ВИВЧАЄМО

ТЕОРЕТИЧНУ ФОНЕТИКУ

КОНСПЕКТИ ЛЕКЦІЙ

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Видання призначено для студентів 3 курсу англійського відділення факультету іноземних мов. Тут розглядаються найважливіші положення фонетичної науки, які мають універсальне використання на практиці. Особлива увага приділяється тим розділам, які будуть необхідні студентам в їх самостійній педагогічній роботі. Дане видання спрямовано на ознайомлення студентів з сучасним станом науки про фонетичну будову англійської мови, узагальнення та поглиблення їх знання з практичної фонетики, яка вивчалась на молодших курсах. Навчально-методичний посібник розрахований на 18 годин, і хоча семінари не передбачаються навчальним планом, кожна лекція супроводжується питаннями для семінарських занять. Даний курс лекцій побудовано на когнітивному підході до вивчення матеріалу, що стимулює пізнавальну активність студентів, навчає їх самостійно вирішувати складні лінгвістичні проблеми, аналізувати фонетичні явища іноземної мови, порівнювати їх з явищами рідної мови та застосовувати результати цього зіставлення для корегування як власної вимови, так і вимови своїх майбутніх учнів.

Навчальне видання

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THE SUBJECT MATTER OF THEORETICAL PHONETICS.

The term "phonetics" comes from the Greek word phōne [fɔ:nə] = sound, voice and *phōnetikós* connected with voice = the science (the study) of the voice.

Phonetics is a branch of linguistics which studies the sound system of the language: phonemes, word stress, syllabic structure and intonation. It is a science about sounds and their meaningful usage in speech, historical changes of sounds, how sounds form syllables and words.

The present course of Theoretical Phonetics will include 18 hours (9 lectures), dealing with the following issues:

- Phonetics and Phonology;
- The articulatory aspect of English speech sounds;
- The system of English consonants and vowels;
- Typical mistakes made by Russian/Ukrainian learners in the pronunciation of English sounds;
- Modification of phonemes in connected speech;
- The syllabic system of the English language;
- English Intonation;
- Varieties of English pronunciation including new dialects.

THE ROLE OF PHONETICS IN TEACHING FOREIGN LANGUAGES

Is it necessary for an English teacher to be a phonetician? I would reply that yes. It isn't possible to teach a foreign language to anyone without paying attention to pronunciation. And any pronunciation is phonetics.

Theoretical Phonetic is primarily concerned with *the expression level of speech* (how words are pronounced). It also considers *the content level* (what these sound sequences mean because only meaningful sound sequences become speech).

Why is Theoretical Phonetics included into the curriculum of the Foreign Languages departments of Universities? Because it studies the sound system of the language (phonemes, word stress, syllabic structure and intonation). Neither linguistic theory nor language practice can do without Phonetics.

The main objectives of the teaching Theoretical Phonetics are:

- To give the students the necessary information on theory and problems of English phonetics;
- To show importance of theoretical studies in solving practical problems connected with language teaching.

More practical aims of the course include:

- Teaching students to monitor their own pronunciation and to be able to perfect it;
- Helping students to become a good example/model of native-like English pronunciation for their future students or pupils;
- Teaching students to spot their future pupils' pronunciation mistakes and to be able to correct them;
- Teaching students to keep their organs of speech healthy and enable them to use their voice in the best possible way.

BRANCHES OF PHONETICS

Branches of phonetics correspond to four stages of pronunciation of sounds and syllables: speech organs move to produce sounds, sounds travel in the sound waves,

the waves are received by ear and transmitted to the brain. Thus we distinguish the following branches of phonetics:

1. **PHYSIOLOGICAL Phonetics –** studies neurological, physiological basis of speech production. It studies quality and length of sounds, tamber/timber of voice (which shows people's emotions when they speak), intensity (force) of sounds,

   pitch (or rising/falling) of voice, pausations etc.

   This branch of Phonetics uses a lot of physics laboratory equipment such as spectrographs, oscilographs and others.

2. **ARTICULATORY Phonetics -** studies the way air is set in motion to produce speech sounds, the movements of organs of speech**.** Articulatory phonetics is the most valuable for teaching, as it describes proper ways of speech organ positions to produce a sound;

3. **ACOUSTIC Phonetics** – studies characteristics of sound waves that transmit speech sounds, the way air vibrates between the speaker's mouth and the listener's ear. It studies means we use to discriminate sounds: pitch of voice; loudness; intensity or force of sounds; their length and quality. This branch of Phonetics uses a lot of physics laboratory equipment such as spectrograms, oscilograms, intonograms etc. It begins to play a growing part in language teaching because computer multimedia pronunciation training programmes use spectrograms to build up correct pronunciation skills.

4. **AUDITORY Phonetics** – studies the hearing process, how speech is received by ear.

   Besides, according to the subject and area a branch of Phonetics covers, we distinguish:

1. GENERAL PHONETICS **-**   is part of general linguistics which is concerned with the study of production human speech and functioning of speech mechanism. General phonetics

   • establishes phonetic regularities common for human languages in general;

   • includes a number of theories, which are true for a group of languages,
     e.g. the phoneme theory, the theory of syllable formation, of stress, of intonation

- establishes the types of speech sounds in various languages, the way they are produced and the role they play in speech;
- uses data provided by special phonetics of different languages and disciplines like speech pathology, psychology, etc.

2. SPECIAL PHONETICS deals with the study of *one language.* It falls into:

a) *descriptive phonetics* which studies the sounds of the given language at a particular period of time (that is *synchronically);*

b) *historic phonetics* which studies the sounds of the given language in their historical development (that is *diachronically).*

3. THEORETICAL PHONETICS applies the theories formulated by General Phonetics to the language it analyses.

4. COMPARATIVE PHONETICS is concerned with the comparative study of phonetic systems of two or more languages.

5. PRACTICAL OR APPLIED PHONETICS deals with the application of phonetic theories to other fields of language study, e.g. methodology of language teaching, logopedics, dialectology, surdo-pedagogy, etc.

6. PHONOLOGICAL/FUNCTIONAL PHONETICS is a purely linguistic branch of phonetics. It studies functional properties of phonemes, syllables, accent and intonation by means of special linguistic methods, which help to interpret them as socially significant elements.

CONNECTION OF PHONETICS WITH OTHER DISCIPLINES

Phonetics is closely connected with such linguistic disciplines as grammar, lexicology, stylistics.

Phonetics and Grammar

Phonetics helps for example to distinguish grammar forms:

singular vs. plural of nouns, e.g. *a man– men; a book - books;*

present (or infinitive) vs. past, e.g. *to build – built.*

Phonetics helps to avoid ambiguity using the right intonation and pausation,

e.g. *What writing poet is doing is interesting.* (Compare Russian *Казнить нельзя помиловать)*

Phonetics and Lexicology

Such phonetic phenomena as <u>stress and different meanings of homographs</u> help to distinguish words,

e.g<u>. stress</u> : *a `record - to re`cord; a blackboard – a black board;*

e.g. <u>homographs</u>: *bow* [bqV] лук, бант*;* [baV] - поклон.

Phonetics and Stylistics

Such stylistic means as <u>repetition of phrases, words and sounds</u> help the writers to create precise physical images to impress the reader,

e.g. **alliteration** - *гремучие раскаты грома;*   *"Listen, you hear the grating roar of pebbles..."*

e.g. **onomatopoeia** - a combination of sounds which imitates sounds produced in nature (e.g. *twitter, smack, bang, crash etc*.)

e.g. frequent use of **logical stress or parallel constructions** can be a peculiarity of an author's style.

Connection of Phonetics with other disciplines

Phonetics is closely connected with other linguistic studies (**psycholinguistics, sociolinguistics, applied linguistics etc)** as well as with non-linguistic disciplines (physiology and anatomy, physics (acoustics), information theory, psychology,criminology etc.)

THE USE OF COGNITIVE APPROACH IN TEACHING PRONUNCIATION

Agree or disagree with the following statements. Circle a plus if you agree and a minus if you don't:

+	–	**1. Teaching pronunciation <u>mustn't</u> be paid much attention to. People are interested in <u>what</u> is being said and not in <u>how</u> it is being said.**
+	–	**2. Pronunciation can't be taught. It can only be picked up if a person has a good ear for music and languages.**
+	–	**3. Pronunciation is a visiting card of the speaker who will be treated with more respect if his/her pronunciation is better.**
+	–	**4. Learning pronunciation is hard work. No matter how difficult it may be, it must be worked at and improved all the time.**
+	–	**5. Learning grammar and vocabulary is more important than learning pronunciation.**
+	–	**6. Learning pronunciation is so boring. It is hateful to repeat one and the same word or sound hundreds of times.**
+	–	**7. If you know the phonological system of the language it will be easier for you to**

		monitor your pronunciation and eliminate your mistakes.
+	–	**8.** It is useless to work at your pronunciation because you'll never sound native-like all the same.
+	–	**9.** It is impossible to demand good pronunciation at school. Teaching pronunciation is individual work.
+	–	**10.** There is no better way of learning pronunciation than by imitation.

Recommended answers:

1. Disagree	*5. Disagree*	*8. Disagree*
2. Disagree	*6. Agree*	*9. Disagree*
3. Disagree/ agree	*7. Agree*	*10. Disagree*
4. Agree		

Study comments and analyze your results.

1. If you agree with the first and second statements, ***you underestimate motivation and practice***. You all remember an English proverb "Where there is a will, there is a way". Regarding pronunciation, it means that if you want to improve your foreign sounds and intonation or the quality of your voice, and have enough will power to work hard, you'll eventually achieve your aim.

2. There is a common belief that some people are ***tone-deaf*** while others have a better ear for music and foreign languages. But every human being, unless ***<u>hearing-impaired</u>*** has ***a basic ability to distinguish sounds and produce*** them ***more*** or less accurately. If they did not, they wouldn't have learnt the sounds of their mother tongue.

3. It is known that ear for music can be developed with practice, ***therefore ear for foreign languages can be developed as well.*** Everything depends upon the character and amount of exercises used for training. Learners with good phonetic abilities (to distinguish and imitate sounds) may succeed from only pronunciation drills as they will be able to hear their own mistakes and pronounce the sounds correctly. But if the abilities are poor, a learner will repeat the sounds wrongly again and again.

The only way to use a combination of various activities based on all types of learning approaches: **COGNITIVE, BEHAVIORISTIC** and **MENTALISTIC**.

Cognitive approach to learning is based on learning through doing and using your own experience. It means that nothing is given ready-made, students work out the rules of the language from the examples given by the teacher. In learning pronunciation they compare the sounds of the target language with the similar sounds of their mother tongue and combine the theoretical knowledge of sound production with imitation to achieve language proficiency that will enable them to communicate in real-life situations.

Mentalistic approach is inductive, it means that the level of the students' activity is rather low and they learn by the experience of others rather than by their own. The rules of the language are given ready-made. In learning pronunciation students are required to study theory that is later applied to practice in exercises, which often are rather far from real-life communication.

Behavoiristic approach is based on a psychological theory of a repetitive action and a view on learning as habit formation. Behaviorists believe that if you repeat one and the same word or phrase (which must be absolutely correct) a number of times, you will necessarily remember it. No doubt, you will, but not all people can learn by mere drilling and miming, and besides the number of language items in this case is rather restricted. This learning theory uses a lot of memorization of texts where meaning is often irrelevant.

Each approach has its strong and weak points. So only *by combining the best features of all these learning theories you can achieve success in your work*. This course of lectures is based on the cognitive approach and combines theory and practice.

For future teachers it is *an absolute must* to know the theory of Phonetics. In your work you'll have to spot and diagnose your pupils' pronunciation mistakes. How can you do it if you don't know the origin and character of this mistake? You are like doctors that diagnose a patient. Can a doctor do it if he doesn't know the human's anatomy? The answer is evident, isn't it?

QUESTIONS FOR SEMINAR 1.
1. The subject matter of Theoretical Phonetics.
2. The role of Phonetics in teaching foreign languages.

3. Phonetics as a branch of Linguistics.
4. Branches of Phonetics.
5. Connection of Phonetics with other sciences.
6. The use of cognitive approach in teaching pronunciation.

LECTURE 2.

SPEECH SOUNDS AND SPEECH PROCESS

- **Speech sound as a physiological, physical and linguistic phenomenon.**
- **Physical (acoustic) properties of speech sounds.**
- **Physiological (articulatory) aspects of speech sounds. Speech mechanisms.**
- **Stages of the speech process.**
- **Recommendations for correct breathing.**
- **Psychological mechanism of the speech process.**
- **Peculiarities of people's voices.**

SPEECH SOUND AS A PHYSIOLOGICAL, PHYSICAL AND LINGUISTIC PHENOMENON

Sounds can be produced by different things - cars, birds, thunderstorms, raindrops, falling leaves and, of course, human beings. Man is one of the numerous animals created by nature, and as all of them he has his own language. Sounds created by the speaker shows his/her personality, which includes: age, nationality, education, physiological and emotional state, social status, sex, etc., e.g. Eliza Doolitle and Professor Higgins in B.Shaw's "Pygmalion".

Each **SPEECH SOUND** has a complex nature and can be analyzed from the point of view of **4 DIFFERENT ASPECTS**:

1. physical (acoustic) aspects (frequency *(частота),* pitch *(высота тона голоса),* intensity/force, duration) – studied by Physiological Phonetics;

2. auditory aspects (periodical (music and speech) and non-periodical (noise))– studied by Physiological Phonetics;

3. articulatory aspects – studied by Articulatory Phonetics;

4. linguistic (functional) aspects - studied by Functional or Phonological Phonetics.

PHYSICAL (ACOUSTIC) PROPERTIES OF SPEECH SOUNDS

Acoustically speech sound is *a physical phenomenon produced by the vibration of the vocal cords and perceived by ear due to the vibration of the layers of air*

which occur at the rate of 16-20 thousand times per second, that is the limit of human hearing. Sounds have the following **PHYSICAL PROPERTIES**:

1. ***Frequency*** *(частота)*- is the number of vibration per second. The greater the frequency, the higher the pitch. Frequency is measured in *hertz or cycles per second.*

2. ***Pitch*** *(высота голосового тона)* - is the degree of highness or lowness varying with the number of vibrations of a note; perception of the frequency of repeated pressure on the ear-drum. The pitch rises with the increase of the vocal cords tension and the frequency increases as well. The pitch of the man's voice is lower than that of the woman's because his vocal cords are longer and thicker. ***Pitch component*** (мелодический компонент тона голоса) has a certain

 - *level* (уровень высоты (частотная характеристика голоса, напр., высокий, низкий);

 - *movement* (движение (напр., вверх в конце вопросов, вниз в приказах);

 - *range* (диапазон частот голоса, высотный интервал, объем высотных изменений голоса на протяжении отрезка речи).

3. ***Intensity/Force*** *(интенсивность, напряженность звука)* depends on increase of air pressure on organs of speech. They become more tense and produce more intense and louder sounds. Combination of air pressure and tension (напряженность) of organs of speech results in greater pressure on ear-drums and you can hear the sound better. Intensity is measured in *decibels (dbs).*

4. ***Duration*** - length or quantity of time during which the same vibratory motion, the same patterns of vibration are maintained. It is measured in *milliseconds.*

PHYSIOLOGICAL (ARTICULATORY) ASPECTS OF SPEECH SOUND

For breathing and speaking people need some power. There are ***4 physiological mechanisms*** that take part in the production of each sound:

1. the **POWER MECHANISM (*the diaphragm, the glottis*** (голосовая щель); ***the lungs, the larynx-*** (гортань) (with ***the vocal cords***), ***the bronchi*** [brPNkai] , the pharynx (глотка), ***the windpipe*** = trachea [trq`ki:q], ***the mouth*** and ***the nasal cavities;***

2. the **VIBRATOR MECHANISM** (*the vocal cords* in the larynx);

3. the **RESONATOR MECHANISM** *(the pharynx, the larynx, the mouth, the nasal cavity);*

4. the **OBSTRUCTER MECHANISM to produce consonants** *(the tongue, the lips, the teeth, the soft palate with the uvula, the hard palate with the alveolar ridge).*

Let's make two comments.

The *vibrator mechanism* is the *voice producing mechanism* and consists of the vocal cords that are situated in the larynx. *Vocal cords may be opened and closed*(completely and incompletely). The pitch of the voice is controlled by the tension ofthe vocal cords. When the air from the lungs comes to the larynx, the vocal cords*vibrate* and then produce different combinations of sounds:

- pure musical sounds - *vowels (when the vocal cords are drawn together);*
- sounds where voice prevails over noise - *sonants or sonorants = semi-vowels*;
- sounds where noise prevails over voice - *voiced consonants*;
- sounds that have only noise and no voice because the vocal cords are taken apart and do not vibrate - *voiceless consonants;*
- when both parts of the glottis are closed firmly, the sound which is produced at separating them is called *the glottal stop* (твердый приступ). It's one of the most typical mistakes of Russian/Ukrainian learners of English. Glottal stop is characteristic of our languages, but is not observed in standard British pronunciation where practically all the words in the sentence are linked together. (e.g. Any noise annoys an oyster but a noisy noise annoys an oyster most.)

