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**Post-sonorant occlusivization in Kabyle**

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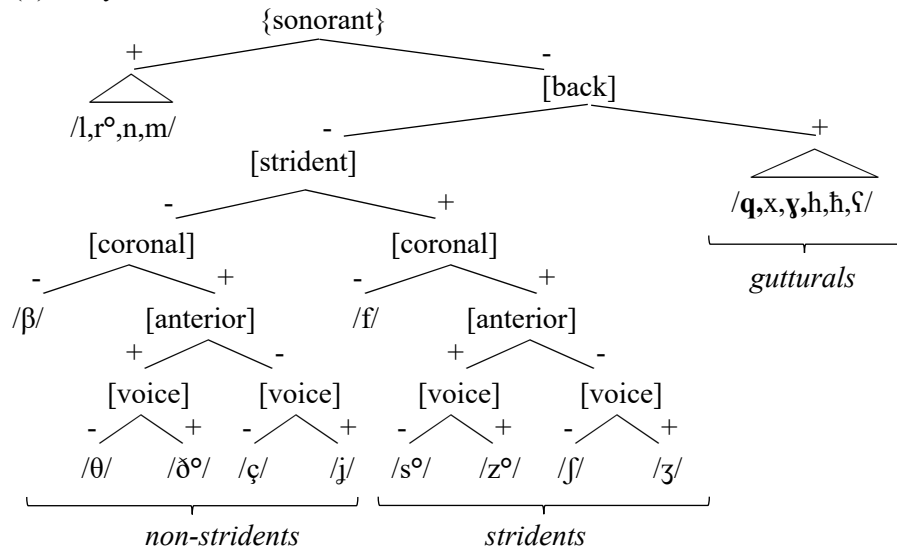
19<sup>th</sup> RFP meeting  
june 7-9 2022  
CLUP OPorto

Kabyle/θaqβajliθ: Spoken in North Algeria. Berber, Afro-asiatic. Here we focus on Chemini Kabyle (South-East Bejaïa).

- (1) Spirantizing vs non-spirantizing Berber languages (CHAKER 2004, KOSSMANN 2021, KOSSMANN, M. G. & H. G. STROOMER (1997).

Kabyle as a spirantized language: obstruent’s system composed of spirant consonants to the exclusion of uvular /q/¹.

(2) Kabyle consonants



/X°/ = distinctive emphasis /X/~X<sup>s</sup>/.

Kabyle: occlusivization whenever a fricative is geminated.

(3) Simple vs geminated in Chemini Kabyle (ChK)

		preterit/perfect C <sub>1</sub> C <sub>2</sub> əC <sub>3</sub>	intensive/imperfect C <sub>1</sub> əC <sub>2</sub> C <sub>2</sub> əC <sub>3</sub>	gloss
<b>(a) sonorants</b>				
[r]	[rr]	[frən]	[fərrən]	<i>choose</i>
[ɾ]	[ll]	[qɾəʕ]	[qəlləʕ]	<i>remove, start</i>
[n]	[nn]	[hnəθ]	[hənnəθ]	<i>perjure</i>
[m]	[mm]	[qməʃ]	[qəmməʃ]	<i>close eyes</i>
<b>(b) [-strident] fricatives</b>				
[β]	[bb]	[qβəð]	[qəbbəð]	<i>take by force</i>
[θ]	[tt]	[fθəɾ]	[fəttəɾ]	<i>roll couscous</i>
[ð]	[dd]	[xðəm]	[xəddəm]	<i>work</i>
[ç]	[kk]	[zçəm]	[zəkkəm]	<i>stay silent</i>
[j]	[gg]	[mjər]	[məggər]	<i>harvest</i>
<b>(c) [+strident] fricatives</b>				
[f]	[pp]	[rfəð]	[rəppəð]	<i>carry</i>
[s]	[ts]	[fsər]	[fətsəsər]	<i>expand</i>
[z]	[dz]	[jzər]	[jədzdzər]	<i>notch</i>
[ʃ]	[tʃ]	[çʃəm]	[çəʃtʃəm]	<i>enter</i>
[ʒ]	[dʒ]	[βʒəh]	[βədʒdʒəh]	<i>wide open</i>
<b>(d) [+back] fricatives</b>				
[x]	[xx]	[sxəð]	[səxxəð]	<i>punish, afflict</i>
[χ]	[qq]	[nχəʕ]	[nəqqəʕ]	<i>reduce</i>
[h]	[hh]	[nhəɾ]	[nəhhəɾ]	<i>drive</i>
[ħ]	[ħħ]	[mħəq]	[məħħəq]	<i>grind, crush</i>
[ʕ]	[ʕʕ]	[nʕəɾ]	[nəʕʕəɾ]	<i>insult, curse</i>

