

ENGLISH SPEECH SOUNDS

(1) Consonant sounds

In the production of English consonant sounds, the outward flow of breath is obstructed in various ways by the organs of speech. Sometimes it is interfered with completely; sometimes it is interfered with partially so that friction occurs at different points in the mouth cavity; sometimes it is forced over the sides of the tongue or made to pass out through the nose.

In practical phonetics, the most adequate description of a consonant sound, for the purpose of learning how to recognize and produce it, is a definition which tells the student how to make that sound.

The definition of a consonant sound is usually given in terms of the following:

- 1- The state of the vocal bands. When the vocal bands are made to vibrate in the process of producing a consonant sound, the sound is described as *voiced*. When, on the other hand, the vocal bands are not made to vibrate, the sound is described as *voiceless*.
- 2- The articulator which functions in the process of producing the sound.
- 3- The place of obstruction or point of articulation that is the place of complete or partial contact between the articulator and the point of articulation.
- 4- The state of the muscles used in the production of the sound. When the sound is made with a noticeable measure of tenseness in the muscles, it is described as *fortis*. When, on the other hand, no tenseness of muscles is present, the sound is described as *lenis*.
- 5- The *manner of articulation* or the state of the breath stream; whether it is completely or partially obstructed, and if partially obstructed, whether with or without local

friction. The manner of articulation also indicates whether the sound is released through the mouth or the nose. Hence English consonant sounds are usually classified into *Stops*, *Fricatives*, *Affricates*, *Nasals*, *Laterals*, and *Glides or Semi-Vowels*.

STOPS

[p] [t] [k]

[b] [d] [g]

[p] as in the words *pen* [p^hen], *supper* [sə'pə]-[sə'pər]*, *lip* [lip], and *hiccough* [hikəp].

(In the writing system, the sound [p] is represented by p or pp, except in the most unusual spelling of the word *hiccough*).

By effecting complete stoppage of the outward flow of the breath-stream through close contact of the two lips with each other, and by following the contact with sudden separation from each other resulting in the release of breath with an audible explosion, the lips articulate [p]. The vocal bands are not made to vibrate and the velum is raised high, closing off the nasal cavity.

This sound is made with tense muscles of the lips and the cheeks. It is *fortis*

Thus, [p] is defined as a *voiceless, bilabial, fortis stop*.

When [p] occurs at the beginning of a word, initially, as in *pen* and *pot*, it is pronounced with an audible puff of breath or aspiration which is heard after the explosion of [p] and before the beginning of the vowel which follows it. This pronunciation might be shown thus: *pen* [p^hen] and *pot* [p^hɒt].

Similarly, when the sound [p] comes inside a word, medially, and is followed by a stressed vowel sound as in *repél* and *repéat*, it is pronounced with a puff of breath or aspiration. Thus *repél* [rip^hél] and *repeat* [rip^hiyt].

* Pronunciations indicated by asterisks are typical of American English.

However, when the sound [p] comes after [s] as in *spin*, or at the end of a word as in *step*, it is not followed by aspiration. Thus *spin* [spin] and [step].

[b] as in the words *bed* [bed] *rabbit* [ræbɪt], and *rib* [rib].

In the writing system the sound [b] is represented by *b* and *bb*.

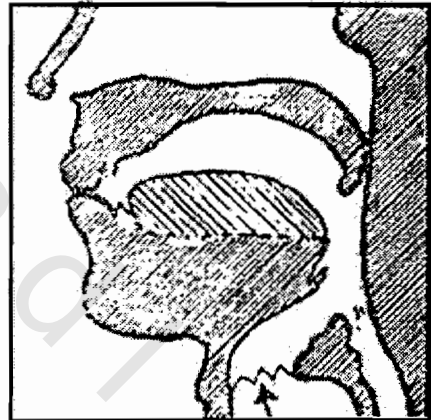
This sound is made by the same articulation for [p], except that the vocal bands are made to vibrate so that 'voice' is produced during its production, and that it is made with lax muscles of lips and cheeks. It is *lenis*.

Thus, [b] is defined as a *voiced, bilabial, lenis stop*.

[t] as in the words *ten* [tʰen], *written* [rɪtʰn], *rent* [rent], *Thomas* [tɒ'məs], and *asked* [á:skt]-[æskt]*.



[p]



[b]

Articulations of [p] and [b]

In the writing system the sound [t] is represented by *t*, *tt*, *th*, *ed* in the grammatical ending when it follows a voiceless consonant sound, except [t], since English has no gemination.