The obstructer mechanism is used only *in the production of consonant sounds*, because vowels are produced with the vocal cords drawn together and without any obstruction to the air stream. Obstructions may be made by:

- the tongue - the tip with the blades; the front part; the middle part; the back part; the root of the tongue;

- the lips - top and bottom (upper/lower);

- the teeth - top and bottom (upper/lower);

- the soft palate with the uvula;

- the hard palate with the alveolar ridge (alveoli/teeth ridge)

To sum it up we may say that voice is produced after a command is given *by the brain* and the air pushed up under the pressure *from the lungs and bronchi* finds *resistance of the closed vocal cords*. The air stream makes them *vibrate* and as a result appears a sound. It however is not of full value because it is too weak and primitive. It *takes its intensity and beauty* when it goes to *resonators* either to high ones – mouth and nose or to bottom ones in the chest cavity - the larynx and the pharynx.

STAGES OF THE SPEECH PROCESS

We distinguish **6 STAGES OF THE SPEECH PROCESS:**

Stage 1. INNERVATION It is the initial stage when your brain gives command to your central nervous system that controls all the stages of speech and breathing mechanism.

Stage 2. BREATHING It is inhalation and exhalation of air that gives you force for sound production. When people breathe without speaking, the inhalation-exhalation time is equal. But when we breathe for speech, our inhalations are short and exhalations are long and controlled.

RECOMMENDATIONS FOR CORRECT BREATHING

1. *Do not wear tight clothes* and especially tight collars when you are going to speak in public.
2. Keep your *back straight* while speaking.
3. If you are sitting while reading or speaking *do not press your chest against the edge of the table*.
4. *Do not bend your head* while reading or speaking as it injures the voice apparatus and causes huskiness.
5. *Do not tense the muscles of your neck*.

Stage 3. PHONATION   The production of speech sounds by vocal cords.

Stage 4.   RESONANCE   It is amplification and modification of sounds using natural resonators - the larynx, the pharynx, the nasal cavity and the mouth cavity.

Stage 5. ARTICULATION   The movements of active organs of speech to produce a sound.

Stage 6. AUDITION.   This is the ultimate aim of speech process when both interlocutors hear the air vibration in the form of different sounds that make up words and sentences. In short, audition is the process of hearing.

PSYCHOLOGICAL MECHANISM OF THE SPEECH PROCESS

The psychological mechanism selects from the great amount of acoustic information *only   linguistically important and interprets it according to the given language system.*

Do you know why Russian/Ukrainian students seldom distinguish the sounds [æ] and [e] like in *"bad - bed"*? It happens because this linguistic information is not important for their mother tongue.   That is why you can often hear students pronounce "bed news" or "bed weather".

The same happens when they *devoice final consonants* at the end of the words, e.g. *He took his pen out of his back* (instead of *bag*).

She was hungry and wanted to buy some foot (instead of *food*).

PECULIARITIES OF PEOPLE'S VOICES

- It is generally accepted that *powerful and self-confident people speak loudly* while shy and modest people have a low voice.

- A *low sound* is produced when a person *does not know how to breathe* in the right way and the lungs do not push out enough air.

- *Too loud voices* may be a result of a *disease* when the vocal cords do not close. In this case it is recommended to see a special doctor who is called a phoniator. (фониатр).

- There are no people with two *identical tamber (timber)*. It helps us to guess who is speaking even if we do not see this person. Tamber may be unpleasant if people speak with *nasality, hoarseness or hard glottal attack.*

- Hoarseness and harsh sounds show that people suffer from some defect of vocal cords or in resonators. Vocal cords may be closed too tightly or the throat may be too tense. It is always the result of nervousness or overtension. In this case it is also recommended to see a phoniator.

- Each person's voice is unique and no two people have resonatory cavities that are exactly the same in size and shape. A person can adjust and change his resonatory cavities doing special exercises so s/he <u>can change the qualities of his/her voice</u>.

- You can also <u>widen the range of your voice</u>. One of the recommended exercises is to read hexameter, making your pitch higher on every line like in a musical scale.

QUESTIONS FOR SEMINAR 2

- Speech sound as a physiological, physical and linguistic phenomenon.
- Physical (acoustic) properties of speech sounds.
- Physiological (articulatory) aspects of speech sounds. Speech mechanisms.
- Stages of the speech process.
- Recommendations for correct breathing.
- Psychological mechanism of the speech process.
- Peculiarities of people's voices.

LECTURE 3.

PHONEMES AND PHONOLOGY

- **Functional significance as linguistic aspect of sound production.**
- **The nature of the phoneme. Phoneme as a functional unit.**
- **Phonemes and allophones.**
- **Types of allophones.**
- **Phonetics and Phonology. Units of Phonetics and Phonology.**
- **Criteria for comparative analysis of languages.**

FUNCTIONAL SIGNIFICANCE AS LINGUISTIC ASPECT OF SOUND PRODUCTION

Each sound of speech is functionally significant, though it has no meaning of its own. (For example, what does *"k"* mean?). This feature of ***absence of meaning***

distinguishes any phonetic unit of the language from all other language units, grammatical or lexical, which are meaningful, e.g. *a morpheme* "est" – small + est = smallest (grammatical language unit); *work* (a lexical language unit).

So, sounds become meaningful only in context ***when they are combined in words or have some syntactic meaning***:

e.g. [qV] *Oh!* (surprise);

[R] *They **are** students*.;

[r] *"R-r-r!" said the angry dog*.

Linguistic aspect of is also called ***functional*** **or** ***social*** because speech sounds play an important role in functioning of the language that is a social phenomenon.

THE NATURE OF THE PHONEME
PHONEME AS A FUNCTIONAL UNIT

Speech sounds are ***building blocks****,* materials for morphemes, words, phrases and sentences**.** This ability of speech sounds to build, to constitute words and sentences is called its **constitutive function**.

Besides this, speech sounds help ***to distinguish one word from another***, e.g. man - men; pot - port; asks - asked. This feature of speech sounds is called their **distinctive function.** In Theoretical phonetics speech sounds that build up words and differentiate them are called **phonemes.** Its shortest definition pointing at its two main functions is:

The PHONEME is the smallest linguistically relevant unit of the sound structure of a given language which serves to distinguish one word from another.

Each phoneme of a given language may be regarded as opposed to the other phonemes in some physical (and/or articulatory) features (e.g. [s] - voiceless, [z] – voiced; [V] – short, [u:] - long). Thus, ***the relationship of phonemes can be described as difference which may be measured either at the acoustical or articulatory level.***

Phonemes are unilateral (one-sided), i.e. they carry no meaning of their own (in contrast to words as units of the semantic level, that can have a meaning even when they are pronounced in isolation). The "phonemes" [b] and [p] mean nothing when they are not used in words. But they can differentiate two meanings (become *semiologically relevant*) in words (e.g.*"bill" and "pill"*). **Phonemes in words become semiologically relevant** (are used to express a meaning). The category of semiological relevance is the most important category of phonology.

Phoneticians make a conclusion that ***the phoneme is a unity of three aspects:***

1. ___the material aspect___, because in speech it is represented by concrete material sounds;

2. ___the abstracted aspect___, because it is a generalization, abstracted from its variants that exist in actual speech;

3. ___the functional aspect___, because it functions to make one word or grammar form distinct from the other (e.g. *said-says, sleeper-sleepy, light, like*).

PHONEMES AND ALLOPHONES

Phonemes and allophones are closely connected but at the same time they belong to two different levels:

- ***phoneme – to an abstract level,***
- ***allophones – to a concrete level___.___***

The phoneme is an abstraction. It is realized in a bunch of allophones that occur in different positions in the word (i.e. different environments).
Listen to the pronunciation of one and the same sound [k] in several words:

cool - [k] is aspirated;

school - [k] loses aspiration after [s];

black - [k] has less aspiration than at the beginning of the word;

black cat - first [k] loses plosion and aspiration before the second one

Though all these 4 sounds [k] are slightly different they are recognizable as the sound [k] all the same. They are variants of one and the same phoneme [k] and are called ___allophones___. So, ***articulatory and acoustic features of allophones depend on their position and phonetic environment.***

The articulatory features which form the invariant of the phoneme (stay the same in all its allophones) ***are called <u>distinctive or relevant.</u>*** (e.g. backlingual and labial articulations of [k] and [p] are the same in all their allophones)

The articulatory features which change in allophones of the same phoneme are called non- <u>distinctive or irrelevant.</u> Here's an example.

The phoneme [p] is defined as ***occlusive, plosive, labial, bilabial, noise, fortis, voiced consonant.*** All these features are common for all its allophones. But each allophone besides these common features will have its own peculiarities,

park - [p] is aspirated;

stop - [p] is less aspirated;

prove- [p] is labialized;

stop Kate - [p] has no plosion and practically no aspiration.

> **ALLOPHONES (or variants) of a phoneme are speech sounds which are its realizations and which cannot distinguish words.**

Allophones help their phonemes to perform a recognitive function because without them it is sometimes difficult to recognize words, e.g. words *"post"* and *"boast"* differ only in aspiration and work of the vocal cords ([p] is voiceless and [b] is voiced).

COMPLEMENTARY DISTRIBUTION AND FREE VARIATION

Now the question arises: which of the phonetically different sounds should be regarded as different phonemes and which should not? To establish a set of phonemes in any given language we must disregard all the sounds the difference between which is accounted for by their position alone. e.g. Russian: *дом - дым*. The vowels in these words are in absolutely identical positions, and therefore this case is quite different from the opposition: *мел - мель,* where the difference between the vowels [э] and [jэ] can be easily explained by their positions. They are never found in the same environment in the Russian language. They are positional variants of one and the same phoneme [э].

The sounds of a language, therefore, fall into two classes:

1. sounds the difference between which is not fully conditioned (does not depend on the position alone);

2. sounds the difference between which is fully conditioned (depends on position alone). If two or more sounds never occur in a given language in the same environment (by environment we mean the sounds which immediately precede or follow the sound in question) they are not different phonemes, but only positional variants (allophones) of a certain phoneme.

e.g. [i:] in an open syllable and [i] in the syllable closed with a voiceless

consonant, as in *see – seat*;

[t'] (aspirated) before a stressed vowel and [t] released through the nose or

laterally, as in *table – little.*

In other terms, these sounds are found to be in **complementary distribution** (by ***distribution we mean a sum total of the environments of a given sound***), i.e. their distributions complement each other to cover the whole distribution of the phoneme ([i:] and [t] in our examples) of which they are variants.

Other sounds the difference of which is never conditioned by their position alone may or may not be used as different phonemes. To decide whether the two given sounds are different phonemes or not we must apply the criterion of ***semiological relevance***. Thus the vowels in *дом - дым* are different phonemes because the opposition of these sounds are semiologically relevant. On the other hand, the English bilabial fricatives [w] (tense) and [w] (lax) are not different phonemes, but variants of one and the same phoneme. The difference between them does not serve to differentiate any sound envelopes of English though the sounds may occur in the same environment. If two or more variants of one and the same phoneme may occur in the same environment, and the choice of a particular variant depends upon the speaker (to be more exact, on his individual manner of speaking) the variants are said to be ***in free variation***.

ALLOPHONES

FREE VARIATIONS

in different positions   in the same position
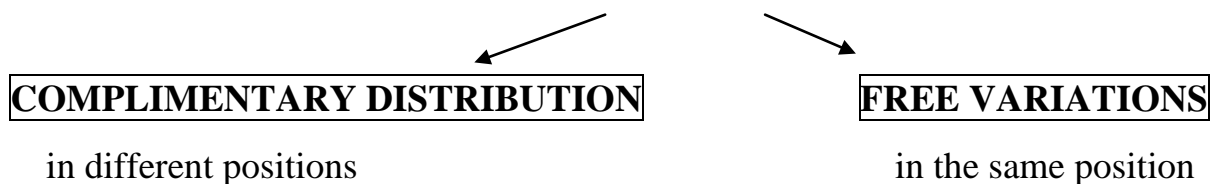
1. Some allophones <u>can never be found in identical positions</u>,

   e.g. dark and light variants of the phoneme [l]:

      light [l] before vowels and [j] - *lily, will you*;

      dark [l] before consonants and in final position - *apple, will Tom*.

This example does not concern American English, where the [l] is dark in all positions.

This phenomenon is called **complementary distribution of allophones**.

2. But when allophones of the same phoneme are <u>found in one and the same position</u> they are said to be in **free variation**,

   e.g. [w] in *when* or *which* is pronounced differently in different states of the USA.

      [w] is an allophone of phoneme [w] = different dialects of the language.

TYPES OF ALLOPHONES

Allophones can be grouped according to three different principles:

ALLOPHONES	POSITIONAL variants
	INDIVIDUAL variants
	DIALECTAL variants

Positional variants of allophones are the following:

1. ***typical or principal*** - free of influence of the neighbouring phonemes, when they are in isolation, e.g. Ah! [R] - in exclamation.

2. ***positional*** - traditionally used only in certain positions,

      e.g. dark and light [l];

      e.g. <u>*traditional devoicing*</u> of final consonants in Russian, *"дуб", "столб"*;

      e.g. <u>*absence of voicing*</u> in English prefixes - *"disagree, disorder, absurd"*.

3. ***combinatory*** - under the influence of neighbouring sounds, that is when they are combined with other phonemes,

e.g. try - [t] is a post-alveolar allophone of the sound [t]; [r] is a devoiced allophone of the sound [r].

e.g. all this – dentalisation of the phoneme [l] under the influence of the phoneme [ð]

PHONETICS AND PHONOLOGY

The phoneme is a phonological unit which is represented in speech by its phonetic units - speech sounds. When we listen to someone's speech we constantly carry out *2 types of analysis*:

1. *phonetic* - in which we distinguish articulatory and acoustic characteristics of particular sounds and their combinations;

2. *phonological* - in which we determine the role of these sounds in communication.

> *Thus, both phonemes and speech sounds are 2 sides of one and the same phenomenon - the sound system of language.*

In special literature you can find a lot of definitions of phonetics and phonology. I will give you only one which I hope will help you to understand the difference between them.

Phonetics is a branch of linguistics that studies:

a) sounds in the broad sense, comprising *segmental sounds* (vowels and consonants) and *prosodic phenomena* (pitch, stress, tempo, rhythm, pauses);

b) the ways in which sounds are organized into a *system of units* and the variation of units in all types and styles of spoken language;

c) the *acoustic properties of sounds*, *the physiological basis of sound production and peculiarities of each individual speaker*.

Phonology is a purely linguistic branch of Phonetics which

a) deals with the *functional aspect of sound phenomena*;

b) discovers those segmental and prosodic features that *differ one language from another;*

c) establishes the *system of phonemes and prosodemes for each language*;

d) determines the *frequency of occurrence* of these units in syllables, words, rhythmic groups and other sequences that form an utterance.

Let's compare phonetic and phonological units studied by these disciplines:

Phonetics	*Phonology*
speech sounds	phonemes
syllables	syllables
stress	accentemes
intonation	prosodeme

So, it is evident that ***Phonetics deals with a more concrete and practical level*** of real speech sounds while Phonology studies ***a more abstract and general level*** of abstract units that make the sound inventory of a language. Phonology of segmental units (vowels and consonants) is called ***phonemics,*** phonology of intonation is called ***prosody*** (**prosodemics, intonology**).

CRITERIA FOR COMPARATIVE ANALYSIS OF LANGUAGES

Phonological units are mainly used for comparative analysis of different languages. Languages are usually compared according to the following criteria:

1. comparison of sound inventories;
2. distinctive features analysis;
3. number and quality of oppositions and correlations;
4. reduction or neutralization of phonemes;
5. force of phonological opposition;
6. phonemic distribution and frequency of use of different classes of phonemes;
7. functions of phonemes in words.

INTERESTING FACTS

The University of California in Los Angeles is a home of a survey of the sound systems of 317 languages. They have Phonological Segment Inventory Database which includes a representative selection with members of each of the different language families, e.g. West-Germanic, Indo-Pacific, Polynesian, etc. In the result of comparative analysis interesting tendencies and patterns emerge. For example, 70 % of the languages surveyed have between 20 and 37 sounds in their inventories. The largest inventory discovered, is 141 sounds and the smallest is only 11.

Consonants are far more common than vowels: the average number of consonants is 22.8 and the average number of vowels is 8.7. One of Indo-Pacific languages has only 22 sounds - 12 vowels and 10 consonants. And one of American Indian languages has 46 consonants and only 3 vowels! Another, Mohawk has only 7 consonants! The Sedang language spoken in Vietnam has 55 vowels!

