

Typology of consonants

PREPARED
BY GROUP 109

VOWELS VERSUS CONSONANTS

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Vowels are basic speech sounds articulated with an open vocal tract.

Consonants are basic speech sounds articulated with a partially or completely closed vocal tract.

There are 5 vowel letters in the alphabet.

There are 21 consonant letters in the alphabet.

There are about 20 vowel sounds in English.

There are about 24 consonant sounds in English.

Vowels are the nucleus of a syllable.

Consonants have to be linked with a vowel to form a syllable.

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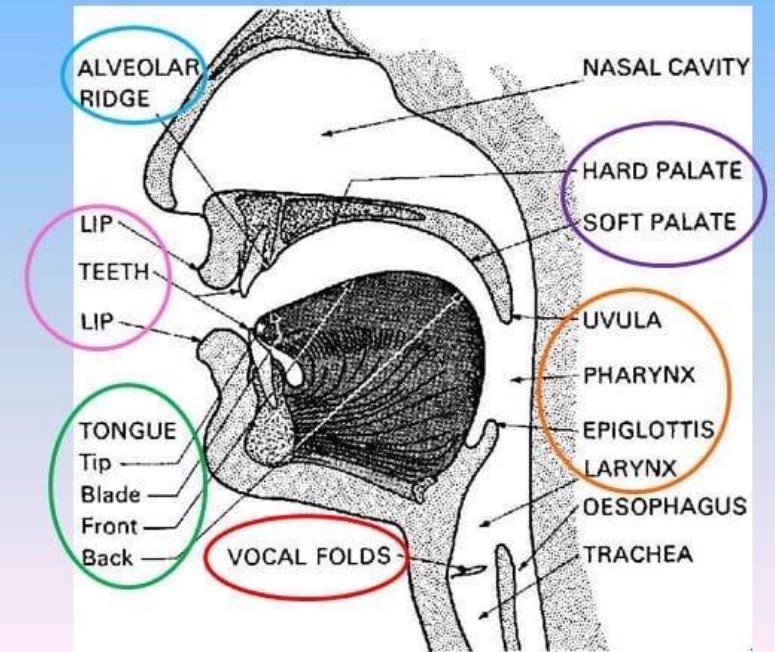
Organs of speech

Organs of speech are: nasal cavity, lips, teeth, alveolar ridge, larynx, palate (soft and hard), uvula, tongue (tip, blade, front, back), epiglottis, pharynx, vocal cords, and trachea.

THE MAIN SPEECH ORGANS

1. Lips
2. Teeth
3. Alveolar ridge
4. Tongue
5. Larynx
6. Vocal cords
7. Epiglottis
8. Pharynx
9. Soft palate

10. Uvula
11. Hard palate



Plan of the presentation

1. Definition of a consonant
2. Organs of speech and their work
3. Voiced and voiceless consonants
4. Place of articulation
5. Manner of articulation
6. Laryngeals
7. Assimilation
8. Linking and Intrusion

Definition of a consonant

In **articulatory phonetics**, a consonant is a speech sound that is articulated with complete or partial closure of the vocal tract.

Consonants may come singly (by themselves) or in clusters (two or more together), but must be connected to a vowel to form a syllable.

The word consonant is also used to refer to a letter of an alphabet that denotes a consonant sound.

There are 21 consonant letters in English, for 24 consonant sounds in most English accents. Because of the history of the English language, there is no neat one-to-one relationship between letter and sound. th and ch each stand for a single sound, and x in fox stands for two sounds (ks).

All these letters are consonants:

B, C, D, F, G, H, J, K, L, M, N, P, Q, R, S, T, V, W, X, (sometimes Y), and Z.

"Y" is often used as a consonant, but it is sometimes used as a vowel. For example, in the word yellow, y is a consonant. But in the word happy, y is a vowel.

How does it work?

The air stream released by the lungs goes through the wind pipe and comes to the larynx, which contains the vocal cords.