This sound is made by completely stopping the outward flow of the breath stream through the pressure of the tip of the tongue against the teethridge (alveolar ridge), and by following

* Pronunciations indicated by asterisks are typical of American English.

the stoppage with sudden release resulting in the escape of breath with an audible explosion.

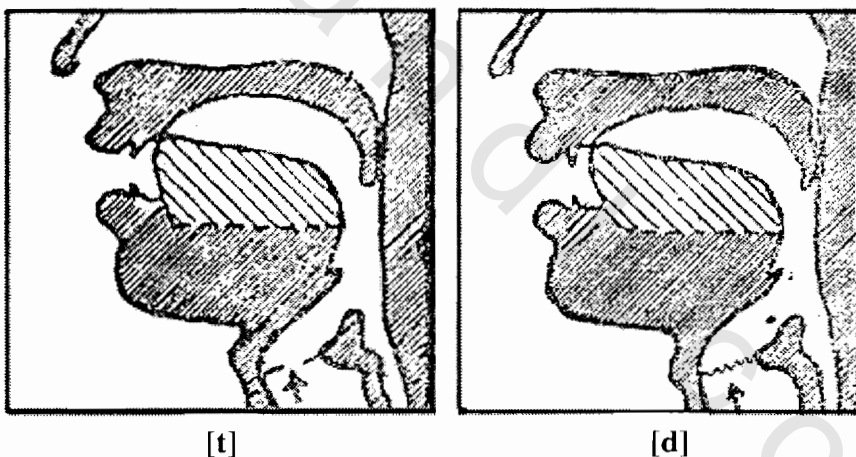
The vocal bands are not made to vibrate, and the velum is raised high, closing off the nasal cavity. This sound is *fortis*.

Thus, [t] is defined as a *voiceless, alveolar, fortis, stop*.

Like [p], the sound [t] is pronounced with a puff of breath or aspiration when it comes at the beginning of a word or of a stressed syllable, except after [s]. Thus *tin* [t^hin], *tea* [t^hi:y], *retain* [rit^héyn], but *street* [striyt], *stay* [stey], *bet* [bet] and *let* [let].

[d] as in the words *dig* [dig], *rider* [ráydə]-[ráydər]*, *ladder* [lædə]-[lædər]*, *lad* [læd], and *begged* [bégd].

In the writing system the sound [d] is represented by d, dd, and ed-in the grammatical ending when it follows a voiced consonant sound, except [d].



Articulations of [t] and [d]

This sound is made by the same articulation for [t], except that the vocal bands are made to vibrate, and that it is *lenis*.

Thus, [d] is defined as a *voiced, alveolar, lenis stop*.

[k] as in the words *keep* [k^hiyp], *like* [layk], *came* [k^heym], *come* [k^həm], *cut* [k^hət], *character* [k^hæriktə] - [k^hærektər]*, *quality* [kwɔ'liiti], [kwáliiti]*, and *six* [siks].

In the writing system the sound [k] is represented by k, c (before consonant letters and a, o, and u), by ck, ch, q, and x.

This sound is made by a complete stoppage of the outward flow of the breath stream through the pressure of the back of the tongue against the velum, and by sudden separation from the velum resulting in the release of breath with an audible explosion. Here the vocal bands are not made to vibrate, and the velum is raised high, closing off the nasal cavity. This sound is *fortis*.

Thus, [k] is defined as a *voiceless, velar, fortis stop*.

Like [p] and [t], the sound [k] is pronounced with a puff of breath or aspiration when it comes at the beginning of a word or of a stressed syllable, except after [s].

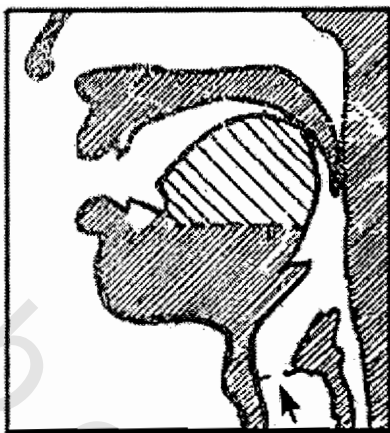
Thus, *cat* [k^hæt], *key* [k^hiy], *recall* [rik^hɔ':l], *recount* [rik^háwnt], but *skin* [skin], *sky* [skay], *lick* [lik], and *look* [luk].

[g] as in the words *get* [get], *begging* [bégiŋ], *leg* [leg] *ghost* [gowst] *guést* [gest], and *finger* [fingə]-[fingər]*.

