University of Mostefa Benboulaid –Batna2-
Department of English
Module: Phonetics

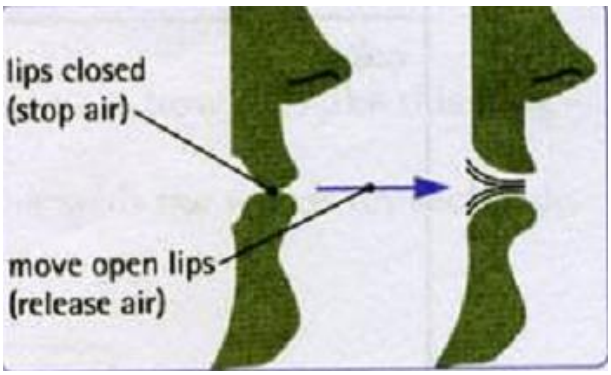
Level: 1st year.
Groups: 05 & 06

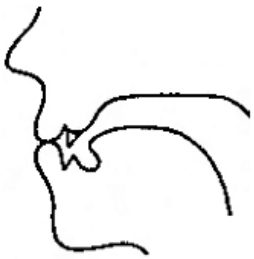
The Description of Consonants

A consonant is a sound produced with a ***partial*** or ***complete*** obstruction of the airstream. To differentiate the 24 consonants from each other, phoneticians use a classification based on the **place of articulation**, **manner of articulation** in addition to the criteria of whether they are **voiced** or **voiceless** and **oral** or **nasal**.

1)Plosives (stop consonants): In stop consonant, the breath is completely stopped at some point in the mouth, and then released with a slight explosion. There are three pairs of phonemes containing stops which are: /p, b/, /t, d/, /k, g/.

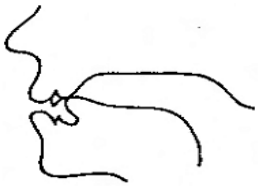
- **Bilabial plosives/p, b/:** They are produced as a result of plosion obtained with the lips being closed. Then a strong push of air or plosion is suddenly produced between the upper and lower lips during the opening of the mouth. E.g. pride /praid/, bride /braid/.



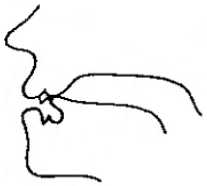


/p/ and /b/

- **Alveolar plosives /t, d/:** They are produced with the tip of the tongue being pressed against the alveolar ridge to form a complete closure on the air stream passage. When the pressure of the tongue is finally released, we obtain a plosion. E.g. tune /tju:n/, dune /dju:n/.

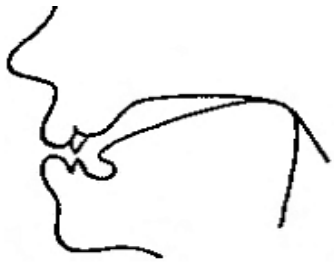


/d/

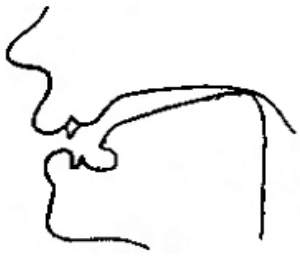


/t/

➢**Velar plosives /k,g/:** They are produced with the back of the tongue pressed and raised against the velum so that no air can escape. When the air stream is realeased, the air rushes out creating a velar plosion. E.g.class /kla:s/, glass /gla:s/.



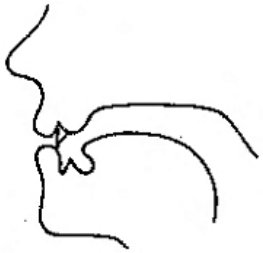
/g/



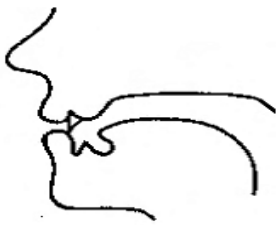
/k/

2)Fricatives (friction consonants): Fricatives are consonants with the characteristic that when they are produced, air escape through a small passage where it causes friction or a hissing sound.

