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Sanskrit Pronunciation & Accents

Applications of the Natural Phonetics & Tonetics Method

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O.

Preliminary observations on classical Sanskrit pronunciation

o.1. Our primary (and ambitious) aim is to accurately describe the real pronunciation of classical Sanskrit of the middle period of the 1st millennium BC (ie about 2500 years ago). According to Natural Phonotonetics, we will start from its real vowels and diphthongs: phonemically /i, a, u; ii, ee, aa, oo, uu; ai, au/ (with all their taxophones, as shown in fig 3.1).

Of course, in this 3rd millennium AC, which is just at its beginning, we cannot possibly consider intense (or ‘syllabic’) consonants as if they were still ‘vowels’, although they clearly form the nuclei of their syllables. Thus, /f, r, l/ are simply intense contoids.

The *nasalization* implied in some examples, here indicated as /V~/ (transliterated as *m*, after a vowel), and anciently called *anusvāra*, /anus'vaara/ [ənʊs'waarə], will be transcribed very accurately, as well, with precise phonetic symbols.

o.2. There is another phono-grammatical ‘phenomenon’, here indicated as /Vh/ (transliterated as *b*, after a vowel), and anciently called *visarga*, /vi'sarga/ [vɪ'sərgə], which will be transcribed very accurately, as well, with all its necessary taxophones. Of course, it is a consonantal phenomenon, although in Sanskrit it was dealt with the vowels that it followed, which ‘colored’ it differently, as we will see.

Afterwards, the ‘legitimate’ consonants will be presented and described, in our modern scientific way. Although it is necessary to clearly state (with sincere admiration) that the consonants of Sanskrit had been fairly scientifically presented and described, especially its momentaneous and nasal elements. In fact, this language was first analyzed phonically, rather than starting from a sort of ‘necessary’ spelling, to ‘explain’ how some more or less inadequate writable signs, somehow ‘devised’ or ‘stolen’ from other similar jumbles.

o.3. Only, at a second time, in fact, Sanskrit was starting to be ‘written’. Unfortunately, a sort of syllable entity was chosen to be the basis for it, instead of pure (and legitimate) segments. Thus, some combinations of consonants and vowels were ‘selected’ for a basis as /Ca/, with the ‘magical’ possibility for that /a/ to ‘disappear’, when convenient... Of course, the other way round would have been more suitable, by ‘adding’ that ‘jack of all trades’ *a* /a/ when necessary, instead of

cancelling it, for pure ‘convenience’, as a stopgap measure.

However, the real problem was that by searching both for artistic elegance and ‘convenient’ space concision, the essential strokes were both shortened (or ‘mutilated’) and combined as possible, with no practical and reliable linguistic method.

In fact, very sadly, the strokes did not mainly combine their phonic values, in real phonic syllables, but only for (terribly unphonic) eye and space reasons. The result was to produce about 200 monographic jumbles, ie the traditional ‘devanagari’ script (still used in Hindi, too: *dēvanāgarī* [deβ'naag-ri], in real Sanskrit [dev'naag̃-ri]). Frankly, they look more like heavily elaborate little embroideris.

o.4. We also have a secondary (and additional) aim, ie to add the ‘modern pronunciation’ (or rather the various different ‘pronunciations’) that Sanskrit is subject to, generally limiting ourselves to the Indian subcontinent. From an objective standpoint, things are very similar to what even the various ‘specialists’ or ‘experts’ currently do for classical Latin and Greek, although, for these two further languages, the current spelling situation is certainly even worse, especially for Latin.

In fact, in these two languages, even the position of stress may be phonemic, ie it may change the meaning of certain words, especially in Latin. In addition the assignment of Latin stress also depends on the quantity of its *i*, *e*, *a*, *o*, *u* vowels (including *y*, in Greek loans), which is *not* indicated, except, partially, in good dictionaries (but with differences, hopefully representing possible real pronunciation differences).

For ancient Greek, in addition to the possible quantity differences for *ι*, *α*, *υ*, which may be short or long, there is the complication that it kept three stressed tones: [] ['] [˘], and an unstressed one: [.]. Happily enough, however, its tonemes (and variants) are rather correctly shown by the definitive spelling of the ancient texts that we have, and they combine pitch and intensity differences.

However, even for Latin and Greek, not only common students or teachers, but also ‘specialists and experts’, more or less heavily, also exhibit regional characteristics, not only Italian or Greek, but also of several national (and again regional) countries, mostly European (or Western), but also mostly Asian (or Eastern).

Let us state clearly, once and for all, that our main aim, for those three classical languages, is to show what their real pronunciations were, independently from the difficulties this may present. We intend to show them by means of precise *canIPA* symbols and figures (and terminology), as already said.

o.5. Unfortunately, any (written) language has an *alphabetical ‘order’* of its own, more or less unsatisfactory, indeed. In fact, none of them is clearly ‘phonological’, but subject to ‘criteria’ which have very little to do with either *phonology* or *logic*. The Sanskrit one is: *a*, *ā*, *i*, *ī*, *u*, *ū*, *ṛ*, *ṝ*, *l*, *ē*, *ai*, *ō*, *au*, *k*, *kh*, *g*, *gh*, *n*, *č*, *ch*, *j*, *jh*, *ń*, *Ń*, *th*, *d*, *dh*, *ɳ*, *t*, *th*, *d*, *dh*, *n*, *p*, *ph*, *b*, *bh*, *m*, *y*, *r*, *l*, *v*, *ś*, *ʂ*, *s*, *h*, plus two ‘things’ represented as something troublesome, ie *m̥*, *h̥* – for two original diacrit-

ics, ie ‘’ (written above) and ‘:’ (written after) certain ‘stroke combinations’. Phonically, they are, respectively: /~/ and /h/ (ie /-~/ and /-h/ after vowels: /V-/). More traditionally, instead of ē, ḫ, ṛ, ḥ, ḡ, j, ñ, we find the less explicit letters e, o, ṛ/ṛ, ḥ/ṝ, ḡ/ং, c, j, ñ.

Of course, a modern (and more scientific way of listing the phonemes of Sanskrit is: (*vowels*) /i, a, u; ii, ee, aa, oo, uu; ai, au/ i, a, u; ī, ē, ḫ, ḥ, ñ; *ai, au*; and (*nasal consonants*) /m, n, ḷ, ḣ, ḻ, ḳ/ m, n, ḷ, ḳ, ḻ; (*stop c.*) /p, b; t, d; ṭ, ḍ; c, j; k, g/ p, b; t, d; ṭ, ḍ; c, j; k, g.

Arguably, ‘things’ like /ph, bh/ &c are *not* single or unitary phonemes, but obvious sequences (not substantially different from /pr, pl, pj, pu/ or /kʂ, ʐ/ &c); (*constrictive c.*) /s, ʂ, ʂ/ s, ʂ, ʂ; (*approximant c.*) /v, j, ɦ, ɦ/ v, y, h, ɦ; (*rhotic c.*) /r, ɾ; ɻ, ɻ/ r, ɾ; ɻ; (*lateral c.*) /l, ɬ/ l, ɬ.

Certainly, the intense (or ‘syllabic’) *consonants*, /ɻ, ɬ/ r, ɾ; l, ɬ, are not ‘vowels’. The table of fig 4.1 clearly shows all the (phonetic) consonantal taxophones that we need to transcribe real Sanskrit.

o.6. § 1 & 2 will introduce to Natutal Phonotonetics. For deeper information and further useful figures, readers are invited to (carefully) see § 8-14 of our *Natural Phonetics and Tonetics*, which may be found (in an updated version) in our *canipa.net* website. There many pdf’s (on several languages from further books of ours) may be useful to increase one’s knowledge about these subjects.

o.7. *Acknowledgments.* Special thanks to Maria Piera Candotti and Malhar Kulkarni for their kind help with the sentences of § 5 and Aesop’s story ‘The North Wind and the Sun’ in § 6.

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1.

A general approach to Natural Phonetics

1.0. In this introductory chapter, we will present the fundamental categories, with a simplified treatment limited to the most basic elements. These categories constitute the minimum necessary to proceed scientifically with phonetics.

In what will follow, every part will be gone into in greater depth and with added detail, helping the reader to arrive at a more complete knowledge of the subject.

Vowels

1.1. The back of the tongue is the fundamental element in vowel production. It moves in two different directions: HIGH–LOW and FORWARD–BACK. Consequently, the combination of these two elements produces a *quadrilateral*, which gives us the fundamental VOCOGRAM, used for showing –inside it– the positions of the vowels of a given language. On the left side of fig 1.1, there are three orograms indicating the zone of vocoid articulations; these orograms are steadily more schematic, moving downwards. The first, on top, is the most realistic, while the third, at the bottom, is a quadrilateral.

On the right-hand side of fig 1.1, the upper diagram is an orogram which shows the tongue: LOW and CENTRAL, as in the pronunciation of *a* [a] in most languages. The upper outlines of the positions of *i* [i], HIGH and FRONT, and *u* [u], HIGH and BACK, are also given – as they occur in most languages. The points are connected and contained in the white (or transparent) quadrilateral, which is given enlarged in the figure below (the *vocogram*, on the lower part of the right-hand side).

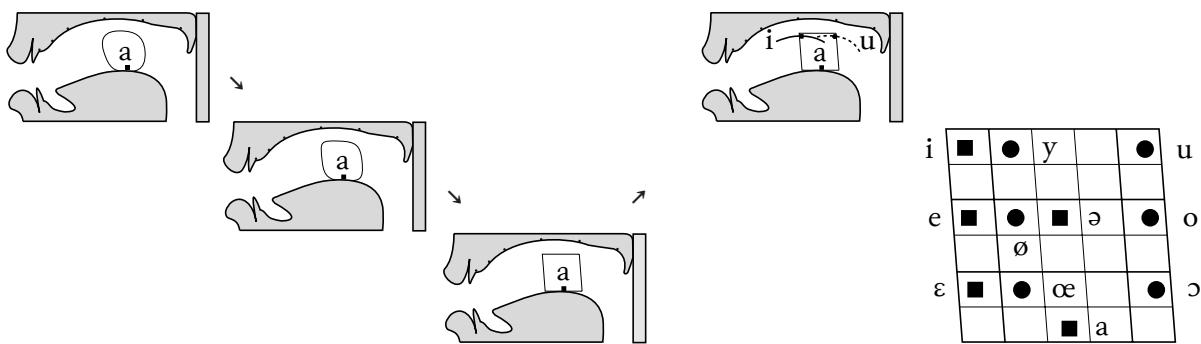
1.2. In the large quadrilateral, 11 vowels have been placed, shown by (square and round) MARKERS. The ROUND ones refer to vowels articulated with ROUNDED lips, while the SQUARE ones naturally represent vowels with unrounded –either SPREAD or neutral– lip position.

The symbols [i, a, u] correspond to Spanish *i, a, u*, as in *utilizar* [u̯tiliθar] (or Italian *utilità* [u̯tilita]), while [e, o] are the ‘closed’ vowels of Portuguese, as in *vê, povo* [ve, 'povu] (or Italian *tre, sono* ['tre, 'sono]); [ɛ, ɔ] are the (stressed) ‘open’ vowels of Portuguese, as in *pé, pô* ['pe, 'pɔ] (or Italian *sette, otto* ['sette, 'otto]). Note also German *Kamm, Tag* ['kham, 'tha:k], *viel, Kuh* ['fi:l, 'ku:], and –but closer– *Weg, Boot, weg, Loch* ['ve:k, 'bo:t, 've:k, 'loχ]. The Italian words written *corressi* and

volto have two different meanings corresponding to two different pronunciations: (*se*) *corressi* ‘(if) I ran’ [kor'ressi], and (*io*) *corressi* ‘(I) corrected’ [kor'ressi]; (*il*) *volto* ‘(the) face’ ['vol:to], and (*io*) *volto* ‘(I) turn around’ ['vɔl:to]. Consequently, the two GRAPHEMES *{e, o}* can each represent two different phonemes: /e, ε/ or /o, œ/.

The vowels of a number of languages are concisely shown in fig 1.1. Our bibliography contains the books we produced (or intend to produce) to accurately describe a number of languages.

fig 1.1. The articulatory extent of vowel sounds.



1.3. fig 1.1 (the vocogram part) contains three more vowels /y, ø, œ/, which are rounded, and for this reason have circular markers. These vowels are *almost* like /i, e, ε/ with lip rounding added. However, the tongue is a bit farther back than it is in /i, e, ε/, and in fact, these rounded vowels are a little centralized in the vocograms. /y, ø, œ/ occur in many languages, such as French: *lune, deux, seul* ['lyn, 'dø, 'søl], or German: *Füße, Öl, zwölf* ['fy:s̩, 'øl, 'tsfo:l̩] (as well as in several Italian dialects, particularly Lombardian, Piedmontese, and Ligurian).

The first German example also has an instance of [ə], which is generically placed in the center, at the height of [e, ø, o] (cf fig 1.1). However, '[ə]' has many different realizations in the different languages, which are better rendered with more appropriate symbols.

The symbol '/', (an uncurved apostrophe) placed immediately before a syllable, indicates STRESS. The CHRONEME, /:/, indicates distinctive lengthening of the preceding vowel – for example, in German there is a contrast between *Stadt* ['ʃtat] ‘city’ and *Staat* ['ʃta:t] ‘State’. When the same symbol occurs in PHONETIC TRANSCRIPTIONS (in brackets, []), instead of in PHONEMIC TRANSCRIPTIONS, which are written between slashes, / /), it is called a CHRONE, and indicates length which is not distinctive.

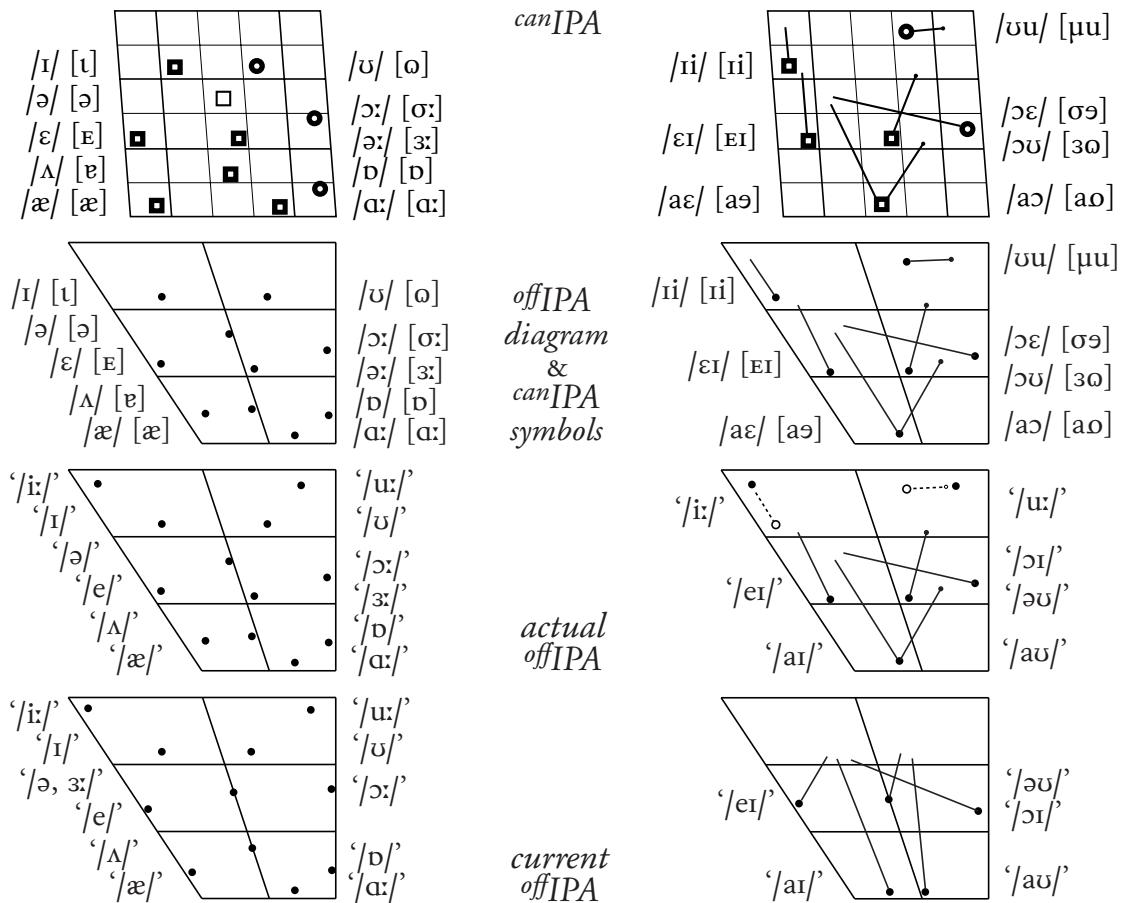
1.4. An example of non-distinctive lengthening is that occurring in Italian word-internal stressed unchecked syllables: *seme, solo* ['se:me, 'so:lo].

In conclusion, vowels consist of three fundamental elements: RAISING (of the tongue and jaw), ADVANCING (of the back of the tongue), and lip ROUNDING (or its absence).

As a first approach to the vowel phonemes of English, which are many more than in Spanish (5) or in Italian (7), we reproduce a simplified version of the vocograms of neutral British English, showing only its monophthongs (9 + schwa

/ə/) and diphthongs (7), with no combinatory variant, and excluding centering diphthongs, as well (here). This is done to enable the comparison with other similar figures currently found in phonetics or linguistics textbooks. We also present them both in our own vocograms and in the official quadrilaterals (but keeping our symbols) for a quicker comparison (followed by both an actual and current application of offIPA criteria and symbols, too).

fig 1.2 Four versions of simplified monophthongs and diphthongs of neutral British English.



Voicing

1.5. Voicing is the ‘voice’ given to vowels and certain consonants by the vibration of the vocal folds (which are located in the larynx).

Voicing can, therefore, be present or absent, giving rise to two main TYPES OF PHONATION: VOICED and VOICELESS consonants.

To give a few examples, the consonants present in *man*, *ring*, *dig*, *jazz*, *these*, *leisure* are voiced: ['mæn], ['rɪŋ], ['dɪg], ['dʒæz], ['ðrɪz] and ['leɪzə], ['laɪzə; 'leɪzə].

The Spanish or Italian /j, ʎ/ are also voiced, and in neutral Italian pronunciation, they are always geminated between vowels, just like the consonants written doubled in the official orthography: *sogno*, *foglio*, *mamma*, *babbo*, *oggi* ['sɔɲɲo, 'fɔʎʎo, 'mamːma, 'babːbo, 'ɔdʒːɔdʒːi].

However, in other languages, /j, ʎ/ are generally found without gemination, as in Spanish: *mañana*, *calle* [ma'ɲaɳa, 'kaʎe], or Portuguese *ninho*, *filho* ['niŋu, 'fiʎu].

1.6. The other fundamental group of consonants is that of VOICELESS consonants, as seen in *pack*, *teach*, *south*, *fish* [phæk, 'θrɪtʃ, 'saʊθ, 'fɪʃ]. Of course, we have *fishy* [fɪʃ-i], while in neutral Italian, /ʃ/ is geminated between vowels: *pesce* ['peʃ:se].

Gemination occurs even in foreign words adapted into Italian, such as the word *cachet* [kaʃʃɛ], which in French is [kaʃɛ]. It is interesting to note that Italians also pronounce the orthographic geminates of foreign languages as true phonic geminates, as in the English name *Billy* ['bil.li], instead of ['bul.i].

Consonant gemination is distinctive in Italian, as the following examples demonstrate: *cade*, *cadde* ['ka:de, 'kad:de], *tufo*, *tuffo* ['tu:fo, 'tuf:fo], *nono*, *nonno* ['nɔ:ño, 'nɔ:n:ño], *caro*, *carro* ['ka:ro, 'kar:ro]. In neutral Italian, there is also gemination in cases such as *è vero* [ev'vero], *ho sonno* [os'son:no], *a casa* [ak'ka:za], *blu mare* [blum'ma:re], *così forte* [kozif'för:te], *tornerò domani* [torne'rōd do'mani], *città balneare* [tʃit'tab balne'a:re]. This kind of gemination is better defined as *co-gemination*.

Consonants

1.7. We will now see how the consonants are produced. As we have seen, the articulation of vowels is determined by the back of the tongue, with its up/down movements (complemented by closing and opening of the jaw), as well as its front/back movements, and also by the possibility of lip rounding. With consonants, instead, the space available is greater. In fact, it extends from the lips all the way to the larynx (cf fig 1.3).

In the table of fig 1.3, the names across the top are the main PLACES OF ARTICULATION, ranging from the lips to the larynx. The names to the left of the rows, instead, indicate the main MANNERS OF ARTICULATION. Intersections between the rows and columns can then produce various consonant sounds, and the number is often doubled due to the possibility of adding voicing (ie the voiced PHONATION TYPE).

All the British English consonant phonemes are given in the table, including the voiced elements forming diphonic pairs (given in parentheses). The consonants

fig 1.3. Simplified table of consonant sounds.

	bilabial	labiodental	dental	alveolar	postalveolar	postalveo-palatal protruded	palatal	velar	velar rounded	uvular	laryngeal
nasal	m		n			p	j				
stop	p (b)		t (d)	t̪ (d̪)			k (g)				
stop-strictive						tʃ (dʒ)					
constrictive	f (v)		θ (ð)								
grooved con.			s (z)			ʃ (ʒ)					
approximant				ɹ			j	w	ɹ	h	
trill											
lateral				l			ɺ				

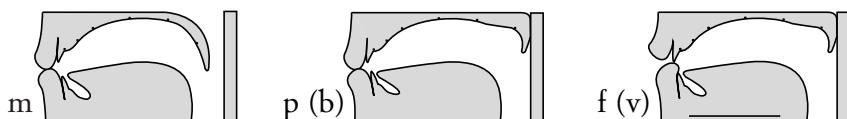
(symbols in brackets –or standing alone [except h]– are *voiced*)

[ŋ; t, (d); r, (r̥); ɬ] also appear; these are not phonemes of English (and are therefore given in italics), but are very important in certain other languages, or as taxophones in words like *cats* [t̪hæts] and *heads* [hɛd̪z]. All of these articulations are given in fig 1.4-10 (and again, from another perspective, in fig 1.11-17).

Places of articulation

1.8. Here we consider the most important PLACES (or *points*) of articulation according to a structural and typological point of view (further on, we will see many more). The most external ones are BILABIAL ([m; p, b]), as in *my pub* [maʊ'phəb̪], and LABIODENTAL ([f, v]), as in *five* [fɪv̪]. These articulations are particularly easy to see (fig 1.4).

fig 1.4. Bilabial and labiodental articulations.



Immediately afterwards, we encounter the places: DENTAL ([t, d; θ, ð; s, z], fig 1.5), as in *the thing, seize* [ðə'θɪŋ; 'sɪz̪], and Spanish *data, zona* ['d̪ata, 'θoŋna] (in American Spanish we have ['soŋna]); ALVEOLAR ([n; ʃ, ʒ; r; l], fig 1.6), as in *today* [t̪ə'deɪ], and Spanish or Italian *rana, luna*, Sp. [r̪a:n̪a, lu:n̪a], It. [ra:na, lu:na].

In English, /t, d/ are alveolar (as we have already seen), as is Castilian Spanish /s/. In phonemic (or phonological) transcriptions, simpler symbols may be used: *today* /t̪ə'deɪ/, *casas* /'kasas/. However, in truly useful phonetic transcriptions, more precise symbols are to be used, [t̪, d̪; s̪] (although not official IPA).

fig 1.5. Dental articulations.

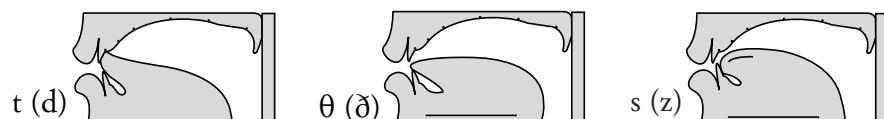
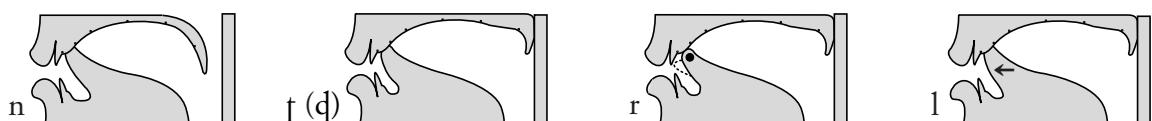


fig 1.6. Alveolar articulations.



1.9. We, now, have the POSTALVEOLAR place of articulation (fig 1.7), which is still farther back than the alveolar one. It occurs in British English *rain* ['r̪eɪn̪]. It is quite clear that the British articulation is postalveolar (in spite of the misleading official term 'retroflex', which intends to mean the same thing, although saying it in a more complicated way).

However, in part because of a less clear official terminology, even British and American phoneticians often exchange the symbols, using [ɻ] for the neutral

American *r*, which is not postalveolar, but a slightly postalveolarized prevelar approximant, that we indicate exactly with the symbol [ɹ].

The following place of articulation, which officially (but very dangerously) is called ‘postalveolar’, naturally risks being confused with the preceding articulation (which is legitimately POSTALVEOLAR) – a common fate with those who entrust their fate to overly simplistic definitions.

1.10. In reality, we have here a compound articulation. It is not merely POSTALVEOLAR, but also has two simultaneous articulatory components (ie *coarticulations*): one which is PALATAL and another which is LABIAL.

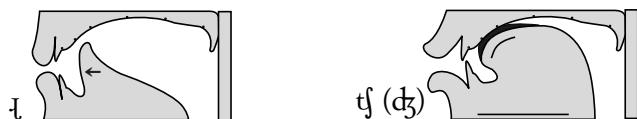
fig 1.7 (on the right) shows the articulation of the (respectively, voiced and voiceless) consonants *church*, *judge* [tʃʌtʃ, dʒədʒ]. As can be seen, there is a point of contact, in the postalveolar zone, indicated in black (for reasons that we will soon see when we move on to manners of articulation), and a point of proximity of the articulatory organs (at the palate), as well as (fairly visible) protrusion of the lips.

The descriptions of this articulation are usually among the worst (and this goes for the MANNER as well). In fact, perhaps thinking to make things easier by (excessive) simplification, the articulation is often described as ‘palatal’ (as an alternative to ‘postalveolar’, already seen). In reality, its proper definition is POSTALVEO-PALATAL PROTRUDED, precisely because each of its three components is fundamental.

1.11. For example, in Spanish, we encounter an articulation without lip protrusion, which is therefore simply POSTALVEO-PALATAL. It is useful to indicate this slightly different articulation with a symbol of its own (as we have already mentioned, and will again). The symbol used is a suitably modified version of the one used for the articulation with lip protrusion, so that the relationship between the articulations is preserved in the symbols, without, however, confusing them together. In phonemic transcriptions, the more general symbols are employed in all cases, thus, we have Spanish *chachachá* /tʃatʃa'tʃa/ [tʃatʃa'tʃa].

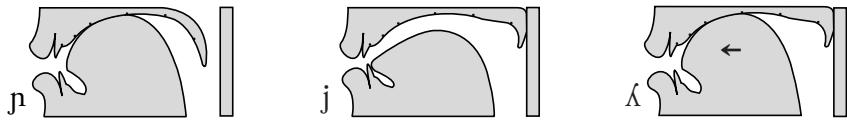
Although it is more complex, this clearer definition surely helps the reader to fully understand the mechanism of its articulation; and the consequential knowledge and phonetic richness leads to much more satisfying practical results. In fact, phonetics should not be carried out unwillingly, proceeding only by memorization. Phonetics is an artistic science, and as such, should be ‘savored’ and ‘lived’ in the best and most creative way (as we have already pointed out in § 1.4).

fig 1.7. Postalveolar and postalveopalatal protruded articulations.



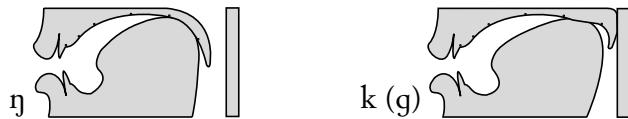
1.12. We next come to the true PALATAL place of articulation (fig 1.8), as with Italian /ɲ, j,ʎ/, or in Castilian Spanish *sueño*, *ciencia*, *calle* ['ʂweŋo, ʈjeŋθja, ʈkaʎe], or in Italian *gnocco*, *paio*, *foglia* [ɲɔkkɔ, ʈpaio, ʈfɔʎʎa]. English has /j/ in *yes*, *unit* [jɛs, ɿjuɳɪt].

fig 1.8. Palatal articulations.



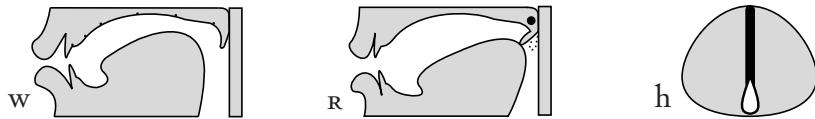
1.13. We also have the VELAR place (fig 1.9). The velar nasal, /ŋ/, is a phoneme in English (occurring between vowels as well): *sing, singing* ['sɪŋ, 'sɪŋ-ɪŋ]. Moreover, there are the velar stops, /k, g/, also with their prevelar taxophones, occurring before palatal vocoids (or [j]), as in *cat, get* [t̪χæʃ, 'gɛʃ]. In Spanish and Italian, [ŋ] only occurs as a contextual variant (ie taxophone) of the phoneme /n/, as in Sp. *congreso* /kon'gresco/ [kon'gɾe'so] or It. *congresso* /kon'gresso/ [kon'gres:s'o].

fig 1.9. Velar articulations.



1.14. Adding lip rounding (as in [u]), we obtain the VELAR ROUNDED place of articulation (fig 1.10, on the left), as in /w/ in *wit, one* ['wɪt, 'wen:], or in Spanish *cuatro* ['kwa:t̪ro], or Italian *uomo* ['wɔ:mo].

fig 1.10. Velar rounded, uvular, and laryngeal articulations.



1.15. Farther back, we find the UVULAR place (fig 1.10, in the middle), which we will exemplify with the voiced trill, [r]. It may advisable to use this symbol in phonemic transcriptions of French and German, even though the most frequent actual realization in these languages is not a trill (as will be seen later on). The purpose of this choice of a phonemic symbol is to make it particularly evident that the articulation is uvular (and not alveolar, [r], or postalveolar, [ɹ]): French *rare* /ʁa:r/ ['ʁa:r], and German *rein* /ʁaen/ ['ʁaen]. Let us observe that [ʁ] is a constrictive, while [ɹ] is an approximant: progressively weaker than [r].

The last place of articulation (in this simplified table) is the LARYNGEAL place, most commonly represented by /h/ (fig 1.10, on the right), as in English *hat* [hæt], and German *Hans* ['hans].

Manners of articulation

1.16. Now, in order to fully master the table of fig 1.3 (which can be pictured mentally as well, since it is fairly simple – though new to those who have never done phonetics), we will move on to the seven fundamental MANNERS OF ARTICULATION, using the same consonants, but from this opposing perspective.

The PLACE and the MANNER of articulation are two of the *three* components constituting the consonants – the third is the TYPE OF PHONATION, particularly the distinction VOICED vs VOICELESS.

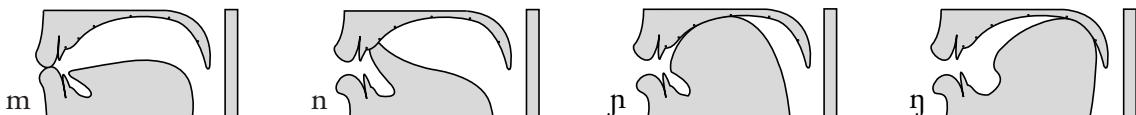
We will now move through the table, from the top downwards, so that we can see these MANNERS of articulation. The presentation will follow a quite precise physiological and articulatory logic, as we shall see.

1.17. Nasal (1). Lowering the velum, we open the passage to the nasal cavity, thus allowing expiratory air to escape from the nose. The result is the NASAL manner of articulation, which is combined with a closure produced somewhere in the mouth (in this table, in the bilabial, alveolar, palatal, or velar places).

However, these articulations should certainly not be called ‘stops’ (the next manner that we will consider), since nasal sounds are continuous, not momentary. Notwithstanding the closure in the oral channel, air can continuously escape through the nose, and the sound can be prolonged as long as expiratory air remains available.

The nasal consonants we have considered are [m, n, ŋ, ɳ] in English *man*, *singing* [mæn, 'sɪŋɪŋ], or in Spanish *mar*, *no*, *caña*, *tengo* ['mar, 'nɔ, 'ka'na, 'tengo], or in Italian *mai*, *no*, *ragno*, *lungo* ['maɪ, 'nɔ, 'raŋ:ño, 'luŋ:go], and they are voiced. We group them together in fig 1.11 so that it can be easily seen that the velum is lowered in all of them.

fig 1.11. Nasal articulations.



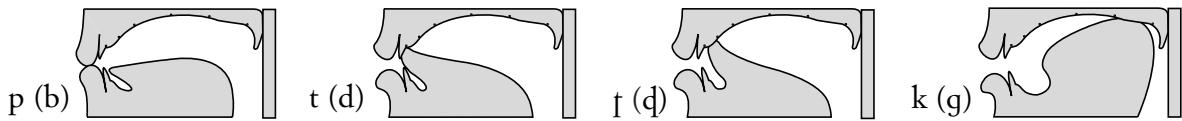
1.18. Stop (2). If, instead, the velum is raised (as in all the manners which follow), and a closure occurs, we have the STOP manner of articulation (fig 1.12). Here we have voiced and voiceless consonants, as in [p, b; t, d; ʈ, ɖ; k, g; ɳ, ɳ̪]: *pen*, *Ben*; *two*, *do*; *cot*, *got* ['phen:, 'ben:, ʈʰəu:, ɖəu:, khɔʈ, 'gɔʈ]; and [t, d] *diente* (Sp.) ['dje̞n̪te]; *dente* (It.) ['dɛn̪te].

In all the figures given to illustrate the manners of articulation, the reader should pay particular attention to what they have in common (even between different places of articulation) – these common features are precisely the characteristics of the manner in question.

1.19. Constrictive (3). For now, it will be convenient to skip the manner which is ‘halfway’ between the preceding manner and this one (and indicated in the table as 2+3, since it results from a combination of those two manners in a single sound – the reason will be seen shortly).

We therefore come to the CONSTRITIVE manner of articulation, characterized by the speaker bringing the articulatory organs sufficiently close together that there is an audible noise of air friction. The constrictive manner is characterized by this friction, which however differs quite a bit in sound, depending upon the

fig 1.12. Stop articulations.



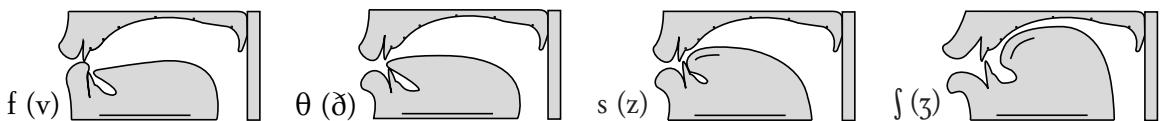
place of articulation. In the table of fig 1.3, we have four DIPHONIC PAIRS of constrictives (which appear in fig 1.13), ie [f, v; s, z; θ, ð; ʃ, ʒ], as in *five, seize, this thing, ash, rouge* [fɪv, sɪz, ðɪsθɪŋ, əʃ, ʁʊʒ]. As we have indicated, a diphonic pair consists of voiceless and voiced elements, sharing the same place and manner of articulation.

The term CONSTRITIVE is clearer and more appropriate, since it is articulatory in nature, and therefore easier to put into concrete relationship with the production of the sounds in question. However, due to a sort of pernicious inertia, the term ‘fricative’ is still more common (the term is auditory and semantically much less transparent).

fig 1.13. Constrictive articulations.

1.20. *Stopstrictive* (2+3). The combination of manners 2 and 3 produces the STOPSTRICTIVE manner, which naturally derives from *stop + constrictive*. The more common term ‘affricate’ is not articulatory, but rather auditory, and therefore less evident and less easily concretized.

Instead, the new term *stopstrictive* immediately communicates the exact nature



of the sound by virtue of its compound structure: the sound is composed of a first part which is incomplete, firmly joined to a second part, which characterizes it.

In the table, we have one diphonic pair of stopstrictives, [tʃ, dʒ], as in *match, age* ['mætʃ, 'eɪdʒ]. The mechanism is a combination of the stop manner (2) and the constrictive manner (3), with a total *length* corresponding to that of a *single* segment, *not* to the sum of two segments. A duration equivalent to that of two segments is found instead in SEQUENCES /ts, dz; tʃ, dʒ/, such as, for example, *cats, heads* [khaets, 'heɪdʒ], or French *patchouli, adjective* [paʃʃuли, ɔdʒektif].

It is important to pay careful attention to the distinction between the stopstrictive symbols, [tʃ dʒ], which are *monograms*, and the symbols for *sequences*, /tʃ, dʒ/, which are similar, but clearly not identical. For instance, in English, we have *patchouli*, [paʃʃuли, ɔdʒektif] and *adjective, agent* ['ædʒektiv, 'eɪdʒənt]. The two successive phases of the articulation are, in fact, HOMORGANIC (ie produced in the same place of articulation). What occurs here is the combination of two different manners: the first half is a stop, corresponding in place of articulation to the constriction of the second half.

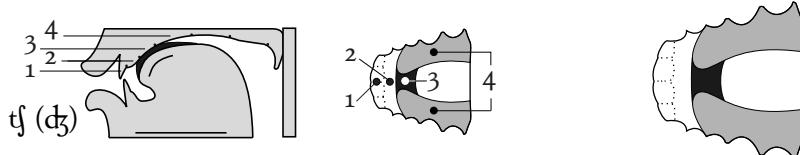
1.21. The best symbols for indicating stopstrictives are MONOGRAMS, as [tʃ, dʒ], which make three fundamental points quite clear: that the sound is a SINGLE

sound, and not two sounds in sequence (even though it is composed of two distinct phases), with the NORMAL *duration* of one segment.

In fact, for instance, in Italian it is possible to have phonemic oppositions such as the one between *mogio* ‘downcast’ and *moggio* ‘bushel’: /'mɔdʒo/, 'mɔdʒdʒo/ [mɔ:dʒo, 'mɔdʒ:dʒo], and HOMORGANIC, as was mentioned above – it is therefore not a simple combination of [t, d] with [ʃ, ʒ], as can unfortunately be read in certain linguistics texts (and even phonetics texts!).

In fig 1.14, the first phase is marked in black, while the second one is in grey (as with all the other articulations). The first phase is the *stop* phase, and the second is the *constrictive* one, with the articulatory organs close together, but without occlusion of the passage of air. The two diagrams on the right-hand side of fig 1.14 show the mechanism from another point of view: that of PALATOGRAMS.

fig 1.14. Stopstrictive articulations.



1.22. Comparing the orogram of [tʃ, dʒ] with that of [ʃ, ʒ] (fig 1.13), it is possible to see the difference between the constrictives and the stopstrictives, at least for the case of the postalveopalatal (protruded) place of articulation.

Both of these, in our figures, contain a horizontal line at the bottom, which by convention represents the noise common to the two manners. Instead, a curved line, at the height of the blade, represents (also by convention) a longitudinal groove.

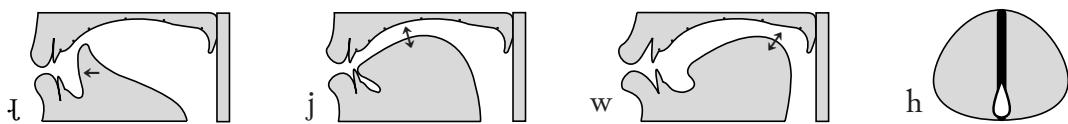
This groove is formed between the blade of the tongue and the part of the palatal vault that it approaches and partially touches. It is through the groove that air escapes, causing the hissing noises which characterize these GROOVED SOUNDS.

1.23. *Approximant* (4). The next manner, following the table of fig 1.3, is the APPROXIMANT manner. It is distinguished from the CONSTRITIVE manner (3) because the articulatory organs are less close together, and as a result, they produce a less apparent noise. In fact, this noise is mostly heard only in the voiceless sounds, while in the voiced ones it is usually ‘covered over’ by the voicing produced by vocal-fold vibration.

fig 1.15 gives the orograms of [l, j, w], in which the amount of space between the back of the tongue and the palatal vault is clearly visible. In the orthographic systems of different languages, [j, w] are found written both with ‘vowel’ graphemes and ‘consonant’ graphemes: *use*, *yes*, *quite*, *wet* [ju:s, 'jes, 'khwaət, 'wet] in Italian, *ieri*, *uomo* [jɛ:ri, 'wo:mo]. Both are voiced.

In the table of fig 1.3 (and fig 1.15, on the right), we have [h], as well. Although it is mostly foreign to the Romance languages, it is nevertheless very important in many other languages: English *hut* [hɛt], German *Hut* ['hʊt]. It is voiceless, and produced in the glottis by opening the arytenoids. Therefore, it usually has no oral articulation of its own (except for coarticulation).

fig 1.15. Approximant articulations.



1.24. *Trill* (5). The second to last manner in the table is the TRILL manner. It regards sounds which produce a pair of rapid tapping contacts of the tongue tip against the alveolar ridge, in the case of [r] in Italian *rana* [ra:n:a], or of the uvula against the postdorsum, as in the [R] theoretically possible for French *rue* ['ry] or German *Rast* ['rast].

In Spanish, the alveolar trill is typically longer: *rana* [ra:n:a] (sometimes we find '/rana/', or, on the contrary, simply *perro* ['pero'], for real ['per:o], as opposed to *pero* ['pero'] ['pe:ro]). Both are voiced, and both are shown in fig 1.16, where the tapping contacts are indicated schematically by the dark balls, and more concretely by the dashed outlines (more easily visible in the magnified versions on the sides).

Later on, we will also encounter ‘trills’ with only one tapping contact (these are called TAPS). It will be seen, in any case, that the grapheme *r* does not represent a strong or weak trill at all, in many languages, but rather a constrictive or an approximant, in most cases (which we will see adequately, when necessary).

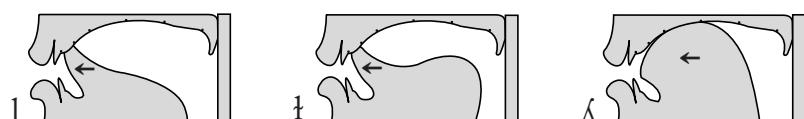
fig 1.16. Trill articulations.



1.25. *Lateral* (6). The last manner is the LATERAL one, in which the tongue, while touching a point on the palatal vault, contracts laterally, thereby permitting air to pass out by the sides of the tongue.

fig 1.17 shows the laterals [l, ɿ], as in *lily* [lɪl-i], or in Castilian Spanish *calle* ['ka:l:e], or Italian *luglio* [luʎʎo:ʎo]. English and many other languages do not have any [ɿ] sound, but rather a velarized alveolar [ɫ], as in *fulfil* [fʊɫfɪl:ɫ].

fig 1.17. Lateral articulations.



2.

A general approach to Natural Tonetics

Prosodic elements

2.1. While speaking of the vowels (§ 1.2), we have already mentioned the distinct role that segment DURATION (also called LENGTH or QUANTITY) can have in certain languages.

Normally, the CHRONEME, /:/, is placed after a vowel when it is necessary to indicate length (as we have seen in § 1.2, in the case of German *Stadt* [ʃtɔ:t] ‘city’ and *Staat* [ʃta:t] ‘State’).

At times, differences in duration are combined with differences in timbre, as we find, again in German, with *offen* [ɔ:f:m̩], *Ofen* [ɔ:o:f:m̩].

Duration can also be associated with diphthongization, as in English *bee*, *two* ['bri:, tʰju:], Too often, these last examples are still transcribed ‘[bi:, tu:]’, as if they were actually long monophthongs (and, unfortunately, they are also often transcribed without a stress mark, as if monosyllables could not be either stressed or unstressed).

2.2. PHONEMIC LENGTH of consonants is better indicated by doubling, or more technically GEMINATING the symbol. This is especially true of languages such as Italian, where –phonetically as well– the consonants in question are truly GEMINATE, extending over two different syllables ([CC], and not merely ‘lengthened’ consonants, [C:]): *vanno*, *detto*, *faccio*, *passo*, *carro*, *gallo* ['van:nɔ:, 'det:tɔ:, 'fatʃ:tiɔ:, 'pas:sɔ:, 'kar:ro, 'gal:lo].

It is thus important to avoid transcriptions such as ‘/van:o, 'det:o, 'fatʃ:o, 'pas:o, 'kar:o, 'gal:o’ (or, even worse, ‘/fat:ʃ:o/’). Let us also note English: *penknife*, *book-case*, *this seat* ['phen,nəʊf, 'bʊk,kɛɪs, ðɪs'seɪt].

PHONETIC LENGTH (which is not distinctive) of single elements, whether vowels or consonants, is marked with the CHRONE, [:], or with the SEMI-CHRONE, [·] (when less duration is present): English *car*, *card*, *cart*, *cardigan* [kha:, kha:d, kha:t, kha:dʒən], *sea*, *seed*, *seat*, *seeding* ['sri:, 'sri:d, 'sri:t, 'sri:dʒɪŋ].

Stress

2.3. Word STRESS (as well as that of RHYTHM GROUPS, or *stress groups* – the first term is preferable) is marked by ['] in front of the syllable in question: *finally* ['faθ-]

nəli] (and certainly not in front of the stressed vowel, '[fáənəli]', nor above the vowel, '[fáənəli]'. Secondary stress, which is weaker (and generally, phonetic and not phonemic, ie without distinctive value), is denoted by [:]: *dynamite* ['dáənə-máət̪] (not ['dáənəm,áət̪'], nor ['dáənəmàət̪']).

Especially in Romance studies, terminological inertia has dragged obviously unscientific names through time from the Roman era to the present, and so we must insist, once again, that 'tonic' is completely inappropriate in the sense of STRESSED.

The word *tonic* clearly refers to the *tone* (pitch) of a syllable, not to its *stress*. The Romans took their terminology for syllable PROMINENCE from Greek, where prominence was *tonal* (determined by *pitch*, in addition to inevitable intensity), even though, in Latin, prominence was *intensive, stress-based*. All terms of this sort without scientific foundation should be rigorously avoided, since they cannot fail to produce dangerous conceptual misunderstandings.