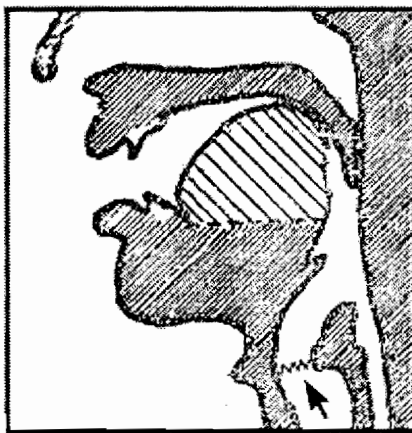
In the writing system, the sound [g] is represented by g, gg, gh, and gu.

This sound is made by the same articulation for [k] except that the vocal bands are made to vibrate, and that the muscles involved in its production are held lax. It is *lenis*.

Thus, [g] is defined as a *voiced, velar, lenis stop*.



[k]



[g]

Articulations of [k] and [g]

CONTINUANTS:

Flat Fricatives:

[f] [θ]

[v] [ð]

[f] as in the words *fill* [fil], *offer* [ɔ'fə]-[ɔ'fər]*, *stiff* [stif], *often* [ɔ'fən], *photograph* [fówtəgrɑ:f]-[fówtəgræf]*, and *laugh* [la:f]-[læf]*.

In the writing system, the sound [f] is represented by f, ff, ft, ph, and gh.

This sound is made by pressing the lower lip lightly against the upper front teeth in order to obstruct the outward flow of the breath stream only partially, with a resulting local friction. The tongue lies flat in the mouth cavity, the vocal bands are not made to vibrate, and the velum is raised high, closing off the nasal cavity.

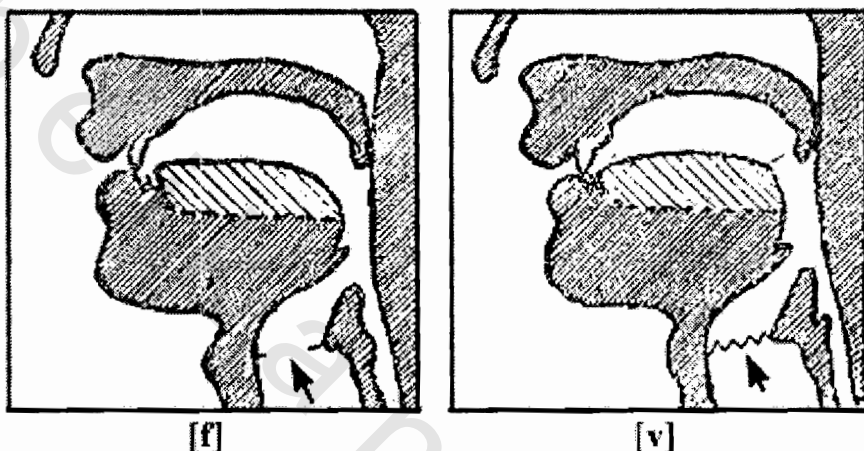
Like the voiceless stops, the sound [f] is made with some tenseness of the muscles; it is *fortis*.

Thus [f] is defined as a *voiceless*, *labiodental* (lip and teeth relation) *flat*, *fricative*.

[v] as in the words *valley* [væli], *lovely* [lə'vli], *love* [ləv], and of [ə'v].

In the writing system, the sound [v] is represented by v, and by f.

This sound is made by the same articulation for [f], except that the vocal bands are made to vibrate, and that it is *lenis*.



Articulations of [f] and [v]

Thus, [v] is defined as a *voiced, labiodental, flat, lenis fricative*.

[θ] as in the words *thin* [θin], *authentic* [ɔ:θéntik], and *breath* [breθ].

In the writing system, the sound [θ] is always represented by th.

This sound is made by pointing the tip of the tongue in between the upper and lower front teeth so as to obstruct the outward flow of the breath stream only partially and produce an audible local friction. The tongue lies flat in the mouth, the vocal bands are not made to vibrate, and the velum is raised high, closing off the nasal cavity. This sound is *fortis*.

Thus, [θ] is defined as a *voiceless, interdental, flat, fortis fricative*.

[ð] as in the words *this* [ðis], *brother* [brə'ðə], and *breathe* [briyð].

In the writing system, the sound [ð] is represented by *th*. We must note that the final *-e*, in such words as *breathe* [briyð] and *loathe* [lowð], though not representing a sound, indicates that the *th* combination represents a voiced sound.

This sound is made by the same articulation for [θ] except that the vocal bands are made to vibrate, and that the muscles involved are held lax. It is *lenis*.

Thus, [ð] is defined as a *voiced, interdental, flat, lenis fricative*.



[θ]



[ð]

Articulations of [θ] and [ð]

Glottal Fricative:

[h] as in the words *hit* [hit], *hat* [hæt], *hot* [hɒt], and *whom* [huwm].