¹ We will not discuss /q/ in this presentation. w.r.t. glides (/j/ & /w/) see BEDAR, QUELLEC & VOELTZEL (2021).

**OCclusivization:** in other A.-A. languages (Hebrew, Tigrinya: ELMEDLAOUI 1993, LOWENSTAMM & PRUNET 1996).

(4)  $\sqrt{\text{sjr}}$  : aorist & intensive

[sjər] <i>be sore.AOR</i>					[səggər] <i>be sore.INT</i>								
C <sub>1</sub>	v	C <sub>2</sub>	V	C <sub>3</sub>	V	C <sub>1</sub>	V	C <sub>2</sub>	v	C <sub>2</sub>	V	C <sub>3</sub>	V
								\					
s		j	ə	r		s	ə	j		ə	r		

**However, OCC without extra-position: post-sonorant.**

(5) Some examples of sonorant + /β, θ, ð, ç, j/ in ChK

	/r/	/l/	/n/	/m/
/β/	[rβu] <i>litter</i>	[ɿβuβəɣ] <i>soaked</i>	[mbəh] <i>warn</i>	[imbuxən] <i>soot</i>
/θ/	[θirθəwθ] <i>rheum</i>	[ltəf] <i>massage</i>	[ntu] <i>depressed</i>	[θasumta] <i>pillow</i>
/ð/	[rðəx] <i>crush</i>	[aldun] <i>lead</i>	[anda] <i>where</i>	[θamda] <i>pond</i>
/ç/	[rku] <i>rotten</i>	[θiɿkiθ] <i>louse</i>	[ŋkər] <i>deny</i>	[amkan] <i>place</i>
/j/	[argaz] <i>man</i>	[aɣam] <i>flange</i>	[ŋgi] <i>drain</i>	[amjuð] <i>cutting</i>

(6)  $\sqrt{\text{rjl}}$

/rjəl/ → [rgəl] <i>close, shut</i>					
C <sub>1</sub>	v	C <sub>2</sub>	V	C <sub>3</sub>	V
r		j	ə	l	

**Government Phonology Framework:** KLV (1985, 1990), HARRIS (1990, 1994), HARRIS & LINDSEY (1995), LOWENSTAMM (1996), SCHEER (2004), NASUKAWA (2000), BACKLEY (2011).

**![sonorant] used as a shortcut.**

**Fricatives and occlusivization**

/β, θ, ð, ç, j/ only: [-strident].

SAIB (1974, *inter alia*): diachronic process which spirantized proto-Berber stops in Tamazight & Tachelhit resulting in [-strident] fricatives.

(7) SAIB (1974: 11) : While the summary of the historical changes reveals the differences observed in Berber dialects and explains the alternations that now occur, the problem of how to account for the present situation is not necessarily resolved by the diachronic account.

Aït Ndhir Tamazight problem:

(8) SAIB (1974: 17): [...] instead of an alternation of simple/identical geminate stops, as in Tachelhiyt, the alternation exhibited by this dialect is one between non-strident spirants and geminate stops.

Underlying consonants: stops or fricatives? spirantization or occlusivization rule?

No single stops surface in Aït Ndhir Tamazight: underlying fricatives.

(9) SAIB (1974: 20, fig. 31) *occlusivization rule*

SD:	[-strident, + continu] <sub>1</sub> (#)	[-strident, + continu] <sub>2</sub>
SC:	[- continu] <sub>1</sub>	[- continu] <sub>2</sub>

(where 1 = 2)

OUAKRIM (1995 : 46sq) a.o.: same reasoning but lax/tense contrast.