All languages have plosives and of these, voiceless occur more often than voiced. The majority of languages have up to 4 fricatives, but some have as many as 12, and Russian is among them. The most frequent fricatives are [s, z]. The most frequent nasal in most languages is [n]. If there are two nasals, they are [n] and [m]. Only 4 languages surveyed have no nasals at all. There seem to be no languages with just 1 vowel, but there is one language that has 3 vowels! The shortest alphabet in the world, Rotokas from the Solomon Islands, has only 11 letters. The longest alphabet, Cambodian, has 74 letters.

Phonology helps in devising alphabets and orthography of unwritten languages and in reforming spelling. With the help of Phonology alphabets of some Asian and African countries and North American tribes (Ojibway) were created at the beginning of the 20-th century. Spelling reform is being held in the USA now, e.g. *night - nite; new - nu; through - thru, etc.*

QUESTIONS FOR SEMINAR 3

1. Functional significance as linguistic aspect of sound production.
2. The nature of the phoneme. Phoneme as a functional unit.
3. Phonemes and allophones.
4. Complementary distribution and free variation.
5. Types of allophones.
6. Phonetics and Phonology. Units of Phonetics and Phonology.
7. Criteria for comparative analysis of languages.

LECTURE 4.

METHODS OF PHONOLOGICAL ANALYSIS

- **Methods of comparative analysis. The Phoneme theory.**
- **Phonological opposition.**
- **The system of phonological oppositions in English. Relevant and irrelevant features.**
- **Interrelations among the phonemes of one given language.**
- **Phonological schools.**

METHODS OF COMPARATIVE ANALYSIS

Phonology is based on the <u>phoneme theory</u> which we are going to discuss today. ***The principal aim of Phonology is to establish all the phonemes of a given language that is to make the sound inventory of the given language.***

Using your own linguistic experience you can say that different languages have a different number of speech sounds, or phonemes and correspondingly a different number of allophones representing them. So each language has it own system of phonemes. E.g. English – 24 consonants and 20 vowels; Russian/Ukrainian – 5-6 vowels and 35-37 consonants.

Even similar sounds in different languages have their differences. E.g. In English <u>dark and light allophones of [l]</u> are realizations of one and the same phoneme that is why native speakers will recognize the word *lily* even if you use the dark allophone of the sound [l]. In Russian [л] and [л'] are not allophones but different phonemes as they distinguish words, e.g. *лук - люк*.

Phonologists use 2 main **METHODS TO ESTABLISH THE SOUND INVENTORY** of the language.

1. the **DISTRIBUTIONAL method**;

2. the **SEMANTIC method/the method of substitution**.

THE DISTRIBUTIONAL METHOD

Distribution of phonemes means the place they occupy in the word, e.g. initial position, final position, or their phonetic environment. The fact is that the sounds of a language combine to a certain pattern that is characteristic of this particular language.

It means that some sounds can never be found in certain positions, e.g. in English [h] never happens in the final position, and [ŋ] never occurs in the initial position.

Such peculiarities allow phonologists <u>to identify phonemes on the ground of their distribution.</u> For example, if one sound occurs in a certain phonetic context and another sound occurs only in a different phonetic environment, these sounds cannot be opposed to each other. It means that these two sounds are <u>complementing one another</u> and they are <u>allophones</u> of one and the same phoneme. The distributional method is based on two <u>phonological laws of phonemic distribution:</u>

a) different phonemes ***<u>can</u>*** freely occur in one and the same position ***and can be opposed to each other;***

b) allophones of one and the same phoneme ***<u>cannot</u>*** occur in the same phonetic context as they can occur only in different positions and ***therefore cannot be opposed to each other*** (except complimentary distributions and free variations which are not numerous).

- Let us analyze two minimal pairs, e.g. *pea - bee* [pi:] - [bi:]; *bay - pay* [bei] - [pei]. Phonemes [p] and [b] in these pairs occupy the same initial position and have the same phonetic environment so they are two different phonemes.

- Now let's take e.g. *port – sport,* where [p] in the first word occupies the initial position in the stressed syllable so it is <u>aspirated</u>, while in the second word, though it also happens to be in the stressed syllable, it is preceded by the sound [s<u>] that deprives it of aspiration.</u> As their phonological environment is different, aspirated [p] cannot be opposed to non-aspirated [p].

The distributional method is a purely formal method of identifying phonemes of a language. It can be used by phonologists even if they deal with the languages they do not know at all. For example, it is widely used by American linguists to study the languages of Red Indian tribes that have no written language. Taken alone the ***distributional method*** is not enough to establish all the phonemes of the given language that is why the other method is used.

THE SEMANTIC METHOD

The second method consists of discovering minimal pairs. While using it scientists systematically replace one speech sound by another in the same position to see whether this substitution will produce a minimal pair or not. This method consists of finding as many meaningful pairs of words which differ in one phoneme as possible. The semantic method is called so because it pays extremely important attention to semantic meanings of words. Phonologists study the function of sounds by collecting minimal pairs of words in the given language

If two speech sounds distinguish words with different meanings, they form a phonological opposition and are realizations of two different phonemes. If not, they are allophones of the same phoneme.

The semantic method is based on the phonemic rule that a phoneme can distinguish words and morphemes when opposed to another phoneme or zero in the same position.

e.g.   *ten - pen* [t] vs. [p], *man - men* [æ] vs. [e] is a phonological opposition

pen - pens [-] vs. [z], *ten - tenth* [-] vs. [θ] is a zero phonological opposition, as these words present different grammar forms.

PHONOLOGICAL OPPOSITION

Both of these methods help to distinguish phonemes by establishing their distinctive phonological oppositions. To be different 2 phonemes should have *at least one relative distinctive phonological feature* (существенный различительный фонологический признак).

Let's compare 2 phonemes [p] and [b]. They are both labial, bilabial, occlusive, plosive, noise consonants. What differs them is that [p] is voiceless and [b] is voiced. They are different only in one relative distinctive phonological feature and they are a minimal pair as they exist in words [pen] and [ben]. The conclusion is that [p] and [b] are 2 different phonemes and they are in phonological opposition.

Phonological oppositions can be:

1. *single*, e.g.   [f - v] constrictive noise fricative labio-dental; [f] voiceless, [v] voiced;

2. ***double***, e.g. [b - d] where [b] is occlusive noise plosive <u>labial bilabial</u> voiced, and [d] is occlusive, noise plosive <u>fore-lingual apical-alveolar</u> voiced;

3. ***multiple***, e.g. [k - s] where

   - [k] is <u>occlusive</u> noise <u>plosive back-lingual</u> voiceless, and
   - [s] is <u>constrictive</u> noise <u>fricative apical-alveolar</u> voiceless.

The only features they have in common are that they are <u>both noise and voiceless.</u>

It is not always easy to identify all phonemes of the language. For example not all phonologists consider the neutral sound ***schwa*** [q] to be a separate phoneme in English. Some scientists regard it as an allophone of the sound [æ] or [A], though they may be found in phonological opposition, e.g. *accept* [qk`sept] and *except* [ik`sept], *officers* [`P fisqz] and *offices* [`P fisiz] where they distinguish words.

There are also controversial views on <u>phonemes [j] and [w].</u> Some scientists regard them as allophones of [i] and [u] correspondingly. But again these phonemes may be found in minimal pairs, e.g. jet - met - vet - wet; Us [u:z] - use [ju:z]. Besides [w] and [j] occur in the phonetic positions that are occupied only by consonants and not by vowels.

In English there are also several <u>sounds of a complex nature</u> that present difficulty in determination whether they are ***monophonemic*** or a combination of several phonemes [C], [G], [tr], [dr], [ts] and [dz].

There are several rules (worked out by the phonologist Trubetskoy N.) which help to determine whether the sounds are monophonemic or a combination of several sounds. They are:

   1. a phoneme is indivisible as no syllable division can occur within a phoneme;
   2. a phoneme is produced by one articulatory effort;
   3. the duration of a phoneme should not be longer than all other separate phonemes of the same language.

It was scientifically proved that [C] and [G] are monophonemic separate sounds as their duration is the same as any other monophonemic sound of English, they are pronounced by one articulatory effort and they cannot be divided into syllables, e.g.

kitchen [ki- Ɔn]. On the other hand [ts] and [dz] are combinations of sounds because their duration is longer, and the question about [tr] and [dr] is not settled yet.

Another problem is English triphthongs, e.g. [aVq], [aiq] as in words *flower* and *fire*. Some scientists regard them as monophonemic sounds, others as biophonemic clusters. The point of view of those phonologists who consider them to *be complex units consisting of 2 elements = biophonemic clusters* is based on the physical and physiological arguments that state that

- they have 2 syllables;

- they are not produced by one articulatory effort;

- their duration is more than other monophthongs and diphthongs.

THE SYSTEM OF PHONOLOGICAL OPPOSITIONS IN ENGLISH
1. RELEVANT AND IRRELEVANT FEATURES.

Every speech sound is characterized by a number of distinctive features, but not all of which are equally important for communication. For example, lack of aspiration of the sounds [p, t, k] though shows a foreign accent will not hinder communication if the word is in some understandable context.

So the question is to decide which of the features are **relevant** and which are **irrelevant**. This question is important not only from the ***phonological*** but also from the ***methodological*** point of view as teachers in mass schools using an <u>approximation approach</u> may not pay much attention to some irrelevant distinctive features of sounds like, e.g. aspiration. Phonological analysis makes a conclusion that:

Each <u>PHONEME</u> is characterized by a certain number of phonologically <u>relevant</u> features which are <u>constant and distinctive</u>, as they never change, no matter what position this phoneme is and they always distinguish this phoneme from any other.

Each <u>ALLOPHONE</u> has all phonologically relevant features of its phoneme plus a number of irrelevant features which distinguish one allophone from another allophone of the same phoneme. Let's analyse the phoneme [p] in different words:

pea [pi:]	***paw*** [pɔ:]	***up*** [ʌp]
labial	*labial*	*labial*

bilabial	*bilabial*	*bilabial*
occlusive	*occlusive*	*occlusive*
noise	*noise*	*noise*
fortis	*fortis*	*fortis*
plosive	*plosive*	*partially plosive*
aspirated	*aspirated*	*partially aspirated*
unrounded	*rounded*	*unrounded*

The result of our analysis shows that ***phonologically relevant features*** for the phoneme [p] are <u>labial, bilabial, occlusive, noise, fortis</u>. All the other features are ***irrelevant*** as they change in different positions.

<u>The main point is</u> - if the foreign speaker substitutes at least one relevant phonological feature of a phoneme, it changes completely and the word would not be recognizable. If he substitutes one allophone of the same phoneme by any other, the message will be clear but the ***accent*** will grate on the ears.

2. OPPOSITIONS IN THE SYSTEM OF ENGLISH CONSONANTS are as following:

1. **LENIS V. FORTIS oppostion** based on the force of articulation (voiced vs. voiceless), e.g. *port* and *bought;*

2. **opposition BASED ON THE ACTIVE ORGAN of speech**, e.g. *wet* and *vet* (bilabial vs. labial);

3. **opposition BASED UPON THE TYPE OF OBSTRUCTION**, e.g. *cat* and *hat* (occlusive = constrictive).

LENIS - FORTIS OPPOSITION

One of the most important <u>relevant phonological features</u> of English consonants is the lenis - fortis opposition. It means that no matter what position they occupy in the word

- voiced English consonants are always ***<u>lax or weak - lenis</u>***,

- while voiceless consonants are always <u>**strong and energetic**</u> **- fortis**

It is just the opposite in Russian. If all teachers and students of English remembered it, there wouldn't be funny confusions of the kind:

e.g. *They chose a fat <u>pick</u> (pig) and roasted it for dinner.*

His <u>head</u> (hat) was in his hand.

The words "pig" and "pick" are distinguished by only one final sound which is traditionally devoiced by Russian/Ukrainian learners. This devoicing changes the meaning of the words and makes the sentence either funny or meaningless.

3. OPPOSITIONS IN THE SYSTEM OF ENGLISH VOWELS

1. BETWEEN MONOPHTHONGS

e.g. [R] = [A] *dark* and *duck*

2. BETWEEN MONOPHTHONGS AND DIPHTHONGS e.g. [e] - [ei] *let* and *late*; e.g. Italians can't pronounce [O:], so they say *law* as [qʊ], e.g. *mother-in-law* will sound like *mother-in-low*.

3. BETWEEN DIPHTHONGS

e.g. [iq] = [Fq] *chair* and *cheer*; *hare* and *here*

HISTORICAL LENGTH OF ENGLISH VOWELS

Another example is historical length of English traditionally long vowels. Since you started learning English you've been told that some English vowels are long, while others are short. Let's find out if this length is a relevant or irrelevant feature of each separate historically long vowel.

Let's compare: e.g. *knee* [ni:]; *kneel* [ni:l]; *niece* [ni:s].

Is the length of the vowel sound [i:] in all these words the same? No, it's different.

Historically long vowels are:

- the longest in an open syllable,
- shorter before a voiced consonant
- the shortest before a voiceless consonant

So according to the rule that *relevant distinctive features are constant and never change*, *the length of a vowel cannot be regarded as its relative distinctive feature and can influence only the accent, but not the meaning of the word.*

AN INTERESTING FACT

It has been physically proved that the length if [i] in the word *sid* and [i:] in the word *seed* is absolutely the same. When we deliberately make it longer we make a mistake and are influenced by the ***visual image of two dots*** after the symbol [i:]. Though these two sounds are really different but what makes them two separate phonemes is their other relevant distinctive features - ***lip and tongue position***, but not the length.

INTERRELATIONS AMONG THE PHONEMES OF ONE LANGUAGE

1. Different phonemes can't have common allophones.

2. Allophones don't lose their distinctive features.

3. There is no neutralisation of phonological opposition but there is historical alteration of sounds. e.g. Russian *[луг] = [лук].*

PHONOLOGICAL SCHOOLS

The difference of opinions that was demonstrated in the question of phonemes identification shows that there have always existed quite a lot of different scientific phonological schools which had different viewpoints on the question of the Phoneme theory.

The founder of the phoneme theory was I.A. Baudouine de Courtenay, who formulated it in 1868-1881. A child of French parents, he was born in Poland but almost all his life worked in Russia - in Kazan and St.Petersburg. His ideas were later developed by his followers in different countries of the world.

The **Moscow** school represented by ReformatskiyA.A., Kuznetsov R.S., Avanessov R.I., Panov M.V. and others investigated the phoneme by a multilateral phonological analysis.

The **Leningrad** school (Scerba, Dikushina, Vassylyev and others) analysed and investigated sounds as real speech units.

The **Prague** school (Trubetskoy, Mathesuis, Jakobson, Trnka, Vachek, etc) developed the ideas of the outstanding Swiss linguist Ferdinand de Saussure, who is considered to be the founder of modern linguistics. The main points of their theory are:

1.   the separation of phonology from phonetic

2.   the theory of phonological opposition

3.   the theory of the archi-phoneme

The **London** school headed by Prof. Daniel Jones represented the physical conception of the phoneme.

The **American** school (Edward Sapir and Leonard Bloomfield) analyzed the phoneme syncronically without taking into consideration its historic development.

The **Copenhagen** Phonological school headed by L. Hjelmslev tried to represent all linguistic phenomena as a series of relations and mathematical ratios.

QUESTIONS FOR SEMINAR 4

1. Methods of comparative analysis. The Phoneme theory.
2. Phonological opposition.
3. The system of phonological oppositions in English. Relevant and irrelevant features.
4. Interrelations among the phonemes of one given language.
5. Phonological schools.

LECTURE 5

TRANSCRIPTION. CLASSIFICATION OF CONSONANTS

- **Phonetic and Phonemic transcription.**
- **British Received Pronunciation and Regional dialects. Estuary English.**
- **Styles of Speech.**
- **Classification of Speech Sounds.**
- **Comparison of English and Russian Sound Inventories. Consonantic and vocalic languages.**
- **Classification of consonants.**
- **Methodological classification of English consonants for teachers/learners of English.**
- **Typical mistakes of Russian/Ukrainian learners in mastering English consonants.**

PHONETIC TRANSCRIPTION

The main aim of phonology is to establish all the phonemes of the given language. Another aim of this science is *to find ways how to present speech visually*. These two questions, the *inventory* of speech sounds and the way of their visual

presentation, are very closely connected as you should know <u>what</u> to present, before you start thinking <u>how</u> to present, shouldn't you?

So the first step that phonologists do is to single out each individual phoneme that exists in the given language and then their second step is to find a **symbol** that can represent this phoneme and reflect its pronunciation.

The creation of a reliable phonetic transcription has always been one of the main concerns of the phonologists and the first attempts to represent phonemes visually were made as early as in the 16th century.

What symbols have been used in learning foreign languages to help the learners? First those were letters of the mother tongue. Most of you have seen this kind of 'letter representation',

e.g. *early – ели; this – зыс/дыс/лыс*. So you see that letters are not very helpful.

