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DEPARTMENT OF ENGLISH LANGUAGE
AND LITERATURE

PHONETICS: COURSE 1

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I. Definitions :

Phonetics: is the scientific study of speech sounds. It is concerned with the physical manifestation of language in sound waves and how they are produced, transmitted, and perceived, and also "provides methods for their description, classification, and transcription". Since phonetics studies the form of sounds and its physical aspect it has strong association with other disciplines such as anatomy, neurology, physiology and physics.

The Phonetic Alphabet: Spelling, or orthography, does not consistently represent the sounds of language. There are some problems with ordinary spelling:

- The same sound may be represented by many letters or combination of letters: he / people / key / believe / seize / machine / Caesar / seas / see /
- The same letter may represent a variety of sounds: father / village / badly / made / many
- a combination of letters may represent a single sound: shoot / character / Thomas / either physics / rough / chalk
- a single letter may represent a combination of sounds: xerox

In 1888 the International Phonetic Alphabet (IPA) was invented in order to have a system in which there was a one- to-one correspondence between each sound in language and each phonetic symbol. Someone who knows the IPA knows how to pronounce any word in any language but dialectal and individual differences may affect pronunciation.

1. Linguistics and phonetics: as explained in the above definition phonetics is a branch of linguistics concerned with speech sounds. Linguistics and phonetics have similarities and differences. Both of them are grounded in a basic interest in the nature of human communication. If the subject of linguistics is the scientific study of the nature, use, and variety of all aspects of language, the subject of phonetics is the scientific study of the nature, use, and variety of all aspects of speech. The two subjects have developed so widely in the second half of the twentieth century. Linguistics and phonetics share a common domain in phonology, the study of communicative aspects of spoken language. The intersection of linguistics and phonetics is the study of spoken language. Linguistics contributes to phonetics its phonological understanding of the distinctive patterns that make up the coded, conventional aspects of speech which differentiate individual words and other units of spoken language. Phonetics contributes to linguistics its phonetic understanding of the production and perception of the detailed artefacts of speech that embody those significant phonological patterns.

2. Phonetics and phonology:

a. Phonology: studies the classification of sounds as patterns and its function in relation to each other in a language (it is about the abstract aspect of sounds' phonemes'). It studies phonemes, syllable structure, stress, accent, intonation and which sounds are distinctive units. Phonology is the basis for further work in morphology, syntax, discourse, and orthography design because it studies the function of sounds (its linguistic aspects) in language as a system.

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b. The Three Categories of Sounds: Phone, Phoneme, and Allophone:

The term **sound** is often regarded as not being a precise one in the fields of phonetics and phonology and is thus replaced by the term **phone**. Sound could mean any noise or sound, while phone is restricted to the human voice ('Phone' comes from a Greek word 'phone' [human voice] and is regarded as a speech sound which can be cut out from the speech stream. Crystal (2008) defines phone as "the smallest perceptible discrete segment of sound in a stream of speech" (2008: 361).

A **phoneme** includes all the phonetic specifications of phones and is the smallest independent unit that can bring about a change in meaning. Roach (2009) calls phonemes "abstract sounds" as there may be slightly different ways to realise the same phoneme. An example of a phoneme is the sound /t/ in the words *team* and *steam*. The slight difference in the realisation of this phoneme is that the /t/ in *team* is aspirated [t^h], while the /t/ in *steam* is not [t]. Phones that belong to the same phoneme, such as [t] and [t^h] for English /t/, are called **allophones**. Allophones do not affect the semantic meaning of the word (non-distinctive units), while a substituted phoneme could bring a semantic change. For example, *team* pronounced with any allophone of the phoneme /t/ maintains its meaning, but if it is substituted with the phoneme /b/, then it brings about a semantic change. These two words then (*team* /ti:m/ and *beam* /bi:m/) form a **minimal pair**, which is an opposition of two words showing the existence of these two phonemes. For a set of words to form a minimal pair, they may differ in one phoneme only. Phonemes cannot, in fact, be pronounced in actual speech, they are realised through allophones.