Chemini Kabyle: **OCC** of all front fricatives.

(10) Stridency: simples and geminates

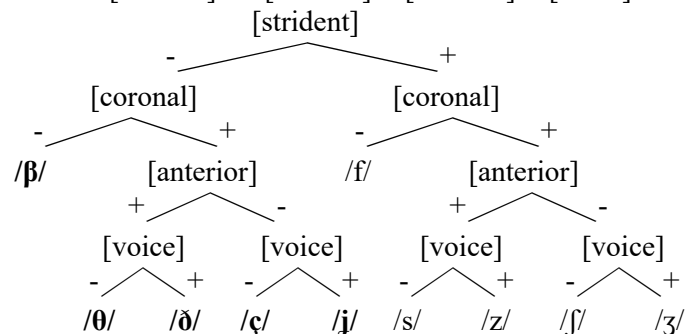
non-strident		strident	
simple	geminate	simple	geminate
/β/ : [β]	[bb]	/f/ : [f]	[pp]
/θ/ : [θ]	[tt]	/s/ : [s]	[tsts]
/ð/ : [ð]	[dd]	/z/ : [z]	[dzdz]
/ç/ : [ç]	[kk]	/ʃ/ : [ʃ]	[tʃtʃ]
/j/ : [j]	[gg]	/ʒ/ : [ʒ]	[dʒdʒ]

ELIAS (2020) and ref. therein for a recent analysis and discussion of length/strength in Kabyle.

Only [-strident] fricatives **Post-Sonorant OCC**.

Modified Contrastivist Specification (DRESHER 2009, 2021, HALL 2007, 2011).

(11) Stridency Hierarchy in ChK  
 [strident] >> [coronal] >> [anterior] >> [voice]



**Unequal involvement**

(12) **Post-Sonorant OCC**

	/r/___	/l/___	/n/___	/m/___
a. /β/	-	-	+	+
b. /θ/	-	+	+	+
c. /ð/	-	+	+	+
d. /ç/	+	+	+	+
e. /j/	+	+	+	-

"+" = OCC. "-" = No OCC.

/r, l, n, m/: members trigger OCC at different degrees.

(13) BACKLEY (2011 : 149) [...] because voicing is not phonological in nasals, or in any other sonorants, it is not represented by an element. This leads us to the conclusion that 'sonorant' is not actually a grammatical category; it does not count as a natural class because sonorants (vowels, glides, liquids, nasals) have no phonological properties in common.

(14) **"Sonorants" can, under conditions, host [-strident] fricatives content.**

**Non-stridency as headedness**

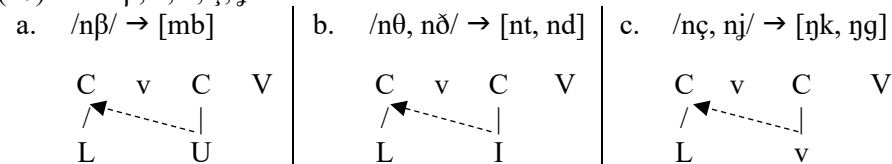
[-strident] fricatives: headed elementary content hence their capacity to spread.

(15) [-strident]: HEAD [+strident]: ¬HEAD

(16) /β/ = U labial  
 /θ, ð/ = I coronal  
 /ç, j/ = ɤ dorsal

**The coronal nasal /n/**

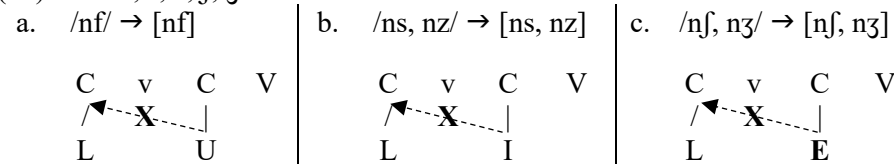
(17) /n/ + /β, θ, ð, ç, j/ in ChK



Homorganicity: Headed elementary content spreading.

No Homorganicity No OCC with [+strident] fricatives.

(18) /n/ + /f, s, z, ʃ, ʒ/ in ChK



When spreading occurs, the content of the headed expression is interpreted on two positions (as for geminates): it entails OCC.