The vocal cords are two elastic folds which may be kept apart or brought together. The opening between them is called the glottis. If the tense vocal cords are brought together, the air stream forcing an opening makes them vibrate and we hear some voice.

On coming out of the larynx the air stream passes through the pharynx.

The pharyngeal cavity extends from the top of the larynx to the soft palate, which directs the air stream either to the mouth or nasal cavities, which function as the principal resonators.

The soft palate is the furthest part of the palate from the teeth. Most of the palate is hard. This hard and fixed part of the palate is divided into two sections: the hard palate (the highest part of the palate) and the teeth ridge or alveolar ridge. The most important organ of speech is the tongue. Phoneticians divide the tongue into four sections, the part which lies opposite the soft palate is called the back of the tongue; the part facing the hard palate is called the front; the one lying under the teeth ridge is known as the blade and its extremity the tip.

The lips can take up various positions as well. They can be brought firmly together or kept apart neutral, rounded, or protruded forward.

Active organs

Active organs of speech are movable and taking an active part in a sound formation:

- Vocal cords which produce voice
- The tongue which is the most flexible movable organ
- The lips affective very considerably the shape of the mouth cavity
- The soft palate with the uvula directing the stream of air either to the mouth or to the nasal cavity
- The back wall of the faring contracted for some sounds
- The lower jaw which movement controls the gap between the teeth and also the disposition of the lips
- The lungs air for sounds

Passive organs of speech

1. The teeth
2. The teeth ridge or alveolar ridge
3. The hard palate
4. The walls of the resonators

Voiced and
voiceless
consonants

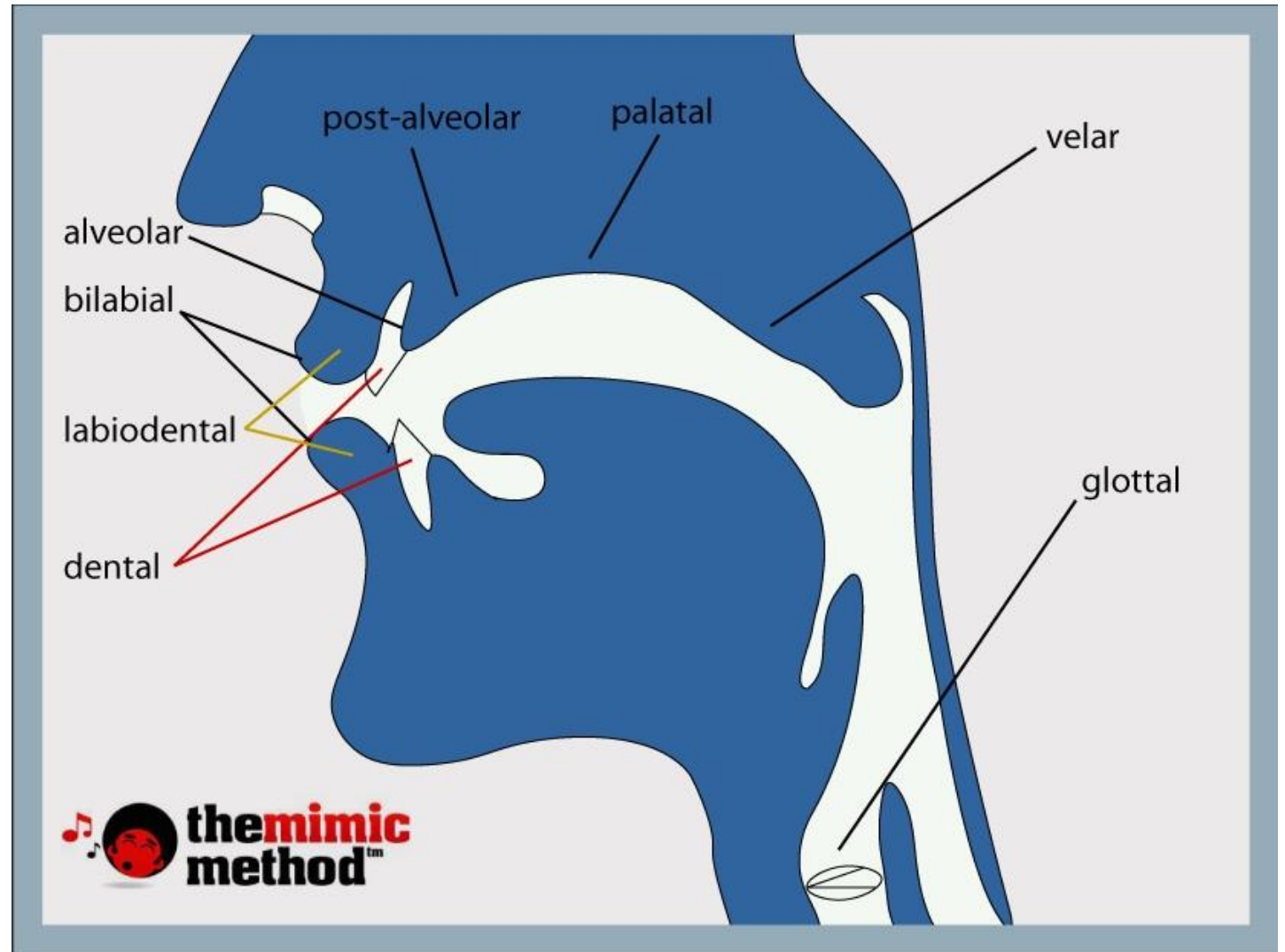
An easy way to
determine
whether a
consonant is
voiced or not is
to place a finger
on your throat.



