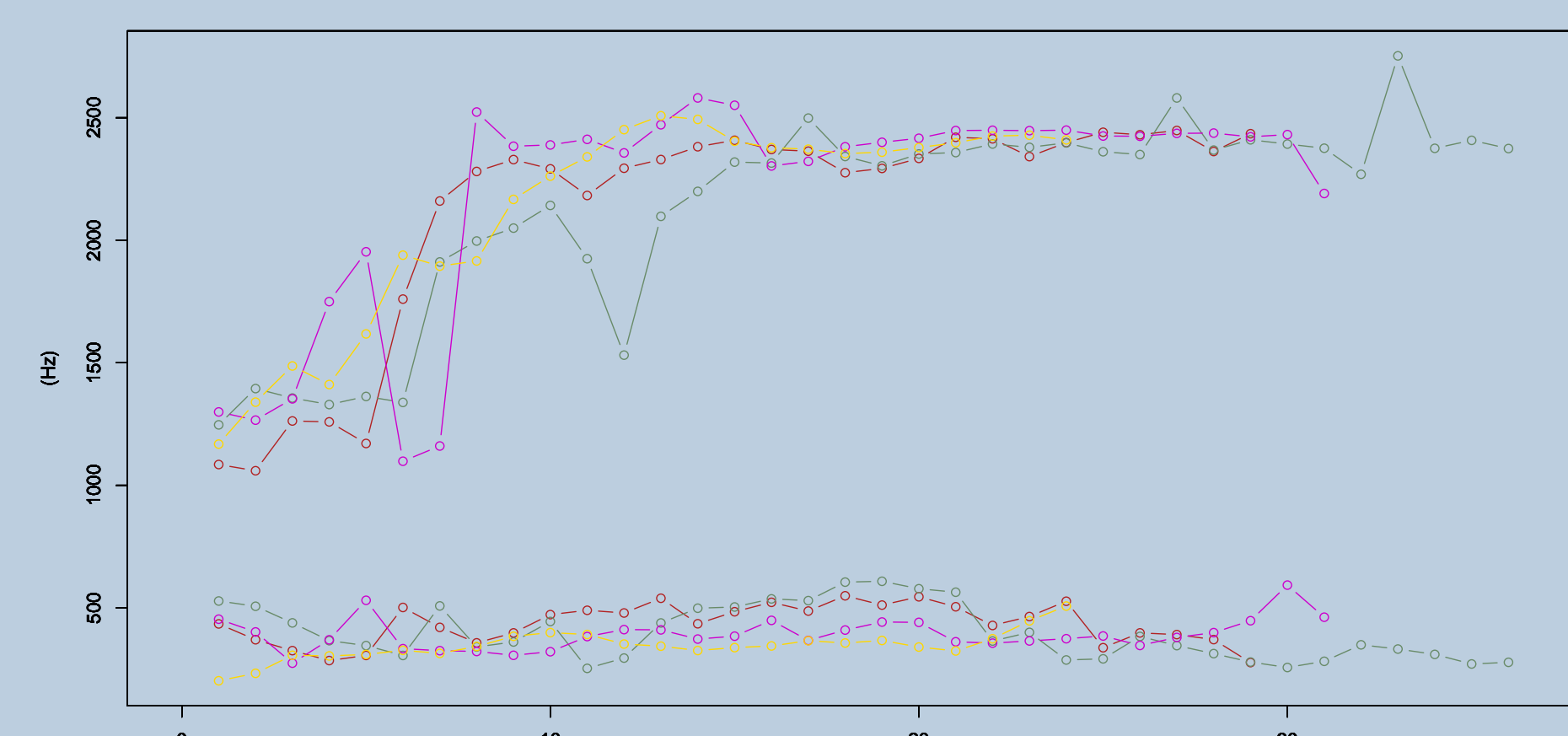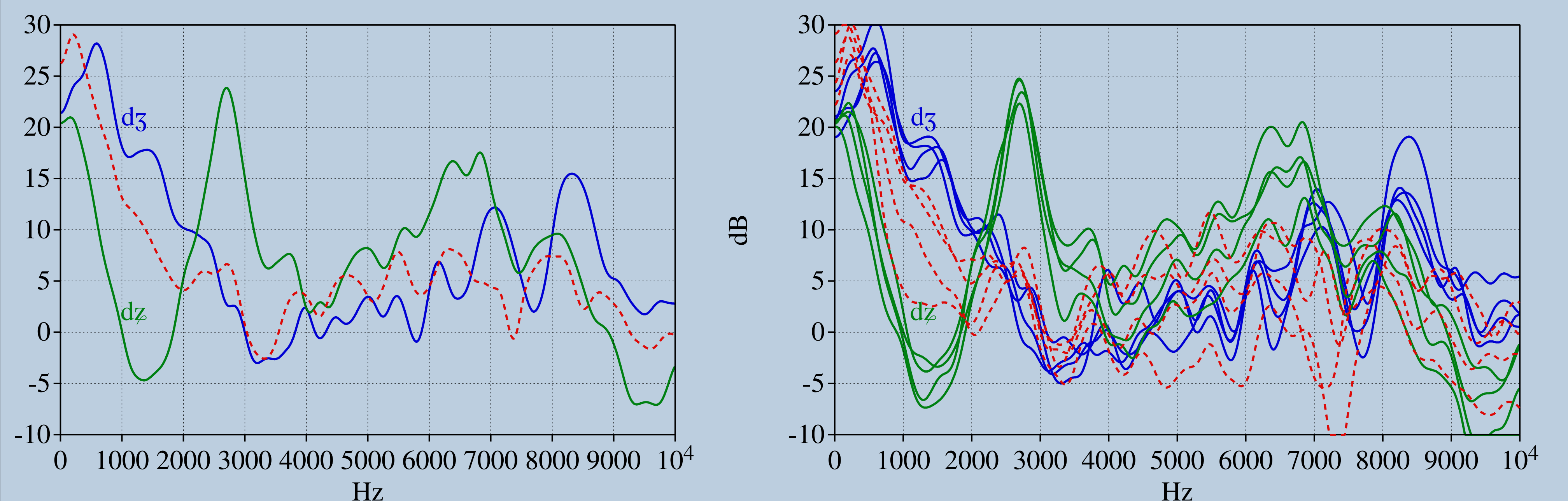
	Chinese	Tehuelche	Ghomalaʼ	Chuvash	Croatian	Irigwe	Pangwa	Baka	Eloyi	Gbaya	Aja	Bengali	Koasati
ʃ	+	+	+	+	+	+	+	+	+	+	+		
tʃ	+	+	+	+	+	+	+					+	+
ɕ	+	+	+	+								+	+
tɕ	+			+	+	+	+	+	+	+	+		