This sound is produced by aspiration before a vowel sound. During the pronunciation of [h], the tongue and lips are in the position for the pronunciation of the vowel sound

which follows it. For example, during the pronunciation of [h] in the word *hat* [hæt] the tongue is in low-front position and the lips are unrounded in anticipation for the pronunciation of the vowel sound [æ].

The aspiration characteristic of [h] is made by closing the vocal bands in such a way as to cause some 'glottic' friction. The sound [h] is originally voiceless, voicing being that of the vowel sound which follows it.

Thus, [h] is defined as a *voiceless, glottal, fricative*.

Grooved Fricatives:

[s]	[š]
[z]	[ž]

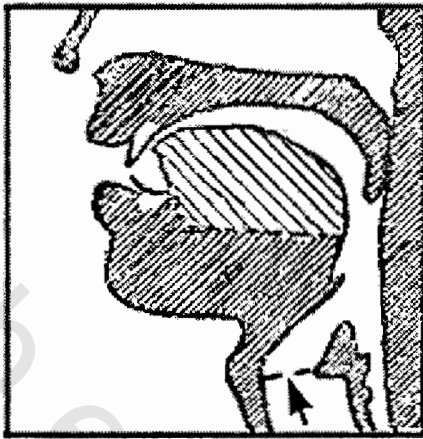
[s] as in the words *sea* [siy], *lesson* [lésn], *cent* [sent], *cinema* [sínimə], *cyder* [sáydə], *scent* [sent], *psychology* [saykə'lədži], and *fix* [fiks].

In the writing system the sound [s] is represented by s, ss, c (before e, i, and y), sc, ps, and x.

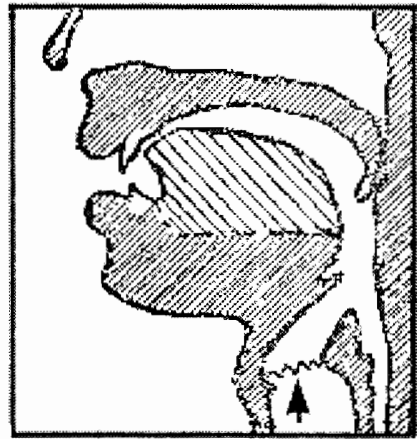
This sound is made by raising the tip and front of the tongue towards the teethridge (alveolar ridge) so as to direct a forced and compressed breath stream against the alveolar ridge, and thence down against the cutting edges of the lower front teeth resulting in friction. The tip and front of the tongue are grooved (with the sides raised and the center assuming the form of a channel), the vocal bands are not made to vibrate, and the velum is raised high, closing off the nasal cavity. This sound is *fortis*.

Thus, [s] is defined as a *voiceless, alveolar, grooved, fortis fricative*.

[z] as in the words *zoo* [zuw], *buzz* [bəz], and *has* [hæz]. In the writing system the sound [z] is represented by z, zz, and s.



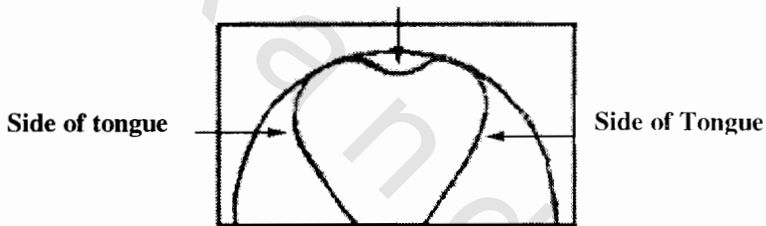
[s]



[z]

Articulations of [s] and [z]

Tip and front of tongue



Grooved tip and front of tongue

This sound is made by the same articulation for [s] except that the vocal bands are made to vibrate, and that it is *lenis*.

Thus [z] is defined as a *voiced, alveolar, grooved, lenis fricative*.

[š] as in the words *she* [šiy]. [ši], *sure* [šua]. [šur]*, *mission* [mišən], *initial* [inišəl], *suspicion* [səspišən], and *ocean* [ówsən].

In the writing system the sound [š] is represented by sh, s (before u), ss, ti, ci, si, and ce.

This sound is made by the front and middle of the tongue pressing widely against the hard palate and thus interfering with the outward flow of the breath stream so as to produce an

audible friction. Here the front and middle of the tongue are grooved, the vocal bands are not made to vibrate, and the velum is raised high, closing off the nasal cavity. This sound is *fortis*.