It is obvious that *a phonetic symbol of a phoneme is a generalized idea of this sound* because it is next to impossible to give symbols to all the allophones of all the phonemes that exist in the given language, though such attempts were made by some phonologists.

In modern phonetic science there exist **<u>TWO TYPES OF TRANSCRIPTION</u>**

1. Phonemic or broad transcription.

- **Phonemic** because there as many symbols as there phonemes in the given language;
- **Broad** because it is for broad public use, for ordinary learners of his language and non-specialists.

2. Phonetic or narrow transcription, which contains not only phonemes but also the *main allophones* of the given language.

- **Phonetic** because it shows the pronunciation of all the phonemes and their main not all (!) allophones;
- **Narrow** because for specialists only.

Phonetic or narrow transcription uses special marks to denote different features allophones are characterized by, e.g. curve – for nasalization; dot - for devoicing

tick – voicing, etc. that are called **<u>diacritic [`daiɋ`kritik]</u>** marks.

The transcription symbols we see practically every day in our dictionaries is a system of symbols called the **International Phonetic Transcription (ITP)**. It was devised in **1904** by the **International Phonetic Association**. It is called international because it can be applied to any language in the world. The broad type of this transcription was for the first time used by the representative of the London Phonological School **Daniel Jones in 1917** in his "English Pronouncing Dictionary.

The **International Phonetic Transcription** is periodically updated because the pronunciation as well as language on the whole constantly changes; so new transcription symbols are introduced to reflect the changing reality.

In 1980 the International Phonetic Association adopted new symbols for several English phonemes that had changed their pronunciation by that time. The most important changes were:

- [u] was changed into [ʊ];
- [O] was changed into [P];
- [q:] was changed into [E :];
- [ou] was changed into [qV].

American transcription system differs from the **International Phonetic Transcription.** What makes it difficult is fact that in the USA phonologists can't agree on one unified transcription system. That is why transcription symbols differ from dictionary to dictionary creating problems for learners. The examples I am giving you are taken from Webster's New World Dictionary edited by David. B. Guralnik:

- [oo]   stands for [u:];
- [yoo] stands for [ju:];
- [o]   stands for [qV].

BRITISH RECEIVED PRONUNCIATION AND REGIONAL DIALECTS

There is no doubt that most students of our department would like to sound like native speakers. **But what does the idea of "a native speaker" mean?**

A person who was born and lives in **Scotland** is definitely a native speaker. But he or she pronounces

- [r] rolled like Russian at the beginning of the word *("river")* and like American at the end of the word, e.g. *"bird"*,

- [æ] instead of [a:], e.g. in the word *"grass"*,

A **Welshman** is also a native speaker but he pronounces

- [r] like a Scotsman or Russian, e.g. *river;*

- [S] like a Russian, e.g. *sugar;*

- [h] like a Ukrainian, e.g. *heart.*

An **Indonesian** whose second state language is English is also a native speaker. But his sounds

- [l] are all clear and light in any position;

- and most vowel sounds do not resemble English at all.

You all know that **Australians** have their own accent. One of its peculiarities is replacing the diphthong [ei] by the diphthong [ai]. So the word *late* will sound like [lait] and *brave* like [braiv]. There is a nice joke about *Aussies* ['P ziz] - Australians. It goes back to the Second World War and is connected with the opening of the second front in Africa. A group of Australians come to fight Nazis and are greeted by a British officer. He pathetically says, *"You've come here to die and to defend your Motherland". One of the Australians corrects the officer, "Excuse me, sir. We didn't come today* [tq `dai], *we came yesterday* [ai]*".*

On the British Isles the existing English accents differ not only from country to country but also <u>from one part of the country to another</u>, e.g. *Glasgow – bus, love,* etc.

They also can differ <u>within only city</u> if this city is London. Most of you have probably heard about **Cockneys** and their fantastic accent. One of their peculiarities is the same as in Australia, **[ai] instead of [ei]**. Other typical features of their accent are:

- [f, v] instead of [θ, ð], e.g. *father* [`fR vq];

- adding schwa between two consonants, e.g. *lovely* [`lA vqli];

- glottal stop instead of the initial [h], *'ouse*;

- glottal stop instead of *-ing, goin*.

The biggest English speaking country in the world – the United States of America, also has its pronunciation peculiarities. In the 16th century Americans used to be British. But already at the end of the 19th century Bernard Shaw spoke about the British and Americans as **about one nation separated by a common language.** In the 60s of the 20th century American film that were shown in Britain had to be dubbed because the British truly didn't understand the accent of their "overseas relatives". No doubt you know about American most prominent pronunciation peculiarities: the retroflex sound [r] and the Southern "twang".

So the question arises if it is possible for a student of English to learn all these numerous pronunciation varieties of different dialects and accents? The answer is definitely negative. That is why for teaching and learning purposes **British Received Pronunciation** was chosen as a model.

British Received Pronunciation (**BRP for short**) *is also called Queen's English or BBC English.* It is based *on Southern English dialect and Public School Pronunciation*. It means that the South of England was the birthplace of this pronunciation and the term "Public School Pronunciation" shows it *social bias*.

BRP is spoken by only **2% of the British population** but everybody understands it because it is widely used on radio and TV that is why it is also called **BBC English**. BRP can mainly be heard in schools, colleges and in the company of elderly educated people. Young British people and uneducated population of the British Isles speak a wide variety of dialects.

The newest of the British dialects is **Estuary English**. This term was introduced into **dialectology in 1984** and reflected the birth of another original dialect that at that time belonged only to a limited number of young people – prosperous businessmen called **yuppies** and not very educated Essex girls and young men who lived at the Thames estuary. This dialect is something in the middle between BRP and Cockney and is very much under the influence of American pronunciation. The most *typical pronunciation features of Estuary English dialect* are:

1. [ai] instead of [ei] like in Cockney and Australian variant, e.g. "day" [dai];

2. [qʊ] instead of [aʊ] like in "cow" [kqʊ];

3. [ʊ] instead of [aʊ] like in "about" [q`bʊt];

4. [qu:] instead of [u:] like in "room" [rqu:m];

5. dark variant of the sound [l] is changed into [w] like in "apple" [`æpw];

6. [r] in retroflex like in American English;

7. [j] is not pronounced like in "tune" [tʃu:n];

8. there is no changes in stress to distinguish a noun from a verb,

   e.g. `import – to im`port;

9. there is no difference in the pronunciation of [i] and [i:], [P] and [O:] vowels,

   e.g. *heel = hill; feel = fill; salt = sort*, etc.;

10. adding [q] in suffixes like in *profession* or *vision* [S qn] and [zqn].

STYLES OF SPEECH

Pronunciation of one and the same person may be different in different situations. The teacher, for example, will speak differently while giving a lecture, speaking with a student, with a friend, or speaking with a small child. In the first case the teacher will speak loudly and very distinctly, carefully pronouncing all the sounds, especially if he/she speaks in a foreign language. But when he speaks with a friend his/her speech will be rather fast and careless, not very distinct with a lot of contractions. ***Styles of speech*** are traditionally classified into

- **the *full* style** with a low tempo and careful pronunciation

- **the *colloquial* style** with a high tempo and careless pronunciation.

e.g.	*full style*	*colloquial style*
this year	[θis jiq]	[θiS S iq]
is she	[iz S i]	[iS S i]
let me	[let mi]	[lemi]
give me	[giv mi]	[gimi]
open	[`qVpn]	[`qʊpm]

In teaching a foreign language it is necessary to begin from introducing first the full style and only then gradually master the colloquial style and not vice versa or at the same time because the learner may be misled.

CLASSIFICATION OF SPEECH SOUNDS

Speech Sounds

Vowels (20)

Consonants (24)

monophthongs (10)

[i,ʊ,ɒ,ɔ:,æ,e,ʌ,ə,ɑ:,ɜ:]

sonants (7)

noise consonants (17)

diphthongs (8)

[ɔi, ei, ɑi, ɛə, iə, ʊə, ɑʊ, əʊ].

[m,n,l,w,r,j,ŋ]

diphthongoids (2)
[i:, u:]

voiceless(9)
noise only

voiced (8)
noise + voice

[p,t,k,s,h,f,ʃ,ʧ,θ]

[b,d,g,z,v,ʒ,ɢ,ð]
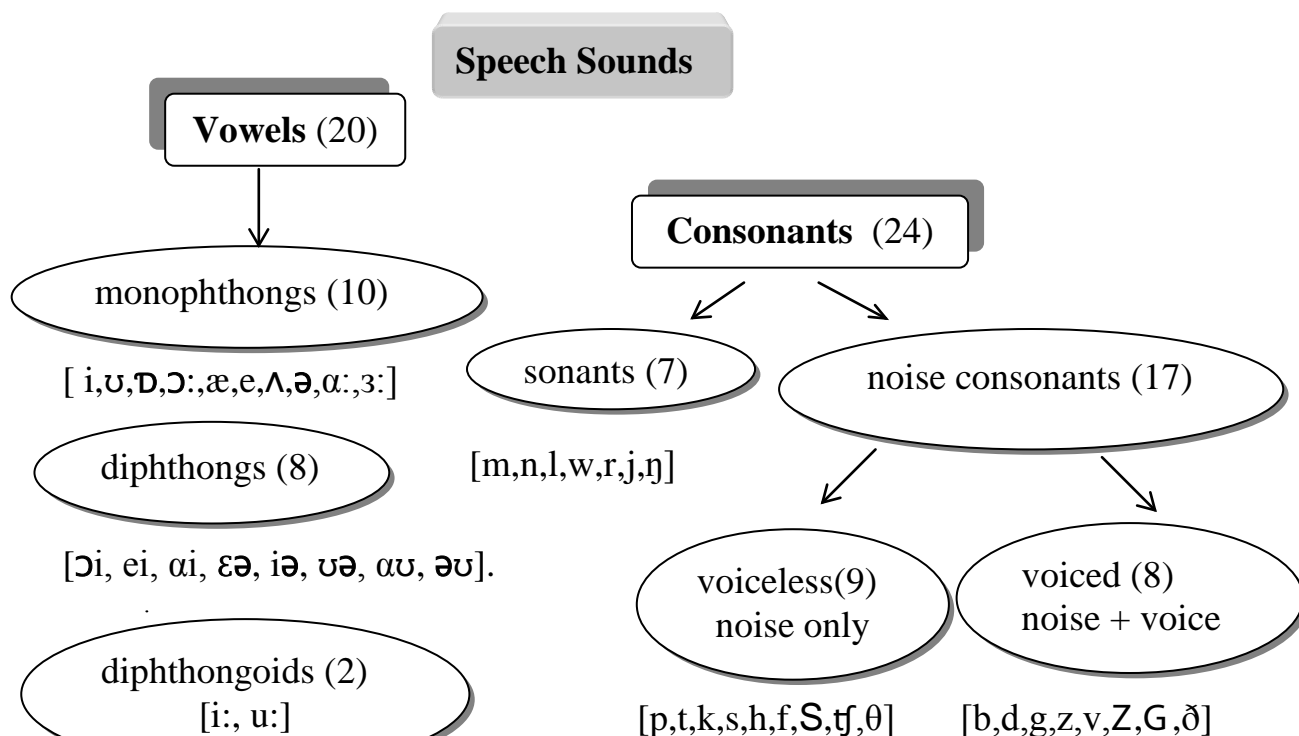
COMPARISON OF ENGLISH, UKRAINIAN AND RUSSIAN SOUND INVENTORIES

PHONEMES	ENGLISH	RUSSIAN/UKRAINIAN
CONSONANTS	24	37
noise	17	28
voiced	8	12
voiceless	9	16
sonants	7	9
VOWELS	20	6
monophthongs	10	6
diphthongs	8	-*
diphthongoids	2	-
triphthongs	5	-

* There is a viewpoint that Russian phonetic sounds like [ай] or [ой] are diphthongs. But according to one of Trubetskoy's phonetic laws, which says that a phoneme is constant, unchanged and indivisible, it was proved that sounds like [ай] or [ой] are *biphonemic combinations* and if we change the form of, for example, the word *край* into the word *края* we shall see that the second word

can be divided into syllables so it is divisible. The same is true for the word

бой. Compare: *'Был бой. Шли бои. Отряд прорывался с боями'.*

Students of Foreign Languages Department know much better the number of English consonants and vowels than that of Russian or Ukrainian. They know that the number of English consonants is 24 and vowels 20, 44 all in all. But they are not sure how many Russian and Ukrainian sounds there exist in our native language, though they know that there are 33 letters. Actually it is not surprising because the phonologists themselves can't give the exact number of Russian and Ukrainian sounds. Opinions about the sound inventory of the Russian and Ukrainian languages are different. Some scientists (for example, V.D. Arakin) do not include into the sound inventory the sounds [ш', ж'], claiming that they are not phonemes but allophones of the phonemes [ш, ж]. So they think that there are 35 consonant and 6 vowel sounds in Russian. There are also some phoneticians (e.g. Kononenko V.I.) who claim that there are only 33 consonant phonemes in Russian. They exclude [г'], [к'], [ж']. Akishina, on the contrary includes these sounds but excludes the sound [ы], which she thinks to be the allophone of the sound [и]. Thus, she supposes that there are 37 consonants and 5 vowels.

There is another group of phonologists who believe that there are only 32 consonants. They exclude from the list all palatalized variants of the sounds [ш, ж, г, х, к].

In this course of lectures we shall support the inventory offered by the majority of phonologists that there are **37 consonants and 6 vowels in Russian and Ukrainian.**

As we have just seen the difference between the number of consonants and vowels in Russian and Ukrainian is much larger than that one in English. ***Languages where there are more consonants that vowels are called <u>consonantic</u>*** (like Russian and Ukrainian), while those ***where the number of vowels is more or their number is practically the same are called <u>vocalic</u>***. English is naturally closer to vocalic languages as there are only 4 more consonants than vowels in it.

CLASSIFICATION OF CONSONANTS

There is no unanimous opinion among the world phonologists how consonant phonemes should be classified. There have been attempts to classify them:

- according to the active speech organs
- according to the passive speech organs
- according to both active and passive speech organs

Hence there are numerous classifications made by different home and foreign phoneticians, e.g. Americans Bloch and Trager, Englishmen Jones and Gimson, Soviet scientists Scherba, Torsyev, Trakhterov, Vassyliev, Smirnov, etc.

In this course of lectures we offer the one, which was suggested by Vyacheslav Alexandrovich Vassyliev, a representative of Leningrad Phonological School. He classifies all consonants according to four principles.

PRINCIPLE I. According to the type OF OBSTRUCTION AND THE MANNER OF NOISE PRODUCTION. Obstructions can be of three types:

1. Complete obstruction Consonants pronounced with a *complete obstruction* when the air-stream breaks it to escape from the mouth or nasal cavity are called *occlusive*.

2. Incomplete Consonants pronounced with *an incomplete obstruction* when the air-stream passes through the narrowing made by two organs of speech are called *constrictive*.

3. Intermittent (complete + incomplete) Consonants pronounced *both with complete and incomplete obstructions* when the air-stream first breaks the complete obstruction and then passes through the incomplete obstruction are called *affricates*.

The first principle of classification of consonants is illustrated in APPENDIX 1.

* There is no unanimous opinion among English and American phonologists about the number of affricates in BRP.

1. American phonologists Bloch and Trager thought that [ʧ] and [ʤ] were not affricates but mere combination of sounds, and there are no affricates in English.

2. Daniel Jones believed that there were 6 affricates in English - [C,G, ts, dz, tr, dr].

3. To this Jones' theory Ward and Gimson (Great Britain) added two more affricates [tθ, dð] as in "eighth and width" and got 8 all in all.

    The majority of other phonologists do not agree with these three points of view.

    To prove the existence or presence of affricates in English one of Trubetskoy's laws was used - *the law of articulatory indivisibility* - which means that one phoneme can't be divided into syllables.

    Let's analyse the words "chain" or "choose" or "judge". Is it possible to change these words so that they could exist without either [t] or [S], and [d] or [Z]? No, it is not! So it proves that they are *monophonemic sounds*. Now let's look at the words *nutshell* and *courtship*. There words are easily divided into two syllables - *nut + shell; court + ship.* It proves that while [C] in the words, for example *kitchen* is a *monophonemic sound*, there can also be *biophonemic combinations of sounds* [t] and [S].The same can be said about the combination of sounds [tθ, dð] in the words *eighth* and *width,* which can exist in their other forms *eight* and *wide.* It shows that [tθ, dð] are also *biophonemic combinations of sounds*.

4. Sound clusters [tr] and [dr] like in the words *try* and *dry* have more ground to be called affricates as there are words like *rye*, but few phonologists regard them as such.

