

10. Consonants & contoids (2)

10.01. For the sake of thoroughness and to facilitate finding and memorizing the various consonantal articulations, we have to consider some *lists*, which may not be considered entertaining, but are however necessary. By grouping them into seven sections, with internal subdivisions, we will provide 462 articulations (although there can certainly be others, by combining other places and manners of articulation). They will appear after the rich, but partial, table (fig 10.1).

Obviously, diphonic pairs count as one articulation, not as two. Therefore, in practice, every articulation can produce a diphonic pair, with two contoids which are distinguished only by their phonation type (voiced or voiceless).

In the table of fig 10.1 (which is long and therefore divided into three parts, to avoid reducing it too much and make it indecipherable), we will give only the 319 <commonest> or most <important> articulations (out of the 462 included in the lists), depending on vertical and horizontal axes, for 527 contoids (out of the 772 included in the *HPb* (and in fig 10.2-8). The signs <›, which alternate with the names of the manners provided, on the left side, indicate the <intermediate> manners, which do not appear in the table.

Table of the main *canIPA* contoids

10.02. We will now give the *table* of the main *contoids* belonging to the *canIPA* alphabet. It will emerge rather clearly that unitary symbols are preferable to the official ones which need so many diacritics in order to be exact.

However, the way they are placed in the table is quite sufficient to make their values clear (as happens to the vocoids in the vocogram), especially if they are coupled with their orograms (which are to be analyzed very carefully).

canIPA contoids (displayed according to articulation manners)

10.1. In our lists, in double square brackets, less common –but more precise– symbols appear, which can be rendered with more <normal> symbols, given in simple brackets – in less sophisticated transcriptions, once their exact articulations are clearly known.

For *sonant* (or *sonorant*, cf § 11.21) phones, which are more often voiced, we will indicate the rarest voiceless phones in round brackets (in the lists). Instead, we will indicate less frequent articulations, which are given near more normal ones (and represented by the same symbols), by putting them in round brackets (in the figures).

fig 10.1. *canIPA* contoids (319 articulations out of 462, and 527 phones out of 772, cf fig 10.1-7).

CONTOIDS (1)

	VOICING	BILABIAL	Bilabial rounded	Palatalized bilabial	Uvularized bilabial	Labial-apical	LABIODENTAL	Labiodental rounded.	Palatal. labiodental	Uvular. labiodental	Dental-bilabial	Pre-dental	Pro-dental	DENTAL	Dental rounded	Labiodent. dental	Uvularized dental	Denti-alveolar	ALVEOLAR
Semi-nasal (N)	+	ᵿ					ᵿ												ᵿ
NASAL (N)	+	m	ᵿ̃	ᵿ̃	ᵿ̃	ᵿ̃	ᵿ̃	ᵿ̃	ᵿ̃	ᵿ̃	ᵿ̃			n	ᵿ̃		ᵿ̃	ᵿ̃	n
STOP (K)	-	p	p̂	p̃	p̄	p̅	p̆				ᵿ̥	t̥		t̥	t̥	t̥	t̥	t̥	t̥
	+	b	b̂	b̃	b̄	b̅	b̆				ᵿ̆	d̆		d̆	d̆	d̆	d̆	d̆	d̆
STOP-STRICTIVE (KK)	-	ᵿᵿ	ᵿ̂ᵿ̂				ᵿᵿ̆				ᵿ̥ᵿ̥	t̥ᵿ̥		t̥ᵿ̥	t̥ᵿ̥		t̥ᵿ̥		t̥ᵿ̥
	+	ᵿᵿ	ᵿ̂ᵿ̂				ᵿᵿ̆				ᵿ̆ᵿ̆	d̆ᵿ̆		d̆ᵿ̆	d̆ᵿ̆		d̆ᵿ̆		d̆ᵿ̆
<i>grooved</i> stop-str. (KS)	-										(ts)		ts	t̃s	t̄s		ts		t̃s
	+										(dz)		dz	d̃z	d̄z		dz		d̃z
CONSTRICTIVE (X)	-	ᵿ	ᵿ̂	ᵿ̃	ᵿ̄	ᵿ̅	f̆	f̆̂	f̆̃	f̆̄		ᵿ̥	ᵿ̥	ᵿ̥	ᵿ̥		ᵿ̥		ᵿ̥
	+	ᵿ	ᵿ̂	ᵿ̃	ᵿ̄	ᵿ̅	v̆	v̆̂	v̆̃	v̆̄		ᵿ̆	ᵿ̆̂	ᵿ̆̃	ᵿ̆̄		ᵿ̆̂		ᵿ̆̂
<i>grooved</i> constrict. (S)	-										(s)		s	ᵿ̃	ᵿ̄	ᵿ̅	ᵿ̆	ᵿ̇	ᵿ̈
	+										(z)		z	ᵿ̃	ᵿ̄	ᵿ̅	ᵿ̆	ᵿ̇	ᵿ̈
APPROXIMANT (J)	-	ᵿ̥	ᵿ̥̂	ᵿ̥̃	ᵿ̥̄		F̆	F̆̂	F̆̃	F̆̄				ᵿ̥					ᵿ̥
	+	ᵿ̆	ᵿ̆̂	ᵿ̆̃	ᵿ̆̄		ᵿ̆	ᵿ̆̂	ᵿ̆̃	ᵿ̆̄				ᵿ̆					ᵿ̆
<i>lateralized</i> app. (l)	+													ᵿ̆					ᵿ̆
TRILL (R)	+	B												(r)					r
<i>constrictive</i> trill (R)	-																		ᵿ̥
	+																		ᵿ̆
tap (ʀ)	+	ᵿ̆												(r)					r
flap (ʀ)	+						ᵿ̆												ᵿ̆
LATERAL (appr.) (L)	+					ᵿ̆								ᵿ̆	ᵿ̆̂		ᵿ̆̂	ᵿ̆̂	ᵿ̆̂
	-													ᵿ̆̂					ᵿ̆̂
<i>lateral constrictive</i> (L)	+													ᵿ̆̂					ᵿ̆̂
	-													ᵿ̆̂					ᵿ̆̂
<i>unilater.</i> (appr.) (L)	+													ᵿ̆̂					ᵿ̆̂
<i>semilateral</i> (L)	+																		ᵿ̆̂
<i>lateral tap</i> (l)	+																		ᵿ̆̂
	±	o ¹	o ²	o ³	o ⁴	o ⁵	1 ¹	1 ²	1 ³	1 ⁴	1 ⁵	2 ¹	2 ²	2 ³	2 ⁴	2 ⁵	2 ⁶	2 ⁷	3 ¹

CONTOIDS (2)

	VOICING	ALVEOLAR	Alveolar rounded	Labiodent. alveolar	Alveo-prevelar	Velarized alveolar	Uvularized alveolar	[APICO-]POSTALVEOLAR	[Apico-]Postalveolar <i>roun.</i>	Velar. apico-postalveolar	Velar. apico-postalveol. <i>r.</i>	Apico-palatal	Apico-palatal rounded	Postalveo-palatal	POSTALVEO-PALAT. <i>protrud.</i>	Postalveo-palatal <i>over-roun.</i>	Velarized postalveolar	Velar. postalveol. <i>protrud.</i>	PREPALATAL	Bilabialized prepalatal	Prepalatal rounded	Labiodentalized palatal	PALATAL	Palatal rounded
(N)	+	ᵿ						ᵿ						ᵿ					ᵿ				ᵿ	
(N)	+	n	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ	ᵿ			ᵿ	ᵿ	ᵿ			ᵿ		ᵿ			ᵿ	ᵿ	ᵿ
(K)	-	t	t̃			ṭ	(ṭ)	t̥	t̥	t̥	t̥	t̥	t̥	(t̥)	(t̥)		(t̥)	(t̥)	t̥	(t̥)			c	c̃
	+	d	d̃			ḍ	(ḍ)	d̥	d̥	d̥	d̥	d̥	d̥	(d̥)	(d̥)		(d̥)	(d̥)	d̥	(d̥)			ɟ	ɟ̃
(KX)	-	tɕ	t̃ɕ					t̥ɕ	t̥ɕ														kɕ	k̃ɕ
	+	dɕ	d̃ɕ					d̥ɕ	d̥ɕ														gɕ	g̃ɕ
(KS)	-	tʂ	t̃ʂ			ṭʂ	(ṭʂ)	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ	t̥ʂ		
	+	dʂ	d̃ʂ			ḍʂ	(ḍʂ)	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ	d̥ʂ		
(X)	-	ɕ	ɕ̃					ɕ	ɕ̃														ɕ	ɕ̃
	+	ɟ	ɟ̃					ɟ	ɟ̃														ɟ	ɟ̃
(S)	-	ʃ	ʃ̃			ʃ̣	(ʃ̣)	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥	ʃ̥		
	+	ʒ	ʒ̃			ʒ̣	(ʒ̣)	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥	ʒ̥		
(J)	-	ɕ						ɕ	ɕ̃			ɕ	ɕ̃						ɕ	ɕ̃			ɕ	ɕ̃
	+	ɟ						ɟ	ɟ̃			ɟ	ɟ̃						ɟ	ɟ̃			ɟ	ɟ̃
(U)	+	ɹ				(ɹ̥)	ɹ̥	ɹ̥	ɹ̥	ɹ̥	ɹ̥													
(R)	+	r	r̃			(r̥)	r̥	ɹ̥				ɹ̥							ɹ̥					
(R)	-	ʀ																						
	+	ʁ																	ʁ					
(ʀ)	+	r	r̃			(r̥)	r̥	ɹ̥				ɹ̥							ɹ̥					
(ʀ)	+	ɹ				(ɹ̥)	ɹ̥	ɹ̥				ɹ̥							ɹ̥					
(L)	+	l	l̃			ḷ	ḷ	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥	l̥
(ʎ)	-	ʎ̥				ʎ̣		ʎ̥						ʎ̥					ʎ̥				ʎ̥	ʎ̥
	+	ʎ̥				ʎ̣		ʎ̥						ʎ̥					ʎ̥				ʎ̥	ʎ̥
(ʎ)	+	ʎ		ʎ̃	ʎ̃	ʎ̃							ʎ̃						ʎ̃				ʎ̃	ʎ̃
(ʎ)	+	ʎ̥				ʎ̣		ʎ̥						ʎ̥					ʎ̥				ʎ̥	ʎ̥
(J)	+	ɹ̥						ɹ̥				ɹ̥							ɹ̥				ɹ̥	ɹ̥

± 3¹ 3² 3³ 3⁴ 3⁵ 3⁶ 4¹ 4² 4³ 4⁴ 4⁵ 4⁶ 5¹ 5² 5³ 5⁴ 5⁵ 6¹ 6² 6³ 6⁴ 7¹ 7²

CONTOIDS (3)

canIPA *ʎ* *ɥ* *ɔ̃*

	VOICING	Palatal <i>rounded</i>	Uvularized palatal	Postpalatal	Postpalatal <i>rounded</i>	Prevelar	Prevelar <i>rounded</i>	Postalveol. prevelar <i>rounded</i> .	Provelar	Provelar <i>rounded</i>	VELAR	Velar <i>rounded</i>	Velar–bilabial	Labiodentalized velar	Velar–dental/alveolar	Uvulo-postalveolarized velar <i>r</i> .	UVULAR	Uvular <i>rounded</i>	Pharyngealized uvular	Pharyngeal. uvular <i>rounded</i> .	Prepharyngeal	PHARYNGEAL	Pharyngeal <i>rounded</i>	LARYNGEAL	Laryngeal <i>rounded</i>
(N)	+								ŋ																
(N)	+	ɲ	ɲ̠	ɲ̟		ŋ					ŋ	ɲ̠	ɲ̟	ɲ̟	ɲ̟		ɴ	ɲ̠	ɲ̟	ɲ̟					
(K)	-	ç	ç̠	ç̟		k̠					k	k̠	k̠	ç̟			q	q̠	q̟	q̟		ʁ̠			
(K)	+	ʝ	ʝ̠	ʝ̟		g̠					g	ʝ̠	ʝ̟	ç̟			ɢ	ɢ̠	ɢ̟	ɢ̟		ʕ̠			
(KX)	-	k̠ç̟	k̠ç̟̠	k̠ç̟̟		k̠x̠					k̠x̠	k̠x̠̠					k̠χ̠	k̠χ̠̠	k̠χ̠̟	k̠χ̠̟̠					
(KX)	+	g̠ʝ̟	g̠ʝ̟̠	g̠ʝ̟̟		g̠ʝ̟̠					g̠ʝ̟̠	g̠ʝ̟̠̠					g̠ʝ̟̠	g̠ʝ̟̠̠	g̠ʝ̟̠̟	g̠ʝ̟̠̟̠					
(KS)	-																								
(KS)	+																								
(X)	-	ç̠	ç̠̠	ç̠̟		x̠					x̠	x̠̠					χ̠	χ̠̠	χ̠̟	χ̠̟̠		ħ̠	ħ̠̠	ħ̠̟	ħ̠̟̠
(X)	+	ʝ̠	ʝ̠̠	ʝ̠̟		ʝ̠̠					ʝ̠̠	ʝ̠̠̠					ʝ̠̠	ʝ̠̠̠	ʝ̠̠̟	ʝ̠̠̟̠		ɦ̠	ɦ̠̠	ɦ̠̟	ɦ̠̟̠
(S)	-																								
(S)	+																								
(J)	-	ɥ̠	ɥ̠̠			ɥ̠̠	ɥ̠̠̠				ɥ̠̠̠	ɥ̠̠̠̠					ʝ̠̠̠	ʝ̠̠̠̠	ʝ̠̠̠̟	ʝ̠̠̠̟̠		ɰ̠	ɰ̠̠	ɰ̠̟	ɰ̠̟̠
(J)	+	ɥ̠̠	ɥ̠̠̠	ɥ̠̠̟		ɥ̠̠̠	ɥ̠̠̠̠		ɥ̠̠̠̠	w̠	ɥ̠̠̠̠	ɥ̠̠̠̠̠					ʝ̠̠̠̠	ʝ̠̠̠̠̠	ʝ̠̠̠̠̟	ʝ̠̠̠̠̟̠		ɰ̠̠	ɰ̠̠̠	ɰ̠̠̟	ɰ̠̠̟̠
(U)	+							ɰ̠̠̠̠								ʝ̠̠̠̠̠									
(R)	+																ʝ̠̠̠̠̠	ʝ̠̠̠̠̠̠							
(R)	-										ʝ̠̠̠̠̠						ʝ̠̠̠̠̠	ʝ̠̠̠̠̠̠	ʝ̠̠̠̠̠̠			ʝ̠̠̠̠̠̠			
(R)	+										ʝ̠̠̠̠̠						ʝ̠̠̠̠̠	ʝ̠̠̠̠̠̠	ʝ̠̠̠̠̠̠			ʝ̠̠̠̠̠̠			
(R)	+																ʝ̠̠̠̠̠								
(L)	+					ɬ̠					ɬ̠	ɬ̠̠			ɬ̠̠		ɬ̠̠								
(L)	-										ɬ̠̠̠						ɬ̠̠̠								
(L)	+										ɬ̠̠̠						ɬ̠̠̠								
(L)	+										ɬ̠̠̠̠	ɬ̠̠̠̠̠													
(J)	+					ɰ̠̠̠̠̠					ɰ̠̠̠̠̠	ɰ̠̠̠̠̠̠													

± 7² 7³ 7⁴ 7⁵ 8¹ 8² 8³ 8⁴ 8⁵ 9¹ 9² 9³ 9⁴ 9⁵ 9⁶ 10¹ 10² 10³ 10⁴ 11¹ 11² 11³ 12¹ 12²

When no symbol is given in square brackets, it is substituted with ⟨/⟩. For voiceless phones this appears first, while it is shown last for voiced phones. Thus, any possible ambiguity is avoided. Obviously, a symbol appearing alone stands for a laryngeal stop (or a phone with mixed phonation, or else with the phonation type indicated by the corresponding laryngogram).

An eight-pointed asterisk, ⟨*⟩, placed before the lips of a given orogram, highlights the few canonical articulations, which constitute the frame of the official consonant inventory (although, somehow, *canIPA* and *offIPA* symbols do not fully correspond). Instead, ⟨*⟩ indicates that nearby there is another orogram, with a slight articulatory difference, but it is represented with the same symbol. Finally, a small ring, ⟨°⟩, indicates that that articulation does not appear in the table of fig 10.1 (which –otherwise– would have become impossible to handle and see adequately).

In these synopses, we will use the most precise symbols, to couple each articulation exactly with its symbol, although for some of these, generally, commoner symbols can be used (as can be seen in § 10.2-8).

For all our articulations (with their unitary symbols), we thought it useful to add the corresponding *offIPA* ⟨transcriptions⟩ (given within ⟨⟩), in order to show their ⟨composition⟩ (almost as in chemical or algebraic formulae).

This will be useful both to understand the combinations of the few basic symbols with so many diacritics (even if we did not use all those which could have been necessary for absolute precision), and to highlight that it is unthinkable to do ⟨diacritical transcriptions⟩, as all other ⟨phonetic alphabets⟩ do.

Among the fundamental criteria of the original *IPA*, in fact, was also that of avoiding articulatory diacritics.

Let us recall that it is paramount to carefully observe the orograms, to constantly compare them, and to find similarities also between symbols, by starting from the official ones, from which the others have been derived (although with useful modifications and some necessary substitutions).

Nasals /N/ [N, ^N] (63)

10.2. They include three synopses grouped into ⟨front⟩ (34), ⟨back⟩ (21), and ⟨semi-nasal⟩ (8, which have no complete occlusion between the articulators).

10.2.1. ⟨Front⟩ nasals [N] (34).