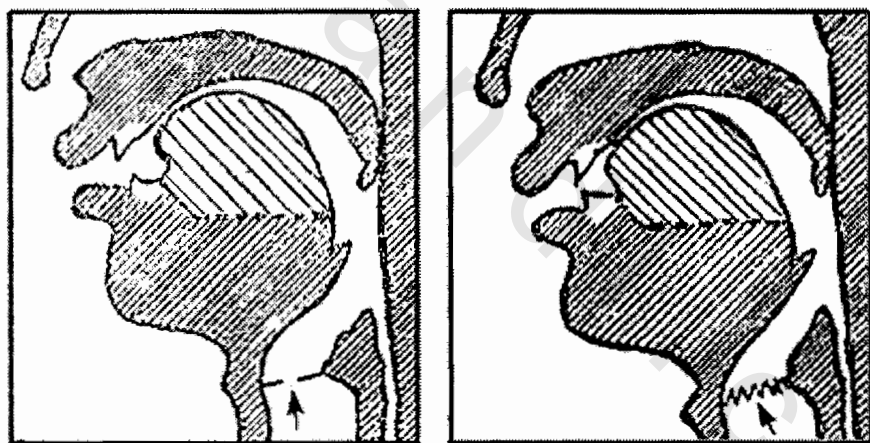
Thus [š] is defined as a *voiceless, palatal, grooved, fortis fricative*.

[ž] as in the words *azure* [ǣžə(r)], *pleasure* [pléžə(r)], *vision* [vížən], *luxurious* [lǣgžúriəs], and *rouge* [rúwž]¹.

In the writing system the sound [ž] is represented by z, s (before u), si, x, and ge.

This sound is made by the same articulation for [š] except that the vocal bands are made to vibrate, and that it is *lenis*.

Thus [ž] is defined as a *voiced, palatal, grooved, lenis fricative*.



[š]

[ž]

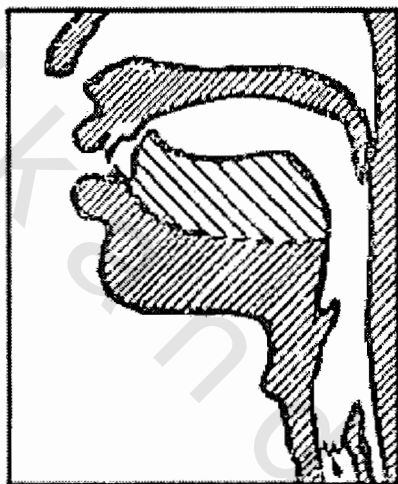
Articulations of [š] and [ž]

¹(r) is pronounced when followed by a word beginning with a vowel sound.

Lateral fricative:

[r] as in the words *read* [riyd], *right* [rayt], and *arouse* [əráwz].

This sound is made by the tip of the tongue against the back part of the teethridge, the main body of the tongue being kept low and the front being held concave to the palate, and the whole tongue being laterally contracted. The velum is raised high, closing off the nasal cavity, and the vocal bands are made to vibrate.



Articulation of [r]

[r] is defined as a *voiced, alveo-palatal, lateral fricative*.

Affricates:

[tʃ]

[dʒ]

Each of these two sounds consists of two elements; the first is a stop and the second a fricative.

[tʃ] as in the words *change* [tʃéyndʒ], *teach* [tiytʃ], and *future* [fyúwtʃə(r)].

The first element of this sound is made by the same articulation for [t], the second by the same articulation for [ʃ].

Here the vocal bands are not made to vibrate and the velum is raised high, closing off the nasal cavity.

Thus, [tʃ] is defined as a *voiceless, alveo-palatal affricate*.
[dʒ] as in the words *judge* [dʒə'dʒ], *George* [dʒɔ':dʒ] [dʒɔ'rdʒ]¹, and *geology* [dʒiɒlədʒi]-[dʒiələdʒi]*.

The first element of this sound is made by the same articulation for [d], the second by the same articulation for [ʒ]. Here the vocal bands are made to vibrate and the velum is raised high, closing off the nasal cavity.

Thus, [dʒ] is defined as a *voiced, alveo-palatal affricate*.

Nasals:

[m] [n] [ŋ]

[m] as in the words *man* [mæn], *grammar* [græmə(r)], *comb* [kɒm], and *calm* [kɑ:m].

In writing, the sound [m] is represented by m, mm, mb, and lm.

This sound is made by pressing the lips lightly together so as to stop the breath stream from escaping out of the mouth, and by lowering the velum so as to allow breath to go out through the nose. Here the vocal bands are made to vibrate.

Thus, [m] is defined as a *voiced, bilabial nasal*.

