

Phonological Features (素性)

Phonological features are the basic building blocks of sounds. The system is designed to permit us to distinguish all possible speech sounds from each other, as well as to help us group sounds into *natural classes*.

Major class features

We can distinguish consonants from vowels using C for consonants and V for vowels.

consonantal (子音性)

- definition: Any sound made with a constriction in the oral cavity that is narrower than that needed for a glide.
- abbreviation: cons, cns
- [+consonantal]: stops, fricatives, affricates, nasals, liquids
- [-consonantal]: glides, vowels, laryngeals

sonorant (共鳴性)

- definition: Any sound made in such a way as to permit *spontaneous voicing*.
Less formally: sounds that can be sung.
- abbreviation: son
- [+sonorant]: vowels, approximants (liquids & glides), nasals
- [-sonorant]: obstruents (stops, fricatives, affricates), laryngeals

These two features divide the speech sounds into four major classes:

consonantal	+	+	-	-
sonorant	-	+	+	-
	obstruents	nasals liquids	glides vowels	laryngeals (? h fi)

Place features

labial (唇音性)

- definition: Any sound made using the lips.
- abbreviation: lab
- [+labial]: bilabials, labiodentals, labiovelars; *also* [+round] vowels
- [-labial]: all others

coronal (舌頂性)

- definition: Any sound made using the front part of the tongue (the *corona*).
- abbreviation: cor
- [+coronal]: dentals, alveolars, palato-alveolars; *also* palatals
- [-coronal]: all others

dorsal (舌背性)

- definition: Any sound made using the back of the tongue (the *dorsum*).
- abbreviation: dor, dors
- [+dorsal]: velars, uvulars, palatals; glides and vowels
- [-dorsal]: all others

pharyngeal (咽頭性)

- definition: Any sound made with a constriction at the pharynx.
 abbreviation: phar
 [+pharyngeal]: pharyngeal consonants, such as in Arabic [ʕ] and [ħ]); *also* vowels that are specified as [±ATR]
 [-pharyngeal]: all others

anterior (前方性)

- definition: Any *coronal* sound where the constriction is made in front of, or at the alveolar ridge.
 This feature is not defined if the sound is [-coronal].
 abbreviation: ant
 [+anterior]: dentals, alveolars
 [-anterior]: post-alveolars (palato-alveolars, alveo-palatals, retroflex sounds), palatals

distributed (擴張性)

- definition: Any *coronal* sound where the constriction is made with the surface of the tongue blade (rather than with the tip of the tongue).
 This feature is not defined if the sound is [-coronal].
 abbreviation: distr
 [+distributed]: laminals (dentals, palato-alveolars)
 [-distributed]: apicals (alveolars, retroflex sounds)

These features can account for all possible places as follows:

		lab	cor	ant	distr	dor	hi	phar
bilabial & labiodental	p f	+	-			-		-
dental	θ	-	+	+	+	-		-
alveolar	t s l	-	+	+	-	-		-
palato-alveolar	ʃ	-	+	-	+	-		-
retroflex	ɻ	-	+	-	-	-		-
palatal	ç j	-	+	-	+	+	+	-
velar	k x	-	-			+	+	-
uvular	q	-	-			+	-	-
pharyngeal	ħ ʕ	-	-			+	-	+
laryngeal	? h	-	-			-		-
labio-velar	w	+	-			+	+	-

Manner features

continuant (繼續性)

- definition: Any sound where air is permitted to flow through the center of the oral cavity.
- abbreviation: cont, cnt
- [+continuant]: fricatives, glides, vowels, [r]
- [-continuant]: stops, nasals, [l]

Affricates can be described as sounds which are both [-continuant] (like a stop) and [+continuant] (like a fricative).

nasal (鼻音性)

- definition: Any sound made with a lowered velum, letting air pass through the nose.
- abbreviation: nas
- [+nasal]: nasal consonants, nasalized vowels and consonants
- [-nasal]: all others

lateral (側音性)

- definition: Any sound where the constriction is made so as to divert air flow to the side of the mouth.
- abbreviation: lat
- [+lateral]: [l], as well as other lateral sounds
- [-lateral]: all others

strident (粗擦性)

- definition: Any fricative sound produced with a strong hissing noise. This feature is defined only for fricatives and affricates.
- abbreviation: strid
- [+strident]: strident fricatives: sibilants ([s] [z] [ʃ] [ʒ]), labiodentals ([f] [v]), and uvulars ([χ]); and affricates
- [-strident]: other fricatives ([θ] [ð] [ϕ] [β] [ç] [x] [ɣ])

Laryngeal Features

voice (有声音性)

- definition: Any sound made with vibrating vocal cords.
- abbreviation: voi, vce
- [+voice]: voiced sounds
- [-voice]: voiceless sounds

spread glottis ()

- definition: Any sound made with the vocal cords drawn apart.
- abbreviation: spr. gl., spread
- [+spread glottis]: aspirated stops, breathy voice (murmered) consonants, voiceless vowels and approximants
- [-spread glottis]: all others

constricted glottis (声門狭窄性)

- definition: Any sound made with the vocal cords pressed together.
abbreviation: constr. gl., constr.
[+constr. glottis]: glottal stop, ejectives, implosives, laryngealized (creaky voice) segments
[-constr. glottis]: all others

Vowel Features

Vowel features are defined in terms of the *rest position* of the tongue. The rest position of the tongue in speech is the position required to make the sound [ɛ] (about as in Japanese 絵).

high (高段性)

- definition: Any sound where the tongue body is raised above the rest position.
abbreviation: hi
[+high]: high vowels, glides; *also* velars, palatals, palatalized consonants
[-high]: all others

low (低段性)

- definition: Any sound where the tongue body is lowered below the rest position.
abbreviation: lo
[+low]: low vowels; *also* pharyngeals
[-low]: all others

No sound can be both [+high] and [+low] at the same time.

back (後舌性)

- definition: Any sound where the tongue body is moved back from the rest position.
abbreviation: bk
[+back]: back vowels; *also* velars, uvulars, and pharyngeals
[-back]: all others

round (円唇性)

- definition: Any sound made with rounded lips.
abbreviation: rnd
[+round]: round vowels, labialized consonants
[-round]: all others

ATR (Advanced Tongue Root)

- definition: Any sound made with the root of the tongue moved forward.
This feature is only defined for vowels in languages with an ATR/RTR (or tense/lax) distinction.
[+ATR]: ATR vowels, tense vowels
[-ATR]: RTR vowels, lax vowels

Overview