2.4. In the case of stress position, it is also good to use scientific and objective terminology. We will therefore speak of FINAL-STRESSED words (stressed on the last syllable, rather than 'oxytone'), ie with stress on the last syllable: *ago, again, replace, kangaroo* [ə'gɔ:, ə'gɛ(i)n, ɹə'phleɪs, ɹhæŋgə'ɫu:n].

Spanish *terminó, convoy, tendría, tomar* [ter'mi'nó, kom'bvi, ten'dri:a, to'mar]. Italian: *partirà, partirai, ferrovia, Manin* [part'i:ra, part'i:ra:i, ferro'vì:a, ma'nin:].

Next we have PENULTIMATE-STRESSED words (stressed on the last but one syllable, better than 'paroxytone'): *apparent, deductive, evolution* [ə'phæ:t̪en̪t̪, d̪e'fæk:t̪iv, e'vel̪ju:n̪] or [i:i:və-].

Spanish: *termino, mañana, hermoso* [ter'mi:ño, ma'ɲa:na, er'mos:so], Italian: *ritorno, domani, principi* 'principles' (also written *princípi*) [ri'tor:ño, do'ma:ni, pri'sip'i:pí] (different from *principi* 'princes', also written *príncipi*); PREPENULTIMATESTRESSED ones (stressed on the last but two syllable, better than 'proparoxytone'): *dedicate, cumbersome, curiosity* ['d̪e:d̪i:khei̪t̪, 'khembəsm̪, khjoəl̪i'psət̪i].

Spanish: *término, régimen, regímenes* ['térm̪ino, 'r̪eximén, r̪e'xi'menes], Italian: *ritornano, domenica, termino, fabbrica* [ri'tor:nan̪o, do'me:ni:ka, 'térm̪ino, 'fab:bri:ka].

Much less frequently, we encounter words STRESSED ON THE FOURTH TO LAST SYLLABLE: *prosecutor, definitely* ['ph̪.l̪ɒsə:k̪hjø:t̪ə, 'd̪efənə:t̪li].

Italian: *terminano, fabbricalo* ['térm̪ina:ño, 'fab:brikálo]; on the FIFTH TO LAST: *cumulatively, positivism* ['khjumjələ:t̪ivli, -leit̪ivli, 'ph̪oz-ət̪i:vizm̪], Italian: *fabbri-camelo* ['fab:brikame:lo].

And on the SIXTH TO LAST as in the very rare Italian form *fabbricamicelo* 'build it for me there, or by means of that, or out of that' ['fab:briká,mitʃe:lo] (actually, a form made up purposely as an example, just to set a linguistic record).

Sentence stress

2.5. It is advisable to consider as SENTENCE STRESS, or *ictus*, every case of word stress which remains stressed in sentence context, and does not become reduced. When stress reduction actually occurs, it is a phonetic (rather than a phonemic)

phenomenon, as in Italian *tre gatti* ‘three cats’ [treg'gat:t], where the isolated ['tre] loses its stress when placed in a rhythm group.

In English such a reduction does not occur; as a matter of fact, we can easily have examples such as: *Then three nice black cats ran out* ['ðen 'θri: 'na:s 'blæk 'kæts 'jæn 'aʊt].

It is preferable to avoid using the term ‘sentence stress’ to refer to the sentence FOCUS; this last notion refers to the word, or words (and therefore concepts), which in a given utterance are communicatively more PROMINENT. In fact, they are highlighted by virtue of being new to the conversation (as opposed to being already given, or known).

2.6. Sentence stress and focus are in fact two distinct attributes, although they are not necessarily incompatible. In fact, they can both be present in the last stress group, even though this possibility is statistically the least frequent: *I never said that was true* [aə'nev-ə 'sed 'ðæp wəz'ði:lju:.]. Or, in Italian, *Non ho mai detto che questo fosse vero* ‘I never said that was true’ [no,nɔmmmai'detto kek,kwesto,fosse'vero:.]).

In practice, it is much more probable that the sentences above would be said as [aə'nev-ə 'sə:d· 'ðæp wəz'ði:lju:.], or better [aə'nev-ə 'sə:d· 'ðæp wəz'ði:lju:.], or [aə'nev-ə 'sed.. 'ðæp wəz'ði:lju:.] (and [no,nɔmmmai'det:to· kek,kwesto,fosse'vero:.], or [no,nɔmmmai'det:to· kek,kwesto,fosse'vero:.], or also [nonɔm'maidetto· kek,kwesto,fosse'vero:.]).

Therefore, a concrete utterance (which is sufficiently long) will have multiple *ictuses*, ie *protonic* syllables and one or more *tonic* syllables (in the rigorous sense of *stressed syllables* in the *tune*).

At the same time, the utterance can also have one or more points which are communicatively *highlighted* (ie the *sentence foci*), and these are generally expressed by different proportions of stress and pitch.

The sentence *These are the new co-workers of my neighbor Roberta* [ðizəðə'nju: 'kh3o,w3:kəz əvma:s'neibə ɻə'b3:tə..] can be variously realized, with single or multiple highlights.

We can therefore encounter [ðizəðə'nju: 'kh3o,w3:kəz əvma:s'neibə ɻə'b3:tə..], or also [ðizəðə'nju: 'kh3o,w3:kəz əvma:s'neibə ɻə'b3:tə..], or possibly [ðizəðə'nju: 'kh3o,w3:kəz əvma:s'neibə ɻə'b3:tə..], or else also [ðizəðə'nju: 'kh3o,w3:kəz əvma:s'neibə ɻə'b3:tə..]. Notice the importance of the continuative tune [:], even without a short pause [:] (or longer: [::]).

2.7. Of course, similar subdivisions are possible for the corresponding Italian sentence, too: *Questi sono i nuovi colleghi della mia vicina Roberta*: [kwesti,sono'i'nwɔ:vi kɔllɛ:gi· ,della,miavi'tʃi:na ro'bər:ta:], or also [kwesti,sono'i'nwɔ:vi kɔllɛ:gi· ,della,miavi'tʃi:na ro'bər:ta:], or possibly [kwesti,sono'i'nwɔ:vi kɔllɛ:gi· ,della,miavi'tʃi:na ro'bər:ta:], or else also [kwesti,sono'i'nwɔ:vi kɔllɛ:gi· ,della,miavi'tʃi:na ro'bər:ta:]].

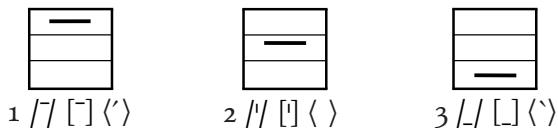
In any case, the elements highlighted can also be grammemes, in cases such as particular contrasts. With the examples above, we can have ['ðriz·], or [ðiz'a:] (with *are* highlighted), or even [ðə,nju:] (with *new* destressed, but with *my* highlighted, ['ma:s], for some particular reason). Quite the same for Italian (and other languages).

Some kind of attenuation can occur in parts of the sentence rendered ‘parenthetical’, as in [ləvmaθ'neɪbə tə'bəz'trə..], where *of my neighbor Roberta* is spoken as a sort of afterthought. Again, similar possibilities occur in the Italian example given: [della,miavi'tʃirna ro'bər:ta.] *della mia vicina Roberta*.

Tones

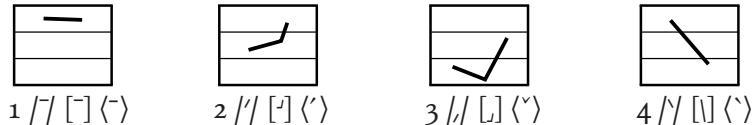
2.8. Certain languages have distinctive TONES; these are called, logically enough, TONEMES. Distinctive tones imply that when the pitch of a syllable changes, its meaning can change, as well. Let us look at, for example, the three basic ton(em)es of the African language Yoruba (cf fig 2.1): ró, ro, rò /'ro, 'ro, _ro/ ‘to drape, to till, to think’.

fig 2.1. The three Yoruba tonemes.



In fig 2.2, the four ton(em)es of Mandarin Chinese are shown: mā, má, mǎ, mà /'ma, 'ma, ,ma, 'ma/ ‘mother, hemp, horse, to curse’. Of course, in our book *Chinese Pronunciation & Accents*, all possible variants are clearly shown.

fig 2.2.
The four (Mandarin)
Chinese tonemes.



Examining these fairly simple examples, it becomes clear that the graphic signs used are capable of referring to (quite) different tonetic realities in different languages.

Intonation

2.9. We will now concisely introduce the bare essentials of INTONATION. In fact, all languages have their own intonation systems, and phonetics should therefore not be treated without examining intonation, as well. Unfortunately, it is often left out entirely, even in descriptions of particular languages or in transcriptions of sentences or passages! A notably bad example of this omission is given by the ‘official manual’ of the International Phonetic Association: *Handbook of the International Phonetic Association: A Guide to the Use of the International Phonetic Alphabet* (found in the bibliography).

In every language the THREE MARKED TUNES (/ . ? ;/) and the UNMARKED PRO-TUNE (the normal / /, without a special symbol) should be clearly indicated with appropriate symbols (both on a phonetic, or rather, TONETIC level, and on a phonemic, or TONEMIC one). The *tune* involves the final stressed syllable of an utterance and the syllables around it (cf fig 2.3), while the *protune* is what is found

before the tune in the same intonation group (cf fig 2.3, on the right). In the example *his cousin's name is Bartholomew* [hɪz'kʰeɪz̩n̩z 'neɪm ɪzbaθɒləmjuː..], the tune is constituted by the full name of *Bartholomew*, while the protune is everything prior to it: *his cousin's name is...*

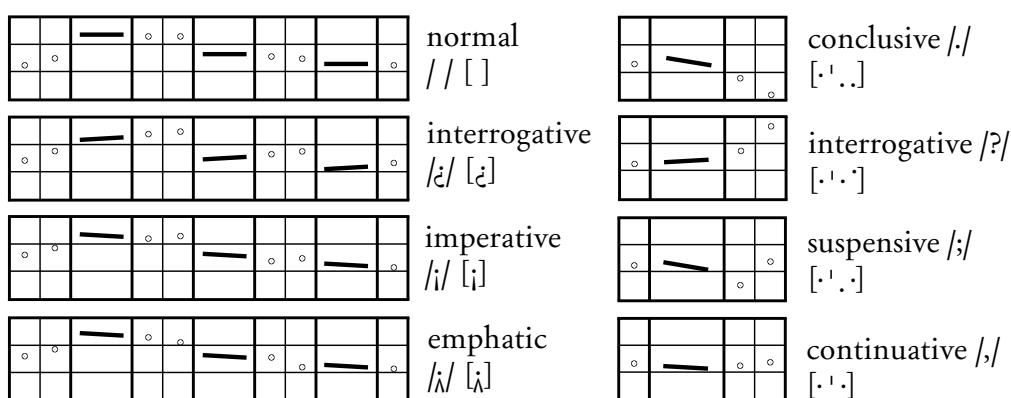
The example of *Bartholomew* is particularly interesting because it allows us to consider the four ideal components of a tune: the *pretonic* syllable (*Bar-*), the *tonic* syllable (*-thol-*), and the two *posttonic* ones (*-omew*).

The pronunciation of this example normally provides a reasonably adequate realization of the schematic tonal movements shown in fig 2.3 (which besides the unmarked protune and the three marked tunes, give the important interrogative protune, /ɔ:/, which is marked, and the continuative intoneme, // – which is unmarked).

2.10. If the example were *his cousin's name is Dick* [hɪz'kʰeɪz̩n̩z 'neɪm ɪz'dɪk..], the tune would be *is Dick*. The tonic and posttonic syllables would consist of only one syllable (*Dick*). In consequence, the ideal movement shown in the diagrams (for the case with four syllables) would be compressed, not just horizontally, but inevitably in terms of the vertical range, as well. When only one syllable is present (as in the answer to a question like *what is his cousin's name? – Dick*), the result is a fusion of the expected pitch patterns which maintains the characteristic movements, but in an attenuated form.

The intonation schemes of the British school were among the few to have some practical use; but precisely for the reasons considered here (and in general), they are sometimes decidedly excessive. In fact, for [·'..] or [·'·'] (cf fig 2.3), they give diagrams like ˘ or ˘˘ when there is only one short voiced element: for example for [i] in *Dick* – if the result were truly as extended as their diagrams show, it would rather sound like a police siren!

fig 2.3. The four protunes and tunes of neutral British English.



2.11. The protune and the tune taken together form an INTONATION GROUP more usefully called TUNING. We use examples such as *My favorite dictionary*, or *That patient thinks he's Giuseppe Verdi*, to show that the parts of an intonation group do not necessarily respect word boundaries. In fact, the tunes in these utterances are, respectively: [ʃətʃdɪkʃn̩i..] and [i'veədʒi..] (-rite dictionary and -pe Verdi). The protunes, on the other hand, are [ðæts maefiːv] and [ðæp'pheɪʃnt θɪŋks iz-]

[dʒmu'sep] (*My favo-* and *That patient thinks he's Giusep-*). The full examples are: [ðæts maθfeɪn̩t̪ ðɪkʃn̩i..] and [ðæp'pheɪʃnt̪ θɪŋks izdʒmu'sep-i 'veədi..].

It will be seen that our transcriptions are not subdivided pedantically along word boundaries. That practice is still quite common (in the best case, motivated by hopes of helping the reader). It is much more useful to subdivide transcriptions into rhythm groups, as we have done, instead of giving things (and symbols) like ['ðæt̪ iz 'maɪ 'feɪvərət̪ 'dɪkʃənri'].

Or ['ðæt̪ 'peʃnt̪ θɪŋks hɪz dʒur'sepi 'veədi'], where the stresses and some unreduced forms (for current reduced forms or 'weak forms') are also unnatural (ie in the cases of '/iz 'maɪ/' in the first example and '/hɪz/', at least, in the second, which are weakened in normal speech, both articulatorily and prosodically).

2.12. Another (not unimportant!) counsel regards the fact that 'sounds have no capitals'; note that, for other reasons, the traditional orthographies of languages such as Arabic and Hindi, and Chinese and Japanese as well, have no capital letters. Children can easily tell that there is no phonic difference between *smith* and *Smith*, or between Italian *franco* and *Franco* – both of the English examples are pronounced exclusively [smiθ], and the Italian ones are both pronounced [fran̩ko].

And yet, even in textbooks, all too often we find (printed, as well) atrocities such as ['Dʒu'sepi 'Veədi'] and also '/Maɪ/' absurdly derived from writing conventions! The 'transcription' of *My* is given with a capital letter, because it is the first word in the sentence! Moreover, the transcription of *Giuseppe* uses a capital letter because the word is a proper name, and the result is an inappropriate and ambiguous digram, *Dʒ*, instead of a slightly less forced *Dʒ*, which would at least represent the unity of the sound [dʒ] better.

2.13. fig 2.4 will be a useful explanatory tool in order to understand more explicitly the use of tonograms (given that we are not all musicians or singers, for whom the analogy with a musical score is obvious). Let us observe, then, the graphemic text, to which we have given the form of the intonation curve. Normally this curve is shown with the lines and dots of tonograms, but here we have used a more 'intuitive' approach.

fig 2.4. An iconic way to introduce people to intonation.

1	<i>See you on Saturday.</i>	
2	<i>(Will they) see you on Saturday?</i>	
3	<i>(If they don't)</i>	<i>see you on Saturday... (it'll be a total disaster.)</i>
4	<i>(If they don't)</i>	<i>see you on Saturday... (don't worry about it.)</i>

We show just four examples, based on the segment *see you on Saturday* (in neutral British pronunciation), expressly to compare them with $\overline{\text{I}}$ and $\overline{\text{J}}$, seen above. These examples contrast pairwise: a *conclusive* utterance is contrasted with an *interrogative* one (of a total question), and a *suspensive* utterance with a *continuative* one.

2.14. In the case of the last two sentences, the semantic importance of what follows (given in parentheses) is fundamental, whether it is expressed out loud, or instead remains implicit. In any case, the suspensive tune is characterized by decidedly greater and more immediate anticipation, while this is lacking with the continuative. This difference, and certainly not their syntax, explains the difference in intonation between the third and fourth examples.

Applying the movements of the three tunes to a slightly different example, we see that in neutral (better than ‘standard’) British English, the *conclusive tune* is falling (./ [·'..]), of the type shown in fig 2.3: *Christian* [khʌɪstʃən..] (and also in three examples in fig 2.4).

The *interrogative tune* is rising (/?/ [·'··]), as in the question *Christian?* [khʌɪstʃən·]. The third tune, the *suspensive*, is used to create a sort of anticipation, or ‘suspense’. In neutral British pronunciation, it is falling-rising, /;/ [·'..]: *Although his name’s Christian, –[khʌɪstʃən.] – he’s no good Christian at all.*

2.15. In fig 2.3 (as well as in the second example of fig 2.4), we have the *interrogative protune*, /ɔ/, as well. This protune is a modification of the normal protune, and it anticipates on the rhythmic-group syllables of the protune the characteristic movement of the interrogative tune (although in an attenuated form).

Obviously, in the part specifically dedicated to the topic, we will be more explicit and more exhaustive. Here, we remark only that the interrogative protune is the same in all types of questions, whether these are TOTAL questions, like *Is his cousin’s name Christian?*, or PARTIAL ones (containing a question word, such as *why, when, who, how...*), such as *Why is his cousin’s name Christian?*

We must warn the reader that, contrary to what grammar books and writing-based teaching imply, not all questions have an interrogative tune, nor should they.

In fact, partial questions, in order to sound truly natural and authentic, should be pronounced with a conclusive tune (or at most, with the unmarked *continuative* tune, with pitch in the mid band, which will be seen in greater detail later on): *Why is his name Christian?* [ɔ̄-wəθɪz (h)ɪz'nɛɪm 'khʌɪstʃən..] (or [khʌɪstʃən·], with a continuative tune).

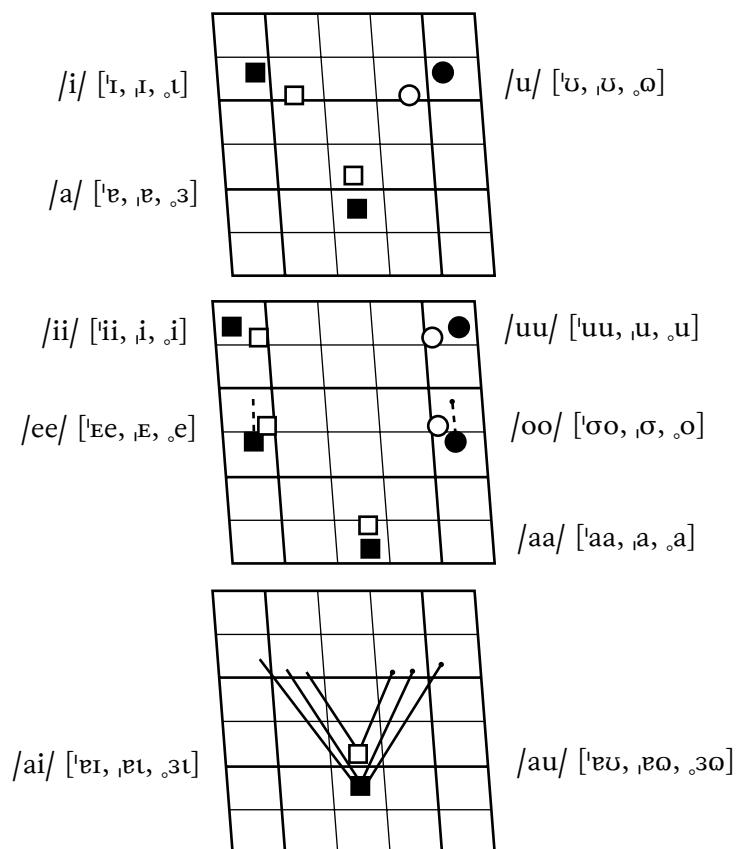
2.16. Let us conclude this chapter by drawing attention, again, to fig 2.3. The left bottom part of it shows two more protunes and their typical movements. The imperative one, /ɪ/, and the emphatic one, /ʌ/, which do not need any explanation.

3. Sanskrit vowels

3.1. The vowel system of Sanskrit is shown in fig 3.1, including the taxophones occurring in unstressed syllables. So, we have three short vowels: /i/ [i, i, .i], /a/ [a, a, .a], /u/ [u, u, .o] (first vocogram). We also have three ‘long’ vowels (actually *monotimbric* diphthongs, shown in the second vocogram): /ii/ [ii, i, .i], /aa/ [aa, a, .a], /uu/ [uu, u, .u]. In addition, we find two *narrow* diphthongs (shown in the second vocogram, as well, but too often described as ‘long vowels’): /ee/ [ee, e, .e], /oo/ [oo, o, .o].

Besides, there are two *wide* diphthongs (actually somewhat wider than the two narrow ones, as can be seen, but certainly not as their phonemic representation, which would surely be too unnatural, for true Sanskrit, differently from Vedic Sanskrit, cf fig 9.3): /ai/ [ai, ia, .ia], /au/ [au, oa, .oa].

fig 3.1. Sanskrit vowels & diphthongs.

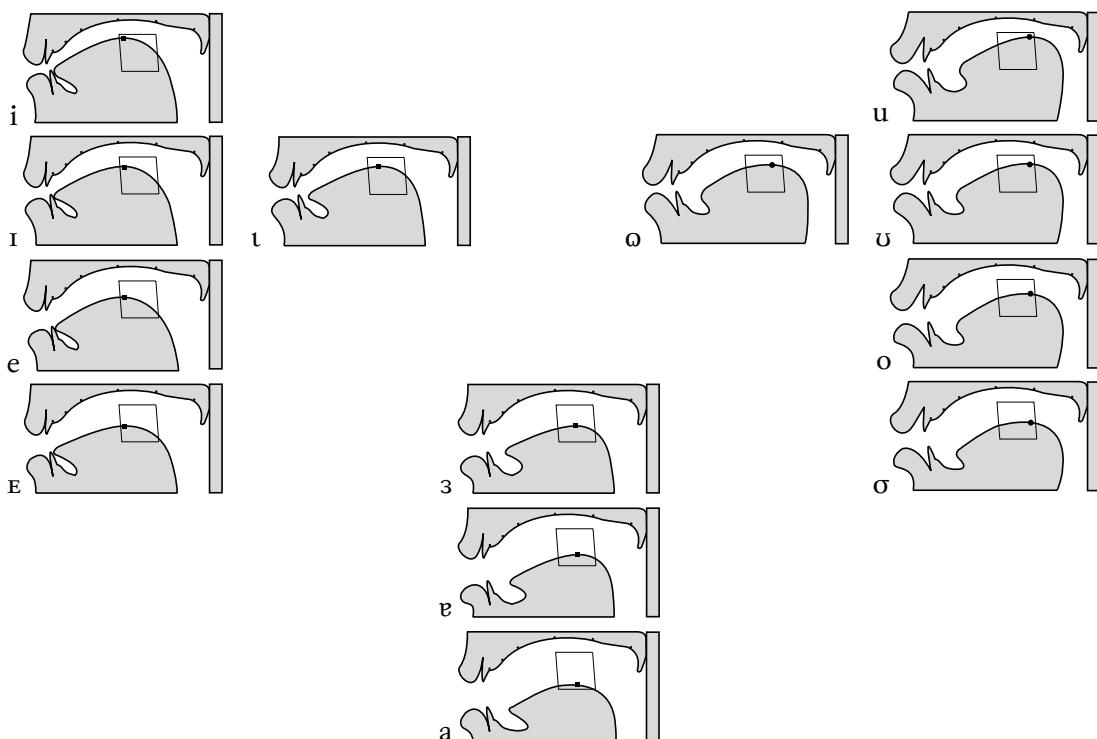


Examples: *idam* [ɪdəm], *jīva* [ɟiivə], *nālinī* ['naaluni], *ētat* ['eetət], *ćēt* [kçeet], *dēva* ['dēeuəz], *upe* ['upe], *indra* ['ind-rəz], *indūra* [in'duurəz], *indriya* ['ind-rijəz], *indrāni* [ind'raani], *manas* ['menəs], *māyā* ['maaja], *ćandana* [kçəndənə], *ilā* [ila], *itas* ['itəs], *jīvita* [ɟiivitə], *giri* [ɟirɪ], *īśikā* [i'siika], *kavi* [kevu], *Pāṇini* ['paan̄i], *āśit* ['aasit], *Kāśī* ['kaaṣi], *lōka* [l'sokəz], *kāthōra* [k3t̪hōrəz], *gō* ['gσo], *unmiṣ* ['unmɪṣ], *unmil* ['unmil], *dhā* [d'haa], *dhāv* [d'haaav].

And: *ulūta* [o'lūutə], *upabru* [o'pəb-ru], *upaplu* [o'pəp-lə], *uparut* ['upərətə], *sūbhru* ['suubhə-ru], *udbhā* ['udb-ha], *nadī* ['nədi], *bhūyāṁs* [b'huuujāṁs], *mūrčhā* ['muurč-ħa], *guru* ['gurə], *gai* ['gei], *vaiśya* ['vaiç-jəz], *praudha* [p'reuḍ-ħəz], *Paurava* ['peuṛəvə], *guna* ['guŋəz], *rūpa* ['ruupəz], *ēti* ['eetu], *atīta* [z'tiitə], *tītau* ['tīteo], *ain-drah* ['aīnd-rəh], *paundrah* ['peuṇḍ-rəh].

3.2. fig 3.2 shows the orograms of these vowels, while fig 3.3 gives their labiograms, and fig 3.4 their palatograms.

fig 3.2. Orograms of the vocalic elements of Sanskrit.



3.3. In addition, Sanskrit also has phonemic vowel *nasalization* (/V~/, signaled by *-ṁ*, 'anusvāra'), which manifests itself with very different frequency on all vowels (including rarer /au~/). For example: /i~/ [i, ī, ȫ], /a~/ [ɛ, ē, ȫ], /aa~/ [ää, ā, ȫ], /u~/ [ȫ, ū, ȫ].

Let us examine in detail how to pass from the simple notation *m* to accurate transcriptions. In *word-final position, before a pause*, *-ṁ* corresponds to /m/ [m]: *krim* [kriim], *ēm* ['eem], *kaim* [keim], *tam* ['tam], *tām* ['taam], *tītaum* ['tītəom].

fig 3.3. Labiograms of the vocalic elements of Sanskrit.

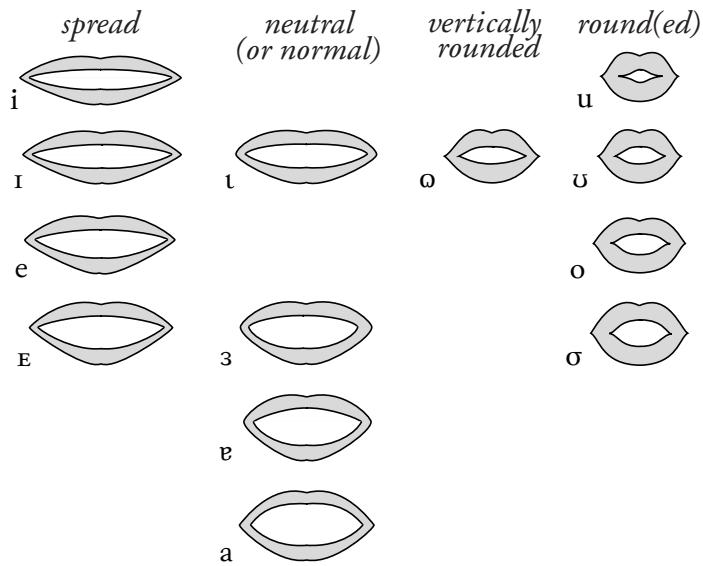
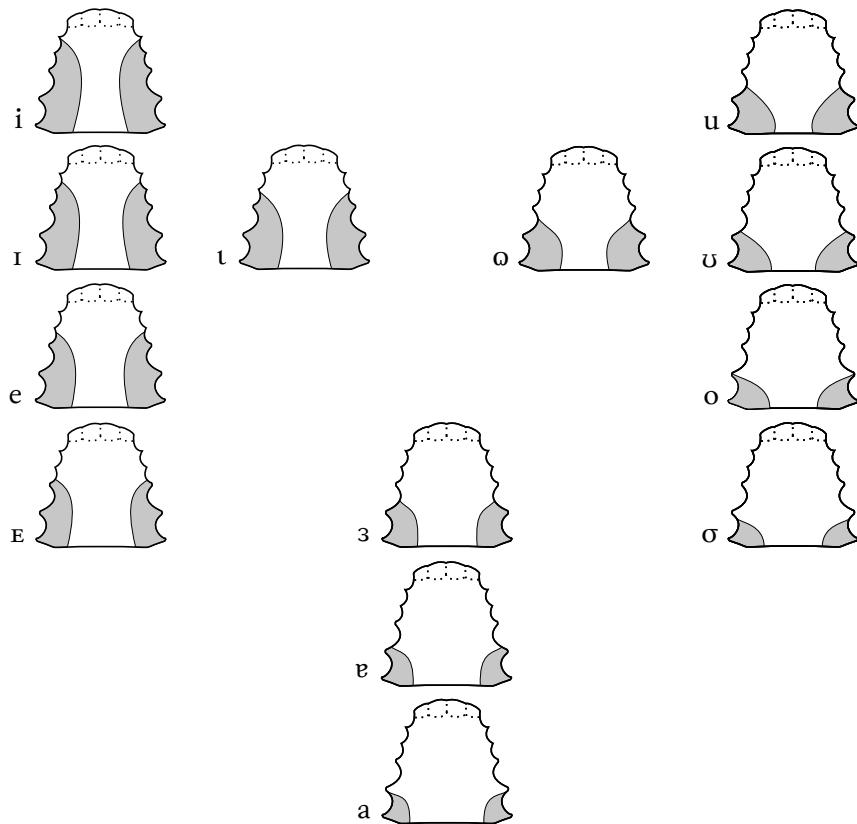


fig 3.4. Palatograms of the vocalic elements of Sanskrit.



However, in phrases, if *-m* is followed by continuous consonants (ie /m, n, ɳ, ɲ, ɳ; s, ʂ, ɳ; v, j, ɦ; r, ɻ; l/ [m, n, ɳ, ɲ, ɳ; s, ʂ, ɳ; v, ɻ, ɦ; r, ɻ, l]), it is realized as some homorganic semi-nasal contoids, preceded by nasalized vocoids (true examples will be shown later on): [Ṽ]+[na, ɳa, ɳa, ɳa, ɳa, ɳa] (usually, instead of [Ṽnŋv], [Ṽnŋw] appears, more often, but without excluding the labiodental sequence).

Instead, for *-m*, when *followed by momentaneous* contoids (/p, b, t, d, ḍ, c, ḡ, k, g/ [p, b, t, d, ḍ, ḡ, k, g, k, g]), still in phrases, it is realized as some homorganic *full* nasal contoids, preceded by *oral* vocoids: [V]+[m, n, ḷ, ḱ, ḷ].

On the other hand, in *word-internal position*, *-m* followed by *continuous* consonants (see above) is realized as in phrases, ie as some homorganic *semi-nasal* contoids, preceded by nasalized vocoids.

But, still in *word-internal position*, *-m* followed by *momentaneous* consonants behaves in two different ways, according to words, speakers (and writers), ie as *full* nasal contoids, preceded by *oral* vocoids (written with *m, n, ḷ, ḱ, ḷ*), or as some homorganic *semi-nasal* contoids, preceded by nasalized vocoids (then, written with *m̥*).

3.4. Examples: *samvāra* [səmvaarə], *samphālah/sam-* [səmpʰhaalə], *səmp-*, *sambhūya/sam-* [səmbʰhuuyə], *səmb-*, *samtāna/san-* [səmtaana], *sən-*, *dams* ['dēəs], *aṁhas* ['ēə-ħəs], *damṣṭrā* ['dēħħst̪-ra], *nihsam̥dhi* [nīħsēad-ħi], *sam̥caya/sań-* ['sējħəj-], *'sań-*, *sam̥jñā/sań-* ['sējħ-ja], *'sań-*, *asam̥mr̥sta/asamm-* [əsəmħ-ħr̥t̪-], *əsəm'm-*, *ōṁkāra/ōń-* [ōħħkaarə], *oń-*, *đīmn* [đīħən], *sam̥nidhi* ['sēħanid-ħi], *sam̥rakṣ* ['sēħarħkħ], *sam̥līna* [səħħliinə], *sam̥yōga* [səħħjōgə], *ćūṁkṛta/ćūń-* [kħūħūnħkṛt̪-], *kħuħ-], *aṁta/anta* ['ēħħt̪-], *'ańt̪-*, *pam̥dita/pań-* ['pēħħd̪it̪-], *kraum̥cāḥ/-auńcāḥ* [kħrēħħjākħ-].*

Let us consider the following words, if occurring in their prescribed contexts (with all other possible required seminasals, in addition to [n]): *ēṁ* ['ēēn], *kaiṁ* [kēēn], *tam* ['tēēn], *tāṁ* ['tāān], *titaum* ['tītħħān]. But, if in isolation (and, then, followed by a pause): *ēṁ* ['ēem], *kaiṁ* [kēim], *tam* ['tēm], *tāṁ* ['taam], *titaum* ['tītħħom].

Of course, even in stressed syllables, two simple morae are sufficient for the ‘long’ vowels, [VV], rather than truly long vocoids: [V:], and certainly not [V·V], in free syllables, too.

‘Modern’ Sanskrit vowels

3.5. Arguably, after about 2500 years, the pronunciation of classical Sanskrit, nowadays, has changed –not little– in comparison with the ‘real’ one. In fact, not only students, but also teachers, and ‘experts’, do what they can, often with questionable ‘results’.

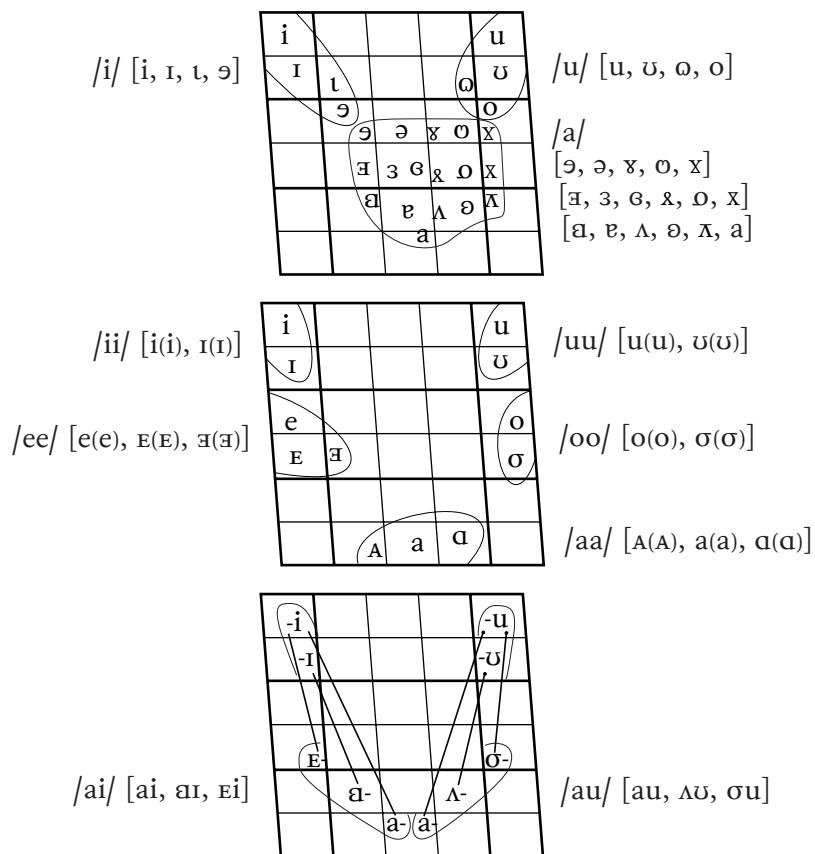
Objectively, in addition to actual ‘regional’ or rather ‘regionational’ accents, we must accept that there is a sort of ‘mediatic’ Sanskrit pronunciation, which is influenced both from local and personal peculiarities. This is what also happens for ‘modern official’ Arabic, in comparison with –but mainly derived from– actual local dialects (which have partially different grammars and vocabularies, too).

Since we exclusively intend to show the real classical Sanskrit pronunciation, in this book, for its ‘modern’ realizations, we will only indicate them, without actually transcribing examples, which are easy to derive, anyway. In fact, they could be counter-productive, indeed.

3.6. Thus, fig 3.5 wants to illustrate the real situation of the phonemic vowel system of ‘modern’ Sanskrit. It shows the different possible realizations of each vowel phoneme, by indicating the vocogram areas broadly occupied by them. For /a/, there are at least 17 actual possibilities (1st vocogram), both in stressed and unstressed syllables, including the ‘good’ ones [ə, ɔ] (the last one as unstressed).

Words ending in /VV(C)#+/ (including /ai, au/) can often be realized as [↓VV(C)#+] in addition to ‘more normal’ [↓VV(C)#+] (we say ‘more normal’ because, final /VV(C)#+/ should not be stressed, not even as [VV(C)#+], in real Sanskrit, except in forms like *namastē!* [nəməstē..], which is actually *namas-tē* ‘hello/homage to you’ (but also possible as [nəməstē..])).

fig 3.5. Vocalic areas of ‘modern’ Sanskrit vowels & diphthongs



Other peculiarities are shown in fig 3.6, for the sequences /ajV, ija, Cja, Ça, va/ (notice: /Ç/ = /j, c, ɿ, ç/), often also for other /a/’s occurring in syllables next to those, in a word (as a kind of vowel harmony), with adjacent /aCaC/ reaching even [e, ə, ɛ, ə]. In addition, /ai, au/, as shown in the 3rd vocogram, may have six actual ‘modern’ realizations. Let us also notice that ‘modern’ /ai, au/ may even become [aɪ, aʊ] (cf fig 3.6).

3.7. For /~/ -m (ie /V~/), we currently hear: ↓[m, n, ɳ] (↓[ɳ] after front vowels), or ↓[ŋ, ɳ] (velar or provelar seminasal, with rounded lips), all independently from

fig 3.6. Typical vocalic areas for particular ‘modern’ sequences.

/ai/ [aɪ]				/au/ [a'u]
/ajV/ [e-, e-, ə-, ə-, a-, a-] + [-j-, -j-, -θ-] + [-V]	(i)			(u)
/ija/ [i-, i-, ɪ-] + [-j-, -j-, -θ-] + [-e, -e, -ə, -ə, -a, -a]	e ɪ	ə ə	o ə	o ə
/C#ja/ [(C#)] + [j-, j-, ɪ-] + [-e, -e, -ə, -ə, -a, -a]				
/C#a/ [C](= /n, c, ɟ/) + [-e, -e, -ə, -ə, -a, -a]	a ɛ a	e ə ə		
/C#va/ [(C#)] + [w-, v-, β-, β-] + [-e, -e, -ə, -ə, -a, -a] & [(C#)] + [w-, v-, β-, β-, θ-] + [-o, -o, -σ, -σ, -o]				

a following consonant (so different from [$\equiv C$]), again with frequent alternations.

More rarely, but as more committed realizations, we may also find $\downarrow[V\tilde{V}, \tilde{V}\cdot]$ (especially before a pause), or $\downarrow[\chi\hat{\eta}, \chi\hat{\eta}; \lambda\hat{\eta}, \lambda\hat{\eta}; \Lambda\hat{\eta}, \Lambda\hat{\eta}]$, in addition to $\downarrow[VN(\equiv C), VN(\equiv C)]$ or $\downarrow[\tilde{V}N(\equiv C), \tilde{V}N(\equiv C)]$ ($[N]$ is a full nasal contoid, while $[^N]$ is semi-nasal).

These sequences occur either before momentaneous or continuous consonants, even alternating much; notice that [$\equiv C$] means ‘homorganic to a following consonant’). In ‘modern’ Vedic chanting, $\downarrow[w\tilde{x}m, w\tilde{x}m, w\tilde{x}m:]$ is more typically used (even in longer sequences, also preceded or not by [g, γ]).

In addition, we find (notice that ‘ \downarrow ’ indicates worse realizations): $\downarrow mv$ [$m\cdot\omega, m\cdot\nu$] $\downarrow[\tilde{\omega}\cdot\omega, \tilde{\nu}\cdot\nu, \beta\cdot\beta]$, $\downarrow my$ [$\alpha\cdot j, \downarrow\tilde{j}\cdot j$], $\downarrow ms$ [$\alpha\cdot s, \tilde{\alpha}\cdot s$] $\downarrow[\eta\cdot s, \tilde{\chi}\cdot s, \alpha\cdot s, \tilde{\chi}\cdot s, \alpha\cdot s, \tilde{\chi}\cdot s]$, $\downarrow m\acute{s}$ [$\alpha\cdot\acute{s}$] $\downarrow[\eta\cdot\acute{s}, \tilde{\chi}\cdot\acute{s}, \alpha\cdot\acute{s}, \tilde{\chi}\cdot\acute{s}, \alpha\cdot\acute{s}, \tilde{\chi}\cdot\acute{s}]$, $\downarrow mr$ [$\alpha\cdot r, \downarrow\tilde{r}\cdot r$], $\downarrow ml$ [$\alpha\cdot l, \downarrow\tilde{l}\cdot l$].

3.8. As for ‘modern’ /h/ -h (ie /Vh/, that is [Vh∅]), we usually find [$\downarrow VhV$], or [$\downarrow\tilde{V}hV$], or [$\downarrow V\tilde{h}V$], but also [$\downarrow\downarrow VhV$], which sounds completely different from real Sanskrit usage. Some, more or less frequent renderings, as [VhV] (with [h] instead of [h]), are only little ‘better’. All this can alternate also with real Sanskrit realizations, producing, however, still more complex and uncertain results, to make someone... turn in the grave...

fig 3.7 shows the more typical ‘modern’ realizations of /r, ɻ; ɿ, ɻ̄, ɿ̄, ɿ̄̄/, by means of the vocoids given there, as [CV], instead of [C] (intense, or ‘syllabic’). Some intense contoidal realizations are also possible.

fig 3.7. Typical ‘modern’ realizations of /r, ɻ; ɿ, ɻ̄, ɿ̄, ɿ̄̄/.

/r/ [r] + [i(i), I(I), ɪ(ɪ), ɻ(ɻ), ɿ(ɿ), ɿ̄(ɿ̄), ɿ̄̄(ɿ̄̄)]	(i)	(ɪ)	(ɻ)	(ɿ)	(ɿ̄)	(ɿ̄̄)	/r/ [r] + [u(u), ʊ(ʊ), ɔ(ɔ)]
/ɻ/ [ɻ] + [i(i), I(I), ɪ(ɪ), ɻ(ɻ), ɿ(ɿ), ɿ̄(ɿ̄), ɿ̄̄(ɿ̄̄)]	I ɪ	ɻ ɪ	ɿ ɻ	ɿ̄ ɿ	ɿ̄̄ ɿ̄		/ɻ/ [ɻ] + [u(u), ʊ(ʊ), ɔ(ɔ)]
/ɿ/ [ɿ] + [i(i), I(I), ɪ(ɪ), ɻ(ɻ), ɿ(ɿ), ɿ̄(ɿ̄), ɿ̄̄(ɿ̄̄)]							/ɿ/ [ɿ] + [u(u), ʊ(ʊ), ɔ(ɔ)]
/ɿ̄/ [ɿ̄] + [i(i), I(I), ɪ(ɪ), ɻ(ɻ), ɿ(ɿ), ɿ̄(ɿ̄), ɿ̄̄(ɿ̄̄)]							/ɿ̄/ [ɿ̄] + [u(u), ʊ(ʊ), ɔ(ɔ)]
/ɿ̄̄/ [ɿ̄̄] + [i(i), I(I), ɪ(ɪ), ɻ(ɻ), ɿ(ɿ), ɿ̄(ɿ̄), ɿ̄̄(ɿ̄̄)]							

4. Sanskrit consonants

4.1. Readers are invited to take good account of what has been said under § 1.7-25. The consonant system of Sanskrit is shown in the table of fig 4.1, including all necessary taxophones for ‘neutral’ classical Sanskrit. All other different consonants, necessary for ‘modern’ or other accents, or for comparisons with English, are also provided in further figures, for useful (and convenient) comparisons.

In a phonemic transcription of Sanskrit, we may use some more general (less precise: *offIPA*) symbols, as the postalveolar (badly called ‘retroflex’, or even ‘cacuminal’, or ‘cerebral’!): /ɳ; t̪, d̪; s̪; l̪/ (although not shown in the table), instead of truly apico-palatal: [ɳ, ɳ̪; t̪, d̪; s̪; l̪].

The same for the three palatal ones: /c, j̪; ç/, which are not realized as normal *slit* palatals: [c, j̪; ç], but as *grooved* contoids; more precisely, as stop-semi-constrictive the first two: [kç, gç], and as semi-constrictive the third one: [ç] (however, /j̪/, is actually realized as [j̪], in the combination *jñ* /j̪n/ [j̪#n]: *yajña* /jaʃña/ [jaʃ#nɔ̄]).

fig 4.1. Table of the consonants of classical Sanskrit. The phonemes are indicated without [], even if their more abstract symbols do not appear here.

	bilabial	labiodental	dental	alveolar	apico-palatal	dorsopalatal	prevocalic	velo-labial	laryngeal	laryngeal rounded
semi-nasal	[n̪]	[m̪]	[ɳ̪]	[n̪]	[ɳ̪]	[j̪]	[ɳ̪]	[ɳ̪]		
nasal	m	[m̪]	[ɳ̪]	[n̪]	ɳ̪	j̪	[ɳ̪]	[ɳ̪]		
stop	p b		t d		t̪ d̪	kç	[k g]	k g		
stop-strictive			s		s̪	ç				
constrictive										
approximant	[ɸ β]	v	[ð ð̪]	[z]	[ç ɿ]	[h] j-[ɦ]		[h ɦ]	[h v-w]	h ɦ
tap				f-f̪						
trill				r-r̪						
lateral			[l]	[l̪] l̪̄	[ɿ]					

Nasals

4.2. There are five nasal phonemes: /m, n, ɳ, ɲ, ɳ/ [m, n, ɳ, ɲ, ɳ], but, for a seriously complete description of this language, we need eleven further taxophones. Three fully nasal contoids, due to place assimilation to a following consonant: [ɳj, ɳ, ɳ]. In addition, further eight *semi-nasal* contoids: [m̪, ɳ̪, ɳ̥, ɳ̫, ɳ̬, ɳ̭, ɳ̮, ɳ̯]. They are all shown in fig 4.2.1-4 (including phones belonging to different accents).