PRINCIPLE II. According to the ACTIVE SPEECH ORGANS AND THE PLACE OF OBSTRUCTION. (See APPENDIX 2)

Explanation of some terms:

1. *labial* - sounds produced mainly with the help of the lips;

2. *lingual* - the active speech organ in the production of these sounds is the tongue

3. *pharyngeal* - sounds produced in the pharynx

4. *cacuminal* - articulated by the tip and the blades of the tongue raised against the back slope of the teeth ridge

5. *retroflex(ed)* - articulated by the tip of the tongue curled back behind the back slope of the teeth ridge

6. *dorsal* - sounds articulated by the blade of the tongue against either the upper teeth or teeth ridge, the tip of the tongue at this time is passive and lowered. Russian and Ukrainian sounds [т, т', д, д', с, с', з, з', н, н']

7. *dental* - sounds are articulated either with the tip of the tongue against the upper teeth English [θ] and ð] or Russian [л, л'] or the blade of the tongue against the upper teeth Russian and Ukrainian [т, т', д, д']

PRINCIPLE III. *According to the WORK OF THE VOCAL CORDS AND THE FORCE OF ARTICULATION*

According to the work of the vocal cords all consonants are divided into ***voiced and voiceless***, and according to the force of articulation they are divided into ***fortis (strong) and lenis (weak).*** As you remember we have already analysed this relevant distinctive feature of English consonants: ***voiceless are fortis and voiced are lenis, it is just the reverse in Russian and Ukrainian.***

PRINCIPLE IV. *According to the POSITION OF THE SOFT PALATE*

All consonants are divided into **nasal and oral.** Nasal are produced with the soft palate lowered while the air passage through the mouth cavity is blocked and as the result of this the air escapes trough the nasal cavity. There are 3 nasal consonants in English and 4 in Russian. The rest of the consonants are oral.

METHODOLOGICAL CLASSIFICATION OF ENGLISH CONSONANTS

FOR TEACHERS/LEARNERS OF ENGLISH

English speech sounds can be divided into several groups according to

- their difficulty for Russian/Ukrainian learners,

- ways of their presentation and retention

- the amount of time they should be practised.

Group 1: Sounds that are very similar to their Russian/Ukrainian counterparts and do not demand any additional work or extra explanation,

e.g. [m, f, b, v] and [g] in Russian not Ukrainian!

Group 2: Sounds that cause phonetic mistakes and demand some correction. The difference in the pronunciation should be explained, demonstrated and practised in a number of exercises,

e.g. [p, t, k] – aspiration; apical-alveolar English consonants [t, d, l, n, s, z] should not be substituted by dorsal-dental Russian/Ukrainian sounds [т, д, с, з, л, н].

Group 3: Sounds that cause phonological mistakes due to interference not only between Russian/Ukrainian and English sounds but also between English similar sounds. These sounds demand much work, explanation and long practice,

e.g. [w] and [v].

Group 4: Sounds that cause phonological mistakes due to the fact that they do not exist in Russian and Ukrainian and are substituted by either similar English or Russian/Ukrainian sounds,

e.g. [r, w, θ, ð, ŋ].

Conclusion: Awareness of phonetic and phonological mistakes and methodological classification of English consonants will help the teacher to rationally plan his/her lesson allocating the necessary amount of time to practicing different consonant sounds.

TYPICAL MISTAKES OF RUSSIAN/UKRAINIAN LEARNERS IN MASTERING ENGLISH CONSONANTS
PHONOLOGICAL MISTAKES

1. Substitution of English interdental sounds [θ] and [ð] by R/U sounds [с, з, ф, в, л]

e.g. *I don't like to read **sick** (instead of **thick**) books.*

*Let me **sink** (instead of **think**).*

2. Substitution of English sound [w] by English [v] or R/U [в]

e. g. *There is something wrong with the **veal** (**weal**) of my car.*

*Let's go **vest** (**west**).*

3. Substitution of English voiced consonants by their voiceless counterparts

e.g. *Where is your pen? It's in my **back (bag)**.*

*She went to **bet (bed)**.*

*The **doc** (**dog***) heard some noise and started to bark.*

4. Substitution of English back-lingual sound ŋ] by the English sound [n] or Russian/Ukrainian sound [н],

e.g. *She often **sins** (**sings**) in the bathroom.*

PHONETIC MISTAKES

1. Absence of aspiration in the sounds [p, t, k] before the stressed vowels.

2. Substitution of apical-alveolar English consonants [t, d, l, n, s, z] by dorsal-dental Russian/Ukrainian sounds [т, д, с, з, л, н], e.g. *table.*

3. Palatalisation of English consonants before front vowels [i, i:, e, æ, iǝ, ei],

e.g. *lily.*

Note: *Palatalisation* is softening of consonants, which takes place when not the front part of the tongue but the middle part of the tongue is raised to the hard palate and the air passage is constricted which gives a consonant a soft colouring. In Russian/Ukrainian palatalisation is a distinctive relevant feature as it distinguishes two phonemes, e.g. *пыл – пыль, нос – нес, дал – даль.*

QUESTIONS FOR SEMINAR 5
1. Phonetic transcription.
2. Phonemic transcription.
3. British Received Pronunciation and Regional dialects.
4. Estuary English.
5. Styles of Speech.
6. Classification of Speech Sounds.
7. Comparison of English and Russian Sound Inventories.
8. Consonantic and vocalic languages.
9. Classification of English and Russian consonants.
10. Principle I.
11. Principle II.
12. Principle III.
13. Principle IV.
14. Methodological classification of English consonants for teachers/learners of English.
15. Typical mistakes of Russian/Ukrainian learners in mastering English consonants.

LECTURE 6.

CLASSIFICATION OF VOWELS

- **Classification of vowels.**
- **Methodological Classification of English vowels for teachers/learners of English.**
- **Typical mistakes of Russian/Ukrainian learners in vowels production.**

CLASSIFICATION OF VOWELS

As it was mentioned earlier, vowels unlike consonants are produced **with no obstruction** to the air stream, so *on the perception level* their integral character is **tone, not noise**. Due to various reasons the English language has developed a vocalic system of a much larger number of phonemes than Russian or Ukrainian.

The quality of a vowel is determined by **the size, volume and shape of the mouth resonator**, which are modified by the movement of the active speech organs, **that is the tongue and the lips**. Besides, the particular quality of a vowel can depend on other **articulatory characteristics,** such as

• the relative stability of the tongue;

• the position of the lips;

• physical duration of the segment;

• the force of articulation;

• the degree of tenseness of speech organs.

So a vowel quality is a combination of all these features, which are all interconnected and interdependent. But for the sake of analysis it is necessary to classify vowels according to some criteria.

In this course of lectures we offer the classification, which was suggested by Vyach. Alexandr. Vassyliev, a representative of Leningrad Phonological School. He classifies all vowels according to six principles.

PRINCIPLE I: **According to the STABILITY OF ARTICULATION**

This principle specifies the actual position of the articulation organ in the process of the vowel articulation. There are two possible varieties:

- the tongue position is stable;

- the tongue position changes when it moves.

In the first case the articulated vowel is *a relatively pure musical sound in the articulation of which organs of speech do not change their position*. These vowels are called **monophthongs**.

There are 10 monophthongs in English and 6 in Russian and Ukrainian.

Compare: English vowels [i, e, R, P, O:, E:, q, æ, A, υ];

Russian/Ukrainian vowels [а, у, и, ы, э, о].

In the second case the vowel consists of **two clearly perceptible elements**.

They are called **diphthongs** and are defined as *monosyllabic (unisyllabic) gliding sounds in the pronunciation of which organs of speech start from one position and then gradually glide into another*.

Though a diphthong consists of two elements there is **no boundary** between them and the *duration of a diphthong equals to that of a monophthong*.

The two elements of a diphthong are called *a nucleus and a glide*. The nucleus is always **stronger** and more distinct while the glide is **weaker** and *its formation is not accomplished*. Diphthongs are **monophonemic sounds** as their articulatory, morphological and syllabic indivisibility was scientifically proved. There are 8 diphthongs in English and none in Russian/Ukrainian**.**

- 3 diphthongs glide towards [i] - [ai], [ei], [Oi];
- 3 diphthongs glide towards [q] - [iq], [υq], [Fq];
- 2 diphthongs glide towards [υ] - [aυ], [qυ].

According to the movement of the tongue within the articulation of the diphthong from the nucleus to the glide, <u>diphthongs are divided into</u>

1. closing [ai], [ei], [Oi], [aV], [qυ] as the tongue comes <u>close to the palate;</u>

2. centring [iq], [υq], [Fq] as the tongue is in the <u>middle of the mouth cavity</u>.

There also exists a third variety, **an intermediate case**, when the change in the tongue position is fairly weak.

The vowels in the articulation of which *the speech organs change their position but very slightly are called* <u>**diphthongoids**</u>. There are two diphthongoids in English - [i:] and [u:] and no diphthongoids in Russian/Ukrainian**.**

Summarizing all this we may say that by using the method of minimal pairs phonologists established :

VOWEL PHONEMES	ENGLISH	RUSSIAN/UKRAINIAN
	20	6
monophthongs	10	6
diphthongs	8	-
dipthongoids	2	-

While speaking about vowels it is necessary to mention ***triphthongs*** - ***combinations of vowel sounds pronounced with a glide from one vowel to another and then to a third, all produced rapidly and without interruption***. There are 5 triphthongs in English and none in Russian/Ukrainian**.** Triphthongs are ***biophonemic sounds*** and may be looked on as being composed of 5 closing diphthongs and a schwa added to the end, e.g.

power, hour - [aVq]   *liar, fire* - [aiq]   *layer, player* - [eiq]

lower, mower - [qʊq]   *loyal, royal* - [Oiq]

PRINCIPLE II: **According to the POSITION OF THE TONGUE**

(See APPENDIX 3)

For the sake of convenience the position of the tongue in the mouth cavity is characterised from two aspects:

- ***horizontal movement of the tongue;***
- ***vertical movement of the tongue.***

HORIZONTAL MOVEMENT OF THE TONGUE

1. ***Front vowels*** (гласные переднего ряда)- when the bulk of the tongue is in the front part of the mouth cavity, the front of the tongue is ***raised towards the hard palate and the tip of the tongue is near the lower teeth.***

   English front vowels   Russian/Ukrainian front vowels

   [i:] [e] [æ] [ei] [Fq]   [и]   [э]

2. ***Front-retracted vowels*** (гласные переднего продвинутого назад ряда) - when the bulk of the tongue is in the front part of the mouth cavity but the tip of the

tongue is slightly retracted from the lower teeth and *the front part of the tongue is directed towards the hard palate.*

English front-retracted vowels   Russian/Ukrainian front-retracted vowels

[i] [iq] [aʋ] [ai]   none

3. *Central (mixed) vowels* (гласные среднего ряда) - when the central part of the tongue is raised towards the *juncture between the hard and the soft palate* and the tip of the tongue is retracted from the lower teeth.

English central vowels   Russian/Ukrainian central vowels

[A] [E :] [q] [qʋ]   [а] [ы]

4. *Back-advanced vowels* (гласные заднего продвинутого вперед ряда) - when the bulk of the tongue is in the back part of the mouth cavity and the tip of the tongue is retracted from the lower teeth farther than for central vowels while *the back part of the tongue is raised towards the front part of the soft palate.*

English back-advanced vowels   Russian/Ukrainian back-advanced vowels

[R] [ʋ] [ʋq]   none

5. *Back vowels* - (гласные заднего ряда) when the bulk of the tongue is in the back part of the mouth cavity and the tip of the tongue is retracted rather far from the lower teeth, farther than for back-advanced vowels *while the back part of the tongue is raised towards the soft palate.*

English back vowels   Russian/Ukrainian back vowels

[P] [O:] [u:] [Oi]   [o] [у]

VERTICAL MOVEMENT OF THE TONGUE (according to the height of the raised part of the tongue)

1. *Close (High) vowels* (закрытые гласные, гласные высокого подъема) – when one part of the tongue comes close to the <u>roof of the mouth cavity</u> and the <u>air-passage is narrow</u>, but not as narrow as for consonants.

English close vowels   Russian/Ukrainian close vowels

[i:] [ʋ] [i] [ʋq] [ei] [Vq]   [и] [у] [ы]

2. *Mid-open vowels* (гласные среднего подъема) when the raised part of the tongue is *half-way* between its high and low position in the middle of the mouth cavity.

English mid-open vowels   Russian/Ukrainian mid-open vowels

[e] [E:] [q]   [O:] [Fq] [qʋ]   [o]   [э]

3. *Open vowels* (открытые гласные, гласные низкого подъема) when the raised part of the tongue is very low in the mouth cavity and <u>the air passage is very wide.</u>

English open vowels   Russian/Ukrainian open vowels

   [æ] [α:] [O] [A] [ai] [aV]   [a]

 Each of three main vertical positions of the tongue has 2 variations: ***narrow and broad.***

PRINCIPLE III: According to the LIP POSITION

According to the position of the lips all vowels are divided into ***rounded*** and ***unrounded.***

English rounded vowels (4)   Russian/Ukrainian rounded vowels (2)

   [P] [O:] [ʋ] [u:]   [o] [y]

   The rest of the vowels are unrounded.

Note: *Lip rounding is not a relevant distinctive feature since <u>no</u> two words can be differentiated on its basis*.

PRINCIPLE IV: According to the LENGTH OF VOWELS.

English vowels are **historically divided into long and short**. But as we stated earlier this division ***cannot be considered a relevant distinctive feature because the length of the vowel varies under the influence of different phonetic context.*** So it is an incidental feature that characterises sounds of a certain quality.

It must also be mentioned that historically short vowels ***tend to be lengthened before lenis consonants [b, d, g, m, n, z].***

PRINCIPLE V: According to the DEGREE OF TENSENESS

It characterizes the state of the organs of speech at the moment of production of a vowel. It was physically proved that all **historically long English vowels are tense** and **all historically short vowels are lax. <u>All Russian and Ukrainian vowels are lax</u>** because in their production speech organs are less tense and there is less muscular effort.

<u>*PRINCIPLE VI*</u>: **According to the CHECKNESS** (усечение) **OF VOWELS**

This quality depends on the character of the articulatory transition from a vowel to a consonant that is according to the character of the vowel end. In English it is very close, in Russian and Ukrainian it is not. As a result all English vowels are checked when they are stressed. All Russian and Ukrainian vowels are unchecked.

<u>**Checked vowels**</u> (усеченные)	<u>**Unchecked vowels**</u> (неусеченные)
• No lessening the force of utterance towards their end. • The end is strong. • The vowels end abruptly and are interrupted by the consonants that follow.	• They are pronounced with lessening the force of utterance towards their end. • They have a weak end.
They occur only in closed syllables: • All short vowels under stress, e.g. *put, not.* • Long vowels and diphthongs before voiceless consonants e.g. *speak, type.*	***They occur in the following positions***: • Long vowels and diphthongs in open syllables, e.g. *sea, toe.* • Before voiced consonants, e.g. *card, board.* • All vowels in unstressed syllables, e.g. *about, reform.*

It should be mentioned that though this characteristic feature of vowels has no phonological value, it is important for Russian and Ukrainian learners. Such words as «seven, matter, body, better, etc» should be divided into syllables in such a way that the vowel should remain checked unlike the Russian *Боря, бита, мята, т.д.*

Summing up the classification of vowels it is necessary to emphasize that phonological analysis of articulatory features of English vowels allows to consider <u>functionally relevant</u> the following two characteristics:

1. stability of articulation;
2. tongue position;

The rest of the features mentioned above have no phonological value though they are very important for the language learners as they are the cause of phonetic mistakes.

METHODOLOGICAL CLASSIFICATION OF ENGLISH VOWELS.

Group 1: Sounds that are very similar to their Russian/Ukrainian counterparts and do not demand any additional work or extra explanation,

e.g. [A], [ai], [e], [aV], [ei], [q].

Group 2: Sounds that cause phonetic mistakes and demand some correction. The difference in the pronunciation should be explained, demonstrated and practised in a number of exercises, e.g. [Oi].

Group 3: Sounds that cause phonological mistakes due to interference not only between Russian/Ukrainian and English sounds but also between English similar sounds. These sounds demand much work explanation and long practice,

e.g. [æ,] [i], [iː] [ɑ:], [O:], [u:], [ʋ], [iq], [Fq], [ʋq], [P].

Group 4: Sounds that cause phonological mistakes due to the fact that they do not exist in Russian and Ukrainian and are substituted by either similar English or Russian/Ukrainian sounds, e.g. [E:].

Conclusion: Awareness of phonetic and phonological mistakes and methodological classification of English vowels will help the teacher to rationally plan his/her lesson allocating the necessary amount of time to practising different consonant sounds.

TYPICAL MISTAKES OF RUSSIAN/UKRAINIAN LEARNERS IN VOWEL PRODUCTION

Practically all mistakes in the vowel production are ***phonologica*l** and they are substitution of English vowel sounds by similar English or Russian/Ukrainian ones,

1. [æ] by the English sound [e] or Russian/Ukrainian sounds [ɔ] and [jɔ],

e.g. *We are having **bed** weather today. He was a good **men***.

