## What is phonetics? .Lecture: 1

Phonetics is the scientific study of speech sounds themselves. How they are made, how they are perceived and the physics involved. In other words, it is the study of speech sounds. It has 3 types :

Articulatory phonetics, Auditory phonetics \& Acoustic. For ex:
Phonetics studies this sound how is produced.
$/ \mathrm{p} / \underset{\sim}{\longrightarrow}$ what are articulators can be used to produce such a sound?
how / p / is perceived ( plosive , fricative , or what ? )
Acoustically , it deals with the waves of this sound.

## - What is phonology?

Phonology is the scientific study of how the speech sounds are organized into systems for each individual language.. For ex: how the sounds can be combined together; the relation between them and how they affect each other. In other words, it is about the distributions of the sounds. It is about the way phonemes are grouped together into clusters, structures, syllables or phrases.

- So what is the difference between the two?

Both of them are like a paper with two phases of one point.

But phonetics is the concrete phase, the physical phase, the tangible phase ... As for phonology, it is the abstract phase the unseen process of putting phonemes together.

- What is the difference between Accents and Dialects ?
- Accent $\rightarrow$ is concerned only with pronunciation differences.
- Dialect $\rightarrow$ refers to all language variations including grammatical and lexical factors.


## - What is RP?

It is a kind of pronunciation used in educated speakers particularly in south east England.

- What's the sole aim of studying phonology ?

Sounds $\rightarrow$ words $\rightarrow$ phrases $\rightarrow$ clauses $\rightarrow$ Sentences


Speaking a language

## The production of speech sounds

- Articulatory phonetics :

It is the study of the different parts of vocal tracts.
It deals with the way in which speech sounds are produced.

## - What are the main articulators?

## 1-The pharynx:

It is a tube which begins just above the larynx. It is about 7 cm long in women and about 8 cm in men. It has two parts:
One part being the back of the mouth and the other being the beginning of the way through the nasal cavity.

## 2-The palate:

It forms the roof of the mouth and separates the mouth cavity from nasal cavity . it is divided into three parts : the alveolar-ridge, the lard palate and the soft palate .

A- the alveolar-ridge :
It is the first part of the palate in which any human being can touch using the tip of his/her tongue. (/ $\underline{\mathbf{t}} /, / \underline{\mathbf{d}} /, / \underline{\underline{l}} /, / \underline{\mathbf{n}} /$ and / $\underline{\mathbf{s}} /$ ) $\rightarrow$ ( alveolars )

B- The hard palate : It makes the roof of the mouth.

C- the soft palate $\rightarrow$ or $\rightarrow$ velum :
if is movable part of the palate . if it is lowered, it closes the way to the oral cavity forcing the air to go through the nasal cavity. Thus, nasals (/m/,/n/ and / b/ ) are produced. But if it is raised, the air cannot escape through the nose.

## Velars :

Refer to those sounds which are produced when the tongue is in contact with the lower side of the soft palate as in (/k/,/g/).

## 3- The larynx :

It is a tube consisting of two small bands of elastic tissues making two flat strips of rubber ( the vocal cords).

## 4- the vocal cords :

They are two flat strips of rubber in which they can be moved forwards each other. The gap between them is called glottis. it is used to produce / $h$ / in English and/g/ or / ? / (الهمزة) in Arabic .

- What are the three states of the vocal facts (cords)?..............................................Lecture: 2
A- When the vocal cords are held widely a part, the glottis is open so that the air passes freely. The sound produced is called " breath ".

B- when they are drawn near together and the air is forced between them so that they vibrate. The sound produced is called " voice".

C- if they are drawn towards each other leaving only a narrow space for the air, the resulting sound is one variety of " whisper " or " voiceless ".

## 5- the tongue:

It is the most important articulator because it moves freely. It is important for the production of both consonants and vowels. It is divided into Five parts :
9 Tip - Blade - Front - Back $\rightarrow$ ( see p. 10 fig 2 )

## 6- the teeth :

They help in the production of dentals (/Ө/ and / $/ /$ ) and labiodentals ( produced by the lower lip with the upper set of teeth ) $\rightarrow$ /f/and/v/.
The two sets of teeth are equally important?
Because if any of the lower set teeth is missed, some sounds are going to be produced with difficulty (/s/and/z/).
7- the lips :
They produce bilabials (/m/,/w/,/p/ and /b/) and labiodentals (/f/and/v/)

- What are the minor articulators?

1- the larynx.
2- The jaw.
3- the nose and nasal cavity .

## Vowel and consonant :

-Vowels are sounds in which there is no obstruction to the flow of air as it passes from the larynx to the lips. All vowels are voiced and oral.
-Consonants are sounds in which there is obstruction to the flow of air . Example (/s/ or /d/ )

## Problem between Vowels and consonants

1- Some English sounds (consonants ) ( e.g., /h/,/w/) do not really obstruct the flow of air more than some vowels do.

2- Different languages have different ways of dividing their sounds into vowels and consonants. for example :
$/ r /$ is felt to be a consonant by most English speakers, but in Chinese, the same sounds in treated as a vowel.
-Distribution is the study of different context and positions in which particular sounds can occur. It has a great importance in phonology .
-What is the difference between vowels and consonants?

- The most important difference between them is not the way that they are made but their different distributions.
. What are the ways that the vowels differ from each other :

1- the parts of the tongue : front, center, back .
2- the height of the tongue : close , mid - close , mid - open, open.

3- the shape of the lips : rounded, spread, neutral .
A. Rounded $\rightarrow$ [ $\mathbf{D}$, v, כ:, u:]
B. Spread $\rightarrow$ [ æ, e , I, i: ]
c. Neutral $\rightarrow$ [ $\Lambda$, ә, 3: , a: ]

## .Friction noise :

Is a sort of hissing sound ( e.g., /f / or /s/ ) .

- Rounded $\rightarrow$ where the corners of the lips are brought towards each other and the lips pushed forwards. Ex $\rightarrow$ [ u ]
- Spread $\rightarrow$ the corners of the lips moved away from each other as for a smile . Ex $\rightarrow[i] \rightarrow$ fish .
- Neutral $\rightarrow$ where the lips are not noticeably rounded or spread.
. Cardinal vowel :
Is a standard reference system invented by Daniel Jones as a means of describing vowels in any language.
- What are the types of cardinal vowels?

1- primary cardinal vowels $\rightarrow 1[i], 2[e], 3[\varepsilon], 4[a]$ un rounded, 5[a], 6 [ 0 ], 7 [ 0 ], 8 [ u ] rounded . 2- secondary cardinal vowels $\rightarrow$ [i] , [e] , [æ], [^] , [D] , [ U] . See the diagram below:

## part of tongue



| Lips position |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| spread | neutral |  | rounded |  |  |
| sound | exam | sound | exam | sound | exam |
| I | bin/bin/ | $\wedge$ | but/b^t/ | D | lost/lost/ |
| C | pen/pen/ | ə | dinner/dine/ | U | cook/kuk/ |
| æ | bat/bret/ | 3: | hurt/hs:t/ | O: | horse/ho:s/ |
| i: | feel/fi:// | c: | heart/he:t/ | u: | moon/mu:n/ |

