

---



---

## Sounds of the IPA

---

*John Wells and Jill House*

*Department of Phonetics and Linguistics, University College London*

- W: We've made this recording in order to illustrate the sounds associated with the phonetic symbols shown on the 1993 version of the Chart of the International Phonetic Alphabet.
- H: This is a copyright recording, and may not be reproduced without permission. It was recorded on the tenth of March 1995, at University College London. My name is Jill House.
- W: And mine is John Wells. The recording was monitored by Michael Ashby and John Baldwin, and the sound engineers were Steve Nevard and David Cushing. Copies of the recording are available from the Department of Phonetics and Linguistics, University College London, Gower Street, London WC1E 6BT, United Kingdom.
- H: Before we start, we'd like to call attention to two points that should always be kept in mind. The first is that any phonetic symbol — for vowel, consonant, or prosodic feature — can be applied to a range of sound-types. We have aimed at what we take to be a neutrally typical version of each.
- W: The symbol for 'aspirated', for example, does not specify the **degree** of aspiration — how many milliseconds of delay between plosive release and onset of voicing, delay during which turbulence may be audibly present — and in fact there is a continuous range of possible degrees of aspiration.
- H: The second, and related, point is that when IPA symbols are used to transcribe the sounds of a particular language, the neutrally typical versions we try to offer may not correspond exactly to the language-specific sounds.
- W: The same letter 'ell' (l) is used in the transcription of English, Spanish, Zulu, and Korean; in each case not only will it cover a range of allophonic variants, but also the default realization will vary somewhat from language to language. So it is inevitable that our version of the voiced alveolar lateral, [l], may not quite correspond to the typical sound of the language you may be interested in.
- H: We start with the table at the top of the Chart. It illustrates consonants produced with a pulmonic egressive air-stream mechanism. We begin with the **plosives**: sounds made with a complete obstruction of the air flow.
- W: They come in pairs, voiceless and voiced. At each place of articulation you will hear first the voiceless plosive, then the voiced one. We will make the voiceless plosives with a slight aspiration, and the voiced ones fully voiced. Each consonant will be said twice: first followed by a vowel, of the type [ɑ:], and then with a vowel both before and after.
- H: First, then, the bilabials, made by the two lips: [paba]
- W: [apa aba]. Then the alveolars, made by the tongue tip against the alveolar ridge: [ta da].

- H: [ataada]. The retroflex plosives, made by curling the tongue tip back and articulating against the rear slope of the alveolar ridge: [ʈaɖa].
- W: [aʈaɖa]. The palatals, made by the front of the tongue against the hard palate: [caja].
- H: [acaɟa]. The velars, made by the back of the tongue against the velum, the soft palate: [kaga].
- W: [akaɟa]. The uvulars, made by the extreme back of the tongue against the uvula: [qaɣa].
- H: [aqaɣa]. Then the glottal plosive, made by bringing the vocal folds together. Here of course voicing is not possible: [ʔa].
- W: [aʔa].

- H: Next we take the **nasals**. Their articulation is like that of the plosives, except that the soft palate is lowered, allowing the airstream to escape through the nasal cavity. We pronounce all the nasals voiced. First, a bilabial nasal : [ma].
- W: [ama]. Then the labiodental nasal, made by articulating with the lower lip against the upper teeth: [ɱa].
- H: [aɱa]. Alveolar: [na].
- W: [ana]. A retroflex nasal: [ɳa].
- H: [aɳa]. And a palatal: [ɲa].
- W: [aɲa]. Velar: [ŋa].
- H: [aŋa]. A uvular nasal: [ɴa].
- W: [Na].

- H: Next are the **trills**, involving the repeated vibration of one articulator against another. There are only three of these, and we pronounce them all voiced. First, a bilabial trill: [βa].
- W: [aβa]. Then an alveolar trill: [ra].
- H: [ara].
- W: And a uvular trill: [ʀa]. [aʀa].

- H: Like a trill, but involving just a single touch, is a **tap** or **flap**. The alveolar tap: [r̩a].
- W: [ara]. And a retroflex flap: [ɽa].
- H: [aɽa].