**GIVE VOICE
TO THE
VOICELESS**



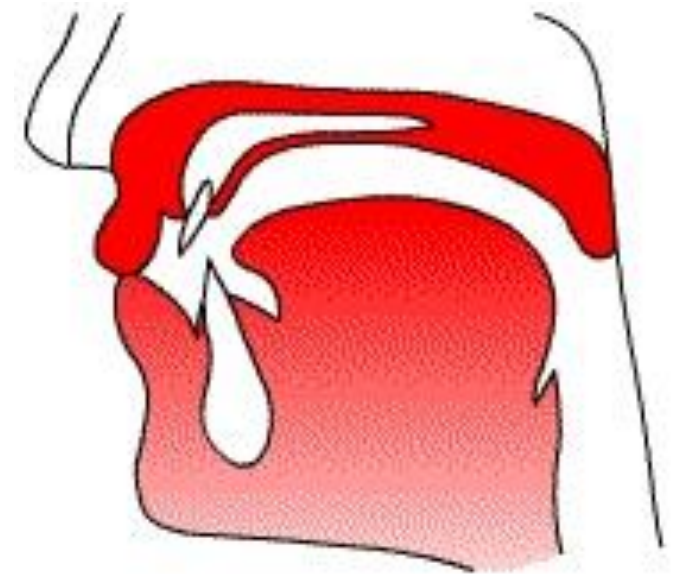
Place of articulation



Bilabial

In a bilabial consonant, the lower and upper lips approach or touch each other.