**The lateral /l/**

In Chemini Kabyle, the lateral is realized:

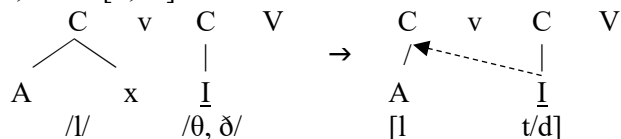
- as an approximant [ɭ] when simple,
- as [l] when geminated and when it precedes /θ/ or /ð/.

BEDAR & QUELLEC (2020): bipositionality of [l] + shared content with /θ, ð/.  
 BACKLEY (2011: 165): laterals may contain |A| and |l|.

In ChK: [ɭ] is the result of a lenition process leading to the loss of |l|. /l/ can surface as [l] provided that the adjacent segment contains headed-I.

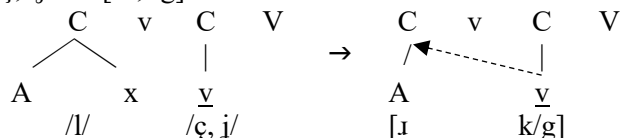
(19) /l/ + /θ, ð/ in ChK

/lθ, lð/ → [lt, ld]



(20) /l/ + /ç, j/ in ChK

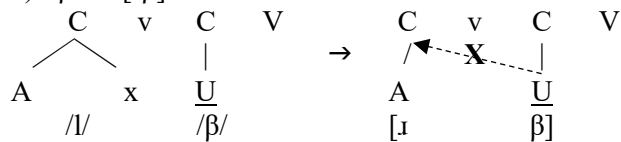
/lç, lj/ → [ɭk, ɭg]



[ɭ] has no hot features:

- spreads and is interpreted on two positions >> OCC.
- the lateral is bipositional but, lacking |l|, not interpreted as [l] >> [ɭ]

(21) /lβ/ → [ɭβ] in ChK



Lateral accepts only |l|: |U| cannot spread >> neither OCC, nor [l].

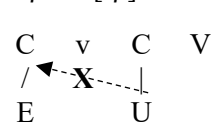
### The rhotic /r/

The rhotic rejects |l| (/θ, ð/) and |U| (/β/): only /ç, j/'s OCC is attested.

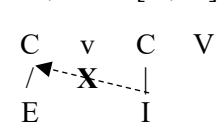
[ɭ] can interpret its content on the preceding position without modifying the rhotic (no significant change in duration, no change in quality).

(22) /r/ + /β, θ, ð, ç, j/ in ChK

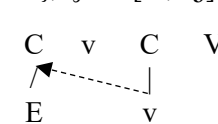
a. /rβ/ → [rβ]



b. /rθ, rð/ → [rθ, rð]



c. /rç, rj/ → [rk, rg]



[E]: up to now we don't know the content of /r/ in ChK (and in Kabyle).

Backley (2011 : 165): /r/ = |A|.

(23) |A|, |R|, nothing?

- Distinct representation for the rhotic [r] and the ungeminated lateral [ɭ].
- Type I : Split-R dialect (Youssef: 2019): /r/~r<sup>S</sup>/ neutralized (/r/ → [r<sup>S</sup>]/\_ [+back]). If /r/ = |A|, /r<sup>S</sup>/ would be |A|<sup>|A|</sup>?
- |R| (HARRIS 1990, 1994): no processes justifying the use of this prime.
- un/underspecified (RICE 1992, 2005, AVERY & RICE 1988, NATVIG 2020) /r/ does not explain /ç, j/ occlusivization and why /β, θ, ð/ do not. If /r/ had no content, all [-strident] fricatives should be subject to occlusivization.

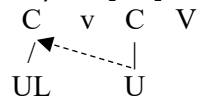
/r/ does have elementary content (or a particular structure, which we don't now yet) blocking the occlusivization of [-strident] fricatives except /ç, j/ because the latter are made of [ɭ].