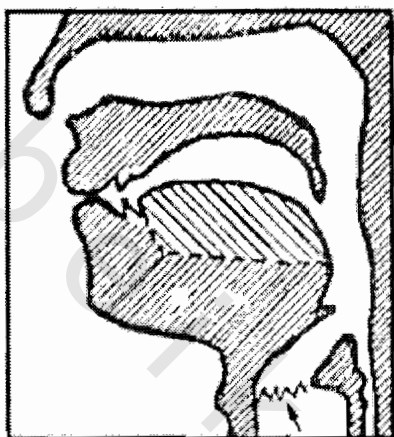
[n] as in the words *net* [net] *dinner* [dɪnə(r)], *den* [den], *know* [nəʊ], *pneumonia* [nyumɔ'niə], *sign* [saɪn] and *gnaw* [nɔ]. [nə]*.

In writing, the sound [n] is represented by n, nn, kn, pn, and gn.

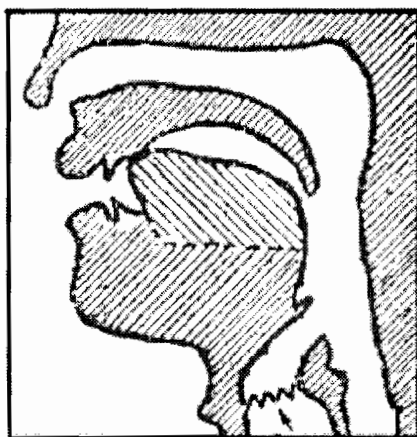
This sound is made by pressing the front of the tongue against the teeth-ridge, while dropping the velum to its neutral

¹The voiced alveo-palatal fricative [r] is typical of British English. American English has the so-called retroflex [ɹ].

position opening the back part of the nasal cavity and allowing the breath stream to pass out through the nose. Here the vocal bands are made to vibrate.



[m]



[n]

Articulations of [m] and [n]

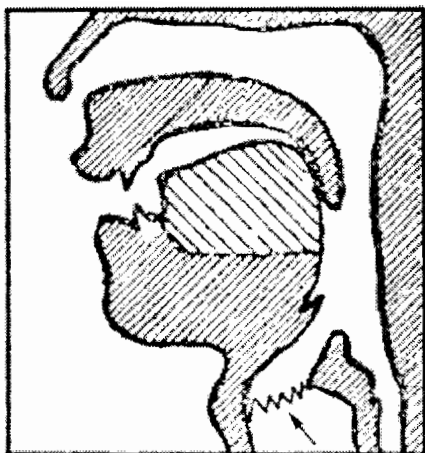
Thus, [n] is defined as voiced, alveolar nasal

[ŋ] as in the words *thank* [θæŋk], *puncture* [pʌŋktsə (r)] and *thing* [θɪŋ].

In writing, the sound [ŋ] is represented by n before k or c, and by ng.

This sound is made by lowering and pressing the velum against the back part of the tongue so as to block the oral passage and permit the passage of the breath stream through the nose. Here the vocal bands are made to vibrate.

Thus, [ŋ] is defined as a *voiced, velar nasal*.



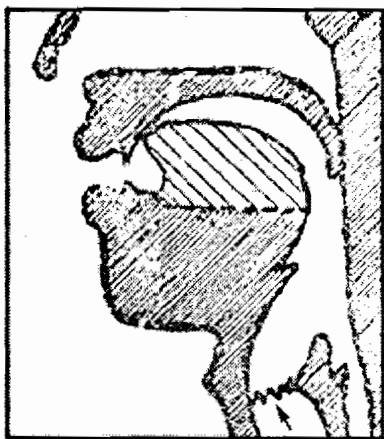
[ŋ]

Articulation of [ŋ]

Lateral [l]

[l] as in the words *love* [læv], *heal* [hiyl], *bill*, [bil] *pillow* [pīlow], and *bold* [bowld].

In writing, the sound [l] is represented by *l* and *ll*.



[l]

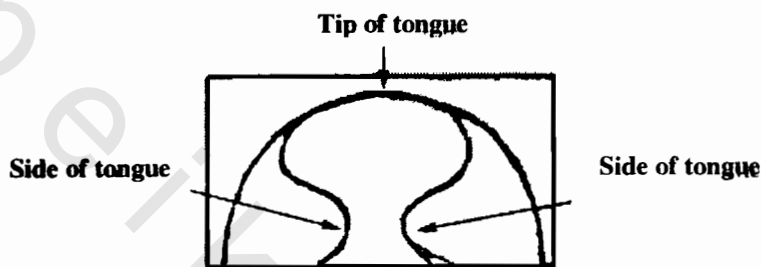


[t]

Articulation of [l] and [t]

This sound is made by the front of the tongue pressing against the center of the teethridge without contact with the sides (lateral position), so that the breath stream escapes freely on the sides of the tongue. Here the vocal bands are made to vibrate and the velum is raised high, closing off the nasal cavity.