- W: Now come the **fricatives**. They involve forcing the airstream through a narrow gap, which causes it to be turbulent: the result is heard as friction. The fricatives come in pairs, with first a voiceless and then a voiced one at each place of articulation. We begin with the bilabial fricatives: [ɸaβa].
- H: [aɸaβa]. Then the labiodentals: [ɸava].
- W: [aɸava]. Dental fricatives: [θa ða].
- H: [aθaða]. Alveolars: [sa za].
- W: [asaza]. And postalveolars, sometimes known as palatoalveolars: [ʃa ʒa].
- H: [aʃaʒa]. The retroflex fricatives are [ʂaʐa].
- W: [aʂaʐa]. Then the palatals: [ça ʝa].

H: [αçααjα]. Velars: [χαγα].

W: [αχααγα]. And uvular fricatives: [χαβα].

H: [αχααβα]. Then we take the pharyngeal fricatives, made by constricting the pharynx: [ħα ʕα].

W: [αħααʕα]. And last along the fricative row, the so-called glottal fricatives: [hα h̥α].

H: [αhααh̥α]. And then there are also the lateral fricatives, at the alveolar place of articulation: [ɬαɮα].

W: [αɬααɮα].

H: **Approximants** are similar in their manner of articulation to fricatives, but are produced without friction, without making the airstream turbulent. They are all pronounced with voicing. First, the labiodental approximant: [ʋα].

W: [αʋα]. Next, an alveolar or postalveolar approximant: [ɹα].

H: [αɹα]. And a retroflex: [ɻα].

W: [αɻα]. A palatal approximant or semivowel: [jα].

H: [αjα]. And a velar one: [ɰα].

W: [αɰα].

H: The **lateral approximants** are articulated with the air escaping around a central obstruction. We pronounce them voiced. The alveolar lateral is [lα].

W: [αlα]. Retroflex: [ɭα].

H: [αɭα]. The palatal lateral: [ɮα].

W: [αɮα]. And a velar lateral: [ɭ̥α].

H: [αɭ̥α]. That brings us to the end of the consonants shown in the main grid of the chart.

W: Next we come on to the **non-pulmonic** consonants. Their initiation originates somewhere other than in the lungs. First we take the **clicks**, made with an oral or **velaric ingressive** airstream mechanism. We pronounce them without any specific simultaneous articulation, and they are accordingly voiceless. First, the bilabial click: [ɕα].

H: Between vowels, that's [αɕα]. The dental click is [ǀα] (*old symbol [ɿ], Zulu c, affricated*). You will notice that it has an affricated release.

W: [αǀα]. An alveolar or postalveolar click, often called retroflex, is [ǁα] (*old [ç], Zulu q; 'hollow' sound*).

H: [αǁα]. A so-called palatoalveolar click is [ǃα]; it has alveolar contact and an abrupt release (*'flat' sound, dental/alveolar, no affrication*).

W: [αǃα]. And lastly the alveolar lateral click is [ǂα] (*old [ʒ], Zulu x; (post-)alveolar, affricated*).

H: [αǂα].

W: The **voiced implosives** are made with a pharyngeal or **glottalic ingressive** airstream mechanism. The bilabial implosive stop is [ɓα].

H: [αɓα]. Dental or alveolar, [ɗα].