Examples: *mati* ['meti], *janaḥ* ['g̣enəḥ], *ṭṛnam/-am* ['ṭṛɳ̤m̪, -m̪], *pañca* ['peñ-kaᷟ], *jñānam* [jñaanam̪], *anya* ['eᷟ-jaᷟ], *pañjaram* ['peñg̣eñz̤raṁ], *nēyuta* ['ɳ̤eej̤oṭe], *aṅgam/-am* ['aṅg̤aᷟ, -m̪].

fig 4.2.1. Classical Sanskrit *nasal* consonants.

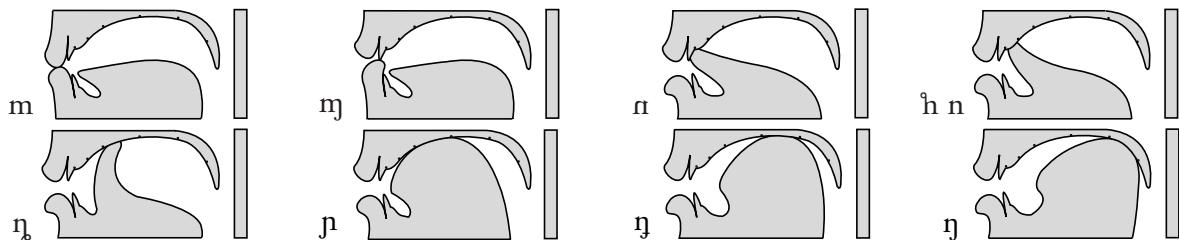


fig 4.2.2. Further ‘modern’ Sanskrit *nasal* consonants.

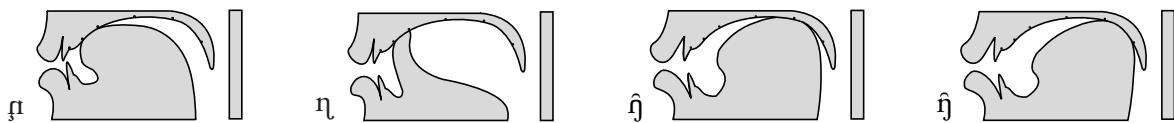


fig 4.2.3. Classical Sanskrit *semi-nasal* consonants.

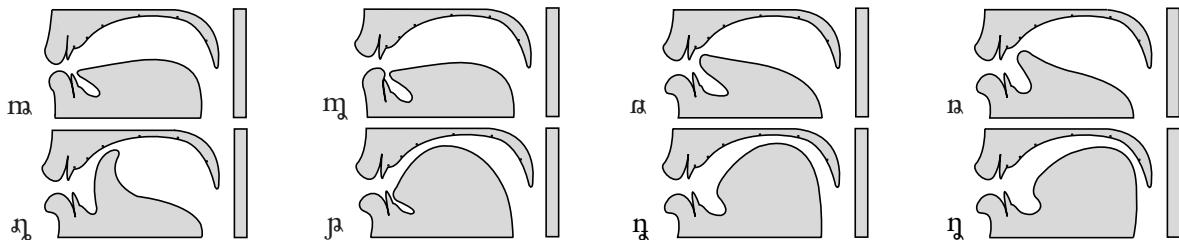
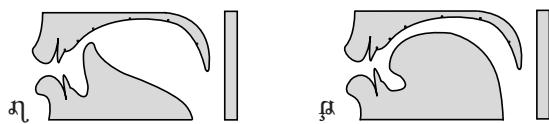


fig 4.2.4. Further ‘modern’ Sanskrit *semi-nasal* consonants.



Stops

4.3. There are five couples of (voiceless and voiced) stops (including /c, j/ [kᷟ, gᷟ], just seen in § 4.1): /p, b; t, d; t̄, d̄/ [p, b; t, d; t̄, d̄], and /k, g/ [k, g; k̄, ḡ] (the last two are the taxophones occurring before front vowels or /j/). fig 4.3.1-2 show both neutral and ‘modern’ stops, including stop-strictive variants.

Examples (including contextual variants): *buddha* ['buḍḍhaᷟ], *dēva* ['deeuᷟ], *jīva* ['g̣iiuᷟ], *karman* ['kərmən], *pitr̄* ['pitṛᷟ], *rūpa* ['ruupəᷟ], *tat* ['tet], *guṇa* ['guɳəᷟ], *yuga*

[jug̪], cit̪ [kçit̪], cakra [kçek-r̪], vāc̪ [vaaak̪], hatha-yoga [h̪at̪-h̪i 'j̪oog̪], vāhana [vaañ̪i-n̪a], brahman [b̪r̪eñ̪m̪n̪], brahmā [b̪r̪eñ̪ma], svabhāva [s-wəb̪h̪aauv̪], bhūta [b̪h̪uuut̪z̪], chāyā [kç̪haaja], dharma [d̪h̪erm̪z̪], ghōsa [g̪h̪iñ̪osa], phala [p̪h̪el̪z̪], ta-thāgata [t̪t̪haag̪aate], śūdra [ç̪uuud-r̪z̪], puruṣa [p̪uṛoṣ̪z̪], śīṣṭa [ç̪iṣṭ̪z̪], duḥkha [duh̪uk̪-h̪i], namah̪ [n̪em̪z̪h̪], ahaṅkāra/aham̪- [añ̪k̪aara, añ̪k̪aam̪-], sannyāsin/sam̪n̪- [sənn̪-jaas̪in, sən̪an̪-, səñ̪ji-, səñ̪ja-].

And: kṣatriya [kç̪et̪-rije], Lakṣmī [lək̪s̪-mai], prajñā [p̪reñ̪-na], taṭah̪ [teñ̪z̪h̪], pīta [piit̪z̪], paćati [pek̪ç̪z̪ti], kūpaḥ [kuup̪z̪h̪], atha [et̪-h̪i], pītham̪/-am̪ [piit̪-h̪iñ̪, -m̪i], phaṭā [p̪heṭ̪a], khāta [k̪haat̪z̪], chōṭita [kç̪h̪iñ̪oṭ̪ite], gajah̪ [g̪egeñ̪z̪h̪], jada [g̪egeñ̪z̪], bijam̪/-am̪ [biig̪eñ̪iñ̪, -m̪i], dadāti [d̪e-d̪aati], āghātah̪ [agh̪aatt̪z̪h̪], jhaṭiti [j̪h̪eṭ̪i], bāḍham̪/-am̪ [baad̪-h̪iñ̪, -m̪i], bōdhati [b̪hiñ̪oð̪z̪ti], bhāgah̪ [b̪h̪aag̪z̪h̪], bibhēda [bib̪h̪eed̪z̪], caya [kç̪eñ̪z̪], chada [kç̪h̪eñ̪d̪z̪], c̪avana [kç̪j̪euñ̪ne], c̪uti [kç̪j̪uти], jyā [g̪eñ̪ja], jha [g̪eñ̪he].

fig 4.3.1. Classical Sanskrit stop consonants (including stop-semi-strictive taxophones, [kç̪, g̪e]).

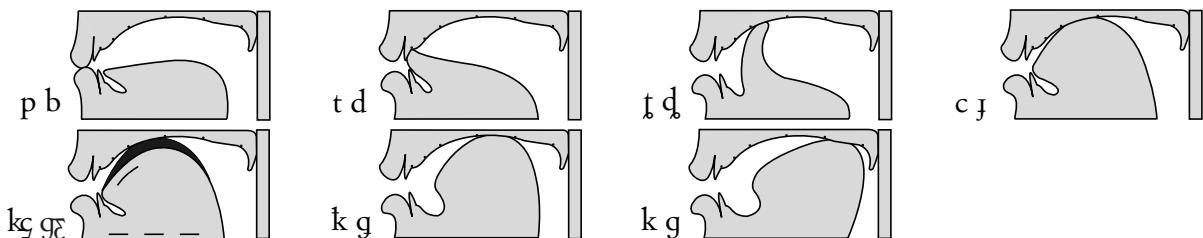
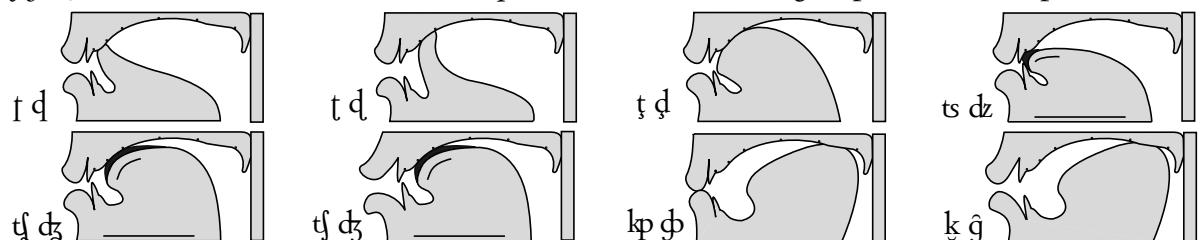


fig 4.3.2. Further ‘modern’ Sanskrit stop consonants (including stop-strictive taxophones).



4.4. It is very important to know that all those phonemic stops often appear in clusters with /Ch, Ch̪/, as [Ch, Ch̪], opposable to their simple ‘unaspirated’ occurrences, /C/ [C̪, C̪̫]. Of course, they are sequences, not any divine manifestation of ‘aspiration’ (and, actually, as in Hindi, they are not tautosyllabic initial clusters, ‘/#Ch, #Ch̪/ [Ch, Ch̪]’, but heterosyllabic, ie: /C-h, C-h̪/ [C-h, C-h̪] ([C#h, C#h̪])), most clearly visible (and hearable) in stressed syllables: [Ch, Ch̪]).

It is impossible not to observe that, unfortunately, [Ch, Ch̪] were considered to be unitary entities, probably because no ‘clear’ place of articulation, after the quite evident contoids occurring before them, was identified, in ancient times. Actually, even ‘normal’ /h, h̪/ were interpreted more as some peculiar kind of vowel-like sounds. Things were, certainly, further complicated without our *canIPA* symbols (and orograms), as we will see dealing with Sanskrit approximants.

Arguably, the phonic production of the larynx after consonants (with clear places) was not thought to be something independent from their obviously rec-

ognizable places. Nobody is perfect! In fact, we are fairly convinced that only *nothing* is flawless. Anything materially physical cannot be perfect...

Scientifically speaking, also in modern times, it is a fact that [Ch, Ḍh] are undeniably (heterosyllabic) clusters (in Hindi, too). It is true that they do not form tautosyllabic entities (in spite of their ‘syllabic non-weight’ for stress assignment, since, in this respect, even [Ch, Ḍh] are made to count as something like simpler ‘[C^h, C^h]’, or, actually, like plain [C]). But one thing is segmental weight, while stress-assignment rules are another matter.

Constrictives

4.5. There are three voiceless *grooved constrictive* phonemes (although the offIPA symbols /ʂ, ʐ/ indicate grooved postalveolar, and slit palatal articulations, respectively). Actually, we have /s, ʂ, ʐ/ [s, ʂ, ʐ], grooved dental, grooved apico-palatal, and (*semi-constrictive*) slit palatal, respectively.

Examples: *tasya* ['t̪es-ʒə], *rasah* ['rəsəh], *dōṣah* ['d̪oʂəh], *āśā* ['aača], *Lakṣmī* ['ləkʂ-mi]. See fig 4.4.1-2.

fig 4.4.1. Classical Sanskrit *constrictive* consonants.

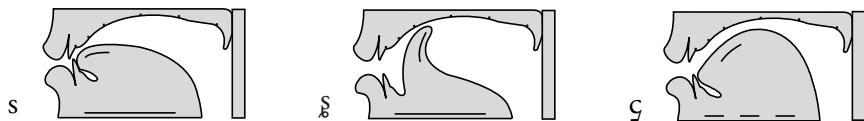
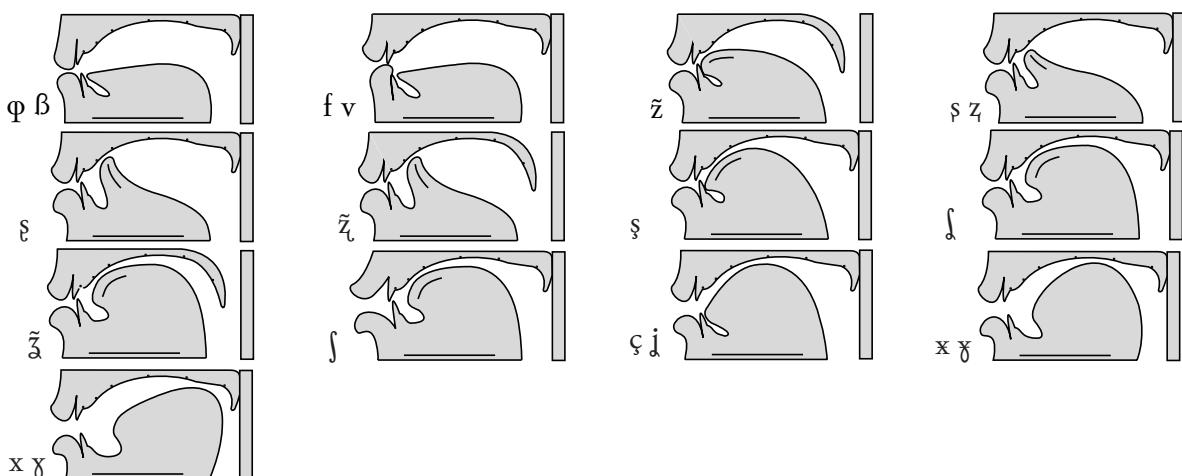


fig 4.4.2. Further ‘modern’ Sanskrit *constrictive* consonants.



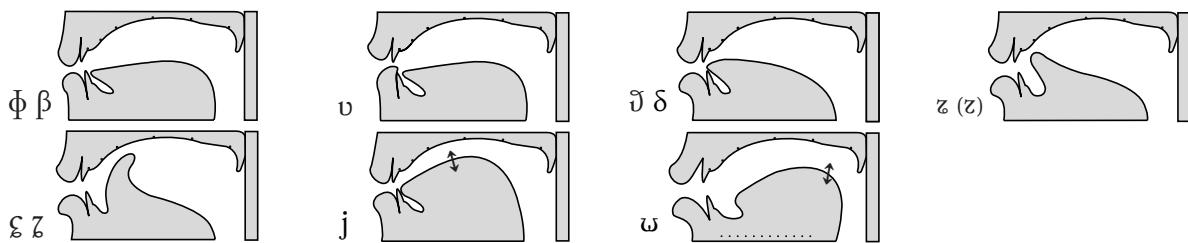
Approximants

4.6. There are four approximant phonemes (with taxophones), three are voiced (fig 4.5.1). So, we have /v/ [v] (and [w], after consonants) – for /v/. In ‘modern Sanskrit’, although less recommendably, we can also find [β], or (especially in contact with /uu, u, oo/) [θ, ω].

In addition: /j, ʃ/ [j, ʃ], and the *voiceless* /h/ [h]. Besides, let us observe carefully that also /v, j/ [v, w; j] are heterosyllabic in clusters with a preceding consonant (as /r, l/ [r, l] are, too). So, in addition to [C^hh, C^vh], we certainly have: [C^w, C^j, C^r, C^l].

Let us observe that both /f/ and /h/ are surely needed as two distinct phonemes (including their numerous taxophones, which we will see accurately). In fact, in addition to ‘normal’ (in Sanskrit) /f/ [f] *b*, we also have /h/ [h] *b*. It is not possible, functionally, to unify them into just one of them. Thus, we have /Ch, Ch/ [C^hh, C^hf], too, as we have /#fV/ and /Vh#/ . That is why, in our consonant table we inevitably do *not* find ‘/ph, bf; th, dh/’ &c, not even if indicated as ‘/p(h), b(f); t(h), d(f)/’ &c.

fig 4.5.1. Classical Sanskrit *approximant* consonants.



4.7. Thus, let us pay particular attention to the different taxophones of /h, f/: either in /#fV/ or /C^hV, C^hfV/ clusters, they have the following taxophones ‘colored’ by the specific vowels (here, shown simply as phonemes, without their important taxophones): [h, f] with /i, ii/ (even for /jV/); [h, f] with /ee/; [h, f] with /a, aa/; [h, f] with /oo/; [h, f] with /u, uu/.

Besides, also for /Vh#/ , we have: [h] with /i, ii/; [h] with /ee/; [h] with /a, aa/; [h] with /oo/; [h] with /u, uu/. In addition, by place assimilation, we find the approximant taxophones in the following clusters (occurring within or between words): /hs/ [ʃs], /hʂ/ [ʂʂ], /hç/ [çç]; also: /hp, hb/ [ɸp, βb], /ht, hd/ [t̪t, ðd], /hʈ, hɖ/ [ʈʈ, ɖɖ], /hc, hⱼ/ [hck, hɟɟ], /hk, hg/ [hk, hg] (including [-k, -g] in contact with /ii, i, ee; j/).

Examples: *hata* [hətə], *iha* [iħə], *bāhu* [bħaaħu], *hṛta* [ħṛtə], *čhāyā* [kħħaaħa], *hiñd* [ħiñd], *hēlā* [ħeela], *hōma* [ħōmə], *hum* [ħuħum], *hvē* [ħuħee], *vlād* [vħlaad], *bras* [ħrəs], *hyas* [ħħjas].

4.8. Some examples for *expiration* (/h#/ -h, ‘visarga’, vaguely ‘sound emission’; see fig 4.5.2, and fig 4.5.1 for further possible taxophones): *tīh* [tiiħ], *bhaktīh* [bħektiħ], *taiħ* [teiħ], *kusumaiħ* [kuħsummeiħ], *tah* [teħ], *ataħ* [etħəħ], *duryōgaħ* [dorjooġəħ], *tāħ* [taah], *hētōħ* [ħeetoh], *puh* [puħu], *guruħ* [guruh], *muneh* [muñeh], *antahpāta* [antħəħpaatħ], *antahkara* [antħekkara], *nihšamam* [niħħeżżem], *nihṣr* [niħ-sf], *dvāħsthah* [dwaħħst-hħəħ], *parahlōkah* [parħeħħiż-żokħ], *dāruñahrañah* [da-ru-ñehħeż-żehħ], *nihśōdhyam* [niħħeħodħi-jem], *tataħ* [tetħəħ], *tāħ* [taah], *taiħ* [teiħ], *āħ!* [ħaaħ], *kālē-pliaśmaśruħnā* [ħħaale pliex-ħeġġi-ħuħna, -ħne], *dāruñahrañah* [da-ru-ñehħeż-żehħ], *parahlōkah* [parħeħħiż-żokħ, -ż-żiż-żo-], *dhanādibbiħħebħedyaħ* [ħħeħ-nadib-ħiħbħeed-ħj-, -ħiħbħiħ-, -ħiħbħiħ-, -ħiħbħiħ-], *krōdhajahdōsah* [kroðd-ħiħgħeż-ħiħ-dōs-ħiħ-], *ajātaś-riṅgahgauħ* [a-ja-ta-ħiġi-ġeħġeż-ħiħ-], *ajātaś-riṅgahgauħ* [a-ja-ta-ħiġi-ġeħġeż-ħiħ-]. fig 4.5.3 adds contoids used in ‘modern’ accents.

fig 4.5.2. Classical Sanskrit *approximant* realizations for /h/ h and /h/ h̥.

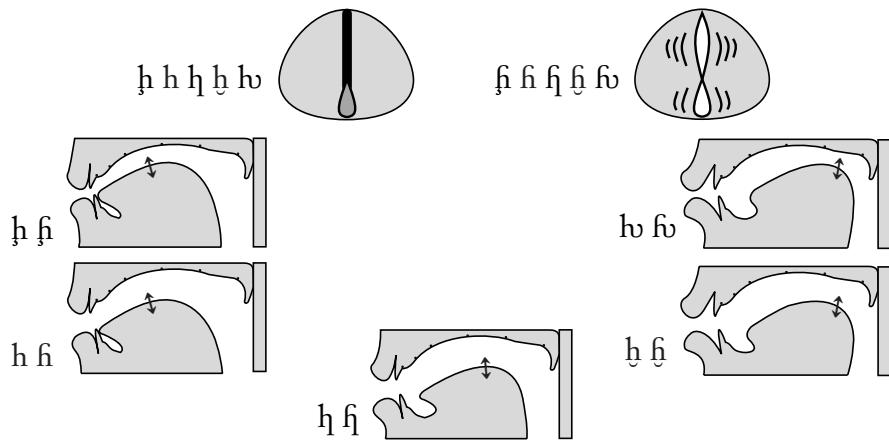
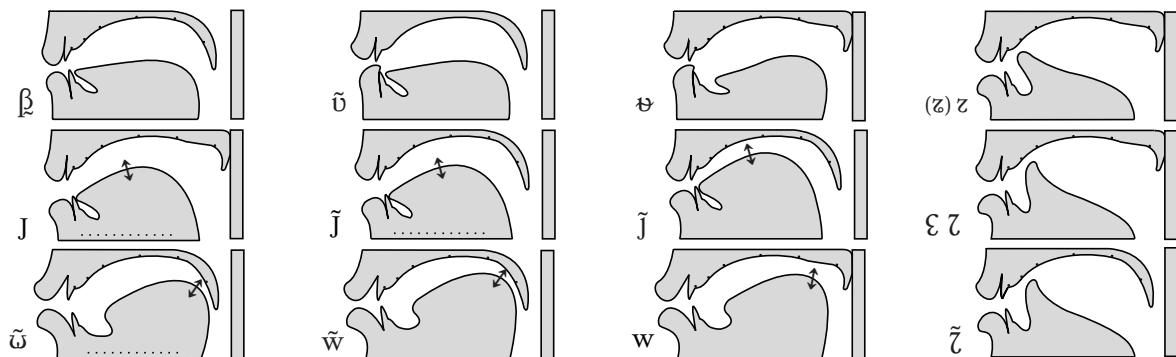


fig 4.5.3. Further ‘modern’ Sanskrit *approximant* consonants.



Rhotics

4.9. There are two alveolar voiced phonemes, a tap, /ɾ/ [ɾ], and a trill, /r/ [r] (fig 4.6.1); they may also be distinctively intense (or ‘syllabic’): /f̥/ [f̥], /r̥/ [r̥] (occurring as syllable nuclei).

fig 4.6.1. Classical Sanskrit *rhotic* consonants.

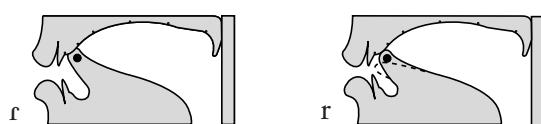
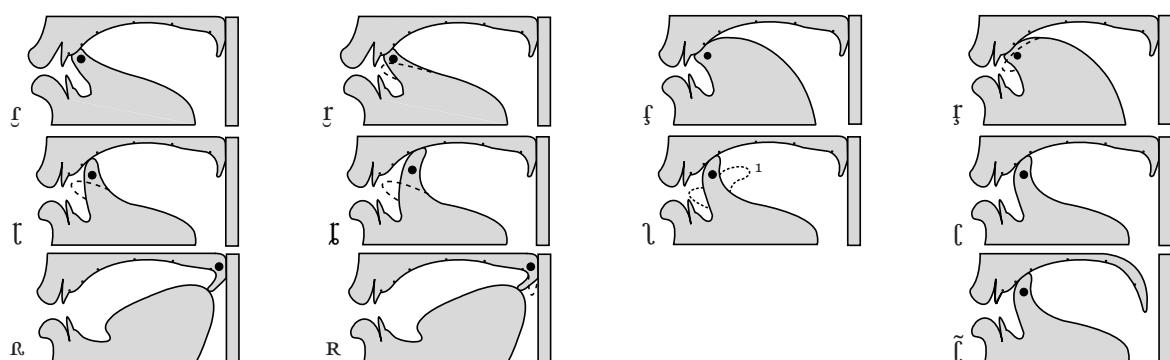


fig 4.6.2. Further ‘modern’ Sanskrit *rhotic* consonants.



Examples: *rūpam/-am* [ruupəm], *nirṛṇa* [nirṛṇ̥], *rīti* [rīt̥i], *vīrah* [vīr̥ah], *ṛsiḥ* [ṛsiḥ], *kṛṣṇah* [kṛṣṇ̥ah], *vrddhiḥ* [vrddhiḥ], *nṛpah* [nṛp̥ah], *pitrā* [pit̥ra], *pitr̥n* [pit̥rn̥], *pitr̥bhīḥ* [pit̥b̥-bhīḥ].

fig 4.6.2 shows further articulations needed to accurately describe ‘modern’ accents. It also includes two uvular phones, [ṛ, ṛ], as ancient dialectal variants, as described by some authors of the time.

Laterals

4.10. There is one alveolar voiced lateral phoneme: /l/ [l] (with dental and apico-palatal taxophones, [l̥, l̥̄], by assimilation to a following consonant, see fig 4.7.1). There is also an intense (distinctive) version, /ɭ/ [ɭ] (the official spelling includes even a ‘longer’ variant, as for the two rhotic phonemes, but no actual word has been found using it).

Examples: *layah* [ləjəh], *kłptah* [kłp-təh], *plu* [plu], *čhalā* [čhəl̥ə], *čhal* [čhəl̥], *golda* [gɔłdə].

fig 4.7.1. Classical Sanskrit *lateral* consonants.

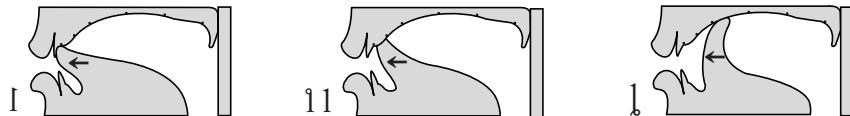
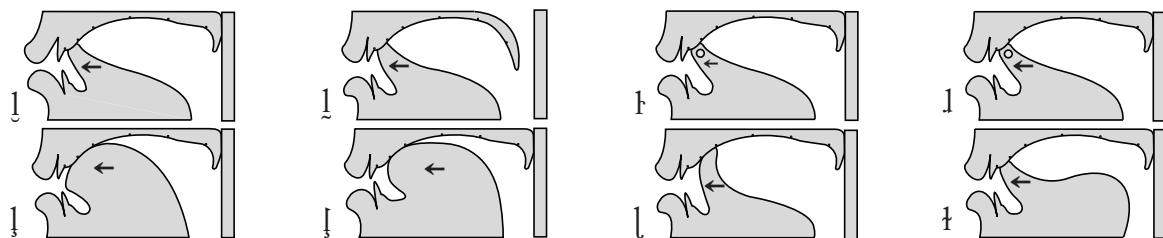


fig 4.7.2. Further ‘modern’ Sanskrit *lateral* consonants.



‘Modern’ Sanskrit consonants

4.11. The preceding figures, in addition to neutral contoids, always added typical variants, mostly for ‘modern’ accents (as stated there).

The most peculiar difference concerns the number of possible realizations of (heterosyllabic) /ɟŋ/ /jŋ/, instead of ‘normal’ [ɟ-ŋ], giving: [gɛ-ŋ], [dʒ-ŋ], [g-ŋ], [g-ŋ], [ɟd-ŋ], [d-ŋ], [ŋ-ŋ], [ŋ-ŋ]. In addition, /ŋc, ɲɟ/ [ŋkç, ɲgç] may occur with [ʂ-, ʂ-, n-, ɳ-, ɳ-], while both /ç/ and /ʂ/ are often unified into [ʃ] or [ʃ̥] (sometimes, even into [ʂ̥]).

In addition, /h/+s, ʂ, ç/, instead of becoming ‘ss, ʂʂ, çç’, ie neutral classical Sanskrit [ʂs, ʂʂ, ʂç], may appear precisely as /h/+s, ʂ, ç/ (with all possible taxophones of /h/, depending on their preceding vowels, cf § 4.7-8).

Particularly ‘modern’ is the rendering of /f, r, l/ /ʂ, ʐ, ɬ/, shown in fig 3.7, also depending on the relative prominence of the syllables where they belong, instead of

actual intense (or ‘syllabic’) contoids, which appear (for /f, l/ /r, l/) as [f, l]+[i, r, u], or [t̪, t̪, u, ə], or [u, v, ə], and (for /ʈ/ /ʈ/), with the same vocoids, in unstressed syllables, but with monotimbric diphthongs, in stressed syllables, [ii, ii, uu; ɿɿ, ɿɿ, uu, əə; uu, uu, əə].

In addition, for /f, t̪, l/ /r, ʈ, l/, we may also find the following ‘committed’ intense contoidal taxophones: [ɸ, ɸ; ʈ, ʈ; ɿ, ɿ], respectively (palatalized or labialized).

More about ‘modern regional’ peculiarities will be said in Ch 8, not only for the consonants, but also for the vowels and the intonation patterns (with vocograms and tonograms).

5. Sanskrit structures

Mutation

5.1. Mutation, or *sandhi* ([sənd̪-fi], from *sam* [səm] ‘together’ and *dhi* [d̪fi] ‘put’, while *dhī* [d̪fii] means ‘thought, wisdom’ and much more). It is a Sanskrit term meaning exactly *mutation* (by assimilation, or dissimilation, or simplification, or fusion), clearly showing mutation of *-m* into *-n*, by assimilation to *dh-*.

Thus, mutation can be morphological (ie within words, ‘internal sandhi’), or syntactical (ie between words, ‘external sandhi’). It is shown in spelling, too, since, as we know well, Sanskrit was firstly described for its pronunciation (and grammar), and secondly for its spelling (devised later on).

Although Sanskrit (and Hindi) spellings have been reduced rather artistically (although controversially), by combining very many ligatures, trying to save space while producing pleasing forms for the eyes, however, they could not respect enough the basic (and natural) essence of Sanskrit pronunciation.

Although the term *sandhi* has been traditionally used in diachronic linguistics, even for many other living languages (often also if described synchronically), we prefer to use the more specifically phonic term: *mutation*.

Since Sanskrit spelling shows *mutation* rather accurately, it is not our intention to fully and systematically explain how it works. Of course, those people who master or learn this language know quite well what all grammars explain and show for these facts (extensively).

5.2. Let us start from ‘vocalic’ *mutation*. Obviously, it applies between ‘vocalic’ elements, that means between *intense* (or ‘syllabic’) elements, which are capable of forming the nucleus of a syllable, as well. There are five groups (see fig 3.1-4 for the vowels and diphthongs), including *intense sonants* (which are actually contoids, certainly *not* vocoids): /f, r; l/ [f, r; l], adding (of necessity) *mixed clusters*: /ar, al; a:r/ [a:, əl; a:, ər; a:r, ər].

Thus, we have:

/i(i)/ + /i(i)/ → /ii/, /a(a)/ + /a(a)/ → /aa/, /u(u)/ + /u(u)/ → /uu/: *dēvī iyam* → *dēvīyam* [de'viij3m], *na asti* → *nāsti* ['naast1], *sa tūvāća* → *satūvāća* [setu'vaakç3]

/a(a)/ + /i(i)/ → /ee/, /a(a)/ + /u(u)/ → /oo/, /a(a)/ + /f, r/ → /ar/: *kanyā iyam* → *kanyēyam* [k3njl'jeej3m], *sā uvāća* → *sōvāća* [so'vaakç3], *yatha rsis* → *yatharṣih* [j3t'harsih]

/a(a)/ + /ee, ai/ → /ai/, /a(a)/ + /oo, au/ → /au/: *tatra ēva* → *tatraiva* [t̪at̪r̪ai̪və], *tatra ait* → *tatratīt̪* [t̪at̪r̪-t̪s̪it̪], *sa ḫaṣadhiḥ* → *sauṣadhiḥ* [s̪auṣeṣd̪hiḥ], *tasya auṣadham* → *taṣyauṣadham* [t̪aṣyauṣeṣd̪hiṁ]

/i(i)/ + /V/ → /jV/, /u(u)/ + /V/ → /vV/, /f, ṣ/ + /V/ → /fV/: *trīṇi ētāni* → *trīṇy ētāni* [*triṇj jētaanī*], *su-akṣa-* → *svakṣa* [s̪u-akṣ-ṣ̪], *kartṛ- i-* → *kartṛi* [k̪ar̪t̪-fi], *dēvī abravīt̪* → *dēvyabrvīt̪* [dēv̪j̪eb̪-t̪s̪v̪it̪], *langhu idam* → *langhv idam* [l̪aŋgfu- wi̪d̪am]

/ee, oo/ + /a/ → /ee∅, oo∅/: *vanē avasat* → *vanē ’vasat* [v̪ēn̪eev̪ēs̪et̪], *ga᷍ē asti* → *ga᷍ē ’sti* [g̪ēg̪ēes̪ti], *puruṣō asti* → *puruṣō ’sti* [p̪ur̪oṣ̪os̪ti], (*rāmaḥ api* →) *rāmō api* → *rāmō ’pi* [rām̪oṣ̪o(pi̪)]

/ee, oo/ + /i(i), u(u), aa, ee, oo, f, ṣ/ → /ai(i), au(u), aa(a), ae(e), ao(o), af, ar̪/: *prabhō ēhi!* → *prabha ēhi!* [p̪rab̪-b̪h̪i̪] (rarely → *prabhav̪ ēhi!* [p̪rab̪-b̪h̪i̪v̪], or [p̪rab̪-b̪h̪-i̪-j̪ēf̪i̪]), *vana ṛṣiḥ* → *vanē ṛṣiḥ* [v̪aṇēf̪i̪], *vanē uvāsa* → *vana uvāsa* [v̪aṇv̪a-vaas̪], (*rāmaḥ idam abravīt̪* →) *rāmō idam abravīt̪* → *rāma idam abravīt̪* [raam̪i- d̪-m̪ēb̪-t̪s̪v̪it̪]; also possible, although rare: *ga᷍ē āstē* → *gaja(y)* *āstē* [ga᷍ēz̪t̪(j)aas-te]

/ai/ + /V/ → /aaV/, /au/ + /V/ → /aavV/: *tasmai adāt̪* → *tasmā adāt̪* [t̪aṣ̪ma(a)3̪dat̪], *aśvau ētau* → *aśvāv̪ ētau* [aṣ̪v̪aav̪ēt̪ēo]

But /ii, ee, oo, uu/, as dual endings or interjections, do not undergo mutation: *kanyē āsātē atra*: [*k̪aṇ-jea saateat̪-t̪s̪*], *aśvē iva* [*aṣ̪wāi̪və*] (but: *aśvah iva* → *aśva iva* [*aṣ̪wāi̪və*]), *ahō, Indra!* [*ah̪o-Ind̪-t̪s̪*].

5.3. Let us pass, now, to *consonantal mutation*. Different consonants have different realizations, as we will see. First, let us consider the behavior of the consonants before a *pause*. At the end of Sanskrit words, for structural (historical) reasons, only the following consonants occur, before a pause: /m, n, ṇ, ḫ/ [m, n, ḫ, ḫ], /p, t, ṭ, k/ [p, t, ṭ, k, k], /h/ [h, h, ḫ, ḫ, h̪] (m, n, ḫ, ḫ; p, t, ṭ, k; h̪).

Consonant clusters are reduced to their first element, except for: /rp#, rt#, ṭt#/ (-rp, -rt, -ṛt, -rk). Some examples: *adām* [3̪daam], *bhavan* [b̪h̪āvən], *abibhah* [ābibib̪h̪ah], *avart* [āvərt̪], *urk* [uṛk] (including words like *suhṛt̪* [suṛht̪]).

Thus, there are several neutralizations of final consonants:

/-ph, -bf, -b/ → /-p/;

/-th, -dh, -d/ → /-t/;

/-ṭh, -ḍh, -ḍ; -ṣ/ [-ṭh, -ḍh, -ḍ; -ṣ] → /-ṭ/ [-ṭ];

/-c, -ch, -j, -jh, -ç/ [-kç, -kjh, -gç, -gjh; -ç] (although, sometimes, /-j, -ç/ → /-t/ [-t]);
/-kh, -gh, -g/ → /-k/.

In addition: /-n/ → /-n/;

/-h, -ṣ/ → /t̪/ [t̪] (sometimes → /-k/): *madhulih(s)* → *madhulit̪* [mađ-ħuolit̪], *dviṣ(s)* → *dvit̪* [d̪v̪it̪]

/-r, -s/ → /h/ /-h̪: *punar* → *punah* [puṇəh̪], *aśvas* → *aśvah* [aṣ̪-vəh̪].

Here is a cumulative example: *triṣṭup* /triṣṭup/ [t̪riṣṭup] (from *triṣṭubhs*, with /s/ → /∅/ and /bh/ → /p/).

Final /p, t, ṭ, k/ + /C/ (a voiced consonant) become /b, d, ḫ, g/ (including /c →

k/) or /m, n, η, ι/ + a nasal: (*vāc-dēvatā* → *vāk-dēvatā* →) *vāg-dēvatā* [vāg, deu̯ta], *nagarāt āgaćčhat nrpas* → *nagarād āgaćčhan nrpaḥ* [nāg̡ra, rada 'gæk̡kç-h3n 'nrpaḥ], *vāk na asti* → *vān nāsti* [vāan 'naasti], *ap-maya* → *am-maya* [əm, məj3]

Final /t/ + /c, ch, j, ſh, ç/ [kç, kçh, gç, gçh, ç], or + /t, th, d, dh, s/ [t, th, d, dh, s], or + /l/ [l], assimilates to them: *tat ča* → *tać ča* [tæk̡kç3], *tat jalām* → *tań jalām* [tæg̡'gæl3m], *tat labhatē* → *tal labhatē* [tel'ləb-ħ3tE], *tat śāstram* → *tać čhāstram* [tek̡kçħaast-r3m]

Final /p, t, t̄, k/ [p, t, t̄, k] + /h/ [h] become laryngealized voiced geminates: *tat hi* → *tad dhi* [tədd̡fi], *vāk hi* → *vāg ghi* [vāagg̡fi]

Initial /ch/ [kçh], after ā or mā, or after a short vowel, becomes /cch/ [kçkçh]: *na čhindanti* → *na ččhindanti* [næk̡kçħiṇd̡aṇti], *mā ččhaitsit!* [jmak̡kçħeit-sit]

Final /n, η, ι/ [n, η, ι, η] (*after a short vowel*) are geminated: *san(ts) atra* → *sann atra* [s3n'n̡et-r3], *pratyāńcs āśīnas* → *pratyāńn̡ āśīnah* ['prət-j3n̡ ηa'siin3h], *aḥam tam aśvam paśyāmi* [aḥ3nt3'maç-w3m p3ç'jaam1].

Final /m/ [m] does not change before a vowel, with which it becomes the beginning consonant of its syllable); but it becomes homorganic (either full nasal, before, momentaneous consonants, or else seminasal, before continuous consonants): *kim* / *kiń karōṣi* [çk̡ińk3'rōṣi], *kiṁnara* / *kinnara* [k̡ińn3r̡-, k̡ińn3-], *kimpuṣuṣa* / *kim-* [k̡ińpaṛoṛuṣ3, k̡im-].

Final /n/ [n] before /d/ [d̡], /j/ [gç], /ç/ [ç], /l/ [l], becomes the homorganic nasal by assimilation (with the two further possible taxophones shown): *tān janān* → *tāń janān* [tān'g̡eṇan], *tān śāśān* → *tāń śāśān* / *čhaśān* [tāj'çeçan, -ŋkç3-], *tān lōkān* → *tāń lōkān* [tān'lōokan, tāllōo-].

Final /n/ [n], before /t, t̄, c/ [t, t̄, kç], becomes homorganic semi-nasal: [ast, aṣṭ, jaçkç], respectively: *patan tarus* → *patam̃s taruh* ['pət3as 'taroh], *tān tān* → *tām̃s tān* ['tāńas 'taan], *vṛkān ča paśyati* → *vṛkām̃s ča paśyati* ['vṛkājaç kç3'peç-j3,tı], *abharan tatra* → *abharam̃s tatra* ['eb-ħ3r3as 'tet-r3].

5.4. All Sanskrit grammars extensively and clearly show, with many examples, how consonant mutation works in phrases, sentences, and texts. In fact, as we already know, their official spelling is a reliable indication. Therefore, in this book, mostly dedicated to the explanation of the real pronunciation of classical Sanskrit, we will certainly prefer to deepen the actual phonic structure of this language, more than what all grammars deal with, as already said.

So, we chose to use all possible accurate (*canIPA*) symbols to clearly illustrate it (also for the numerous taxophones of h /h/ and m /~/). This is done hoping to be of help also to readers, who just want to know how Sanskrit has to be pronounced, even without actually wanting to learn to systematically use it. Therefore, the transcribed sentences (§ 5.12) and texts (Ø 6) will be sufficient.

It is safer to apply the following prosodic indications: when there a pause (even a very short one, '[]', or longer, '[|, ||]' &c) no assimilation is produced. Instead,

when no pause occurs after a tone (even the continuative one, ‘[.]’), assimilation is accurately applied.

Stress

5.5. As in Hindi, also in (true, classical) Sanskrit (already become tonemeless), the position of stress in words, and phrases and sentences, has no distinctive (meaningful) function. Therefore, the stress may be said to practically fall on any syllable, also depending on the lexical content of each word, and speakers intentions, in addition to syllable ‘weight’.

However, it is better to follow the ‘rule’, clearly set by *Pāṇini* [paan̄i], although nowadays very few ‘experts’ actually respect and utilize it, in their modern, revived ‘present-day’, forms. Of course, there is no real problem for effective communication, although our dear Master would be appalled in hearing what his ‘disciples and successors’ actually utter, even in India itself.

Unfortunately this situation is sadly paralleled as far as Latin and (ancient) Greek are concerned, to say nothing about Esperanto, which, of course, is not a dead language, not even ‘natural’, with many more interferences from other languages and variants. Practically, anybody gives outrageous offence to all these four languages. Let us sadly add that, usually, even real living languages are not ‘respected’ much, as far as their pronunciation is concerned...

5.6. Therefore, we will faithfully apply the ‘well-known’ (although not always well-applied) rule. It is important to clearly identify the ‘heaviness’ of each syllable. In fact, a syllable with a short vowel, and not followed by a tautosyllabic consonant, /V[#]/, is *light*. All others are *heavy*: /V[#], VV[#], VC[#], V:[#]C, VV[#]C, V:C[#], VVC[#]/.

Let us observe that, here, ‘/V:/’ means a ‘long vowel’, although it actually is [VV], as, for instance, [ii] (similarly to real diphthongs, although narrow, as [ee]).

For the correct calculation of where to place the stress in a word, it is fundamental to keep well in mind that consonant clusters are *heterosyllabic*, ie divided, even when their second element is /v, j, r, l/ [v, j, r, l]. Instead, as we already know, clusters with /h, ḥ/ as their second elements, although clearly heterosyllabic phonetically ([C[#]h, C[#]ḥ]), are to be considered as *tautosyllabic*, ie undivided, as far as stress assignment is concerned: something like ['#Ch, #Ch'].

Thus, the *rule* says that word-stress falls on the penultimate syllable, if that is heavy, failing which it falls on the antepenultimate, if the latter is heavy. If both penultimate and antepenultimate are light, the stress falls on the fourth syllable from the end of the word, if present. This ‘rule’ is similar to that of (classical) Latin, with the exception that in Sanskrit also a preantepenultimate syllable may be stressed (as it was possible in archaic Latin, too).

5.7. A heavy syllable at the end of a word does *not* count (for stress assignment). However, too often, in ‘modern Sanskrit’ a word-final heavy syllable is unduly

stressed by ‘experts’, practically changing the ‘rule’, and including the last syllable in the count of stressable syllables, as if it were the penultimate of the rule.

So, in ‘modern Sanskrit’, a final heavy syllable if it is stressed (including *-ah*, which becomes [əhə]), otherwise the stress falls on the antepenultimate even if a light one, unless the last two syllables are both light and both with /ə/, so that the antepenultimate is then stressed, independently from its heaviness.

This ‘rule’ is similar to that of (classical) Greek, including the fact that stress may not fall on a preantepenultimate syllable, but only up to the antepenultimate, from the last one included.

Of course, it is wiser to follow the prescribed rule of the penultimate, although it is possible to also consider that of the ultimate, at least as a possible ‘different accent’, perhaps as a *mediatic* (modern) accent, in comparison with the real (classical) *neutral* one.

In fact, it is as a kind of accent for mass communication, rather than for true ‘lovers’. Consequently, it also has peculiarities as far as vowels and consonants are concerned.

5.8. To complete this prosodic survey, let us say that earlier (or Vedic [v̥eɪd̥ɪk, v̥við̥ɪk]) Sanskrit, the one which had both tonemic and intonation patterns, may be considered as the *traditional* form (cf 9.3).

Besides, also fully unstressed heavy syllables are somewhat more prominent, even if it is more natural to realize their ‘long’ vowels as short, but keeping their specific timbres (inside their box in the vocogram).

In addition, by combining secondary stresses with the vowel qualities, which are less attenuated and more peripheral on the vocogram, we may perceive stronger prominence, in comparison with fully unstressed vowels.

It is important to know that such syllable shortening is meant to avoid monotonous utterances, as dirges, since we prefer to treat Sanskrit as a real ‘living’ language, independently from *mantra* traditions, with different peculiar conventions.

5.9. Here are some examples of neutral stress: *āghātaḥ* [ag̥ħātəḥ], *āghātēna* [ag̥ħātēnə], *Śakuntalā* [çɔk̥unṭəla], *kāmayatē* [kaam̥jɔt̥E], *gamayati* [gəm̥jɔt̥i], *āśvāsanam̥/-am* [açwāsənɔm̥, -ɔm̥], *turiya* [to'riijɔ], *susupti* [sɔʃupti], *manvantara* [mɔn̥vaɳ̥tɔra], *prajāpati* [prɔj̥g̥aapɔtri], *upaniṣad* [uρɔn̥iʃəd̥], *arata* [ərɔt̥a], *arati* [ərɔt̥i], *aratni* [ərɔt̥-ni], *aratnin* [ərɔt̥-nɪn], *arathin* [ərɔt̥-hɪn], *arantuka* [ərɔntɔka], *arapas* [ərɔpəs̥], *arapačana* [ərɔpɔkɔnə], *aram* [ərɔm̥], *aramati* [ərɔm̥ɔt̥i], *arara* [ərɔrə].