Thus, [ɫ] is defined as a voiced, alveolar lateral.



Tongue in the lateral position

Usually during the pronunciation of [ɫ] before vowels and [y] as in, the words *live* [liv], *pillow* [pilow], and *Lilian* [lilyən], the front part of the tongue presses against the teethridge without contact with the sides, and the middle of the tongue is kept high in the mouth cavity. This [ɫ] is called 'clear' [ɫ] in phonetic description.

On the other hand, during the pronunciation of final [ɫ] as in the words *hill* [hil] and *heal* [hiyɫ], and when immediately followed by a consonant sound other than [y], as in *build* [bild] and *belt* [belt], the front of the tongue presses against the teethridge without contact with the sides, but the middle of the tongue is kept low in the mouth cavity. The sound produced in such a manner is called 'dark' [ɫ] in phonetic description. It is similar to the [ɫ] in the Arabic word الله

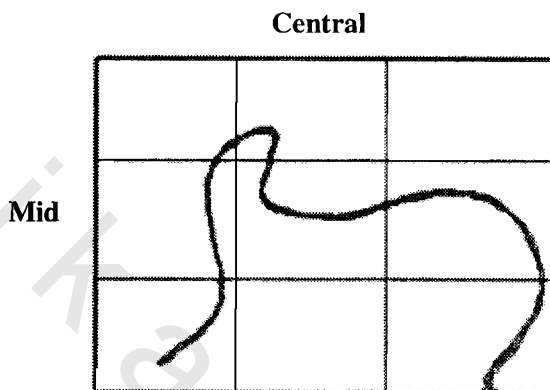
Glides (semivowels)

[r]

[y]

[w]

[r] In American English, [r] is made with the tongue in mid-central position, but with the tip slightly curled upwards, even backwards.



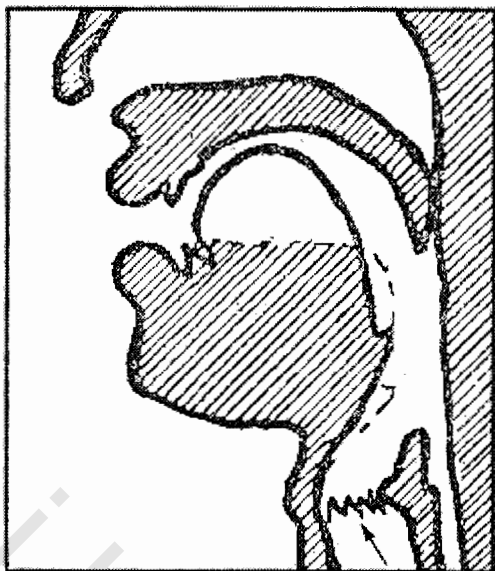
Articulation of retroflex [r]

This sound is described as *inverted or retroflex* [r]. Since its characteristic quality continues while the tongue is in motion to the position of a following vowel sound, or away from that of a preceding vowel sound, the retroflex [r] is classified as a voiced glide or semivowel.

Thus, [r] is defined as a voiced, alveolar glide.

[y] as in the words *yes* [yes], *vineyard* [vinyəd]-[vinyərd]*, *onion* [ə'nyən], *familiar* [fə'milyə]-[fə'milyər]*; and *few* [fyúw].

In writing, the sound [y] is usually represented by *y* (before a vowel sound) but sometimes by *i*. It is often represented only by the latter *u*, which then symbolizes both [y] and [uw] vowel sounds, as in *mute* [myuwt]. When the glide [y] follows a vowel sound, it is often not represented in writing at all, as in *metre* [míytə(r)].



Change in tongue position for [ya]

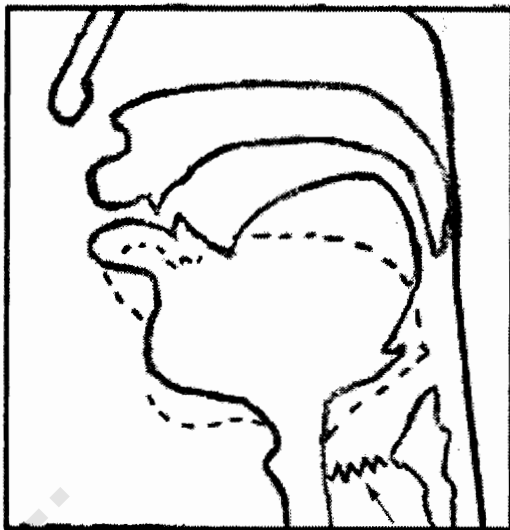
At the beginning of the [y] sound, the tongue is in a high front position similar to the tongue position for the vowel [i]. The lips are spread, and the soft palate is in its raised position, and the vocal bands are made to vibrate. Then the tongue glides smoothly into the position of the vowel which follows [y], and the voiced sound is continuous.

