

## **A CRITIQUE OF THE IPA CHART (REVISED TO 1996)**

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The 1996 update of the 1993 version of the IPA chart is examined, mainly in comparison with the 1993 version with a view to finding what the points of revision may be. The sole major changes consist in replacing the symbol  $\text{e}$  in the 1993 version by the symbol  $\text{ɛ}$  for the rounded central open-mid vowel in the cardinal vowel system and adding the symbol  $\text{ɶ}$ . The remaining differences are of presentational nature. There can be said to be no significant change on the whole from the 1993 to the 1996 version.

Key words: 1996 update, vowels, consonants (non-pulmonic), consonants (pulmonic), suprasegmentals, tones and word accents, level, contour, diacritics, affricate, synchronic articulation.

Examinamos la actualización realizada en 1996 de la versión de 1993 del AFI, principalmente comparándola con esta última versión, con el fin de encontrar posibles puntos susceptibles de corrección. El único cambio relevante consiste en la sustitución del símbolo  $\text{e}$  de la versión de 1993 por el símbolo  $\text{ɛ}$  para la vocal redondeada, central, semi-abierta del sistema cardinal y en el añadido del símbolo  $\text{ɶ}$ . Las diferencias restantes conciernen a la presentación. Se puede afirmar que en general no existen cambios significativos entre las versiones de 1993 y de 1996.

Palabras clave: versión actualizada del AFI 1996, vocales, consonantes (no pulmonicas), consonantes (pulmonicas), suprasegmentos, acentos de tono y de palabra, contorno, diacríticos, africado, articulación sincrónica.

Akamatsu (1996), which was entitled “A Critique of the IPA Chart (Revised to 1993)” and was published in *Contextos* XIV/27-28 (1996), started with the following words.

Some readers of *Contextos* may remember that in Akamatsu (1992), I submitted to a critical examination the IPA chart revised to 1951, 1979 and 1989, this last being the latest edition at the time of the publication of that paper. No sooner had Akamatsu (1992) appeared than the IPA brought out a yet new version of the IPA chart, this one revised to 1993, which was published as the centre-piece in *JIPA* Vol. 23 Number 1 (June). (*op. cit.*, p. 9)

It so turned out that the 1993 version was not the end of the long continual revision of the IPA (International Phonetic Alphabet) chart by members of the IPA (International Phonetic Association). There followed a 1996 update of the 1993 edition. It is the objective of my present paper to comment on the 1996 update in order not to lag behind the IPA's on-going revision of the IPA chart. The reason why I do not say 'the 1996 revised edition' is simply that the IPA itself refers to this (so far) latest version as 'the IPA (revised to 1993, updated 1996)'. I am aware that some writers speak of the 1996 edition, but this practice seems to be incorrect. For reason of easier and convenient reference in what follows in this paper, I will speak of the 1993 versions and the 1996 version (instead of the 1996 update), as well as the 1989 version, the 1979 version and the 1951 version.

It would be appropriate to attempt a comparison in this paper between the 1993 and 1996 versions of the IPA chart in the main, with occasional backward references to a few previous versions where necessary. I shall reproduce at the end of this paper not only the 1996 and 1993 versions but also the 1989, 1979 and 1951 versions so that the reader can the more easily follow my discussion.

### **1. The general layout**

a) The 1996 version is longitudinally rectangular, as was the 1993 version. It may be recalled that the 1989 version, which preceded the 1993 version, was latitudinally rectangular.

(b) The 'CONSONANTS (PULMONIC)' section of the chart in the 1996 version is placed at the top taking the whole breadth of the chart as it was in the 1993 version. However, the placement of the 'CONSONANT (PULMONIC)' section in the 1996 version is consistent with this section being horizontally enlarged and vertically reduced, compared with that in the 1993 version.

(c) The 'CONSONANTS (NON-PULMONIC)' section, which is placed underneath, corresponding to the left half of the 'CONSONANTS (PULMONIC)' section, is identical in both the 1996 and the 1993 versions, except that in the 1996 version the classificatory captions 'Clicks', 'Voiced

implosives' and 'Ejectives' appear in three respective *grids*, unlike in the 1993 version, and the examples of the three categories of the relevant consonants are separated from each other by vertical lines, unlike in the 1993 version in which no such vertical lines were provided. This is a presentational improvement in the 1996 version over the 1993 version.

