

Post-nasal voicing and contour segments

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ISSUES

- How are contours represented in the phonology?
- What segments have internal contours?
- What exactly is post-nasal voicing? What feature(s) are spreading? Why is it restricted to nasals?

CLAIMS

- Post-nasal voicing is not necessarily a product of *[+nasal, -voice], as has been claimed in the recent literature; this constraint wrongly predicts that voiceless aspirates should undergo voicing in languages with three- and four-way laryngeal contrasts.
- Also cannot be *[+nasal, +cont], as Padgett claims.
- Must be *[+nasal, +sg].¹

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¹ potential problem: PNV in languages that don't aspirate the voiceless stops...

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A. Panjabi and Sindhi

(1) Panjabi inventory

p	p ^h	b	m	w			
t	t ^h	d	n	s	l	r	
ʈ	ʈ ^h	ɖ	ɳ	ʂ	ɭ	ɽ	
ʈʃ	ʈʃ ^h	ɖʒ	ɳ	j			
k	k ^h	g	ŋ				
			h				

(2) Sindhi inventory (C = implosive)

p	p ^h	b	b ^h	ɓ	m	ɸ	β		
t	t ^h	d	d ^h	ɗ	n	s	z	l	r
ʈ	ʈ ^h	ɖ	ɖ ^h	ɗ	ɳ				ɽ
ʈʃ	ʈʃ ^h	ɖʒ	ɖʒ ^h	ɗʒ	ɳ	ʃ		j	
k	k ^h	g	g ^h	ɠ	ŋ	x	ɣ		
				h					

(3) nasal voicing in Panjabi and Sindhi (Turner 1966, Masica 1991:203)²

	Sanskrit	Panjabi	Sindhi	gloss
a.	aṅka	aṅg	aṅgu	mark
	kaṅṭā	kaṅṭā	kaṅṭo	thorn
	danta	dand	ḍandu	tooth

² Vowels are presented in ISO 15919 transliteration (https://en.wikipedia.org/wiki/ISO_15919); I have converted the consonants to their IPA values in hopes of reducing confusion concerning what they represent.

	ɕampa	ɕambā	ɕambo	type of tree
b.	paɳtʃa	paɳɕ	paɳɕa	five
	tʃaɳtʃu	tʃuɳdʒ	-----	beak
	amsa	hass	haɳɕ ^h i	shoulder(blade)
	hamsa	hās	haɳɕu	goose
c.	paɳt ^h ā	pand	paɳd ^h u	path
	graɳt ^h i	gaɳd ^h	gaɳd ^h i	knot
	ʃuɳt ^h i	suɳd ^h	suɳd ^h i	ginger
d.	ɕaɳg ^h ā	ɕaɳg ^h	ʃaɳg ^h a	leg, shank
	and ^h a	and ^h ā	and ^h o	blind
	gaɳb ^h īra	-----	gāb ^h īru	deep

- Tarascan voiceless aspirates don't undergo post-nasal voicing, whereas plain voiceless stops do (Steriade 1997:66, from Foster 1969)
- Tamil has nasal voicing of stops--Bosch and Wiltshire (1992), ex. 16
- [James Bailey deals with nt → nd (Charles Reiss, p.c.)]

GENERALIZATIONS

- affricates are affected
- difficult to determine what happens to fricatives, Panjabi voiced aspirates
- voiceless aspirates are affected
- aspiration is not affected

B. Zoque

(4) Zoque inventory

p	b	m	f	w
t	d	n	s	
c	ɟ			
ts				
tʃ	ɕ	ɳ	ʃ	j
k	g	ŋ		

? h

(5) Zoque nasal voicing in derived environments (Kenstowicz 1994:500)

- | | | | |
|----|-----------|---------|-----------------|
| a. | min-pa | minba | he comes |
| b. | pʌn-tʃʌki | pʌnɕʌki | figure of a man |
| c. | winsaʔu | winsaʔu | he received |

C. English

(6) English nasal place assimilation

- | | | |
|----|-----------------------|-----------------|
| a. | <i>in-describable</i> | [ɪndəskɹɪbəbəl] |
| | <i>in-justice</i> | [ɪnɕʌstɪs] |
| | <i>in-capable</i> | [ɪŋkʰeɪpəbəl] |
| | <i>im-possible</i> | [ɪmpʰəsɪbəl] |
| b. | <i>in-finite</i> | [ɪnfənət] |
| | <i>in-valid</i> | [ɪnvæləd] |
| c. | <i>in-active</i> | [ɪnæktəv] |

Padgett 1991: *[+nasal, +continuant]

D. Armenian

(7) New Julfa inventory

b	b ^h	p	p ^h	f	v	m
d	d ^h	t	t ^h	s	z	n
ɖ	ɖ ^h	ts	ts ^h			
ɕ	ɕ ^h	tʃ	tʃ ^h	ʃ	ʒ	
g	g ^h	k	k ^h	χ	ʁ	
				h	ɦ	
j	ɾ	ɾ	l	lʲ		

(8) New Julfa nasal voicing (Vaux 1998)

	classical	New Julfa	gloss
a.	əntsaj	əndʒa	gift
	ankanel	ənganiɛl	fall
	ajntɛɫ	əndieɤ	there
b.	tʃantʃ	tʃandʒ	fly
c.	-----	insaf	justice
	-----	sunsunakviel	become greedy
	-----	semsuri	type of melon
d.	t ^h antʃ ^h ɛl	t ^h antʃ ^h in tal	mutter
	ʃamp ^h ur	ʃamp ^h ur	spit
	jawnk ^h	ʃunk ^h	eyebrow

(9)	nominative	genitive	gloss
	kənik	kəngɑ	wife
	g ^h ort ^h ənuk	g ^h ort ^h əngɑ	frog