- W: [ɑɗɑ]. And a palatal implosive: [ɟɑ].
- H: [ɑɟɑ]. Velar: [gɑ].
- W: [ɑɣɑ]. Then the uvular: [ɣɑ].
- H: [ɑɣɑ]. The **ejectives** also have a pharyngeal or glottalic airstream mechanism, but an egressive one. They are voiceless. First, the bilabial ejective stop: [p'ɑ].
- W: [ɑp'ɑ]. Dental or alveolar (this one is alveolar): [t'ɑ].
- H: [ɑt'ɑ]. Velar: [k'ɑ].
- W: [ɑk'ɑ]. And lastly, an alveolar fricative ejective: [s'ɑ].
- H: [ɑs'ɑ].
- W: Now we come to the **vowels**. We'll take these in the order in which they're displayed on the chart, reading across. We'll say each vowel first on a falling tone, and then on a mid level tone. We'll make each vowel fairly long.
- H: We start with the **close** vowels, which can also be termed **high**. Close front unrounded, cardinal one, (*falling*) [i].
- W: (*level*) [i]. Close front rounded, cardinal nine, (*falling*) [y].
- H: (*level*) [y]. Close central unrounded, cardinal seventeen, barred-I, (*falling*) [ɨ].
- W: (*level*) [ɨ]. Close central rounded, cardinal eighteen, barred-U, (*falling*) [ɯ].
- H: (*level*) [ɯ]. Close back unrounded, cardinal sixteen, (*falling*) [ɯ].
- W: (*level*) [ɯ]. Close back rounded, cardinal eight, (*falling*) [u].
- H: (*level*) [u]. Next the chart shows three vowels that are lax or mid-centralized counterparts of some we've just had. Fairly front, fairly close unrounded, lax cardinal one, small cap I: (*falling*) [ɪ].
- W: (*level*) [ɪ]. Then the corresponding rounded vowel, lax cardinal nine, small cap Y, (*falling*) [ʏ].
- H: (*level*) [ʏ]. And then fairly back, fairly close rounded, lax cardinal eight: (*falling*) [ʊ].
- W: (*level*) [ʊ]. Now we turn to the **close-mid** vowels, also termed half-close or mid-high. Close-mid front, unrounded, cardinal two, (*falling*) [e].
- H: (*level*) [e]. Close-mid front, rounded, cardinal ten, (*falling*) [ø].
- W: (*level*) [ø]. Close-mid central, unrounded, a closish schwa, reversed E, (*falling*) [ə].
- H: (*level*) [ə]. The corresponding rounded vowel, close-mid central, barred O, (*falling*) [ø].
- W: (*level*) [ø]. Then a close-mid back unrounded vowel, cardinal seventeen, ram's-horn, (*falling*) [ɤ].
- H: (*level*) [ɤ]. Close-mid back rounded, cardinal seven, (*falling*) [o].
- W: (*level*) [o]. Then the schwa, which is quite loosely defined: a mid central vowel, normally unrounded, (*falling*) [ə].
- H: (*level*) [ə]. Next we take the **open-mid** vowels, also termed half-open or mid-low. Open-mid front, unrounded, cardinal three, (*falling*) [ɛ].