(d) The 'VOWELS' section is placed to the right of the 'CONSONANTS (NON-PULMONIC)' section, i.e. underneath and corresponding to the right half of the 'CONSONANTS (PULMONIC)' section. This placement actually represents *somewhat, but only somewhat*, a return to the placement of the 'VOWELS' section in the 1989 version to the extent that this section does not now appear below the 'CONSONANTS (NON-PULMONIC)' section as it did in the 1993 version. The difference is that the 'vowels' section appeared to the right of the 'CONSONANTS (PULMONIC)' section in 1989 version. (Note that the layout of the 1989 version is latitudinally rectangular.) It appears that the IPA has not arrived at a definitive placement of the 'VOWELS' section in relation to the 'CONSONANT (PULMONIC)' section.

(e) The 'OTHER SYMBOLS' section is placed underneath the 'CONSONANTS (NON-PULMONIC)' section in the 1996 version, whereas in the 1993 version it was placed underneath the 'VOWELS' section, that is, in the bottom left corner of the chart. Again, we can say that the IPA is not definitive about the placement of the 'OTHER SYMBOLS' section. It is worth recalling that the 'OTHER SYMBOLS' section was placed in the 1989 version elsewhere. The change in the placement of the 'OTHER SYMBOLS' section in the 1996 version has resulted in a different positioning of  $k̠$  and  $ʃ̠$ .

(f) In the 1996 version, the 'SUPRASEGMENTALS' section consists of two sub-sections, i.e. the sub-section of symbols for suprasegmental features or suprasegmental-related features and the sub-section of symbols for tonal and accentual features. The first sub-section has, however, no identificatory label (any more than in the 1989 version and the 1993 version, a fact I unwittingly omitted to point out in Akamatsu 1992 and Akamatsu 1996), while the second sub-section has the identificatory label 'TONES AND WORD ACCENTS', this identificatory label having the two sub-identificatory labels, 'LEVEL' and 'CONTOUR'. This represents a presentational weakness in the IPA chart, so far as the 'SUPRASEGMENTALS' section on the whole is concerned. For this reason I shall, in what follows, conveniently refer to the

two sub-sections as the first sub-section and the second sub-section, respectively. In the 1996 version, the first sub-section is placed above the second sub-section, and both sub-sections as a whole are placed underneath the 'VOWELS' section. The two sub-sections thus occupy the bottom right-hand small part of the chart. In the 1993 version, the two sub-sections were placed side by side, the first on the left and the second on the right, and both beneath the right half of the 'CONSONANTS (PULMONIC)' section but above the 'DIACRITICS' section. This *side-by-side* placement of the two sub-sections was already observed in the 1989 version. The vertical presentation of the two sub-sections in the 1996 is therefore a major new change, since such a placement was not seen in any previous versions.

(g) Finally, the 'DIACRITICS' section is found in the 1996 version at the bottom left-hand large part of the chart, whereas it was in the bottom right-hand large part of the chart in the 1993 version.

The various aspects of the general layout such as mentioned above ((a) to (g)) in the course of my comparing the 1996 and 1993 versions (with occasional backward references to the 1989 version) give the 1996 chart quite a startling new look to those who are or were acquainted with any of the previous versions of the IPA chart. Be that as it may, it is clear that the IPA is clearly still not quite satisfied with each of the previous versions and intends to continue its attempts to improve on it. The objects of such attempts includes the general layout, whatever the motivation and the purpose may be.

## 2. Examination of changes in detail

As already mentioned above, the 1996 version of the IPA chart represents the up-to-date latest version, described by the IPA itself as 'revised to 1993, updated 1996'. In other words, the latest version is probably not meant to be a new version in its full sense but is to be considered as an updated 1993 version. This may be a question of nuance in the expression, but it is worth investigating what the reality is. At any rate, I continue to refer to the latest version as 'the 1996 version' for convenience sake. What are the changes that have been brought about in the 1996 version as compared with its predecessor, the 1993 version proper?

