

# ภาคผนวก

Appendix-The International Phonetic Alphabet (Revised to 1979)

THE INTERNATIONAL PHONETIC ALPHABET

	Bilabial		Labiodental		Dental, Alveolar, or Post-alveolar		Palato-alveolar	Palatal	Velar	Uvular	Labial-Palatal	Labial-Velar	Pharyngeal	Glottal
S	Nasal	m	ɱ		n	ɳ		ɲ	ŋ	ɴ				
	Plosive	p	b		t	d		c	ɟ	k	g	q	ɢ	ʔ
T	(Median) Fricative	ɸ	β	f	v	θ	ð	s	z	ʃ	ʒ	x	χ	ʁ
	(Median) Approximant				ʋ		ɹ		ɻ		ɰ		ʷ	
V	Lateral Fricative					ɬ	ɮ							
	Lateral (Approximant)					ɭ			ʎ					
O	Trill					ʀ				ʀ				
	Tap or Flap					ɾ	ɽ			ɽ				
N	Ejective	pʰ				tʰ				kʰ				
	Implosive		ɓ			ɗ								
C	(Median) Click	ɔ				ɰ	ʘ							
	Lateral Click					ɠ								

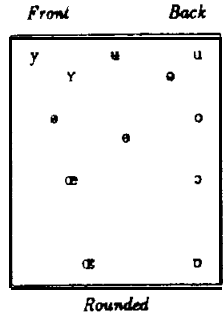
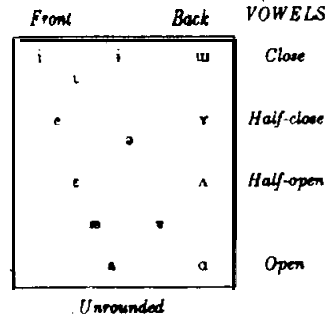
DIACRITICS

- Voiceless ɸ ɸ
- Voiced β β
- Aspirated tʰ tʰ
- Breathily-voiced b ɸ
- Dental ɸ
- Labialized ɸ
- Palatalized ɸ
- Velarized or Pharyngealized ɸ
- Syllabic ɸ
- or Simultaneous ɸf (but see also under the heading Affricates)

- or Raised e, ɛ, ɛ̄ ɛ̄
- or Lowered e, ɛ, ɛ̄ ɛ̄
- Advanced u, ʊ ɹ
- or Retracted j, i, ɨ ɨ
- Centralized e ɘ
- Nasalized ɔ̃
- r-coloured ɔ̣
- Long ɔː
- Half-long ɔˑ
- Non-syllabic ɔ̥
- More rounded ɔ̠
- Less rounded ɔ̡

OTHER SYMBOLS

- s, z Alveolo-palatal fricatives
- ɻ, ʎ Palatalized ʃ, ʒ
- ɽ Alveolar fricative trill
- ɭ Alveolar lateral flap
- ɧ Simultaneous ʃ and x
- ɰ Variety of ʃ resembling s, etc.
- ɿ = ɿ
- ʉ = ʉ
- ɹ = Variety of ɹ
- ɽ = r-coloured ɹ



STRESS, TONE (PITCH)

ˈ stress, placed at beginning of stressed syllable  
 ˌ secondary stress  
 ː high level pitch, high tone  
 ˑ low level  
 ˒ high rising  
 ˑ low rising  
 ˒ high falling  
 ˑ low falling  
 ˒ rise-fall  
 ˑ fall-rise

AFFRICATES can be written as digraphs, as ligatures, or with slur marks; thus tʃ, tʃ, dʒ: ɸ tʃ dʒ: ɸ tʃ dʒ.

c, ɟ may occasionally be used for tʃ, dʒ.

Figure 1 The International Phonetic Alphabet (revised to 1951)

	Bi-labial	Labio-dental	Dental and Alveolar	Retroflex	Palato-alveolar	Alveolo-palatal	Palatal	Velar	Uvular	Pharyngeal	Glottal
CONSONANTS	Plosive . . . . .	p b		t d	[ d]		c ɟ	k ɡ	q ɢ		ʔ
	Nasal . . . . .	m	ɱ	n	ɳ		ɲ	ŋ	ɴ		
	Lateral Fricative . . . . .			ɬ ɮ							
	Lateral Non-fricative . . . . .			l	ɭ		ʎ				
	Rolled . . . . .			r					ʀ		
	Flapped . . . . .			ɾ	ɽ				ɽ		
	Fricative . . . . .	ɸ β	f v	θ ð s z	ʂ ʐ	ʃ ʒ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Frictionless Continnants and Semi-vowels							j (ɨ)	(w)	ɰ		
	w	ɥ	ɹ								
VOWELS	Close . . . . .	(y u u)					Front Central Back i y i u u u u				
	Half-close . . . . .	(ø o)					c ø	ɤ o			
	Half-open . . . . .	(æ ə)					e œ	ɛ	ɶ ə		
	Open . . . . .	(ɑ)					a	ɶ o			