- [(ᵐ), m] bilabial (= between the lips) ⟨[ᵐ, m]⟩ (≠, =)
- [/, ᵐ] bilabial rounded (= bilab. with lip rounding) ⟨[m^w]⟩
- [/, m̥] alveolarized bilabial (= bilab. with the tip approaching the alveolar ridge, but without contact) ⟨[m̥̣]⟩
- [(ᶲ), m̃] palatalized bilabial ⟨[ᵐ^j, m^j]⟩
- [(ᶫ), m̃] uvularized bilabial ⟨[ᵐ̤, m̤]⟩
- [/, m̥] labial-apical (= between the upper lip and the tip of the tongue) ⟨[m̥]⟩
- [/, m̥] [/, m̥] labiodentalized bilabial ⟨[m̥^v]⟩
- [(ᶫ), m̃] labiodental (= between the lower lip and the upper teeth) ⟨[ᵐ̤, m̤]⟩ (≠, =)
- [/, m̥] hyper-labiodental (= labiodent., but with a firmer contact, so that no air passes be-

- tween the teeth) <[m̥] >
- [/, m̥] labiodental rounded (= labiodent. + lip rounding) <[m̥^w] >
- [/, m̥] palatalized labiodental <[m̥^j] >
- [/, m̥] uvularized labiodental <[m̥^ɣ] >
- [(h), m̥] [(h), m̥] dental–bilabial (= *simult.* dent. & bilab.) <[m̥^h] >
- [/, m̥]⁺ bilabialized dental (= with secondary labialization) <[m̥^h] >
- [/, m̥]⁺ bilabialized palatalized dental (= with secondary labializ. & palataliz.) <[m̥^{hj}] >
- [/, n] [/, n] dental, or pre dental (= dent. with a *lowered* or *raised* tip) <[n̥] or [n̥⁺] >
- [/, n̥] [/, n̥] dental rounded <[n̥^w] >
- [/, n̥] [/, n̥] uvularized dental <[n̥^ɣ] >
- [/, n̥] [/, n] denti-alveolar (or postdental, or prealveolar) <[n̥] >
- [(h), n̥] alveolar–bilabial (= *simult.* alveol. & bilab.) <[n̥^w, n̥^w] > or <[n̥^wh, n̥^wh] >
- [/, n̥] labialized alveolar <[n̥^w] >
- [/, n̥] labio-palatalized alveolar (= with second. labializ. & palataliz.) <[n̥^{hj}] >
- [(h), n̥] alveolar (= between the alveoles and the tip of the tongue) <[n̥, n̥] > (≠, ≡)
- [/, n̥] alveolar rounded <[n̥^w] >
- [/, n̥] [/, n] labiodentalized alveolar <[n̥^v] >
- [(h), n̥] velarized alveolar <[n̥^ɣ, n̥^ɣ] >
- [/, n̥] [/, n̥] semi-velarized alveolar (with very slight velariz) <[n̥^ɣ] >

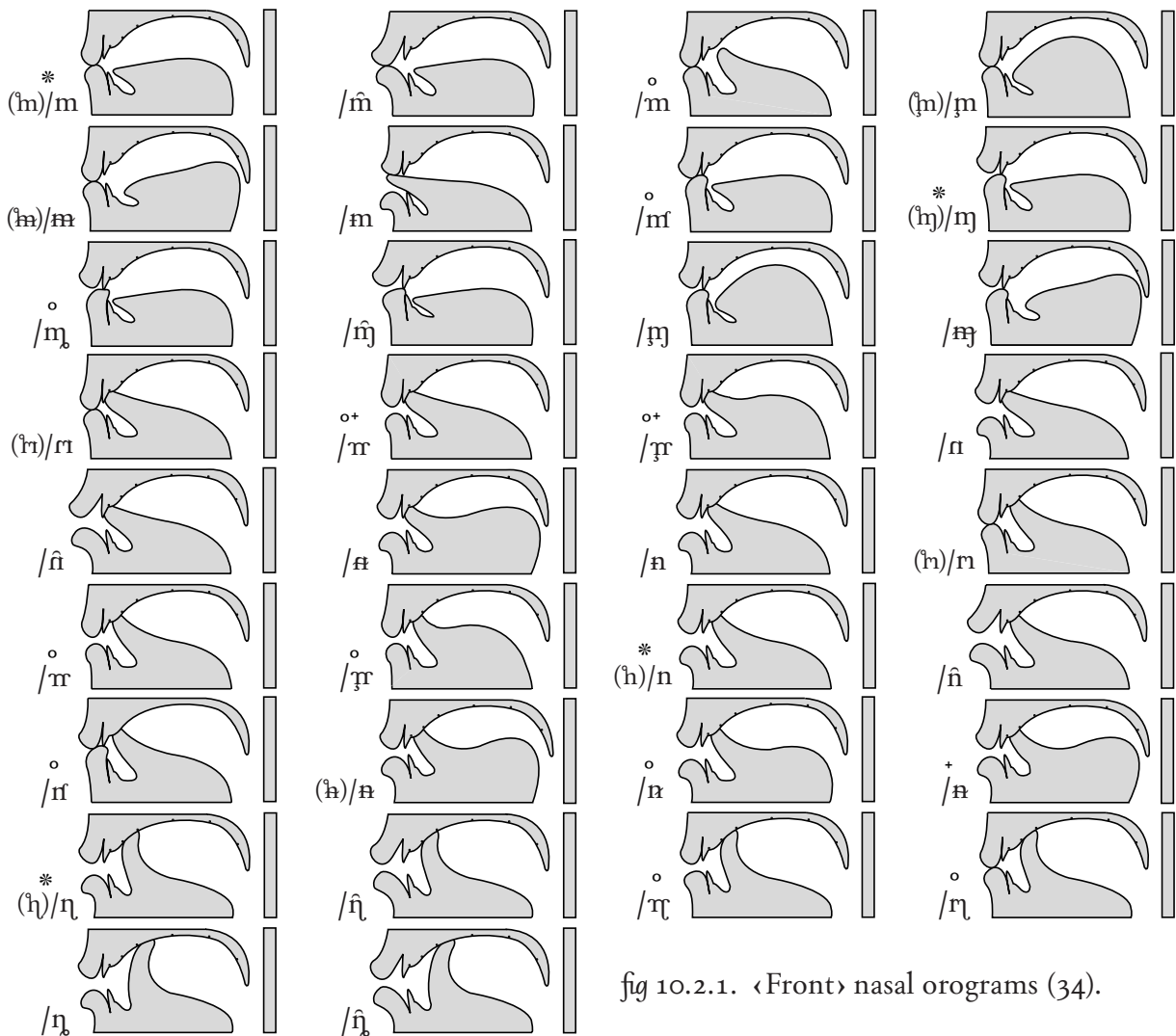


fig 10.2.1. <Front> nasal orograms (34).

- [ʰ, ɲ]⁺ uvularized alveolar <[ɲʷ, ɲʷ]⁺>
 [(h), ɲ] postalveolar: (apico-)... (= not laminal) <[ɲ̠, ɲ̠]⁺ (≠, =)>
 [ʃ, ɲ̠] postalveolar rounded: (apico-)... <[ɲ̠ʷ]⁺>
 [ʃ, ɲ̠] labialized postalveolar <[ɲ̠ʷ]⁺>
 [ʃ, ɲ̠] postalveolar–bilabial: (apico-)... (= *simult.* postalveol. & bilab.) <[ɲ̠ʷ]⁺>
 [ʃ, ɲ̠] apico-palatal (= between the [hard] palate and the tip) <[ɲ̠]⁺>
 [ʃ, ɲ̠] apico-palatal rounded (with lip rounding) <[ɲ̠ʷ]⁺>.

10.2.2. <Back> nasals [N] (21).

- [ʃ, ɲ̠] [ʃ, ɲ̠] postalveo-palatal: (lamino-)... <[ɲ̠̠, ɲ̠̠]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] velarized postalveo-palatal: (lamino-)... <[ɲ̠̠ʷ]⁺>
 [(h), ɲ̠] prepalatal: (lamino-)... (= between the prepalate and the lamina) <[ɲ̠̠ʲ, ɲ̠̠ʲ]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] labiodentalized prepalatal: (lamino-)... <[ɲ̠̠ʷʲ]⁺>
 [(h), ɲ̠] [ʃ, ɲ̠] palatal (= between the [hard] palate and the [medio]dorsum) <[ɲ̠̠, ɲ̠̠]⁺ (≠, =)>
 [ʃ, ɲ̠] [ʃ, ɲ̠] palatal rounded <[ɲ̠̠ʷ]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] uvularized palatal <[ɲ̠̠ʷ]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] postpalatal (= retracted palatal or advanced prevelar) <[ɲ̠̠]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] prevelar (= between the prevelum and the [post]dorsum) <[ɲ̠̠]⁺>
 [(h), ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] velar (= between the velum and the [post]dorsum) <[ɲ̠̠, ɲ̠̠]⁺ (≠, =)>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] velar rounded (with lip rounding) <[ɲ̠̠ʷ]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] velar–bilabial (= *simult.* velar and bilabial) <[ɲ̠̠ʷ]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] labiodentalized velar <[ɲ̠̠ʷ]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠]⁺ velar–dental (= *simult.* velar and dental) <[ɲ̠̠̠]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠]⁺ dentalized velar (with secondary dentalization) <[ɲ̠̠̠]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] velar–alveolar (= *simult.* velar and alveolar) <[ɲ̠̠̠]⁺>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] alveolarized velar <[ɲ̠̠̠]⁺>
 [(N), N] [ʃ, ɲ̠] [ʃ, ɲ̠] uvular (= between the uvula and the [post]dorsum) <[N̠, N̠]⁺ (≠, =)>
 [ʃ, ɲ̠] [ʃ, ɲ̠] [ʃ, ɲ̠] uvular rounded <[N̠ʷ]⁺>

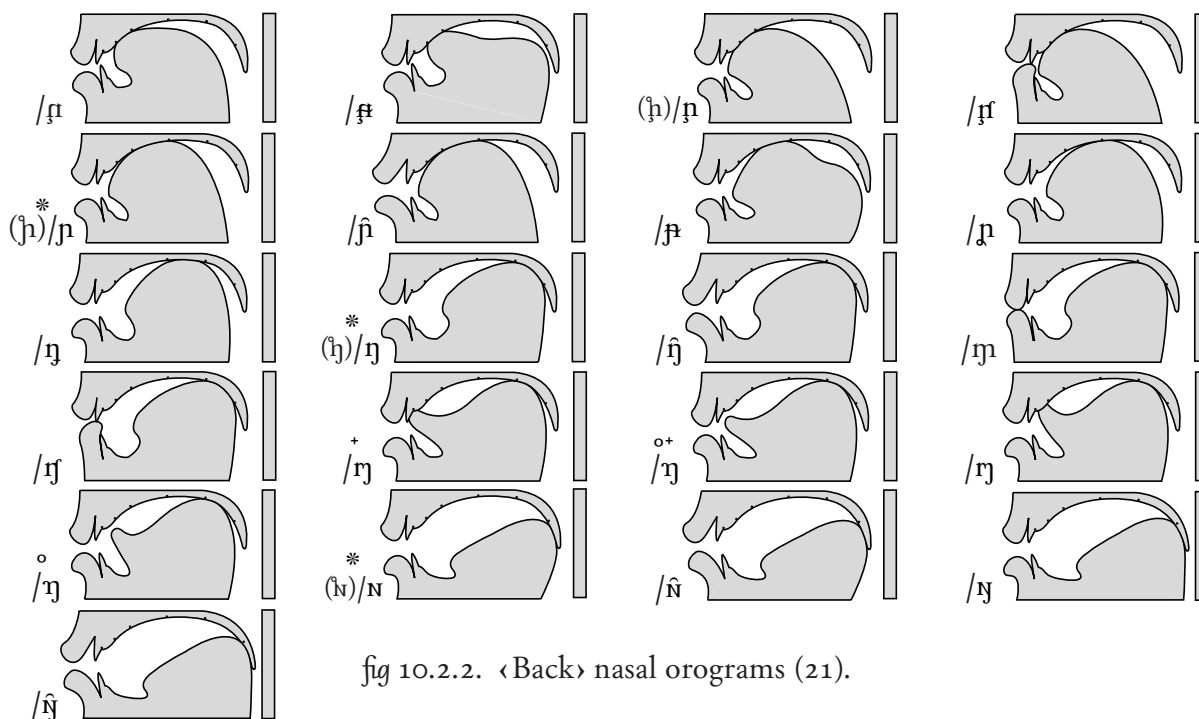


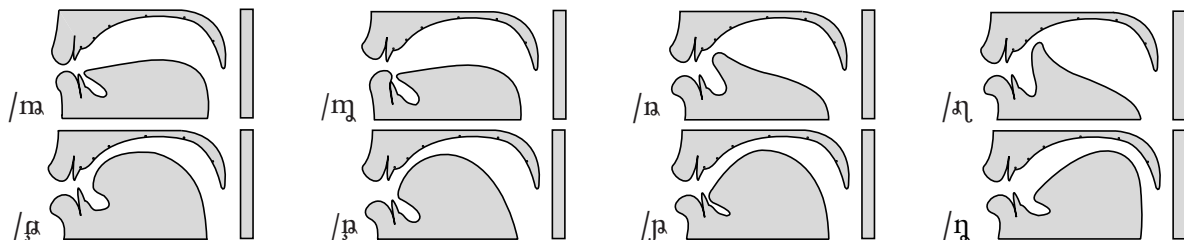
fig 10.2.2. <Back> nasal orograms (21).

- [/, ŋ] pharyngealized uvular ⟨[N^s] or [N̠]⟩
 [/, ɲ] pharyngealized uvular rounded ⟨[N^sw] or [N̠^w]⟩.

10.2.3. ⟨Semi-nasal⟩, or ⟨semi-... nasal⟩ (8).

- [/, m̠] [/, m] *semi*-bilabial (= bilabial, but with no full contact) ⟨[m̠]⟩
 [/, m̡] [/, m] *semi*-labiodental (= labiodental, with no full contact) ⟨[m̡]⟩
 [/, n̠] [/, n] *semi*-alveolar (= alveolar, but with no full contact) ⟨[n̠]⟩
 [/, ŋ̠] [/, ŋ] *semi*-postalveolar (= postalveolar, but with no full contact) ⟨[ŋ̠]⟩
 [/, ɲ̠] [/, ɲ] *semi*-postalveo-palatal (= postalveopalatal, with no full contact) ⟨[ɲ̠]⟩
 [/, p̠] [/, p] *semi*-prepalatal (= prepalatal, with no full contact) ⟨[p̠]⟩
 [/, j̠] [/, j] *semi*-palatal (= but with no full contact) ⟨[j̠]⟩
 [/, ŋ̡] [/, ŋ] *semi*-provelar (= provel., but with no full contact) ⟨[ŋ̡]⟩.

fig 10.2.3. ⟨Semi-nasal⟩ orograms (8).



Stops /K/ [K, ʁ] (68)

10.3. They include four synopses: ⟨front⟩ (32), ⟨back⟩ (24), and laryngeal (4); with the addition of ⟨semi-stops⟩ (8).

10.3.1. ⟨Front⟩ stops [K] (32).

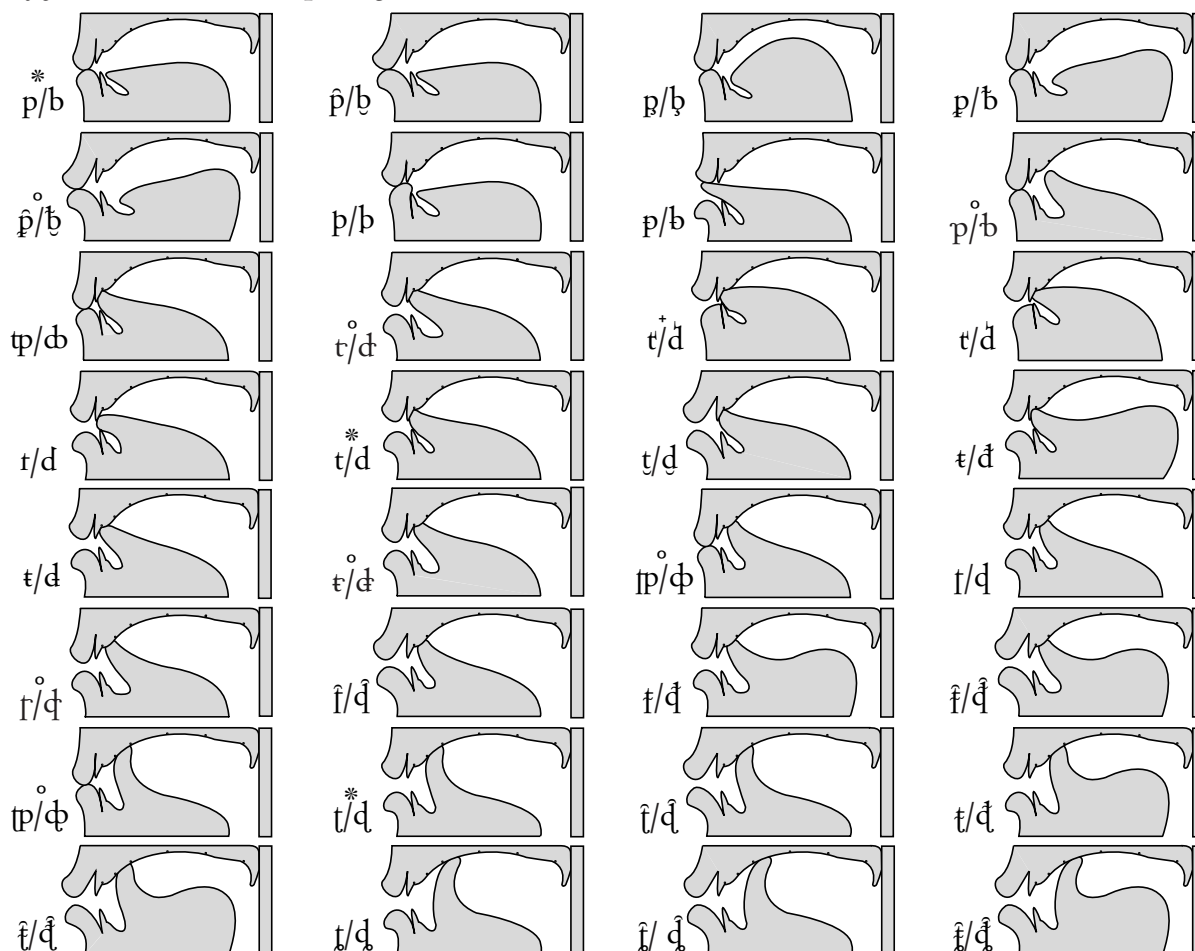
- [p, b] bilabial (= between the lips) ⟨[p, b]⟩ (=)
 [p̠, b̠] bilabial rounded (= bilabial with lip rounding) ⟨[p̠, b̠]⟩
 [p̟, b̟] palatalized bilabial ⟨[p̟, b̟]⟩
 [p̠̥, b̠̥] uvularized bilabial ⟨[p̠̥, b̠̥]⟩
 [p̠̥̠, b̠̥̠] uvularized bilabial rounded ⟨[p̠̥̠, b̠̥̠]⟩
 [p̟, b̟] [p, b] labiodental (=between the lower lip and the upper teeth) ⟨[p̟, b̟]⟩
 [p̟̠, b̟̠] labial-apical (= between the upper lip and the tip of the tongue) ⟨[p̟̠, b̟̠]⟩
 [p̟̠̥, b̟̠̥] semi-alveolarized bilabial (= bilab. with the tip approaching the alveoles, but with no contact) ⟨[p̟̠̥, b̟̠̥]⟩
 [tp̟, b̟] dental–bilabial (= *simult.* dent. & bilab.) ⟨[tp̟, b̟]⟩
 [t̟̠, d̟̠] semi-labialized dental (= with secondary labialization) ⟨[t̟̠, d̟̠]⟩
 [t̟̠̥, d̟̠̥]⁺ [t, d] labiodentalized dental (with a *lowered* tip) ⟨[t̟̠̥, d̟̠̥]⟩
 [t̟̠̥̠, d̟̠̥̠] [t, d] labiodentalized dental (with a *raised* tip) ⟨[t̟̠̥̠, d̟̠̥̠]⟩
 [t̟̠̥̠̠, d̟̠̥̠̠] [t, d] dental, or predental (with a *lowered* tip) ⟨[t̟̠̥̠̠, d̟̠̥̠̠]⟩
 [t̟̠̥̠̠̠, d̟̠̥̠̠̠] [t, d] dental, or lamino-dental (with a *raised* tip) ⟨[t̟̠̥̠̠̠, d̟̠̥̠̠̠]⟩
 [t̟̠̥̠̠̠̠, d̟̠̥̠̠̠̠] dental rounded ⟨[t̟̠̥̠̠̠̠, d̟̠̥̠̠̠̠]⟩
 [t̟̠̥̠̠̠̠̠, d̟̠̥̠̠̠̠̠] uvularized dental ⟨[t̟̠̥̠̠̠̠̠, d̟̠̥̠̠̠̠̠]⟩
 [t̟̠̥̠̠̠̠̠̠, d̟̠̥̠̠̠̠̠̠] [t, d] denti-alveolar (or postdental, or prealveolar) (with *raised* tip) ⟨[t̟̠̥̠̠̠̠̠̠, d̟̠̥̠̠̠̠̠̠]⟩
 [t̟̠̥̠̠̠̠̠̠̠, d̟̠̥̠̠̠̠̠̠̠] semi-labialized denti-alveolar (with no firm bilabial contact) ⟨[t̟̠̥̠̠̠̠̠̠̠, d̟̠̥̠̠̠̠̠̠̠]⟩

[p, ɸ]	alveolar–bilabial (= <i>simult.</i> alveol. & bilab.) <[p̄, ɸ̄b]>
[t, d]	alveolar (= between the alveoles and the tip of the tongue) <[t̄, d̄]>
[ɸ, ɸ̄]	semi-labialized alveolar (with no firm bilabial contact) <[p̄, ɸ̄b]>
[f̄, d̄]	alveolar rounded (with lip rounding) <[t̄ ^w , d̄ ^w >
[ɸ̄, d̄]	velarized alveolar <[t̄ ^ɣ , d̄ ^ɣ >
[ɸ̄, d̄]	velarized alveolar rounded <[t̄ ^{ɣw} , d̄ ^{ɣw} >
[p̄, ɸ̄]	postalveolar–bilabial: (apico-)... (= <i>simult.</i> postalveol. & bilab.) <[p̄, ɸ̄p̄]>
[t̄, d̄]	postalveolar: (apico-)... (= not laminal) <[t̄, d̄]> (=)
[f̄, d̄]	postalveolar rounded: (apico-)... <[t̄ ^w , d̄ ^w >
[ɸ̄, d̄]	velarized postalveolar: (apico-)... <[t̄ ^ɣ , d̄ ^ɣ >
[ɸ̄, d̄]	velarized postalveolar rounded: (apico-)... (with lip rounding) <[t̄ ^{ɣw} , d̄ ^{ɣw} >
[t̄, d̄]	apicalpalatal (= between the [hard] palate and the tip) <[t̄, d̄]>
[f̄, d̄]	apicalpalatal rounded (with lip rounding) <[t̄ ^w , d̄ ^w >
[ɸ̄, d̄]	velarized apicalpalatal rounded (with lip rounding) <[t̄ ^{ɣw} , d̄ ^{ɣw} >

10.3.2. <Back> stops [K] (24).