➢ **Labiodental fricatives /f , v/:** During the production of /f/ and /v/ the lower lip is lightly placed behind the upper teeth, then the air stream is forced out (passed) between these two articulators.E.g. fast /fa:st/ and vast /va:st/.

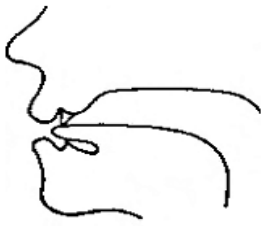


/v/

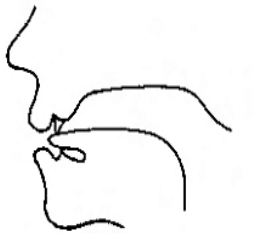


/f/

➢**Dental fricatives / ɵ , ð /:** During the articulation of these consonants the tip of the tongue is placed behind the upper teeth, touching them only lightly and causing a dental buzzing while the air stream is being pushed out. E.g. thin / ɵin/, then / ðen/.



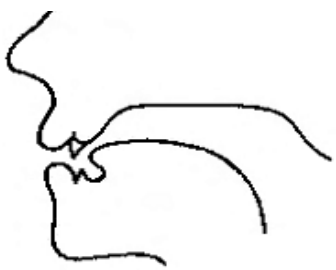
/ ð/



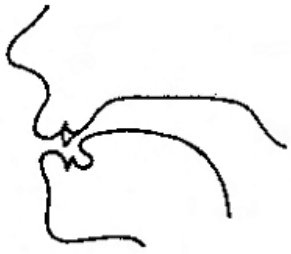
/ɵ/

➢ **Alveolar fricatives /s, z/:** During the production of these consonants the blade of the tongue is raised high towards the alveolar ridge leaving only a small

passage for the air to escape. At the same time, the tongue is compressed creating a sort of hollow channel or tunnel in the middle of the mouth and the air that rushed must pass through this groove. E.g. seal /si:l/, zoo /zu:/.

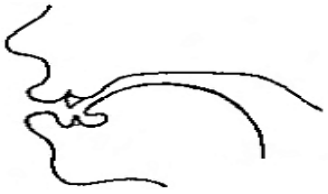


/z/

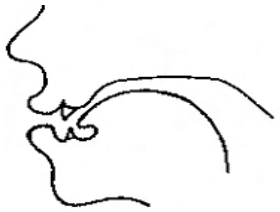


/s/

➢ **Palato-alveolar fricatives / ʃ, ʒ /:** The tip of the tongue is placed towards the alveolar ridge while the back of the tongue is somewhat raising towards the hard palate. E.g. shine /ʃain/, vision /viʒn/.

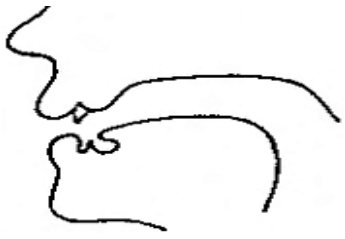


/ ʒ/



/ ʃ/

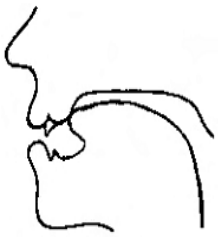
➢**Glottal fricatives /h/:** This sound articulated with glottis in a fully open position with no obstruction anywhere in the oral cavity and free glottal friction. The narrowing that produces the friction noise is between the vocal folds. E.g. heart /ha:rt/.



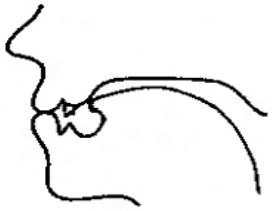
/h/

3) Affricates: They begin as plosives and end as fricatives. For example "church" it begins with the plosive /t/, then the tongue moves to the position for fricatives / ʃ /. So plosive is followed immediately by fricative noise.