C. Differences between Phonetics and Phonology

Both phonetics and phonology deal with spoken language wherein sounds are the very basic unit of study. Yet, there are some prominent differences between phonetics and phonology:

- **Descriptive vs. Theoretical:** Phonetics is a subfield of descriptive linguistics while phonology is an area of theoretical linguistics.
- **Major Field vs. Sub-discipline:** Linguists often consider phonology a major field of linguistics. While, on the other hand, phonetics is regarded as a subfield placed under phonology as shown in the diagram below:
- **General Speech Sounds vs. Particular Sound Pattern Analysis:** Phonetics (the study of the physical aspects of sound) analyzes the production of all human speech sounds, regardless of any language it is dealing with. While, phonology analyses the sound patterns of a particular language by determining which phonetic sounds are significant, and explaining how these sounds are interpreted by the native speaker.
- **Concrete vs. Abstract:** Phonetics discusses the physical characteristics of speech sounds or signs, especially, their physiological production, acoustic properties, auditory perception and neurophysiological status. Phonology is primarily concerned with the abstract, grammatical characterization of systems of sounds or signs.
- ☐ **Audible Sounds vs. Their Meanings:** Phonetics is strictly about audible sounds and the things that happen in our mouth, throat, nasal and sinus cavities, and the lungs to make these sounds. It has nothing to do with meaning. It is only description. Phonology, on the other hand, is both physical as well as meaningful. It explores the differences between the sounds in a language that change the meaning of an utterance.

- **Universal vs. Language Specific:** Phonetics deals with the universal phenomenon of human speech sounds. Phonology, on the other hand, is language specific.

- **Phone vs. Phoneme:** In phonetics, the smallest structural unit is a phone. In phonology, on the other hand, the minimal meaningful unit is called a phoneme.

- **Square Brackets vs. Slanted Brackets:** In phonetic transcription, square brackets are used to enclose transcribed symbols. In phonemic transcription, on the other hand, slashes are used for the same purpose.

- **Individuality vs. Interrelationship of Sounds:** Phonetic transcription depends simply on the pronunciation of each individual sound regardless of its function in the sound system of the given language, whereas phonemic transcription depends upon the interrelationship of sounds in each particular language.

- **Phonetic Symbols vs. Phonemic Symbols:** The symbols of phonetic alphabet are universal. On the other hand, phonemic symbols are a type of phonetic shorthand with specific value for a particular sound in a language.

- **Examples:** Let us take an example of the word “bed”. Phonetics is concerned with its physical production, acoustic properties, and its physiological status. On the other hand, phonologists take the word “bed” differently. They say the word “bet” is very similar to the word “bed” in terms of the physical manifestation of sounds. The only difference is that at the end of “bet,” the vocal chords stop vibrating so that sound is a result only of the placement of the tongue behind the teeth and the flow of air. However, the meanings of the two words are not related in the least. What a vast difference a muscle makes! This is the biggest distinction between phonetics and phonology, although phonologists analyze a lot more than just the obvious differences.

3. Phonology and Morphology:

Morphology: is the study of the internal structure of words (word formation or combination). The smallest unit in morphology is called "**morpheme**" which cannot be further divided. The morpheme is of two types: **free morphemes** or roots or bases (can stand alone and have meaning like weak, table, book) and **bound morphemes** or affixes which can't stand alone and must be attached to free morphemes (dis, tion, s, ful, anti). Bound morphemes are of two types: **inflectional** (can change meaning like less, dis re) and **derivational** (can change part of speech like ful, able, ary, ment, hood).

Morphology and phonology manifest different aspects of human language. Yet, these two linguistics' branches are related in that they operate on the same word level where units of sound and units of word interact intricately. There is an interface between the two disciplines in that the morphological make-up of a word has a considerable influence on its pronunciation. Also, there is a correlation between the order of affixes and their phonological shape. i.e. there are two classes of suffixes: **stress-affecting suffixes** Vs **stress-neutral suffixes**. Stress-affecting suffixes affect the phonological shape of the word in which there is a stress shift from a certain syllable to another when we add suffixes such as: age, al, ant, ance, ary, ate, ic, ion. Whereas stress-neutral suffixes don't alter /shift the stress in words or their derivations: able, er, en, ful, hood, ish, isn, less, like, ment.

4. Phonetics and its Subdivisions

- **articulatory phonetics:** (emission of sounds) oldest branch of phonetics, well established by the 19th century. It studies the ways the vocal tract are used to produce speech sounds and identifies precisely which speech organs and muscles are involved in producing such sounds.

▪ **acoustic phonetics:** (transmission of sounds) which investigates transmission and the physical properties of speech sounds (duration, frequency, intensity, and quality) that are generally measured by spectrographs to depict waveforms and spectrograms. It focus on the physics of speech as it travels through the air in the form of sound waves, and the effect those waves have on a hearer's ears and brain.

▪ **auditory phonetics:** (reception of sounds) which is concerned with how people perceive speech sounds, i.e. how the sound waves activate the listener's eardrum, and how the message is carried to the brain in the form of nerve impulses.