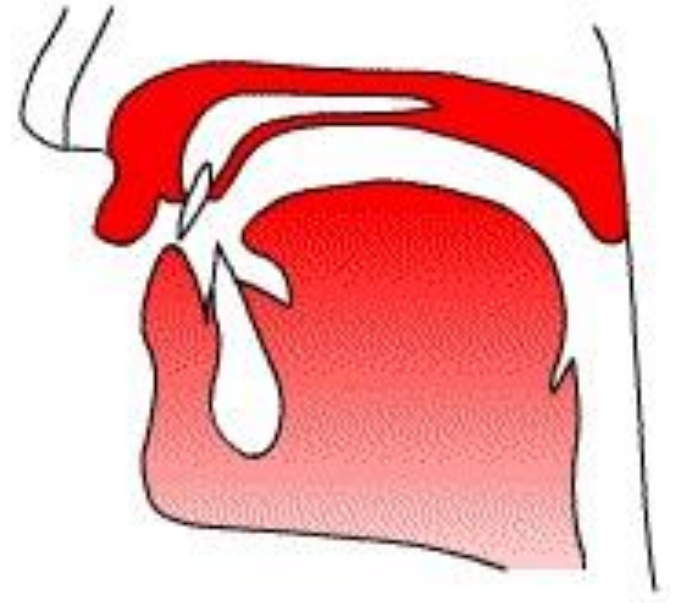
/p/, /b/, /m/, /w/



Labiodental

In a labiodental consonant, the lower lip approaches or touches the upper teeth.

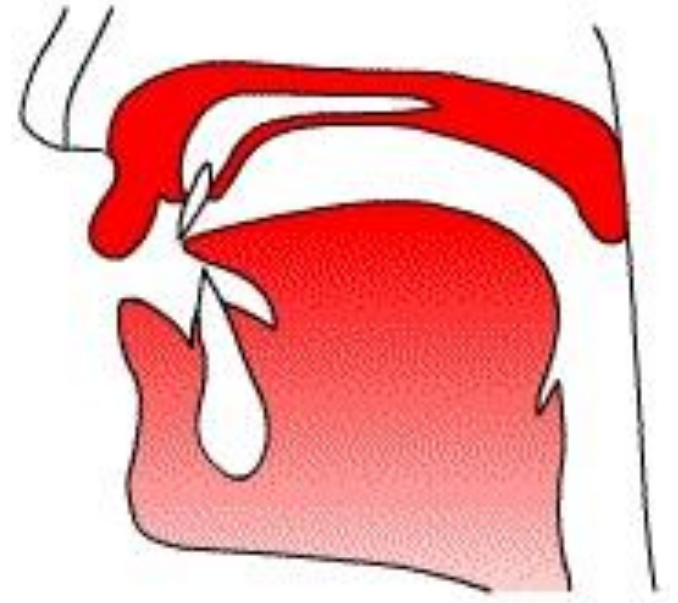
/f/, /v/



Dental

In a dental consonant, the tip or blade of the tongue approaches or touches the upper teeth.

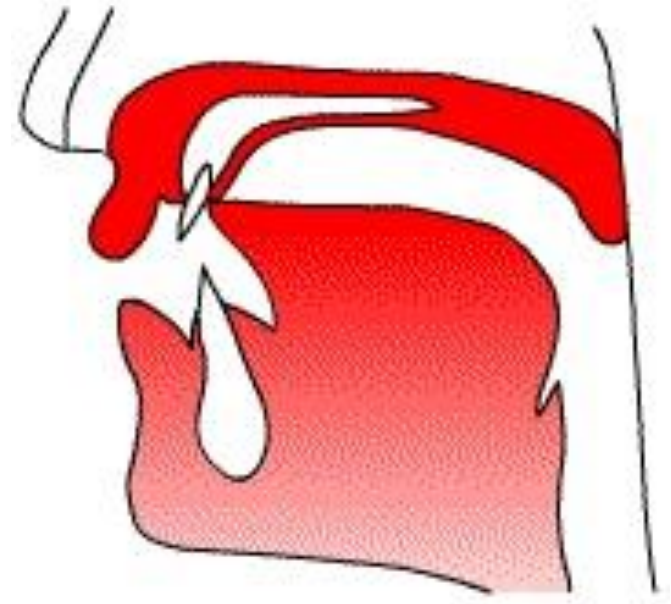
/θ/, /ð/



Alveolar

In an alveolar consonant, the tongue tip (or less often the tongue blade) approaches or touches the alveolar ridge, the ridge immediately behind the upper teeth.