Before a vowel, [y] is a voiced tongue glide from the high-front position to the position of the following vowel. After a vowel, [y] is just the reverse, an upward glide in the direction of the high-front position.

Thus, [y] is defined as a *voiced, palatal glide*.

[w] as in the words *wet* [wet], *quite* [kwayt], *language* [læŋgwidʒ], *choir* [kwáyə(r)].

In writing, the sound [w] is usually indicated by w, and often by u, and o. Sometimes the glide [w] after a vowel sound does not appear in writing at all, as in *going* [gówiŋ] and *pool* [p^huwl], and in the unusual spelling of *once* [wəns].



Change in tongue position for [w]

At the beginning of the [w] sound, the tongue is in high-back position, similar to the tongue position for the vowel [u]. The lips are slightly rounded, the soft palate is in its raised position, and the vocal bands are made to vibrate. Then the tongue **glides** smoothly into the position of the vowel which follows [w], and the voiced sound is continuous.

Before a vowel, [w] is a voiced glide from the high-back position to the position of the following vowel. After a vowel, [w] is just the reverse, an upward tongue glide in the direction of the high-back position.

Thus, [w] is defined as a *voiced, velar glide*.

Because of the rounding of the lips, characteristic of the starting point of the pronunciation of [w], this sound is sometimes defined as a *voiced labio-velar glide*.

Consonant Sounds Chart

Manner of Articulation	Point of Articulation							
	Bilabial	Labiodental	Interdental	Alveolar	Alveopalatal	Palatal	Velar	Glottal
STOPS vl.1 vd.2	p b			t d			k g	
Continuants Fricatives Flat vl.1 vd.		f v	θ ð					h
Grooved vl.1 vd.				s z		ʃ ʒ		
Lateral vl.1 vd.					r			
Affricates vl.1 vd.					tʃ tʒ			
Frictionless Nasal vd. Lateral vd.	m			n l			ŋ	
Glides vd.				r³		y	w	

vl.1 = voiceless, vd.2 = voiced, r³ = retroflex r² in American English

Exercises

The Stops

- 1- Mention the difference between the first consonants in the following pairs of words.

{ try	{ ten	{ pit	{ cane
{ dry	{ den	{ bit	{ gain

- 2- In what are the first consonants in these pairs of words similar?

{ two	{ came	{ pin	{ cake
{ do	{ game	{ pen	{ gate

- 3- Define the following sounds.

k t d

- 4- Describe how these sounds are produced.

g p b

The Fricatives

- 1- Mention the differences between the first consonants in the pairs of these words.

{ fine	{ thin	{ sew	{ change	{ sheep
{ vine	{ then	{ zoo	{ judge	{ cheap

- 2- How are the first consonants in these pairs of words similar.

{ vein	{ these	{ safe	{ chief
{ veal	{ those	{ shave	{ cheer

- 3- Define the following sounds.

s z v dž š

4- Give a full description of these sounds.

t̃s

ž

θ

ð

The Nasals

1- How are the first consonant in each pair of words different.

{ main
{ name

{ noon
{ moon

{ men
{ net

2- Why are the final consonant in each pair of words similar.

{ wing
{ ring

{ win
{ thin

{ lame
{ name

{ sing
{ thing

3- Define the following sounds.

m

n

4- Give a full description of the sound /ŋ/.

Other Consonants

1- Explain the differences between the first consonant in each pair of words.

{ lead
{ read

{ lane
{ main

{ load
{ mode

{ limb
{ them

2- What is the difference between /r/ in British and American English?

3- Why is the /r/ in Arabic different?

4- Give a full description of the /r/ in British English?

5- What are the two English glides?

Arabic Consonants

1- How is the Arabic /q/ produced?

- 2- What is the difference between /ʔ/ in Arabic and English?
- 3- Why is Arabic /j/ = dž defined as an affricate?
- 4- What is the difference between the first consonant in each pair of these Arabic words?

{ /xašiya/	{ /xalá/	{ /halá/	{ /hāma/
{ /ǧašiya/	{ /ǧalá/	{ /galá/	{ /háma/

- 5- Give a detailed description of the /ʔ/ sound?