(a) The contents of the ‘CONSONANTS (PULMONIC)’ section in the 1996 version is identical with those in the 1993 version. This immediately suggests that if any modifications have been brought into the 1996 version, they concern part or the whole of the rest of the 1996 version.

(b) As for the contents of the ‘CONSONANTS (NON-PULMONIC)’ section, there again are no changes in the 1996 version, apart from the superficial but (in my view) ameliorative change in the presentation (see 1. (c) above) of this section.

(c) The contents of the ‘VOWELS’ section in the 1996 version might at first sight seem identical with those in the 1993 version if the reader were less than extremely observant. In reality, however, there is one non-negligible change in respect of one particular symbol. This concerns the symbol ə which appears in the 1996 version and stands for the rounded central open-mid (or half-open, as I prefer to call it) vowel in the cardinal vowel system, for which the 1993 version put the symbol ø. In this connection it is necessary to quote below as relevant what I already wrote in Akamatsu (1996, p. 14) as follows.

[...] The two other vowel symbols, i.e. ø and ə, are quite new to the IPA chart, though, as Pullum *et al.* (1986: 51) say, the symbol ø was used by Kurath (1939: 125) but to stand for œ. I should add that the symbol ə which is subtly similar to but different from ø (notice which side, on the right or left, the depressed part occurs in the two different symbols) was used by Abercrombie (1967: 161) and Catford (1977: 178) to stand for the same vowel as the new symbol ø in the 1993 version is made to.

What I have just referred to before the quotation as ‘one non-negligible change in respect of one particular symbol’ happens in reality to be a corrective action made in the 1996 version by the IPA, as the symbol ø was printed in the 1993 version in mistake for the symbol ə. The correction in question thus brings the IPA usage in this respect in line with the usage practised by Abercrombie (1967: 161) and Catford (1977: 178) (and no

doubt other phoneticians), and everyone will now be happier. The symbol  $\text{ə}$  printed in the 1993 version thus turns out after all not to have been a ‘new’ symbol, as I put it (Akamatsu 1966: 13-14), mistakenly in retrospect, but was simply the wrong symbol which probably resulted from a slip at the stage of proof-reading. Still, it is regretted that this should have happened, since the 1993 version, as any other official printed IPA charts were and will be, carries a thoroughly official status.

(d) The change in the placement of the ‘OTHER SYMBOLS’ section in the 1996 version (cf. *supra* 1.(e)) has resulted in a different positioning of  $\widehat{\text{kp}}$  and  $\widehat{\text{ts}}$ , these symbols being those that appeared in the 1993 version. In the 1993 version,  $\widehat{\text{kp}}$  and  $\widehat{\text{ts}}$  were placed *below* the explanatory sentence which read: “Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary”. This was partly because there was *no space to the right of* the explanatory sentence to place  $\widehat{\text{kp}}$  and  $\widehat{\text{ts}}$ . In the 1996 version, however, there is now ample space to place  $\widehat{\text{kp}}$  and  $\widehat{\text{ts}}$  to the right of the same explanatory sentence. Let it be noted immediately that in the 1996 version the symbol  $\text{ts}$  has replaced the symbol  $\widehat{\text{ts}}$  used in the 1993, 1989, 1979 and 1951 versions, though it must be additionally noted that the 1951 version allows both  $\widehat{\text{ts}}$  and  $\text{ts}$ . It is not entirely clear to me why the symbol  $\text{ts}$  is preferred in the 1996 version over the symbol  $\widehat{\text{ts}}$  used in the 1993 version as well as in the 1979 and 1989 versions. There seems to be no typographic reason why a tie bar should be imperatively placed underneath  $\text{ts}$  (thus  $\text{ts}$ ) in the 1996 version instead of above it (thus  $\widehat{\text{ts}}$ ) as was consistently adhered to in the 1979 and 1989 versions or optionally above (thus  $\widehat{\text{ts}}$ ) or below (thus  $\text{ts}$ ) as it was done in the 1951 version.