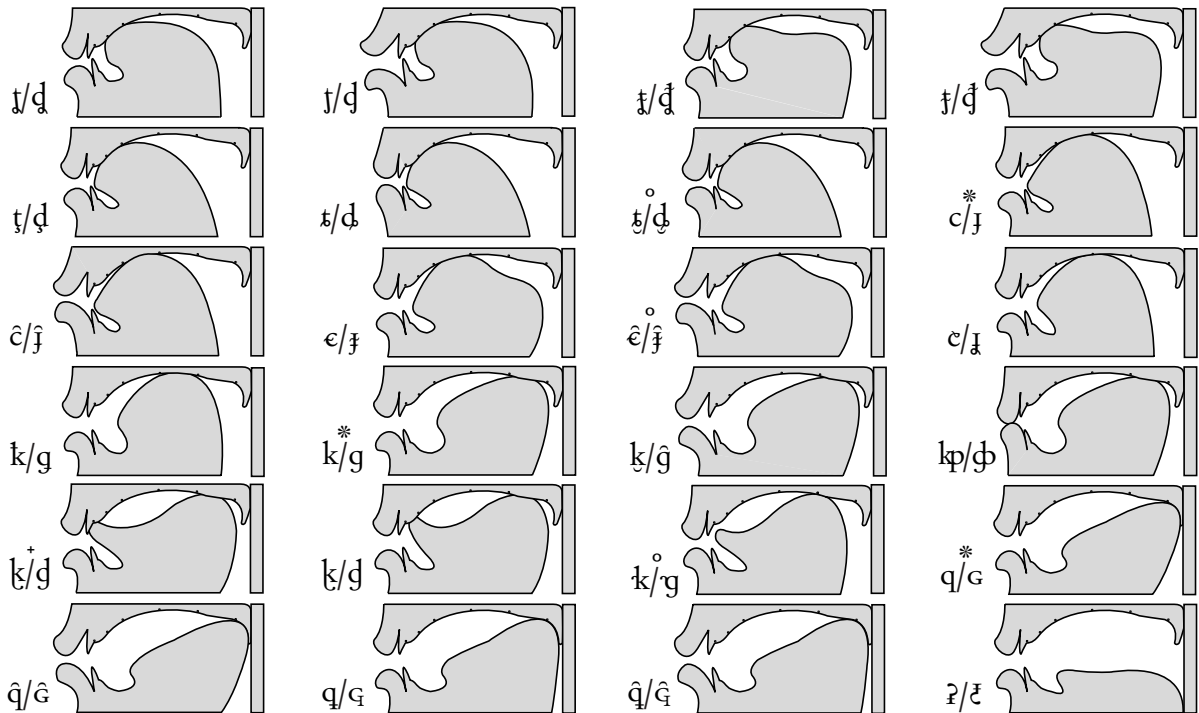
[t̄, d̄]	postalveo-palatal: (lamino-)... <[t̄ ^j , d̄ ^j >
[t̄, d̄]	postalveo-palatal protruded: (lamino-)... <[t̄ ^{jw} , d̄ ^{jw} >
[ɸ̄, d̄]	postalveo-velar: (lamino-)... <[t̄ ^ɣ , d̄ ^ɣ >
[ɸ̄, d̄]	postalveo-velar protruded: (lamino-)... <[t̄ ^{jw} , d̄ ^{jw} >
[t̄, d̄]	prepalatal: (lamino-)... (= between the prepalate and the lamina) <[t̄ ^j , d̄ ^j >

fig 10.3.1. <Front> stop orograms (32).



- [t̥, t̚] labialized prepalatal (with vertical labialization): (lamino-)... <[t̥j̥β, t̚j̥β]>
 [t̥̚, t̚̚] prepalatal rounded: (lamino-)... <[t̥̚j̥̚w, t̚̚j̥̚w]>
 [c, ɟ] palatal (= between the [hard] palate and the [medio]dorsum) <[c, ɟ]> (=)
 [c̠, ɟ̠] palatal rounded <[c̠w, ɟ̠w]>
 [ç, ʝ] uvularized palatal <[ç̠, ʝ̠]>
 [ç̠, ʝ̠] uvularized palatal rounded <[ç̠w, ʝ̠w]>
 [[c, ɟ̠]] [c, ɟ] postpalatal (= retracted palatal or advanced prevelar) <[c, ɟ̠]>
 [[k, g]] [k, g] prevelar (= between the prevelum and the [post]dorsum) <[k̠, ɡ̠]>
 [k, g] velar (= between the velum and the [post]dorsum) <[k, g]> (=)
 [k̠, ɡ̠] velar rounded (with lip rounding) <[k̠w, ɡ̠w]>
 [kp, ɸ] velar–bilabial (= *simult.* velar and bilabial) <[kp̠, ɸ̠]>
 [k̠, ɡ̠]⁺ velar–dental (= *simult.* velar and dental) <[k̠t̠, ɡ̠d̠]>
 [k̠, ɡ̠] velar–alveolar (= *simult.* velar and alveolar) <[k̠t̠, ɡ̠d̠]>
 [[k̠, ɣ]] semi-dentalized velar (with the tip approaching the teeth, but with no contact) <[k̠t̠, ɣ̠]>
 [q, ɢ] uvular (= between the uvula and the [post]dorsum) <[q, ɢ]> (=)
 [q̠, ɢ̠] uvular rounded <[q̠w, ɢ̠w]>
 [q̠, ɢ̠] pharyngealized uvular <[q̠̠, ɢ̠̠]>
 [q̠̠, ɢ̠̠] pharyngealized uvular rounded <[q̠̠w, ɢ̠̠w]>
 [ʀ, ʁ] pharyngeal (= between the lower pharynx and the root of the tongue) <[ʀ, ʁ]>.

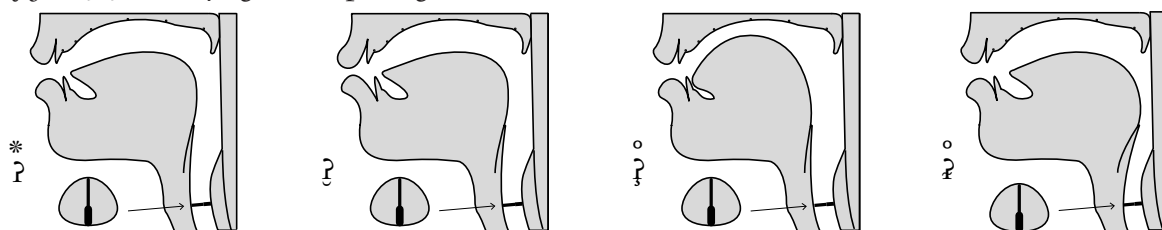
fig 10.3.2. <Back> stop orograms (24).



10.3.3. <Laryngeal> stops [ʔ] (4).

- [ʔ] laryngeal (= between the vocal folds, including the arytenoid cartilages) <[ʔ]> (=)
 [[ʔ]] [ʔ] laryngeal rounded (with lip rounding) <[ʔ̠w]>
 [ʔ̠] [ʔ] palatalized laryngeal (with the dorsum *raised* towards the [hard] palate) <[ʔ̠j̠]>
 [ʔ̠̠] [ʔ] uvularized laryngeal (with the [post]dorsum *raised* towards the uvula) <[ʔ̠̠̠]>.

fig 10.3.3. ‹Laryngeal› stop orograms (4).



10.3.4. Some ‹*semi-stops*› are also possible, which are less firmly articulated (ie with partial occlusion). They remain different both from very tense constrictives and very lax stopstrictives. We will indicate here only those produced at the most important places of articulation, practically the official ones (8). Their generic symbol is [K], whereas they are represented with the diacritic shown in fig 10.3.4. It is important to observe well (in the nearby enlargements) the non-contact at the articulation places. For the laryngeal phone of fig 10.3.3, but most of all of fig 4.4.B.

[[p̣, ḅ]]	[p, b] bilabial (with no full contact) ‹[p̣, ḅ]›
[[ṭ, ḍ]]	[t, d] dentale (with no full contact) ‹[ṭ, ḍ]›
[[ṭ̣, ḍ̣]]	[t, d] alveolar (with no full contact) ‹[ṭ̣, ḍ̣]›
[[ṭ̣̣, ḍ̣̣]]	[t, d] postalveolar (with no full contact) ‹[ṭ̣̣, ḍ̣̣]›
[[ç̣, ʝ̣]]	[ç, ʝ] palatal (with no full contact) ‹[ç̣, ʝ̣]›
[[ḳ, ɡ̣]]	[k, ɡ] velar (with no full contact) ‹[ḳ, ɡ̣]›
[[q̣, ɢ̣]]	[q, ɢ] uvular (with no full contact) ‹[q̣, ɢ̣]›
[[ʔ̣]]	[ʔ] laryngeal (with no full contact) ‹[ʔ̣]›

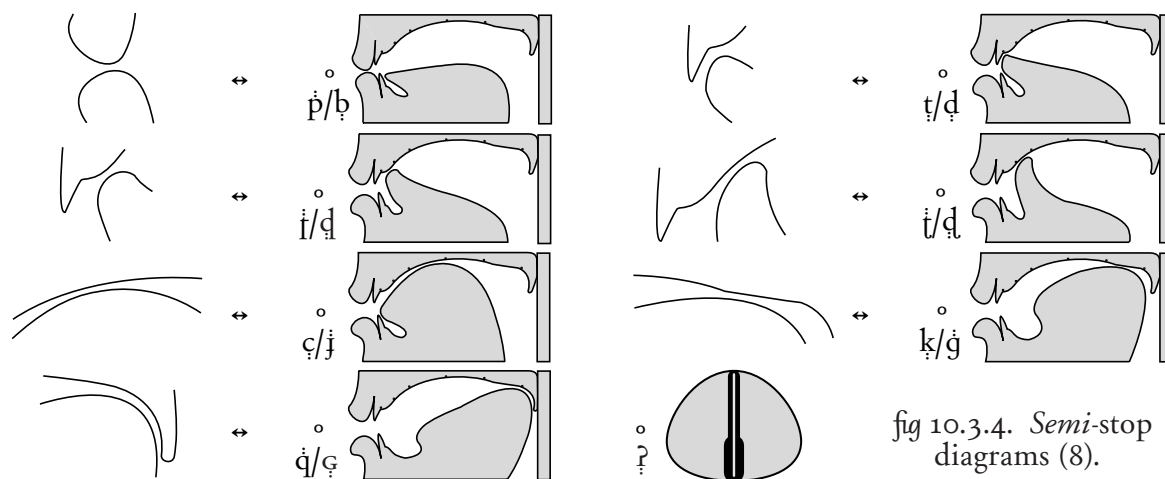


fig 10.3.4. Semi-stop diagrams (8).

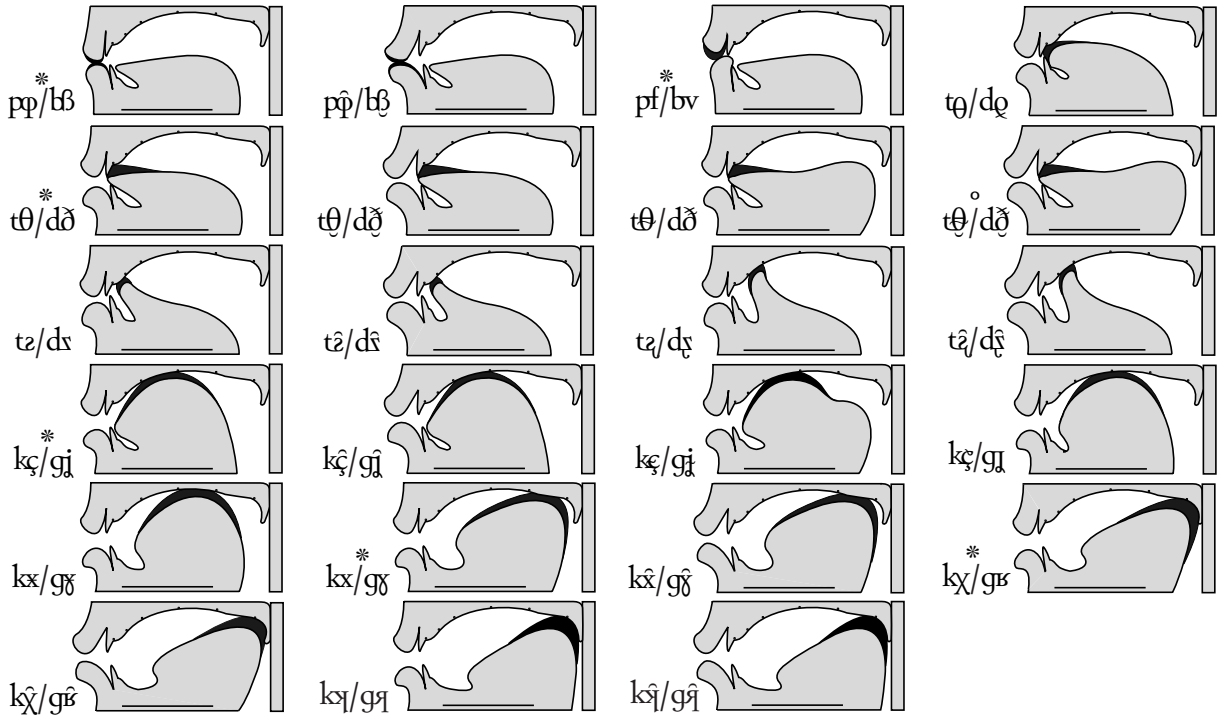
Stop-strictives /KΣ/ [KX, K^X, KS, K^S, KĹ, KṘ, K^X, K^S] (93)

10.4. They include six synopses of slit (23) and grooved (34) phones; also some laterals (11) and trills (4), since for these phones the stopstrictive manner prevails. In addition, we have the synopses of flat (5) and grooved (6) stop-*semi*-constrictives. There are also the lists of flat (5) and grooved (5) *semi-stop*-constrictives, but without orogram synopses, since it is mainly a matter of tension ^{or} internal duration (which are difficult to show on common orograms).

10.4.1. *Slit stopstrictives* /KX/ [KX] (23).

- [pp, bβ] bilabial (= between the lips) <[p̄φ̄, b̄β̄]>
- [p̄φ̄, b̄β̄] bilabial rounded (= bilabial with lip rounding) <[p̄φ̄^w, b̄β̄^w] >
- [p̄f̄, b̄v̄] labiodental (= between the lower lip and the upper teeth) <[p̄f̄, b̄v̄]>
- [t̄θ̄, d̄ɸ̄] dental, or pre dental (with a *lowered* tip) <[t̄θ̄, d̄ɸ̄]>
- [t̄θ̄, d̄ð̄] dental, or lamino-dental (with a *raised* tip of the tongue) <[t̄θ̄, d̄ð̄]>
- [t̄θ̄, d̄ð̄] dental rounded (with *raised* tip of the tongue) <[t̄θ̄^w, d̄ð̄^w] >
- [t̄θ̄, d̄ð̄] uvularized dental (with *raised* tip) <[t̄θ̄^ʷ, d̄ð̄^ʷ] >
- [t̄θ̄, d̄ð̄] uvularized dental rounded (with *raised* tip) <[t̄θ̄^{wʷ}, d̄ð̄^{wʷ}] >
- [t̄ɛ̄, d̄ɟ̄] alveolar (= between the alveoles and the tip of the tongue) <[t̄ɛ̄[‡], d̄ɟ̄[‡]] >
- [t̄ɛ̄, d̄ɟ̄] alveolar rounded (= alveolar with lip rounding) <[t̄ɛ̄^w, d̄ɟ̄^w] >
- [t̄ɛ̄, d̄ɟ̄] postalveolar: (apico-)... (= not laminal) <[t̄ɛ̄[‡], d̄ɟ̄[‡]] >
- [t̄ɛ̄, d̄ɟ̄] postalveolar rounded: (apico-)... <[t̄ɛ̄^w, d̄ɟ̄^w] >
- [k̄ç̄, ḡʝ̄] palatal (= between the [hard] palate and the [medio]dorsum) <[k̄ç̄, ḡʝ̄]>
- [k̄ç̄, ḡʝ̄] palatal rounded (with lip rounding) <[k̄ç̄^w, ḡʝ̄^w] >
- [k̄ç̄, ḡʝ̄] uvularized palatal <[k̄ç̄^ʷ, ḡʝ̄^ʷ] >
- [k̄ç̄, ḡʝ̄] postpalatal (= retracted palatal or advanced prevelar) <[k̄ç̄, ḡʝ̄]>
- [k̄x̄, ḡɣ̄] [kx, gɣ] prevelar (= between the prevelum and the [post]dorsum) <[k̄x̄, ḡɣ̄]>
- [k̄x̄, ḡɣ̄] velar (= between the velum and the [post]dorsum) <[k̄x̄, ḡɣ̄]>
- [k̄x̄, ḡɣ̄] velar rounded (with lip rounding) <[k̄x̄^w, ḡɣ̄^w] >
- [k̄χ̄, ḡʁ̄] uvular (= between the uvula and the [post]dorsum) <[k̄χ̄, ḡʁ̄]>
- [k̄χ̄, ḡʁ̄] uvular rounded <[k̄χ̄^w, ḡʁ̄^w] >
- [k̄ŋ̄, ḡɲ̄] pharyngealized uvular <[k̄ŋ̄[‡], ḡɲ̄[‡]] >
- [k̄ŋ̄, ḡɲ̄] pharyngealized uvular rounded <[k̄ŋ̄^w, ḡɲ̄^w] >.

fig 10.4.1. Flat stop-strictive orograms (23).



10.4.2. *Grooved stopstrictives* /KS/ [KS] (34).