- W: (*level*) [ɛ]. Open-mid front, rounded, cardinal eleven, O-E digraph (*falling*) [œ].
- H: (*level*) [œ]. Open-mid central, unrounded, an openish schwa, reversed epsilon, (*falling*) [ɜ].
- W: (*level*) [ɜ]. The corresponding rounded vowel, open-mid central, (*falling*) [ø].
- H: (*level*) [ø]. And the open-mid back unrounded vowel, cardinal fourteen, inverted V: (*falling*) [ʌ].
- W: (*level*) [ʌ]. Open-mid back rounded, cardinal six, (*falling*) [ɔ].
- H: (*level*) [ɔ]. Then a front unrounded vowel between open-mid and open, A-E digraph: (*falling*) [æ].
- W: (*level*) [æ]. And a central unrounded vowel at the same height, inverted A: (*falling*) [ɐ].
- H: (*level*) [ɐ]. Lastly among the vowels, we come to the **open** vowels, also termed low. An open front unrounded vowel, cardinal four, (*falling*) [a].
- W: (*level*) [a]. The corresponding rounded vowel, open front rounded, cardinal twelve, cap O-E digraph, (*falling*) [œ].
- H: (*level*) [œ]. Then an open back unrounded vowel, cardinal five, (*falling*) [ɑ].
- W: (*level*) [ɑ]. And an open back rounded vowel, cardinal thirteen, (*falling*) [ɒ].
- H: (*level*) [ɒ]. And that completes the vowels.
- W: Now beneath the vowels on the chart is a section labelled “**other symbols**”. These are an assortment of consonants. First comes the voiceless labial-velar fricative, inverted W, [ʍɑ].
- H: [ɑʍɑ]. Then the voiced labial-velar approximant, [wɑ].
- W: [ɑwɑ]. And the voiced labial-palatal approximant, [ɥɑ].
- H: [ɑɥɑ]. Then the epiglottal fricatives, articulated by making a constriction between the epiglottis and the wall of the pharynx: first the voiceless epiglottal fricative, [ħɑ].
- W: [ɑħɑ]. Then the voiced epiglottal fricative, [ʕɑ].
- H: [ɑʕɑ]. If we obstruct the airstream completely at this place, we get an epiglottal plosive, [ʔɑ].
- W: [ɑʔɑ]. At the top of the righthand column under Other Symbols we have the alveolo-palatal fricatives, voiceless and voiced, [çɑʒɑ].
- H: [ɑçɑʒɑ]. Then we have an alveolar lateral flap, [ɺɑ].
- W: [ɑɺɑ]. And then the famous sound of Swedish identified here as consisting of simultaneous [ʃ] and [x], namely [ħʃɑ].
- H: [ɑħʃɑ]. Beneath this symbol the chart mentions the possibility of using a tie bar to join two symbols for affricates and double articulations. The illustration of a double articulation is the voiceless labial-velar plosive [k̠pɑ].
- W: [ɑk̠pɑ]. And the affricate is a voiceless alveolar affricate, [t̪sɑ].
- H: [ɑt̪sɑ]. Another use for the tie bar might be to show nasalized clicks, where the click articulation occurs simultaneously with a voiced velar nasal that

uses a pulmonic air-stream, thus a nasalized postalveolar (*retroflex*) click [ŋ̠ʔ̠].

W: [aŋ̠ʔ̠].

W: Next we turn to the **suprasegmentals**. The English word [ˌfəʊnəˈtɪʃən], so pronounced, illustrates secondary stress on the first syllable and primary stress on the penultimate.

H: [ˌfəʊnəˈtɪʃən]. We shan't demonstrate the symbols for degrees of length, for syllable break, for group boundaries, or for linking, because these can't easily be demonstrated with segments in isolation and out of context.

W: Turning to **tones** and word accents, we start with **level** tones. An extra high tone is [é] ([ʔe]). A high tone is [é] ([ʔe]). A mid tone, [ē] ([ʔe]). A low tone, [è] ([ʔe]). And an extra low tone, [è] ([ʔe]).

H: To demonstrate downstep and upstep, we can take an English sentence, *He's de'termined to °take \charge*. That was an unmarked intonation pattern.

W: *He's de'termined to °take \charge*. With a downstep on *take*, it becomes *He's de'termined to +take \charge*.

H: *He's de'termined to +take \charge*. And with an upstep on *take*, it becomes *He's de'termined to ^take \charge*.

W: *He's de'termined to ^take \charge*. Looking now at the **contour** tones, we have first a rising tone, [ě] ([ʔe]).

H: [ě] ([ʔe]). And then a falling tone, [ê] ([ʔe]).

W: [ê] ([ʔe]). A high rising tone, [é] ([ʔe]); and a low rising tone, [è] ([ʔe]).

H: A rising-falling tone is [ë] ([ʔe]).

W: An English sentence with a global rise is ↗ *WHAT did you say you wanted?*

H: And a global fall is heard in ↘ *What did you say you WANTED?*

W: Lastly we come to the section of the chart labelled **diacritics**. The left-hand column begins with the diacritic to show that a segment is voiceless. A voiceless alveolar nasal is [ŋ̥a].

H: [aŋ̥a]. And a voiceless lenis alveolar plosive, [d̥a].

W: [aɖ̥a]. At the top of the grid here you will also notice the symbol for a voiceless velar nasal, with the diacritic placed above rather than below the rest of the symbol: [ŋ̥̥a].

H: [aŋ̥̥a]. Next, the diacritic to show that a segment is voiced. A voiced fortis alveolar fricative, [ʒ̤a].