The symbol  $\widehat{\text{kp}}$  remains the same in the 1993 and 1996 versions;  $\widehat{\text{kp}}$  does not occur in the 1951 and 1979 versions. The reason why the tie bar is placed above  $\text{kp}$  (thus  $\widehat{\text{kp}}$ ) is not far to seek. The symbol  $\text{k}$  has an ascender and the symbol  $\text{p}$  has a descender, and it might be thought that a tie bar could be placed underneath as much as above the symbol  $\text{p}$ . Whether a tie bar should be placed above or underneath seems, at least so far as the 1996 version is concerned, to depend on whether the sound in question is an affricate, which  $\text{ts}$  (with the tie bar underneath) is, or whether the sound is, like  $\widehat{\text{kp}}$  (with the tie bar above), a sound that requires what the IPA calls a

‘double articulation’ or alternatively what the 1951 version called ‘synchronic articulation’. (The term ‘double articulation’ as used by the IPA with the meaning as intended by them is debatable but will not be discussed in this paper.) This distinction, which seems to apply so far as the 1996 version is concerned, in the use of a tie bar would be useful if the IPA were consistent, which unfortunately is not the case. One only needs to take a look at the 1951 version which allows the use of a tie bar, placed either above or underneath a diagraph to indicate both an affricate or a sound requiring ‘synchronic articulation’, thus giving the example of  $\widehat{ts}$  and  $\underline{ts}$  (an affricate which by definition does not require ‘synchronic articulation’) and also  $\widehat{m\eta}$  (a sound which does require ‘synchronic articulation’). The 1951 version would have given the symbol  $\underline{m\eta}$  (with the tie bar underneath) as an alternative to  $\widehat{m\eta}$  if it were not for the descender in the symbol  $\eta$ . Incidentally, the 1979 version happens to give examples like  $\widehat{ts}$ ,  $\widehat{tj}$  and  $\widehat{d3}$  (all with the tie bars above the diagraphs), but neither  $\widehat{m\eta}$  nor  $\widehat{kp}$  for that matter is given in the 1979 version.

Evidently, in the 1996 version,  $\underline{ts}$  is an example of an affricate, and  $\widehat{kp}$  an example of a sound requiring ‘synchronic articulation’. This is precisely why the 1996 version seems to recommend the two different (but not two alternative) placements of a tie bar. If so, this is a useful discriminatory placement – if this is at all intended by the IPA – of a tie bar. The only fault on the part of the IPA in its 1996 version would be its failure to be sufficiently explicit about this discriminatory placement of a tie bar. If the IPA recommends the discriminatory placement of a tie bar, for an affricate in one case and a sound requiring ‘synchronic articulation’ on the other, *in a principled manner*, it would be ideal. As a matter of fact, however, as I hope to indicate in a future paper on an IPA publication, that confusion prevails, since what I am describing as ‘a discriminatory placement of a tie bar’ happens not to be used by the IPA itself in a principled manner.

(e) In the 1996 version, the sole change brought about in the sub-section consisting of symbols for suprasegmental features or suprasegmental-related features concerns the placement of an item which the IPA presents as follows: ‘. Syllable break .i.ækt’. In the 1993 version, this was placed after ‘extra-short ɛ’ and before ‘l minor (foot) group’. In the 1996 version, this has been transferred downward to be placed after ‘|| Major (intonation)

group' and before ' ◡ Linking (absence of a break)' which is the last item in the first sub-section. The only change in the second sub-section brought about in the 1996 version is the disappearance of the word 'etc.' after 'Rising-falling' which was found in the 1989 version and also in the 1993 version. The contents of the first sub-section is identical, except for the above-mentioned new placement of ' ◡ Syllable break' .i.ækt', with those in the 1993 version, and so are the contents of the second sub-section identical, except for the above mentioned disappearance of the word 'etc.' after 'Rising-falling', with those in the 1993 version. It is quite fair to say then that there is in practice no change from the two previous versions to the 1996 version so far as the 'SUPRASEGMENTALS' section as a whole is concerned.

(f) A few changes are found in the section 'DIACRITICS' in the 1996 version as compared with the 1993 version. They are as follows.

(i) The change that first strikes a user of the 1996 version is that the 'DIACRITICS' section, which was placed in the bottom right-hand side in the 1993 version, is now placed in the bottom left-hand side.

