

The Phoneme Theory

Lecture 2

The subject of phonology

- The branch of phonetics that studies the linguistic function of consonant and vowel sounds, syllabic structures, word accent and prosodic features is called *phonology*. Unlike phonetics itself, whose domain is articulatory and acoustic features, phonology investigates the social aspect of sounds, syllables, phrases and so on.

Aspects of the phoneme

- According to L.V.Scherba the phoneme may be viewed as a functional, material and abstract unit. V.A.Vassilyev looks upon the phoneme as a dialectical unity of these aspects because they determine one another and are interdependent.

V.A. Vassilyev's definition of the phoneme

- The definition of the phoneme by V.A. Vassilyev is as follows: “**the segmental phoneme is the smallest** (i.e. further indivisible into smaller consecutive segments) **language unit** (sound type) that **exists in the speech** of all the members of a given language community **as such speech sounds which are capable of distinguishing** one word from another word of the same language or one grammatical form of a word from another grammatical form of the same word” (Vassilyev, 1970 : 136).

M.A. Sokolova's definition

- M.A.Sokolova gives her own definition: The phoneme is a minimal abstract linguistic unit realized in speech in the form of speech sounds opposable to other phonemes of the same language to distinguish the meaning of morphemes and words (p. 34).

The functions of the phoneme

- Phonemes can perform distinctive, constitutive and recognitive functions.
- Constitutive function is not performed by phonemes as such, but by speech sounds, but since speech sounds are materializations of phonemes, we may say that constitutive function is performed by phonemes.
- The third function of the phoneme is called recognitive (identificatory). It consists in making the words easily recognizable by using the right allophone in the right place. It's the function of allophones.

Types of allophones

- Variants of the same phoneme are called allophones. Allophones of the same phoneme never occur in the same phonetic context and cannot contrast with each other or be used to differentiate meanings. Allophones are divided into principal or typical and subsidiary ones.

Principal allophones

- Two objective criteria may be suggested:
- the principal or typical variant of a phoneme **is free from the influence of neighboring speech sounds** and other purely phonetic factors, such as absence of stress.
- It is **most representative of the phoneme as a whole**, in the sense that it has the greatest number of articulatory features (both distinctively relevant and irrelevant) among all the variants of the phoneme. For example – the phoneme [t]. The principal variant of the phoneme has three distinctive features (forelingual, occlusive, voiceless, fortis) and two distinctively irrelevant features (alveolar and aspirated).

Subsidiary allophones

- The subsidiary variants of a phoneme are subdivided into two groups: combinatory and positional. Positional allophones are used in certain positions traditionally, e.g. clear and dark [l]. Combinatory allophones appear in the process of speech and result from the influence of one phoneme upon another. The alveolar phoneme [t] becomes labialized in “*twice*”, it becomes dental in *eighth* and post-alveolar in *try* under the influence of the sounds that follow it.

Aspects of the phoneme

- As it has already been mentioned, the phoneme is a dialectical unity of three aspects. It is 1) functional, 2) material, real and objective, 3) abstract and generalized.
- First of all the phoneme is a functional unit. It functions to make one word or its grammatical form distinct from another. It constitutes words and helps to recognize them.
- The phoneme is material, real and objective because it exists independently from our will. It exists in the speech of all people of the same language community in the form of speech sounds.
- The next aspect of the phoneme is its abstracted and generalized character. This is reflected in the definition of a phoneme as a language unit (We don't pronounce phonemes). Each language unit the phoneme, the morpheme, the word (lexeme), the utterance is an abstraction from and a generalization of actual utterances. Native speakers do not notice the difference between allophones of the same phoneme because they this difference does not distinguish meanings, so they abstract themselves from such differences.

the functional aspect

- Each phoneme is opposed to the other phonemes of the same language in some physical and articulatory features. If the opposed sounds differ in one articulatory feature and this difference brings about some changes in meaning, the contrasting features are called relevant, e.g. port-court (both sounds are occlusive and fortis, but [p] is labial and [k] is backlingual.). So labial and backlingual features are relevant features in the system of English sounds. The functionally relevant bundle of articulatory features is called the invariant of the phoneme. Neither of the articulatory features that form the invariant of the phoneme can be changed without affecting the meaning. If the opposed sounds differ in one articulatory feature and this feature doesn't cause any changes in the meaning of the words, the contrasting features are called redundant (irrelevant), e.g. aspirated and non-aspirated [p] in initial positions.

The types of mistakes

- **Phonological** (replacing an allophone of one phoneme by an allophone of a different phoneme) and **phonetic** (replacing an allophone of a phoneme by another allophone of the same phoneme).

The morphological approach

- The morphological approach
- B. de Courtenay tried to analyze phonemes according to their functions in morphemes. He centered his attention mainly on the phenomenon of phonetic and historical alternation.

Psychological or mentalistic approach

- Psychological or mentalistic approach
- The “mentalistic” or “psychological” approach regards the phoneme as an ideal mental image or the target that the speaker aims. A speech sound is a fictitious unit. What does exist is a perception of sound. It is a complex perception of the articulatory movements and acoustic impressions, all of which react on the mind simultaneously. B. de Courtenay called this complex perception the phoneme. A similar approach was adopted by E. Sapir.