And: *ararinda* [ərɔt̥rindɔ], *ariṣṭa* [ərɔʃt̥ɔ], *aritra* [ərɔt̥rɪt̥ɔ], *arundhatī* [ərʊndħiɔt̥i], *arghya* [ərgħi-jɔ], *arīcat* [ərkɔt̥], *arcāna* [ərkɔn̥ne], *arcā* [ərkɔ], *ardhačandra* [ərdħɔkɔnd-ɔrɔ], *ardhadēva* [ərdħ-ħɔd̥d̥euvɔ], *ardaśabda* [ərdħɔc̥eb-dɔ], *ardhasama* [ərdħ-ħɔsɔme], *ardēndra* [ərdħeend-ɔrɔ], *arvāčīna* [ərvāk̥ciinɔ], *alpaka* [əlpɔkɔ], *avakl̥p* [əvɔkłp], *avakram* [əvɔk-ħɔm̥]...

Further useful examples: *mahārāja* [məħħa'rāagħɔz], *Sītā* [siiتا], *Rāvana* [rāvānɔŋħa], *maithuna* [məitħuħuħna], *dēvanāgarī* [d̥euvɔn̥aagħɔri], *Himālaya* [ħimħalaħjɔz], *Śiva* [çiuž], *Kālidāsa* [kalħidaasɔ], *guru* [gurɔ], *Aśoka* [ɔ'ċsokɔ], *samsāra* [sɔħħsaarɔ],

samskāra [sə̄skaarə], *śaitya* [kṣeit̪-jə], *pīṇḍa* [piṇḍə], *manusmṛti* [mə̄nusmṛti].

And: *Viṣṇu* [vɪṣṇʊ], *Kauṭilya* [kəʊt̪ɪl-jə], *anusvāra* [ənʊs̪vārə], *śakti* [çek̪t̪i], *Aśvaghōṣa* [aç-vaṣg̪hōṣə], *Vātsyāyana* [vats̪jaaj̪ə,ne], *vēdānta* [vēdaant̪ə], *brahmaṇ* [b̪raḥ-mən̪], *śakra* [kṣek̪-rə], *Candraṅgupta* [kṣeṇd̪-rə'g̪u-p̪-t̪ə], *Kāmaśūtra* [kamə̄suut̪-rə], *mantra* ['ment̪-rə], *visargāḥ* [vɪsərg̪ə], *nirvāṇa* [nirwaan̪ə], *dharmaśāstra* [d̪hārta-
mə̄ṣaast̪-rə], *Bhāratavarṣa* [b̪hārət̪ə'vərṣə], *yakṣa* [jæk̪sə], *vijñānavādin* [vij̪jan̪-
'vaadin̪].

‘Modern’ stress patterns

5.10. Too often, the stress pattern are clearly different from the original correct ones, and frankly rather offensive for the language. Let us call this ‘modern’ Sanskrit pattern ‘mediatic’ one, because today it is a way which is currently used to ‘actualize’ Sanskrit.

In fact, we may have cases like (sometimes alternating with the true correct patterns, but also with further incorrect ones, see the items at the beginning of § 5.9), here given with neutral phones: *āghātāḥ* [ag̪-hāt̪ə], *kāmayatē* [kamə̄jə-
'tee, -j̪ete], *āśvāsanam/-m* [aç-wasən̪ə, -am̪, aç-wa'se-], *Śakuntalā* [çek̪oṇ̪t̪əla, çə-
kənt̪əlaa], *gamayati* [gəmə̄j̪ət̪i, gə̄mə̄j̪ət̪i], *āghātēna* [ag̪-haate,ne, ag̪-hate,ne].

Strangely enough, penultimate syllables, even ‘light’ ones, and ultimate ones, especially if ‘heavy’, are very often stressed. This is done in open opposition to the ‘regular’ and (well-known [?!]) ‘rules’. No other examples are added here, not to ‘corrupt’ anyone more than simple mistakes can, inevitably, do.

However, we must add that there is an even broader ‘mediatic’ Sanskrit stress pattern, which combines the ‘ugly’ and undesirable, although strongly used, way of realizing as stressed even short final vowel (some of them for morphological ‘reasons’): *-i*, *-a*, *-u!*

5.11. But the final straw is provided by *-ah̪*, currently realized as [↓-əh̪ə] (together with *-ih̪* [↓-iḥ̪i], *-uh̪* [↓-uḥ̪o], which occur less frequently). Obviously, in true Sanskrit, they are: [-əh̪], [-iḥ̪], [-oḥ̪u], with no absurd addition of echo vocoids. Unfortunately, even ‘native experts’, more and more often (and quite shamelessly, it seems), utter *-ah̪* as [↓-əh̪ə] (and *-ih̪* [↓-iḥ̪i], *-uh̪* [↓-oḥ̪u])! Of course, they not only invent those ‘unexisting vowels’, but they even realize them as stressed!

For another strange (but not at all rare) and offensive stress deviation, see what we wrote in the second indent of § 3.6, about /VV(C)[#]/, too often becoming not only [VV(C)[#]], but also [VV(C)[#]].

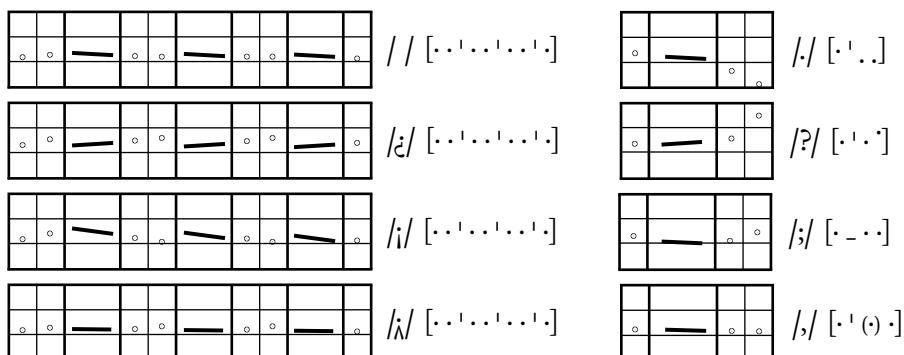
Thankfully, as we know quite well, by now, in Sanskrit the position of word-stress has no distinctive effect! Thus, effective communication is not actually hampered... It is only ‘offended’, and not only by ‘foreigners’, ie ‘non-Indians’. It is easy to imagine such ‘deviations’, as applied to the examples provided above, but, again, we do not show them in transcriptions, with their dangerous ‘deviations’, not to be judged guilty to induce anyone to persist in (avoidable) errors!

Sadly enough, the situation of the authentic and genuine pronunciation of Latin and (ancient) Greek is not better than for Sanskrit. In addition, in Latin and Greek, the position of stress may be distinctive, although not as frequently as in Italian (or even in English). Of course, also common contemporary Italian and Greek speakers (including ‘experts’) are certainly not always good and sure models for stress placement (and not only for that).

Intonation

5.12. With reference to what is presented under § 2.9-15, here, we will see the tonograms for classical Sanskrit intonation (cf fig 5) followed by a sufficient number of examples, fully transcribed phonotonetically.

fig 5. The four protunes & tunes of classical Sanskrit.



Samskṛtām bhāṣām samyag vadēyam.
 [sə̄skṛtamb̄ 'haṣām 'səm-jəg uʒ'deejəm..]
 (I’d like to speak Sanskrit well.)

Jānīmaḥ kas tavābhīprāyah.
 [ḡāniiməḥ kestəvab̄-fiip̄raajəḥ..]
 (We know what you mean.)

Anugṛhītō ’smi.
 [ənugr̄hiitos̄mi..]
 (Thank you very much.)

Dhanyavādaḥ
 [d̄hāy-jaʒ'vaadəḥ..]
 (Thanks a lot.)

Asmin viṣayē tava abhiprāyah kah?
 [ə'smīna 'viṣeje 'tevab̄ fiip̄raajəḥ keh..]
 (What do you think about it?)

Katham anubhavasy ādya?
 [χ'k̥et-χ̥m̥z̥ 'n̥ob-χ̥v̥z̥s̥ j̥aad-j̥z..]
 (How are you feeling today?)

Kutra gaćchāmāḥ?
 [χ'kut-r̥z̥ g̥ek̥k̥χ̥haam̥z̥h̥..]
 (Where are we going?)

Kim tvayā saṃskṛtēna vaktum śakyatē?
 [χ'k̥in̥t̥w̥aja s̥eñsk̥t̥eens̥ 'v̥ekt̥oma 'ç̥ek̥-j̥z̥te:]
 (Can you speak Sanskrit?)

Kim tava bhrātā tad upalabhatē?
 [χ'k̥in̥t̥euv̥zb̥h̥ 'raata t̥d̥op̥z̥l̥eb̥-f̥iñ,te:]
 (Does your brother understand it?)

Api sa śva āgantā?
 [χ'ep̥is̥t̥-s̥a-χ̥d̥a:]
 (Is he coming tomorrow?)

Yadi tvam̥ śanivāsarē āgantum̥ na śaknōsi, tarhi naḥ kaṣṭam̥ bhaviṣyati.
 [χ'jed̥it̥w̥ej̥ χ̥z̥n̥t̥vaass̥r̥e a'gen̥t̥oñ̥ n̥aç̥z̥k̥-n̥soṣ̥t̥..] 'tarhi n̥z̥h̥kaṣ̥t̥z̥mb̥ h̥z̥'v̥iñj̥z̥t̥i..]
 (If you can't come on Saturday, we'll be in trouble.)

Yadā naukāśayam̥ prāpa tataḥ prāk̥ sā nauḥ nirgatā.
 [χ'jeda n̥z̥o'kaaç̥z̥j̥em̥p̥ -raap̥z̥ 'tet̥hp̥ 'raak̥..] sa'n̥eoñ̥ 'n̥irg̥z̥ta..]
 (When I arrived at the station, the ship had gone.)

Api rathēna padēna vā asmābhīr gantavyam̥?
 [χ'ep̥is̥t̥-heen̥z̥..] χ̥p̥z̥-deen̥z̥v̥a..] χ̥z̥s̥maab̥-f̥iñ̥ g̥z̥n̥t̥eñ̥-j̥z̥m̥..]
 (Shall we go by coach, or on foot?)

Ēkah, dvau, trayah, čatvārah.
 ['eekeh̥ d̥w̥au t̥-raj̥z̥h̥..] k̥ç̥z̥t̥waar̥z̥h̥..]
 (One, two, three, four.)

Ēkah, dvau, trayah, čatvārah...
 ['eekeh̥ d̥w̥au t̥-raj̥z̥h̥ k̥ç̥z̥t̥waar̥z̥h̥..]
 (One, two, three, four...)

Yadyapi tvam̥ śanivāsarē āgantum̥ na śaknōsi tathāpi kaṣṭam̥ nāsti.
 [χ'jed̥-j̥z̥pit̥ w̥ej̥ χ̥z̥n̥t̥vaass̥r̥e a'gen̥t̥oñ̥ n̥aç̥z̥k̥-n̥soṣ̥t̥..] t̥t̥thaapi 'kaṣ̥t̥z̥n̥ 'naast̥i..]
 (If you can't come on Saturday, there's no problem.)

Api padēna rathēna vā nāvā vā gaćchasi?
 [χ'ep̥is̥t̥-deen̥z̥..] χ̥z̥t̥-heen̥z̥v̥a..] χ̥z̥naav̥a 'g̥ek̥k̥-χ̥z̥s̥i..]
 (Are you going on foot, by coach, or by boat?)

Nahi, sō 'vadan, na mayā kṛtam ētad iti.
 [na'hi..] [so'uvaṇḍe..] [na'meja 'kṛt̪a 'meeṭḍaṇti..]
 (No, he said, I haven't done it.)

Avaśyam, priyē.
 [avaṣyam-priyē..]
 (Of course, my dear.)

Avaśyam, priyē, śvas tat prāptāsi.
 [avaṣyam-priyē..] [śvas-tat-prāptāsi..]
 (Of course, my dear, you'll have it tomorrow.)

Vastutah, sō 'vadan, mama niścayō nāsti.
 [vastu-taḥ..] [so'uvaṇḍe..] [mama 'niṣṭ̪aṇjo 'nāst̪i..]
 (As a matter of fact, he said, I'm not at all sure.)

Api na smarasi, priyē, amūṁ cītram purvasmin saptahē 'paśyāmēti?
 [api-na-smarasi-priyē..] [amūṁ-cītra-purva-smiṇ-saptaḥe-paśyāmēti..]
 (Don't you remember, dear, we saw that painting last week?)

Kim brūṣē "cīntā nāstīti", vismayē, vīparītam kadā satyam astīti?
 [kim-brūṣē "cīntā-nāstīti..] [vismayē..] [vīparīta-kadā-satyam-astīti..]
 (Why did you say 'I don't mind', I wonder, when the opposite is true?)

6. Texts in phonotonic transcription

6.0.1. In this chapter, what we have explained so far will be summarized and put into practice, by accurately transcribing some extended texts. Customarily, many phoneticians choose the Aesopian tale *The North Wind and the Sun*, as a sort of ‘universal specimen’ for phonetic analysis. Actually, a tale is not always a good choice, since it usually contains a lot of descriptive passages, generally accompanied by a very moderate amount of *direct speech*, if any.

In our view, and according to the natural approach itself, direct speech is *the* most representative and natural form of ‘spoken language’; in a tale, however, direct speech is often reduced to very short sentences, offering little room for complex intonational patterns and paraphonic features. Hence the need for descriptive passages, where longer utterances are more common, provided they are... *said* by the speaker, not mechanically read aloud, like a press release.

In fact, reading aloud is nothing but the *phonic rendition of a written text*. Good writers –journalists above all– aim at being as convincing and understandable as possible, while (hopefully!) striving for conciseness, in order to keep their readers from falling asleep. Natural speech, instead, obeys different dynamics, paying much more attention to rhythm and ‘flow’, rather than simply delivering information. When these two different ways of using language are forced to coexist, results are rarely satisfactory.

In reading aloud –for example, from a newspaper, or a textbook– everyone must have experienced the uncomfortable feeling of ‘something missing’, as if the text lacked strength and balance. Typically, passionate and eloquent speakers have a hard time coordinating the pauses perceived by them as spontaneous and necessary with those found in the written page. The main reason is that traditional punctuation works –almost exclusively– as a typographical aid to highlight the *syntax* of complex utterances, and only secondarily to mark expressive pauses and emotional features.

As such, punctuation evidently fails to reproduce the colorful richness of real speech, with all its changes in pitch, speed, and paraphonic nuances. That is why ‘verbatim’ transcriptions –like parliamentary and judiciary records– look so redundant in some parts, and desperately elliptical in others. Omitting altogether what readers could not reconstruct by themselves is exactly the price to pay, in order to make written language understandable.

6.0.2. There are certain tendencies, which are generally shared by many native speakers, but their actual use is not at all systematic. In fact, it also depends on rhythm, and possible pauses and emphasis, especially for contrast, among other things, such as hesitation pauses and false starts.

Of course, semantics also has its role in all that, since speakers may have different ways of thinking about the meaning of certain words, at least in certain contexts. In addition, many stress shifts seem to have a kind of special function: that of differentiating plain and trivial words from more specific words, at least in the very context of a particular topic, which may even reveal personal feelings.

In conclusion, any language admits a certain degree of –mostly random– divergence from what is ‘normal’, ie statistically more frequent, for the simple reason that the very act of speech, though extremely effective, yet is not a mathematically flawless mechanism. All this, in spite of ever possible slips into some mediatic traits.

What matters is pronouncing correctly all that is crucial to mutual understanding: our brain, meanwhile, will naturally reconstruct what the speaker may have neglected.

However, just to be on the safer side, and as a form of courtesy to their listeners, foreign speakers should avoid ‘tricks’, and decidedly stick to the normalized scheme proposed so far (a courtesy that native speakers should better reciprocate, when talking to foreigners).

The North Wind and the Sun

6.1.1. Here is our version of *The North Wind and the Sun*, preceded by the English text (taken from Canepari’s *English Pronunciation & Accents*, § 52) and its British English transcription, which we just reproduce, with all necessary symbols, but without explicitly explaining them or showing their orograms.

As a matter of fact, its only aim here is simply to hint at the general meaning of the text. Of course, the interested readers can refer to the just mentioned book, from which we also reproduce the typical broad Hindi pronunciation of English. See § 16, in this book, as well. There, some different versions, in some English accents, are shown.

The North Wind and the Sun were disputing which was the stronger, when a traveler came along wrapped in a warm cloak. They agreed that the one who first succeeded in making the traveler take his cloak off should be considered stronger than the other.

Then the North Wind blew as hard as he could, but the more he blew the more closely did the traveler fold his cloak around him; and at last the North Wind gave up the attempt. Then the Sun shone out warmly, and immediately the traveler took off his cloak. And so the North Wind was obliged to confess that the Sun was the stronger of the two.

Did you like the story? Do you want to hear it again?

Sanskrit text

10.1.2. Here is the corresponding text, though not rendered word by word, but in a genuine version.

Athōttara vāyuh sūryah ca katara āvayōr nu balīyān iti vivadamānāv āstām. Atrāntarē, sītah-vārakah-prāvā-rakā-vṛtaḥ kah cīd upāyayaū pathikah. Tau samayañ ćak-kratur, yah kila nau pathikam amum svagāttrāt prāvārakam unmōćayituñ kṣamēta, sa ēva balīyān iti prakīrtt-yēta.

Tataḥ cōttarō vāyur yathāśakti mahatā javēna prasartum upākramata. Yāvad uggrataram sa prāvahat, pathikas tāvan nividataram prāvākavṛtam ātmānam akarōt. Antē sāv uttarō vāyur nivṛtta-pprayatnō babbūva. Tatas sūrya udīyāya, vitatāna-ća prakhara-kara-jālam, pathikah ca sapadi svāngād unmumō ća prāvārakam. Ūttarō vāyur api kāmam svīćakāra, sūrya ēva balīyān āvayōr dvayōr iti.

Api tubhyam kathām arōćata? Api punah śuśrūṣasē?

[z̄t̄h̄sot-t̄z̄r̄z̄ 'uaajoñ-suur-jz̄-k̄z̄..| 'ketz̄r̄a·'aañjor̄-uubz̄lījan..| 'it̄. uubz̄d̄maana 'uaastam..|| z̄t̄raantz̄r̄e·| 'cīt̄z̄'uaarz̄-keφr̄ ra'uaarz̄ka 'uūt̄z̄h̄k̄aç·k̄p̄o'raajz̄jao'p̄et̄-h̄i'keh̄..|| 't̄o's'mas'aat̄ 'k̄eakk̄-r̄z̄,t̄r̄.| 'jañk̄iñz̄uao'p̄et̄-h̄i'ke·m̄z̄,m̄ñma·w̄z̄'gaatt-ratp̄·ra'uaarz̄-k̄am·'oñ'msook̄z̄j̄t̄uñk̄..| ḡz̄-meetz̄..| s̄z̄'eeuñ b̄z̄lījan..| it̄p̄r̄z̄,k̄irtt̄'jeetz̄..||

't̄at̄z̄·'k̄sottz̄ro 'uaajor̄. 'jañ-jaçek-t̄. | 'mañz̄,ta·ḡz̄-ueenz̄..| p̄z̄'serto·m̄o'paakk̄-r̄z̄-m̄,t̄r̄..|| 'jaauñz̄·'dugg-r̄z̄t̄z̄,raam·s̄p̄'raauñz̄,h̄at̄..| 'p̄et̄-h̄i'k̄z̄_taauñz̄..| u'vñd̄z̄t̄z̄,raamp̄·ra'uaarz̄ 'kevñt̄,te·met'maanz̄·'mañz̄,s̄o..|| z̄p̄'teesa·'vñttz̄ro 'uaajor̄. n̄'vñt̄-tepp̄ r̄z̄'jaetno·b̄z̄'h̄uusuz..|| ,t̄at̄z̄'suur-jz̄o d̄-jaajz̄..| 'vñt̄z̄taanz̄,k̄ce·'prek-h̄z̄z̄,k̄er̄z̄ 'ḡaalz̄m..|| 'p̄et̄-h̄i'keçk̄z̄·'s̄ip̄z̄,s̄o..| 'waañga·,duñmo'msook̄z̄p̄·ra'uaarz̄-k̄am..|| 'uttz̄ro 'uaajor̄,r̄. 'kaamñas,wiñz̄'kaaz̄..| -suur-jz̄..| 'eeuñ b̄z̄līja..| 'naauñjord̄ 'uaajor̄..| 'it̄.||

გაერთიანე კეთ-ხამ· გვირსოკვეთა..| გაერთიანე გვიარუსვე..].



Some other texts

Su-kṛtam!

“Bāla, kiṁ paṭhasi?”

“Ācārya, Rāmāyaṇam Mahābhāratam ća paṭhāmi”.

Bāla, su-kṛtam!

[;''sukṛtam..|

|'baalz̄·| 'k̄im'p̄et̄-h̄z̄si..

|a'k̄caar-jz̄..| 'ra'maañz̄m,mañhab'haarz̄t̄z̄,k̄z̄p̄..| h̄z̄'haam..

|'baalz̄·;''sukṛtam..]

Well done!

‘What are you reading, sonny?’

‘Teacher, I’m reading the Ramayana and Mahabharata’

Very well, sonny!

~~~~~

*Śrī-Gaṇeśah*

*Naraḥ kiṁ khādati?*

*Ödanam khādati.*

*Ihabālō dēvam pūjayati.*

*Kaṁ dēvam pūjayati?*

*“Om śrī-Gaṇeśaya namah”. Ėvam vadati bālah.*

[ç'rii g3'ñeeç3..]

ç'ñeražh· ç'kiñk'haad3,tı..

'sod3m3ñk 'haad3,tı..

'iž· 'baalo ·d3eeu3m ·'ruuñçežj3,tı..

ç'ken'd3eeu3m ·'ruuñçežj3,tı..

"σομ·]" [çrig3'ñeeç3 'mewa'ñeməžh..] 'eeu3m 'epa'ñ .. 'baal3h..]

*Lord Ganesha*

What does Man eat?

He eats rice.

Here, the child pays homage to God.

Which God does he pay homage to?

He pays homage to Lord Ganesha.

Om: homage to Lord Ganesha.

~~~~~

Kutra vasasi?

Dēvadatta! Grāmē vā nagarē vā vasasi?

Nagarē vasāmi.

Vānarāḥ kutra vasanti?

Vānarā vanē vasanti.

Vṛkṣēṣu ḥa krīdanti.

[ç'kut-t3 išasa'ñ..]

ç'deu3'dett3g· ç'raameua·ç·aueñagəraeu'a·ç·aueñagəraeu'a..

'neg3ñE u3'saamı..

ç'uaan3ñraḥ· ç'kut-t3 u3'saanti..

'uaan3ñra·ç'uañne u3'saanti..

uñk'ñeeñøkçæk· ri'ñpəntı..]]

Where d'you live?

Devadatta, d'you live in a village or in a town?

I live in a town.

Where do monkeys live?

Monkeys live in a forest.

And they play in the trees.



Kākah

Ācārya, kākah kutra vasati?

Putra, kākō grāmēṣu vasati kākasya varṇah kālah.

Ācāry, kōkilam api paśyāmi.

Kōkilō nīlah kākānāṁ svarah karkasah kōkilānāṁ svarō ladhurah.

[kaakz̄h..]

χa'k̄haar-jz̄| χ'kaakz̄h. χ'kut-r̄z 'vassz̄t̄i..

'put-r̄z| 'kaakog·'raameṣo 'vassz̄t̄i..| ka'kes-jz̄ 'vareñz̄h| 'kaalz̄h..

a'k̄haar-jz̄| 'koṣok̄l̄a·'maṛip̄z̄j̄aam̄i..

'koṣok̄l̄o·'niilz̄h..| ka'kaanāas 'vareñh| 'kerkz̄ceh.| 'koṭūlaanāas 'vareo·'med-huqeñh..

The crow

Teacher, where does the crow live?

Sonny, the crow lives in towns.

The crow's color is black.

Teacher, I can see a cuckoo, too.

The cuckoo is dark.

The singing of crows is hard.

The singing of cuckoos is soft.

*Kusumāni ća phalāni ća*

Dēvān kusumaih pūjayanti narāh.

Phalair api pūjayanti.

Kusumāni phalāni ća vanad ānayāmi. Dēvattēna saha tatra gaćchāmi.

Astu: kusumāni ća phalāni ća vanasya vṛksēṣu rōhanti.

[kusw'maanik̄cep· h̄z̄laanik̄ce..||

'dēvān·'kusw'maih| 'puḍz̄e'jaṇtu· 'nerah..|

p̄hālāiñz̄p̄i| 'puḍz̄e'jaṇtu..|

kuṣw'maanī· p̄h̄z̄laanik̄ce| 'vanađa· n̄z̄jaam̄i..| ,dēvaz̄d̄z̄t̄teenz̄sahez̄· 'tet-r̄z ,gaćk̄c̄ -'haam̄i..|

'astw| 'kusw'maanik̄z̄| p̄h̄z̄laanik̄ce| až̄-sañ'z̄ euk̄ṣeeñw..|

Flowers and fruits

Men play homage to Gods.

They play homage to them with some fruits, too.

I'm bringing some flowers and fruits from the forest.

I go there with Davadatta.

That is: flowers and fruits grow on the forest trees.

*Adya mēghō varṣati*

Bālah, kim Dēvadattēna saha grāmam gaćchatha?

Adya mēghō varṣati bhayād gr̄hān na nirgaćchāmah.

Astu api ća parvatēbhyaḥ pāśānāḥ patanti.

*Pavanasya vēgēna cā kusumāni vrkēbhyaḥ-patanti.
Dēvēbhyo namaḥ! Jālasya prabhāvēna vrksā rōhanti.*

[pa'la-ja-zi-'meeeg-hi 'va-za-z-i-tr..||
χ'baalaḥ-χ'kiṇ de,va-pa-dət'-teenəs 'saḥ-χ'g'raamən 'gækçkç-hjət-hjə-||
χ'baalaḥ-χ'kiṇ de,va-pa-'meeeg-hi 'va-za-z-i-tr..|| b'hjəjad· gr'hjannəz, nurgəkçkç-haamən..||
χ'baalaḥ-χ'kiṇ de,va-pa-'meeeg-hi 'va-za-z-i-tr..|| a'kç-ka'a, l'a'kç-ka'a, |
χ'baalaḥ-χ'kiṇ de,va-pa-'meeeg-hi 'va-za-z-i-tr..|| a'kç-ka'a, l'a'kç-ka'a, |
χ'baalaḥ-χ'kiṇ de,va-pa-'meeeg-hi 'va-za-z-i-tr..|| a'kç-ka'a, l'a'kç-ka'a, |
χ'baalaḥ-χ'kiṇ de,va-pa-'meeeg-hi 'va-za-z-i-tr..|| a'kç-ka'a, l'a'kç-ka'a, |

Today, it's raining

Kids, are you going to the village with Devadatta?
Today, it's raining; out of fear, we don't go out.
That is: in addition, some stones are falling off the mountainins.
And, due to the force of the wind, the flowers come off the trees.
Homage to the Gods! The trees grow thanks to the water.



Bhayākulā kanyā

Kim ētat? Kim ētat?

Vada kiṁ tava nāma?

Kanakaprabhā iti mama nāma.

Atrāgaćcha Kanakaprabhē cintām mā kuru! Ōdanam khāda pānīyam piba.

Anugṛhitāsmi. Dhanya-vādah.

[b-hj̥'jaakə-la· 'kep-ja..||
χ'ki'meetət..| χ'ki'meetət..|
'va-pə-| χ'kiṇ teu-za-naamə..|
ke-nə-kep-ə-χə-| a-ti-me-ə-naamə..|
a-ət-ə-γækçkç-hj̥-| ke-nə-kep-ə-χə-| a-ət-ə-γækçkç-hj̥-|
jəm 'pibə..| me-ə-naamə..| a-ət-ə-γækçkç-hj̥-| a-ət-ə-γækçkç-hj̥-|
ə-nugfhi'ta-as-mi..| d'hən-jə-va-adə-| a-ət-ə-γækçkç-hj̥-| a-ət-ə-γækçkç-hj̥-|

A very anxious young girl

What's that? What's that?

Tell me: what's your name?

My name's Kanakaprabha.

Come here, Kanakaprabha. Don't worry! Eat some rice, drink some water.

I'm grateful. Thank you.



Śubha-rātriḥ!

Dēvadatta, gaganē sūrya-ćandrau paśya!

Aśva-gaja-baka-narāḥ-kṣētra-parvata-vanēbhyaḥ śīghram nirgamisyanti. Brāhma-na-kṣatriya-vaiśyā dēvālayam dēvā-ālayam gamis-yanti.

Paśya! Mantri-sūta-sainikānvitō nrpō 'pi vanān nirgaćchati.

Adhunā ćandram ēva paśyāmi. Śubha-rātriḥ!

[gub-h̥̄raat-rih..]
 ḡdeuḍdettz̄: 'gaḡne: 'suur-j̄ k̄āṇḍ-r̄z̄o.. 'p̄as-j̄z..]
 'a᷇-a᷇: 'gej̄z̄: 'baalz̄: -n̄rah̄: k̄s̄eet-r̄z̄: 'p̄ar-a᷇t̄: u᷇neeb̄-f̄i᷇jh̄: ,ūr̄ḡm̄is̄j̄ānt̄i..]
 'braah̄m̄z̄n̄j̄: k̄s̄et-r̄z̄: -āt̄: d̄eūaalz̄j̄ē: ḡam̄is̄j̄ānt̄i..]
 'p̄as-j̄z..] 'ment-r̄: 'suut̄: 'saūnūkaam̄-a᷇t̄: n̄f̄-p̄soori.. 'vanan.. n̄ḡek̄k̄-h̄z̄t̄i..]
 'k̄āṇḍ-r̄z̄m̄eūz̄: p̄e᷇jaam̄i..] gub-h̥̄raat-rih..]

Good night!

Devadatta, look at the sun and the moon in the sky!

Horses, elephants, kids and men will quickly go out of fields, mountains, and forests.

Brahmans, kshatriyas, and vaishyas will go to the temple.

Look! Also the king goes out of the forest, followed by ministers, cabmen, and soldiers.

Now, I can just see the moon. Good night!



Sa᷇d̄ rtavah̄

Samvatsarē ṣa᷇d̄ rtava iti tvayā ūikṣitam.

Rtu-samkhyā khalu ūikṣitā. Idānīm, rtōḥ rtōḥ kah̄ kah̄ ūabdō bhavatīti jñātum ićchāmah.

Śr̄nuta! Rtu-samhāra-kāvyē gr̄iṣma-varṣā-śradh-ḥemanta-śiśira-vasanta-ṛtavō varṇitāḥ. Gr̄iṣmaḥ kathāṁ varṇitāḥ?

Praćānda-sūryō dinānta-ramyō niḍāgha-kālah samupāgataḥ priyē; varṣāsu ā
vibhāti kaṇṭē vara-ratna-bhūṣitā varāṅganēva kṣitir ibdragōpakaīḥ.

Śarad-ṛtum aham ēva varṇayāmi: ham̄sair jītā su-lalitā gatir aṅganānām, ambhō-
-ruhair vikāsitair mukha-ćandra-kāntīḥ.

Bhō! Mām api śr̄nuta paripakva-śālīr vilīna-padmāḥ hērmanta-kālah samupāga-
taḥ; ūiśirē ā niruddha-vātāyana-mandirōdaram hutāśanō gurūni vastrāni ā
prayānti janasya sēvyatām.

Drumāḥ sa-puṣpāḥ salilāṁ sa-padmāṁ striyah̄ sa-kāmāḥ pavanaḥ su-gandhiḥ
sukhāḥ pradōṣa divasaś sarvam̄ priyē cārutaram̄ vasantē.

[ṣa᷇d̄t̄s̄uah̄..]
 s̄s̄nāw̄at-s̄s̄r̄e: ḡf̄t̄s̄uaz̄t̄: t̄wa᷇jač̄ik̄-ṣ̄n̄t̄em..]
 ḡt̄ośa᷇n̄k̄-h̄jak̄. h̄elō: 'c̄ik̄-ṣ̄n̄ta..] ḡdaan̄im..] 'rtōḥṛtōḥ. k̄eh̄-k̄z̄h̄: 'c̄eb̄-dob̄ h̄yāt̄iit̄iȳ.
 'juat̄o, m̄ik̄k̄-h̄aam̄eḥ..]
 'c̄f̄n̄oṭ̄a..] ḡt̄os̄a᷇h̄ar̄z̄ 'kaau-je..] ḡriiṣma..] u᷇r̄sa..] ḡt̄p̄er̄ta..] t̄s̄a᷇-c̄i᷇-t̄s̄a᷇-
 't̄t̄a..] u᷇r̄ta..] ḡt̄iili..]
 ḡḡriiṣm̄z̄ 'ket̄h̄z̄m̄ 'a᷇r̄n̄t̄aḥ..]
 pr̄z̄k̄āṇḍs̄ 'suur-jo.. d̄t̄n̄r̄t̄z̄ 'ram-jo.. n̄uḍaaḡ-h̄z̄ 'kaalz̄h̄ 's̄m̄oḍaaḡz̄te..] ḡp̄t̄je..]
 u᷇r̄s̄aas̄o, k̄z̄e..] u᷇b̄h̄aati..] 'keṇṭ-ḥie..] u᷇s̄aṇḍa..] u᷇r̄t̄z̄ 'b̄-n̄z̄ 'h̄u᷇s̄a..] u᷇r̄n̄eūn̄ḡz̄e..] 's̄iti
 'r̄z̄-ḡs̄oṝz̄ 'keiḥ..]
 as̄p̄t̄o..] ḡt̄a᷇h̄z̄ 'm̄eeuḍ..] u᷇r̄t̄z̄ 'jaam̄..] h̄yās̄a..] ḡr̄ita..] s̄o᷇l̄ita..] 'ḡat̄i..] u᷇r̄t̄z̄ 'naanam..]
 'amb̄-h̄o..] u᷇r̄t̄z̄ 'a᷇kaasi..] 'm̄uk̄-h̄z̄..] k̄āṇḍ-r̄z̄..] 'kaant̄iḥ..]

॥b'hiṣo..॥ 'maa ,n̄ṛpi'c̄f̄o-te | p̄er̄i'p̄ek̄-wa 'saal̄i āiliin̄i 'p̄eḍm̄eḥ | fi'e'maṇ̄i-te . 'kaal̄eḥ ;
 se'mo_paaḡḡt̄eḥ | 'c̄içure,k̄gen̄trudd̄-ḥ̄i. na'aaj̄e,mā: ,maṇ̄du'is̄od̄e,r̄em̄. nu'o'taaç̄-
 uṣ. ḡo'r̄uuij̄i u3straan̄i k̄sep̄ r̄a'j̄eṇti. ḡe3'n̄as̄-j̄e 'seeu-j̄atam..||
 d̄l̄umah̄: s̄z'puṣp̄ah̄: 'sa'l̄i l̄ēa s̄z'p̄ed̄-m̄ast̄ 'rij̄eū. s̄z'kaamañ̄ 'de'u3,n̄auñ̄. so'geaṇ̄-
 fiñ̄.|| 's̄uk̄-hañ̄ph̄ r̄a'd̄os̄a: 'diu3saç̄k̄a: 'r̄em̄-jañ̄ 'sa'r̄uñ̄ma āe's̄ante..||

The six seasons

In a year, there are six seasons, as you've learnt.

Certainly: I've learnt the names of the seasons. Now, we hope to know which are the names of the seasons.

Listen! The poem 'The circle of the seasons' describes the seasons: summer, rain-season, fall, winter, cold-season, spring.

How was spring described?

With its strong wind, its nice day-ends, the warm season has come, my dear.

And during the rain-season, it sparkles, decorated with precious neck-stones like a pretty woman, or the earth with ladybirds.

Fall, just described by me: the wild geese outdid the nice walk of women. The lotuses outdid the brightness of the moon on their faces.

Hey, listen to me, too! With its ripe rice, with its faded lotuses, the turn of winter has come. And during cold weather, the house hollow with closed windows, the fire and warm clothes are useful for people.

The trees are in blossom, the waters have some lotuses, the women are in love, the wind is fragrant, the evenings and days are pleasant. Oh, my dear, everything is lovelier in spring.

Śvaśrūr vadhuś cā



Hē, janāḥ! Ayōdhyā-nagarīm paśyata!

Kim Ayōdhyā-nagaryām kācīn nadī vahati?

Arē! Na jānāsi! Tatra Sarayūr vahati. Nadhyāḥ śōbhām draṣṭum̄ gamiṣyāmāḥ.

Nadhyās tīrē ēkā nārī tiṣṭati.

Yā nārī tatra tiṣṭati sā mama śvaśrūḥ.

Tvāṁ dr̄ṣṭvā śvaśrūḥ sa-krōdhā bhavēt.

Tvayā sādhūktam vadhvā kadāpi nir-janam̄ gr̄ham̄ vihāya na gantavyam.

Tvam̄ gr̄ham̄ gaććēḥ. Aham̄ tu dēvīm̄ Pārvatīm̄ pūjā�iṣyāmi.

Dēvībhiḥ striyah̄ sadā rakṣitāḥ.

[c̄a]wāç̄-ru. 'wāç̄-pa[.||

ḥe"gr̄enaḥ | z̄j̄o'ne'gr̄im̄. |

z̄k̄im̄z̄j̄o'ne'gr̄im̄. | kaak̄in̄'edi'vāñ̄. ||

āñ̄wāñ̄. | iñ̄a'ra'ñ̄. | .iñ̄a'ñ̄. | .iñ̄a'ñ̄. | .iñ̄a'ñ̄. ||

'jaam̄z̄.||

'n̄-p̄eñ̄. | 't̄iire. | 'eeka 'naari. 'tiṣṭz̄. ||

ja'naari. 't̄et-ru. | 'tiṣṭz̄. | sa'mem̄z̄ 'wāç̄-ruh̄. ||

twāñ̄d̄r̄. | wāç̄-ruh̄. | s̄ek̄t̄soñ̄-hab̄ 'h̄avet. ||

t̄wāj̄asad̄h̄uuukt̄. | wāç̄-p̄añ̄. | ḡj̄h̄. ||

ત्वार्णग्रही॒ गैक्-क्चेह..॥ एही॒ तो॑दी॒ एवि॑म् प्रा॒र-व॒त्ति॑म् पुग्रे॒जि॑श्या॒मि॑..।
दे॒वी॒ि॒ब्-हि॒ष्टि॒ति॒ज्ञ॒सा॑'॒र॒क्-शि॒ता॒ह..॥]

Mother-in-law and daughter-in-law

Hey, you all! Have a look at Ayodha town!

Does any river flow through the town?

Oh! You don't know! The Sarayu flows there. We're going see the beauty of that river. On the river bank there's a woman. The woman who is there's my mother-in-law.

Seeing you your mother-in-law might get annoyed/crossed.

You're right. A daughter-in-law must never get off, leaving her home empty.

You should go back home. I'll pay homage to the goddess Parvati.

Goddesses always protected women.



Vṛddha-śāsakah simhaś cā

Asti, Mandara-nāmni parvatē, "Durdāntō" nāma simhah. Sa cā sarvadā paśūn-ām vadham kurvann āstē.

Tataḥ sarvaiḥ paśubhir militvā sa simhō vijñaptah: "Mrgēndra! Kim artham ēkadā bahu-paśu-ghātah kriyate? Yadi prasādō bhavati tada vayam ēva bhavat-āhārārtham prati-dinam ēkaikam paśum upadhaukayāmah".

Tatra simhēnōktam: "Yady ētad abhimataṁ bhavatām tarhi bhavatu tat".

Tataḥ prabhṛty ēkaikam paśum upakalpitam bhaksayann āstē. ātha kadācid vṛdha-śāsakasya kasyaścid vārah samāyātah. Sō 'cintaya: "Mandam mandam gaćchāmi".

Tataḥ simhō pi kṣudhā-pīditah kōpāt tam uvācā: "Kutas tvam vilambād āgatō 'si?" "Śāśakō 'bravīt, Dēva!" Nāham aparādhī. Aham āgaćchan pathi simhāntrēṇa balād dhrtah".

Tasyāgrē punar āgamanāya śapataṁ kṛtvā svāminam: "Nivēdayitum atrāgatō 'smi"
Simhah sa-kōpam āha: "Sa-tvaram gatvā dur-ātmānam darśaya kva sa dur-ātmā tiṣṭhati?"

Tataḥ śāśakas tam grīhitvā gambhīra-kūpam darśayitum gataḥ. Atrāgatya svayam ēva paśyatu svāmī ity uktvā tasmin kūpa-jalē tasya simhasyaiva pratibimbam darśitavān.

Tatō 'sau kōpa-vaśāt simha-nādam mumōcā. Tatas tat pratiśabdēna dvi-guṇata- rō nādah kūpāt samutthitah.

Athāsau tam nādam ākarnya: "Śaktatarō 'yam iti matvā" tasyōpary ātmānam nikṣipya pańcatvam upagataḥ.

[!u]ddh-[h]i॒[c]a॒[c]e॒[s]i॒[h]i॒[c]e॒[.]
[a]sti॒[t]e॒[n]aamnि॒[d]e॒[a]w3te॒[.] [d]o॒[r]daantō॒[.] naam3॒[.] [s]i॒[h]i॒[c]e॒[.] as॒[.]
p3॒[c]uuunām॒[.] wa॒[.] h-॒[h]i॒[.] kur-॒[.] naas-॒[.] te॒[.]
[t]at3॒[.] as॒[.] de॒[.] ob॒[.] hir॒[.] m-॒[.] lit-॒[.] wa॒[.] s3॒[.] si॒[h]o॒[.] u[.] t-॒[.] e-॒[.] t-॒[.] h-॒[.]
[m]d-॒[.] ge-॒[.] e-॒[.] p-॒[.] t-॒[.] ..[.] kr-॒[.] m-॒[.] e-॒[.] t-॒[.] h-॒[.] e-॒[.] a-॒[.] s-॒[.] aa-॒[.]
[d]ip-॒[.] t-॒[.] s-॒[.] aa-॒[.] dob॒[.] h-॒[.] ja-॒[.] b-॒[.] h-॒[.] u-॒[.] da-॒[.] ha॒[.] ra-॒[.] arth-॒[.] h-॒[.] p-॒[.] t-॒[.] a-॒[.] t-॒[.] i-॒[.] d-॒[.] n-॒[.] m-॒[.] e-॒[.] k-॒[.] e-॒[.] k-॒[.] m-

'rəgə ,mərədʒhəoκz'jaaməz̪..|
 'tət-ru . sīnāhē'nōok-t̪əm . jađ-jeet̪s 'dəb-ɦi'mət̪əm 'həvəz'tam . | 'təf̪i'b 'həvəz'to,t̪et ..|
 'tət̪əph̪ . 'rəb-ɦiżt̪ jekəirk̪əm . | 'rəgə ,mərəd'kəlpit̪əm . | b'ɦek̪əz̪jən . 'naastel | 'rət-h̪z .
 k̪d'aakçid 'wədd-ɦz . ɣəc̪z'kes-żz . | 'kes-żz̪kçid 'waarəz̪h . | səma'jaat̪əz̪h ..|| sə'kçint̪z̪jet .
 'mənd̪əm 'mənd̪əm . ɣək̪ək̪'həam̪i ..|
 'tət̪əs̪'sīnāhōpri | k̪s̪ud-ɦa . 'piid̪lət̪əh . 'kso'pat . | 'təmə'u'aakçz . || ɡ'kut̪əst̪wəm . | ɡ'wilemba
 'daagz̪tos̪i ..|
 'cəc̪z̪k̪ob . 'reuit .. | ɡ'deeu'z ..| 'naah̪z ,mərəd'raad-ɦi ..| 'aɦ̪z'ma'gək̪-k̪z̪m . 'pət-ɦi ..|
 sīn̪hənt̪z'reeñz . 'bəladd 'hīt̪əh ..|
 t̪əs̪'jaag-re 'pūn̪z ,fagz̪m̪s'naaj̪z . 'cəp̪z̪-h̪z̪y 'k̪ft-wa . | s'waam̪i'nən . | n̪i'veedz̪j̪t̪u . m̪z̪-
 'raagz̪tos̪m̪i ..|
 'sīn̪h̪z̪ . s̪z̪'kso'p̪z 'meah̪z . | s̪z̪'wərəz̪y 'gət-wa . | d'vrat'ma'an̪z̪ 'dərç̪z̪je ..| ɡ'k'wəs̪z̪ də-
 'raat-ma 't̪iš-ż̪t̪i ..|
 't̪ət̪z̪c . 'cəc̪z̪k̪as ,təj-qr̪fiit̪-wa . | g̪əmb̪fīr̪z'kuup̪z̪n . 'dərç̪z̪j̪itoj̪ 'gət̪əh ..| et̪-ra'gət-j̪z̪s̪
 'wəj̪z 'meeu'z . 'pəs̪-j̪zt̪os̪ 'waami ..| ɡ't̪j̪ukt-wa . | 'tes̪m̪in ..| 'kuup̪z̪j̪ale . | 'tes̪-żz . sīn̪h̪as̪-
 'j̪uz̪ ..| p̪r̪eti'bim̪bən . 'dərç̪it̪z̪vən ..|
 't̪ət̪os̪a'w ..| 'kso'p̪z . 'n̪aç̪at . | sīn̪h̪z 'naad̪əm mō'mōok̪z ..| 't̪ət̪əs̪,t̪ətp . r̪z̪,t̪iç̪z̪b'deeen̪z̪:
 dəw̪l'g̪uñ̪z̪t̪ər̪o . 'naad̪əh . | 'kuup̪at . s̪z̪'mūtt̪-hīt̪əh . | z̪t̪h̪aa's̪z̪o ..| t̪ən'naad̪z mā'ker̪-
 j̪z̪ : | 'cəkt̪z̪t̪ər̪s̪j̪z̪ 'mīt̪'met-wa ..| t̪əs̪'j̪so'p̪z̪ ja't'ma'an̪z̪ n̪i'k̪s̪ip-żz̪ : p̪z̪r̪-k̪ç̪et-wz̪
 'm̪w̪r̪z̪,t̪əh ..|]

The old hare and the lion

Once upon a time, on the Mandara mountain, there was a lion named ‘Tameless’. It always spent its time killing animals. Then, all the animals met and presented it with a request: ‘King of the animals, what about killing several animals at a time? If you agree, every day, we will offer you an animal for your meal’.

The lion said: ‘If this is your wish, then, it’s agreed’. Since that moment, it lived on any animal destined to it. Yet, one day, it was the turn of an old hare. It said to itself: ‘I’m going to go very slowly’.

Then, the lion, which was starving to death, told it angrily: ‘Why did you arrive late?’

The hare said: ‘I’m not guilty, Sire, on the way, another lion kept me forcibly’. After swearing to return, it said: ‘I came here to inform Your Majesty’.