(ii) The number (i.e. thirty-one) and the identities of the diacritic symbols and the order in which these symbols are listed in the 'DIACRITICS' section are precisely the same in the 1996 version and the 1993 version (or for that matter the 1989 version as well, but not the 1979 version). Any remaining changes concern some other respects.

(iii) The symbol for the consonant segment whereby to illustrate the use of the diacritic symbol ◡ (for 'Syllabic') has been changed from ɹ (in the 1993 version to n (in the 1996 version), so that we see n◡ in the 1996 version instead of ɹ◡ in the 1993 version. This change in the choice of the consonant segment in illustrating the diacritic symbol ◡ is obviously welcome.

(iv) In illustrating the diacritic symbol ~ (for 'Rhoticity'), the symbol was introduced on its own in the 1989 version, but only in combination with ə, but ə̃ was used in all of the 1951, the 1979, the 1989 and the 1993 versions. The 1996 version has not only ə̃ but also, newly, ə̃. The reason why the latter symbol has been added is not clear to me.



(v) Related to the point mentioned immediately above, in (iv), I should further mention that there lacks a symmetry in the 1996 version (as well as in the 1993 and the 1989 versions) in that the ‘DIACRITICS’ section presents, on the one hand, illustrations in terms of pairs of example phonetic segments, ‘Dental  $\underset{̣}{t}$   $\underset{̣}{d}$ ’, ‘Apical  $\underset{̣}{t}$   $\underset{̣}{d}$ ’ and ‘Laminal  $\underset{̣}{t}$   $\underset{̣}{d}$ ’, respectively, but on the other hand illustrations in terms of a single example phonetic segment for ‘Nasal release  $d^n$ ’, ‘Lateral release  $d^l$ ’ and ‘No audible release  $d^{\neg}$ ’. I have no objection to illustrating in terms of pairs of phonetic segments. What puzzles me is why the IPA does not presents a pair of example phonetic segments to illustrate the use of the diacritic symbol for ‘Nasal release’, ‘Lateral release’ and ‘No audible release’ as well. If it did, we would see ‘Nasal release  $t^n d^n$ ’, ‘Lateral release’  $t^l d^l$ ’ and ‘No audible release  $t^{\neg} d^{\neg}$ ’ instead. I should say, if only to ward off in advance any possible objection from some quarters, that  $t^{\neg}$  is perfectly justifiable. I take it that the IPA’s expression ‘No audible release’ is equivalent in practice to ‘No release’, in which sense the diacritic symbol  $\neg$  has long been used in the phonetics literature. The IPA’s term ‘audible’ in the particular expression ‘No audible release’ seems redundant in the present case.

In examining some changes in detail in (a) to (f) in 2, I remarked on all the similarities and differences between the 1993 version (and where appropriate, one or more previous versions) of the IPA chart and the 1996 version. I have made here and there my minimum observations concerning some of the changes brought about in the 1996 version.

Successive revisions of the IPA chart by the IPA (International Phonetic Association) in relatively quick succession in recent years (the three latest versions dating 1989, 1993 and 1996) has given rise to some confusion as to which version should be reproduced by individual writers of books on linguistics (phonetics included), though the benefit of the doubt should be given to a certain extent to there being a time-gap between the time of the authors’ proof-reading and the actual publication of the works. Anyhow the fact remains that general readers frequently find one or another version of the IPA chart, even at relatively recent dates. Note that the *Handbook of the International Phonetic Association*, published in 1999, does carry the 1996

version on page ix as the latest (as the handbook went to press) version of the IPA chart. There seems to be some calm prevailing for the moment in that, following the 1996 version, no new revision of the IPA chart has been published by the IPA, at least at the time of the publication of the present paper of mine.

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*Erratum*. In Akamatsu (1996) in which I discussed the 1993 version, I erroneously wrote that "...there is *no* change in the section [sic] called 'diacritics'." (p. 17). In fact, a change *was* introduced in the 1993 version in that the 'DIACRITICS' section which had been placed in the lower left part in the 1989 version was moved to the bottom right-hand part in the 1993 version and that the phrase 'Diacritics may be placed above a symbol with a descender, e.g. ŋ̣' was newly added in the 1993 version. This new presentation of the 'DIACRITICS' section is retained in the 1996 version.