2. [ɑ:] by the English sound [A] or Russian/Ukrainian sound [a],

e.g. *It was getting **duck (dark)**. His **hut (heart)** stopped beating. She changed an old **bun (barn)** into a new modern house.*

3. [E:] by the English sound [e] or Russian/Ukrainian sounds [jo] or [jэ],

      e.g. ***nurse, girl, dirty***

4. [P] by the English sound [O:] (or vice versa) or Russian/Ukrainian sound [o];

      e.g. *They were **cot (caught)** by a storm. We were given excellent **cord (cod)** for dinner.*

5. [i:] by the English sound [i] (or vice versa) or Russian/Ukrainian sounds [и] and [ы],

      e.g. *They have a nice house on the **heel (hill)**. The **mill (meal)** they had in the restaurant was awful.*

6. [u:] by the English sound [ʊ] (or vice versa) or Russian/Ukrainian sound [y],

      e.g. *There isn't any **foot (food)** in the fridge. She was swimming in the swimming **pull (pool)**.*

7. [Fq] by the English sound [iq] (or vice versa),

      e.g. *He ordered a glass of **bear (beer)**. He **hear (hair)** was grey.*

8. [aiq] by the English sound [ai],

    e.g. *The **line (lion)** in the cage looked rather dangerous. The United Kingdom of Great Britain and Northern **Island (Ireland)**.*

QUESTIONS FOR SEMINAR 6

1. Classification of vowels.
2. Principle 1.
3. Monophthongs.
4. Diphthongs.
5. Diphthongoids.
6. Principle 2. Horizontal movement of the tongue.
7. Vertical movement of the tongue.
8. Principle 3.
9. Principle 4.
10. Principle 5.
11. Principle 6.
12. Methodological Classification of English vowels.
13. Typical mistakes of Russian/Ukrainian learners in vowels production.

LECTURE 7

MODIFICATION OF SOUNDS IN CONNECTED SPEECH (1).
ASSIMILATION

- **Modification of sounds in connected speech.**
- **Merging of stages.**
- **Interpenetration of stages.**
- **Assimilation, accommodation and elision.**
- **Types of assimilation.**

MODIFICATION OF SOUNDS IN CONNECTED SPEECH

People seldom pronounce sounds in isolation, maybe only when they spell a word, like *I-N-T-E-R-N-E-T*, though in this case what they actually pronounce are letters which in some cases coincide with sounds, e.g. *A* [ei]. So whenever people speak, they have to join sounds together, and speakers of different languages sometimes do it in different ways. In some languages it is not difficult to separate one sound or even word from another because the sounds do not merge (сливаются) into each other. But English, unlike Russian or Ukrainian, is notorious for difficult junctions of speech sounds. So what happens when two sounds come together in connected speech? To answer this question, it is necessary to **understand the mechanism of joining sounds together** and to analyse the stages in the articulation of a speech sound pronounced in isolation.

Each speech sound, pronounced separately, has **_3 stages of articulation_**:

1. ***initial stage*** (which is also called on-glide or excursion) – when speech organs move from the neutral position to the position necessary for the pronunciation of this particular sound;

2. ***medial stage*** (stop-stage or retention stage) – when speech organs are kept for some time in the same position necessary for the pronunciation of this particular sound or they may move their position like in diphthongoids, diphthongs or affricates;

3. *final stage* (off-glide, release or recursion) when speech organs move away to the neutral position. This last stage in most sounds is not clear and almost inaudible. ***The exception are plosive sounds [p, b, t, d, k, g].***

In English there are two principal ways of linking two adjacent sounds: merging (слияние) and interpenetration (взаимопроникновение) of stages.

MERGING OF STAGES

Why do two adjacent sounds merge (сливаются)? The main characteristics are as follows:

1. It is a *simpler* and *looser way* of joining two sounds together;

2. It happens when two adjacent sounds of ***different nature*** are joined together;

3. Merging means that the end of the preceding sound penetrates into the beginning of the following sound, i.e. ***the end of the first and the beginning of the second sound are articulated almost simultaneously***.

Merging happens when TWO SOUND OF DIFFERENT NATURE are articulated by:

1. Different organs of speech

 e.g. **C (consonant) + V (vowel)**= *four* [fL] where [f] is labio-dental pronounced with the help of lips and [L] is a back vowel articulated with the back of the tongue;

 e.g. **V+C** = *arm* [R m] back advanced vowel + bilabial consonant;

 e.g. **C+C** = *speak* [spi:k] where [s] is an apical-alveolar sound and [p] is a bilabial consonant.

2. By different parts of the tongue

 e.g. **C+V** = *give* [giv] where [g] is a back-lingual consonant and [i] is a front retracted vowel;

 e.g. **C+C** = *clean* [kli:n] where [k] is back-lingual and [l] is forelingual;

 e.g. **V+C** = *eagle* [`i:gl] where [i:] is a front vowel and [g] is a back-lingual consonant;

 e.g. **V+V** = *quiet* [`kwaiqt] where [i] is pronounced by the front part of the tongue and [q] with the middle part.

3. Both by different organs of speech and by different parts of the tongue

e.g. **C+V** = *we* [wi:] where [w] is bilabial though the tongue takes part in its articulation and is in the back of the mouth cavity, while in the pronunciation of [i:] the bulk of the tongue is in the front of the mouth cavity;

e.g. **V+C** = *Iowa* [ˈaiqwq] where [q] is pronounced by the middle part of the tongue while [w] is articulated with the tongue in the back position with lips rounded.

INTERPENETRATION OF STAGES

The main characteristics of interpenetration of linking two adjacent sounds are as follows:

1. It is *a more complicated way* of joining sounds together;

2. It happens only to consonants;

3. Only consonants of *similar or identical nature* are joined together in this way;

4. In the process of interpenetration the end of the first sound penetrates not only in the beginning *but also in the middle* of the second sound;

Interpenetration happens:

a) *When sounds of similar nature are articulated by different parts of the tongue,*

e.g. *fact* where [k] is back-lingual and [t] is apical-alveolar. Both these sounds are plosives. In the result of the interpenetration of stages the sound [k] loses its plosion. This phonetic phenomenon when the preceding sound loses its plosion is called *LOSS OF PLOSION* and does not happen in Russian or Ukrainian because Russian and Ukrainian consonants [к, т] *merge and not interpenetrate*.

b) *When sounds of a similar nature are articulated by the same part of the tongue, have the same place of articulation but are pronounced with a different manner of the production of noise,*

e.g. *all the* where [l] and [ð] are both forelingual and apical but [l] is apical-alveolar while [ð] is apical interdental.

This phonetic phenomenon when the preceding apical-alveolar sound assimilates under the influence of the following apical-interdental sound due to the

interpenetration of stages is called ***DENTALISATION***. It happens to the consonants [t, d, s, z, l, n] before [ð] and [θ].

> e.g. *written* [`ritn] where [t] and [n] are both forelingual and apical-alveolar but
>
> [t] is oral while [n] is nasal sonant.

This phonetic phenomenon when the preceding apical-alveolar oral sound assimilates under the influence of the following nasal sonant due to the interpenetration of stages is called ***NASAL PLOSION.*** It happens to plosives [p, b, t, d, k, g] before nasal sonants [m, n].

> e.g. *little* [litl] where [t] and [l] are both forelingual and apical-alveolar but [t] is
>
> oral plosive while [l] is oral lateral sonant.

This phonetic phenomenon when the preceding apical-alveolar oral plosive consonant assimilates under the influence of the following lateral sonant due to the interpenetration of stages is called ***LATERAL PLOSION.***

*c) **When sounds are identical,***

> e.g. *unnecessary* [nn]; *with them* [ðð]; *this story* [ss]; *last time* [tt].

In this case interpenetration is accompanied by the omission of two stages, that is the final stage of the first sound and the initial stage of the second sound.

ASSIMILATION, ACCOMMODATION AND ELISION

If two adjacent sounds that influence each other so that their pronunciation becomes similar or identical are **consonants (C+C)**, this phenomenon is called **ASSIMILATION.**

If one of the adjacent sounds is a **vowe**l **(C+V/ V+C)**, this modification of the articulation is called **ACCOMMODATION (or adaptation).**

If one of the adjacent sounds is lost in the process of speech , if it is so to say swallowed by the neighboring sound, this phenomenon is called **ELISION**. It can happen both to vowels and to consonants,

> e.g. *cupboard* [`kʌbqd]; *goodbye* [gʊ`bai]; *let me* [`lemi]; *different* [`difrqnt]
>
> Modification of sounds in connected speech is caused by the so-called

"economy of efforts", that is, the speaker avoids articulatory movements which are not absolutely necessary for intelligibility of speech. It is a kind of the "law of the stronger» according to which the stronger phoneme, which needs more articulatory effort will influence the weaker one.

e.g. Compare: <u>*of an*</u> *hour* [qv̱ qn `avq]  but <u>*of*</u> *course* [qf̱ `kLs] – in the first word combination the sound [f] stands before a vowel so it changes into a voiced consonant [v], while in the second word combination the sound [f] is in an unstressed position before the fortis voiceless sound [k] which is stronger than the [f] in the unstressed syllable so the sound [f] remains voiceless too.

TYPES OF ASSIMILATION

Assimilation can affect all the features of the articulation of a particular consonant simultaneously or only one or some of them. **Assimilation can affect**:

1. The place of the articulation,

> e.g. *tenth* – apical-alveolar [n] becomes dental under the influence of interdental [θ].

2. The place of the articulation and the active speech organ,

> e.g. *congress* [ŋg] - apical-alveolar [n] becomes back-lingual under the influence of back-lingual [g].

3. The manner of the production of noise,

> e.g. *give me* [`gimmi] – constrictive fricative [v] becomes plosive under the influence of [m].

1. *The work of the vocal cords*,

> e.g. *gooseberry* [zb] compare with goose [gu:s]; voiceless [s] becomes voiced under the influence of the voiced [b].

2. The lip position,

> e.g. *twenty* [tw] – [t] is labialized under the influence of bilabial [w].

3. The position of the soft palate,

> e.g. *grandmother* [nm] – [d] is swallowed as a result of the elision and the soft palate goes down joining two nasal sounds together.

DEGREES of assimilation

Assimilation can be of three degrees:

1. *complete* – when the articulation of the assimilated consonant fully coincides with the assimilating one, e.g. *is she* [iSSi], *does she* [`dASSi], *horse shoe*.

2. *partial* – when the assimilated consonant becomes only partially similar, but retains its main phonological features,

    e.g. *twice* – [w] is partially devoiced; *all the* – [l] changes its place of articulation while retaining all the other phonological features.

3. *intermediate* –when the assimilated consonant changes into a different sound, but does not coincide with the assimilated one,

    e.g. *gooseberry* - [s] changes into [z] and not into [b];

    congress - [n] changes into [ŋ] but not into [g];

    would you – [d] changes into [G] but not [j];

    how's your mother – [z] changes into [Z] but not [j].

DIRECTION of assimilation

Assimilation can be of three types:

1. progressive – when the preceding sound influences the following (A → B);

    e.g. *pens, desks;*

2. regressive – when the following sound influences the preceding one (A← B);

    e.g. *newspaper, gooseberry, congress;*

3. double (reciprocal) – when both adjacent consonants influence each other,

    e.g. *twice, try, place.*

KINDS of assimilation

Assimilation is also divided into three kinds:

1. historical – e.g. words of French origin which assimilated under the influence of Celtic pronunciation *(culture, question, measure);*

2. living – when there are one or more variants of pronunciation of one and the same word, which shows that the process of assimilation is still going on,

    e.g. [s - S] *issue, tissue, negotiations;*

3. contextual – when the pronunciation of the sound in the new word differs from the pronunciation of the same sound in the same word but in a different context or combination,

e.g. *hand* but *handkerchief* [hænd] – [`hænkətʃif]  *; does* but *does she* [dʌz] – `dʌʃ ʃ i]; *news* but *newspaper* [nju:z] – [`nju:speipə].

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QUESTIONS FOR SEMINAR 7
1. Modification of sounds in connected speech, stages of articulation.
2. Merging of stages.
3. Interpenetration of stages.
4. Assimilation, accommodation and elision.
5. Types of assimilation.
6. Degrees of assimilation.
7. Direction of assimilation.
8. Kinds of assimilation.

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LECTURE 8

MODIFICATION OF SOUNDS IN CONNECTED SPEECH (2). SYLLABLE

- **Kinds of assimilation and adaptation.**
- **Comparison of modification of sounds in English and Russian/Ukrainian.**
- **Modification of English vowels in connected speech.**
- **Traditional use of unreduced vowels.**
- **The syllable as a phonetic and phonological unit.**
- **Syllable formation and syllable division.**
- **Theories of syllable formation and syllable division.**
- **Syllabic formation.**
- **Syllabic division.**

KINDS OF ASSIMILATION AND ADAPTATION.
COMPARISON OF ASSIMILATION IN ENGLISH AND
IN RUSSIAN/UKRAINIAN

1. Assimilation in English acts ***in both directions***, while in Russian/Ukrainian it is ***mainly regressive***,

e.g. English *tables* - progressive; *black cat* – regressive;

Russian – *рассказ, размен, в три раза, вторник* – all regressive;

Ukrainian – *спитати, сфотографувати, з хати [с хати]* **–** all regressive.

2. In English assimilation may affect ***various features in the articulation*** of consonants while in Russian/Ukrainian it ***mainly affects the work of the vocal cords***,

e.g. Ukrainian: *вокзал* [вогзал], *боротьба* [бородьба];

Russian: *вторник* [фт], *трубка* [пк].

3. ***Dentalization*** affects the place of articulation and the active organ of speech. Forelinguual apical-alveolar sounds [t, d, s, z, n, l] become dental under the influence of the interdental sounds [ð] and [ð]. Because Russian and Ukrainian don't have interdental sounds this type of assimilation ***does not exist in these languages.***

4. ***Nasal Plosion*** affects the work of the soft palate and the manner of the production of noise. It exists in all three languages,

e.g. English: *garden, Britain, at no price, last night, help me, ask me, don't know;*

Ukrainian: *від мене, дні, людні, літній;*

Russian: *обман, сытный, людный, от меня, дни.*

5. ***Lateral Plosion*** affects the manner of the production of noise. It exists in all three languages,

e.g. English: *cattle, eagle, capital, apple, at large;*

Ukrainian: *підлабузник, покласти, підлеглий;*

Russian: *дотла, стлать, подлый, вопль.*

6. ***Loss of Plosion*** affects the manner of the production of noise in the combination of two plosive consonants or when a plosive is followed by an affricate. In Russian and Ukrainian both plosive consonants retain their plosion. If you transfer this R/U pronunciation habit into English it will be not a phonological but a phonetic mistake and give you a distinct foreign accent.

e.g. English: *doctor, factory, and Jane, ask Charles, blackbird;*

Ukrainian: *доктор, як-то;*

Russian: *фактор, доктор, отпор, как-то.*

7. ***Labialization*** affects the active speech organs and the place of articulation. It happens to consonants followed by rounded vowels or the sound [w]. It exists in all three languages,

> e.g. English: *tall, bull, twist;*
>
> Ukrainian: *клуня, в голос, сума;*
>
> Russian: *боль, путь, соль.*

8. ***Voicing and devoicing*** affects the work of the vocal cords. It happens to consonants in all three languages but in different ways. Let's compare:

CONSONANT CLUSTERS	ENGLISH	RUSSIAN	UKRAINIAN
1. voiceless + voiced (regressive)	*goose* [s] - *gooseberry*[zb]	*молотьба* [дб]; *просьба* [зб]; *сзади* [зз]	*як би* [јагби]; *отже* [одже]
2. voiced + voiceless (regressive)	*used* [ju:zd] – *used to* [ju:st tə]; *have* [hæv] – *have to* [hæf tə]; but not in the middle of the word, e.g. *disorder, disarmament, absent* [`æbsənt], not [`æpsənt]	*трубка* [пк]; *сказка* [ск]	*легко* [лехко]; *вогко* [вохго]; but not in the middle of the word, e.g. *розсада, безславно*
3. voiceless + voiced (progressive)	*what's*[ts], *Pat's* [ts], *booked* [kt], *asked* [kt]	does not exist	does not exist
4. voiced + sonant (progressive)	*tree, fry, place*	*пламя, мысль*	*плітки, слово, треба*
5. devoicing of a voiced consonant in the final position	may be slightly devoiced but is never replaced by a voiceless consonant, e.g. *bag* (but not *back!*); *cod* (but not *cot*!)	*снег* [снек]: *столб* [п]; *лоб* [п]; *стог* [к] replacement of voiced consonants by their voiceless counterparts is caused by **historical alterations**	*сніг, стовб, дід* – replacement of voiced consonants by their voiceless counterparts is caused by **historical alterations.**

9. ***Aspiration*** affects the manner of the production of noise. It happens only to [p, t, k] in stressed syllables. It has different degrees:

- It is the strongest when [p, t, k] are followed by a long vowel or a diphthong, e.g. *pass, care*;

- The degree of aspiration is weaker when [p, t, k] are followed by a short vowel, e.g. *pick, took*;

- There is no aspiration when [p, t, k] are preceded by the sound [s], by a consonant or followed by an unstressed vowel, e.g. *park-spark, pretty, subscription.*

In Russian and Ukrainian aspiration exists only at the end of words in the final position, but it is even weaker that the English weakest aspiration in the same position, compare: *part, cat, Pete – крот, кот, спит.*

10. ***Palatalization*** is adaptation of consonants to the front or front-retracted vowels or the sound [j]. For Russian and Ukrainian it is a relative distinctive feature, which helps for distinguish words, e.g. Ukrainian: *яр – ярь, до свата – до свята*; Russian: *удар – ударь; мал - мял.* In English it either does not exist or can be very slight, e.g. *key.*

MODIFICATION OF ENGLISH VOWELS IN CONNECTED SPEECH

1. ***Nasalization*** happens when vowels become slightly nasal under the influence of the nasal consonants, e.g. *morning, aunt*; it is typical for all the three languages, e.g. *море, Аня.*

2. ***Positional length of vowels*** – is not a relevant distinctive feature in English and does not exist in Russian and Ukrainian, e.g. [hi: - hi:l – hi:t].