The lion replied angrily: be quick in showing me that villain. Where’s that villain?

Then, the hare took it and showed a deep well. When they arrived there, it said: ‘Your Majesty, have a look yourself’, and showed the reflection of the same lion, on the water in the well.

Then, flying into a rage, the lion gave a roar. And, due to the echo effect, a noise went out of the well, twice stronger.

Thus, hearing this sound, the lion, thinking it was stronger, it pounced on it, and passed away.

7. Concise Sanskrit phono-dictionary

7.1. This phono-dictionary presents less than 200 words, which are important for cultural Sanskrit traditions.

However, it is more a tool for phoneticians, linguists, and cultured people, who do not actually (need to) speak the language, but are happy to clearly know, at last, how to pronounce it adequately, at least when reading.

Thus, these forms are given both in our own *transliteration* and *transcription*. And it should be carefully noted, from the start, that their *alphabetical order* is quite different from the Devanagari one. In fact, its order is the commonest one used in the West, and with the long vowels after the short ones.

7.2. In addition, every item starts with a capital letter, also because those words are often used as proper names.

It is to be kept in mind that long and nasalized vowels are to be found under their simple element, including the variants of *n* (*ṇ*, *ṁ*, *ñ*), while greater timbre differences have basic different symbols.

The pronunciation given here is the *neutral* one of Classical Sanskrit. Different languages can use the position of stress in a word as a distinctive element, in a more or less extensive way. But, in Sanskrit, it is not so.

7.3. For words beginning with [#C-C, #C'C], it is important not to hastily consider them absolutely wrong. In fact, as soon as these words are inserted in phrases, after a vowel, it is immediately obvious that they are [VC#C, VCC], not [V#CC, VCC]!

Instead, notations like [C'CV, C'VV, CC'V] are decisively unnatural for most languages, even not considering German notations like /CV/ [C?V]: *und überall* [?unt,?ybv?al, -b?r?al-].

A	
<i>Advaita</i> [əd'veitə]	<i>Antahkaraṇa</i> [əntaḥkaraṇa]
<i>Advaitavēdānta</i> [əd'veitavēdānta]	<i>Anupapādaka</i> [ənupapādaka]
<i>Agniṣvātta</i> [aɡ-niʂ'waattə]	<i>Arhat</i> [aɻhaṭ]
<i>Ahaṅkāra</i> [aɦaɳkāra]	<i>Arjuna</i> [aɻg̊uɳa]
	<i>Arūpa</i> [aɻruupa]

Asat ['asət]*Aśvattha* [əs'vatt-hə]*Avalōkitēśvara* [əvəlōkītēśvara]*Avasthā* [əvəst-hə]*Avatāra* [əvət'aarə]*Avīci* [əvīikṣi]*Avidyā* [əvīd-ja]*Ā**Ācārya* [əkṣaar-ji]*Ādi-buddhi* ['adi buddhi]*Ākāśa* [əkāsə]*Ānanda* [ənūndə]*Āsama* [əsəmə]*Āśrama* [əasrəmə]*Ātman* ['aatmən]*B**Bhagavad-gītā* [b̥hag̥eved̥ 'giita]*Bhakti-yōga* [b̥hakti 'jōgə]*Bhūta* [b̥huuutə]*Bīja* [b̥iiγə]*Bōdhi* [b̥od̥hi]*Bōdhisattva* [b̥od̥-hi'satt-wə]*Brahmā* [b̥reḥ-mə]*Brahman* [b̥reḥ-mən]*Brahma-yōga* [b̥reḥ-ma 'jōgə]*Brāhmaṇa* [b̥raaḥ-məɳə]*Buddha* [buddhə]*Buddhi* [buddhi]*C**Ācakra* [əkṣək-ri]*Āśela* [əsəelə]*Āśit* [əs̥it]*Āchāyā* [əc̥haaja]*D**Dāna* ['daanə]*Dēva* ['deevə]*Dharma* [d̥harmə]*Dhāraṇā* [d̥haaraṇə]*Dhyāna* [d̥hijaanə]*Dvāpara-yuga* [d̥waapərə 'jōgə]*Dvija* [d̥vījə]*G**Gāyatrī* ['gaajət,ri]*Gautama* ['gaʊtəmə]*Guṇa* ['guɳə]*Guru* ['guɾo]*Guru-paramparā* ['guɾo pəm̥pəra]*H**Hathā-yōga* [h̥aṭ-ḥə 'jōgə]*I**Īśvara* [iʃ̥vərə]*J**Jāgrat* ['j̥aag-ri]*Jīva* ['j̥iivə]*Jīvanmukta* [j̥i'ven'muk-tə]*Jīvātman* [j̥i'veat-mən]*Jñāna-yōga* [j̥ñaanə 'jōgə]*K**Kali-yuga* [kəli 'jōgə]*Kalpa* [kəlpə]*Karman* [kərmən]*Karma-yōga* [kərmə 'jōgə]*Karuṇā* [kəruɳə]*Kāma* [kaamə]*Kāma-lōka* [kaamə 'lōkə]*Kāma-rūpa* [kaamə 'ruupə]*Kāraṇa-śarīra* [kaaɳəɳə ʂəriiṛə]*Kāraṇōpādhi* [kaaɳəɳə 'paad-ḥi]*Kṛṣṇa* [k̥r̥iṣɳə]*Kṛta-yoga* [k̥r̥itə 'jōgə]*Kṣatriya* [k̥ṣet-riye]*Kṣānti* [k̥ṣaaṇi-ti]*Kumāra* [ku'maara]*L**Laya* [l̥eajə]*Liṅga-śarīra* [liɳgə ʂəriiṛə]*Lipika* [lipike]*Lōka* [l̥sookə]

M

- Mahābhārata* [maħab'ħaaraħtə]
Mahat ['maħat]
Mahātman [m3ħaat-m3n]
Manas ['mənəs]
Mānasaputra [mənəs3pʊt-r3]
Mantra ['mənt-r3]
Manu ['məno]
Manvantara [m3m'wəntərə]
Māyā ['maaja]
Māyāvi-rūpa [ma'jaav1 'ruupə]
Mōkṣa ['mσok-ħ3]
Mudra ['mud-r3]
Mukti ['muk-ti]
Mūlaprakṛti [mu'ləp-r3kṛti]

N

- Nirmāṇakāya* [nir'maṇ3kaaj3]
Nirvāṇa [nir'waan3]
Niyama ['niј3me]

Ō

- Ōm ['σom]

P

- Pāṇḍu* ['pəndu]
Parabrahman [parəb'reħ-m3n]
Paramātman [parət'maat-m3n]
Pāramitā ['paarəməta]
Patañjali [pañtəñgħ3li]
Pitṛ ['pitṛ]
Pradhāna [p-r3d'ħaan3]
Prajāpati [p-r3'għaap3ti]
Prajñā [p'rəj-na]
Prakṛti [p'rəkṛti]
Pralaya [p'rələj-ja]
Pratyēka-buddha [p-r3t'jækə 'budd-ħ3]
Pravṛtti [p-r3'vṛt-ti]
Prāṇa [p'rəaħ3]
Prāṇāyāma [p'rəaħ3jaam3]
Punarjanman [puñzər'għenm3n]
Purāṇa [po'rəaħ3]
Puruṣa ['puɾuʂə]

R

- Rājas* ['raħħes]
Rājā-yoga ['raħħ3 ġoġoġ3]
Rāmāyaṇa [ra'maaħ3,ħa]
Rūpa ['ruupə]

S

- Samādhi* [s3'maad-ħi]
Saṃsāra [s3ħa'saara]
Sannyāsin [s3nn'jaasın]
Sat ['set]
Satya ['sat-ħ3]
Sattva ['sətt-w3]
Sāvitri ['saavut-ri]
Siddhārtha [siddħħaart-ħ3]
Skandha [s'keħħd-ħ3]
Smṛti [s'mṛti]
Sthūla-śarīra [stħuulə ċ3'riir3]
Stūlopādhi [stulo'paad-ħi]
Suṣupti [so'ħup-ti]
Sūkṣmopādhi [suk-ħmo'paad-ħi]
Sūtrātman [sut-ħaat-m3n]
Svabhāva [s-ħ3b'ħaav3]
Svapna [s'ħawap-n3]

Ś

- Śakti* ['çek-ti]
Śambhala ['çəmb-ħ3la]
Śaṅkarācārya [çənħkəraħħa-jaar-ħ3]
Śarīra [ċ3'riir3]
Śāstra ['çaast-r3]
Śiṣṭa ['çisħħ3]
Śiva ['çiu3]
Śīla ['çiiħ3]
Ślōka [çlσok3]
Śruti ['çruti]
Śūdra [çuuđ-r3]
Śūnyatā [çuuŋħ-jaatā]

T

- Tamas* ['təməs]
Tantra ['tənħt-r3]
Tat ['tet]
Tathāgata [t3ħħaagħ3-te]

Tattva [tətt-wə] *Tāntrika* [taant-r̥iķə]
Tējas [teejəs] *Trētā-yuga* [t̥r̥eetə jʊgə]
Trimūrti [t-ru'muurt-ti]
Tṛṣṇā [tr̥s-ɳa]
Turīya [to'rīijə]

U

Upanisad [u-pəñśad] *Upādhi* [o'paad-ɦi]
Upāsaka [o'paasəķə] *Upāsika* [o'paasiķə]

V

Vāc ['vaakç] *Vāhana* ['vaaħəna]
Vaiśya ['vaiś-ja] *Vēda* ['vēedə]
Vēdānta [vē'daañtə] *Vidyā* ['vid-ja]
Virāga [vɪrāagə] *Viśnu* ['viś-ɳo]
Viiryā ['viir-ja]

Y

Yama [jāmə] *Yōga* [jōogə]
Yōgin [jōogin] *Yuga* [jʊgə]

8.

Regional ‘modern’ accents of Sanskrit in the Indian subcontinent

8.0.1. In this chapter, we will provide the phonopses of 17 ‘regional accents’ of Sanskrit, which are typical of bilingual people in India and in some neighboring nations. For each area and mother tongue, we will show what is needed for adequate

fig 8.0.1. Languages spoken in India and some neighboring countries.



comparisons with neutral pronunciation of Sanskrit.

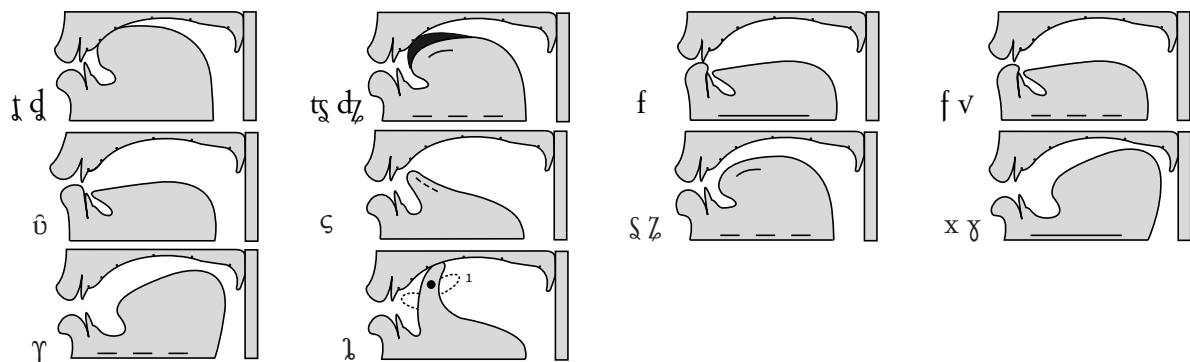
Of course, each single speaker, in addition to what we will show, may also use some neutral or mediatic peculiarity (cf § 3-6).

Each phonopsis shows the fundamental vocograms and tonograms of its accent (with some variants), simply adding some observations about the consonants, mainly when they differ from neutral Sanskrit usage.

Many speakers use only [s] for /s, ſ, ʂ/, even in Bihar. Dravidians, often have /VC#CV/ [V#CV], lengthened contoids instead of geminated, while Bengali and Marathi speakers may have degemination: /VC#CV/ [V#CV].

fig 8.0.2 provides the orograms of the contoids not present among the figures of § 4.

fig 8.0.2. Sanskrit *regional* accent: contoids not present in § 4.



Hindi

8.1.1. *fig 8.1.1* shows the most typical vowels and diphthongs of the Hindi accent of Sanskrit. It should be carefully compared with *fig 3.1*. Look at it particularly for the possible taxophones of unstressed /a/, including its very frequent complete fall in open syllable, either inside or at the end of a word. This fact is most typical of Hindi speakers, especially ‘northerners’, as they do in their mother tongue. But it is terribly different from real Sanskrit usage.

fig 8.1.1. Sanskrit regional accent: *Hindi*.

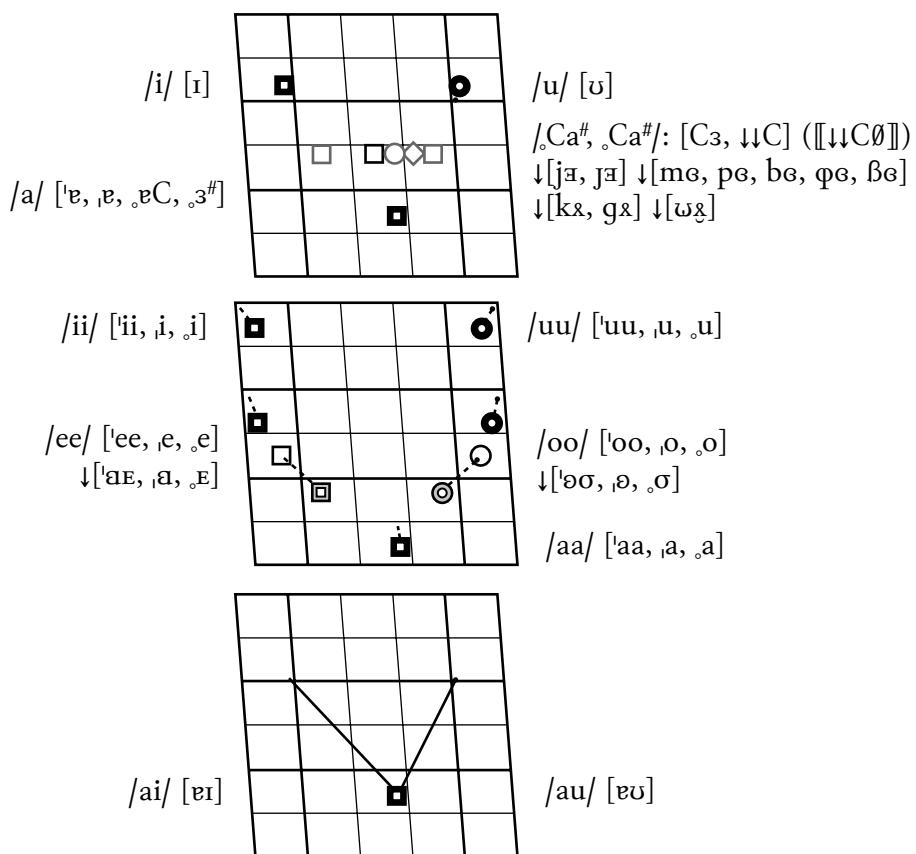


fig 8.1.2 shows frequent variants, which can certainly be found in alternation with those of *fig 8.1.1*. In addition, *fig 8.1.3* gives further possible broader variants, which may occur in the accents of western, southern, or eastern speakers of Hindi (cf *fig 8.0.1*). The intonation patterns are given in *fig 8.1.4*, including frequent variants.

8.1.2. As for the *consonants*, for /~/ we generally have /n[#], n≡C/ especially in the north and east; in addition, in the north we find postpalatals instead of apicopalatals, which are common in the rest of the territory, including /VɳV/ [V̪lV, V̪lV̪] (and further combinations), together with /VlV/ [V̪lV]; /v/ [v, w, β, β, #b]; /b/ [b, β].

/ph/ [ɸ, f, f]; /n, c, ɟ, ɿ/ [ɳ, tɳ, tɿ, ɿ] (and, also after a pause, /c, ɟ/ [tɳ, tɿ, ɿ]; /z, ɻ/ [z, ɻ, ɻ]); /ʃ/ [ʃ, ɿ, ɿ]; /Vɦ/ clusters typically become [ɦV], with possible /Chɦ/ [tʃɦ]; /h/ [ɦ], /h[#]/ [ɦ, ɦ, ɦ]; often /ɦV~/ [ɦV̪]; /k/ [k, ɦ, ɻ, ɿ]; /ʃn/ [ʃ, n, p, dɳ, gɿ]; /ʂ/ [ʂ], /st/ [ʂt];

/r/ [r, r̥, z]; final stops are frequently inaudibly released: [C[#]]. Often, /kʂ/ and /khj/ are exchanged.

fig 8.1.2. Sanskrit regional accent: *Hindi* further realizations.

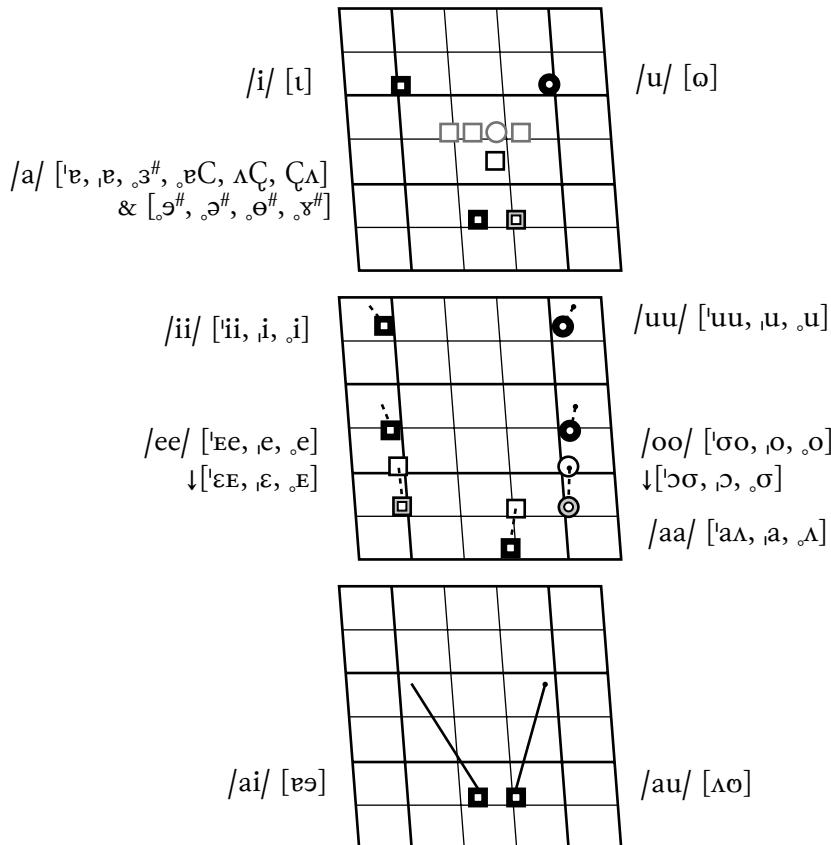


fig 8.1.3.1. Sanskrit regional accent: *Hindi* more local forms.

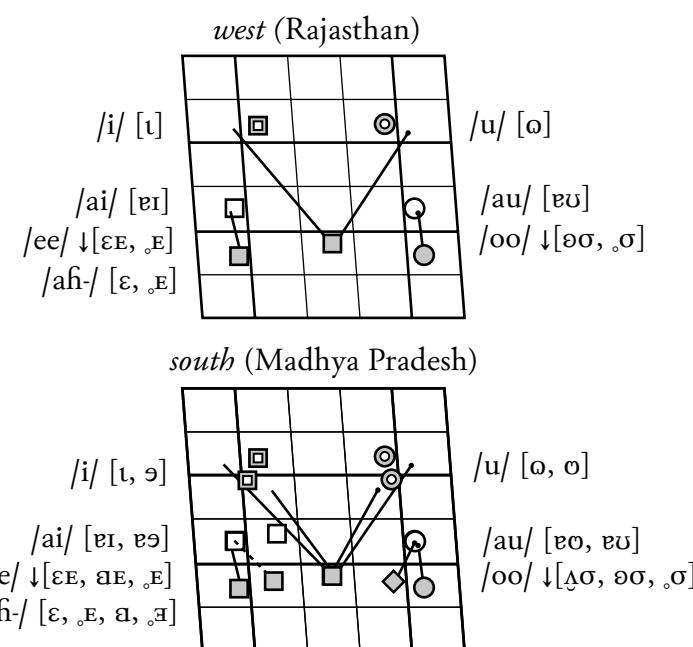
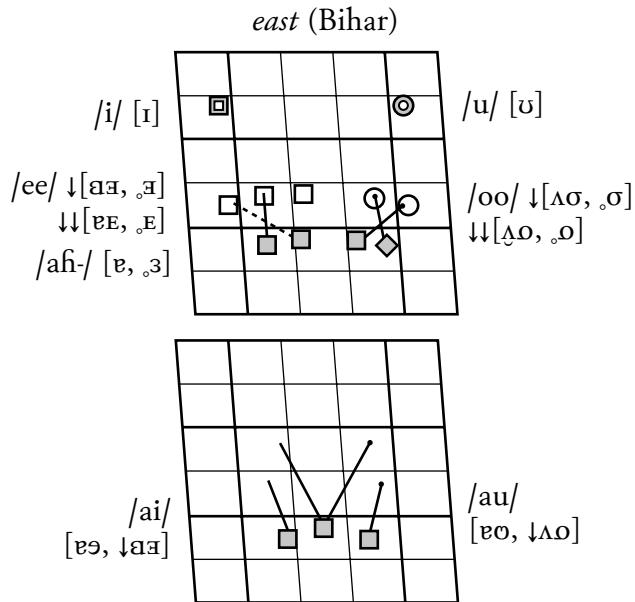
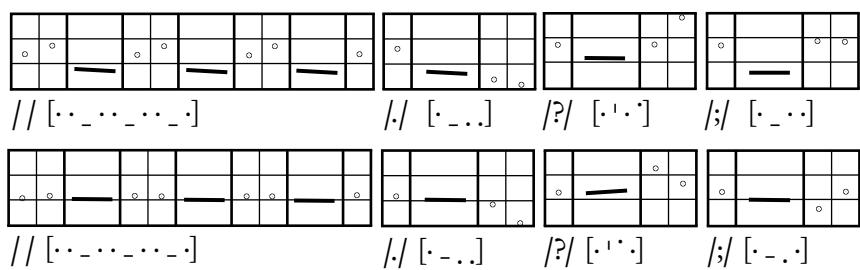


fig 8.1.3.2. Sanskrit regional accent: *Hindi* more local forms.

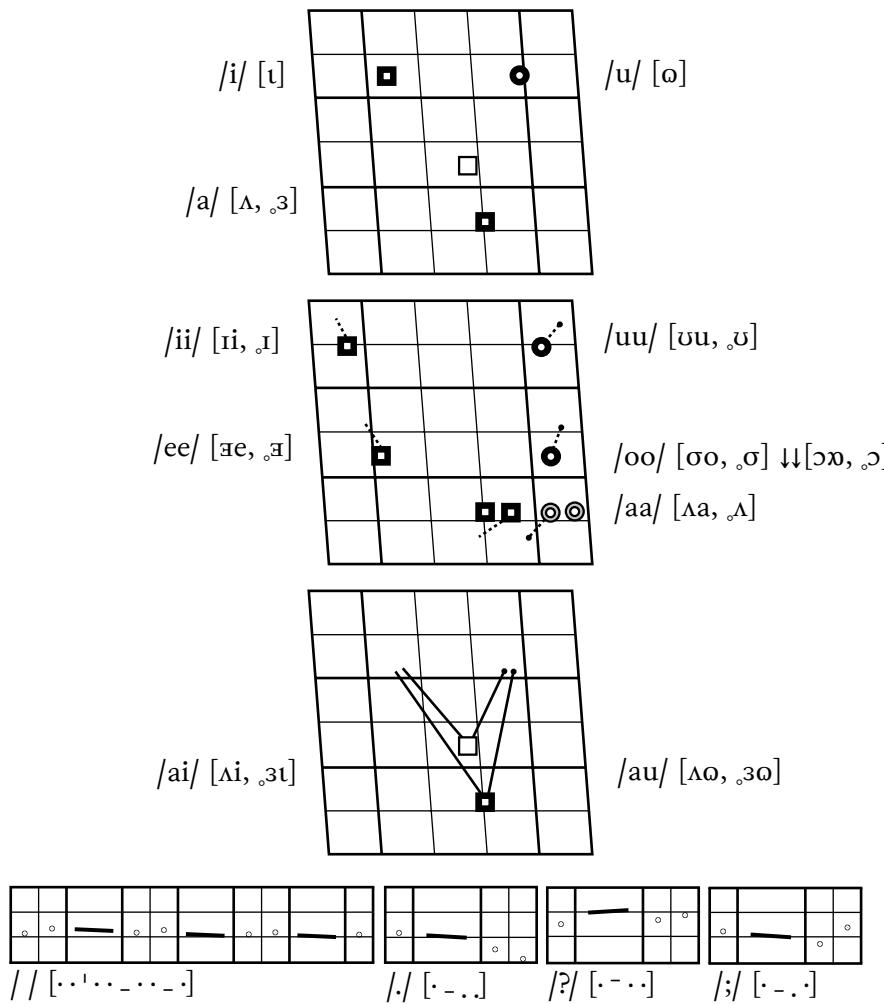
Especially in the east, also /^hj/ [dʒ̄], /s/ may become [ʃ̄, ʂ̄]. In the north-eastern areas (especially in and around Varanasi, *Vārāṇasī*) a final vowel (even short) is very often stressed; in addition, dental and apicopalatal consonants may merge into alveolar realizations.

fig 8.1.4. Sanskrit regional accent: *Hindi* intonation patterns, with variants.

Kashmiri

8.2. In addition to the vocogram and tonograms, for the *consonants* we can particularly mention: *v* [ʊ], *y* [j].

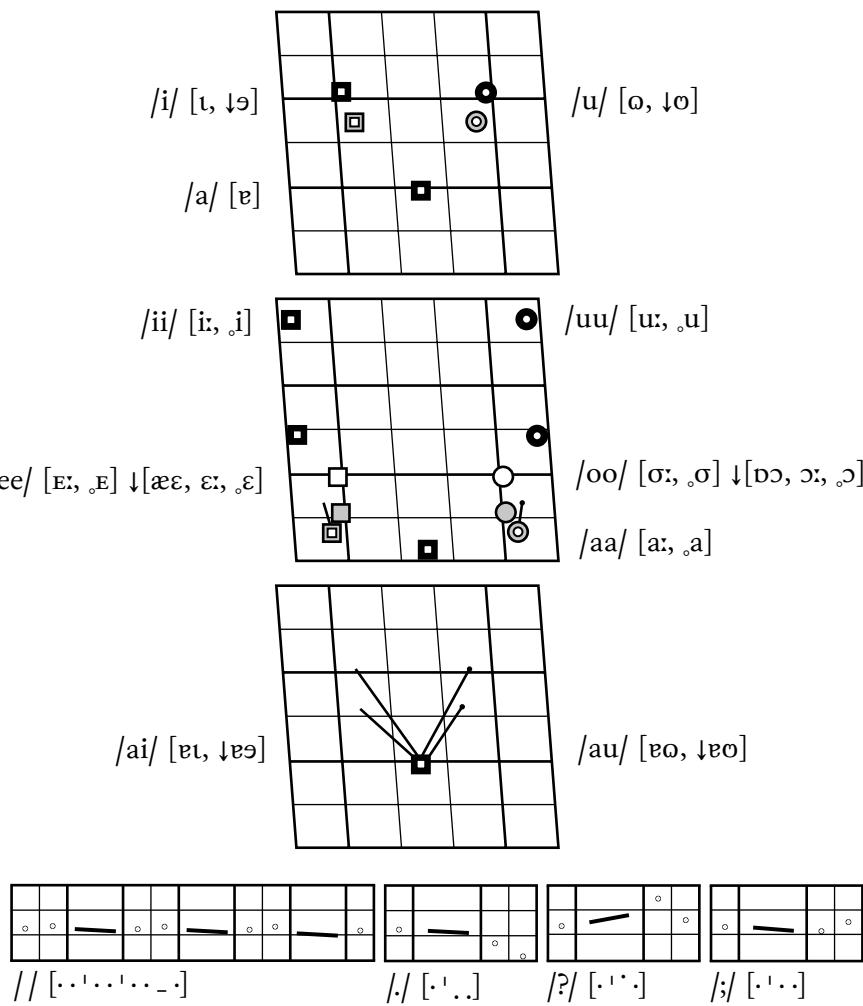
fig 8.2. Sanskrit regional accent: *Kashmiri*.



Panjabi

8.3. In addition to the vocogram (often with /Ca[#], Ca[#]/ [Ø]) and tonograms, for the *consonants* we mention: v [ʊ], h [h, f].

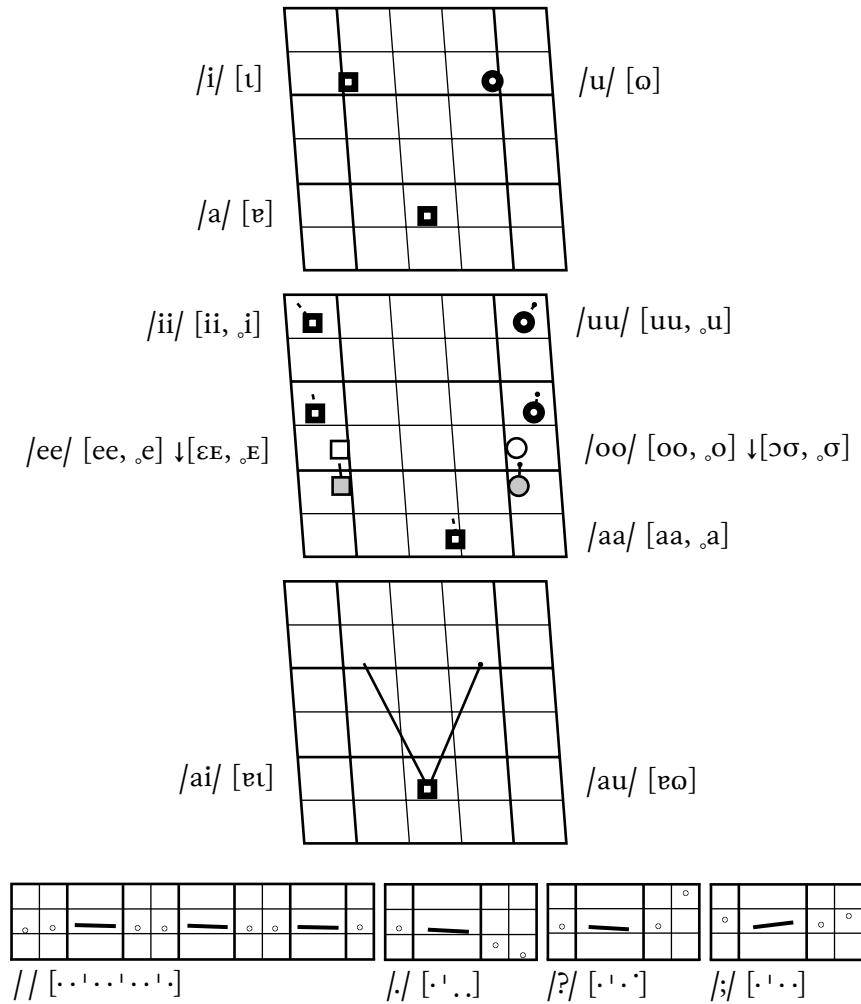
fig 8.3. Sanskrit regional accent: *Punjabi*.



Urdu (Pakistan)

8.4. For the *consonants* we can notice: *v* [v], *y* [J, j].

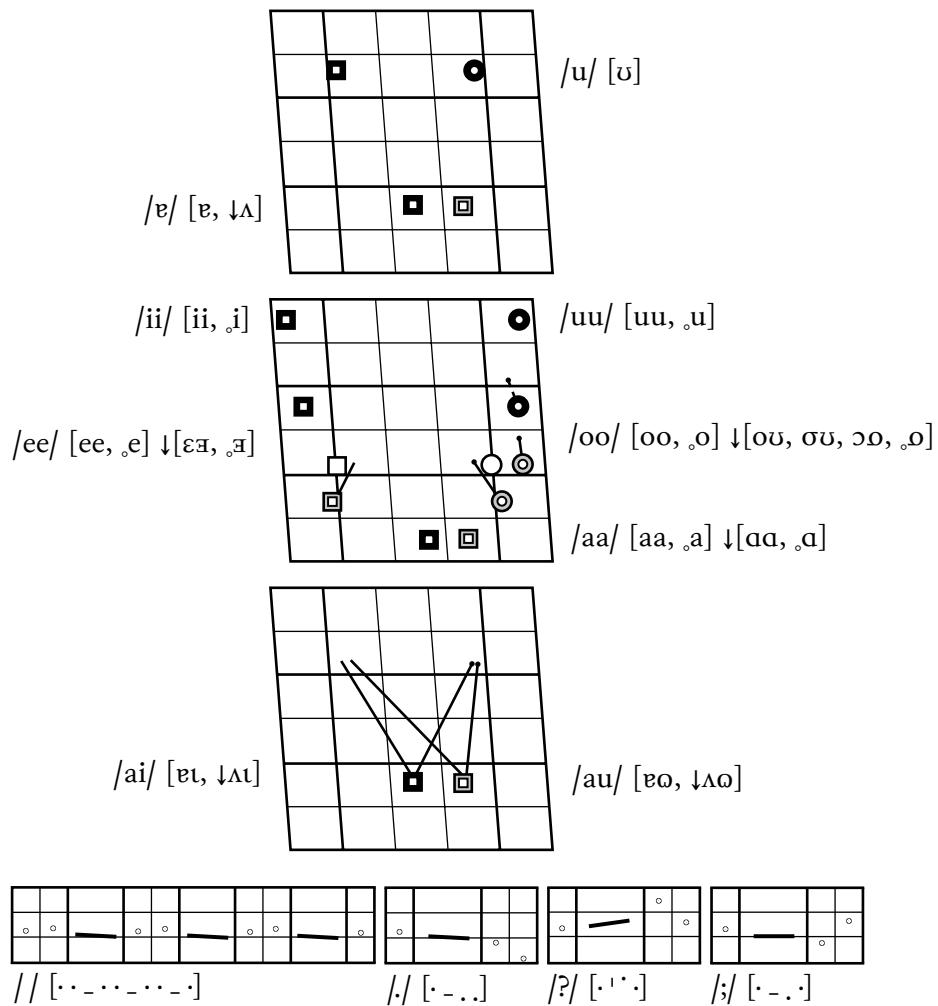
fig 8.4. Sanskrit regional accent: *Urdu*.



Sindhi

8.5. In addition to the vocogram and tonograms, for the *consonants* we can bring up: ν [v], γ [j].

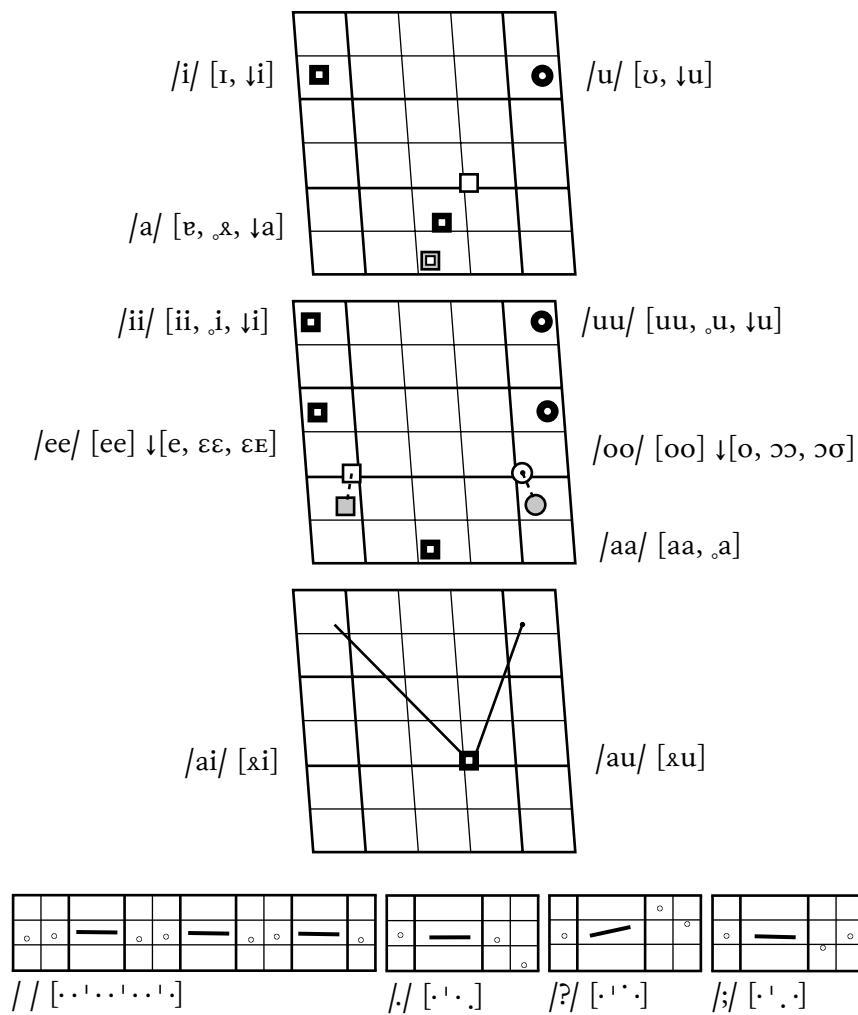
fig 8.5. Sanskrit regional accent: *Sindhi*.



Gujarati

8.6. In addition to the vocogram and tonograms, for the *consonants* we can mention: *v* [ω], *y* [j], *h* [h; h̄], *ph* [ɸ], *b* [β], *r* [z], *th* [ð], *d* [ð], *n* [ñ], *th* [χ], *d̄* [χ̄], *kh* [x], *g* [ɣ], *r̄* [ru], /~/ [x̄ū], and the merger of dental and apicopalatal consonants into alveolar ones.

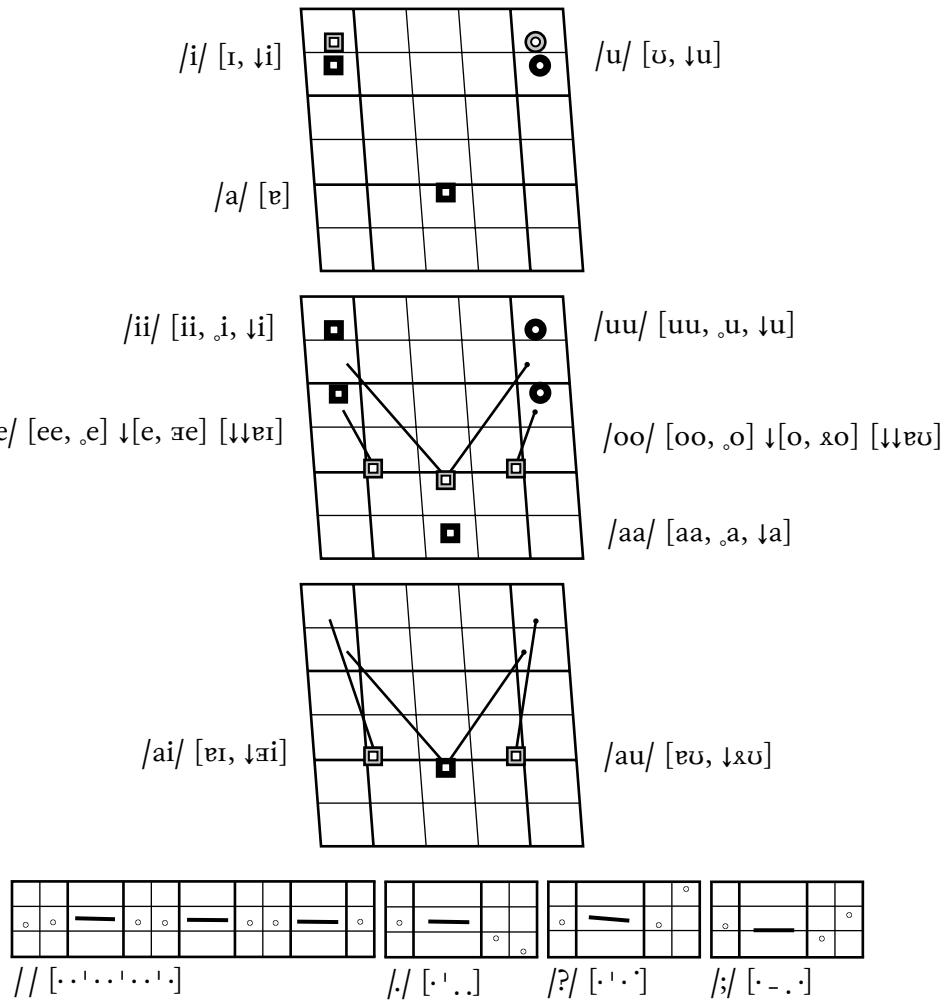
fig 8.6. Sanskrit regional accent: *Gujarati*.



Nepali

8.7. In addition to the vocogram and tonograms, for the *consonants*, let us mention: *v* [ω], *y* [J], *h* [h; h̄], *p̄h* [ph, φ], *bh* [bh, β], *č*, *j* /c/, *ʃ*/ [ts, dz].

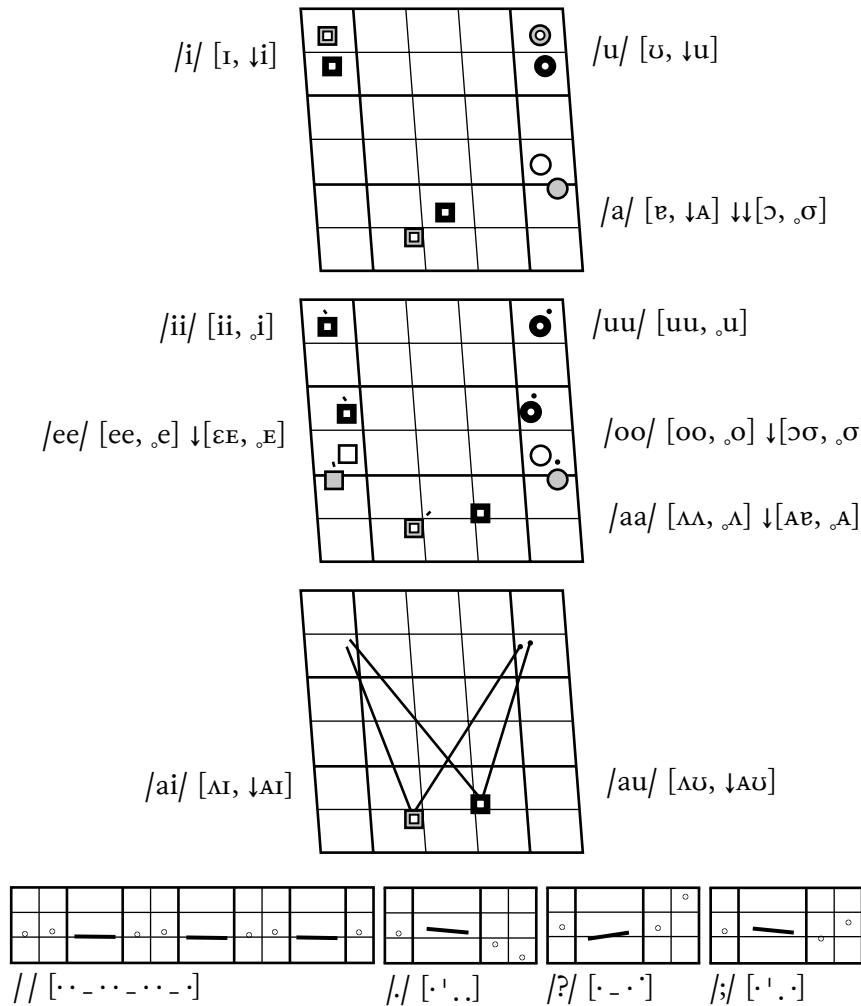
fig 8.7. Sanskrit regional accent: *Nepali*.



Assamese

8.8. In addition to the vocogram and tonograms, for the *consonants* we can indicate: *v* [w, b], *y* [j], *h* [h, f], *č*, *j* also [ts, s; dz, z], initial *y* [dʒ, dz, z].

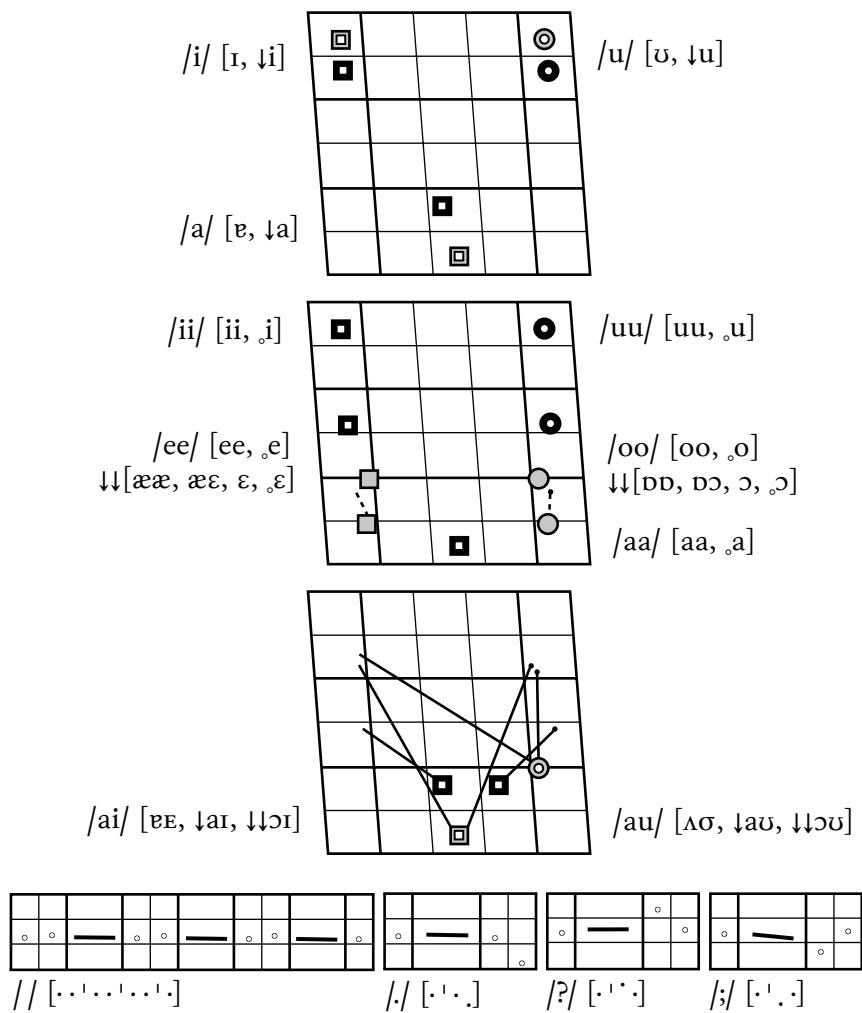
fig 8.8. Sanskrit regional accent: Assamese.