(Secondary articulations are shown by symbol in brackets)

OTHER SOUNDS.—Palatalized consonants: ɕ, ɟ, etc.; palatalized ʃ, ʒ, ʎ, ʝ. Velarized or pharyngealized consonants: ɫ, d, z, etc. Ejective consonants (with simultaneous glottal stop) p', t', etc. Implosive voiced consonants: ɓ, ɗ, etc. Fricative trill: ʀ, ʁ (labialized θ, ð, or s, z). ɮ, ʐ (labialized ʃ, ʒ). ɰ, ʕ, ʁ (clicks, Zulu c, q, x). ɠ (a sound between r and l). ɲ Japanese syllabic nasal. ʃ (combination of x and ʃ). ʎ (voiceless w). ɣ, ʁ, ɰ (lowered varieties of i, y, u). ɶ (a variety of ə). ɷ (a vowel between ɔ and o).

Alfricates are normally represented by groups of two consonants (ts, tʃ, dʒ, etc.), but, when necessary, ligatures are used (ʈ, ɟ, ɟʂ, etc.), or the marks ̣ or ̤ (or ts, etc.). ̣ also denote synchronic articulation (ṃ) = simultaneous m and ɱ). c, ɟ may occasionally be used in place of tʃ, dʒ, and ʝ, ʐ for ts, dz. Aspirates plosives: ph, th, etc. r-coloured vowels: eɪ, aɪ, əɪ, etc., or e', a', ə', etc., or e̞, a̞, ə̞, etc.; r-coloured ɔ: ɔɪ or ɔ' or ɔ̞ or ɔ̞' or ɔ̞̞.

LENGTH, STRESS, PITCH.— (full length); ˑ (half length); ˑ (stress, placed at beginning of the stressed syllable); ˑ (secondary stress); ˑ (high level pitch); ˑ (low level); ˑ (high rising); ˑ (low rising); ˑ (high falling); ˑ (low falling); ˑ (rise-fall); ˑ (fall-rise).

MODIFIERS.— ̣ nasality ̤ breath (l̤) breathless l̤. ̥ voice (s̥ = z̥). ̦ slight aspiration following p, t, etc. ̧ labialization (ɲ̧ = labialized ɲ). ̨ dental articulation (ɬ̨ = dental ɬ). ̩ palatalization (ʃ̩ = ʃ). ̪ specially close vowel (e̪ = a very close e). ̫ specially open vowel (e̫ = a rather open e). ̬ (tongue raised (e̬ or e̬ = e̬). ̭ tongue lowered (ḙ or ḙ = ḙ). ̮ tongue advanced (u̮ or u̮ = an advanced u, ʃ̮ = ʃ). ̯ or ̰ (tongue retracted (i̯ or i̯ = i̯, ʃ̯ = alveolar ʃ). ̱ lips more rounded. ̲ lips more spread. Central vowels: ɨ (= i), ɯ (= u, e̯ = ə̯), ɤ (= ə, ɛ̯, ɶ̯, (e.g. ɟ) syllabic consonant. ̰ consonantal vowel. ̱ variety of ʃ resembling s, etc.

Figure 2 The International Phonetic Alphabet (revised to 1979)

		Bilabial	Labiodental	Dental, Alveolar, or Post-alveolar	Retroflex	Palato- alveolar	Palatal	Velar	Uvular	Labial- Palatal <sup>m</sup>	Labial- Velar	Pharyngeal	Glottal
S	Nasal	m	ɱ	n	ɳ		ɲ	ŋ	ɴ				ʔ
	Plosive	p b		t d	ʈ ɖ		c ɟ	k ɡ	q ɢ		ɸ β		
T	(Median) Fricatives	ɸ β	f v	θ ð s z	ʈ ɖ	ʃ ʒ	ç ʝ	x ɣ	χ ʁ		ɸ β	ħ ʕ	h ɦ
	(Median) Approximant						j	ɥ	ɰ	ɥ	ɰ		
N	Lateral Fricative			ɬ ɮ									
	Lateral (Approximant)						ʎ						
O	Trill			ʀ					ʀ				
	Tap or Flap			ɾ	ɽ								
S	Ejective	pʰ		tʰ				kʰ					
	Implosive	ɓ		ɗ				ɠ					
C	(Median) Click	ǀ		ǃ									
	Lateral Click	ǁ		ǂ									

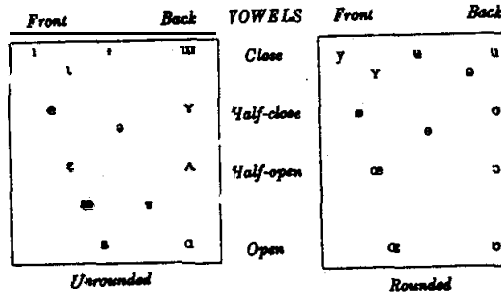
DIACRITICS

- Voiceless p ɸ
- Voiced β
- Aspirated pʰ
- Breathy-voiced βʱ
- Dental ʈ
- Labialized ɸβ
- Palatalized ɸβ̟
- Velarized or Pharyngealized ɸβ̠
- Syllabic p̚
- or Simultaneous ɸβ̚ (but see also under the heading Affricates)