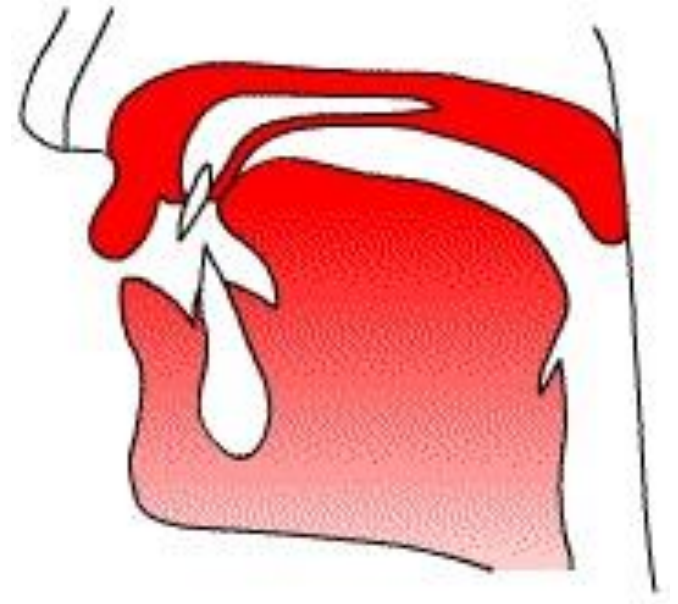
/t/, /d/, /s/, /z/, /n/, /l/,



Postalveolar

In a postalveolar consonant, the constriction is made immediately behind the alveolar ridge. The constriction can be made with either the tip or the blade of the tongue.

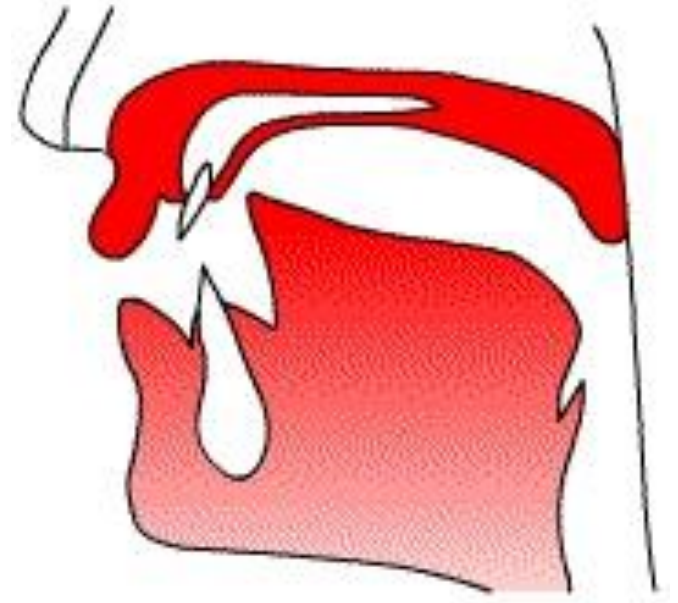
/ʒ/, /ʃ/, /dʒ/, /tʃ/



Retroflex

In a retroflex consonant, the tongue tip is curled backward in the mouth.

/r/



Palatal

In a palatal consonant, the body of the tongue approaches or touches the hard palate.

/j/

Glottal

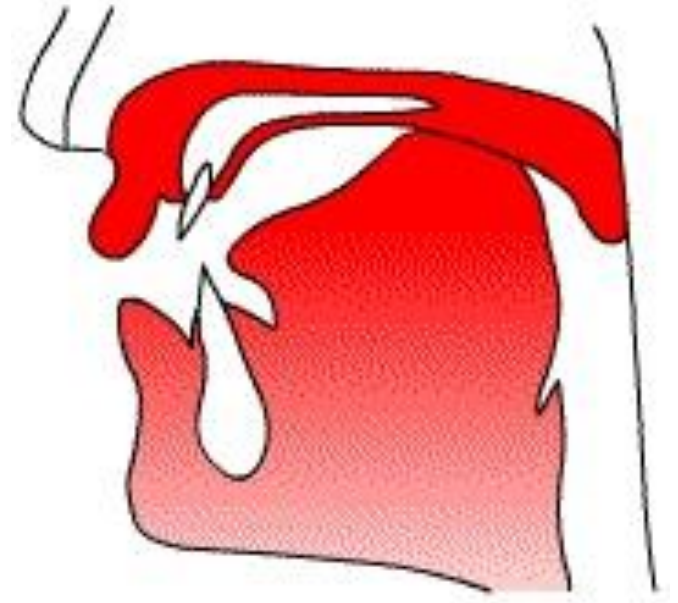
The glottis is the opening between the vocal folds.