(10) voiced aspirates

	classical	New Julfa	gloss
a.	bambak	b ^h ambak	cotton
	gangat	g ^h angat	complaint
	andam	andam	limb
	brindʒ	b ^h rinj	rice
	narindʒ	narindʒ	orange
b.	hamberel	hamb ^h ieriel	endure (*χambieriel)
	ʒarang	ʒarang ^h	heir
	handipel	hand ^h ipiel	meet (*χandipiel)

E. Tarascan

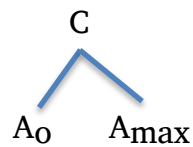
- voiceless aspirates don't undergo post-nasal voicing, whereas plain voiceless stops do (Steriade 1997:66, from Foster 1969)

F. Contour segments

- structure of aspirates
- edge effects

(11) contour segments (Steriade 1992)

released stop unreleased stop



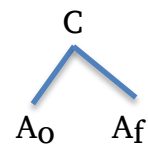
glide



fricative

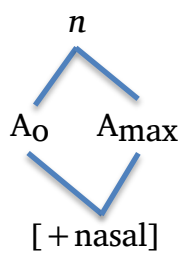


affricate

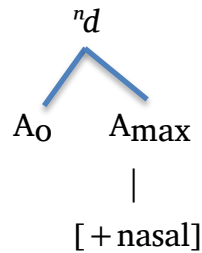


(12) nasal contours

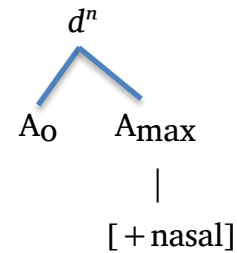
a. nasal stop



b. prenasalized stop

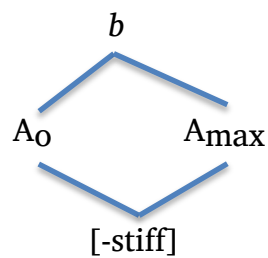


c. postnasal stop

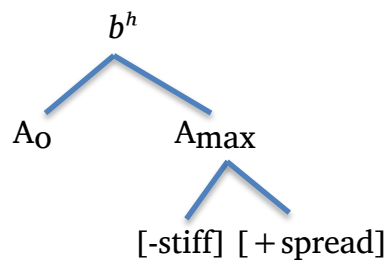


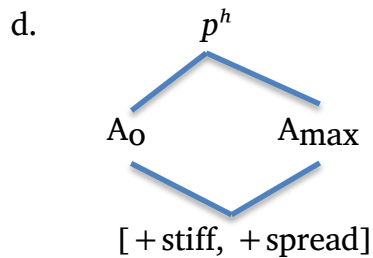
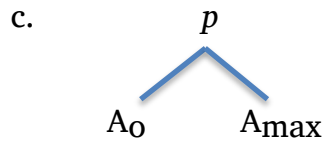
(13) Laryngeal contours

a.



b.





EVIDENCE FOR LARYNGEAL CONTOURS:

(14) ts, tʃ : ts^h, tʃ^h

(15) aspirate dissimilation

	classical	New Julfa	gloss
a.	dʒoxk ^h	dəʒuoχk	hell
	kopk ^h	kopk	eyelid
	t ^h ewk ^h	t ^h iefk	wings
	mitk ^h	mitk	mind
	aɭawt ^h k ^h	ɑɭot ^h k	prayer
	anētsk ^h	anetsk	curse
	tʃawtʃk ^h	tʃotʃk	swing
	aɬ ^h k ^h	ɑɬ ^h k	eye
	varɖk ^h	varɬs ^h k	wages
	xawsk ^h	χosk	speech
	hraʃk ^h	həraʃk	miracle
b.	eawt ^h n	oχtə	seven
	nawt ^h	naft	oil
	k ^h t ^h uel	k ^h əftiel	delouse

(16) **nominative** **genitive** **gloss**
 tsɑβik^h tsɑχki flower

ʃapik ^h	ʃapki	shirt
fietkus	fietk ^h əsin	behind

(17) aspirate dissimilation applies before s-aspiration

pstik ‘small’ > p^həstik

giʃer ‘evening’ > k^həʃier

(18) fricative assimilation

classical	New Julfa	gloss
anzgam	anəsg ^h am	wicked
zgojʃ	əsg ^h uʃ	safe
xɛldel	χieχd ^h iel	strangle
aɫbiwr	ɑχb ^h ur	fountain
zgal	əsg ^h al	feel
zbaɫum	əsb ^h ɑɫum	business
zɫɔʒal	zəχɔʒ ^h al	repent
amboɫɔʒ	amb ^h uoχɔʒ ^h	whole

F. Residual questions

- restriction on *[+nasal, +spread glottis]
- derived vs. non-derived environments
- why not sonorant voicing?
- why didn’t voiced stops aspirate after nasals?

G. Database

- Basque
- Gascon
- Greek (eg Istanbul < eis ten pol-)
- Japanese
- many Armenian dialects

- Palenquero (which, appropriately, is Palengue in their lg.), dentro > lendro, jende < gente, (but NB enkagao = encargada)
- Tamil has nasal voicing of stops--Bosch and Wiltshire (1992) "The Licensing of Prosodic Prominence in Tamil," FLSM 3, Laurel Stvan et al, eds., ex. 16
- Yao (in Africa) apparently has postnasal voicing--cf. the word Bantu.

H. Notes

- Why does Italian locanda > Turkish lokanta?
- Xhosa doesn't allow aspirates after nasals (Jessen 2000)
- one might argue that voicing of aspirates is blocked by structure preservation, but this doesn't work for e.g. New Julfa

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