- [t̥, d̥] ^(*) labiodentalized dental (with a *lowered* or *raised* tip of the tongue) < [t̥^v, d̥^v] >
 [t̥, d̥] uvulo-labiodentalized dental (with a *lowered* or *raised* tip) < [t̥^v, d̥^v] >
 [t̥, d̥] dental (with a *lowered* tip) < [t̥_̄, d̥_̄] >
 [t̥̠, d̥̠] dental rounded (with a *lowered* tip + lip rounding) < [t̥^w, d̥^w] >
 [t̥̠, d̥̠] [t̥, d̥] denti-alveolar (with a *raised* tip) < [t̥̠, d̥̠] >
 [t̥̠, d̥̠] [t̥, d̥] denti-alveolar rounded (with a *raised* tip + lip rounding) < [t̥^w, d̥^w] >
 [t̥, d̥] alveolar (between the alveoles and the tip) < [t̥, d̥] >
 [t̥̠, d̥̠] alveolar rounded < [t̥^w, d̥^w] >
 [t̥̠, d̥̠] alveolar protruded < [t̥^w, d̥^w] >
 [t̥, d̥] velarized alveolar < [t̥^v, d̥^v] >
 [t̥̠, d̥̠] velarized alveolar rounded (with lip rounding) < [t̥^w, d̥^w] >
 [t̥, d̥] postalveolar: (apico-)... (= not laminal) < [t̥̠, d̥̠] >
 [t̥̠, d̥̠] postalveolar rounded: (apico-)... (= not laminal) < [t̥^w, d̥^w] >
 [t̥, d̥] velarized postalveolar: (apico-)... (= not laminal) < [t̥^v, d̥^v] >
 [t̥̠, d̥̠] postalveolar rounded: (apico-)... (= not laminal) < [t̥^w, d̥^w] >
 [t̥̠, d̥̠] apicopalatal (= between the [hard] palate and the tip) < [t̥̠, d̥̠] >
 [t̥̠, d̥̠] apicopalatal rounded (with lip rounding) < [t̥^w, d̥^w] >
 [t̥̠, d̥̠] postalveo-palatal: (lamino-)... (between the postalveolar area and the lamina, with

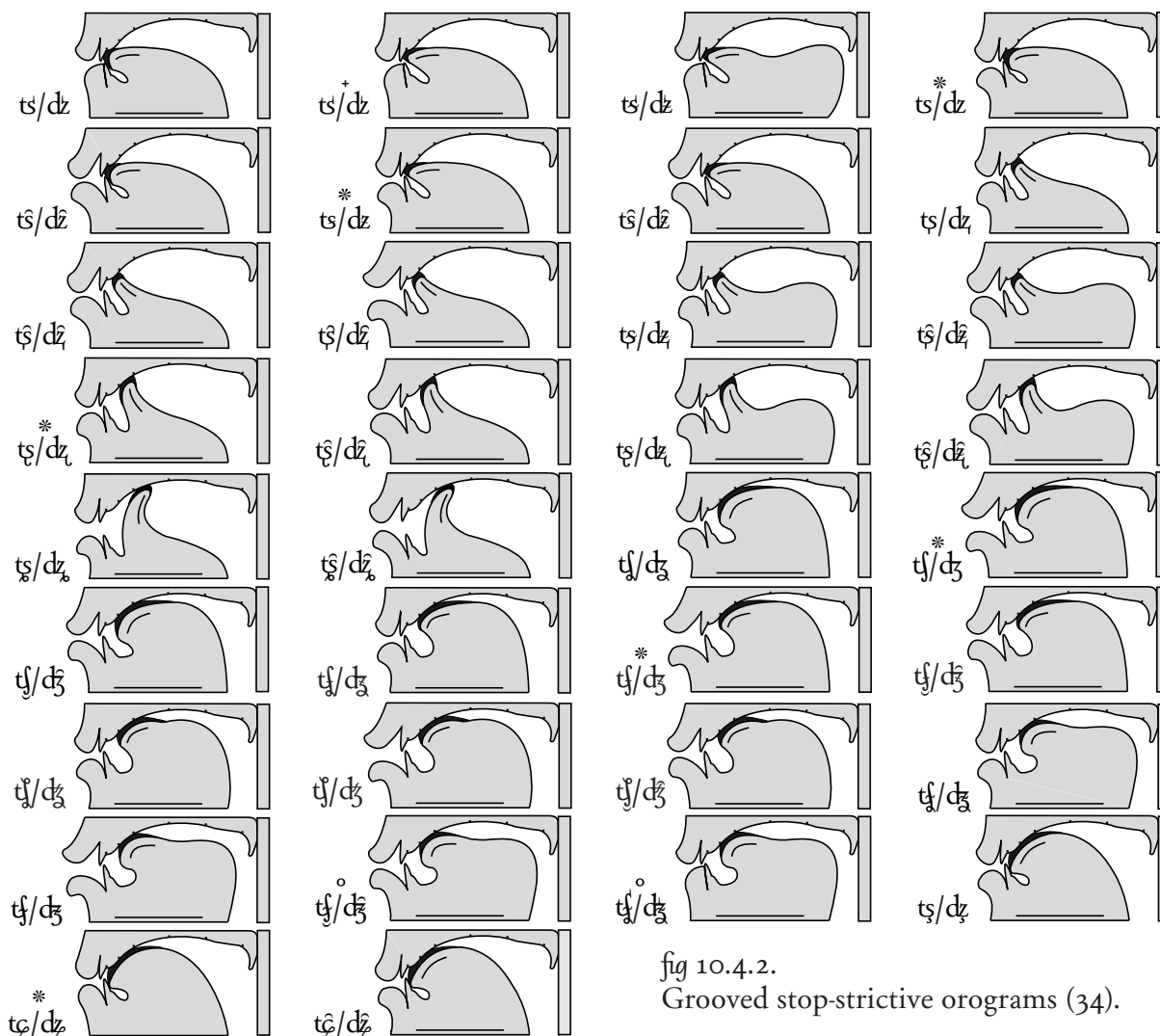


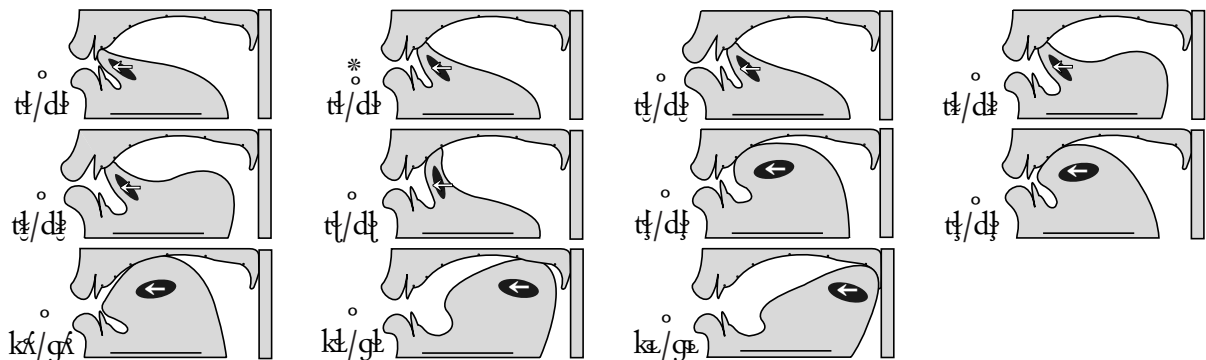
fig 10.4.2.
Grooved stop-strictive orograms (34).

- raising of the mediodorsum, and with a *lowered* tip) $\langle [t_{\text{d}}^j, d_{\text{d}}^j] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-palatal protruded: (lamino-)... (with protr., not just rounding) $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-palatal over-rounded: (lamino-)... (with rounding and protr.) $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[[t_{\text{d}}, d_{\text{d}}]]$ $[t_{\text{d}}, d_{\text{d}}]$ postalveo-palatal: (lamino-)... (between the postalveolar area and the lamina, with raising of the mediodorsum, and with *raised* tip) $\langle [t_{\text{d}}^j, d_{\text{d}}^j] \rangle$
- $[[t_{\text{d}}, d_{\text{d}}]]$ $[t_{\text{d}}, d_{\text{d}}]$ postalveo-palatal protruded: (lamino-)... $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[[t_{\text{d}}, d_{\text{d}}]]$ $[t_{\text{d}}, d_{\text{d}}]$ postalveo-palatal over-rounded: (lamino-)... $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-prevelar: (lamino-)... (with raising of the dorsum towards the prevelum, not towards the palate) $\langle [t_{\text{d}}^v, d_{\text{d}}^v] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-prevelar protruded: (lamino-)... $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-prevelar over-rounded: (lamino-)... $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-velar: (lamino-)... (with raising of the dorsum towards the vel.) $\langle [t_{\text{d}}^v, d_{\text{d}}^v] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-velar protruded: (lamino-)... $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ postalveo-velar over-rounded: (lamino-)... $\langle [t_{\text{d}}^w, d_{\text{d}}^w] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ labiodentalized postalveo-velar: (lamino-)... $\langle [t_{\text{d}}^v, d_{\text{d}}^v] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ prepalatal: (lamino-)... (= between the prepalate and the lamina) $\langle [t_{\text{d}}^j, d_{\text{d}}^j] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ bilabialized prepalatal: (lamino-)... (with vertical labialization) $\langle [t_{\text{d}}^{j\beta}, d_{\text{d}}^{j\beta}] \rangle$
- $[t_{\text{d}}, d_{\text{d}}]$ prepalatal rounded: (lamino-)... $\langle [t_{\text{d}}^{jw}, d_{\text{d}}^{jw}] \rangle$.

10.4.3. Lateral stopstrictives [K L] (11).

- $[[t_{\text{L}}, d_{\text{L}}]]$ $[t_{\text{L}}, d_{\text{L}}]$ dental (with lateral contraction of the tongue) $\langle [t_{\text{L}}, d_{\text{L}}] \rangle$
- $[t_{\text{L}}, d_{\text{L}}]$ alveolar (with lateral contraction) $\langle [t_{\text{L}}, d_{\text{L}}] \rangle$
- $[t_{\text{L}}, d_{\text{L}}]$ alveolar rounded (with lateral contraction) $\langle [t_{\text{L}}^w, d_{\text{L}}^w] \rangle$
- $[t_{\text{L}}, d_{\text{L}}]$ velarized alveolar (with lateral contraction) $\langle [t_{\text{L}}^v, d_{\text{L}}^v] \rangle$
- $[t_{\text{L}}, d_{\text{L}}]$ velarized alveolar rounded (with lateral contraction) $\langle [t_{\text{L}}^w, d_{\text{L}}^w] \rangle$
- $[t_{\text{L}}, d_{\text{L}}]$ postalveolar (with lateral contraction) $\langle [t_{\text{L}}, d_{\text{L}}] \rangle$
- $[[t_{\text{L}}, d_{\text{L}}]]$ $[t_{\text{L}}, d_{\text{L}}]$ postalveo-palatal (with lateral contraction) $\langle [t_{\text{L}}^j, d_{\text{L}}^j] \rangle$
- $[t_{\text{L}}, d_{\text{L}}]$ prepalatal (with lateral contraction) $\langle [t_{\text{L}}^j, d_{\text{L}}^j] \rangle$
- $[k_{\text{L}}, g_{\text{L}}]$ palatal (with lateral contraction) $\langle [c_{\text{L}}, j_{\text{L}}] \rangle$
- $[k_{\text{L}}, g_{\text{L}}]$ velar (with lateral contraction) $\langle [k_{\text{L}}, g_{\text{L}}] \rangle$
- $[k_{\text{L}}, g_{\text{L}}]$ uvular (with lateral contraction) $\langle [k_{\text{L}}, g_{\text{L}}] \rangle$.

fig 10.4.3. Lateral stop-strictive orograms (11).

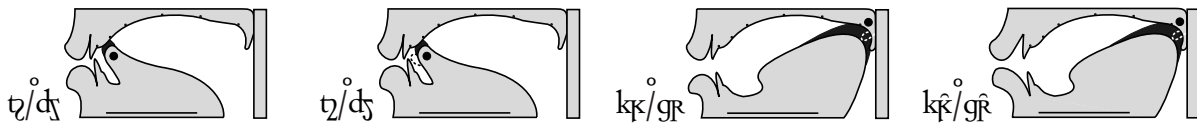


10.4.4. Trilled and *tapped* stopstrictives [KR] (4).

- $[t_{\text{r}}, d_{\text{r}}]$ *tapped* alveolar $\langle [t_{\text{r}}, d_{\text{r}}] \rangle$
- $[t_{\text{r}}, d_{\text{r}}]$ *trilled* alveolar $\langle [t_{\text{r}}, d_{\text{r}}] \rangle$

[[k̠̠, g̠̠] trilled uvular <[q̠̠^ɹ, g̠̠^ɹ]
 [[k̠̠̠, g̠̠̠] trilled uvular rounded <[q̠̠̠^{ɹw}, g̠̠̠^{ɹw}].

fig 10.4.4. Tap & trill stop-strictive orograms (4).

10.4.5. Flat stop-semi-constrictives [K^X] (5).

[[p̠̠, b̠̠] [pf, bv] labiodental (= with semi-constrictive second element) <[p̠̠̠, b̠̠̠]
 [[t̠̠, d̠̠] [t̠̠, d̠̠] dental (= with semi-constrictive second element) <[t̠̠̠, d̠̠̠]
 [[k̠̠, g̠̠] [kç, gj] palatal (= with semi-constrictive second element) <[ç̠̠̠, j̠̠̠]
 [[k̠̠, g̠̠] [kx, gx] velar (= with semi-constrictive second element) <[k̠̠̠, g̠̠̠]
 [[k̠̠̠, g̠̠̠] [k̠̠̠, g̠̠̠] velar rounded (= with semi-constrictive second element) <[k̠̠̠̠, g̠̠̠̠].

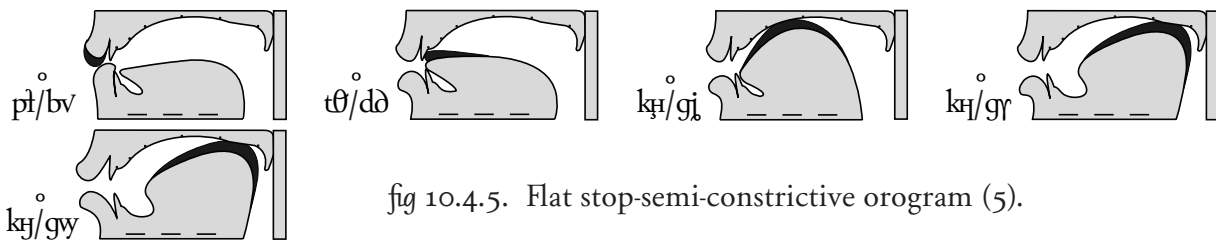
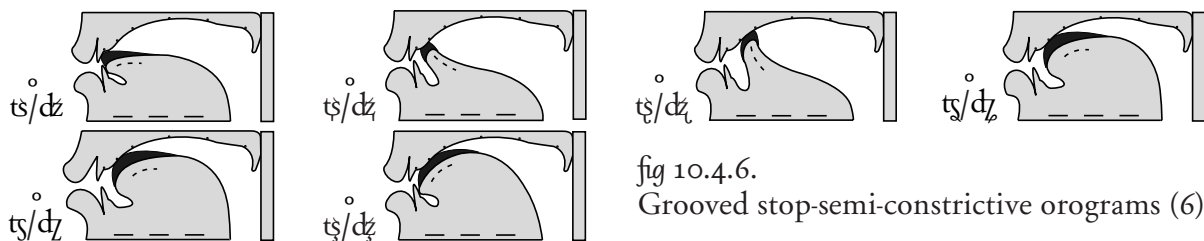


fig 10.4.5. Flat stop-semi-constrictive orogram (5).

10.4.6. Grooved stop-semi-constrictives [K^S] (6).

[[t̠̠, d̠̠] [t̠̠, d̠̠] dental (= with semi-constrictive second element) <[t̠̠̠, d̠̠̠]
 [[t̠̠, d̠̠] [t̠̠, d̠̠] alveolar (= with semi-constrictive second element) <[t̠̠̠, d̠̠̠]
 [[t̠̠, d̠̠] [t̠̠, d̠̠] postalveolar (= with semi-constrictive second element) <[t̠̠̠, d̠̠̠]
 [[t̠̠, d̠̠] [t̠̠̠, d̠̠̠] postalveo-palatal (= with semi-constrictive second element) <[t̠̠̠̠, d̠̠̠̠]
 [[t̠̠, d̠̠] [t̠̠̠, d̠̠̠] postalveo-palatal protruded (= with semi-constr. second element) <[t̠̠̠̠̠, d̠̠̠̠̠]
 [[t̠̠, d̠̠] [t̠̠̠, d̠̠̠] prepalatal (= with semi-constrictive second element) <[t̠̠̠̠, d̠̠̠̠].

fig 10.4.6.
Grooved stop-semi-constrictive orograms (6).

10.4.7. Flat semi-stop-strictives [K^X] (5). They are given without orograms, since the differences would not be clearly visible, although their mechanism is easy to guess (cf fig 10.3.4).

[[p̠̠̠, b̠̠̠] [pf, bv] labiodental (= with reduced first element) <[p̠̠̠̠, b̠̠̠̠]
 [[t̠̠̠, d̠̠̠] [t̠̠̠, d̠̠̠] dental (= with reduced first element) <[t̠̠̠̠, d̠̠̠̠]
 [[k̠̠̠, g̠̠̠] [kç, gj] palatal (= with reduced first element) <[ç̠̠̠̠, j̠̠̠̠]
 [[k̠̠̠, g̠̠̠] [kx, gx] velar (= with reduced first element) <[k̠̠̠̠, g̠̠̠̠]
 [[k̠̠̠̠, g̠̠̠̠] [k̠̠̠̠, g̠̠̠̠] velar rounded (= with reduced first element) <[k̠̠̠̠̠, g̠̠̠̠̠].

10.4.8. *Grooved semi-stop-strictives* [KS] (5). Equally, without orograms.