- or Raised e, ɤ, ɛ ɤ̟
- or Lowered e, ɛ, ɛ̟ ɛ̠
- Advanced u, ʊ ʊ̟
- or Retracted i, ɪ, ɪ̟ ɪ̠
- Centralized ə
- Nasalized ɔ̃
- r-coloured ɔ̣
- Long ɑː
- Half-long ɑˑ
- Non-syllabic ɹ̥
- More rounded ɔ̠
- Less rounded ɔ̠ˑ

OTHER SYMBOLS

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- ɻ Alveolar fricative trill
- ɭ Alveolar lateral flap
- ɥ Simultaneous ʃ and x
- ʎ Variety of ʃ resembling ɲ, etc.
- ɿ = ɹ̥
- ɹ̥ = ɹ̥
- ɹ̥ = Variety of ɹ̥
- ɹ̥ = r-coloured ɹ̥



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- ˎ high level pitch, high tone
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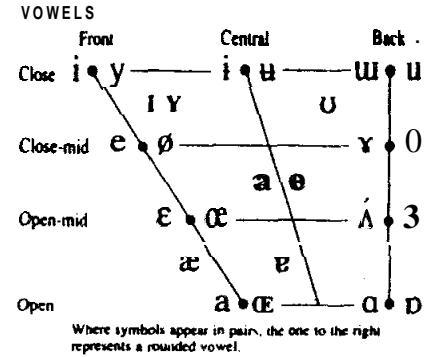
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Figure 3 The International Phonetic Alphabet (revised to 1989)

CONSONANTS

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal		m ɱ		n ɳ		ɳ̠	ɲ	ŋ	ɴ		
Trill				r					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			
Ejective stop	pʰ			tʰ		ʈʰ	cʰ	kʰ	qʰ		
Implosive	ɓ ɗ			ɟ ɗ			ɟ ɗ	ɟ ɗ			

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



- OTHER SYMBOLS
- ʍ Voiceless labial-velar fricative
  - ʋ Voiced labial-velar approximant
  - ɥ Voiced labial-palatal approximant
  - ħ Voiceless epiglottal fricative
  - ʕ Voiced epiglottal fricative
  - ʡ Epiglottal plosive
  - ɕ ʑ Alveolo-palatal fricatives
  - ʙ Additional mid central vowel
  - ◌̘ Bilabial click
  - ◌̙ Dental click
  - ◌̚ (Post)alveolar click
  - ◌̜ Palatoalveolar click
  - ◌̝ Alveolar lateral click
  - ◌̞ Alveolar lateral flap
  - ◌̟ Simultaneous ʃ and x
- Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary. *kp̚ ts̚*

DIACRITICS

◌̥ Voiceless	◌̥ n̥ d̥	◌̙ More rounded	◌̙ ɔ̙	◌̜ Labialized	◌̜ tʷ dʷ	◌̚ Nasalized	◌̚ ẽ
◌̜ Voiced	◌̜ ɳ̜ t̜	◌̚ Less rounded	◌̚ ɔ̚	◌̚ Palatalized	◌̚ tʲ dʲ	◌̚ Nasal release	◌̚ d̚ <sup>n</sup>
◌̚ Aspirated	◌̚ tʰ dʰ	◌̚ Advanced	◌̚ ɯ̚	◌̚ Velarized	◌̚ tˠ dˠ	◌̚ Lateral release	◌̚ d̚ <sup>l</sup>
◌̚ Breathily voiced	◌̚ b̚ a̚	◌̚ Retracted	◌̚ ɨ̚	◌̚ Pharyngealized	◌̚ tˤ dˤ	◌̚ No audible release	◌̚ d̚ <sup>ʰ</sup>
◌̚ Creaky voiced	◌̚ b̚ a̚	◌̚ Centralized	◌̚ ẽ̚	◌̚ Velarized or pharyngealized	◌̚ ɫ		
◌̚ Linguolabial	◌̚ t̚ d̚	◌̚ Mid-centralized	◌̚ ẽ̚	◌̚ Raised	◌̚ e̚ (ɹ̥ = voiced alveolar fricative)		
◌̚ Dental	◌̚ t̚ d̚	◌̚ Syllabic	◌̚ ɹ̚	◌̚ Lowered	◌̚ e̚ (β̚ = voiced bilabial approximant)		
◌̚ Apical	◌̚ t̚ d̚	◌̚ Non-syllabic	◌̚ e̚	◌̚ Advanced Tongue Root	◌̚ e̚		
◌̚ Laminal	◌̚ t̚ d̚	◌̚ Rhoticity	◌̚ ɞ̚	◌̚ Retracted Tongue Root	◌̚ e̚		

