**Phonetics and phonology**

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**Phonetics** is the study of human speech sounds. It is a system for describing and recording the sounds of lan­guage objectively. There are three branches of phonetics:

1. **Articulatory phonetics** is concerned with the way in which speech sounds are articulated. It develops a system for classifying speech sounds on the basis of how they are produced.

2. **Auditory phonetics** is the study of the perception of the speech sounds, as mediated by the ear, auditory nerve, and brain.

3. **Acoustics phonology** is the study of the physical properties of speech, and aims to analyse sound wave signals that occur within speech through varying frequencies, amplitudes and durations.

On the other hands, **phonology** is the study of human speech sounds in a given (specific) language. It concerns itself with the ways in which languages make use of sounds to distinguish words from each other. There are two branches of phonology:

1. **Segmental phonology** is concerned with the smallest segments in phonology (phonemes like /p/ and /d/).

2. **Supra-segmental phonology** is concerned with units above the segments like syllable, stress, intonation etc.

**The organs of speech**

1. The **pharynx** is a tube which begins just above the larynx. It is about 7 cm long in women and about 8 cm in men, and at its top end it is divided into two, one part being the back of the mouth and the other being the beginning of the way through the nasal cavity. If you look in your mirror with your mouth open, you can see the back of the pharynx.

2. The **velum** or **soft palate** is seen in the diagram in a position that allows air to pass through the nose and through the mouth. Yours is probably in that position now, but often in speech it is raised so that air cannot escape through the nose. The other important thing about the velum is that it is one of the articulators that can be touched by the tongue. When we make the sounds [k] and [g] the tongue is in contact with the lower side of the velum, and we call these velar consonants.

3. The **hard palate** is often called the “roof of the mouth”. You can feel its smooth curved surface with your tongue.

4. The **alveolar ridge** is a hump directly behind the teeth. It is between the top front teeth and the hard palate. You can feel its shape with your tongue. Its surface is really much rougher than it feels, and is covered with little ridges. You can only see these if you have a mirror small enough to go inside your mouth (such as those used by dentists). Sounds made with the tongue touching here (such as [t] and [d] are called **alveolar**.

5. The **tongue** is, of course, a very important articulator and it can be moved into many different places and different shapes. It is usual to divide the tongue into different parts, though there are no clear dividing lines within the tongue. Although there are no obvious divisions on the surface of tongue itself, for the description of sounds it may be divided into a number of sections. Figure 2 shows the tongue on a larger scale with these parts shown:

a. **tip** or point

b. **blade**—this lies below the alveolar ridge

c. **front**—this is the middle section which lies below the hard palate

d. **back**—this section lies opposite the velum and the uvula

e. **root**—a relatively vertical section which faces backwards towards the back wall of the pharynx

f. The **teeth** (upper and lower) are usually shown in diagrams like Fig.1 only at the front of the mouth, immediately behind the lips. This is for the sake of a simple diagram, and you should remember that most speakers have teeth to the sides of their mouths, back almost to the soft palate. The tongue is contact with the upper side teeth for many speech sounds. Sounds made with the tongue touching the front teeth are called **dental**.

g. The **lips** are important in speech. They can be pressed together (when we produce the sound [p], [b]), brought into contact with the

teeth (as [f], [v]), or rounded to produce the lip-shape for vowels like [u:]. Sounds in which lips are in contact with each other are called **bilabial**, while those with lip-to-teeth contact are called **labiodentals**.

**The classification of speech sound**

Speech sounds are classified according to:

1. the place of articulation

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***Place of articulation***

By **place of articulation** we mean the area in the mouth at which the consonantal closure or constriction occurs. English uses only seven places of articulation which we describe and illustrate below.

**Alveolar** sounds are made by bringing the tongue and the alveolar ridge (the bony ridge just behind the top teeth) together to create either a stop or fricative:

 [t] **t**ub boa**t**ing boa**t**

[s] **s**ip fu**ss**y gra**ce**

[d] **d**ub bo**d**ing bo**d**e

[z] **z**ip fu**zz**y gra**z**e

[n] **kn**it bo**n**ing bo**n**e

[r] **r**ip te**rr**or tea**r**

**Bilabial** sounds are made by bringing both lips together to stop the air­stream:

[p] **p**ie cu**pp**ing cu**p**

[b] **b**y clu**bb**ing cu**b**

[m] **m**y co**m**ing co**m**e

**Interdental** sounds are made by placing the tip of the tongue between the top and bottom teeth and forcing air through.

 [θ] **th**igh e**th**er mou**th** ba**th** (noun)

[ð] **th**y ei**th**er mou**th** ba**the** (verb)

 **Labiodental** sounds are made by bringing the top teeth into contact with the bottom lip and forcing air between the two to create the fricatives:

 [f] **f**eel ra**ff**le tou**gh**

[v] **v**eal ra**v**el do**v**e

**(Alveo-)palatal** sounds are made by bringing the blade of the tongue to, or close to, the alveo-palatal area of the roof of the mouth to create fricatives and affricates:

[ʃ] **s**ure vi**ci**ous ru**sh**

[ʒ] **g**enre vi**si**on rou**ge**

[tʃ] **ch**in ca**tch**er e**tch**

[dʒ] **g**in e**dge**r e**dge**

**Velar** sounds are created by stopping the airstream by bringing the back of the tongue into contact with the velum:

 [k] **c**ould ba**ck**er tu**ck**

[g] **g**ood ba**gg**er tu**g**

[ŋ] ------ ba**ng**er to**ng**ue

**Lateral** approximants are made by touching the tongue to the alveolar ridge while allowing the air to pass along one or both sides, as in [l]—in *lack*, *call*, and *callow*.

**Central** approximants are made by raising the sides of the tongue so that the air flows along the center of the tongue, as in [r]—in *rock*, *roll*, and *Rory*. [r] is regarded as an alveolar sound.

**Glides** (**semivowels**) come in two kinds: palatal and labio-velar. **Palatal** glides are made by raising the tongue toward the hard palate, close to where the vowel in *eat* is made. The first sound of *yet*, *yolk*, and *y’all* is a palatal glide, represented phonetically as [j].

**Labio-velar** glides are made by rounding the lips and simultaneously raising the back of the tongue toward the velum, close to where the vowel sound of *ooze* is made. Labio-velar glides thus have two places of articulation—they are both labial and velar. The first sound of *wet*, *wall*, and *wink* is a labio-velar glide, represented phonetically as [w].