[[t̥, d̥z]]	[t̥, d̥z] dental (= with reduced first element) < [t̥̄, d̥z̄] >
[[t̥̄, d̥z̄]]	[t̥̄, d̥z̄] postalveolar (= with reduced first element) < [t̥̄̄, d̥z̄̄] >
[[t̥̄̄, d̥z̄̄]]	[t̥̄̄, d̥z̄̄] postalveo-palatal (= with reduced first element) < [t̥̄̄̄, d̥z̄̄̄] >
[[t̥̄̄̄, d̥z̄̄̄]]	[t̥̄̄̄, d̥z̄̄̄] postalveo-palatal protruded (= with reduced first element) < [t̥̄̄̄̄, d̥z̄̄̄̄] >
[[t̥̄̄̄̄, d̥z̄̄̄̄]]	[t̥̄̄̄̄, d̥z̄̄̄̄] prepalatal (= with reduced first element) < [t̥̄̄̄̄̄, d̥z̄̄̄̄̄] >

Constrictives /Σ/ [X, H, S, X̄, S̄] (90)

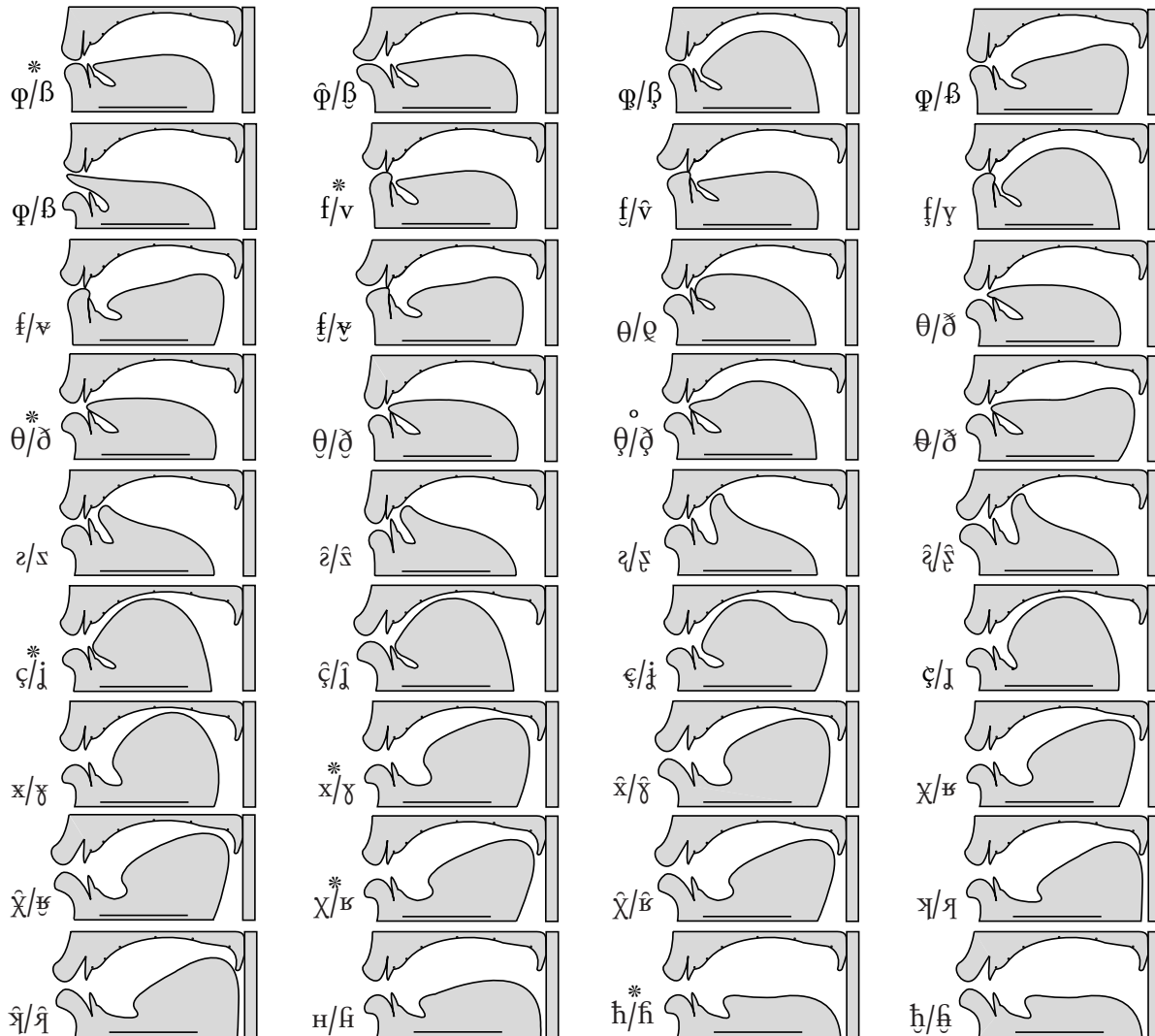
10.5. They comprise five synopses for slit (36) –including laryngeals (2 × 2)– and grooved phones (35); besides, there are those of flat (7) and grooved (6) semi-constrictives. Instead, the synopses of lateral and trilled constrictives are placed among the corresponding manners, since that is their prevailing aspect.

10.5.1. *Slit constrictives* [X] (36).

[ϕ, β]	bilabial (= between the lips) < [ϕ, β] > (≠)
[ϕ̄, β̄]	bilabial rounded (= bilabial with lip rounding) < [ϕ̄, β̄] >
[ϕ̄̄, β̄̄]	palatalized bilabial < [ϕ̄̄, β̄̄] >
[ϕ̄̄̄, β̄̄̄]	uvularized bilabial < [ϕ̄̄̄, β̄̄̄] >
[ϕ̄̄̄̄, β̄̄̄̄]	labial-apical (= between the upper lip and the tip of the tongue) < [ϕ̄̄̄̄, β̄̄̄̄] >
[f, v]	labiodental (= between the lower lip and the upper teeth) < [f, v] > (=)
[f̄, v̄]	labiodental rounded < [f̄, v̄] >
[f̄̄, v̄̄]	palatalized labiodental < [f̄̄, v̄̄] >
[f̄̄̄, v̄̄̄]	uvularized labiodental < [f̄̄̄, v̄̄̄] >
[f̄̄̄̄, v̄̄̄̄]	uvularized labiodental rounded < [f̄̄̄̄, v̄̄̄̄] >
[[θ, ð]]	[θ, ð] dental or pre-dental (with a <i>lowered</i> tip), or predorsal-dental < [θ̄, ð̄] >
[[θ̄, ð̄]]	[θ̄, ð̄] pro-dental (with a <i>raised</i> and protruding tip), or interdental < [θ̄̄, ð̄̄] >
[θ, ð]	dental (with a <i>raised</i> tip) < [θ, ð] > (=)
[θ̄, ð̄]	dental rounded (with a <i>raised</i> tip) < [θ̄̄, ð̄̄] >
[[θ̄̄, ð̄̄]]	([θ̄̄, ð̄̄]) palatalized dental (with a <i>lowered</i> or <i>raised</i> tip) < [θ̄̄̄, ð̄̄̄] >
[θ̄̄̄, ð̄̄̄]	uvularized dental (with a <i>raised</i> tip) < [θ̄̄̄̄, ð̄̄̄̄] >
[z, ʒ]	alveolar < [z̄, ʒ̄] >
[z̄, ʒ̄]	alveolar rounded < [z̄̄, ʒ̄̄] >
[z̄̄, ʒ̄̄]	postalveolar: (apico-)... (not lam.) < [z̄̄̄, ʒ̄̄̄] >
[z̄̄̄, ʒ̄̄̄]	postalveolar rounded: (apico-)... (not lam.) < [z̄̄̄̄, ʒ̄̄̄̄] >
[ç, j]	palatal < [ç, j] > (=, ≠)
[ç̄, j̄]	palatal rounded < [ç̄, j̄] >
[ç̄̄, j̄̄]	uvularized palatal < [ç̄̄, j̄̄] >
[[ç̄̄̄, j̄̄̄]]	[ç̄̄̄, j̄̄̄] postpalatal (= retracted palatal or advanced prevelar) < [ç̄̄̄̄, j̄̄̄̄] >
[[x, ɣ]]	[x, ɣ] prevelar < [x̄, ɣ̄] >
[x, ɣ]	velar < [x, ɣ] > (=, ≡)
[x̄, ɣ̄]	velar rounded (or [x̄, ɣ̄], cf § 9.14) < [x̄̄, ɣ̄̄] >
[[χ, ʁ]]	[χ, ʁ] preuvular < [χ̄, ʁ̄] >
[[χ̄, ʁ̄]]	[χ̄, ʁ̄] preuvular rounded < [χ̄̄, ʁ̄̄] >

- [χ, ɣ] uvular <[χ, ɣ]> (=)
- [χ̠, ɣ̠] uvular rounded <[χ^w, ɣ^w]>
- [ɣ̠, ɣ̠] pharyngealized uvular <[χ^{ɣ̠}, ɣ^{ɣ̠}]>
- [ɣ̠̠, ɣ̠̠] pharyngealized uvular rounded <[χ^{ɣ̠̠w}, ɣ^{ɣ̠̠w}]>
- [ħ, ɦ] prepharyngeal (= between the *upper* pharynx and the root of the tongue) <[ħ, ɦ]> (≠)
- [ħ̠, ɦ̠] pharyngeal (= between the *lower* pharynx and the root of the tongue) <[ħ, ɦ̠]> (≠)
- [ħ̠̠, ɦ̠̠] pharyngeal rounded <[ħ^w, ɦ̠^w]>.

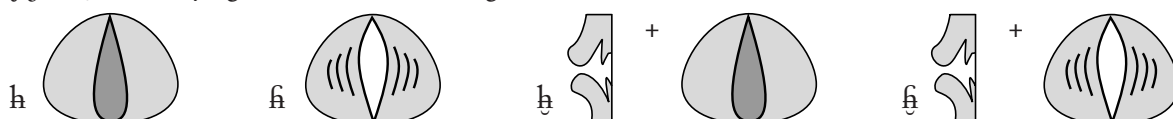
fig 10.5.1. Flat constrictive orograms (36).



10.5.2. Laryngeal constrictives [H] (2 × 2 [+ 2]; cf also § 10.13).

- [[ħ, ɦ]] [h, ɦ] laryngeal (= between the vocal folds, including the aryten. cart.) <[h, ɦ]> (≠)
- [[ħ̠, ɦ̠]] [h, ɦ] laryngeal rounded (with lip rounding) <[h^w, ɦ^w]>
- [[ɦ̠̠, ɦ̠̠]] [h, ɦ] laryngeal (*semiconstrictive*, with minor energy and expiratory air) «[h, ɦ]» (≠).

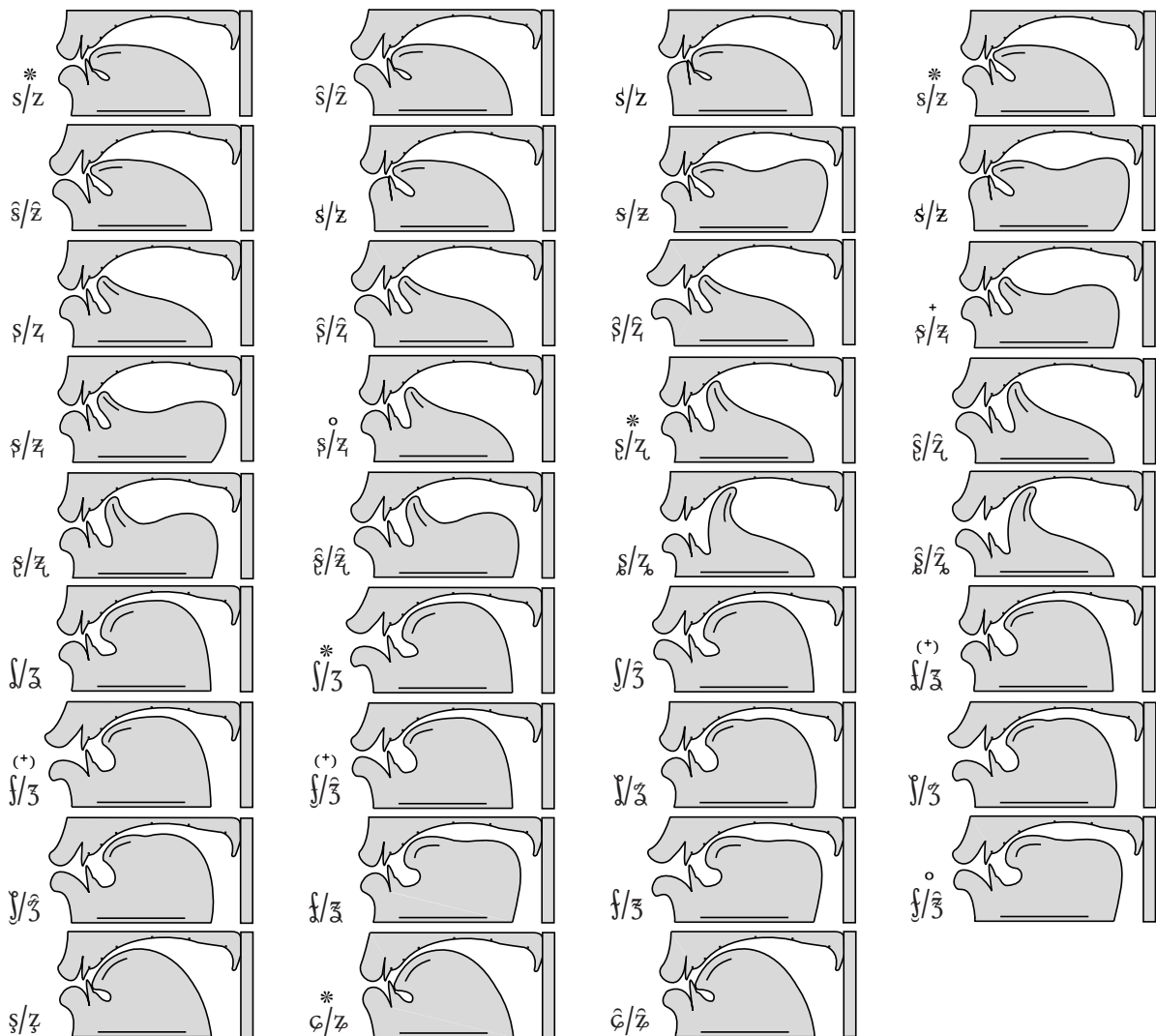
fig 10.5.2. Laryngeal constrictive orograms (2 × 2).



10.5.3. Grooved constrictives [S] (35).

- [s, z] dental (with a *lowered* [or *raised*] tip) <[s̥, z̥]>
- [š, ž] dental rounded (with a *lowered* or *raised* tip) <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] labiodentalized dental (with a *lowered* or *raised* tip) <[s̥ʷ, z̥ʷ]>
- [s, z] [s, z] denti-alveolar (with a *raised* tip) <[s, z]>
- [š, ž] [š, ž] denti-alveolar rounded (with a *raised* tip) <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] [s̥, z̥] labiodentalized denti-alveolar (with a *raised* tip) <[s̥ʷ, z̥ʷ]>
- [s, z] uvularized dental, or ...denti-alv. (with a *raised* tip, or more rarely *lowered*) <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] labiodento-uvularized dental (with a *raised* tip), or ...denti-alveolar <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] alveolar: (apico-) <[s̥, z̥]>
- [š, ž] alveolar rounded: (apico-)... <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] [s̥, z̥] alveolar protruded: (apico-)... <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] [s̥, z̥] pre-postalveolar (or alveo-postalv.; interm.; apic., grooved.) <[s̥, z̥]> or <[s̥, z̥]>
- [s̥, z̥] velarized alveolar: (apico-)... <[s̥ʷ, z̥ʷ]>
- [s̥, z̥]⁺ uvularized alveolar: (apico-)... <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] postalveolar: (apico-)... (not laminal) <[s̥, z̥]> (=)
- [š, ž] postalveolar rounded: (apico-)... <[s̥ʷ, z̥ʷ]>
- [s̥, z̥] velarized postalveolar: (apico-)... <[s̥ʷ, z̥ʷ]>

fig 10.5.3. Grooved constrictive orograms (34).

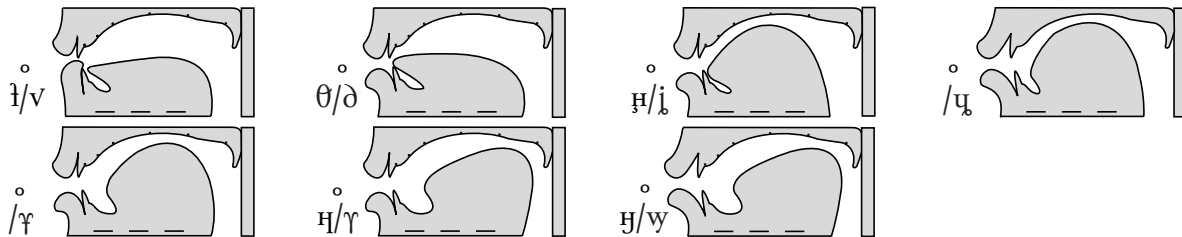


- [ξ, ζ] velarized postalveolar rounded: (apico-)... $\langle [\xi^{\delta w}, \zeta^{\delta w}] \rangle$
- [ξ, ζ] apico-palatal (= between the palate and the tip) $\langle [\xi, \zeta] \rangle$
- [ξ, ζ] apico-palatal rounded $\langle [\xi^w, \zeta^w] \rangle$
- [\jmath, ζ] postalveo-palatal: (lamino-)... (with a *lowered* tip) $\langle [\jmath, \zeta] \rangle$
- [\jmath, ζ] postalveo-palatal protruded: (lamino-)... $\langle [\jmath^w, \zeta^w] \rangle$
- [\jmath, ζ] postalveo-palatal over-rounded: (lamino-)... $\langle [\jmath^w, \zeta^w] \rangle$
- [\jmath, ζ] postalveo-palatal: (lamino-)... (with *raised* tip) $\langle [\jmath, \zeta] \rangle$
- [\jmath, ζ] postalveo-palatal protruded $\langle [\jmath^w, \zeta^w] \rangle$
- [\jmath, ζ] postalveo-palatal over-rounded: (lamino-)... $\langle [\jmath^w, \zeta^w] \rangle$
- [\jmath, ζ] postalveo-prevelar: (lamino-)... $\langle [\jmath^{\delta}, \zeta^{\delta}] \rangle$
- [\jmath, ζ] postalveo-prevelar: (lamino-)... $\langle [\jmath^{\delta w}, \zeta^{\delta w}] \rangle$
- [\jmath, ζ] postalveo-prevelar over-rounded: (lamino-)... $\langle [\jmath^{\delta w}, \zeta^{\delta w}] \rangle$
- [\jmath, ζ] postalveo-velar: (lamino-)... $\langle [\jmath^{\delta}, \zeta^{\delta}] \rangle$
- [\jmath, ζ] postalveo-velar protruded: (lamino-)... $\langle [\jmath^{\delta w}, \zeta^{\delta w}] \rangle$
- [\jmath, ζ] postalveo-velar over-rounded $\langle [\jmath^{\delta w}, \zeta^{\delta w}] \rangle$
- [ξ, ζ] prepalatal: (lamino-)... $\langle [\xi^j, \zeta^j] \rangle$
- [ξ, ζ] bilabialized prepalatal: (lamino-... with *vertical* labialzation)... $\langle [\xi^{j\beta}, \zeta^{j\beta}] \rangle$
- [ξ, ζ] prepalatal rounded: (lamino-)... $\langle [\xi^{jw}, \zeta^{jw}] \rangle$

10.5.4. Flat semi-constrictives [X] (7).

- [β, ν] [f, v] labiodental (= intermediate between constrictive and approximant) $\langle [f, \nu] \rangle$
- [θ, δ] [θ, δ] dental (= intermediate between constrictive and approximant) $\langle [\theta, \delta] \rangle$
- [$\mathfrak{H}, \mathfrak{j}$] [ζ, \mathfrak{j}] palatal (= intermediate between constrictive and approximant) $\langle [\zeta, \mathfrak{j}] \rangle$
- [$\mathfrak{l}, \mathfrak{u}$] [p] pospalatal rounded (= intermediate between constrictive and approximant) $\langle [\mathfrak{l}, \mathfrak{u}] \rangle$
- [$\mathfrak{l}, \mathfrak{r}$] [\mathfrak{r}] prevelar (= intermediate between constrictive and approximant) $\langle [\mathfrak{l}, \mathfrak{r}] \rangle$
- [$\mathfrak{H}, \mathfrak{r}$] [x, \mathfrak{r}] velar (= intermediate between constrictive and approximant) $\langle [x, \mathfrak{r}] \rangle$
- [$\mathfrak{H}, \mathfrak{w}$] [w] velar rounded (= interm. between constrictive and approximant) $\langle [x^w, \mathfrak{r}^w] \rangle$

fig 10.5.4. Flat semi-constrictive orograms (7).