3. ***Reduction*** is the weakening of articulation and shortening of the duration of unstressed vowels. It results in quantitative and qualitative changes in the sounds. It can be of three types:

- ***Quantitative*** when only the length of the vowel is changed without changing the quality of the sound, e.g. *How are you?* [ju] *How are you?* [ju:];

- ***Quantitative*** when due to traditional alterations one sound is replaced by another one, e.g. *Do you have some* [sm] *sugar? Can you give me some?* [sʌm].

Most vowels in unstressed positions are reduced to [ə] but the long vowels [i:] and [u:] are reduced to their short counterparts [i] and [ʊ]. Remember that the long vowel [ɔ:] is not reduced to the short vowel [ɒ], but to [ə].

- ***Elision or zero reduction*** is an omission of a vowel.

    e.g. *John and Mary* [nd]; *I'm a teacher.* [m] *Let's go there.* [s] *Emily* [`emli]

        I wouldn't 'v done this. (*have* not *of*)

TRADITIONAL USE OF UNREDUCED VOWELS

It is necessary to remember that some vowels don't undergo reduction due to historically formed traditional use. They are:

1. Some structural words, e.g. *which, what, where, on, in, with, then, when, how.*

2. Some notional words, e.g. *orchestra* [`ɔ:kestə], *unknown* [ʌn`nəʊn] – prefix "un" is never reduced.

3. Prepositions in the final position in the sentence,

    e.g. *Where are you from?* [frɒm] *Where are they going to?* [tu:]

4. Prepositions before pronouns in the final position in the sentence,

    e.g. *gave it to her* [`tu: hə]  *Bring it for me* [`f ɔ: mi].

5. Auxiliary and modal verbs in the initial and final position in the sentence,

    e.g. *Can you do it for me? I'll do everything I <u>can.</u>* [kæn]

        Who is there? John and Mary <u>are</u>. [ɑ:]

THE SYLLABLE AS A PHONETIC AND PHONOLOGICAL UNIT

Phonemes are the *smallest segments* into which the speech continuum (that is connected speech) is generally divided for purpose of analysis because these units serve to ***differentiate*** words. But in real connected speech sounds are not pronounced separately, by themselves. It is practically impossible to draw articulator boundaries between them. If we slow down the tempo of utterance and articulate all the sounds distinctly, we shall see that the smallest units, into which the speech continuum is divided, are syllables. ***Boundaries between syllables are marked by the alteration of***

increases and decreases in articulatory tension. So, ***the smallest pronunciation unit is the syllable.*** Experiments prove that ***the syllable*** is also the smallest perceptible unit. It means that the listener can recognize the preceding sound only after he has analyzed the whole syllable.

The syllable can be considered as both phonetic and phonological unit. As a ***phonetic unit*** it is defined in articulatory, auditory and acoustic terms with universal application for all languages. As a ***phonological unit*** it can be defined and described only with reference to the structure of one particular language. Its very name, the term ***"syllable"*** denotes particular ways in which phonemes are combined into a language, because in Greek the word ***syllable*** means ***"something taken together".***

Each language has its own rules of combining its phonemes into syllables. Some combinations are permissible in the language, others aren't. Lewis Carrol in "Alice in Wonderland" made non-existing words with correct English syllables, *mimsy, wabe and toves*. But words, e.g. like *kpo, sfple* cannot be English because such combinations of phonemes do not exist in English. Another example may be the difficulty, which English speaking people face when they try to pronounce the Russian words *здравствуйте* or *Днепр* in which the sounds form strange syllables for the English language.

It is the ***specific grouping and distribution of phonemes*** in different languages that make speakers of different languages interpret one and the same word as monosyllabic or dissyllabic, or as disyllabic or trisyllabic. Most Russian or Ukrainian speakers who are not familiar with the idea of English diphthongs are sure that, for example, the word *house* is disyllabic.

Ancient Greek scholars noticed that vowels and consonants fulfil different functions in speech. ***<u>The function of a vowel is to occupy the central position</u>*** in certain combinations, whereas ***consonants serve as the margins*** of the sound combinations. In other words, ***<u>vowels are always syllabic, that is, they always form syllables,</u>*** while consonants in some languages are incapable of doing it. But in a number of languages, English included, some sonants are also syllabic because they have strong vocalic features. Thus, in English ***<u>sonants [l, m, n] can form syllables</u>***,

e.g. *garden* [`ga:- dn], *autumn* [`P:-tm], *kettle* [`ke-tl]. In the Czech language the sonant [r] is syllabic, e.g. *krk* [k-rk] – neck.

THEORIES OF SYLLABLE FORMATION AND SYLLABLE DIVISION

The syllable is a complicated phenomenon, which can be studied on four levels:

1. acoustic;
2. auditory;
3. articulatory;
4. functional.

In the history of theoretical phonetics there have been many theories about syllable formation and division. To understand the essence of the syllable it is necessary to mention some most important ones.

1. The most ***ancient theory*** states ***that there are as many syllables in a word as there are vowels***. Though this theory makes sense for some languages it cannot be universal as in some languages sonorant consonants can form syllables alongside with vowels.

2. The e***xpiratory (chest pulse or pressure) theory*** states ***that there are as many syllables in a word as there are*** <u>***expiration pulses***</u>. According to this theory the borderline between the syllables is the moment of the weakest expiration.

3. The ***sonority theory (теория звучности)*** states that ***there are as many syllables in a word as there are peaks of prominence according to the scale of sonority***. The founder of this theory, the Danish phonetician O. Jesperson, believed that each sound is characterised by a certain degree of sonority, which is understood as acoustic property of a sound that determines its perceptibility. According to this sound property, <u>***A SCALE OF SPEECH SOUNDS***</u> could be established.

The scale looks like this:

- the most sonorous (звучный) are open vowels;
- then come close vowels;
- sonants;
- voiced fricatives;
- voiced plosives;

- voiceless fricatives;
- the least sonorous voiceless plosives.

The peak of prominence is formed by the more sonorous sounds, and one peak of sonority is separated from another peak by sounds of lower sonority. The distance between the two peaks of sonority is a syllable.

Let us compare two words *melt* and *metal*. In the first word there is only one peak of sonority [e] while in the other there are peaks [e] and [l] as [l] is a sonant, so this word has two syllables.

4. The ***muscular tension*** (the articulatory effort) theory was formulated by the Academician Shcherba. According to it ***a syllable is characterised by variations in muscular tension.*** The energy of articulation increases at the beginning of a syllable, reaches its maximum with the vowel or sonant and decreases towards the end of the syllable. So a syllable can be presented as an ***arc of muscular tension***. The boundaries between syllables are determined by the lowest degree of articulatory energy.

5. The ***loudness theory*** was worked out by the phonetician N. Zhinkin. Unlike the previous theories, which analysed ***either a production or a perception level***, his theory ***took into account both these levels***. He experimentally proved that the organ immediately responsible for the variation of loudness is ***the pharynx***. Its narrowing and the resulting increase in muscular tension of its walls reinforce the actual loudness of the vowel or sonant thus forming the peak of the syllable, while the loudness of all other consonants is weakened. So according to this theory*, **the syllable can be regarded as the arc of loudness on the perception level, which corresponds to the arc of articulatory effort on the speech production level, since variations in loudness are due to the work of all the speech mechanisms.***

So *from the <u>phonetic point of view</u> THE SYLLABLE CAN BE DEFINED as <u>a unit which is pronounced by one articulatory effort, by one muscular contraction which results auditorily in one uninterrupted arc of loudness</u>.* This definition of the syllable is universal and can be applied to all languages.

From the ***phonological or functional*** point of view the **syllable** can be defined only with reference to the structure of one particular language as a similar sound sequence may be divided differently in different languages. So the definition of the syllable includes the following **FEATURES OF THE SYLLABLE**:

- a syllable is a chain of phonemes of varying length;
- a syllable is constructed on the basis of contrast of its constituents (which is usually a vowel-consonant type, but may also consist of a vowel alone, a vowel and some consonants, or a syllabic sonant and consonants, in the numbers and arrangements permitted by the given language;
- the nucleus of the syllable is a vowel, the presence of a sonant is optional; there are no languages in which vowels are not used as syllable nuclei, however there are languages where this function is performed by a sonant;
- the distribution of phonemes in the syllabic structure follows the rules , which are specific enough for a particular language.

SYLLABIC FORMATION

Syllabic formation in English is ***based on the phonological opposition vowel – consonant.*** Vowels are usually syllabic, while consonants are not with the exception of sonants [l, n, m] which become syllabic only ***in a certain position – in an unstressed final position preceded by noise consonants***, e.g. *little, blossom, Britain.*

The structure of syllables may vary from language to language because of the number and arrangement of consonants.

In English there are **FOUR TYPES OF SYLLABLES**:

1. ***open*** – **C + V** – where there is no consonant after the vowel, e.g. *no, me, to, far*;

2. ***closed*** – **V + C** – where the vowel is followed by a consonant, e.g. *odd, life*;

3. ***covered*** – **C + V(C)** – when the vowel is preceded by a consonant, e.g. *say, lie, shore;*

4. ***uncovered*** – **V(C)** – when there is no consonant before a vowel, e.g. *oh, oak, eat, eight.*

The fundamental type of syllable in English is the ***closed type*** while in Russian and Ukrainian it is the ***open type***. The number of syllables in an English word can very from 1 to 8 (e.g. boy - unintelligibility).

<h2 style="text-align:center">SYLLABLE DIVISION</h2>

Correct syllable division, especially at the word junctions, is of great Phonological importance, as the wrong syllable division may lead to the confusion of one word with another and cause phonological mistake. Compare: *a name – an aim; a nice house – an ice house, she saw the meat – she saw them eat, ice-cream – I scream, I saw her eyes – I saw her rise.*

SYLLABLE DIVISION in English is regulated by the following **RULES**:

1. Syllabic boundary is ***inside intervocalic consonants*** preceded by vowels. It means that when a short stressed vowel is separated from a following syllable sound by only one consonant it always occurs in ***a closed syllable***. The syllabic boundary in this case occurs ***within the consonant***, e.g. [`sit-i], [`fⱯm-ili]. It is greatly differs from Russian or Ukrainian where ***the first syllable is always open if there is only one consonant between two vowels***, e.g. *cи-лa, вo-дa, пуля.* This difference results in phonetic mistakes when R/U learners tend to turn English closed syllables into open ones by lengthening the short vowels, e.g. *money* [`mⱭⱭ-ni].

2. Syllabic boundary is ***before an intervocalic consonant if it is not preceded by a short stressed vowel.*** It means that long monophthongs, diphthongs and unstressed short vowels [i,q,υ] always occur in phonetically ***open syllables*** when they are separated from the following syllabic sound by only one consonant, e.g. *ar-my, voi-ces, etc.*

3. The syllabic boundary lies ***between two consonants if the first consonant is preceded by a short checked vowel***, e.g. *lov-ly, twen-ty, quick-ly.*

4. The sonants [l, m, n] are syllabic if they are preceded by noise consonants, e.g. *eagle, open, blossom.*

5. There cannot be more than one vowel in one syllable.

6.   The typical and the most fundamental syllable structure is of **(C)V + C** type.

7.   Word final consonants are normally of weak-end type.

QUESTIONS FOR SEMINAR 8

1.   Comparison of modification of sounds in English and Russian/Ukrainian: dentalization, lateral and nasal plosion.
2.   Comparison of modification of sounds in English and Russian/Ukrainian: voicing and devoicing.
3.   Comparison of modification of sounds in English and Russian/Ukrainian: labialization, palatlization, aspiration, loss of aspiration.
4.   Kinds of assimilation and adaptation.
5.   Modification of English vowels in connected speech.
6.   Traditional use of unreduced vowels.
7.   The syllable as a phonetic and phonological unit.
8.   Syllable formation and syllable division.
9.   Theories of syllable formation and syllable division.
10.   Syllabic formation.
11.   Syllabic division.

LECTURE 9.

INTONATION AND PROSODY

- **The role of intonation in language.**
- **Prosodic units.**
- **Structure of intonation.**
- **Prosodic subsystems.**
- **Tonograms.**
- **Nuclear tones.**
- **Scales.**
- **Meanings and functions of prosody.**
- **Functions of nuclear tones.**
- **Prosodic interference. Typical mistakes.**

THE ROLE OF INTONATION IN LANGUAGE

"That chap has some interesting things to say, but he is so arrogant about it all"- may be a reaction to a foreigner who has little control over his low-rising tone.

What is the role of intonation? Is it just a cosmetic accessory, a kind of a costume jewelry that people can do without? Or it is one of the most fundamental aspects of human communication? To say that intonation is very important is to say very little. To some extent it may be even more important than any unit of segmental

level, because native speakers are ready to forgive and just secretly laugh at any pronunciation mistake, but their first reaction to intonation mistake is rather offence than surprise. As one of the phoneticians, R. Kingdon said, *"Intonation is the soul of a language while the pronunciation of its sounds is its body."*

There are dozens of definitions of intonation. In this course of lectures we will use the most complete one that goes like this,

"Intonation is a complex unity of speech melody (which is also called the pitch component), sentence stress, tempo, rhythm and voice timbre which enables the speaker to express his thoughts, emotions and attitudes towards the contents of the utterance and the hearer.

Nowadays the term "intonation" is very often replaced by the term *"prosody"*. Some phoneticians think that these are just synonyms; others believe that the term "prosody" is wider. Nobody has offered the final argument in this scientific discussion so we will regard these terms as synonyms.

PROSODIC UNITS

One of the basic problems in the study of intonation or prosody is to determine its units. They are:

1. *The syllable* – is the smallest prosodic unit, which has no meaning of its own but is very important for building up more complex units of intonation. It has its prosodic functions – *tone, stress and duration*.

2. *The rhythmic group* – is either one stressed syllable or one stressed syllable and a number of unstressed syllables grouped around it. The stressed syllable is the *nucleus* of the *rhythmic group*. There are as many rhythmic groups in the utterance as there stressed syllables in it. Rhythmic groups are always *meaningful*.

3. *The intonation group* – is the second meaningful prosodic unit. Structurally it has some obligatory formal characteristics: *the nuclear stress, and the terminal tone.* The boundaries between intonation groups are marked by pauses. The

structure of an intonation group varies depending on the number of syllables and rhythmic units in it.

Minimally an intonation group can consist of one stressed syllable – *the nucleus*, e.g. *No. Who?*

Maximally, the intonation group can contain:

−   **the pre-head** – all unstressed syllables before the first stressed one; different types of pre-head differentiate emotional meaning;

−   *the head* – all the stressed and unstressed syllables before the nucleus; different types of head convey attitudinal meaning;

−   *the nucleus* (or the nuclear tone) – the most important element in the intonation group because it expresses communicative and attitudinal meaning and indicates the end if the intonation group;

−   *the tail* – all the unstressed syllables that follow the nucleus and whose pitch variation is determined by the nuclear tone.
    e.g. *Her little sister never gets up early. Her* – pre-head; *little sister never gets up* – head; *ear* – nuclear tone; *ly* –tail.

4.   The highest meaningful prosodic unit is the ***utterance***. It is the main communicative unit because it is characterized by its **semantic entity**, which is expressed by all language means – lexical, grammatical and prosodic. The utterance may contain one or several intonation groups.

5.   Utterances can be united into ***hyperutterances***, which are the ultimate units of prosodic analysis.

PROSODIC SUBSYSTEMS

Speech melody or the pitch component of the intonation is acoustically the variations of the fundamental frequency generated by the vibrations of the vocal cords.

