

## Lecture № 01: Domains of Linguistics

### I. Phonetics and Phonology

#### A. Phonetics

##### 1. Definition

Phonetics is a branch of linguistics that studies the material aspects of speech sounds. Material aspects of sounds are those aspects that make for the *physical production, transportation, and comprehension* of the sound. Individuals who conduct research on speech sounds are known as *phoneticians*.

##### 2. Vowels and consonants

Phonetics is the study of the sounds that we produce when we engage in spoken communication. In contrast with other mammals, the human body contains a complex set of equipment, commonly known as *the organs of speech*, which enables us to produce spoken language. The power for all speech sounds emanates from the lungs, travels up the windpipe, past the vocal cords and then into and out of the mouth or nose.

Sounds can be divided into two main types. A vowel is a sound that needs an open air passage in the mouth. The air passage can be modified in terms of shape with different mouth and tongue shapes producing different vowels. A consonant is formed when the air stream is restricted or stopped at some point between the vocal cords and the lips.

##### 3. The modern alphabet and IPA

The modern alphabet does not suffice to transcribe all sounds on a one-to-one basis. Therefore, A *special alphabet* was devised by the International Phonetic Association (IPA). The International Phonetic Alphabet (IPA) shows the means and place of articulation of consonants and vowels that users of English as a mother tongue use. Phonetic characters refer to the actual utterance of a sound. In phonetic writing, the symbols for these sounds are put within brackets, such as: [θ], [ə], and [ð].

##### 4. Branches of phonetics

Phoneticians investigate speech sounds in one of three ways: *articulatory phonetics, acoustic phonetics, and auditory phonetics*.

**a. articulatory phonetics:** it researches where and how sounds are originated and thus carries out physiological studies of the respiratory tract, trying to locate precisely at which location and in which manner a sound is produced.

**b. acoustic phonetics:** it examines the length, frequency and pitch of sounds. Special instruments are required to measure and analyze the sounds while they travel via the channel.

**c. auditory phonetics:** it studies what happens inside the ear and brain when sounds are finally received. It also interested in our ability to identify and differentiate sounds.

### B. Phonology

#### 1. Definition

Another key area of study in the investigation of sounds is *phonology*, which is a very closely related discipline to phonetics. Individuals who specialise in the study of phonology are known as *phonologists*. As a general way of distinguishing between the two disciplinary areas, phonology can be perceived as investigating sounds as an abstract system, whereas phonetics focuses on the actual sounds as they are spoken by specific individuals during particular speech events.

#### 2. Phoneme and phone

Within phonology, the term *phoneme* refers to a set of abstract units which together form the sound system of a language. Contrasts in meaning are produced through directly contrasting phonemes. For example, if we compare /p/ with /b/ as in the words *pin* and *bin*, which differ only by one sound, then a different meaning is created

by the contrast. By replacing the beginning consonants, the meaning of the word changes. Phonemes of the English language, or any other language for that matter, can only exist as abstract entities. They can never be literally produced by speakers.

While the phoneme is the abstract unit or sound-type (“in the mind”), there are many different versions of that sound-type regularly produced in actual speech (“in the mouth”). We can describe those different versions as phones. Phones are phonetic units and appear in *square brackets* [ ]; however, phonemes are put within *slashes* / /, such as /p/ and /b/ for phonological transcription. These are, of course, ideal units of the sound system of a language. They should not be confused with the sounds of actual utterances examined by phonetics.

### 3. Free variation and complementary distribution

Not all sounds of a language are necessarily distinctive sounds. Compare the English and American pronunciations of "dance": [da:ns] versus [dæns]. Although there are different sounds in the pair, the meaning does not change. Thus, [æ] and [a:] are not phonemes in this case. We call this phenomenon *free variation*. The two sounds can be referred to as *allophones*. When we have a set of phones, all of which are versions of one phoneme, we add the prefix “allo-” (= one of a closely related set) and refer to them as allophones of that phoneme. These sounds are merely variations in pronunciation of the same phoneme and do not change the meaning of the word. Free variation can be found in various accents of the same language. In this case, the different pronunciations of words throughout a country do not change the meaning of those words.

Another example of sounds which are not phonemes are those which occur in *complementary distribution*. This means that where one sound of the pair occurs, the other does not. An example for complementary distribution are the aspirated and unaspirated allophones of /p/. The initial consonant as in "pill" is aspirated. The consonant after /s/ in "sprint" is unaspirated. The respective transcriptions would be [p<sup>h</sup>il] and [sprɪnt], where [h] indicates aspiration. Aspirated [p<sup>h</sup>], as you can see in this example, occurs only at the beginning of words. [p<sup>h</sup>] and [p] are only allophones of the same phoneme /p/.

### 4. Syllables and clusters

The analysis of the possible sequences of phonemes focuses not only on phonemes themselves, but also on syllables and clusters. A syllable must comprise a vowel, but usually there is also a consonant (C) before the vowel (V). *Syllables* are frequently described as consisting of an *onset*, which is a consonant, or a few consonants, and a *rhyme*, often subdivided into a *nucleus* (a vowel), and *coda* (any following consonants). In the English language coda does not always have to occur in a syllable, like for instance in the words: he (CV), or too (CV). Clusters, or consonant clusters are simply two or more consonants one after another. Clusters, like other phonotactic rules, are characteristic of a given language, for instance the /st/ cluster in English can be an onset: street, or a coda: highest, however it is impossible in Japanese.

### 5. Coarticulation effects

The most frequent processes that can be observed in casual speech are **assimilation** and **elision**. Assimilation is a process in which certain sounds copy the characteristics of another, adjacent sound (e.g. I have to go [aihæftəgəu]). Elision is a process in which some sounds, or even syllables are omitted and not pronounced at all, although in other situations they are normally uttered (e.g. you and me [juənmi]). Elision occurs in order to make the pronunciation more fluent.

Take note of the fact that Americans use the term "phonology" to refer to both phonetics and phonology. They refer to what we call ‘phonetics’ also as ‘phonetics’, but refer to what Europeans call ‘phonology’ as ‘phonemics’. So if you ever come across the American terminology, do not be confused. In any way, in this lecture we will stick to the European terms.