10.5.5. Grooved semi-constrictives [S] (6).

- [$\mathfrak{s}, \mathfrak{z}$] [s, z] dental (= intermediate between constrictive and approximant) $\langle [\mathfrak{s}, \mathfrak{z}] \rangle$
- [$\mathfrak{s}, \mathfrak{z}$] [s, z] alveolar (= intermediate between constrictive and approximant) $\langle [\mathfrak{s}, \mathfrak{z}] \rangle$
- [ξ, ζ] [s, z] postalveolar (= intermediate between constrictive and approximant) $\langle [\xi^w, \zeta^w] \rangle$

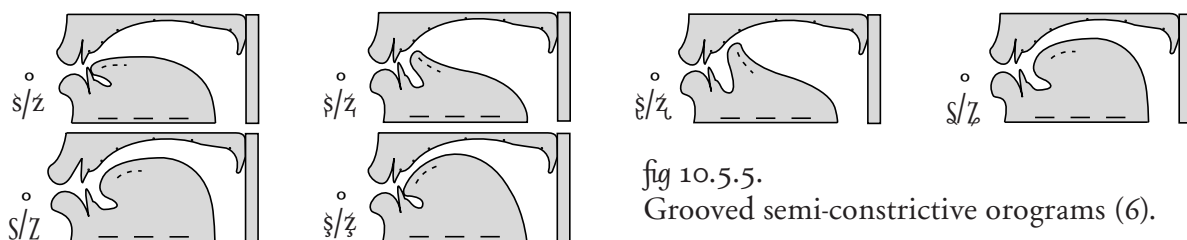


fig 10.5.5. Grooved semi-constrictive orograms (6).

$[\text{ɕ}, \text{ɟ}]$	$[\text{ɕ}, \text{ɟ}]$ postalveo-palatal: (lamino-)... (= interm. between constr. and appr.) $\langle [\text{ɕ}^{\text{rj}}, \text{ɟ}^{\text{rj}}] \rangle$
$[\text{ɕ}, \text{ɟ}]$	$[\text{ɕ}, \text{ɟ}]$ postalveo-palatal protruded: (lamino-)... (= int. betw. con. and app.) $\langle [\text{ɕ}^{\text{rw}}, \text{ɟ}^{\text{rw}}] \rangle$
$[\text{ɕ}, \text{ɟ}]$	$[\text{ɕ}, \text{ɟ}]$ prepalatal (= interm. between constrictive and approximant) $\langle [\text{ɕ}^{\text{j}}, \text{ɟ}^{\text{j}}] \rangle$

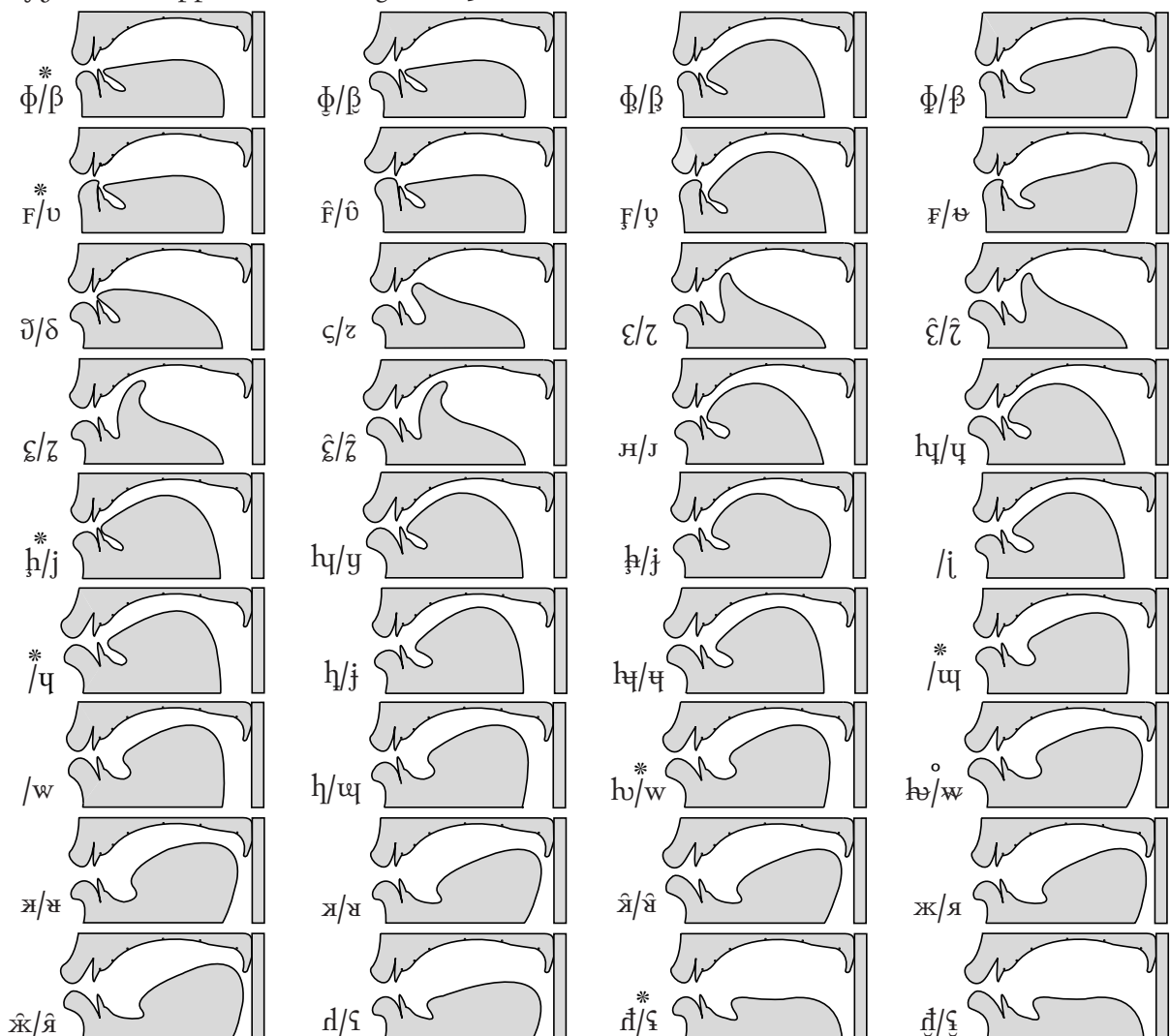
Approximants /J/ [J, ɹ, ʃ, H, ɭ, [*], ɮ] (69)

10.6. They include six synopses –in addition to those of normal phones (36)– also those of semi-approximants (8), nasalized phones (3, among the various possibilities), laryngeals (9), and lateralized ones (13, with structuring differences, which we will see below, as for semi-approximants or semi-... approximants).

10.6.1. (Normal) approximants [J] (36).

$[\Phi, \beta]$	bilabial (= vertically) $\langle [\Phi, \beta] \rangle$
$[\Phi, \beta]$	bilabial rounded $\langle [\Phi^{\text{w}}, \beta^{\text{w}}] \rangle$
$[\Phi, \beta]$	palatalized bilabial $\langle [\Phi^{\text{j}}, \beta^{\text{j}}] \rangle$
$[\Phi, \beta]$	uvularized bilabial $\langle [\Phi^{\text{ɰ}}, \beta^{\text{ɰ}}] \rangle$
$[F, \upsilon]$	labiodental $\langle [f, \upsilon] \rangle$ ($\neq, =$)

fig 10.6.1. Approximant orograms (36).

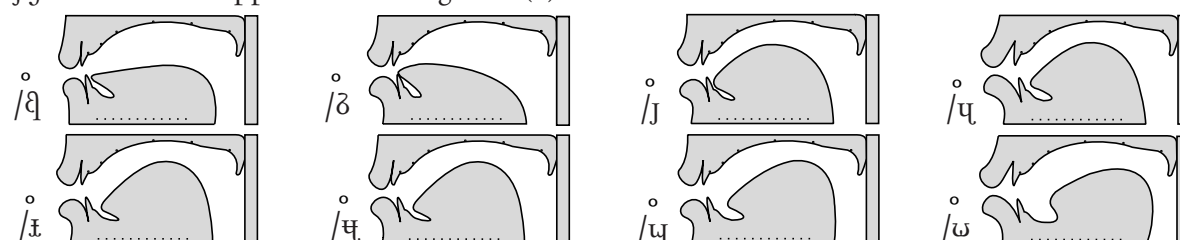


[\hat{f}, \hat{v}]	labiodental rounded < [f^w, v^w] >
[\mathbb{F}, \mathbb{V}]	palatalized labiodental < [f^j, v^j] >
[\mathbb{F}, \mathbb{V}]	uvularized labiodental < [$f^{\text{u}}, v^{\text{u}}$] >
[\mathbb{D}, \mathbb{D}]	dental, or lamino-dental (with <i>raised tip</i>) < [$\theta^{\text{r}}, \delta^{\text{r}}$] >
[ζ, z]	alveolar < [$\zeta^{\text{r}}, z^{\text{r}}$] >
[ξ, ξ]	postalveolar: (apico-)... (not laminal) < [$\xi^{\text{r}}, \xi^{\text{r}}$] >
[$\hat{\xi}, \hat{\xi}$]	postalveolar rounded: (apico-)... < [ξ^w, ξ^w] >
[ξ, ξ]	apico-palatal < [$\xi^{\text{r}}, \xi^{\text{r}}$] >
[$\hat{\xi}, \hat{\xi}$]	apico-palatal rounded < [ξ^w, ξ^w] >
[\mathbb{H}, \mathbb{J}]	prepalatal: (lamino-)... < [$\mathbb{H}^j, \mathbb{J}^j$] >
[\mathbb{H}, \mathbb{J}]	prepalatal rounded: (lamino-)... < [$\mathbb{H}^{jw}, \mathbb{J}^{jw}$] >
[\mathbb{h}, \mathbb{j}]	palatal < [ζ^{r} o [j], [j] > ($\neq, =$)
[\mathbb{h}, \mathbb{j}]	palatal rounded < [\mathbb{y}, \mathbb{y}] > ($\neq, =$)
[\mathbb{h}, \mathbb{j}]	uvularized palatal < [$\mathbb{y}^{\text{u}}, \mathbb{y}^{\text{u}}$] >
[\mathbb{h}, \mathbb{j}]	postpalatal < [\bar{j}] >
[\mathbb{h}, \mathbb{j}]	postpalatal rounded < [\bar{y}] >
[\mathbb{h}, \mathbb{j}]	prevelar < [\check{j}, \check{j}] or [\check{y}, \check{y}] >
[\mathbb{h}, \mathbb{j}]	prevelar rounded < [\check{y}, \check{y}] >
[\mathbb{h}, \mathbb{j}]	<i>provelar</i> (= between prevelar and velar) < [\mathbb{w}] >
[\mathbb{h}, \mathbb{j}]	<i>provelar rounded</i> < [\mathbb{w}] >
[\mathbb{h}, \mathbb{j}]	velar < [\mathbb{w}, \mathbb{w}] > (\neq)
[\mathbb{h}, \mathbb{j}]	velar rounded < [\mathbb{w}, \mathbb{w}] > ($\neq, =$)
[\mathbb{h}, \mathbb{j}]	uvularized velar rounded < [$\mathbb{w}^{\text{u}}, \mathbb{w}^{\text{u}}$] >
[\mathbb{h}, \mathbb{j}]	preuvular < [\check{w}, \check{w}] >
[\mathbb{h}, \mathbb{j}]	uvular < [\check{w}, \check{w}] >
[\mathbb{h}, \mathbb{j}]	uvular rounded < [\check{w}^w, \check{w}^w] >
[\mathbb{h}, \mathbb{j}]	pharyngealized uvular < [$\check{w}^{\text{r}}, \check{w}^{\text{r}}$] >
[\mathbb{h}, \mathbb{j}]	pharyngealized uvular rounded < [$\check{w}^{\text{r}w}, \check{w}^{\text{r}w}$] >
[\mathbb{h}, \mathbb{j}]	prepharyngeal (= between the <i>upper</i> pharynx and the root of the tongue) < [\mathbb{h}, \mathbb{h}] >
[\mathbb{h}, \mathbb{j}]	pharyngeal (= between the <i>lower</i> pharynx and the root of the tongue) < [\mathbb{h}, \mathbb{h}] >
[\mathbb{h}, \mathbb{j}]	pharyngeal rounded < [$\mathbb{h}^w, \mathbb{h}^w$] >

10.6.2. We also have some *semi*-approximants, or *semi*-... approximants, with greater space between the articulators than for approximants and with a definitely more elusive auditory impression [J] (8).

[\mathbb{h}, \mathbb{j}]	[β] <i>semi</i> -bilabial (= bilabial, with very reduced narrowing) < [β] >
[\mathbb{h}, \mathbb{j}]	[δ] <i>semi</i> -dental (= dental, with very reduced narrowing) < [δ] >
[\mathbb{h}, \mathbb{j}]	[j] <i>semi</i> -palatal (with very reduced narrowing) < [j] >
[\mathbb{h}, \mathbb{j}]	[y] <i>semi</i> -palatal rounded (with very reduced narrowing) < [y] >

fig 10.6.2. Semi-approximant orograms (8).

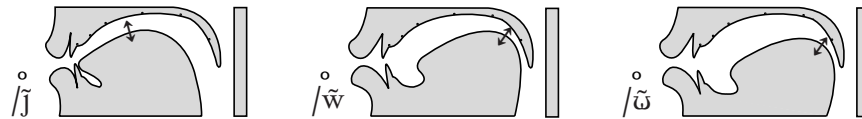


- [[/, ɹ̥]] [ɹ̥] *semi-velar* (with very reduced narrowing) ⟨[ɹ̥] or [ɹ̥̥]⟩
 [[/, ɻ̥]] [ɻ̥] *semi-prevelar rounded* (= prevel., with very reduced narrowing) ⟨[ɻ̥] or [ɻ̥̥]⟩
 [[/, ɹ̥]] [ɹ̥] *semi-provelar* (with very reduced narrowing) ⟨[ɹ̥]⟩
 [[/, ɹ̥̥]] [w̥] *semi-velar rounded* (with very reduced narrowing for both points) ⟨[w̥]⟩.

10.6.3. *Nasalized approximants* [ɹ̃] (3). The difference between these and semi-nasals (in § 10.2.3) lies in the fact that these are normal contours, with the addition of a lowered velum, whereas the others are nasals with an incomplete contact. In fact, in fig 10.6.2, we have indicated double arrows as well (as in fig 5.1), to show the exact combination of the two articulation manners – by insisting and slightly exaggerating. (The same happens to other contours – as constrictives, taps, or laterals – with added nasalization.)

- [/, ɹ̃] palatal (with a *lowered* velum) ⟨[ɹ̃]⟩ (=)
 [/, ɹ̥̃] velar rounded (with a *lowered* velum) ⟨[ɹ̥̃]⟩ (=)
 [/, ɹ̥̥̃] *semi-velar rounded* (with a *lowered* velum) ⟨[ɹ̥̥̃]⟩.

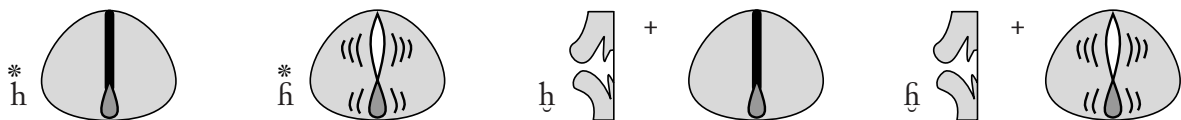
fig 10.6.3. Nasalized approximant orograms (3).



10.6.4.1. *Lenited laryngeal approximants* [h̥] (2 × 2 + 2, including the semiap-proximants, [h̥, h̥̥], which are laxer, using less expiratory air).

- [h̥, h̥̥] laryngeal (= between the vocal folds, including the arytenoid cartilages) ⟨[h̥, h̥̥]⟩
 [h̥̥, h̥̥̥] laryngeal rounded (= with lip rounding) ⟨[h̥̥̥, h̥̥̥̥]⟩.

fig 10.6.4. Lenis approximant laryngograms (2 × 2).



10.6.4.2. *Laryngeal approximant with intermediate phonation* and four mouth articulations (5 – no oro-laryngo-grams are given for these; cf also § 10.13).

- [[h̥̥̥]] palatalized laryngeal (with intermediate phonation) ⟨[h̥̥̥ʲ]⟩
 [[h̥̥̥̥]] velar (= laring. with intermediate phonation) ⟨[h̥̥̥̥ʷ]⟩
 [[h̥̥̥̥̥]] velarized laryngeal (with intermediate phonation) ⟨[h̥̥̥̥̥ʷ]⟩
 [[h̥̥̥̥̥̥]] laryngeal (with intermediate phonation) ⟨[h̥̥̥̥̥̥]⟩
 [[h̥̥̥̥̥̥̥]] laryngeal rounded (with intermediate phonation) ⟨[h̥̥̥̥̥̥̥ʷ]⟩.

10.6.5. *Lateralized apico-laminal approximants*, with other coarticulations (and some with lip-rounding as well) [l̥] (9).

- [[/, ɭ̥]] labiodentalized postalveolar slightly rounded (with lateral contraction) ⟨[ɭ̥̥ʷ]⟩
 [[/, ɭ̥]] dental, or lamino-dental (= with a *lowered* tip and with lateral contraction) ⟨[ɭ̥̥]⟩
 [[/, ɭ̥]] alveolar (with lateral contraction) ⟨[ɭ̥̥]⟩
 [[/, ɭ̥]]* velarized alveolar (with lateral contraction) ⟨[ɭ̥̥̥ʷ]⟩
 [[/, ɭ̥]] uvularized alveolar (with lateral contraction) ⟨[ɭ̥̥̥̥ʷ]⟩

- [ʎ, ɹ̥] postalveolar: (apico-)... (with lateral contraction) <[ɹ̥]>
 [ʎ, ɹ̥̄] postalveolar slightly rounded: (apico-)... (with lateral contraction) <[ɹ̥^w]>
 [ʎ, ɹ̥̄] velarized postalveolar: (apico-)... (with lateral contraction) <[ɹ̥̄^ɣ]>
 [ʎ, ɹ̥̄] velarized postalveolar slightly rounded: (apico-)... (with lateral contraction) <[ɹ̥̄^{ɣw}]>.

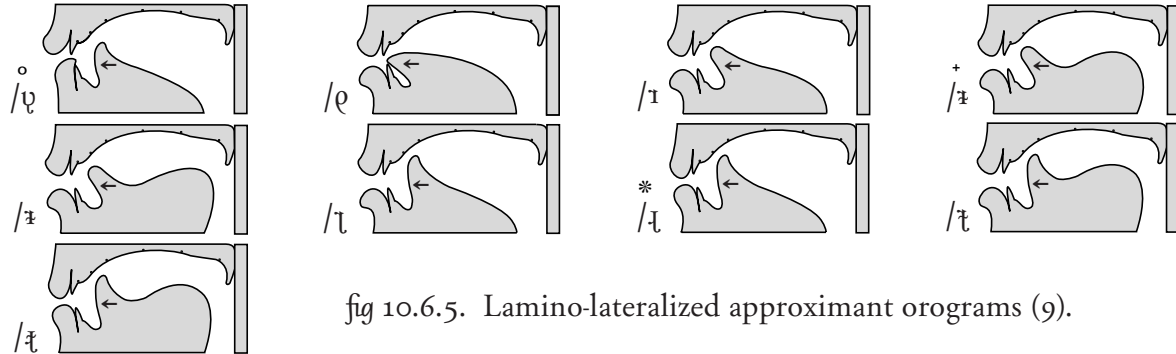


fig 10.6.5. Lamino-lateralized approximant orograms (9).

10.6.6. *Lateralized* approximants, with postaveolar and labial coarticulations, including semi-approximant variants [ʎ*, ɹ̥] (2 + 2).

- [ʎ, ɹ̥] postalveolarized prevelar slightly rounded (with lateral contraction) <[ʎ̄ɹ̥^w]>
 [ʎ, ɹ̥̄] [ɹ̥̄] postalveolarized *semi*-prevelar slightly rounded (with lateral contraction – but with very wide narrowing) <[ʎ̄ɹ̥̄^w]>
 [ʎ, ɹ̥̄] uvulo-postalveolarized velar slightly rounded (with lateral contraction) <[ʎ̄ɹ̥̄^{ɣw}]>
 [ʎ, ɹ̥̄] [ɹ̥̄] uvulo-postalveolarized *semi*-velar slightly rounded (with lateral contraction – but with very wide narrowing) <[ʎ̄ɹ̥̄^{ɣw}]>.

fig 10.6.6. Dorso-lateralized approximant (A) and semi-approximant (B) orograms (with slight postalveolarization) (4).