THE INTERNATIONAL PHONETIC ALPHABET.  
(Revised to 1981.)

	Bi-labial	Labio-dental	Dental and Alveolar	Retroflex	Palato-alveolar	Alveolo-palatal	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive . . . . .	p b		t d	ʈ ɖ		c ɟ	k g	q ɢ			ʔ
Nasal . . . . .	m	ɱ	n	ɳ		ɲ	ŋ	ɴ			
Lateral Fricative . . . . .			ɬ ɮ								
Lateral Non-fricative . . . . .			l	ɭ		ʎ					
Rhotic . . . . .			ɹ					ʀ			
Flapped . . . . .			ɾ					ɽ			
Fricative . . . . .	ɸ β	f v	θ ð s z ʃ ʒ	ʂ ʐ	ç ʝ	ʃ ʒ	x ɣ	χ ʁ	ħ ʕ		h ɦ
Fricatives Continuants and Semi-vowels	w ɥ	ɹ						(w)			
Close . . . . .											
Half-close . . . . .											
Half-open . . . . .											
Open . . . . .											

OTHER SOUNDS.—Palatalized consonants: ʃ, ʒ, etc.; palatalized f, s: ɸ, ɟ. Velarized or pharyngealized consonants: ɣ, ʁ, etc. Ejective consonants (with simultaneous glottal stop): p', t', etc. Implosive voiced consonants: ɓ, ɗ, etc. Fricative trill: ʀ, ʕ (labialized ʁ, ʕ). ʎ, ɟ (labialized ʃ, ʝ). ɬ, ɮ, ʂ, ʐ (clicks, Zulu c, ɟ, z). ɮ (a sound between r and l). ɳ Japanese syllabic nasal. ʃ (combination of x and f). ɸ (voiceless w). ɹ, ɻ, ɹ̥, ɹ̥̥ (lowered varieties of l, y, u). ʒ (a variety of ʒ). ɹ̥ (a vowel between ʀ and ɹ). Affricates are normally represented by groups of two consonants (ts, tʃ, dʒ, etc.), but, when necessary, ligatures are used (tʃ, dʒ, etc.), or the marks ʈ or ɖ (ʈ or ɖ, etc.). ʂ also denote synchronic articulation (ʂɳ = simultaneous s and ʃ). ɸ, ɟ may occasionally be used in place of tʃ, dʒ, and ʒ, ʒ for ts, dz. Aspirated plosives: pʰ, tʰ, etc. R-coloured vowels: ɹ, a, ɹ, etc., or e', a', etc., etc. LENGTH, STRESS, PITCH.—: (full length), ˘ (half length), ˙ (stress, placed at beginning of the stressed syllable), ˊ (secondary stress), ˋ (high level pitch); ˌ (low level); ˊ (high rising); ˋ (low rising); ˊˋ (high falling); ˋˋ (low falling); ˊˋˊ (rise-fall); ˋˋˋ (fall-rise). MODIFIERS.—ˊ nasality. ˙ breath (l = breathed l). ˙ voice (s = z). ˙ slight aspiration following p, t, etc. ˙ labialization (ɸ = labialized n). ˙ dental articulation (ʈ = dental t). ˙ palatalization (ɸ = ɸ). ˙ specially close vowel (ɸ = a very close ɸ), ˙ specially open vowel (ɸ = a rather open ɸ). ˙ tongue raised (ɹ̥, or ɹ̥ = ɹ̥). ˙ tongue lowered (ɹ̥, or ɹ̥ = ɹ̥). ˙ lips more spread. Central vowels: ɪ (= ɪ), ʉ (= ʉ), ɛ (= ɛ), ɔ (= ɔ), ɛ̄ (= ɛ̄), ɔ̄ (= ɔ̄), ɛ̄̄ (= ɛ̄̄), ɔ̄̄ (= ɔ̄̄), ɛ̄̄̄ (= ɛ̄̄̄), ɔ̄̄̄ (= ɔ̄̄̄), ɛ̄̄̄̄ (= ɛ̄̄̄̄), ɔ̄̄̄̄ (= ɔ̄̄̄̄), etc.

(Secondary articulations are shown by symbols in brackets.)