➢ **Palato-alveolar affricates /tʃ /, /dʒ/:** The velum is raised and the nasal cavity is blocked. The tip of the tongue is pressed against the alveolar ridge creating a complete closure to the air stream. At the same time the back of the tongue is raised towards the hard palate to create plosion and friction. E.g. child /tʃaild/, june /dʒu:n/.



/dʒ/



/ tʃ/

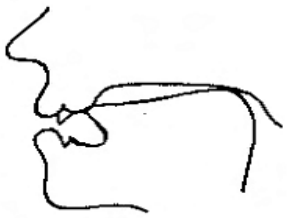
4) Nasals: The basic characteristic of the nasal consonants is that the air escapes through the nose. For this to happen, the soft palate must be lowered and at the same time the mouth passage is blocked at some point.

➢ **Bilabial nasal /m/:**

The lips form a closure similar to that we use for /b/ and /p/, but the soft palate is lowered adding to the plosion of the lips a nasal resonance. E.g. mother / mʌðə /,

/m/

➢**Alveolar nasal /n/:** The soft palate is lowered in order to open the passage to the nasal cavity and the tip of the tongue forms a closure with the alveolar ridge. E.g. now /nau/.



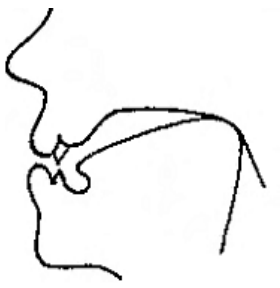
/n/

➢**Velar nasal /ŋ/:** This consonant is obtained with the closure formed within the mouth between the back of the tongue and the velum which is lowered to allow an escape of air streams through the nasal cavity. E.g. sing /siŋ /.

The distribution of nasal consonants:

✓In initial we find /m/ and /n/ occurring freely but /ŋ / never occurs in this position.

✓ Medially / ŋ / occurs quite frequently e.g. finger /fiŋgə/, anger /aŋgə/.

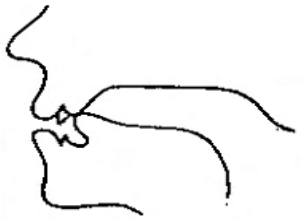


/ ŋ/

✓ At the end of words ending orthographically with 'ng' the / ŋ/ is pronounced, but it is never followed by 'g' e.g. hang /hæŋ/, long /lɔŋ/.

5) Lateral: A lateral consonant is one in which the passage of the air through the mouth does not go in the usual way along the center of the tongue, but the only way for the air to escape is along the sides of the tongue.

➢ **Alveolar lateral /l/:** There is complete closure between the center of the tongue and the alveolar ridge. When we articulate it we feel the sides of the tongue are pulled down while the center is raised.



/l/

• /l/ is a consonant has one usual characteristic, the realization of /l/ found before a vowel is quite different from that found in other context. We have two different sounds of /l/:

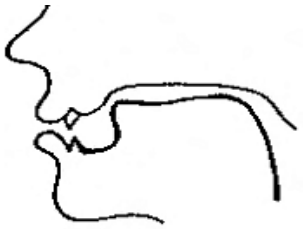
✓ ***Clear /l/:*** when the front of the tongue raised towards the alveolar ridge. It occurs before a vowel, and it will never occur before consonants or a pause.
E.g. sleep /sli:p/.

✓ ***Dark /l/:*** when the back of the tongue is raised towards the soft palate. It occurs before consonants or in final position, but never before vowels.
E.g. milk /mi†k/, pearl /pɜ:†/, salt /sɔ:††/.

• Dark /l/ and clear /l/ are allophones of the phoneme /l/.

6) Approximants: Are consonants difficult to describe. In approximants, articulators approach each other, but don't get sufficiently close to each other to make a complete contact.