Trills, taps & flaps /R/ [R, ʀ, ʁ, ʁ̥, ʁ̄] (39)

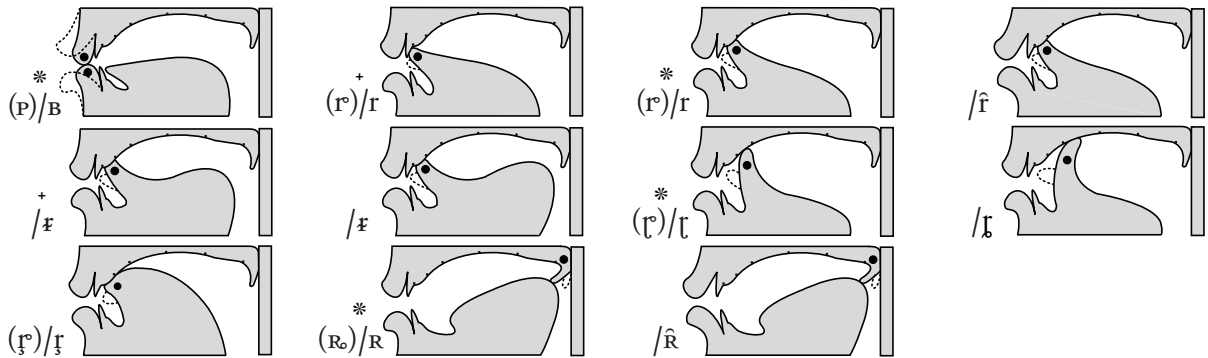
10.7. They include three synopses for trills (11), taps (10), flaps (6); and two more, for *constrictive* trills (6) and taps (3); finally, we find *lateralized* taps and flaps (3). The synopses of tapped laterals are with those of laterals.

10.7.1. *Trills* [R] (11).

- [(p), b] bilabial <[p̥, b]> (≠, =)
 [(r), r̥*] dental (with *raised* tip) <[r̥, r̥̄]>
 [(r), r] alveolar (apical) <[r̥, r̥̄]>
 [ʎ, ɹ̥̄] alveolar rounded <[ɹ̥^w]>
 [ʎ, ɹ̥̄]* velarized alveolar <[ɹ̥̄^ɣ]>
 [ʎ, ɹ̥̄] uvularized (rarely velarized) alveolar <[ɹ̥̄^ɣ]>
 [(r), ɹ̥] postalveolar: (apico-)... (not laminal) <[ɹ̥, ɹ̥̄]> (≠)
 [ʎ, ɹ̥̄] apico-palatal <[r̥̄̄̄, r̥̄̄̄̄]> (≠)
 [(r), ɹ̥̄] prepalatal: (lamino-)... <[r̥̄̄̄̄, r̥̄̄̄̄̄̄]>

- [(\mathbb{R}), \mathbb{R}] uvular < [\mathbb{R} , \mathbb{R}] > (\neq , =)
- [/, $\hat{\mathbb{R}}$] uvular rounded < [\mathbb{R}^w , \mathbb{R}^w] >.

fig 10.7.1. Trill orograms (11).



10.7.2. Taps [ʀ] (10).

- [/, \mathbb{B}] bilabial < [\mathbb{B}] >
- [(\mathbb{P}), \mathbb{P}] dental (with raised tip) < [\mathbb{P} , \mathbb{P}] >
- [(\mathbb{P}), \mathbb{P}] alveolar (with raised tip) < [\mathbb{P} , \mathbb{P}] >
- [/, $\hat{\mathbb{P}}$] alveolar rounded < [\mathbb{P}^w] >
- [(\mathbb{P}), \mathbb{P}] velarized alveolar < [\mathbb{P}^v , \mathbb{P}^v] >
- [(\mathbb{P}), \mathbb{P}] uvularized alveolar (rarely velarized) < [\mathbb{P}^u , \mathbb{P}^u] >
- [(\mathbb{P}), \mathbb{C}] postalveolar: (apico-)... (not laminal) < [\mathbb{P} , \mathbb{C}] > (\neq)
- [/, \mathbb{L}] apico-palatal (palatal and apical, not laminal) < [\mathbb{L}] >
- [(\mathbb{P}), \mathbb{J}] prepalatal: (lamino-)... < [\mathbb{P}^j , \mathbb{P}^j] >
- [(\mathbb{R}), \mathbb{R}] uvular < [\mathbb{R} , \mathbb{R}] >.

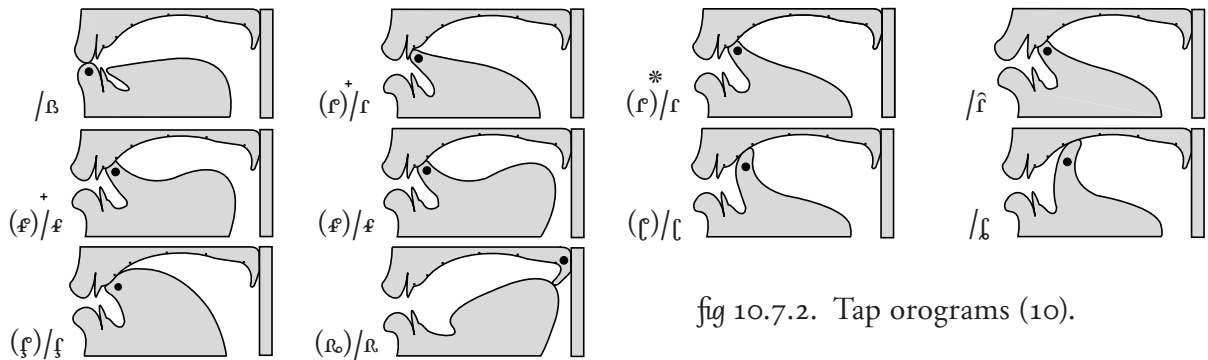
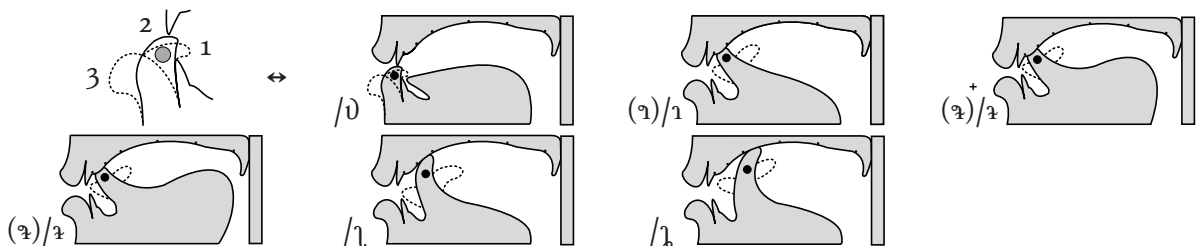


fig 10.7.2. Tap orograms (10).

10.7.3. Flaps [ʀ] (6).

- [/, \mathbb{V}] labiodental (= between the lower lip and the upper teeth) < [\mathbb{V}] >
- [(\mathbb{V}), \mathbb{V}] alveolar < [\mathbb{V} , \mathbb{V}] >

fig 10.7.3. Flap orograms (6).



- [(ʁ), ʁ]⁺ velarized alveolar <[r̥ʁ̥, r̥ʁ̥]>
 [(ʁ), ʁ] uvularized alveolar <[r̥ʁ̥, r̥ʁ̥]>
 [ʎ, ɲ] postalveolar: (apico-)... <[r̥ʎ̥]>
 [(ʎ), ɲ] apico-palatal (not laminal) <[r̥ʎ̥, r̥ʎ̥]>.

10.7.4. Constrictive trills [R] (6).

- [ʀ, ʁ] alveolar (with raised tip and narrowing which produces friction noise) <[r̥ʀ̥, r̥ʀ̥]>
 [ʁ̥, ʁ̥] [x, ɣ] velar (with friction noise) <[r̥ʁ̥, r̥ʁ̥]>
 [ʁ̥, ʁ̥] [χ, ʁ] uvular (with friction noise) <[r̥ʁ̥, r̥ʁ̥]>
 [ʁ̥̥, ʁ̥̥] uvular rounded (with friction noise) <[r̥ʁ̥ʷ, r̥ʁ̥ʷ]>
 [ʁ̥̥, ʁ̥̥] pharyngealized uvular (with friction noise) <[r̥ʁ̥̥, r̥ʁ̥̥]>
 [ʁ̥̥̥, ʁ̥̥̥] pharyngeal (between the *lower* pharynx and the root of the tongue; with friction noise) <[Hr̥̥̥, ʁ̥̥̥]>

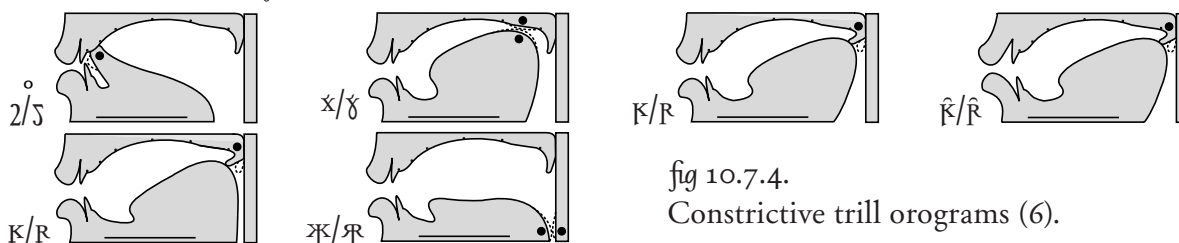


fig 10.7.4.
Constrictive trill orograms (6).

10.7.5. Constrictive taps [R*] (3).

- [ʀ, ʁ] alveolar (with raised tip and narrowing which produces friction noise) <[r̥ʀ̥, r̥ʀ̥]>
 [ʁ̥, ʁ̥] velar (with friction noise) <[r̥ʁ̥, r̥ʁ̥]>
 [ʎ̥, ɲ̥] uvular (with friction noise) <[r̥ʎ̥, r̥ʎ̥]>.

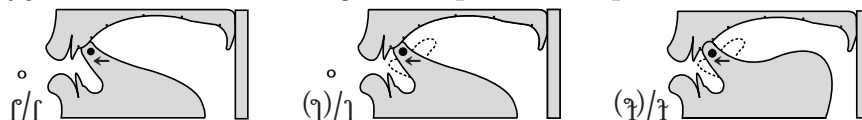


fig 10.7.5.
Constrictive tap orograms (3).

10.7.6. Lateralized taps & flaps [ɹ] (3).

- [(ɹ), ɹ] alveolar *tap* (with *raised* tip) <[r̥ɹ̥, r̥ɹ̥]>
 [(ɹ), ɹ] alveolar *flap* (with *raised* tip) <[r̥ɹ̥, r̥ɹ̥]>
 [(ʎ), ɲ] velarized alveolar *flap* (with *raised* tip) <[r̥ʎ̥, r̥ʎ̥]>.

fig 10.7.6. Lateralized orograms: tap (1) and flap (2).



Laterals /L/ [L, ɭ, ɮ, ɹ, ɻ] (58)

10.8. They include five synopses for (bi)laterals (26), *unilaterals* (9), constrictive laterals (11), lateral taps (3); semi-laterals (8); finally, the symbol for a diaphone is added, [ɮ] (which can be called either <lateralized tap> or <tapped lateral>, for oscillations between [r, ɹ, ɹ, ɻ]).

10.8.1. Laterals [L] (26).

[/, ɸ]	labial-apical (= between the upper lip and the tip of the tongue) < [l̥] >
[/ , l]	dental, or pre-dental (with raised tip) < [l̪] >
[/ , ɭ]	dental rounded < [l̪ʷ] >
[/ , ɮ]	uvularized dental < [l̪ˠ] or [ɮ̪] >
[/ , ɮ̥]	uvularized dental < [l̪ˠ̥] or [ɮ̪̥] >
[/ , l̪]	denti-alveolar (= intermediate between the teeth and the alveoles) < [l̪] >
[(l), l]	alveolar (= between the alveoles and the tip of the tongue) < [l̥], [l] >
[/ , ɭ]	alveolar rounded < [l̪ʷ] >
[(ɮ), ɮ]	uvularized alveolar < [l̪ˠ], [l̪ˠ̥] or [ɮ̪], [ɮ̪̥] >
[(ɮ), ɮ̥]	uvularized semi-alveolar (with reduced velar narrowing than [ɮ̪]) < [l̪ˠ̥], [l̪ˠ̥̥] or [ɮ̪̥], [ɮ̪̥̥] >
[/ , ɮ̥]	uvularized alveolar rounded < [l̪ˠ̥ʷ] or [ɮ̪̥ʷ] >
[/ , ɮ̥̥]	semi-uvularized alveolar rounded < [l̪ˠ̥̥ʷ] or [ɮ̪̥̥ʷ] >
[/ , ɮ̥̥̥]	uvularized alveolar < [l̪ˠ̥̥̥] or [ɮ̪̥̥̥] >
[/ , ɮ̥̥̥̥]	uvularized alveolar rounded < [l̪ˠ̥̥̥ʷ] or [ɮ̪̥̥̥̥ʷ] >
[(l), l̥]	postalveolar: (apico-)... (not laminal) < [l̪̥], [l̪̥̥] > (≠, =)
[/ , l̪̥]	postalveolar rounded: (apico-)... < [l̪̥ʷ], [l̪̥̥ʷ] >
[/ , ɮ̪̥]	uvularized postalveolar < [ɮ̪̥ˠ], [ɮ̪̥̥ˠ] >
[(ɮ), l̪̥]	apico-palatal (= between the palate and the tip) < [l̪̥̊], [l̪̥̥̊] >
[/ , l̪̥̊]	apico-palatal rounded < [l̪̥̊ʷ] >
[l̪̥̊]	postalveo-palatal: (lamino-)... < [l̪̥̊], [l̪̥̥̊] >
[(l), l̪̥̊]	prepalatal: (lamino-)... < [l̪̥̥̊], [l̪̥̥̥̊] >
[(ʎ), ʎ]	palatal < [ʎ̥], [ʎ] > (≠, =)
[/ , ʎ̥]	prevelar < [ʎ̥̊] >
[/ , ʎ]	velar (= betw. the velum and the back of tongue; not <uvularized [alveolar]>) < [ʎ] > (≠)

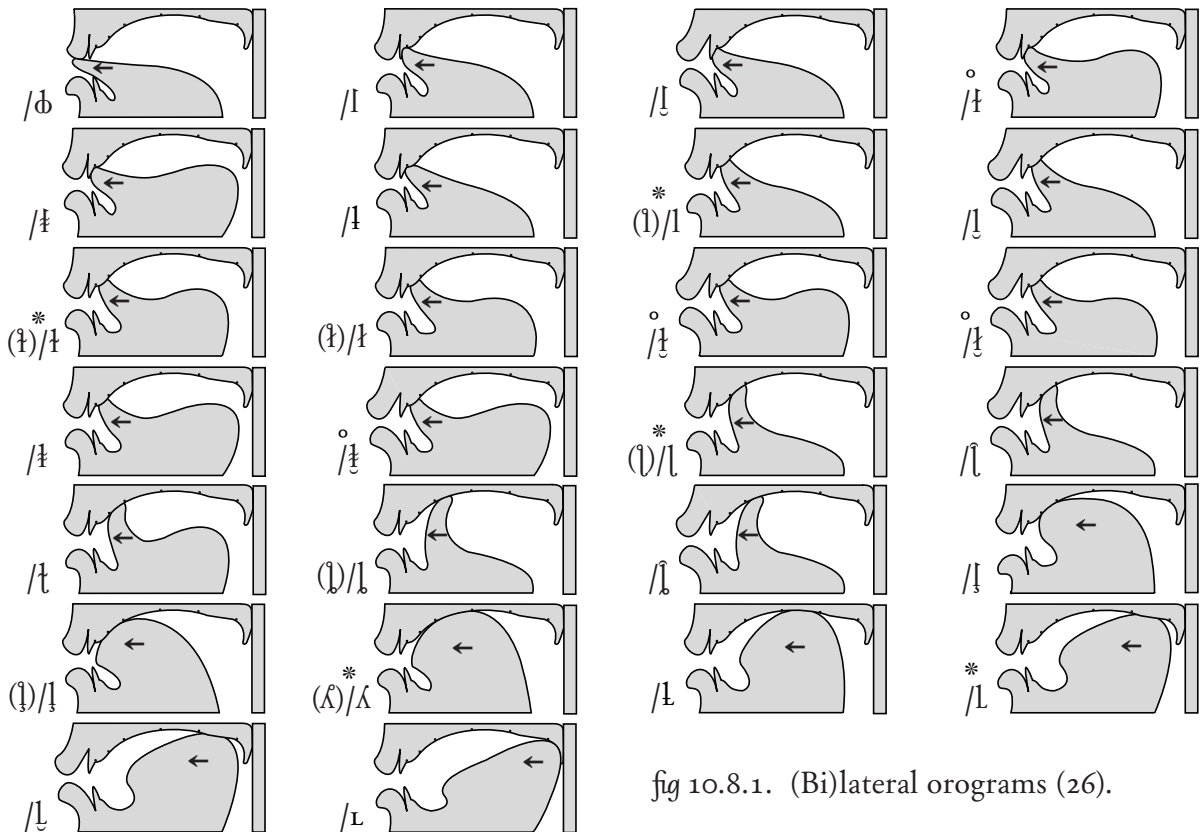


fig 10.8.1. (Bi)lateral orograms (26).

- [/, $\underset{\cdot}{\text{L}}$] velar rounded <[L^w]>
 [/, L] uvular <[L̤]>.

10.8.2. *Unilaterals* [L̤] (9).

- [/, $\underset{\cdot}{\lambda}$] [l] dental: (lamino-)... (with air passing only around one side of the tongue) <[l̤]>
 [(λ), $\underset{\cdot}{\lambda}$] [l] alveolar <[l̤], [l̤]>
 [/, $\underset{\cdot}{\lambda}$] prevelarized alveolar <[l̤ʷ]>
 [/, $\underset{\cdot}{\lambda}$] prevelarized alveolar rounded <[l̤ʷ̠]>
 [/, $\underset{\cdot}{\lambda}$] [ɭ] velarized alveolar <[l̤ʷ̠]>
 [/, $\underset{\cdot}{\lambda}$] [ɮ] uvularized alveolar <[l̤ʷ̠]>
 [/, $\underset{\cdot}{\lambda}$] [ɮ̠] postalveo-palatal: (lamino-)... <[l̤ʷ̠ʲ]>
 [/, $\underset{\cdot}{\lambda}$] [ɮ̠] prepalatal: (lamino-)... <[l̤ʷ̠ʲ]>
 [/, $\underset{\cdot}{\lambda}$] [ɮ̠] palatal: (lamino-)... <[ɮ̠]>.