W: [aʒ̤a]. Aspiration can be shown by a small raised H: aspirated voiceless alveolar plosive, [t<sup>h</sup>a].

H: [at<sup>h</sup>a]. And an aspirated voiced alveolar plosive, [d<sup>h</sup>a] (*i.e.* [d̪<sup>h</sup>a]).

W: [aɖ̪<sup>h</sup>a].

H: We shan't illustrate the remaining diacritics in this column until we come to the one at the bottom, which shows rhoticity. A rhotacized schwa is (*falling*) [ə̤].

- W: (*level*) [əə]. In the central column of diacritics, we start with the diacritic for breathy voicing. A breathy voiced bilabial plosive and open vowel are [b̥ɑ].
- H: [ɑb̥ɑ]. Creaky voicing, on the other hand, sounds like this: the same sequence creaky voiced is [b̥ɑ].
- W: [ɑb̥ɑ]. Linguolabial consonants are articulated with the tongue tip against the upper lip. Voiceless and voiced linguolabial plosives are [t̪ɑ d̪ɑ].
- H: [ɑt̪ɑ d̪ɑ]. Next we have a number of symbols to show secondary articulations. First, labialized segments: [tʷɑdʷɑ].
- W: [ɑtʷɑdʷɑ]. And palatalized: [tʲɑdʲɑ].
- H: [ɑtʲɑdʲɑ]. Velarized: [tˠɑdˠɑ].
- W: [ɑtˠɑdˠɑ]. And lastly pharyngealized: [tˤɑdˤɑ].
- H: [ɑtˤɑdˤɑ]. The tilde-through can be used to show either velarization or pharyngealization, as in dark L, [ɫɑ].
- W: [ɑɫɑ].
- H: In the third column of diacritics we start with symbols specifying with greater precision the place of articulation of sounds involving the tip or blade of the tongue as primary articulator. First, voiceless and voiced dental plosives, articulated against the teeth: [t̪ɑd̪ɑ].
- W: [ɑt̪ɑd̪ɑ]. Then, apical alveolar plosives, made with the tip of the tongue: [t̺ɑd̺ɑ].
- H: [ɑt̺ɑd̺ɑ]. And then laminal alveolar plosives, made with the blade of the tongue: [t̻ɑd̻ɑ].
- W: [ɑt̻ɑd̻ɑ]. The symbol for nasalization is a tilde over a symbol: a nasalized front close-mid unrounded vowel, (*falling*) [ẽ].
- H: (*level*) [ẽ]. The next three symbols show different varieties of plosive release. We hear nasal release in the sequence [d̪nɑ].
- W: [ɑd̪nɑ]. And we hear lateral release in the sequence [d̪lɑ].
- H: [ɑd̪lɑ]. There is no audible release of the plosive in the sequence [ɑd̪].
- W: The same is true of the first plosive in the sequence [ɑd̪bɑ].
- H: Towards the bottom of this grid you see the symbols to show raised and lowered varieties. A raised close-mid front unrounded vowel is (*falling*) [e̝].
- W: (*level*) [e̝]. And a lowered close-mid front unrounded vowel is (*falling*) [e̞].
- H: (*level*) [e̝]. Where a symbol might be interpreted as denoting either a fricative or an approximant, the raising symbol makes it clear we mean the fricative, as in the voiced apico-alveolar fricative, [ɹ̝ɑ].
- W: [ɑɹ̝ɑ]. And the lowering symbol makes it clear we mean the approximant, as in the voiced bilabial approximant, [β̞ɑ].
- H: [ɑβ̞ɑ]. The last two symbols at the bottom right of the chart are used to show advanced tongue root and retracted tongue root. Cardinal two, a close-mid front unrounded vowel, usually has a relatively advanced tongue root, giving a wide pharynx and tense quality: (*falling*) [e̝].
- W: (*level*) [e̝]. With a retracted tongue root we get a narrower pharynx and lax quality: (*falling*) [e̝] (= [ɪ]).

H: (*level*) [e]. And with that we come to the end of this recording.  
W: We hope you've found it useful.