Al- Mustansiriyah University Phonetics & Phonology

College of Arts 2nd Year / Morning &Evening class

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 2nd lecture

**The production of speech sounds**

* Warm up of Previous lecture
* Articulators above the larynx

All the sounds we make when we speak are the result of muscles contracting. The muscles in the chest that we use for breathing produce the flow of air that is needed for almost all speech sounds; muscles in the **larynx** produce many different modifications in the flow of air from the chest to the mouth. After passing through the larynx, the air goes through what we call the **vocal tract,** which ends at the mouth and nostrils; we call the part comprising the mouth the **oral cavity** and the part that leads to the nostrils the **nasal cavity.** Here the air from the lungs escapes into the atmosphere. We have a large and complex set of muscles that can produce changes in the shape of the vocal tract, and in order to learn how the sounds of speech are produced it is necessary to become familiar with the different parts of the vocal tract. These different parts are called **articulators,** and the study of them is called **articulatory phonetics.**

**The figure below shows the articulators above the larynx :**



The **pharynx** is a tube which begins just above the larynx. It is about 2 cm long in women and about 5 cm in men, and at its top end it is divided into two, one part being the back of the oral cavity and the other being the beginning of the way through the nasal cavity.

ii) The **soft palate** or **velum** 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 soft palate is that it is one of the articulators that can be touched by the tongue. When we make the sounds k, g the tongue is in contact with the lower side of the soft palate, and we call these **velar** consonants.

iii) The **hard palate** is often called the "roof of the mouth". You can feel its smooth curved surface with your tongue. A consonant made with the tongue close to the hard palate is called **palatal.** The sound j in 'yes' is palatal.

iv) The **alveolar ridge** 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, d, n) are called **alveolar.**

v) The **tongue** is 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 its structure. Fig. 7 shows the tongue on a larger scale with these parts shown: **tip, blade, front, back** and **root.** (This use of the word "front" often seems rather strange at first.)



vi) The **teeth** (upper and lower) that most speakers have teeth to the sides of their mouths, back almost to the soft palate. The tongue is in contact with the upper side teeth for most speech sounds. Sounds made with the tongue touching the front teeth, such as English t , dare called **dental.**

 vii) The **lips** are important in speech. They can be pressed together (when we produce the sounds p, b), brought into contact with the teeth (as in f, v), or rounded to produce the lip-shape for vowels like u:. Sounds in which the lips are in contact with each other are called **bilabial,** while those with lip- to-teeth contact are called **labiodental.**

* Vowel and consonant:

The difference between vowels and consonants is a difference in the way that they are (1)**produced**,( 2) **distributed .**

 vowels are sounds in which there is no obstruction to the flow of air as it passes from the larynx to the lips.

Consonants are sound produced with obstruction to the flow of air as it passes from the larynx to the lips

 It is necessary to say something about vowels in general before turning to the vowels of English. We need to know in what ways vowels differ from each other. The first thing to consider is the shape and position of the tongue, firstly, the vertical distance between the upper surface of the tongue and the palate and, secondly, the part of the tongue, between front and back, which is raised highest .

**cardinal vowels** are a standard reference system, and people being trained in phonetics at an advanced level have to learn to make them accurately and recognize them correctly. If you learn the cardinal vowels, you are not learning to make English sounds, but you are learning about the range of vowels that the human vocal apparatus can make, and also learning a useful way of describing, classifying and comparing vowels.

The vowels in Figure below are the so- called **primary** cardinal vowels; these are the vowels that are most familiar to the speakers of most European languages, and there are other cardinal vowels **(secondary** cardinal vowels) that sound less familiar. In this course cardinal vowels are printed within square brackets [ ] to distinguish them clearly from English vowel sounds



 **English Vowels**

æ e ɪ ɒ ʊ ə ʌ short

Vowels are classified according to:

1.Tongue Position: It means whether the tongue is at the front, center or at the back of the mouth.

2. Tongue Height: It means, whether the tongue is close ,half-close, half-open, open in the mouth.

3. Lips Rounding: It means whether the lips are unrounded, neutral, or rounded.

 4. Length: It means whether the vowel is short or long

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