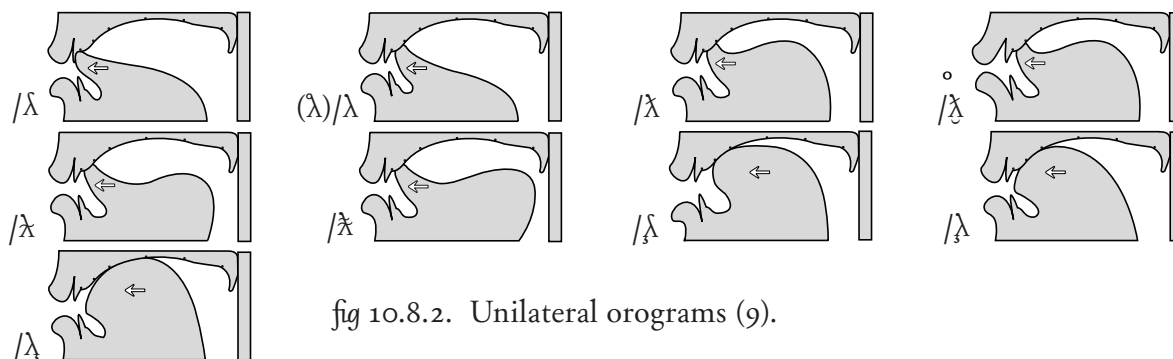
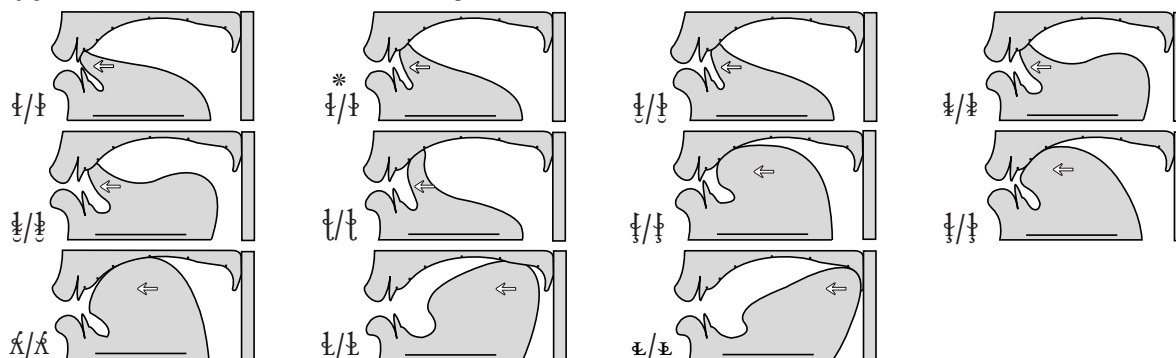


fig 10.8.2. Unilateral orograms (9).

10.8.3. *Constrictive (uni)laterals* [ɮ̠] (11).

- [ɮ̠, ɮ̠] [ɮ̠, ɮ̠] dental, or predental (with friction noise) <[ɮ̠, ɮ̠]>
 [ɮ̠, ɮ̠] alveolar (with friction noise) <[ɮ̠, ɮ̠]>
 [ɮ̠, ɮ̠] alveolar rounded (with friction noise) <[ɮ̠ʷ, ɮ̠ʷ]>
 [ɮ̠, ɮ̠] velarized alveolar (with friction noise) <[ɮ̠ʷ̠, ɮ̠ʷ̠]>
 [ɮ̠, ɮ̠] velarized alveolar rounded (with friction noise) <[ɮ̠ʷ̠̠, ɮ̠ʷ̠̠]>
 [ɮ̠, ɮ̠] postalveolar: (apico-)... (not laminal – with friction noise) <[ɮ̠, ɮ̠]>
 [ɮ̠, ɮ̠] postalveo-palatal: (lamino-)... (with friction noise) <[ɮ̠ʲ, ɮ̠ʲ]>
 [ɮ̠, ɮ̠] prepalatal: (lamino-)... (with friction noise) <[ɮ̠ʲ, ɮ̠ʲ]>
 [ɮ̠, ɮ̠] palatal (with friction noise) <[ɮ̠̠, ɮ̠̠] or [ɮ̠̠, ɮ̠̠]>
 [ɮ̠, ɮ̠] velar (not <velarized [alveolar]> – with friction noise) <[ɮ̠̠, ɮ̠̠] or [ɮ̠̠, ɮ̠̠]>
 [ɮ̠, ɮ̠] uvular (with friction noise) <[ɮ̠̠̠, ɮ̠̠̠] or [ɮ̠̠̠, ɮ̠̠̠]>.

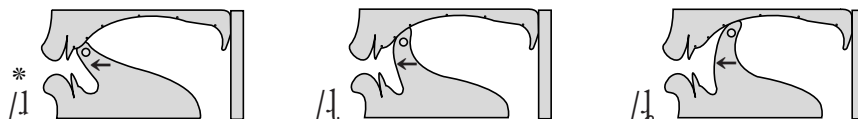
fig 10.8.3. Constrictive lateral orograms (11).



10.8.4. *Tapped* laterals [ɫ] (3).

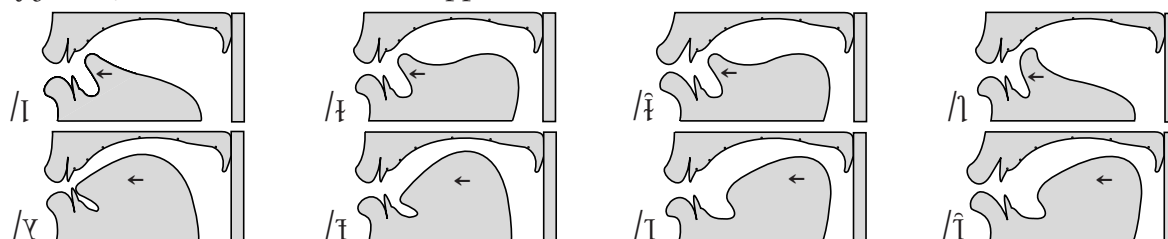
- [/, ɫ] alveolar ⟨[ɫ]⟩ (≡)
 [/, ɫ̠] postalveolar: (apico-)... (not laminal) ⟨[ɫ̠]⟩
 [/, ɫ̟] apico-palatal (= between the [hard] palate and the tip) ⟨[ɫ̟]⟩.

fig 10.8.4. Tapped lateral orograms (3).

10.8.5. *Semilaterals* (or semiapproximant laterals) [ɭ] (5).

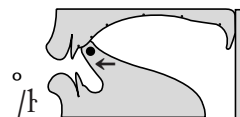
- [/, ɭ] [ɭ] alveolar (with lateral contraction) ⟨[ɭ]⟩
 [/, ɭ̟] [ɭ̟] velarizid alveolar (with lateral contraction) ⟨[ɭ̟]⟩
 [/, ɭ̠] [ɭ̠] velarizid alveolar rounded (with lateral contraction) ⟨[ɭ̠]⟩
 [/, ɭ̡] [ɭ̡] postalveolar (with lateral contraction) ⟨[ɭ̡]⟩
 [/, ɭ̟̠] [ɭ̟̠] palatal (with lateral contraction) ⟨[ɭ̟̠]⟩
 [/, ɭ̟̠̠] [ɭ̟̠̠] prevelar (with lateral contraction) ⟨[ɭ̟̠̠]⟩
 [/, ɭ̟̠̠̠] [ɭ̟̠̠̠] velar (with lateral contraction) ⟨[ɭ̟̠̠̠]⟩
 [/, ɭ̟̠̠̠̠] [ɭ̟̠̠̠̠] velar rounded (with lateral contraction) ⟨[ɭ̟̠̠̠̠]⟩.

fig 10.8.5. Semi-laterals, or semi-approximant laterals (8).



10.8.6. As already pre-empted in § 10.8, we also give the diaphone [ɭ̟̠̠̠̠̠̠] (ie ⟨lateralized tap⟩ or ⟨tapped lateral⟩, for possible oscillations between [r, ɽ] and [ɫ, ɫ̠]). We leave the task of devising possible *offIPA* ⟨transcriptions⟩ to the imagination of careful readers.

fig 10.8.6. Orogram of the alveolar lateralized tap, or tapped lateral, diaphone.

**Comparisons between similar contoids**

10.9. For *nasals*, to closely examine their many articulatory possibilities, we can consider the position of German, as it emerges mainly from § 5.2.1-7 of the *HPr*. We have indicated many coarticulatory combinations, by using both (more) ⟨normal⟩ and (more) ⟨special⟩ symbols. Certainly, this has been done not for the sake of useless pedantry, but rather to fully describe native speakers' ⟨spontaneous and automatic⟩ phonetic reality, in order to allow also non-native speakers to use what natives actually do. In fact, for the 3 nasal phonemes of German, /m, n, ŋ/, we

have 6 taxophones, [m, m̥, n, n̥, ŋ, ŋ̥], and some special ones, [[m̥, n̥, ŋ̥]] (if necessary, [[ŋ̥]], too). For the 2 intense (<syllabic>) nasals, /m̥, n̥/, we have 6 more normal taxophones, [m̥, m̥̄, n̥, n̥̄, ŋ̥, ŋ̥̄], and 9 special ones [[m̥̄, n̥̄, ŋ̥̄, m̥̄̄, n̥̄̄, ŋ̥̄̄, ŋ̥̄̄̄, ŋ̥̄̄̄̄, ŋ̥̄̄̄̄̄]] (if necessary, [[ŋ̥̄̄̄̄̄]], too). They are all given in fig 10.2.

10.10. For *stops*, let us carefully observe the characteristics of some (voiceless) phones, belonging to the apical group (predental, dental, denti-alveolar, alveolar, postalveolar, apico-palatal), [(t), t, t̥, t̄, t̥̄, t̄̄]. We find the last five respectively in: Spanish *tú* [ˈtu], German *Tod* [ˈtʰoːt̥], English *tat* [ˈtʰæt̥], Hindi *taat̥* [ˈtʰaat̥], and Tamil *tti* [ˈt̥ti]. The first orogram in fig 10.9 adds the predental articulation which in Malayalam opposes /t/ [t̥] (and, in traditional pronunciation, also /t̄/ [t̄̄], which in modern pronunciation merges into /t/ [t̥]); thus, they can both become [t̥]: *mut̥tu* [ˈmʊt̥ːu], *muttu* [ˈmʊt̥ːu], *mut̥tu* [ˈmʊt̥ːu].

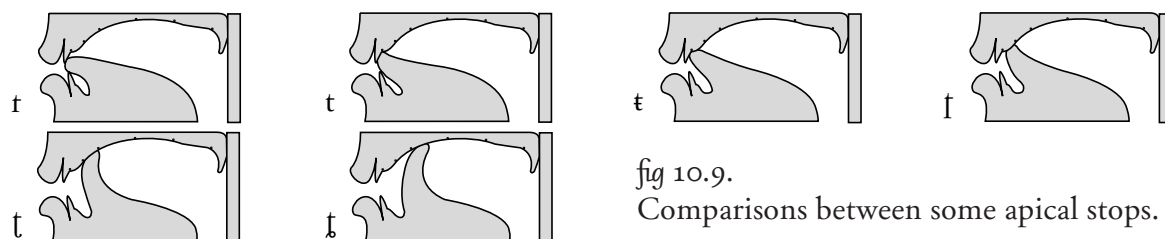


fig 10.9.

Comparisons between some apical stops.

10.11. For *stopstrictives*, let us expressly consider some groups, in order to see their nuances well, since too often they are described badly. For simplicity, we will see voiceless phones only. The first three we consider are (predental, dental, and alveolar) slit contoids, [t̥̄, t̥̄̄; t̥̄̄̄]. We find the first two in regional Italian pronunciations from Trentino (in north-eastern Italy), for /t̥̄̄/: *marzo* [ˈmar̥̄t̥̄̄o, -t̥̄̄o] (for neutral Italian [ˈmar̥̄t̥̄̄o]), and [t̥̄̄̄], in Sicily, for /tr̥̄̄̄/: *tre* [ˈt̥̄̄̄ɛ, ˈt̥̄̄̄ɛɪ] (this is the <legendary> –and <phonetic-fiction>– <cacuminal> sequence <t̥̄̄̄>, for [ˈt̥̄̄̄ɛ]).

It is useful to also consider the grooved triple set, with no lip-rounding nor lip-protrusion – postalveo-palatal with a lowered or raised tip, and prepalatal: [t̥̄̄̄̄, [[t̥̄̄̄̄]], [t̥̄̄̄̄̄], as in typical pronunciations in northern Italy, for /t̥̄̄̄̄/: *cera* [ˈt̥̄̄̄̄ɛra, t̥̄̄̄̄, t̥̄̄̄̄-], /t̥̄̄̄̄ɛra/. Let us also consider the pair with lip-protrusion: [t̥̄̄̄̄̄], as in neutral Italian [ˈt̥̄̄̄̄ɛra]; [[t̥̄̄̄̄̄]], as in English *chain* [ˈt̥̄̄̄̄ɛɪn] /t̥̄̄̄̄ɛɪn/ and German *deutsch* [ˈdɔɪt̥̄̄̄̄ʃ] /dɔɪt̥̄̄̄̄ʃ/. Finally, let us observe [t̥̄̄̄̄̄̄], as well, with vertical labialization (not rounding or protrusion), as in Chinese *jī* [ˈt̥̄̄̄̄̄̄i] /ˈt̥̄̄̄̄̄̄i/.

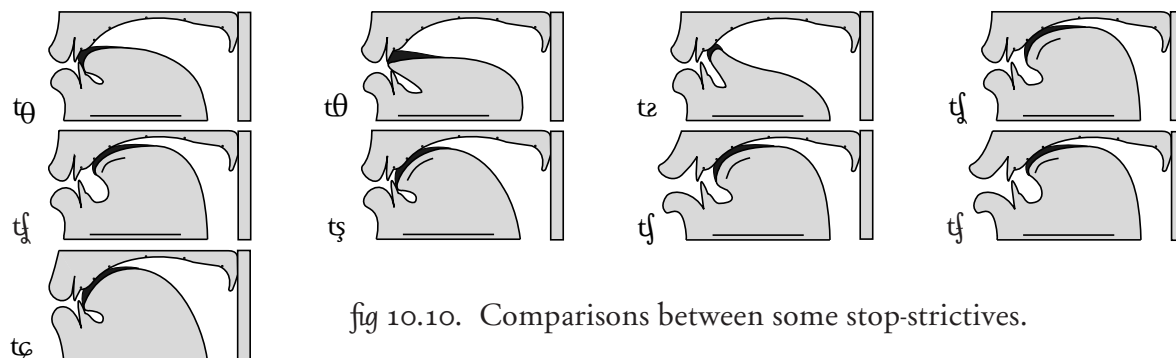


fig 10.10. Comparisons between some stop-strictives.

10.12. In addition, it is worthwhile considering the set of three *grooved constrictives* – dental with a lowered tip [or pre-dental], dental with a raised tip [or denti-alveolar], alveolar, and pre-postalveolar [or alveo-postalv.]: [s, s̥, ʃ, ʃ̥], respectively as in neutral Italian, regional Italian (of upper-southern and northern parts), and regional Italian (of other northern parts), as in *sí* ['si, 'si, 'ʃi, 'ʃi] /'si/ (or of variants of Spanish; while neutral Castilian Spanish uses [ʃ], neutral American Spanish [s]). English speakers can actually use any of these four contoids, but the neutral one is [s], although generally transcribed with [s]: *sixty* ['sɪksʃi] /'sɪksti/.

fig 10.11. Comparisons between some grooved constrictives.



10.13. As far as *median approximants* are concerned, that is those produced within the phonetic space of vocoids (cf fig 8.1), it is very important to also observe some realizations with greater or lesser space between the dorsum and the palate, up to constrictive phones, by considering the following areas: (*prepalatal*), *palatal*, *postpalatal*, *prevelar*, *provelar*, *velar* (and *uvularized velar*, too). We will present the voiced contoids in a synoptic way (whereas their articulations can be found in fig 10.5-6).

fig 10.12.

Comparisons between voiced median approximants (and similar nearby contoids).

	pre-palatal	palatal	postpalatal	pre-velar	pro-velar	velar	pre-palatal rounded	palatal rounded	postpalatal rounded	pre-velar rounded	pro-velar rounded	velar rounded	uvularized velar r.
constrictive		ɰ		ʁ		ʁ		ɰ̠				ʁ̠	
semi-constrictive		ɰ̠		ʁ̠		ʁ̠		(ɰ̠)				ʁ̠	
approximant	ɰ	j	ɰ̠	j̠	ɰ̠	ɰ̠	ɰ̠	ɰ̠	ɰ̠	ɰ̠	w	w	w̠
semi-approxim.		J		ɰ̠	ɰ̠				ɰ̠	ɰ̠		ɰ̠	
lateralized appr.		ɰ̠		ɰ̠		ɰ̠						ɰ̠	
<i>high vocoids</i>		i	ɰ̠	i	ɰ̠	(ɰ̠)		ɰ̠	y	ɰ̠	ɰ̠	u	

Certainly, it will not be in vain to also reflect upon different possible degrees of ⟨[h]⟩ in various languages, either as a phoneme, /h/, or as an element of ⟨aspiration⟩, either phonetic, for /C/, or phonemic, for /Ch/. As a matter of fact, it could be very important to be able to adequately distinguish, not only between (voiced or voiceless) laryngeal approximants, [h, h̠], but also between laryngeal constrictives, [h̠, h̠̠] (cf § 10.6.4 & 10.5.2). And, in addition to a possible intermediate phonation type, [h̠̠] (cf § 10.6.4.2), we can also find the corresponding semi-constrictive, [h̠̠̠], and semi-approximant, [h̠̠̠̠], contoids – which are produced by using a lesser amount of air than the respective constrictive or approximant

phones. Thus, the same figures apply to the two groups. However, the special symbols are not yet in great use.

This reflection can show that the VOT theory is a very weak one, since not only time, but also tension is important in the transitions from a phone to another.

10.14. Lastly, it is important to consider also some alveolar contoids, which can be difficult to distinguish. For the speakers of certain languages (mostly spoken in the Far East, as the various Chinese languages, and Japanese and Korean) they are a severe difficulty, since these differences are not present in the phonemic systems of those languages (cf fig 10.13 & § 9.33). Those Spanish accents which (really or presumably) neutralize the patterns /rC, lC/ can have [r, ɾ, l] (with apical contact), or [z, ɾ, l] (with no contact). The difference between the last three phones (and orograms) is fairly small: [z] lacks any lateral contraction, which is present in [ɾ] (as an added feature), and in [l] (as a fundamental feature coupled with the lack of any apical contact). It is important to pay careful attention to the size of the arrows, too.

fig 10.13. Comparisons between trills, taps, flaps, laterals, approximants (& combinations).

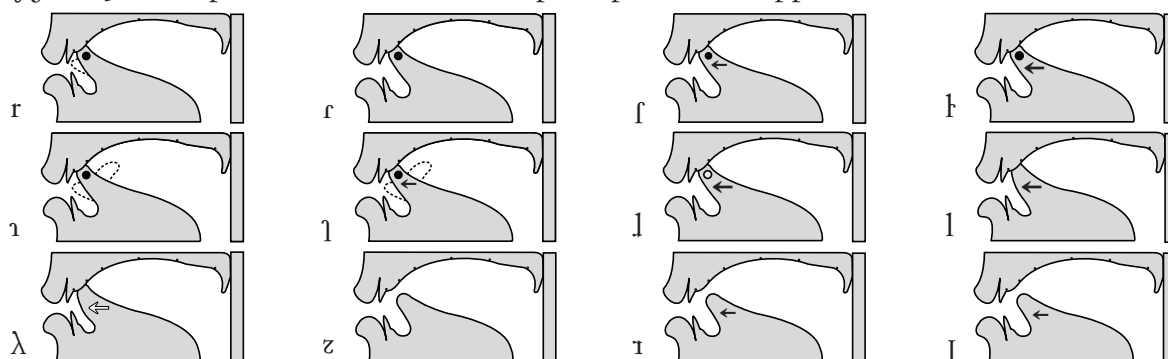


fig 10.14 shows some diagrams of frontal orograms, in order to help to visualize the slight mechanism which contributes to differentiate similar phones. Those in the middle concern the last three phones we have seen; the two on the sides highlight other interesting relations.

fig 10.14. Frontal orograms showing a different perspective.