### The labial nasal /m/

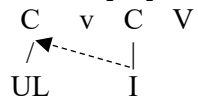
OCC post-/m/ everywhere except for the voiced palatal /j/ in ChK :

(24) Attested /m/ + /β, θ, ð, ç, j/ in ChK

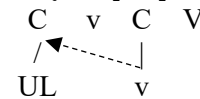
a. /mβ/ → [mb]



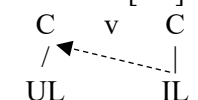
b. /mθ/ → [mt]



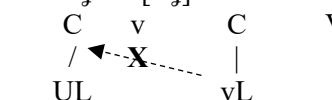
c. /mç/ → [mk]



d. /mð/ → [md]



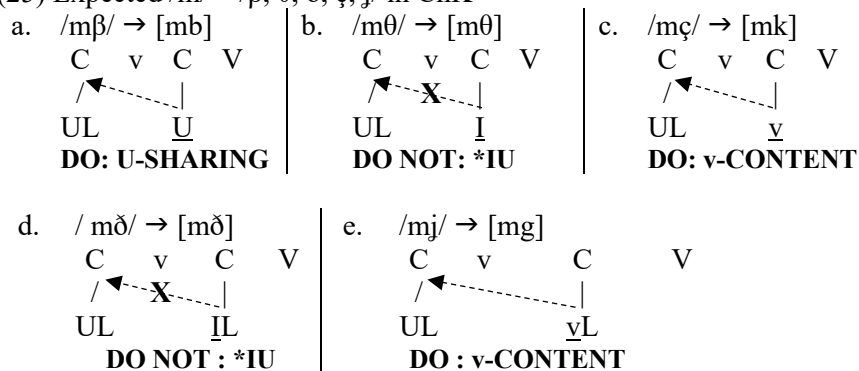
e. /mj/ → [mj]



No modification of /m/: does not accept any external content and it contains |U|.

- i. No problem with bilabial fricative |U| >> sharing content (HONEYBONE 2004).
- ii. Should permit /ç, j/ occlusivization given their content |v| >> this is never the case for /j/.
- iii. Should block /θ, ð/ occlusivization given their content |I| >> this is not the case in ChK|.

(25) Expected /m/ + /β, θ, ð, ç, j/ in ChK



Varieties of Kabyle: Aït Mengellat (DALLEY 1982), Ouaguenoun & Boghni.

(26) Dialectal variation and post-/m/ occlusivization I

	/mβ/	/mç/	/mj/	/mθ/	/mð/
Occlusivization	<i>expected</i>			<i>unexpected</i>	
Fricative content	U	v	vL	I	IL
Ouaguenoun	[mb]	[mk]	[mj]/__[ə,i,a]	[mθ]	[mð]
Boghni			![mh]/ [u]		
Aït Mengellat	[mb]	[mk]	[mj]	[mt]	[mð]
Chemini	[mb]	[mk]	[mj]/__[ə,i,a] ![mh]/ [u]	[mt]	[md]
<i>Status</i>	<i>constant</i>			<i>variable</i>	

! In all these varieties: occlusivization post-/r,l,n/ consistent with what we described in ChK.

(27) Dialectal variation and post-/m/ occlusivization II

- i. the **bilabial** is always subject to occlusivization.
- ii. the **unvoiced palatal** is systematically subject to occlusivization (as expected). However, it is never the case for **its voiced counterpart /j/**. Notice that for Chemini, Boghni and Ouaguenoun, if /mj/ is followed by [u], /j/ is debuccalized ([h]).

>> Voicing conflict: \*LL

- iii. The **coronals** /θ, ð/ give variable results:

– Boghni and Ouaguenoun do not show occlusivization (as expected) as if the nasal were unable to bear both |I| and |U| elements.

>> Element conflict: \*IU

– In Aït Mengellat, no occlusivization for the voiced coronal but for the unvoiced.

>> Voicing conflict: \*LL

– In Chemini, occlusivization is systematic.

>> Neither Voicing, nor Element conflict.

Special status of /m/: more structure?

### Conclusion

Process mistaken as a case of stop preservation.

Outcome of our analysis:

- occlusivization not spirantization in Kabyle.
- internal make-up of segments interacting in this process.
- sonorancy?

Post-Sonorant Occlusivization brings into play the nature of elements, their status, the internal structure of segments and the intersegmental relationship.

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