Bengali

8.9. In addition to the vocogram and tonograms, for the *consonants* we can mention: *v* [ω, b], *y* [j], *h* [h, h̄], *m* [m̄], *b* [β̄], *d* [δ̄], *g* [γ̄], *ph* [φ̄], *bh* [β̄], *r* [z̄], *č̄*, *j* [ts, dz̄], *jñ̄* [g, ḡ], *bh* [β̄], initial *y* [dʒ̄, dz̄, z̄], *s* [ʃ̄], *m̄* [ŋ̄], /CC/ [C]. In addition, it has a rather strong stress mostly found on the first syllables of words.

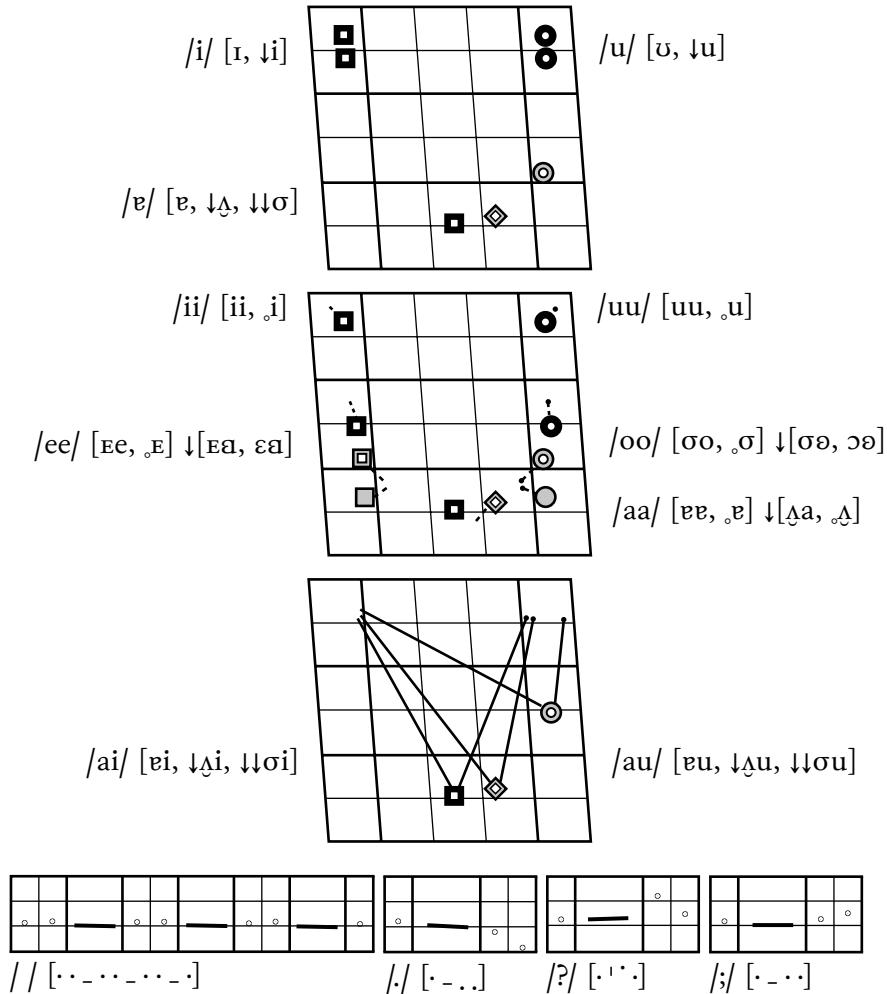
fig 8.9. Sanskrit regional accent: *Bengali*.



Oriya

8.10. In addition to the vocogram and tonograms, for the *consonants* we mention: *v* [ω, β, b], *y* [j], *ć* [tʂ, ts], *j* [dʐ, dz], *jń* [gj], initial *y* [dʐ, dʐ̥], *s* [ʂ, ʂ̥], /sCh/ sequences can become /sC/.

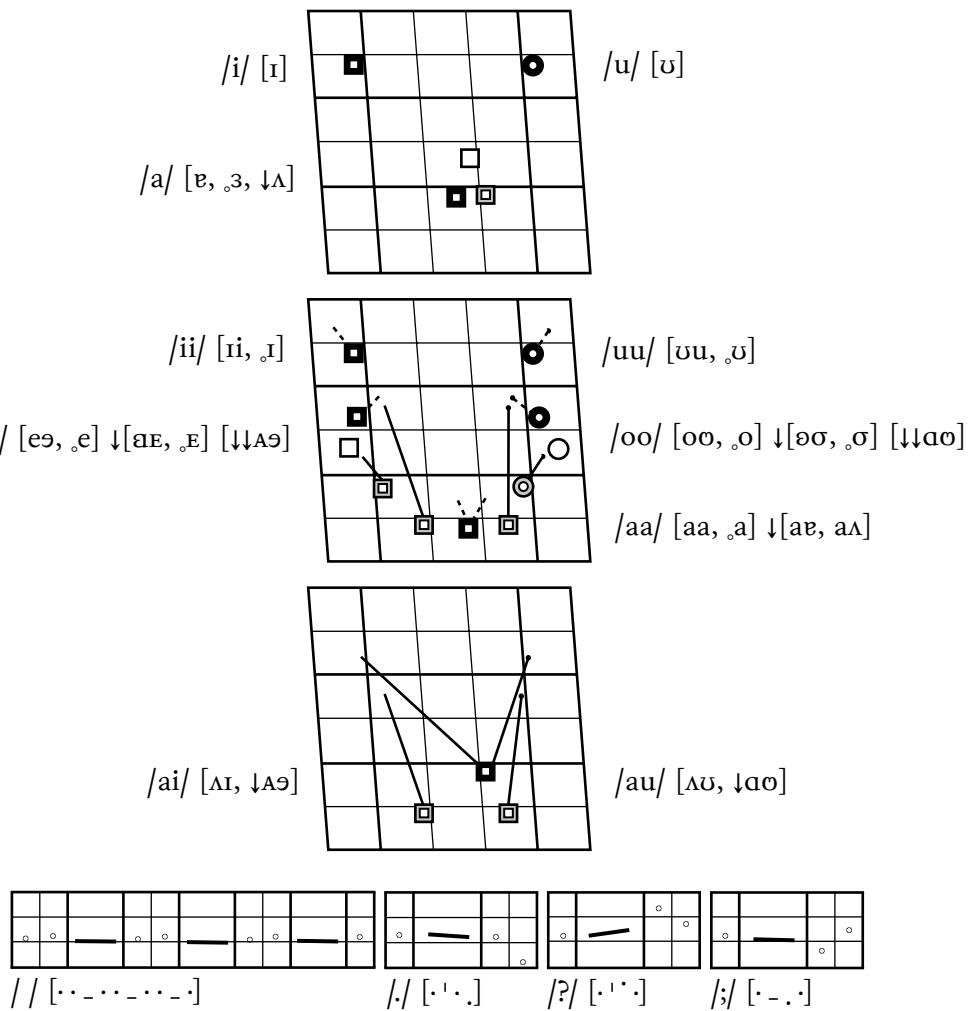
fig 8.10. Sanskrit regional accent: *Oriya*.



Marathi

8.11. In addition to the vocogram and tonograms, for the *consonants*, it is important to point out: *v* [v̑, β], *bh* [β], *dh* [δ], *dh* [ζ], *jh* [ζ], *ph* [Φ], *y* [j], *h* [h, h̑]; /~/ tend to become [ʒ̑]. Apico-palatal consonants are typical.

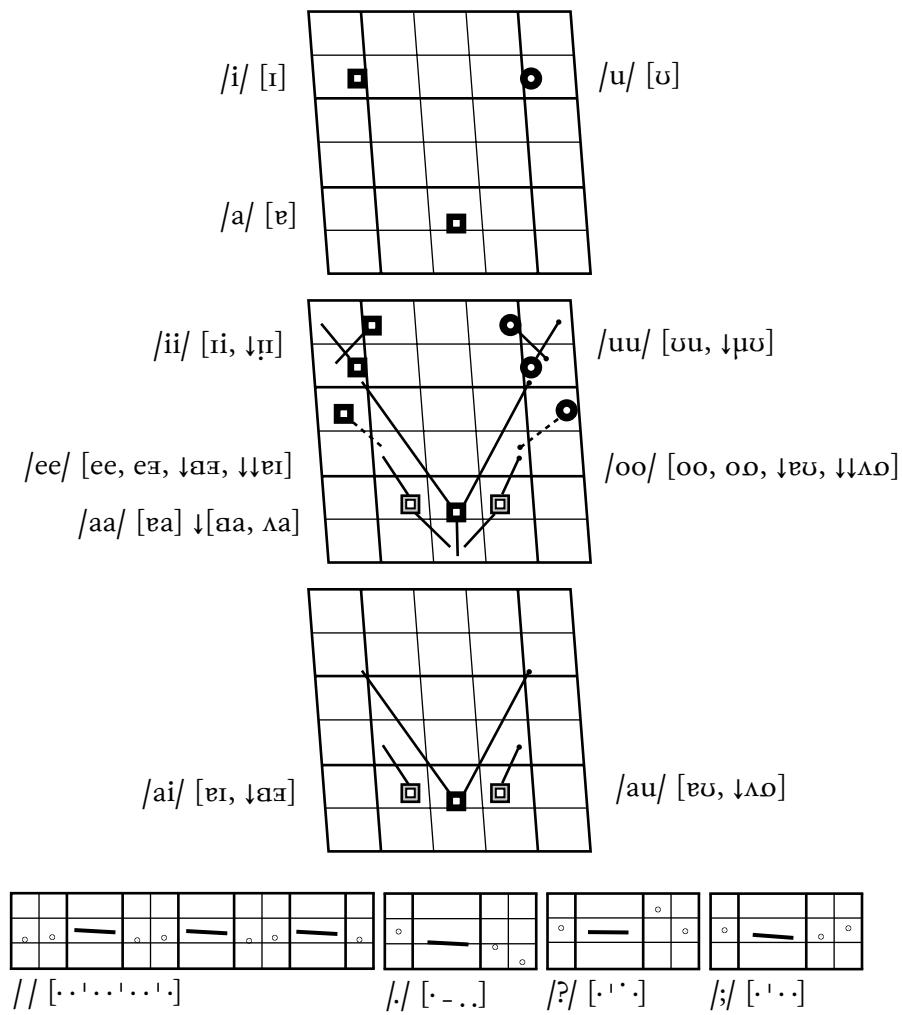
fig 8.11. Sanskrit regional accent: *Marathi*.



Telugu (Andhra Pradesh)

8.12. In addition to the vocogram and tonograms, for the *consonants*, let us note that between vowels, we can find: *m* [m], *p* [ɸ], *b* [β], *t* [ð], *d* [δ], *t̪* [χ], *d̪* [χ], *k* [x], *g* [ɣ], *h* [h, h̪], *ɳ* [ɳ], *t̪ɻ* [ʈʂ], *d̪ɻ* [ɖʂ], *s* [ʂ], *kʂ* [ʈʂ], *r* [ʐ]: apico-palatal consonants are typical (including *l* [ɿ]), if occurring before such apico-palatal contoids), *v* [w, β], *y* [j]; /VN#/ [VN#]; word-initially, front vowels can be preceded by [j], back (rounded) vowels by [w].

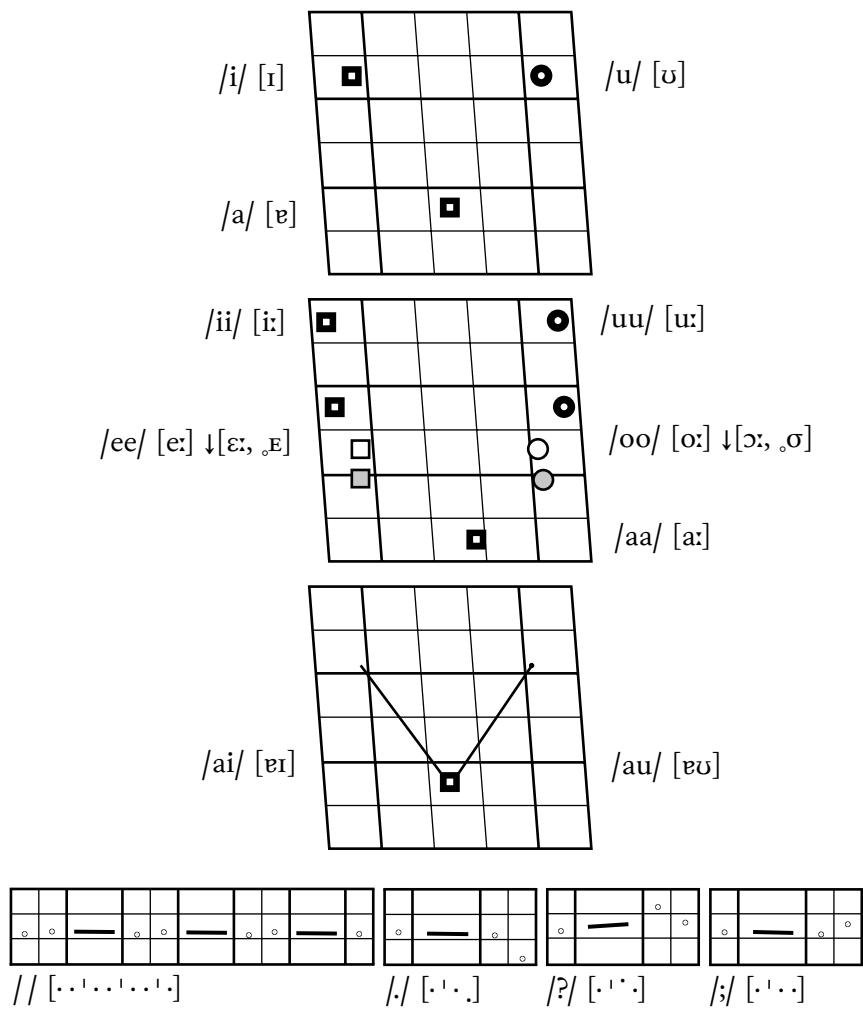
fig 8.12. Sanskrit regional accent: *Telugu* (Dravidian).



Kannada (Karnataka)

8.13. In addition to the vocogram and tonograms, for the *consonants*, let us mention: *n* [ɳ], *t* [ʈ], *d* [ɖ], *s* [ʂ], *r* [ʐ]: apico-palatal consonants are typical (including *l* [ɿ], if occurring before such apico-palatal contoids), *v* [ɺ], *y* [j], *h* [h, ɦ].

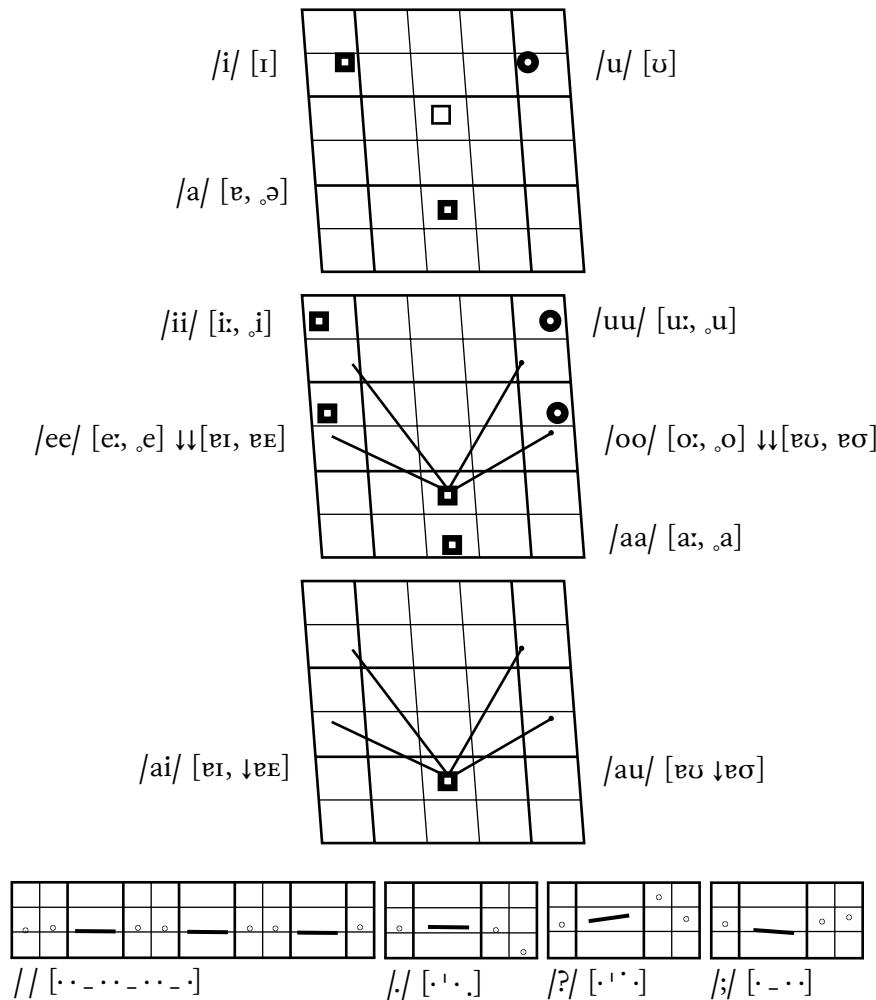
fig 8.13. Sanskrit regional accent: *Kannada* (Dravidian).



Malayalam (Kerala)

8.14. In addition to the vocogram and tonograms, for the *consonants* we find: *v* [v̑], *y* [j̑], *h* [h̑, h̒]; *p* [β̑, β̒], *t* [δ̑, δ̒], *t̑* [z̑, d̑], *k* [γ̑, g̑], *r* [ȓ, r̒], *n* [ɳ̑], *t̒* [t̑], *d̑* [d̑], *s̑* [ʂ̑], *kʂ̑* [ʈʂ̑], *ȓ* [ʐ̑]: apico-palatal consonants are typical (including *l̑* [ɿ̑], if occurring before such apico-palatal contoids).

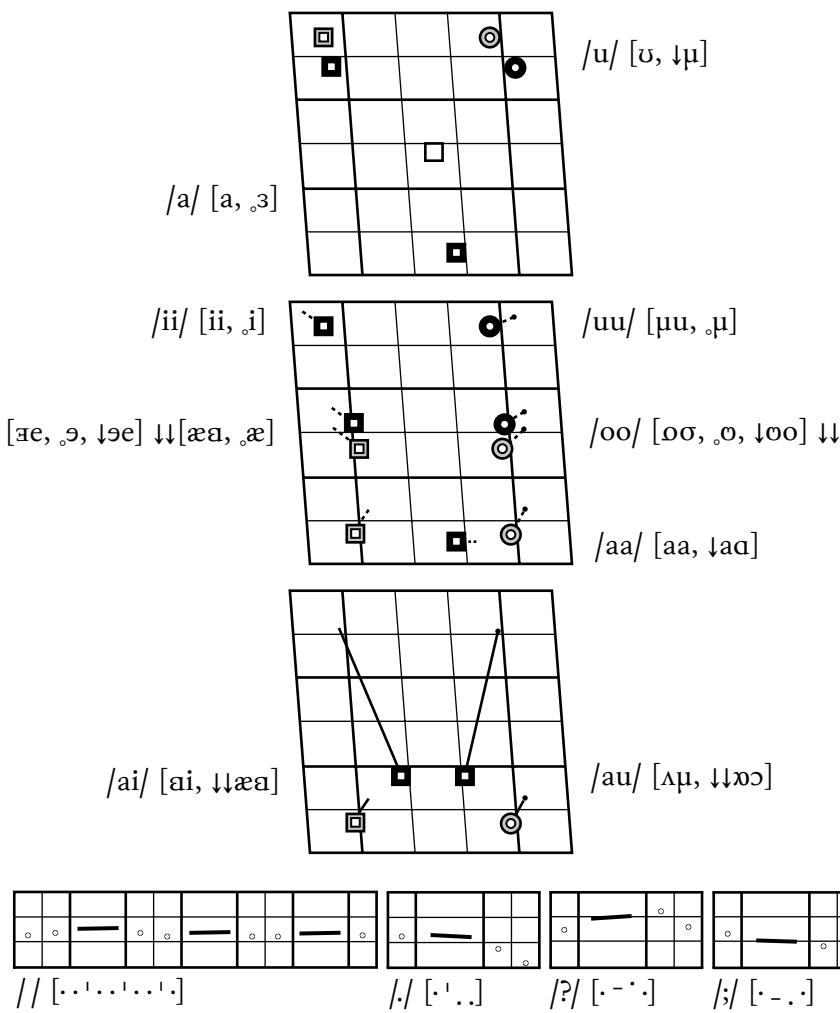
fig 8.14. Sanskrit regional accent: *Malayalam* (Dravidian).



Tamil (Tamil Nadu)

8.15. For the *consonants*, let us indicate: *v* [v, u], *y* [j, J], *h* [h, f], *r* [r, r̥], *b* [b, ↓p], *d* [d, ↓t], *ɖ* [ɖ, ↓ʈ], *g* [g, ↓k], *ɟ* [ɟ, ↓ʈʂ]; between vowels or after nasals: *p* [p, ↓b], *t* [t, ↓d], *ʈ* [ʈ, ↓ɖ], *k* [k, ↓g], *č* [ʈʃ, ↓ɖʐ], *nr* [ɳɖɳ], *n* [ɳ], *t̪* [ʈ̪], *d̪* [ɖ̪], *s̪* [ʂ̪], *r̪* [ʐ̪]: apico-palatal consonants are typical (including *l* [ɿ], if occurring before such apico-palatal contoids).

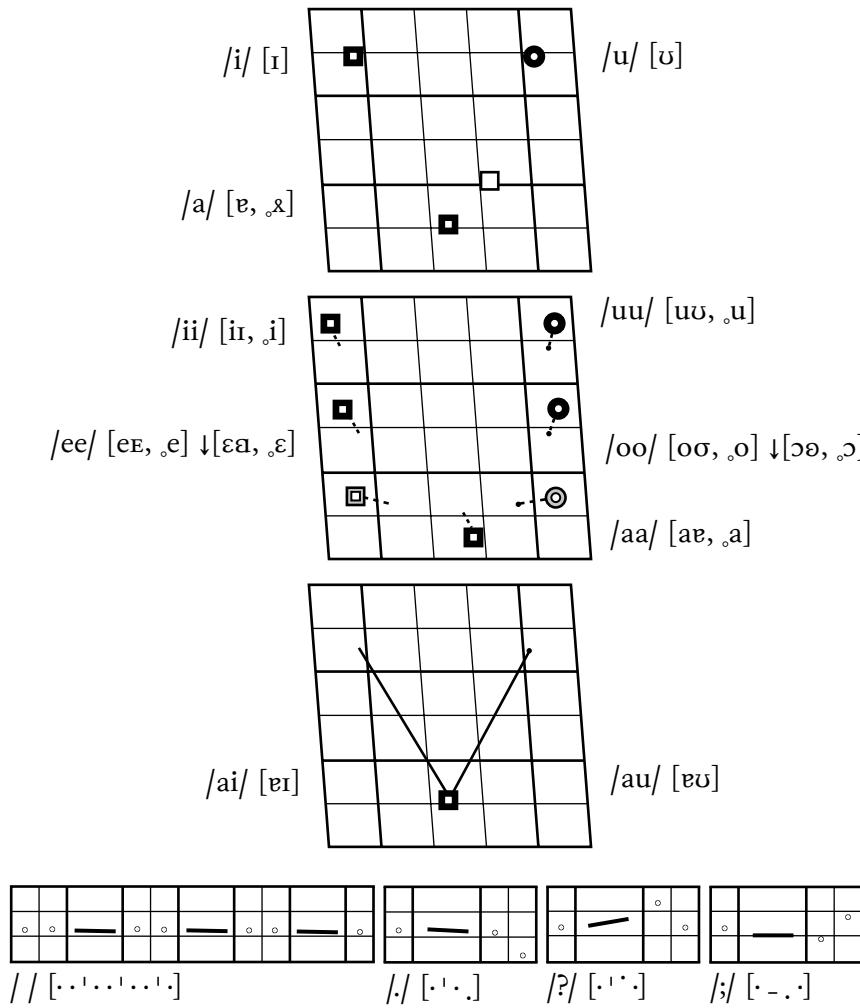
fig 8.15. Sanskrit regional accent: *Tamil* (Dravidian).



Singhala (Sri Lanka)

8.16. In addition to the vocogram and tonograms, for the *consonants* we find: *v* [β], *y* [j], *h* [h, h̄].

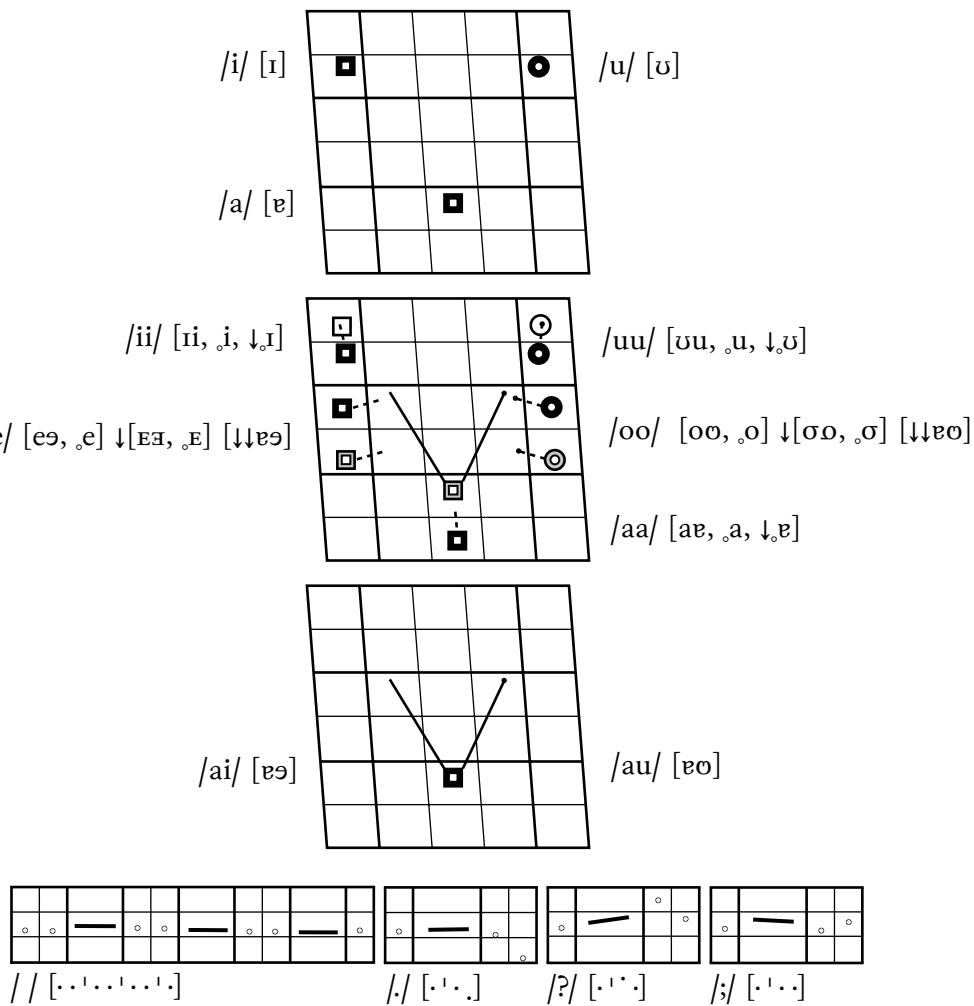
fig 8.16. Sanskrit regional accent: *Singhala*.



Dhivehi (Maldives)

8.17. In addition to the vocogram and tonograms, for the *consonants* we come across the following facts: *v* [v], *y* [j], *b* [h].

fig 8.17. Sanskrit regional accent: *Dhivehi*.



9. Diachronic phonopses

9.0.1. What follows is the result of careful considerations based on extensive comparative records between languages that we have described (including some of their variants), as well as on their repercussions found in loanwords in –and from– those same languages (considering alternations and spelling uncertainties).

Of course, we have also taken into due account modern and present-day reflexes, in terms of substratum characteristics, which are to be found in the areas where the relevant languages were once spoken.

Linguistic *reconstruction*, if undertaken with appropriate instruments, should not be limited merely to vocabulary or morphosyntax. In fact, the rigorous direct phonemic and phonetic experience of the numerous living languages treated in our *Natural Phonetics & Tonetics* and those in the series on *Language Pronunciation & Accents*, certainly makes it possible to sketch an outline for these other languages, in conjunction with the specialists' work.

These phonopses have been filtered, through a way of ‘seeing’ their phonic systems truly ‘from the inside’, and directly bringing them back to life in a fond way, instead of merely considering them simply theoretically, and more out of duty than for fun.

Those who do not deem it proper to accept the results proposed in the following phonopses of tongues of the past are positively at liberty not to credit what will be said.

The fact remains, however, that such hypotheses, including our inferences on *intonation*, might prove to be anything but fanciful ideas. It is no longer absurd, in fact, to consider the possibility of retrieving sound documents from the past, which can turn out to be useful for empirical analyses and tests...

Likewise, as long as someone is not in a position to prove them wrong, these phono-tonically detailed reconstructions should remain valid and reliable.

9.0.2. It would equally be interesting to apply the (segmental and suprasegmental) indications given to the reading and dramatizing of ancient texts.

This way, they would at least not be the predictable lackluster renditions of different texts belonging to totally different languages, all invariably done with the same sounds (of one's own personal variant of an official language) and artificial and contrived intonation patterns, so as to put to sleep even well-intentioned listeners.

By means of computerized text-to-speech synthesis, among others, it will be possible to credibly give a(n almost authentic) voice to those texts, thus considerably

rejuvenating the same old, soporific, academic lectures.

For dead languages, different scholars (and reconstructors) present phonemic systems that sometimes are only partially different, but at other times strikingly different indeed – even conflicting.

Such ‘detailed’ proposals as those presented here should be interpreted in the right spirit... until we are able to travel back in time, by going to and fro at will, bringing good recording tools and –above all– using an excellent time-machine, which could enable us to give definitive answers!

After analyzing so many actual systems of living languages, as said, a certain sensitivity towards fine nuances may be developed almost naturally, possibly (but not necessarily) with a certain bent for symmetry, which so many living languages already show.

Thus, the mapping of vocoids in the vocograms, the compilation of consonant tables, even the assessment of tones and intonations, can be considered to be fairly precise as to their possible realizations. In fact, they are based on an experience of several years (with reference to the author, who began to ‘play’ with the sounds of languages even before birth, especially for paraphonics and tonetics, of course, as everyone can naturally do, but adding systematic studies with the best books available when he was 12 of age).

Of course, it goes without saying, these descriptions are also based on careful consideration of the actual data that many present-day languages have been reconstructed, with regard to the dead languages from which they derive.

All in all, we are dealing with an experience which is centuries-old, or even thousands of years old (with reference to the languages themselves).

9.0.3. In a sense, the Neogrammarians’ comparative method is thus accomplished, by acquiring entirety and naturalness. After all, we restate here, they can be safely held as reliable, as long as recordings can be produced, ascribable to exactly the same languages, which might reveal differences compared to what is presented here.

But, if such languages were actually synthesized according to the indications given, we would get more than plausible results. After all, no-one can be ‘sentenced’ without ‘evidence’ to prove different facts... The widespread and unshakeable slapdash way of doing things which distinguishes much of the academic ‘tradition’ is definitely worse...

Unfortunately, the ‘standard’ practice, for those who write linguistics –or even phonetics– books is unashamedly more approximate than what has been done in this section (about the phono-tonetic reconstruction of dead languages), based on necessarily indirect data and on ‘sound’ common sense about *sounds*.

Early Proto-Indoeuropean

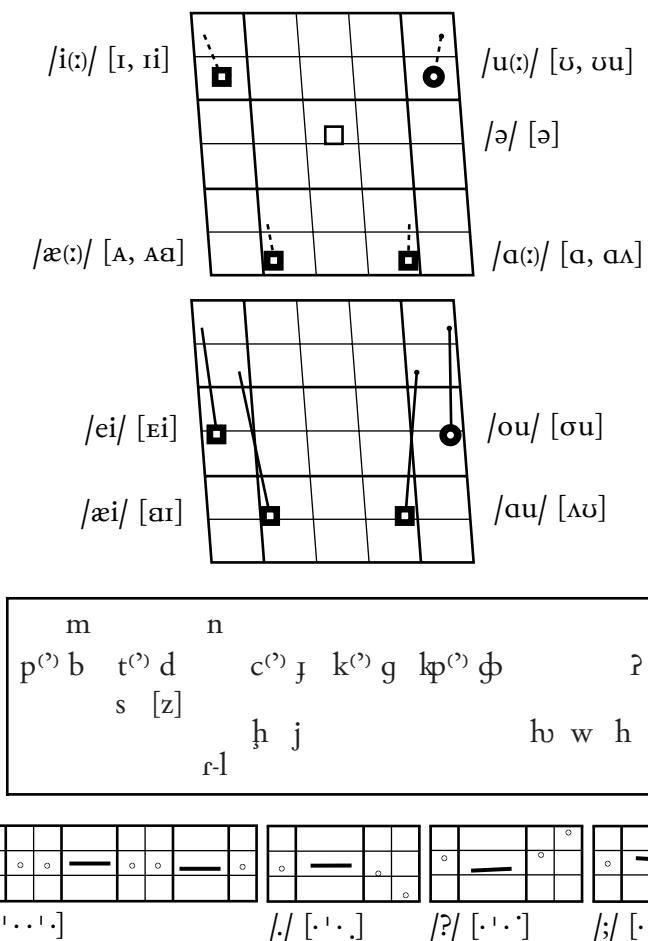
9.1. Together with its later stage (given in the following section), this dead language constitutes the principal sources for the various IE languages, which developed at different times (and in different regions). Only by positing two separate phases, can the previous very different proposals of reconstruction provide otherwise impossible answers.

The early stage only had five short vowels (including /ə/ [ə]) and four long vowels (actually narrow diphthongs, with the same starting points as the short vowels), and four partially different phonemic diphthongs.

As for its consonants, we notice the opposition between ‘aspirated’ and ejective consonants. The voiceless stops are actually ‘[Ch]’, not really ‘/Ch/’, while they also have actual ejective counterparts, /C'/ [C'], shown, in the table, as /C'//. They included the following velar-bilabial consonants, /kp, kp', φ/ [kph, kp', φ].

In addition it had three ‘laryngeal’ approximants (two of them with supralaryngeal colorings, /h, h, hv/ [h, h, hv]), the occurrence of /əm, ən, ər, əl/ [m, n, r, l], and of the assimilatory taxophone /s/ [z].

fig 9.1. Early Proto-Indoeuropean.



Late Proto-Indoeuropean

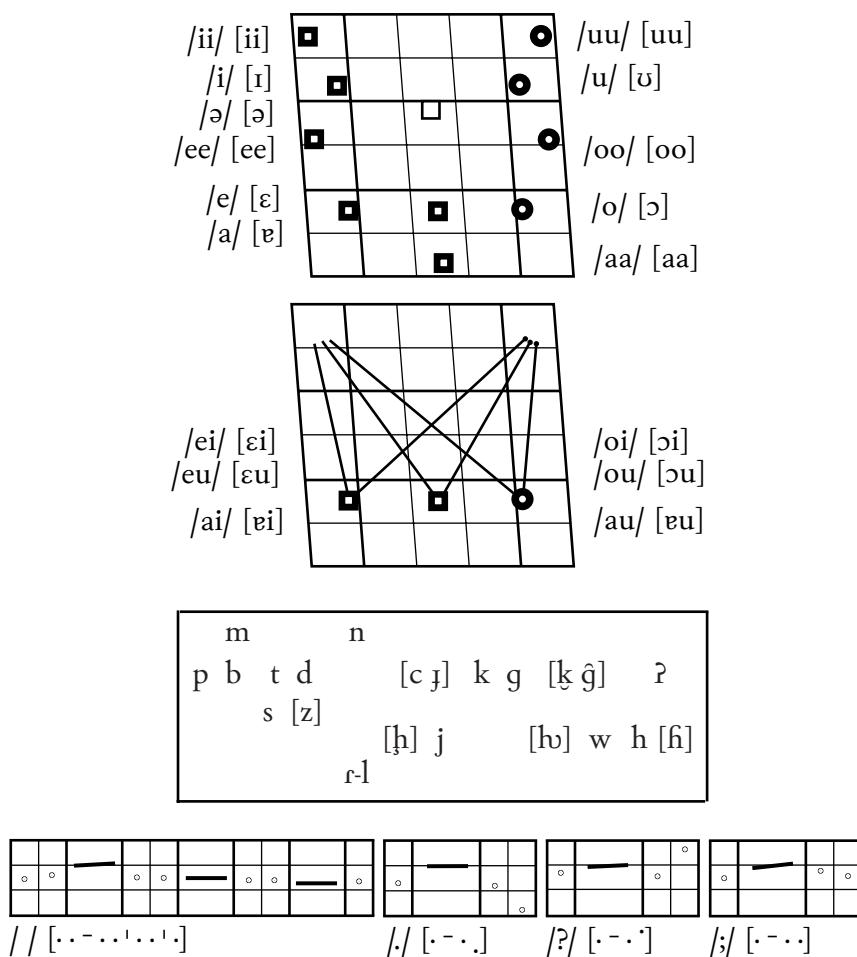
9.2. It had six short vowels (including /ə/ [ə]) and five long vowels (the two series having different timbres). In addition, it had six phonemic diphthongs.

As for its consonants, especially noteworthy is the opposition between /C₁, C₂, C₃, C₄/ [C₁, C₂, C₃, C₄] for stops. There were /Cj, Cw/ sequences for /kj, khj, gj, ghj, hj/ [c, ch, j, jh, h] and /kw, khw, gw, ghw, hw/ [k, kh, g, gh, h]. Also the occurrence of /əm, ən, ər, əl/ [m, n, r, l], and of the assimilatory taxophone /s/ [z], and of [f] for /Ch/ [C₄].

It had a normal stress accent (which could be distinctive as a consequence of its being free), which was of a rather high-pitched nature but did not contrast with a low-pitched one.

However, this tonetic feature acted as an embryo for the word-tonemes (or pitch accents) which would subsequently develop in a number of IE languages.

fig 9.2. Late Proto-Indoeuropean.

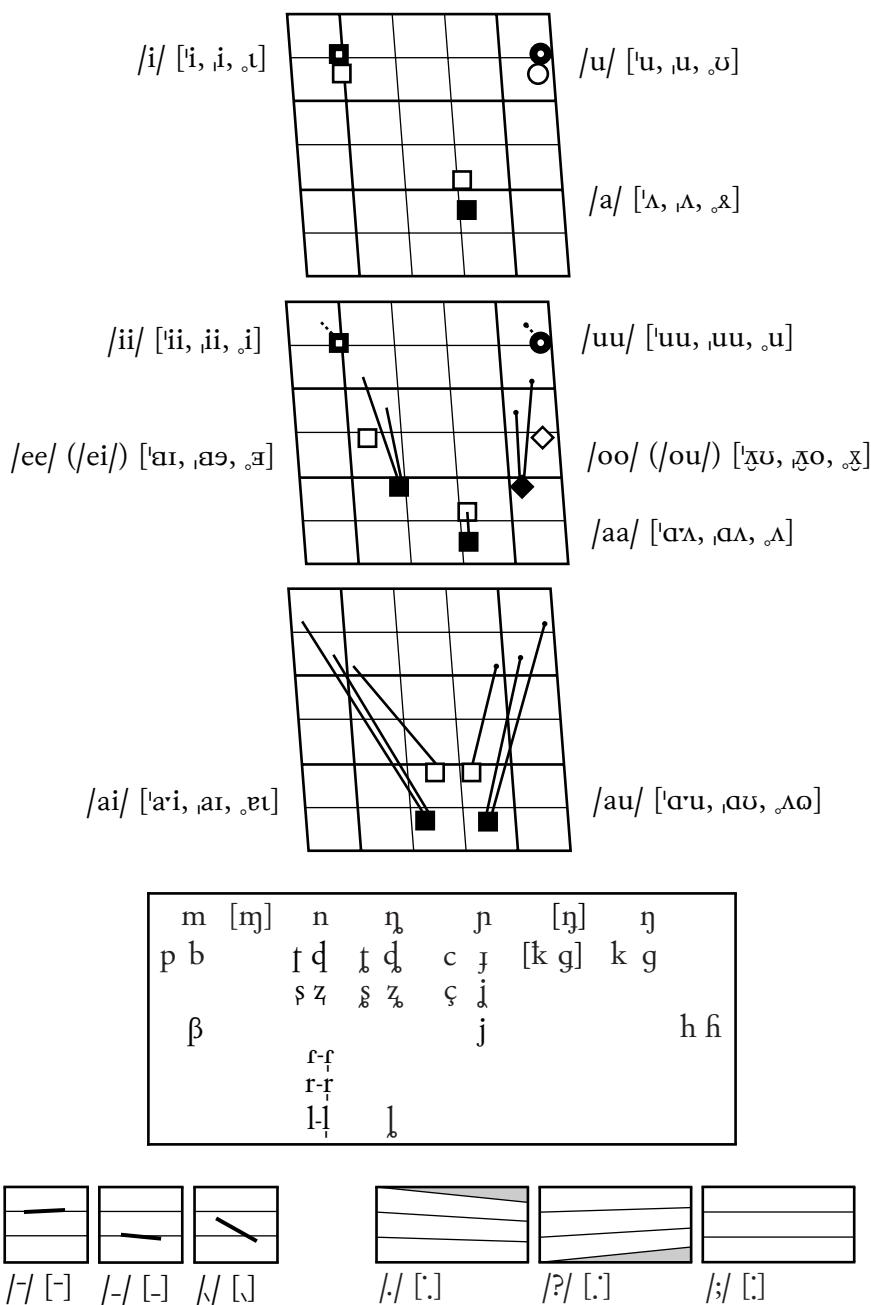


Vedic Sanskrit

9.3. *Vedic Sanskrit* (Indic), also reconstructed on the basis of classical Sanskrit and the reflexes in the Indian languages (and of the ancient borrowings in different languages, such as Greek and Chinese), had three short and five long vowels, as well as the two diphthongs given. It had opposition between /C, Ch, C̄, Ch̄/ with [C̄h], very probably not yet taxophonically differentiated as in Classical Sanskrit. Let us mainly consider the differences between them. It also had /V/[l], including /hV/[h̄l], in addition to /hm, hn, hñ, hβ, hr, hl/.

Lastly, it had the three tonemes given, with possible differences, it seems, as in *súkṛta* ‘well done’ and *sukṛtā* ‘kind deed’

fig 9.3. Vedic Sanskrit.

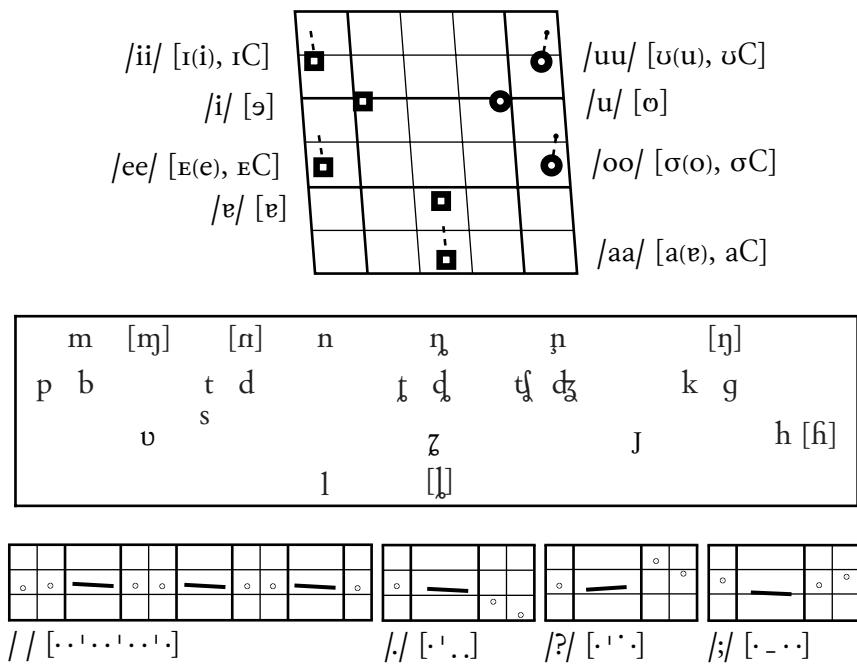


Pali

9.4. *Pali* (Indic) had three short vowels (which could be distinctively nasalized, as well) and five long vowels (actually narrow diphthongs), differing in timbre.

There were no /ai, au/, which had become /ee, oo/, nor intense (or ‘syllabic’) consonants. It had opposition between / ζ , Ch, ζ , Ch/ [ζ , Ch, ζ , Ch]; only /s/, but /ʃ/ [ʃ]; also, distinctive opposition between simple and geminated consonants, C ≠ CC, and [n≡C] (homorganic).

fig 9.4. Pali.