✧ There are only **6 languages** (from PHOIBLE), where ʃʲ is found (Bum, Irish, Kashmiri, Lithuanian, Naki, Paez).

✧ There are only **3 languages** (from PHOIBLE), where kʲ and c cooccur (Gweno, Idoma Ðӱ Kenswei Nsei).

5. Avoidance of Postalveolar Palatalization in Circassian

(5)　/ʃə-jə/　　(6)　/ʃə-jə-tʼʷə/　　(7)　/ɕə-ɕ/　　(8)　/ɕə-jə-ɕə/
　　[ʃəi]　　　　　[ʃətʼʷ]　　　　　　[ɕiɕ]　　　　　[ɕiɕ]
　　horse-ADD　　horse-LNK-two　　LOC-part　　three-LNK-three
　　'and a horse'　'two horses'[a]　'be from'　　'3 numbers "3"'

LTA spectra of the fricative parts of the affricates dz (/ədz/ 'now', plotted green), dʒ (/ɬ͡ɛgʷadʒ/ 'knee', plotted blue) and dʒ before /jə/ (/ɬ͡ɛgʷadʒ-jə/ 'knee-ADD', plotted red). Each word was repeated four times by a female Bzhedugh speaker. The figure on the left shows an approximate plot of all utterances. The figure at the bottom shows F1 and F2 transition in four fragments /jə/ [əi] in /ɬ͡ɛgʷadʒ-jə/ [ɬ͡ɛgʷadʒəi] 'knee-ADD' as produced by a female Bzhedugh speaker (minimal abscissa value is 0.025 s). All measurements are done in Praat (v. 5.3.73); plottings are done in Praat and R (v. 2.15.2).

[a]Whole chain shift: [ʃətʼʷ]←[ʃitʼʷ]←[ʃjətʼʷ]←[ʃəjətʼʷə].