/h/

Velar

In a velar consonant, the body of the tongue approaches or touches the soft palate, or velum.

/k/, /g/, /ŋ/



bilabial		labiodental		dental		alveolar		postalveolar		retroflex	palatal		velar		glottal
p	b					t	d						k	g	
	m						n							ŋ	
		f	v	θ	ð	s	z	ʃ	ʒ						h
	(w)									r		j		(w)	
							l								
								tʃ	dʒ						

ENGLISH CONSONANTS

Manner of articulation

The manner of articulation of consonants is determined by the type of obstruction. The obstructions may be complete and incomplete. When the obstruction is complete the organs of speech are in contact and the air stream meets a closure in the mouth or nasal cavities as in the production of the English [p, b, t, d, k, g, tʃ, dʒ, m, n, ŋ].

In case of an incomplete obstruction the active organ of speech moves towards the point of articulation and the air stream goes through the narrowing between them as in the production of the English [f, v, s, z, θ, ð, ʃ, ʒ, h, w, ɹ, j].

Noise versus Sonorants

According to the manner of articulation English consonants may be of three groups:

1. Occlusive (plosives)
2. Constrictive (fricatives)
3. Occlusive-constrictive (affricates)

	Noise consonants			Sonorants		
	<i>Occlusive stops (plosives)</i>	<i>Constrictive fricatives</i>	<i>Occlusive-constrictive (affricates)</i>	<i>Occlusive</i>	<i>Constrictive</i>	<i>Occlusive-constrictive (affricates) or rolled</i>
Engl	p, b; t, d; k, g	f, v; θ, ð; s, z; ʃ, ʒ; h	tʃ, dʒ	m, n, ŋ	w, l, r, j	---

Another one Typology of English consonants

Forelingual consonants

- Interdental θ ð
- Dental
- Alveolar **t d s z n l**
- Post-alveolar **r**
- Palato-alveolar tʃ dʒ ʒ ʃ

Laryngeals

Laryngeals are consonants, articulated in larynx:

1. Glottal (laryngeal explosion and aspiration). Widespread
2. Epiglottal/emphatic (spirants and occluaions). Semitic and Caucasian languages

Laryngeal hypothesis

*h1 sounds: a glottal stop [ʔ] and an h sound [h] as in English hat ə

*h2 "a-colouring" laryngeal k+h///// ɕ

*h3 "o-coloring" effect k+h+wa///// ɣ^w

Assimilation

Assimilation is a change of a sound in speech so that it becomes identical with or similar to a neighboring sound.

It is a common type of phonological process across languages.

Assimilation can occur either within a word or between words.

It occurs in normal speech, and it becomes more common in more rapid speech.

In some cases, assimilation causes sound spoken to differ from the normal "correct" pronunciation of each sound in isolation.

In other cases, the changed sound is considered canonical for that word or phrase.

Assimilation

For an English example, "handbag" (/ˈhændˌbæg/) is often pronounced /ˈhæmbæg/ in rapid speech. This is because the [m] and [b] sounds are both bilabial consonants and their places of articulation are similar; whereas the sequence [d]-[b] has different places but similar manner of articulation (voiced stop) and is sometimes elided, causing the canonical [n] phoneme to sometimes assimilate to [m] before the [b]. The pronunciations /ˈhæn.bæg/ or /ˈhænd.bæg/ are, however, common in normal speech. By contrast, the word "cupboard", historically a compound of "cup" /kʌp/ and "board" /bɔːrd/, is always pronounced /ˈkʌbəd/ and never */ˈkʌpbɔːrd/, even in slow, highly articulated speech.