➢ **Post alveolar approximants /r/:** The tip of the tongue approach the alveolar area in approximately the way it would for /t/ or /d/, but never actually makes contact with any part of the roof of the mouth. The tongue in fact usually slightly curled up backwards with the tip raised. Consonants with this tongue shape are called **"retroflex"**

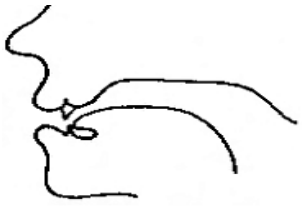


/r/

• Curling back process usually carries the tip of the tongue to a position slightly further back than that of the alveolar consonants that is why it is called post-alveolar.

Distribution of /r/: This phoneme is pronounced only when it occurs before vowels.
E.g. red /red/, arrive /əraiv/
Car /ka: /, hard /ha:d/.

➢ **Palatal approximants /j/:** The tongue is raised towards a front half-close position to that obtained for the vowel /i/ with less spreading of the lips. E.g. you /juː /, yawn /jɔːn/.



/j/

➢**Bilabial approximants /w/:**

It is produced with double articulation. Firstly, the tongue assumes the position of half-close vowel /u:/. Secondly, the lips are rounded more energetic and closer than with /uː /.

E.g. worst /wɜːst/, square /skweə(r) /.

• The /w/ is silent before /r/ E.g. write /rait/, wrist /rist/. /w/

• /w/ and /j/ are called "semi-vowels" which means that they share some characteristics with both vowel and consonants. They are phonetically like vowels because they assume the articulation of vowels, /w/ articulated the same as /uː / and /j/ as /i/. Phonologically, they are consonants because they occur before vowel phonemes and they are preceded by the indefinite article "a" instead of "an".

To sum up

To classify consonants in English, we need to answer the following basic questions:

↳ What is air stream mechanism? In English, most consonants are pulmonic, i.e., the lungs are the main source of air used for speech.
↳ Is the air-stream ingressive or egressive? Again, in English most consonants are produced with an egressive air-stream, i.e., we use air that is moving out of our lungs not the opposite (regressive).
↳ What is the state of the glottis? i.e., what is the position of the vocal cords?
↳ What is the position of the velum/soft palate?
↳ What is the active articulator?, i.e., the main articulator
↳ What is the passive articulator?
↳ What is kind of closure between articulators?

A Chart of Places of Articulation

Place of Articulation	Articulators involved	Examples of consonants
Bilabial	Produced with the two lips together (using close movement of both lips)	/ p, b, m ,w/
Labiodental	Using the lower lip with the upper teeth	/f, v/
Dental	Using the tongue tip with the teeth.	/ ð / and / Θ /
Alveolar	Using the tip or the blade of the tongue close to the alveolar ridge.	/t, d, s, z, n, l/
Post-alveolar	Using the tongue tip close to just behind the alveolar ridge.	/ r/
Plato-alveolar	Using the blade of the tongue close to the alveolar ridge, with a simultaneous raising of the tongue front towards the hard palate.	/ ʃ ,ʒ / and /ʤ, ʧ /
Palatal	Raising the tongue front towards the hard palate.	/j/
Velar	Raising the tongue back against the soft palate (velum).	/ k, g, ŋ /
Glottal	Produced by air passing through the space between the vocal cords (glottis) and making audible friction as in /h/ or a closure as in the glottal stop / ʔ/	/ h/ and /ʔ /

A Chart of Manner of Articulation of English Consonants

Phonetic Term	*Brief Description*	*Symbols for Consonants*
Plosives	Complete closure is made somewhere in the vocal tract creating sudden release with strong puff of air.	/p, b, t, d, k, g/
Nasals	Velum lowered so that the air stream flows through the nasal cavity.	/m, n, ŋ /
Fricatives	Narrowing of the air passage caused by two articulators so as to produce a turbulent air stream or friction when the air escapes through a narrow passage.	/f, v, s, z, ð, Θ, ʃ ,ʒ , h/
Affricates	A kind of closure in which air pressure increases behind the closure, and then released more slowly than in plosives.	/ʤ, ʧ /
Lateral	It is formed with a central obstruction, so that air is able to low through the sides of the tongue.	/l/
Approximants	Vocal organs come near to each other, but not so close.	/ w, j, r/