	Front	Central	Back
	i y	ɨ u	ɯ u
	e ø	o	ɤ o
	ɛ œ	ø	ɑ ɔ
		ɞ	ʊ
		ɤ	ɑ ɔ



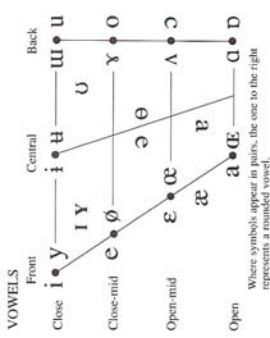
THE INTERNATIONAL PHONETIC ALPHABET (revised to 1989)

CONSONANTS		Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive		p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal		m			n		ɳ	ɲ	ŋ	ɴ		
Trill					ʀ					ʀ		
Tap or Flap					ɾ		ɽ					
Fricative		ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative							ɬ ɮ					
Approximant					ɹ			ɻ	ɰ			
Lateral approximant					l			ʎ	ʟ			
Ejective stop		pʰ			tʰ			cʰ	kʰ	qʰ		
Implosive		ɓ ɗ			ɗ			ɗ	ɗ	ɗ		

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

DIACRITICS

◌̥	◌̦	◌̧	◌̨	◌̩	◌̪	◌̫	◌̬	◌̭	◌̮	◌̯	◌̰	◌̱	◌̲	◌̳	◌̴	◌̵	◌̶	◌̷	◌̸	◌̹	◌̺	◌̻	◌̼	◌̽	◌̾	◌̿	◌̀	◌́	◌̂	◌̃	◌̄	◌̅	◌̆	◌̇	◌̈	◌̉	◌̊	◌̋	◌̌	◌̍	◌̎	◌̏	◌̐	◌̑	◌̒	◌̓	◌̔	◌̕	◌̖	◌̗	◌̘	◌̙	◌̚	◌̛	◌̜	◌̝	◌̞	◌̟	◌̠	◌̡	◌̢	◌̣	◌̤	◌̥	◌̦	◌̧	◌̨	◌̩	◌̪	◌̫	◌̬	◌̭	◌̮	◌̯	◌̰	◌̱	◌̲	◌̳	◌̴	◌̵	◌̶	◌̷	◌̸	◌̹	◌̺	◌̻	◌̼	◌̽	◌̾	◌̿
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- OTHER SYMBOLS
- ◌̥ Voiceless labial-velar fricative
  - ◌̦ Voiced labial-velar fricative
  - ◌̧ Voiced labial-palatal approximant
  - ◌̨ Voiced labial-palatal approximant
  - ◌̩ Voiced labial-palatal approximant
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  - ◌̫ Voiced labial-palatal approximant
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  - ◌̽ Voiced labial-palatal approximant
  - ◌̾ Voiced labial-palatal approximant
  - ◌̿ Voiced labial-palatal approximant

SUPRASEGMENTALS

- ◌̣ Primary stress
- ◌̤ Secondary stress
- ◌̥ Long
- ◌̦ Half-long
- ◌̧ Extra-short
- ◌̨ Syllable break
- ◌̩ Minor (foot) group
- ◌̪ Major (intonation) group
- ◌̫ Linking (absence of a break)
- ◌̬ Global rise
- ◌̭ Global fall

TONES & WORD ACCENTS

- ◌̂ Extra high
- ◌̃ High
- ◌̄ Mid
- ◌̅ Low
- ◌̆ Extra low
- ◌̇ Downstep
- ◌̈ Upstep
- ◌̉ Rising
- ◌̊ Falling
- ◌̋ High rising
- ◌̌ Low rising
- ◌̍ Rising-falling
- ◌̎ etc.