The functional approach

- The functional conception
- It was developed by the linguistic society of Prague – N.Trubetskoy, R.Jacobson. They viewed the phoneme as a minimal sound unit by which meaning can be differentiated without much regard to actually pronounced speech sounds. So meaning differentiation is a defining characteristic of phonemes. Thus, the absence of palatalization in dark [ɫ] and palatalization of clear [ɭ] in English do not differentiate meanings. The same articulatory features in Russian [л] [л'] do differentiate meaning (МОЛ - МОЛЬ), and so they should be assigned to different phonemes. According to this conception so-called distinctive features of the sound make up the phoneme corresponding to it. This approach extracts non-distinctive features from the phonemes, thus divorcing the phoneme from actually pronounced speech sounds.

The abstract approach

- Abstract approach
- A stronger form of the functional approach is advocated in so-called “abstract” view of the phoneme. This view of the phoneme was originated by Ferdinand de Saussure and supported by L. Hjelmslev and his associates in the Copenhagen Linguistic circle. This view regards the phoneme as essentially independent from acoustic and physiological properties associated with them, that is of speech sounds.

The principal points of L. V. Shcherba's phoneme theory

- 1) the theory of phonemic variants (they represent phonemes in actual speech.);
- 2) the theory of phonemic independence.

The physical view

- The physical view
- It was introduced by D.Jones and shared by B.Bloch and G.Trager. This view regards the phoneme as a family of related sounds. According to D.Jones “a phoneme is a family of sounds in a given language, satisfying certain conditions: 1) The various members of a “family” must show phonetic similarity to one another, in other words be related in character; 2) No member of the “family” may occur in the same phonetic context as any other. Yet it is not easy to see how sounds can be assigned to the same phoneme.
- D.Jones emphasizes the fact that different members of the same family are mutually exclusive: the [k] that is used in “keep” cannot be used in “call” where we have a labialized [k].
- This approach disregards functional and abstract aspects of the phoneme.

The system of notation

- The system of phonetic notations.
- The system of phonetic notations is generally termed as “transcription”. It is a set of symbols representing speech sounds. There are two types of transcription – broad and narrow. The first type of transcription provides special symbols for all the phonemes of a language. It is mainly used for practical purposes. The narrow transcription provides special symbols to denote not only the phoneme, but also its allophonic variations. The allophonic transcription serves the purposes of research work.

The methods of phonological analysis

- Methods of phonological analyses
- The aim of phonological analyses is the identification of phonemes and finding out the patterns of relationship into which they fall.
- There are two well-known methods:
- 1) the method of minimal pairs (the semantic method) 2) the method of distinctive oppositions

Distributional method

- The Method of Distinctive Oppositions (distributional method)
- This method was introduced by professor R. Jakobson in “Fundamentals of Language”. He based his method mostly on family names like Chitter, Ditter, Hitter. Proper names create a situation in which feature level predominates over the semantic level, for the context is of no use in this case. The distributional method consists in grouping all the sounds in phonemes according to the two laws of phonemic and allophonic distribution.
- Allophones of different phonemes occur in the same phonetic context. And their distribution is **contrastive**: [pit]-[bit].
- Allophones of the same phoneme never occur in the same phonetic context. In this case their distribution is **complementary**: fully palatalized [j] in the word “let” may sound peculiar to native speakers but the word is still recognized as *let*.
- 1. *Контрастивная дистрибуция*. Единицы (элементы) текста находятся в одинаковых окружениях, различая значения.

2. *Дополнительная дистрибуция*. Единицы (элементы) не встречаются в одинаковых окружениях (позициях), несмотря на их формальное сходство.

3. *Дистрибуция свободного варьирования*. Единицы (элементы) текста встречаются в одинаковых окружениях, не различая значений. Шкаф-шкап, галоши-калоши

Exceptions

- The distributional method states that: 1) allophones of different phonemes occur in the same phonetic context, e.g.: *mom* – *ðom*, *pit* – *bit*, i.e. that they are in contrastive distribution; or 2) allophones of the same phoneme never occur in the same phonetic context, e.g. *call* – *keep*. They are here in complementary distribution.
- Yet there are cases when two sounds are **in complimentary distribution** but are not referred to the same phoneme. Consider English sounds [h] & [ŋ] for example: [h] – occurs only initially or before a vowel while [ŋ] occurs only medially or finally and never occurs initially. Here the method of distribution is modified by addition of the criterion of phonetic similarity/dissimilarity. Articulatory features are taken into account in this case also (Sokolova & others, 2004 : 55).

The semantic method

- The semantic method of identifying the phonemes of a language attaches great significance to meaning. This method is based on a phonemic rule that phonemes can distinguish words and morphemes when opposed to one another. If two or more linguistic units of a level higher than the phonemic one (i.e. words or morphemes) differ solely in one of their segments occurred in the same position whereas the rest of phonetic environment is the same – the linguistic units are called a minimal phonological pair and the segments in question are regarded as different phonemes. Example of the commutation test in English words: pen, den, ten, then, and etc.

Three kinds of oppositions

- In phonology (using the method(s) of phonological analysis) we must also establish the system of oppositions. There are three kinds of oppositions. If members of the opposition differ in one feature the opposition is said to be single, e.g.: *pen* – *ben*. Common features: occlusive – occlusive, labial – labial. Differentiating feature: fortis – lenis. A double opposition takes place if two features are marked (i.e. different), e.g.: *pen* – *den*. Common features: occlusive – occlusive. Differentiating features: labial – lingual, fortis – lenis. If 3 distinctive features are marked the opposition is triple, e.g.: *pen* – *then*. Differentiating features: occlusive – constrictive, labial – dental, fortis – lenis.