Assimilation

Assimilation can be:

1. Synchronic — an active process in a language at a given point in time
2. Diachronic — a historical sound change

Examples of assimilation

1. /t/ changes to /p/ before /m/, /b/ or /p/ (secret police)
2. /d/ changes to /b/ before /m/, /b/ or /p/ (blood pressure)
3. /n/ changes to /m/ before /m/, /b/ or /p/ (garden party)
4. /t/ changes to /k/ before /k/ or /g/ (smart card)
5. /d/ changes to /g/ before /k/ or /g/ (good cook)
6. /n/ changes to /ŋ/ before /k/ or /g/ (common ground)
7. /s/ changes to /ʃ/ before /ʃ/ or /j/ (dress shop)
8. /z/ changes to /ʒ/ before /ʃ/ or /j/ (cheese shop)
9. /θ/ changes to /s/ before /s/ (fifth set)

Linking and Intrusion

There are many different ways to link sounds together. The main forms are:

1. Consonant to Vowel
2. Vowel to Vowel
3. Consonant to Consonant
4. Intrusion or Adding Sounds
5. Elision or Omitting Sounds
6. Geminates or Double Sounds
7. Blending Sounds

Sanskrit: संधि
saṁdhí [send^hi],
("joining")

Sandhi (/ˈsʌndi, ˈsæn-, ˈsɑːn-/;

Sanskrit: संधि saṁdhí [send^hi], ("joining")
is a cover term for a wide variety of **sound changes** that occur at morpheme or word boundaries. Examples include fusion of sounds across word boundaries and the alteration of one sound depending on nearby sounds or the grammatical function of the adjacent words.

Sandhi belongs to **morphophonology**.

Sanskrit: संधि
saṃdhí [sendʰi],
("joining")

Sandhi (/ˈsʌndi, ˈsæn-, ˈsɑːn-/;

Sandhi can be either

internal, at morpheme boundaries within words,
such as syn- + pathy: sympathy,

Or **external**, at word boundaries, such as the
pronunciation "te**m** books" for ten books in some
dialects of English. The linking /r/ process of some
dialects of English ("I saw-**r**-a film" in British English)
is a kind of external sandhi, as are **French liaison**
(pronunciation of usually silent final consonants of
words before words beginning with vowels) and
Italian **raddoppiamento fonosintattico** (lengthening
of initial consonants of words after certain words
ending in vowels).

Linking and Intrusion

Liaison [li'eiz(ə)n];

Liaison (French: [ljɛ.zɔ̃]) is the pronunciation of a latent word-final consonant immediately before a following vowel sound.

Technically, it is a type of **external sandhi**, which is disrupted in pausa.

Liaison [lɛ̃ʁ(ə)n] in French examples

uninverted form	inverted form	translation
elle dort /ɛl dɔʁ/	dort-elle /dɔʁ.t_ɛl/	she sleeps
il vend /il vɑ̃/	vend-il /vɑ̃.t_il/	he sells
ils parlent /il paʁl/	parlent-ils /paʁl.t_il/	they speak
on parle /ɔ̃ paʁl/	parle-t-on /paʁl.t_ɔ̃/	one speaks

Questions

1. Can you name active organs of speech?
2. Can you name passive ones?
3. In which languages does a final devoicing occur?
4. List 9 POA.
5. What is retroflex sound?
6. What is the other name of occlusive consonants?
7. Which languages have epiglottal laryngeals?
8. How many different laryngeals were in Proto-Indo-European language according to de Saussure's laryngeal hypothesis?
9. What is assimilation?
10. What are the two types of assimilation?