THE INTERNATIONAL PHONETIC ALPHABET (revised to 1993)

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d	ʈ ɖ	c ɟ	k ɡ	q ɢ		ʕ	ʔ
Nasal	m	ɱ		n	ɳ	ɲ	ɳ	ŋ	ɴ		
Trill	ʙ			ʀ					ʀ		
Tap or Flap				ɾ	ɽ						
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ	ɻ	j	ɰ				
Lateral approximant				l	ɭ	ʎ	ʟ				

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

CONSONANTS (NON-PULMONIC)

Clicks	Voiced implosives	Ejectives
◌ ɓ	ɓ	ʼ as in:
◌ ɗ	ɗ	ɓ
◌ ɠ	ɠ	ɗ
◌ ʄ	ʄ	ɠ
◌ ʈ	ʈ	ʄ
◌ ɡ	ɡ	ʈ
◌ ʙ	ʙ	ɡ
◌ ɹ̥	ɹ̥	ʙ
◌ ɻ̥	ɻ̥	ɹ̥
◌ ɽ̥	ɽ̥	ɻ̥
◌ ɰ	ɰ	ɽ̥
◌ ʎ	ʎ	ɰ
◌ ʟ	ʟ	ʎ
◌ ɬ	ɬ	ʟ
◌ ɮ	ɮ	ɬ
◌ ʎ̥	ʎ̥	ɮ
◌ ʟ̥	ʟ̥	ʎ̥
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◌ ɽ̥	ɽ̥	ɻ̥
◌		

THE INTERNATIONAL PHONETIC ALPHABET (revised to 1993, updated 1996)

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n̥ n̩		ɳ	ɲ	ŋ	ɴ		
Trill				ʀ					ʁ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

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

CONSONANTS (NON-PULMONIC)

Clicks	Voiced implosives	Ejectives
◌͡	ɓ	ʼ
◌͡	ɗ	ɰ
◌͡	ɟ	ɰ
◌͡	ɠ	ɰ
◌͡	ʄ	ɰ

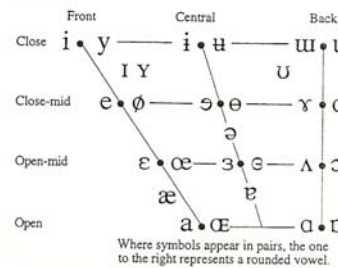
OTHER SYMBOLS

ʌ	Voiceless labial-velar fricative	ɕ ʑ	Alveolo-palatal fricatives
ʋ	Voiced labial-velar approximant	ɺ	Alveolar lateral flap
ɥ	Voiced labial-palatal approximant	ɥ	Simultaneous ʃ and x
ħ	Voiceless epiglottal fricative		
ʕ	Voiced epiglottal fricative		
ʔ	Epiglottal plosive		

DIACRITICS Diacritics may be placed above a symbol with a descender, e.g. ɪ̥

◌̥	Voiceless	◌̤	Breathy voiced	◌̦	Dental
◌̧	Voiced	◌̨	Creaky voiced	◌̩	Apical
◌̪	Aspirated	◌̫	Linguolabial	◌̬	Laminal
◌̭	More rounded	◌̮	Labialized	◌̯	Nasalized
◌̰	Less rounded	◌̱	Palatalized	◌̲	Nasal release
◌̳	Advanced	◌̴	Velarized	◌̵	Lateral release
◌̶	Retracted	◌̷	Pharyngealized	◌̸	No audible release
◌̹	Centralized	◌̺	Velarized or pharyngealized		
◌̻	Mid-centralized	◌̼	Raised		
◌̽	Syllabic	◌̾	Lowered		
◌̿	Non-syllabic	◌̺̥	Advanced Tongue Root		
◌̻̥	Rhoticity	◌̺̥̥	Retracted Tongue Root		

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

SUPRASEGMENTALS

- ˈ Primary stress
- ˌ Secondary stress
- ː Long
- ˑ Half-long
- ◌̥ Extra-short
- ◌̥̥ Minor (foot) group
- ◌̥̥̥ Major (intonation) group
- ◌̥̥̥̥ Syllable break
- ◌̥̥̥̥̥ Linking (absence of a break)

TONES AND WORD ACCENTS

- | LEVEL       | CONTOUR    |
|-------------|------------|
| ◌̥̥̥̥       | Extra high |
| ◌̥̥̥̥̥      | High       |
| ◌̥̥̥̥̥̥     | Mid        |
| ◌̥̥̥̥̥̥̥    | Low        |
| ◌̥̥̥̥̥̥̥̥   | Extra low  |
| ◌̥̥̥̥̥̥̥̥̥  | Downstep   |
| ◌̥̥̥̥̥̥̥̥̥̥ | Upstep     |