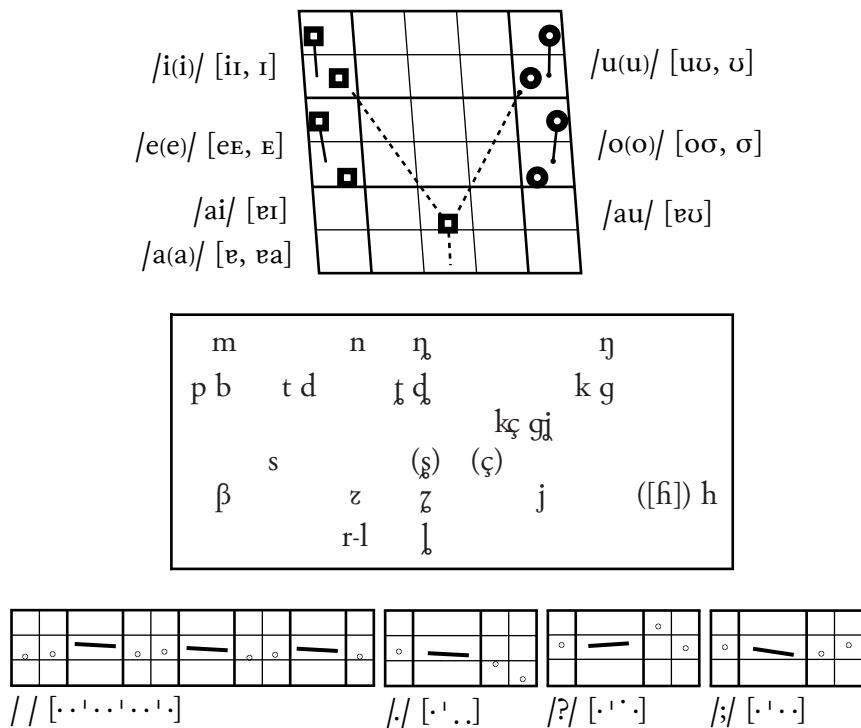


Old Telugu

13.5. Since we are dealing with languages of India, let us include this Dravidian language, which had five vowels, both short and long (the latter actually being narrow opening diphthongs) and the two phonemic diphthongs given.

The momentaneous phonemes (stop and stop-strictive) had ‘aspirated’ clusters, not shown in the table, used in borrowings from Sanskrit, for /Ch, Ch/, as /ʂ, ʂ̥, h/, too.

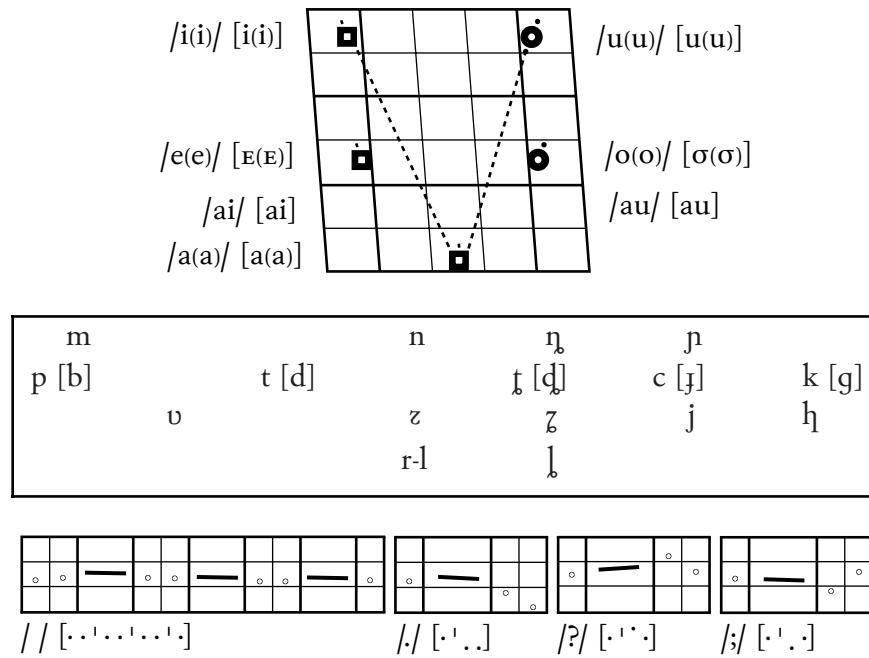
fig 9.5. Old Telugo (Dravidian).



Old Tamil

9.6. This other Dravidian language had five vowels, both short and long (the latter actually being narrow diphthongs) and the two phonemic diphthongs given. The voiced consonantal taxophones occurred in intervocalic position. In addition, it had [n≡C] (homorganic).

fig 9.6. Old Tamil (Dravidian).



10.

Phonopses of 26 modern languages (for comparisons)

10.1. According to the phonetic method, the pronunciation of another language is done contrastively, by comparing the characteristics of the language to be studied and those of one's own mother tongue.

For the latter, at least its neutral accent is presented, although in a simplified way. In fact, only the diphthongs which are not just simple combinations of existing phonemes are here shown, possibly as independent phonemes, often with unpredictable realizations. In more complete books (with specific teaching purposes), also the regional accents of both languages are presented.

10.2. However, in this book it is not possible to provide everything and for several languages. The books already published (and those in preparation, indicated in the bibliography), which belong to the series *X Pronunciation & Accents*, are thought to be useful. They are on: English, German, Dutch, French, Spanish, Portuguese, Italian, Russian, Greek, Chinese, Japanese, Hindi, Turkish, Arabic, Hebrew.

10.3. Therefore, here, we will at least provide the iconic phonopses of 26 languages, as for their *vowels*, *consonants* and *intonation*, a little simplified (but still more accurate than what can be found in so many other books). They are derived from those books or from *Handbook of Pronunciation* and *Natural Phonetics & Tonetics*, where much more can be found in comparison with what has been provided here. In fact, here, for tonal languages, we have also omitted their tonemes, while showing their marked tunes, with further simplifications.

10.4. Thus, it will be useful to carefully compare the phonopses of one's own language (and also those of other languages one wants to know), to see directly what is similar or different. In the indicated books, there are more than 300 such phonopses. fig 10.27.1-7 give a number of orograms of the contoids which are necessary to facilitate the comparison between different languages.

10.5. Symbols given between [] are important taxophones (or combinatory variants), while those between () are possible additional phonemes or xenophonemes. Since we do not consider clusters like /Ch/ as unitary phonemes in possible opposition to simple /C/, they do not appear in the consonant tables provided.

fig 10.1. English.

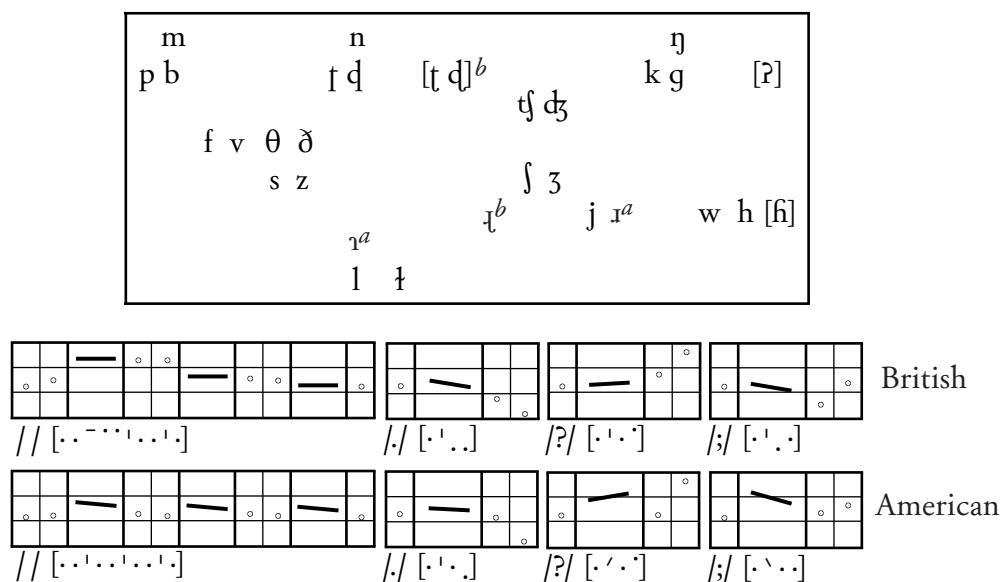
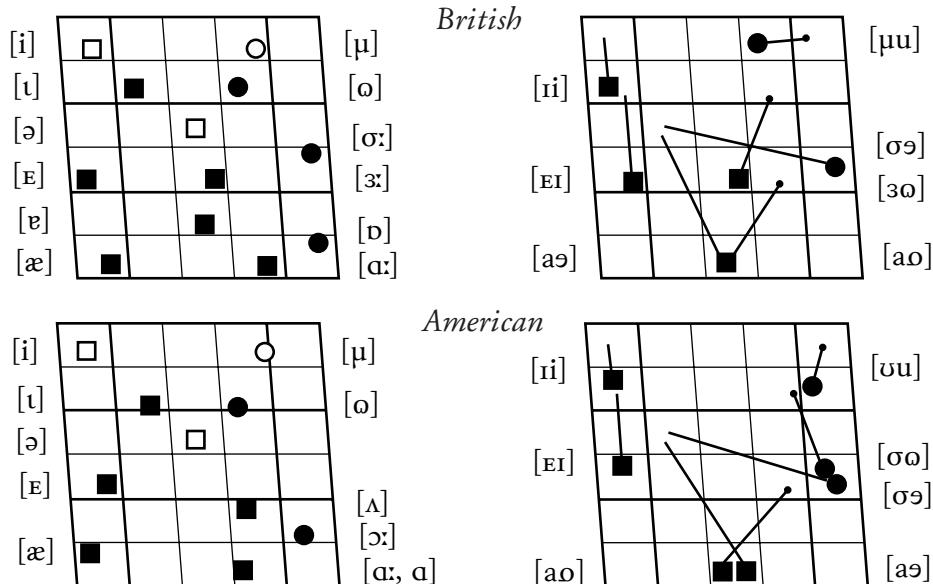


fig 10.2. German.

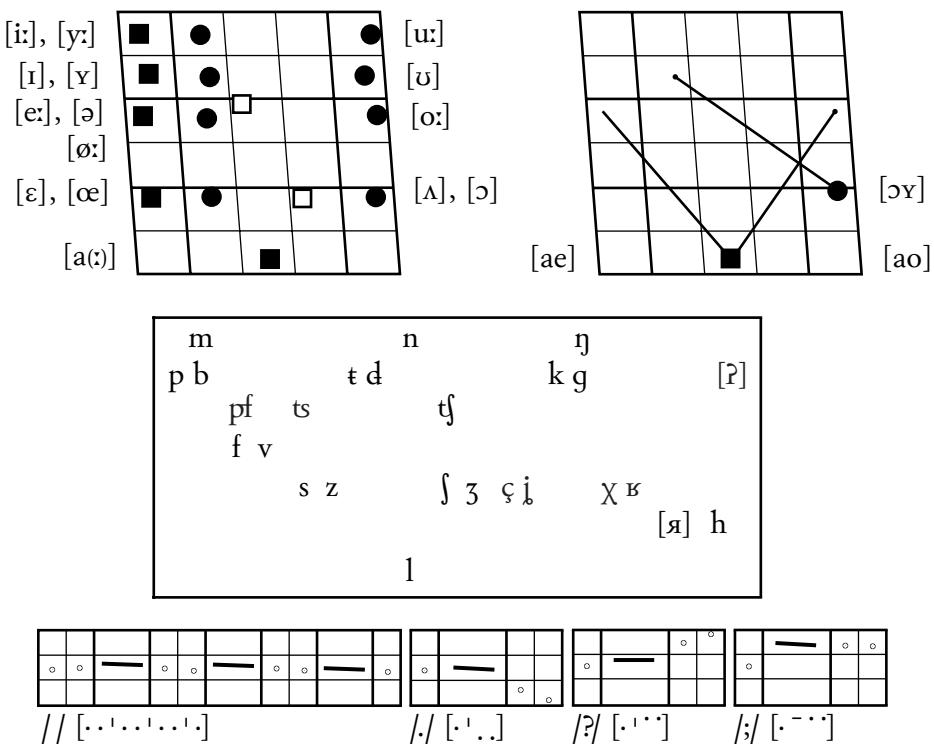


fig 10.3. Dutch.

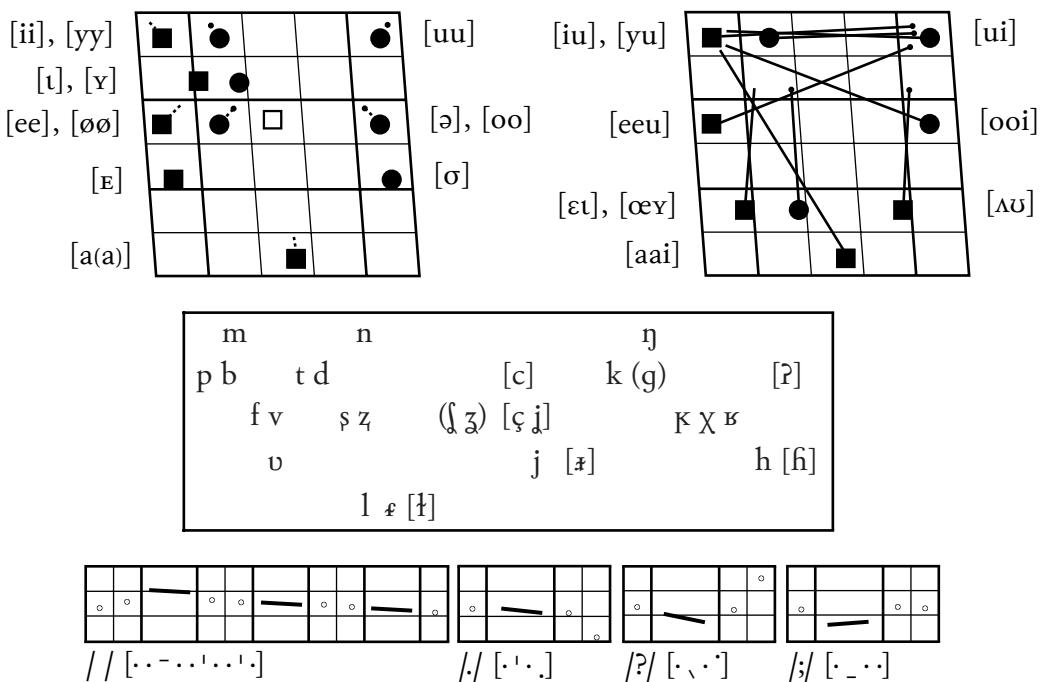


fig 10.4. French.

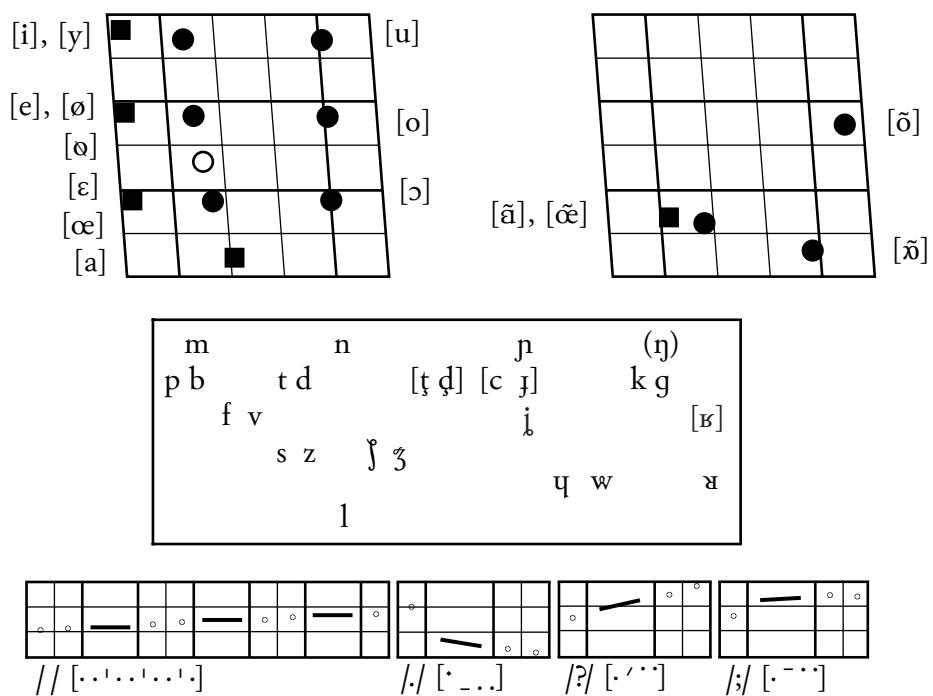


fig 10.5. Spanish.

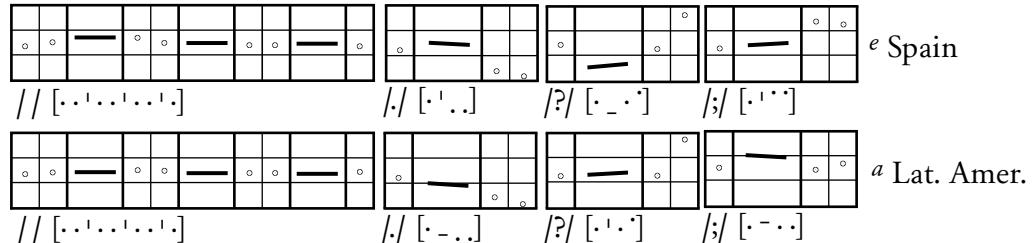
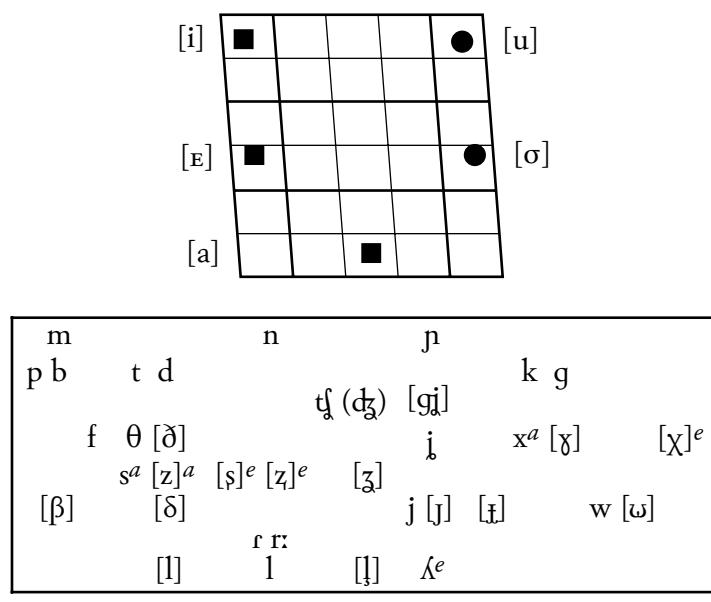


fig 10.6. Portuguese.

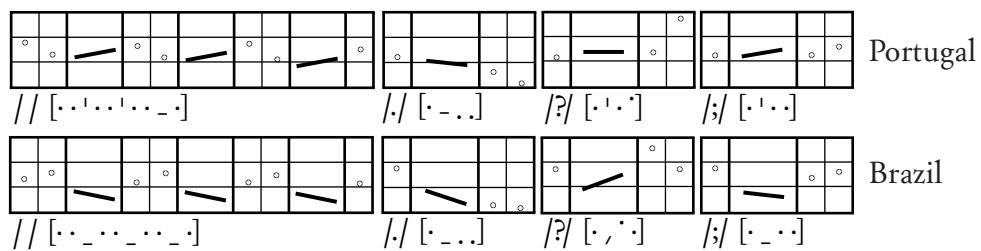
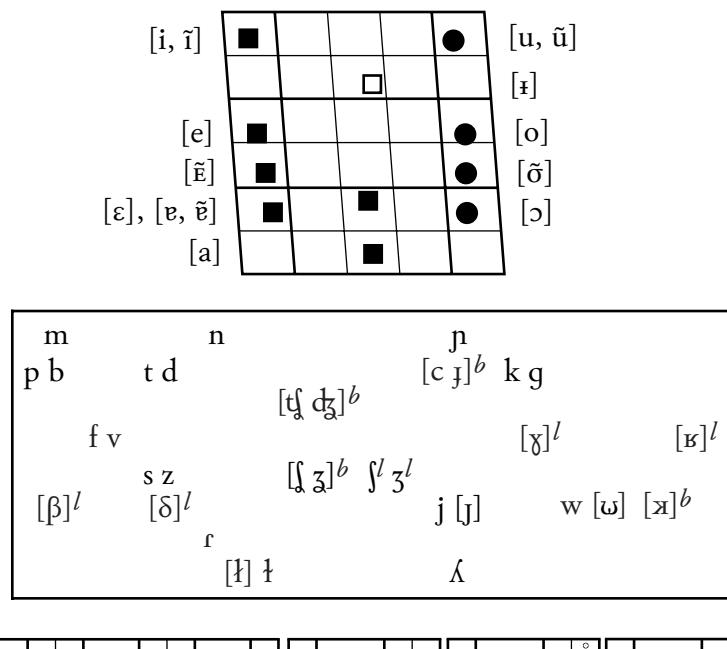


fig 10.7. Italian.

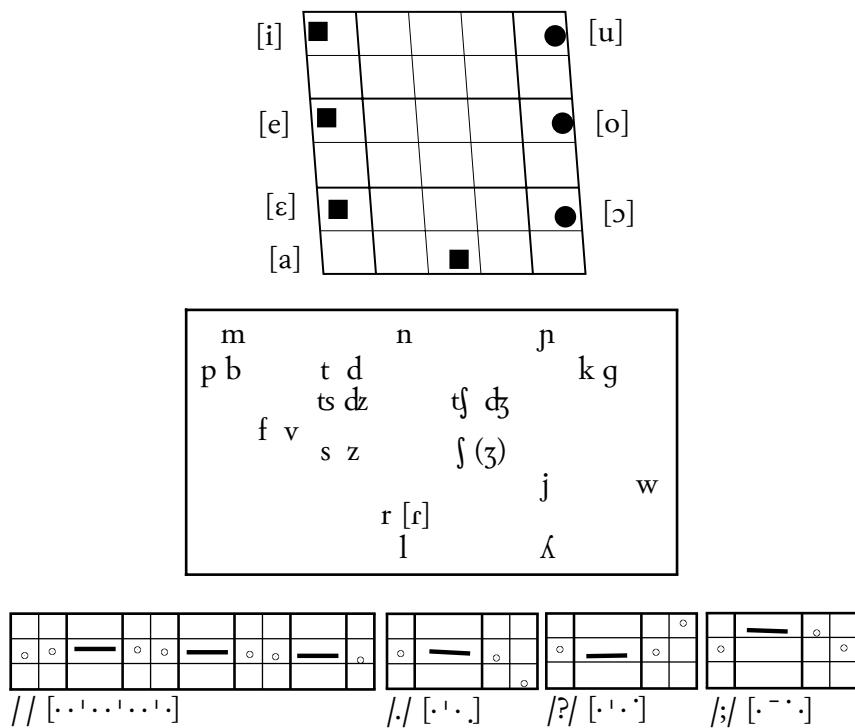


fig 10.8. Romanian.

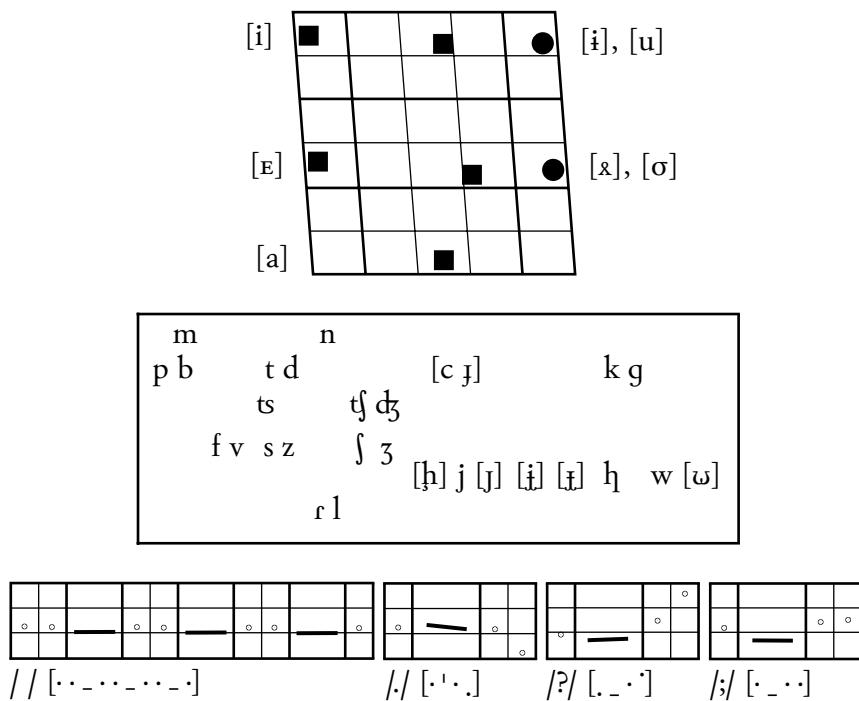


fig 10.9. Russian.

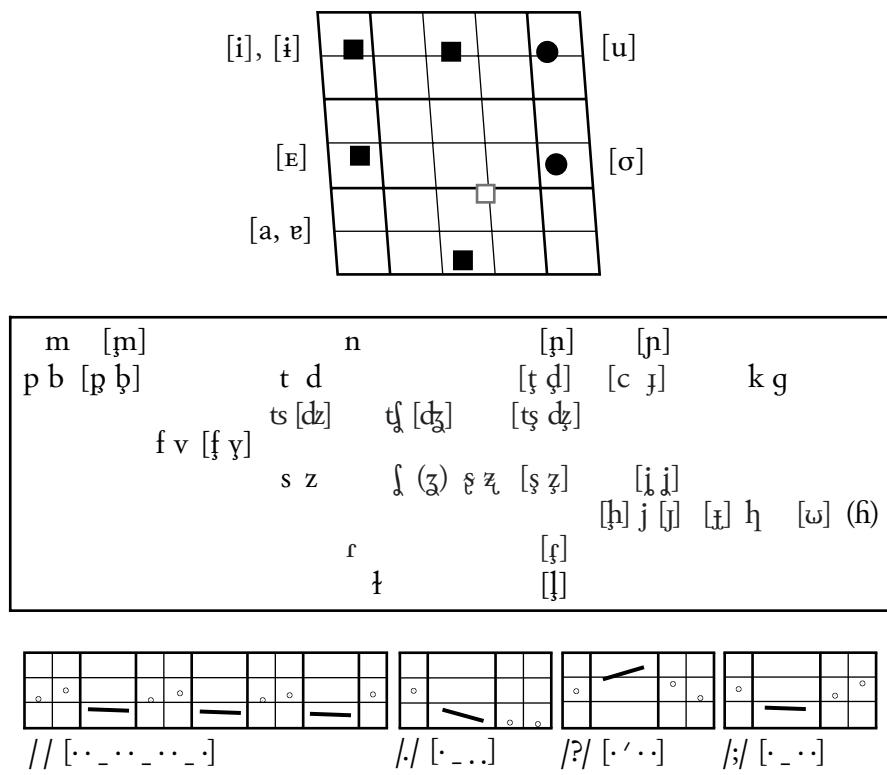


fig 10.10. Czech.

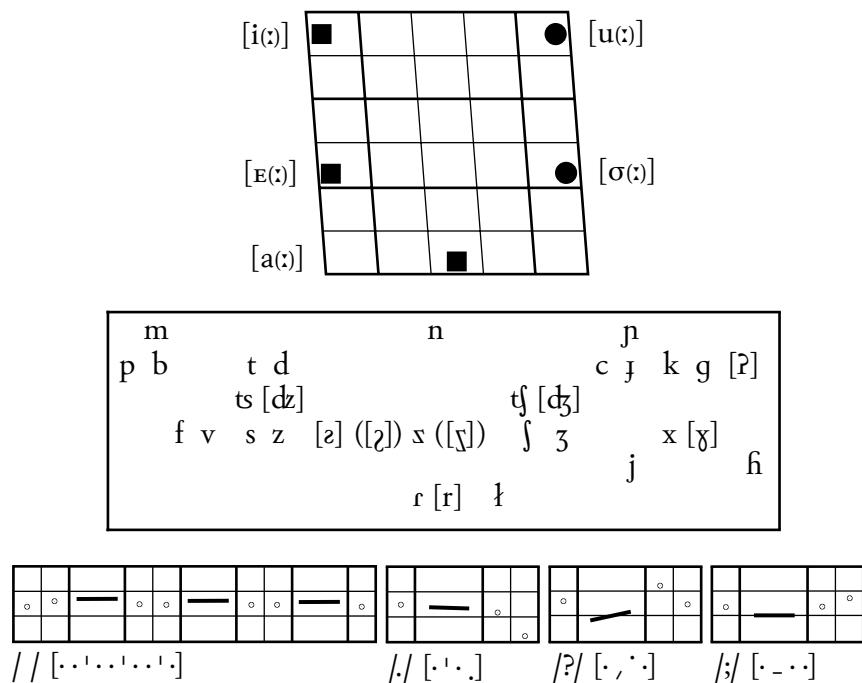


fig 10.11. Polish.

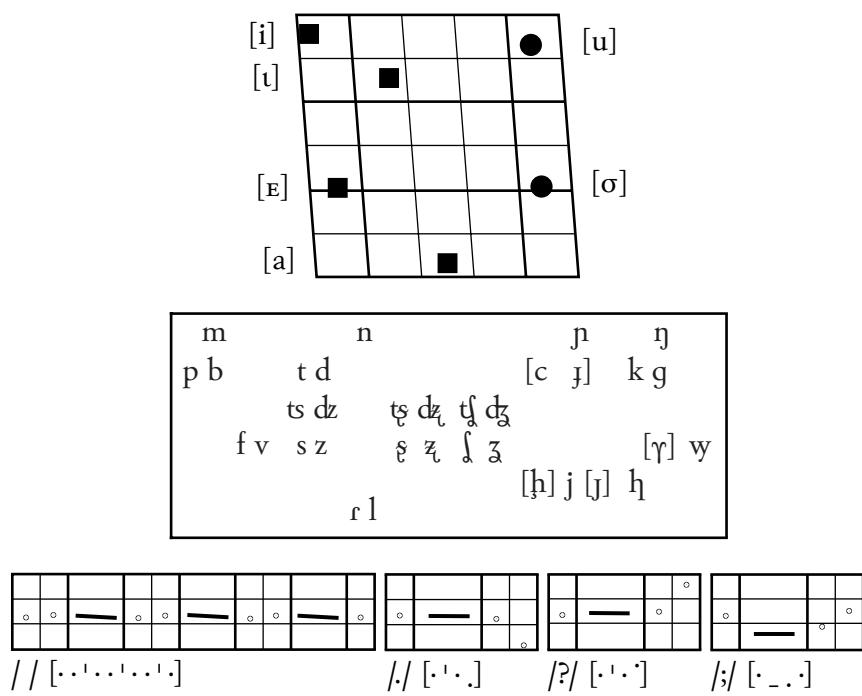


fig 10.12. Bulgarian.

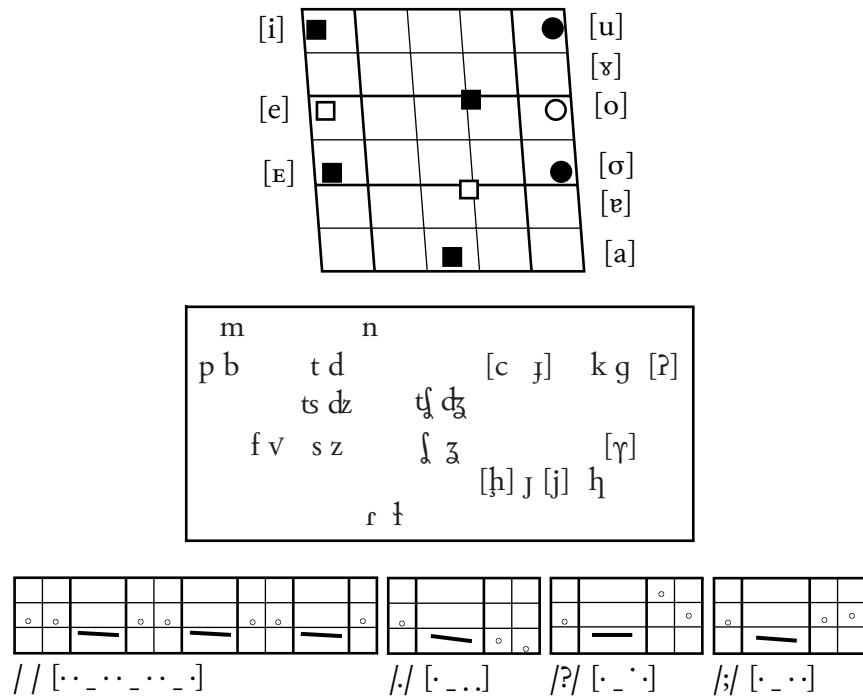


fig 10.13. Greek.

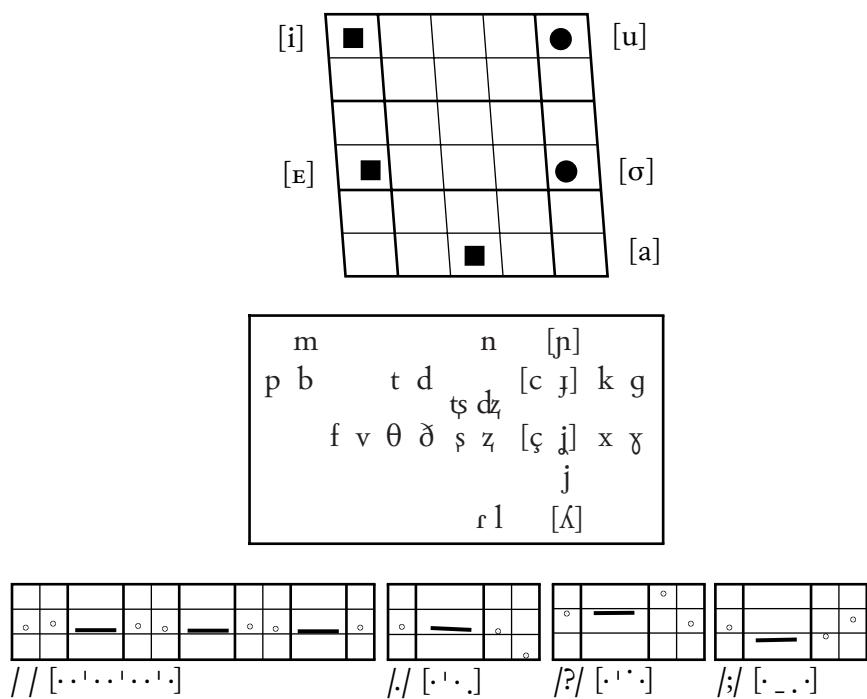
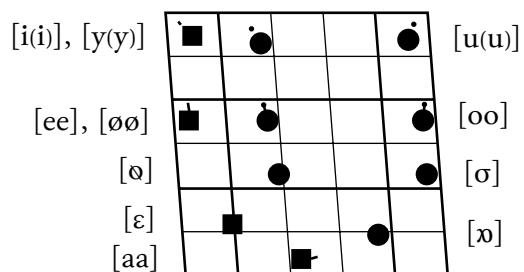


fig 10.14. Hungarian.



m		n		j	
p b		t d		k g	
		ts dz		tʃ dʒ	kç gj
f v	s z		ʃ ʒ	[h] j	[h] h [ɦ]
r l					

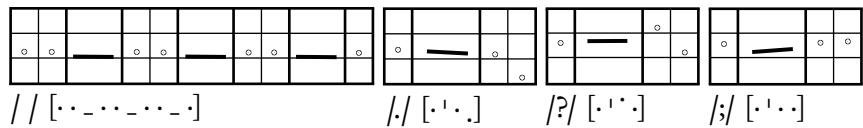
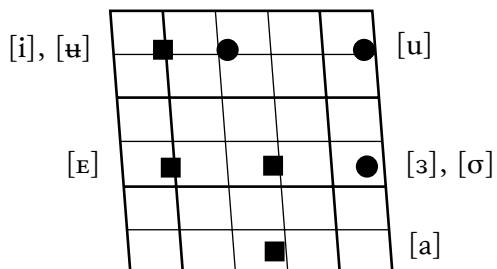


fig 10.15. Albanian.



m		n		j	
p b		t d		k g	
		ts dz		tʃ dʒ	kç gj
f v	θ s ð z		ʃ ʒ		j
ɾ					h
λ	ɛ ŋ				

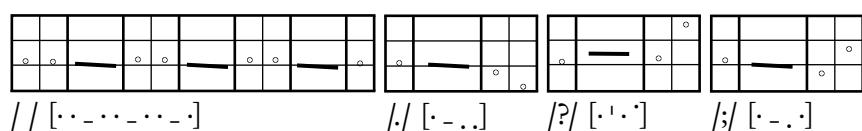


fig 10.16. Finnish.

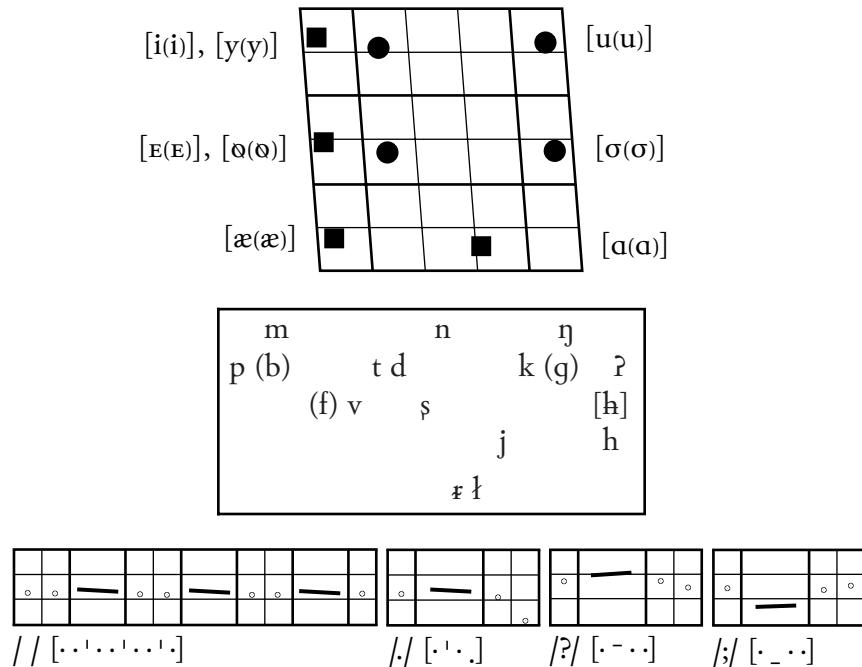


fig 10.17. Arabic.

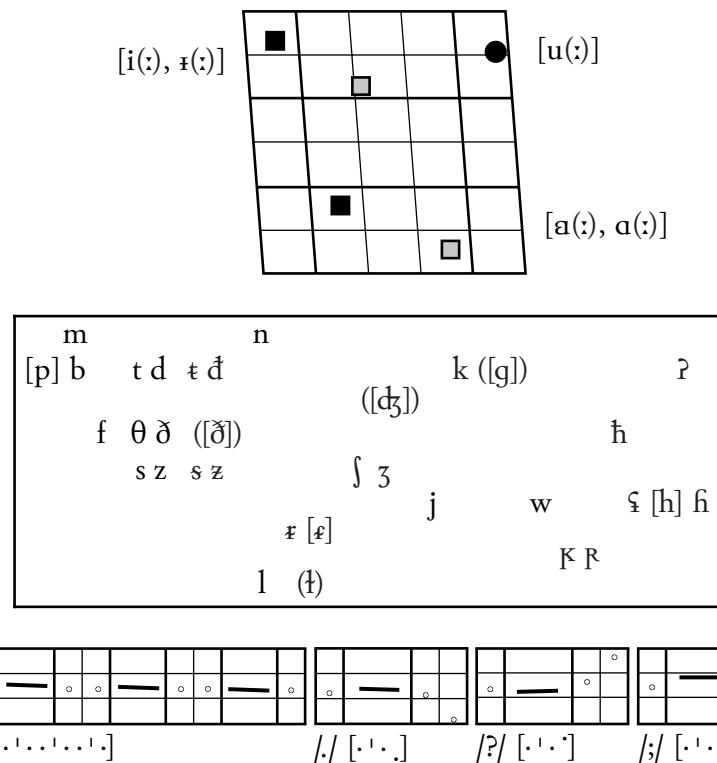


fig 10.18. Hebrew.

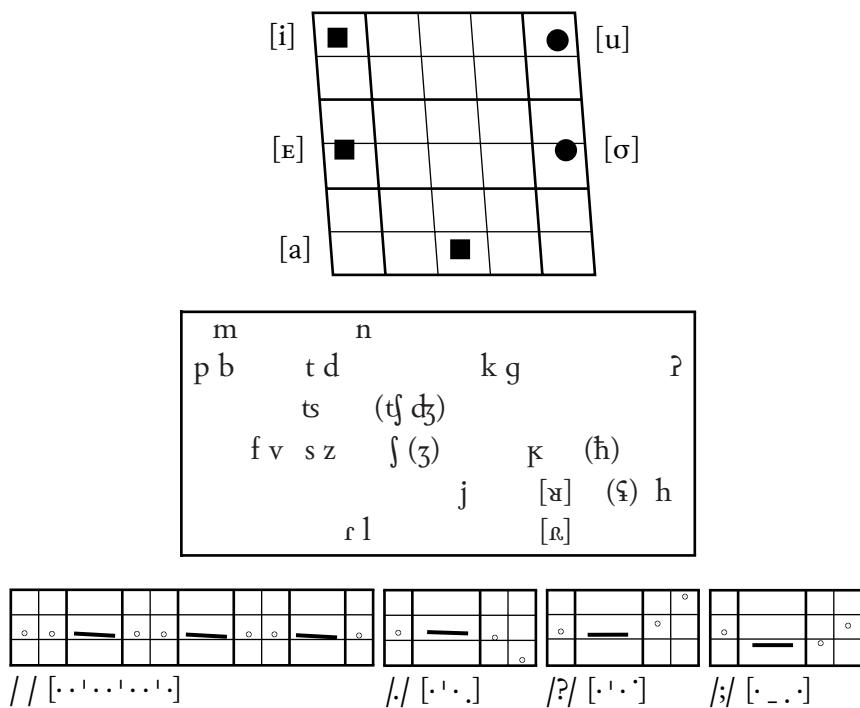


fig 10.19. Turkish.

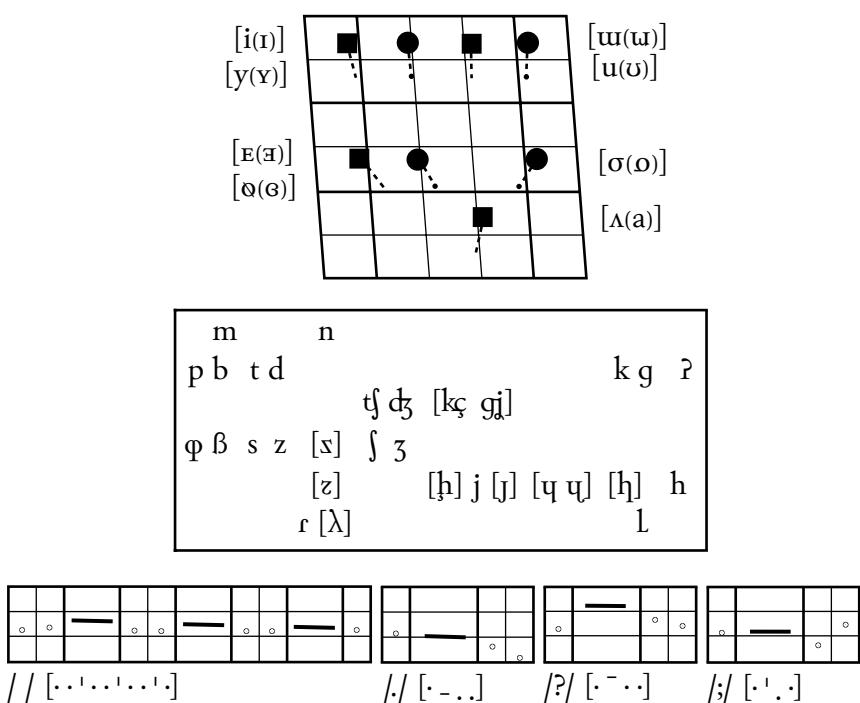


fig 10.20. Persian.

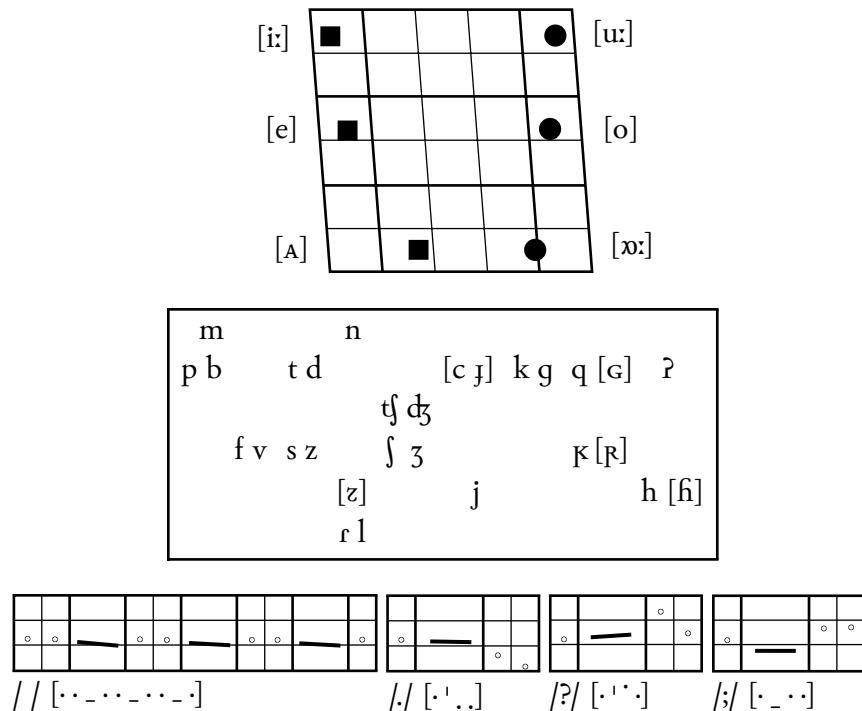


fig 10.21. Hindi.

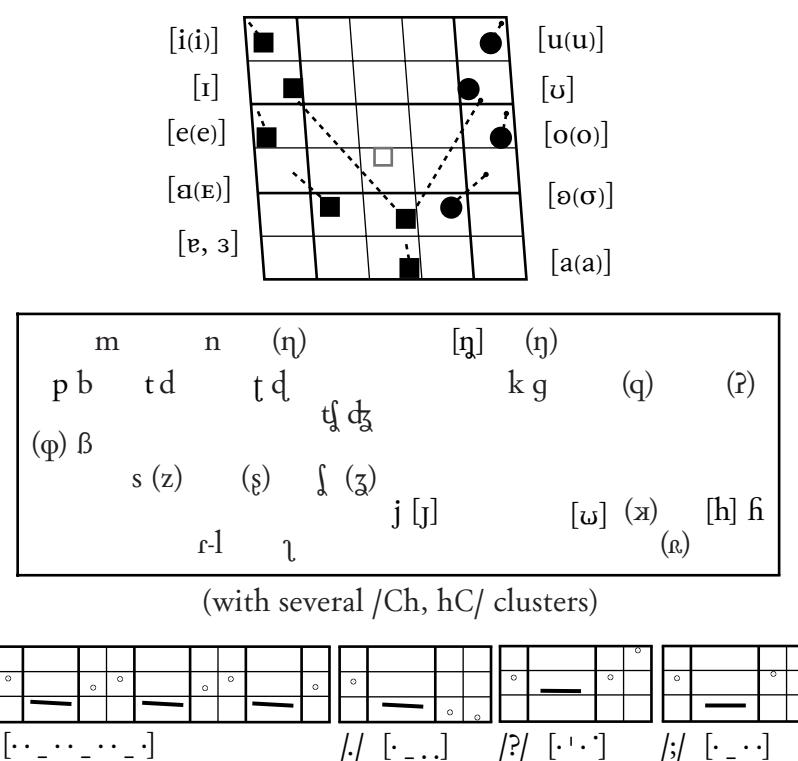


fig 10.22. Vietnamese.

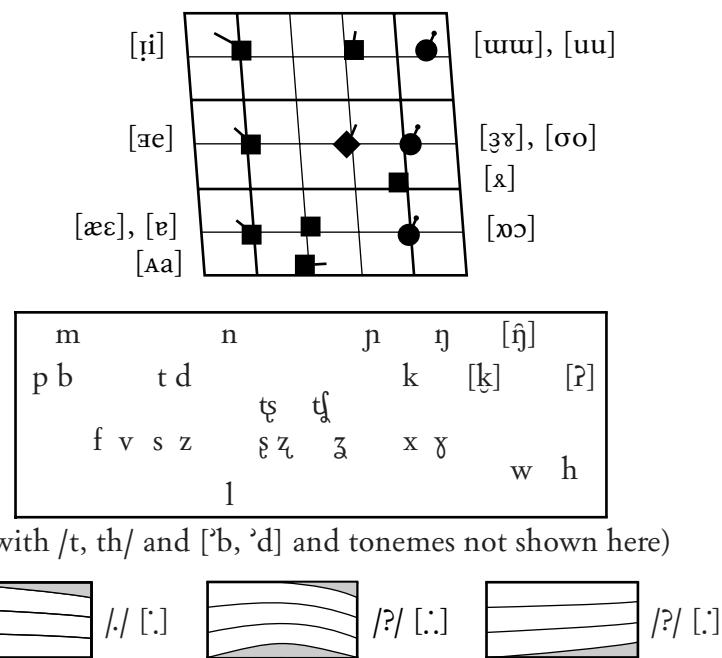


fig 10.23. Burmese.

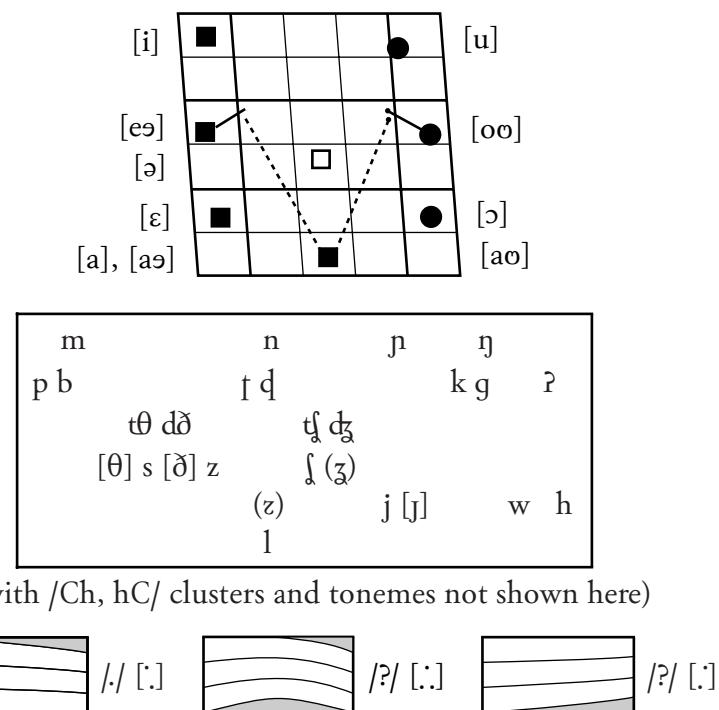


fig 10.24. Chinese.

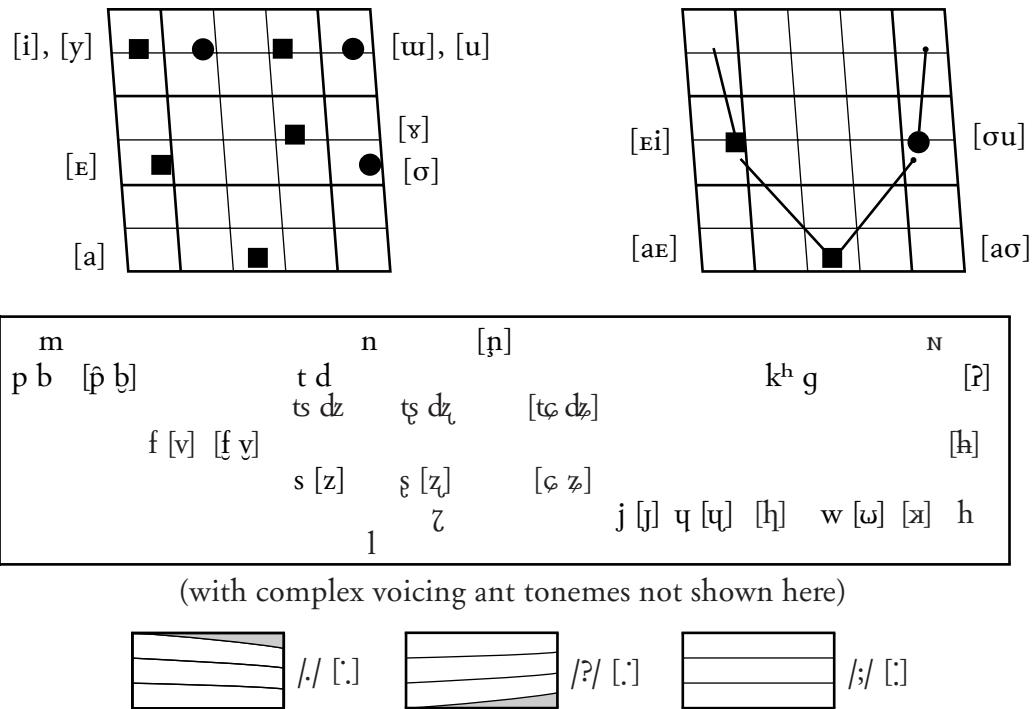


fig 10.25. Korean.

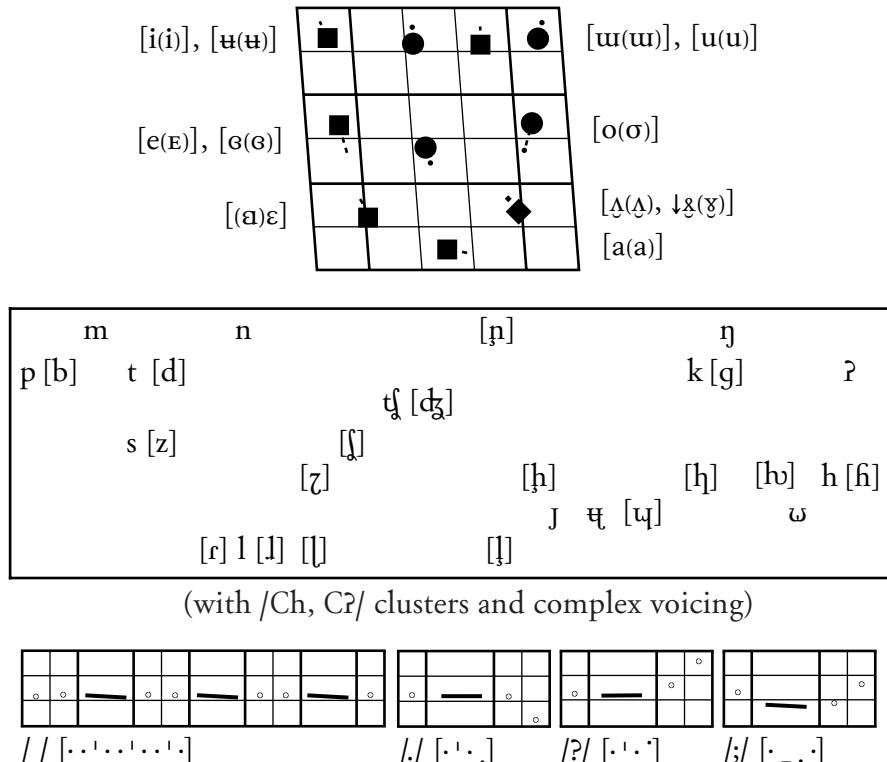
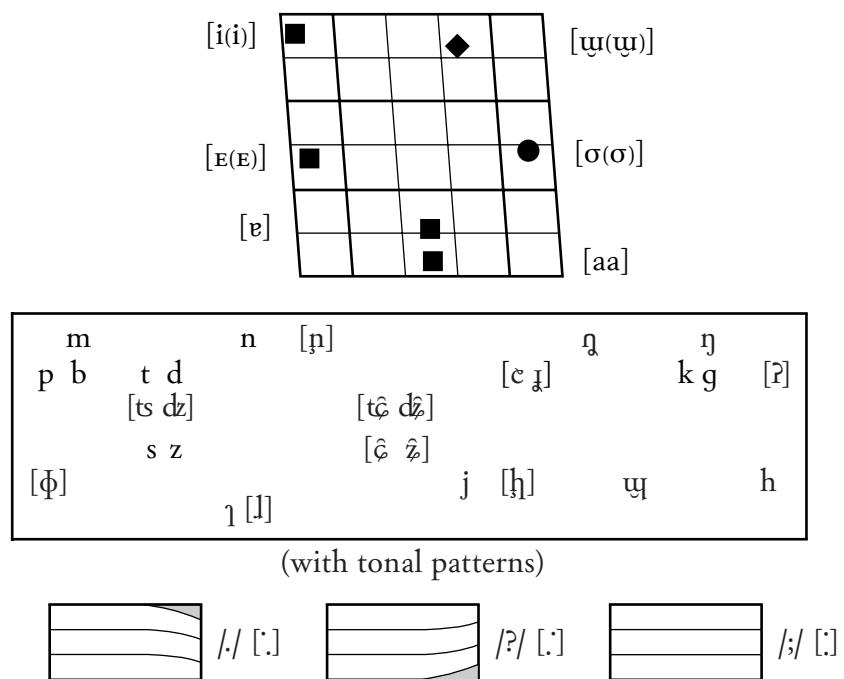


fig 10.26. Japanese.



Main consonant orograms

fig 10.27.1. Main nasals.

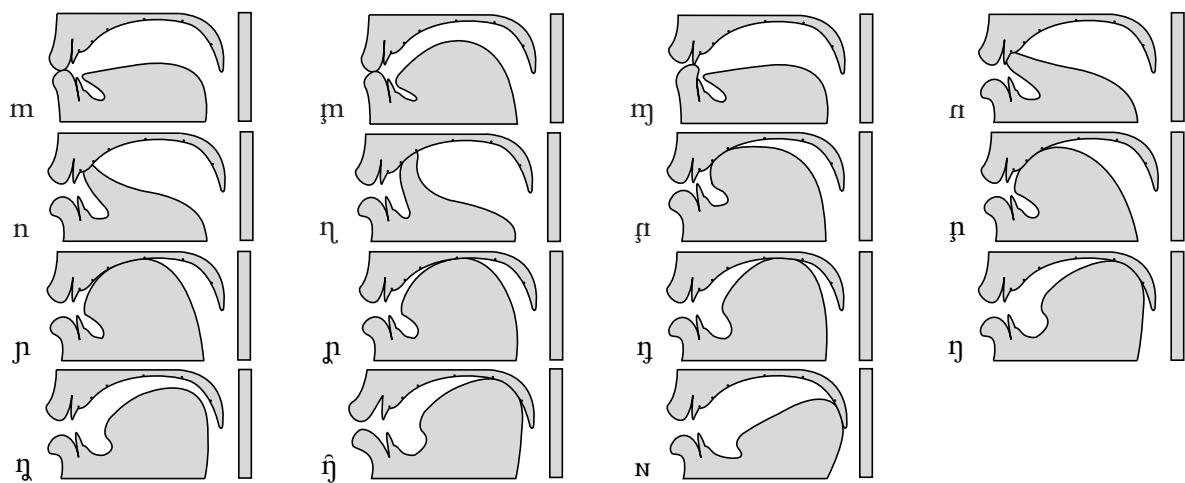


fig 10.27.2. Main stops.

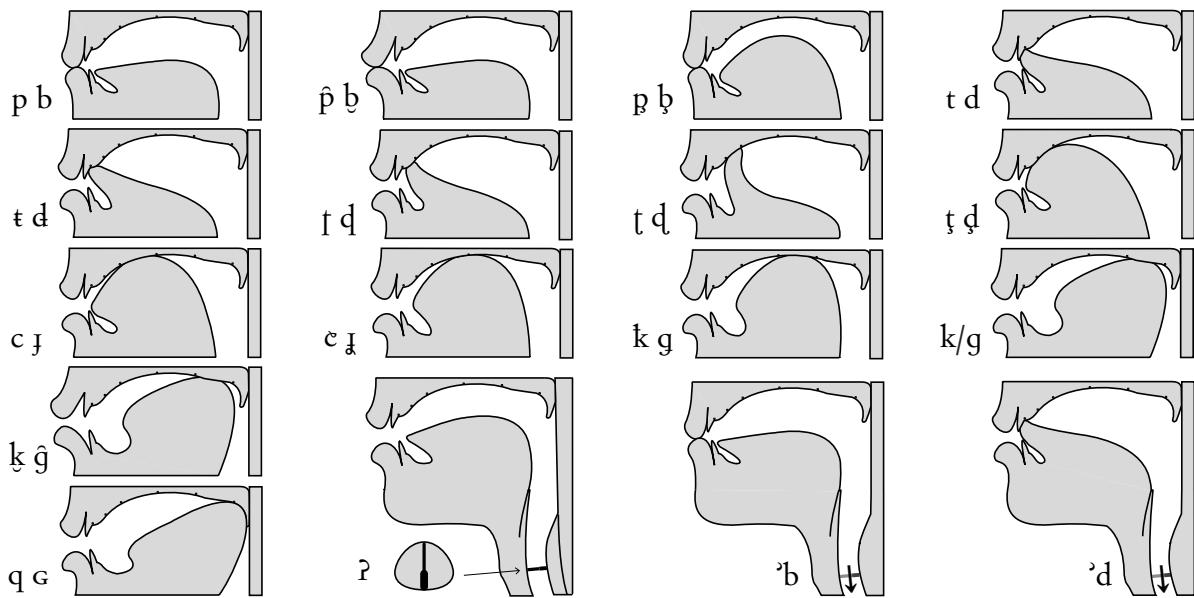


fig 10.27.3. Main stop-strictives (or ‘affricates’).

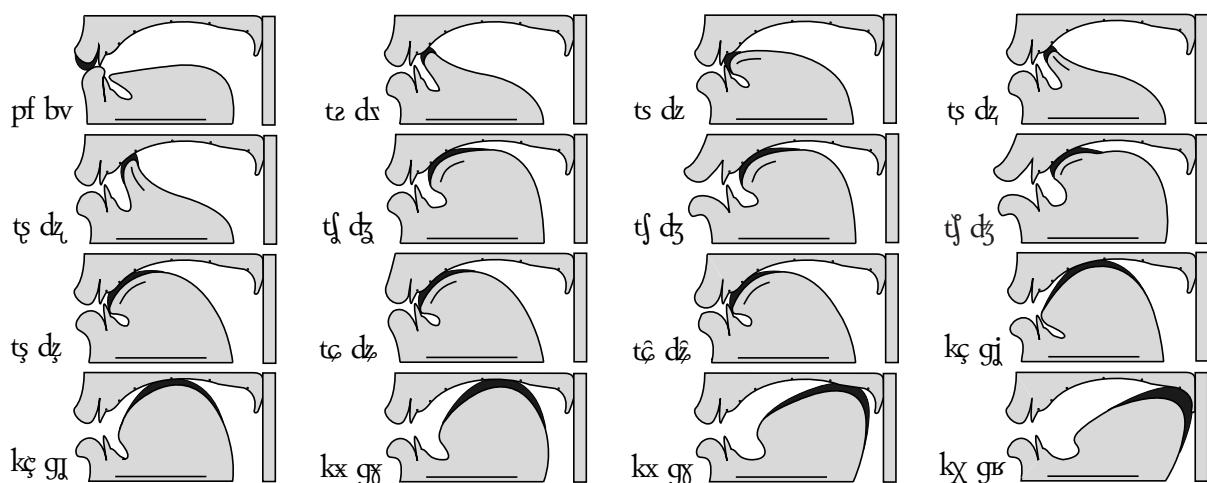


fig 10.27.4. Main constrictives (or 'fricatives').

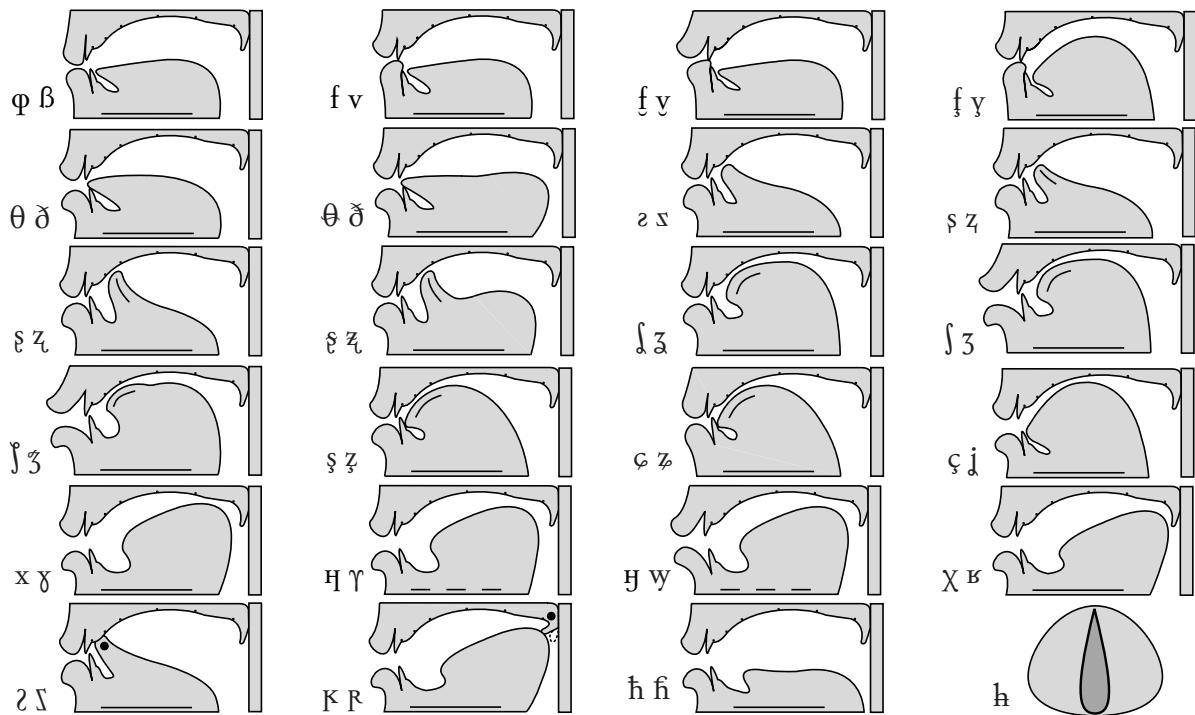


fig 10.27.5. Main approximants (and semi-approximants).

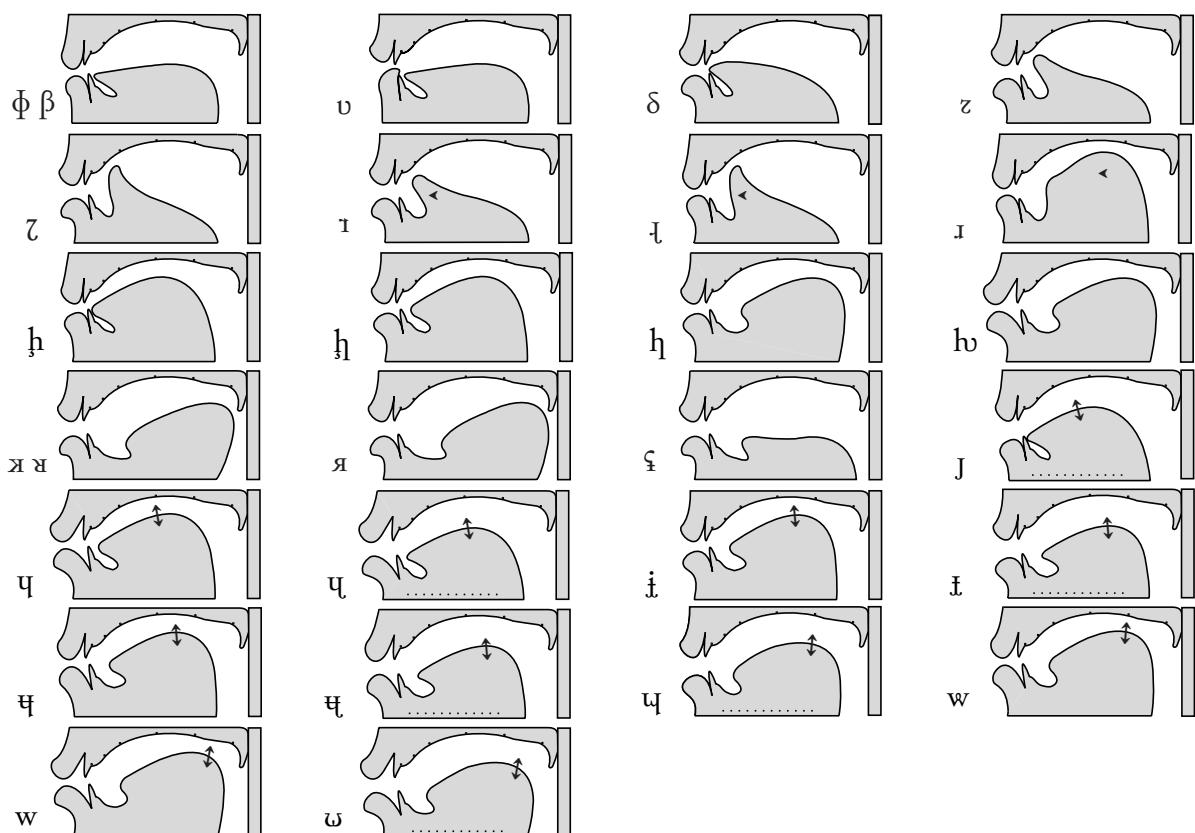


fig 10.27.6. Main 'rhotics'.

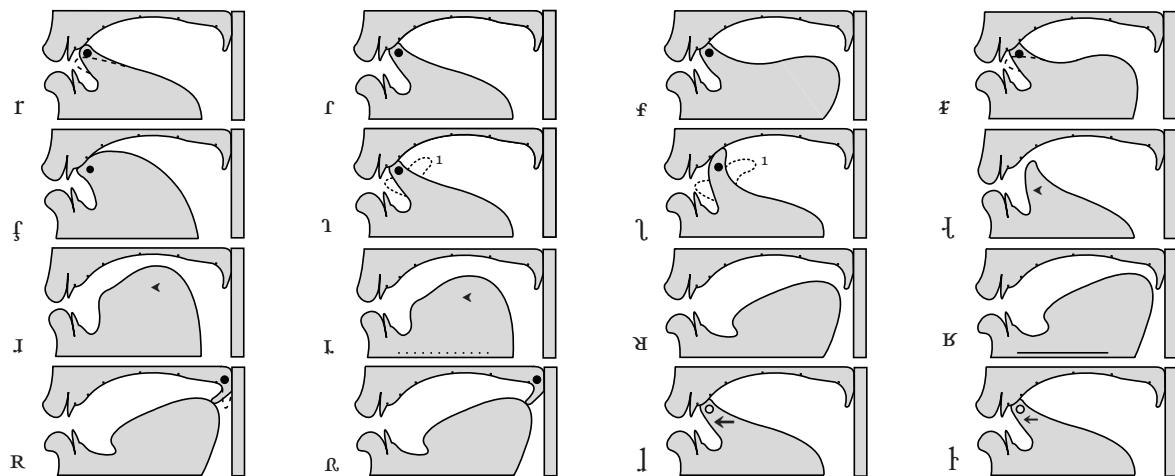
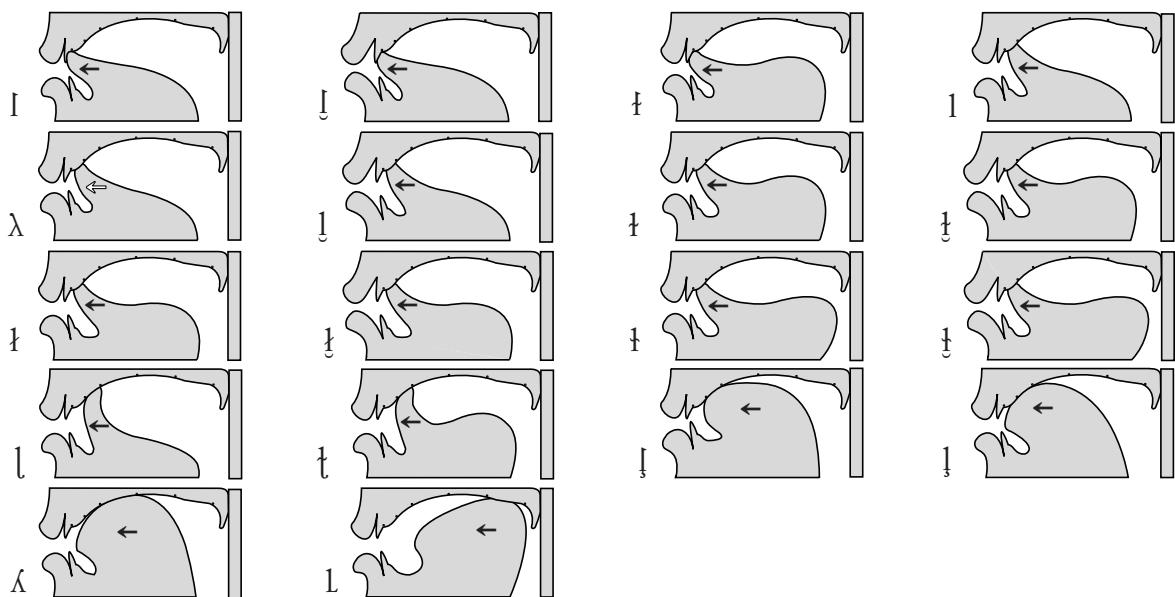


fig 10.27.7. Main laterals.



11.

Annotated Bibliography

A number of our examples have been taken from some of the few titles listed in this Bibliography, but they have been retranscribed (or transcribed, if needed), following our *canIPA* method, also adapting their spelling, following its reform rules or adding it, if not present. Of course, many less useful (or, rather, useless) books and articles do not appear here.

- AKLUJKAR, A. (1992) *Sanskrit: an Easy Introduction to an Enchanting Language*. British Columbia: Svādhyāya Publications; with unsatisfactory, ‘modern’, sound files not particularly fit for *real* pronunciation; with partial transliteration, no IPA.
- ALLEN, W.S. (1953) *Phonetics in Ancient India*. Oxford: OUP; not as expected.
- BALBIR, N. (2013) *Le sanskrit*. Chennevières-sur-Marne: Assimil; with unsatisfactory, ‘modern’, sound files not fit for *real* pronunciation; with transliteration, no IPA.
- BROCQUET, S. (2016²) *Grammaire élémentaire et pratique du sanskrit classique*. Bruxelles: Safran; with transliteration, no IPA.
- BOUQUIAUX, L. *et alii* (1976) *Initiation à la phonétique*. Paris: PUF/ORSTOM; a vinyl record to be used in connection with THOMAS *et alii*; expanded IPA.
- CANEПARI, L. (1983) *Phonetic Notation / La notazione fonetica*. Venezia: Cafoscarina; with 2 enclosed audiocassettes; almost *canIPA*.
- (1986³) *Italiano standard e pronunce regionali* [‘Standard and Regional Italian Pronunciations’]. Padua: CLEUP; with 2 enclosed audiocassettes, the second one is about regional pronunciations, also downloadable from our *canipa.net* website; almost *canIPA*.
- (2000/2009) *Dizionario di pronuncia italiana* [‘Italian Pronouncing Dictionary’]. Bologna: Zanichelli; 60,000 forms with transcription and pronunciation variants, which correspond at least to 180,000 actual words; with many variants and degrees of acceptability: *modern* neutral, *traditional* neutral, *acceptable*, *tolerated*, *slovenly*, *intentional* and *lofty*; *canIPA*.
- (2004²) *Manuale di pronuncia italiana* [‘Handbook of Italian Pronunciation’]. Bologna: Zanichelli; with 2 enclosed audiocassettes, also downloadable from our *canipa.net* website; it introduces *modern* neutral pronunciation, in addition to the *traditional* one, besides other types, including 22 regional koinés; *canIPA*.
- (2007) *Pronunce straniere dell’italiano – ProSIt* [‘Foreign Pronunciations of Italian’]. München, Lincom; precise descriptions of the foreign accents of 43 lan-

- guage groups, not only European, with intonation and more or less marked internal variants; *canIPA*.
- (2007²) *A Handbook of Pronunciation. English, Italian, French, German, Spanish, Portuguese, Russian, Arabic, Hindi, Chinese, Japanese, Esperanto*. München: Lincom; *canIPA* transcriptions, as in this book.
 - (2007) *Natural Phonetics & Tonetics. Articulatory, auditory, and functional*. München: Lincom; updated edition of previous title; the first part gives a complete presentation of the *canIPA* method and symbolization; while, the second part provides accurate phonosyntheses of 241 living languages and 71 dead ones; on our website, the latter are 81, freely downloadable.
 - (2016²) *English Pronunciation & Accents*. München: Lincom; with more than 200 different accents [L1: 121 native with variants], bilingual [L2: 63], foreign [LS: 30]; *canIPA*.
 - (2016²) *German Pronunciation & Accents*. München: Lincom; neutral, mediatic, traditional, international, regional and foreign accents, not only in Germany, Austria and Switzerland; *canIPA*.
 - (2017) *French Pronunciation & Accents*. München: Lincom; neutral, mediatic, traditional, international, regional and foreign accents, not only in France; *canIPA*.
 - (2017) *Portuguese Pronunciation & Accents*. München: Lincom; neutral, mediatic, traditional, and international pronunciations, 22 regional and several foreign accents; *canIPA*.
 - (2018) *Italian Pronunciation & Accents*. München: Lincom; neutral, traditional, mediatic pronunciations, with 22 regional and 43 foreign accents, not only European, with intonation and more or less marked internal variants and subvariants, with further chapters on Italian dialects, Latin and other diachronic stages, and many downloadable sound files from our *canipa.net* website; *canIPA*.
 - (2019) *Hebrew Pronunciation & Accents*. München: Lincom; international, neutral, mediatic, traditional pronunciations, with Jerusalem and five ‘ethnic’ accents, including 40 ‘return-regional’ accents, and a couple of diachronic stages, with counseling by Maya Mevorah; *canIPA*.
 - (2020) *Greek Pronunciation & Accents*. München: Lincom; international, neutral, mediatic, traditional pronunciations, regional accents, including diachronic stages, with a chapter on Ancient Greek; *canIPA*.
 - (2020) *Persian Pronunciation & Accents*. München: Lincom; communicative, neutral, mediatic, traditional, international pronunciations, with regional and bordering accents; *canIPA*.
 - (2021) *Ancient Greek Pronunciation & Modern Accents*. München: Lincom; *canIPA*.
 - (2021) *Romanian Pronunciation & Accents*. München: Lincom; neutral, and mediatic pronunciations, with regional accents; *canIPA*.
 - (forth.) *Italian Pronouncing Dictionary / Dizionario di pronuncia italiana*. Rome: Aracne; updated and expanded full version of the 2000/2009 DiPI edition; *canIPA*.
 - (forth.) *Latin Pronunciation & Accents*. München: Lincom; with different ancient accents and ‘modern’ national ones; *canIPA*.

- (forth.) *Catalan Pronunciation & Accents*. München: Lincom; neutral, and mediatic pronunciations, with regional accents; *canIPA*.
- & BALZI, F. (2016) *Turkish Pronunciation & Accents*. München: Lincom; neutral, mediatic and international pronunciations, and regional accents; *canIPA*.
- & CERINI, M. (2016²) *Dutch & Afrikaans Pronunciation & Accents*. München: Lincom; neutral, mediatic, traditional, international, and regional accents, not only in the Netherlands, Flanders, and South Africa; *canIPA*.
- & — (2017²) *Chinese Pronunciation & Accents*. München: Lincom; neutral and mediatic Mandarin, with 10 regional and Taiwanese accents; *canIPA*.
- & — (2020²) *Arabic Pronunciation & Accents*. München: Lincom; neutral and mediatic accents, including ‘regionational’ accents; with contributions from Maurizio Pugliese; *canIPA*.
- & GIOVANNELLI, B. (2012⁴) *La buona pronuncia italiana del terzo millennio* [‘Good Italian Pronunciation for the Third Millennium’]. Rome: Aracne; neutral pronunciation, with a CD containing recordings, also downloadable from the *canipa.net* website; *canIPA*.
- & MIOTTI, R. (forth.) *Spanish Pronunciation & Accents*. München: Lincom; neutral, mediatic, traditional, international, and regional accents, not only in Spain and Latin America; English version corresponding to Miotti & Canepari’s *Pronunciación y acentos del español*; *canIPA*.
- & MISCIO, F. (2017²) *Japanese Pronunciation & Accents*. München: Lincom; neutral, mediatic and international pronunciations, and 20 regional accents; *canIPA*.
- (2018) *Japanese Pronouncing Dictionary. From Transliteration to Phonotonetics*. München: Lincom; *canIPA*.
- & PUGLIESE, M. (2021) *Galician Pronunciation & Accents*. München: Lincom; neutral, mediatic pronunciations, and regional accents; *canIPA*.
- & SHARMA, G. (2017²) *Hindi Pronunciation & Accents*. München: Lincom; neutral, mediatic and international pronunciations, and 16 regional accents; *canIPA*.
- & VITALI, D. (2018) *Russian Pronunciation & Accents*. München: Lincom; neutral, mediatic, traditional, international, and some regional accents; *canIPA*.
- CARDONA, G. (2003) *Sanskrit*, 104-160, in *The Indo-Aryan Languages*. London: Routledge; transliteration, no IPA.
- CATFORD, J.C. (1988) *A Practical Introduction to Phonetics*. Oxford: Clarendon Press; guided drills to develop phonetic kinesthesia, to be performed accurately, step by step; however, the 2001 edition should be avoided because of too many technical problems during its unsuccessful updating; IPA.
- CHAPMAN, W.H. *et alii* (1988³) *Introduction to Practical Phonetics*. Horsleys Green: Summer Institute of Linguistics; substantially IPA.
- CHATTERJI, S.K. (1952) *ðə prənʌnsieɪn əv *sanskrit*, in ‘Le Maître Phonétique’, 97: 2-9; as all *MPh* contributions, fully transcribed using IPA, including a simple transcription of the North Wind and Sun story, with no stress indications, and as usual without intonation or interrogative sentences, translated by S.S.N. Bhattacharya; useful and reliable.
- (1960) *The pronunciatin of Sanskrit*, in ‘Indian Linguistics’, 21:61-82; based on

- his preceding title, useful and reliable; IPA.
- COULSON, M. (2010) *Teach Yourself Complete Sanskrit*. London: Hodder Headline; with transliteration also in the final vocabulary.
- Duden Aussprachewörterbuch* (2015⁷, 1962¹) Berlin: Dudenverlag; the ‘DUDEN 6’; also gives person, family, and place names belonging to various languages, with their original pronunciation, but unfortunately, with *intralinguistic* rather than *interlinguistic* transcriptions, and sometimes in an outdated style; IPA, with /a, a:/, but /r/, however, now, at last, it accepts ‘/r/‘vocalization’ also after short vowels, although it continues using only /r/; nothing on intonation, and a very short section on reduced forms; IPA.
- However, its first edition was our best ‘friend’ during school time, bringing there interesting books on languages and phonetics, rather than the boring expected ones, not to waste precious time. Among the preferred books there were various Linguaphone courses –set up by renowned phoneticians and also recorded by selected radio speakers– which had a whole disc out of sixteen devoted to the phonetics of the language taught, with full IPA transcriptions of the various examples, accurately chosen to show the phonic structure; later on, we used those same lists, adequately completed, also for our studies on the different accents, including the social, regional, and foreign ones. Unfortunately, after the sixties, those courses became like all others, practically with no attention to phonetics.
- HALL, B.C. (1992) *Sanskrit Pronunciation*. Pasadena: Theosophical University Press; simple booklet and audiocassette.
- Handbook of the International Phonetic Association* (1999). Cambridge: C. Univ. Press; although it should be a reliable and advisable guide for transcribing and describing the pronunciation of languages, it honestly cannot be considered such; IPA.
- HAUDRICOURT, A.G. & THOMAS, J.M.C. (1976) *La notation des langues. Phonétique et phonologie* [‘Language notation. Phonetics and phonology’]. Paris: Inst. Géographique National; with 2 enclosed vinyl records; adapted IPA.
- JONES, D. (1956) *Cardinal Vowels*. London: Linguaphone Institute; 2 [78 rpm] records with booklet; now face A of both records are downloadable; IPA.
- (1967³) *The Phoneme: its Nature and Use*. Cambridge: Heffer; still better than so many more or less recent productions (which woolily try to deal with this serious and important subject, but only ridiculing it, continually ‘inventing’ absurd phonological theories); IPA.
- KILLINGLEY, D. (1997) *Beginning Sanskrit*. München: Lincom; only transliteration.
- KILLINGLEY, S-Y & KILLINGLEY, D. (1995) *Sanskrit*. München: Lincom; general IPA.
- LAVER, J. (1980) *The Phonetic Description of Voice Quality*. Cambridge: CUP; with a non-enclosed audiocassette; IPA.
- MAGGI, F. & L. CANEPARI (forth.) *Latin Pronouncing Dictionary*. Rome: Aracne; presented and realized according to useful phonic principles; *canIPA*.
- MAWET, F. (2012) *Grammaire sanskrite à l’usage des étudiants hellénistiques et latinistes*. Leuven: Peeters; with transliteration, non-IPA.
- MIOTTI, R. & CANEPARI, L. (forth.) *Pronunciación y acentos del español* [‘Spanish Pronunciation & Accents’]. München: Lincom; neutral, mediatic, traditional, international, and regional accents, not only in Spain and Latin America; Spanish

- version of Canepari & Miotti's *Spanish Pronunciation & Accents*; *canIPA*.
— (forth.) *Spanish Pronouncing Dictionary/Diccionario de pronunciación española*. München: Lincom; *canIPA*.
- RUPPEL, A.M. (2017) *The Cambridge Introduction to Sanskrit*. Cambridge: CUP; some transliteration, non-IPA.
- SMALLEY, W.A. (1964²) *Manual of Articulatory Phonetics*. Terrytown (NY): Practical Anthropology; with 33 non-enclosed [18 cm, 19 cm/s] reels, lasting 32 hours; non-IPA.
- Spoken Sanskrit* (1995²) Anuradha: Madras; only official spelling and translation, no transliteration, nor IPA.
- The Ashtādhyāyī of Pāṇini* (1891) Allahabad: Indian Press.
- THOMAS, J.M.C. et alii (1976) *Initiation à la phonétique* ['Introduction to Phonetics']. Paris: PUF; completed by the vinyl record by Bouquiaux et alii; expanded IPA.

INTERNATIONAL PHONETIC ALPHABET
(official: 1993, corrected in 1996, and updated in 2005)

CONSONANT (PULMONIC)

	Bilabial	Labiodent.	Dental	Alveolar	Postalveol.	Retroflex	Palatal	Velar	Uvular	Pharyng.	Glottal
Plosive	p b			t d		t̪ d̪	c ʃ	k g	q χ		ʔ
Nasal	m	n̪		n		ɳ	ɲ	ŋ		N	
Trill	b			r						R	
Tap or Flap		v		r̪		t̪					
Fricative	f β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ɿ	xɣ	Xχ	ħ ʕ	h f
Lateral fric.			ɬ ɭ								
Approxim.		v̪		ɹ̪		ɻ̪	ɺ̪	w̪			
Lateral app.			l̪		ɻ̪	ɺ̪	ɻ̪	ɻ̪			

Where symbols appear in pairs, the one to the right is voiced. Shaded areas denote articulations judged impossible.

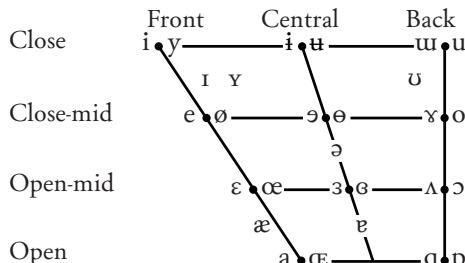
CONSONANTS (NON-PULMONIC)

Clicks	Voiced implosives	Ejectives
○ Bilabial	b Bilabial	' as in:
Dental	d Dental/alveol.	p' Bilabial
! (Post)alveolar	f Palatal	t' Dental/alveol.
‡ Palatoalveolar	g Velar	k' Velar
Alveol. lateral	g' Uvular	s' Alveol. fricat.

OTHER SYMBOLS

- ç Voiceless alveolo-palatal fric.
- ʍ Voiceless labial-velar fric.
- z Voiced alveolo-palatal fric.
- ɿ Voiced labial-palatal app.
- ɿ Voiced alveolar lateral flap
- ʃ Simultaneous ʃ and x
- h Voiceless epiglottal fric.
- ts Affricates and double articulat.
- ʃ̪ Voiced epiglottal fric.
- ts̪ can be represented by two sym-
- ɸ Epiglottal plosive
- kp bols joined by a tie bar if necess.

VOWELS



Where symbols appear in pairs, the one to the right (and ʊ) is rounded.

TONES & WORD ACCENTS

LEVEL		CONTOUR
ó or ˥	Extra-high	ጀ or ↗ Rising
ó ˧	High	ጀ ˨ Falling
ጀ ˧	Mid	ጀ ˧ High rising
ጀ ˨	Low	ጀ ˨ Low rising
ጀ ˩	Extra-low	ጀ ˩ Rising-falling
↑	Downstep (relative)	↗ Global rise
↓	Upstep (relative)	↖ Global fall

DIACRITICS (Diacritics can be placed above a symbol with a descender, eg ɳ̪)

◦ Voiceless	d̪ ʈ ʂ ɬ ɺ ɻ ɻ̪	.. Breathy voiced	b̪ ɖ ʐ ɭ ɻ ɻ̪	~ Dental	t̪ ʈ ʂ ɬ ɺ ɻ ɻ̪
~ Voiced	t̪ ʈ ʂ ɬ ɺ ɻ ɻ̪	~ Creaky voiced	b̪ ɖ ʐ ɭ ɻ ɻ̪	~ Apical	t̪ ʈ ʂ ɬ ɺ ɻ ɻ̪
ʰ Aspirated	tʰ ɖʰ ʂʰ ɬʰ ɺʰ ɻʰ ɻ̪ʰ	~ Linguolabial	t̪ ʈ ʂ ɬ ɺ ɻ ɻ̪	▫ Laminal	t̪ ʈ ʂ ɬ ɺ ɻ ɻ̪
ɔ More rounded	ɔ ɒ	~ Labialized	tʷ ɖʷ ʂʷ ɬʷ ɺʷ ɻʷ ɻ̪ʷ	~ Nasalized	ẽ õ
ɔ Less rounded	ɔ ɒ	~ Palatalized	t̪j ʈj ʂj ɬj ɺj ɻj ɻ̪j	~ Nasal release	d̪n ʈn ʂn ɬn ɺn ɻn ɻ̪n
ɔ Advanced	ɥ ɔ	~ Velarized	t̪χ ʈχ ʂχ ɬχ ɺχ ɻχ ɻ̪χ	~ Lateral release	d̪l ʈl ʂl ɬl ɺl ɻl ɻ̪l
ɔ Retracted	ɛ ɪ	~ Pharyngealized	t̪χ̪ ʈχ̪ ʂχ̪ ɬχ̪ ɺχ̪ ɻχ̪ ɻ̪χ̪	~ No audible rel.	d̪ ʈ ʂ ɬ ɺ ɻ ɻ̪
ɔ Centralized	ɛ̄ ɔ̄	~ Velarized or pharyngealized	ɻ̄ ɻ̪̄		
ɔ Mid-centralized	ɛ̄ ɔ̄	~ Raised	ē (w̄ = voiced labial-velar fricative)		
ɔ Syllabic	n̄ t̄	~ Lowered	ē (x̄ = voiceless velar approximant)		
ɔ Non-syllabic	ɛ̄ ɔ̄	~ Advanced Tongue Root	ē ɔ̄		
ɔ Rhotacized	ɾ̄ ɾ̪̄	~ Retracted Tongue Root	ē ɔ̄		

SUPRASEGMENTALS

- ‘ Primary stress
- ‘ Secondary stress: founətɪʃən
- ⋮ Long aː
- ⋮ Half-long aː
- ⋮ Extra-short ă
- Syllable break: ii.ækt
- | Minor (foot) group
- || Major (intonation) gr.
- Linking (absence of a break)

L