The melody of the utterance is characterized by the following features:

- *The pitch level* – which shows the degree of semantic importance that the speaker attaches to the utterance or intonation group in comparison with any other utterance or intonation group. It is determined by the pitch of its highest-pitched syllable. The number of levels in unemphatic speech is three – *low, mid and high*. Besides some phoneticians distinguish two more levels – *the emphatic and the emotional pitch levels*.

- *The pitch range* – which is the interval between its highest–pitched syllable and its lowest-pitched syllable. The speaker changes his/her voice range according to circumstances. It may be widened or narrowed to express the speaker's attitudes and emotions.

  e.g.   *Yes.* (High Narrow Range– not enthusiastic)

      Yes (Low Narrow Range – sincere but not emotional)

      Yes. (High Wide Range – sincere and enthusiastic)

- *The terminal tone* – the most important element of the pitch from the functional point of view. It has the meaning of its own which practically predetermines the meaning of the whole utterance. The most important *nuclear tones* are:

  - *Low Fall;*
  - *Low Rise;*
  - *High Fall;*
  - *High Rise;*
  - *Fall-Rise;*
  - *Rise-Fall.*

TONOGRAMS

Like music, which can be graphically represented on the music staves, intonation can be graphically represented on *tonogram staves* with the help of a *dot and dash system.* There are a lot of other types of notations but we offer you this system as the easiest and the most visually persuasive.

The *staves* are two horizontal parallel lines, which represent the approximate upper and lower limits of the human voice in speech. Speech melody and stress are

shown on the staves with the help of *dashes, curves and dots* placed on different levels. To make the learners' life easier some phoneticians offered to mark *level tones* within the staves. They suggested 7 levels, with the 1st one being the lowest and the 7th the highest.

7 ▬▬▬▬▬▬▬	
6	High pitch Level (staves 5-7)
5 ───────────	Middle pitch Level (staves 3-5)
4	
3 ── • ⌒	
2	
1 ▬▬▬▬▬	Low Pitch Level (staves 1-3)
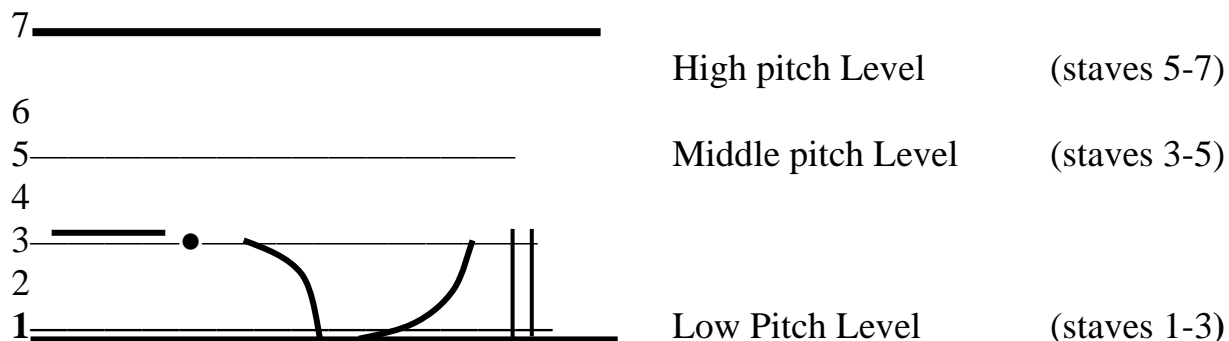
NUCLEAR TONES

Nuclear tones are divided into *emphatic* that use strong stresses and very wide or very narrow pitch ranges (e.g. *High Wide Fall*) and *unemphatic* which makes use of ordinary stresses and pitch ranges (e.g. *Low Fall*).

Thus, the six main nuclear tones can be graphically represented like this:

- Low Fall   3 → 1;
- High Fall 6 → 5;
- Fall Rise   3 → 1→ 3;
- Low Rise 1→ 3;
- High Rise 5 → 6;
- Rise Fall   1→ 3 → 1;

Besides, there are different variations of nuclear tones,

e.g. the High Narrow Fall 6 → 5;

the High Narrow Rise 5 → 6;

the Rise – Fall – Rise 3 → 5 → 1→ 3;

the High Wide Rise 1→ 6.

There are also Level Tones: High (6), Mid (4) and Low (2).

These tones are non-final and non-categoric; they express hesitation and uncertainty.

They are often used while reciting philosophic poetry.

SCALES

The pre-nucleus part of the intonation group, that is the pre-head and the head taken together, is called *the scale*. They may be of different types and the most widely used scales in English are:

- *Descending* in which the pitch gradually comes down;
- *Ascending,* where the pitch comes up;
- *Level,* when all the stressed and unstressed syllables remain on the same level.

Both descending and ascending scales may have different character. They may be

a) *stepping* (the commonest scale in English) when the syllables come down or up step-by-step;

b) *sliding* when each stressed syllable is pronounced with a slide while each unstressed syllable is pitched a little lower or higher than the end of the preceding syllable.

c) *scandent*, in which each stressed syllable is pronounced with a rise or fall, while each unstressed syllable is pitched little lower or higher than the end of the preceding one.

The last two types of scales are more emphatic than the stepping scale.

MEANINGS AND FUNCTIONS OF PROSODY

The most important thing to understand about the meanings and functions of intonation is that it has independent meanings of its own and is not connected with the words or grammatical structure of the sentence, *e.g. John is at home* (This sentence could be declarative interrogative and exclamatory depending on the intonation it is pronounced with.)

The example we have just given shows that the prosody of the utterance is polysemantic, that is, it can express a number of different meanings: finality and non-finality, certainty and non-certainty, categoric and non-categoric attitude, surprise, etc.

In some cases *the intonation pattern of the sentence and its grammatical meaning can coincide,* e.g. *She enjoys swimming*. Here the communicative type of

the sentence is declarative affirmative and the nuclear tone is Low Fall, which expresses categoric statement.

But in other cases the intonation pattern can differ from the grammatical meaning of the sentence, e.g. _She enjoys swimming._ Here the **logical stress** on the word "*she*" changes the intonation pattern.

The prosody of the utterance performs a number of functions. The basic _functions_ are as follows:

1. **The constitutive function** – which forms utterances as communicative units. Without a proper intonation a succession of words has no meaning, only a certain prosodic pattern turns it into a communicative unit with a clear message for a listener. That is why prosody is the only language device that transforms words into communicative units – utterances.

   e.g. *Fire!* – command;   *Fire?* – question;   *Fire.* – statement.

   In writing prosodic meaning of the sentence can be to some extent expressed by punctuation.

2. **The distinctive function** – which differentiates certain features of the utterance, for example,

   a) the communicative types of utterances (declarative, interrogative, imperative and exclamatory);

   b) the modal component of the utterance, e.g. *He _definitely_ promised.   He definitely _promised;_*

   c) the prominence in the utterance, e.g. *I don't know _him_.   I don't know him. I don't _know_ him;*

   d) the syntactic difference of the utterances, to differ one grammar structure from another, e.g. _Smiling Tom entered the room._ _Smiling, Tom entered the room._

3. **The recognitive function** – which helps the listener to recognize the communicative type of the utterance.

These prosodic functions are fulfilled simultaneously and can't be separated   from each other. To sum up the linguistic character of prosody we should say that

1. the prosody of speech is significant and meaningful;

2. it is systematic;

3. it is produced according to the system of prosodic structures of a given language;

4. it is a characteristic feature of each concrete language and cannot be used in speaking another language;

5. it should be paid much attention to at teaching and learning languages.

FUNCTIONS OF NUCLEAR TONES

Because nuclear tones show the speaker's attitude towards what he/she is saying and towards the listener, they are extremely important. We would like to make a brief survey of the most important meanings of the main nuclear tones.

1. Low Fall – a) serious and considerate;

    b) final and definite;

    c) cold and reserved.

2. Low Rise – a) polite and friendly;

    b) lack of interest, detached and reserving judgment (in questions without a question word, e.g. *Tired?*).

3. High Fall – a) polite and friendly, e.g. *Hello!*;

    b) demanding agreement, e.g. *So!*;

    c) shows interest, e.g. *Really!*.

4. High Rise – a) asking for explanation, e.g. *So?*;

    b) echoing, while thinking what to say, e.g. *I don't think that I like that man. - You don't.*

    c) expecting agreement, e.g. *Well?*

5. Fall Rise – a) partial agreement, e.g. *Yes.*

    b) warning, e.g. *Careful!*

6. Rise Fall – a) shows great interest;

    b) being impressed, e.g. *Did he!*

PROSODIC INTERFERENCE. TYPICAL MISTAKES.

Native language interference with English intonation can be observed in all prosodic subsystems: in melody, in stress and rhythm and in tempo. Let us analyze some typical mistakes made by Russian and Ukrainian learners of English. They are practically the same as most Slavic nations have similar prosodic characteristics.

MISTAKES IN PITCH COMPONENTS

1. Russian and Ukrainian learners pronounce the first stressed syllable in descending scales *at a lower level than native speakers*,

   e.g. *It's cold and windy today. Сегодня дождливо и холодно.*

2. Russian and Ukrainian learners often *substitute descending scales by ascending scales in declarative senesces,*

   e.g. *We'll go to the cinema tomorrow. Я купил два билета в кино.*

3. Russian and Ukrainian learners often *substitute English Low Fall by Russian/Ukrainian Low Fall* which has a less sharp pitch contrast,

   e.g. *He kept looking at the clock. Он продолжал смотреть на часы.*

4. Russian and Ukrainian learners often *substitute English Low Rise by Russian/Ukrainian Low Rise,* which is sharper and less curvy,

    e.g. *Has he gone? Он ушел? (Low Rise without a tail)*

      Is he your relative? Он ваш родственник? (Low Rise with a tail)

MISTAKES IN STRESS AND RHYTHM

The most characteristic mistake is stressing *structural words* alongside with *notional words,* which lead to stress and rhythmic patterns unusual for English,

e.g. *Will you buy this book for me?* – the stressed words are: *will, buy, book, for;*

Ты купишь мне эту книгу? – all the words are stressed.

MISTAKES IN TEMPO

Native speakers' tempo *is much higher* than English learners' tempo because the latter make two important mistakes.

- They *do not reduce unstressed syllables* to the same degree as native speakers;
- They *prolong stressed syllables* as they usually do in their mother tongue.

To sum up it is necessary to emphasize once again the importance of conscious and thorough work at English intonation. I would like to quote English phoneticians J. O'Connor and G. Arnold who wrote in one of their books, "English speakers are able to make a good deal of allowance for imperfect sound-making, but being for the most part unaware of the far-reaching effect of intonation in their own language, they are much less able to make the same allowance for mistakenly used tunes. The result is that they may hold the foreigner responsible for what his intonation seems to say – as they would rightly hold an Englishman responsible in a similar case – even though the tune does not reflect his intention."

QUESTIONS FOR SEMINAR 9

1. The role of intonation in language.
2. Prosodic units.
5. Structure of intonation.
6. Prosodic subsystems.
7. Tomograms.
8. Nuclear tones.
9. Scales.
10. Meanings and functions of prosody.
11. Functions of nuclear tones.
12. Prosodic interference: mistakes in pitch components.
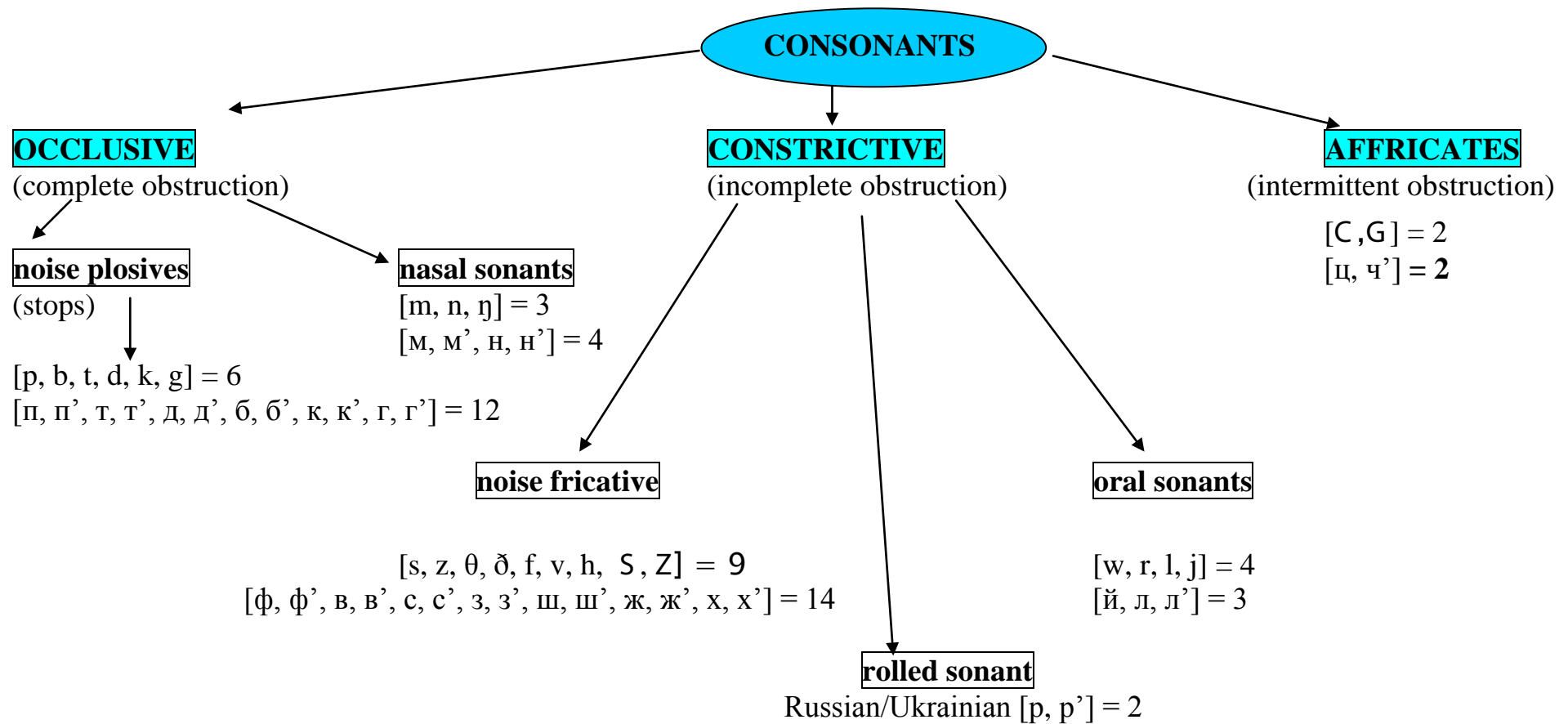13. Prosodic interference: mistakes in stress and rhythm, and in tempo.

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APPENDIX 1.

CLASSIFICATION OF CONSONANTS

PRINCIPLE 1: ACCORDING TO THE TYPE OF OBSTRUCTION AND THE MANNER OF NOISE PRODUCTION

CONSONANTS

OCCLUSIVE
(complete obstruction)

CONSTRICTIVE
(incomplete obstruction)

AFFRICATES
(intermittent obstruction)

[C ,G] = 2
[ц, ч'] = **2**

noise plosives
(stops)

[p, b, t, d, k, g] = 6
[п, п', т, т', д, д', б, б', к, к', г, г'] = 12

nasal sonants
[m, n, ŋ] = 3
[м, м', н, н'] = 4

noise fricative

[s, z, θ, ð, f, v, h, S, Z] = 9
[ф, ф', в, в', с, с', з, з', ш, ш', ж, ж', х, х'] = 14

oral sonants

[w, r, l, j] = 4
[й, л, л'] = 3

rolled sonant
Russian/Ukrainian [p, p'] = 2

CLASSIFICATION OF CONSONANTS

PRINCIPLE 2: ACCORDING TO THE ACTIVE SPEECH ORGAN AND THE PLACE OF OBSTRUCTION

CONSONANTS

LABIAL

PHARYNGUAL
(Glottal)
[h] = 1

Bilabial
[p, b, m, w] = 4
[п, п' б, б', м, м'] = 6

Labio-dental
[f, v] = 2
[ф, ф', в, в'] = 4

LINGUAL

FORELINGUAL

MEDIOLINGUAL
(palatal)
E [j] = 1

R/U [й] = 1

BACK-LINGUAL
(velar)
[k, g, ŋ] = 3

[к, к', г, г', х, х']

cacuminal
Br.E [ʀ] =1
R/U [p, p'] = 2

retroflex
Am.E. [r] =1

R/U [т, т', д, д', н, н', ц] = 7

dorsal

apical

interdental
[θ,ð] = 2

dental
R/U [с, с', з, з', л, л'] = 6

alveolar
[t, d, s, z, n, l] = 6

palato-alveolar
[S, Z, C ,G] = 4 [ч, ш, ш', ж, ж'] = 5
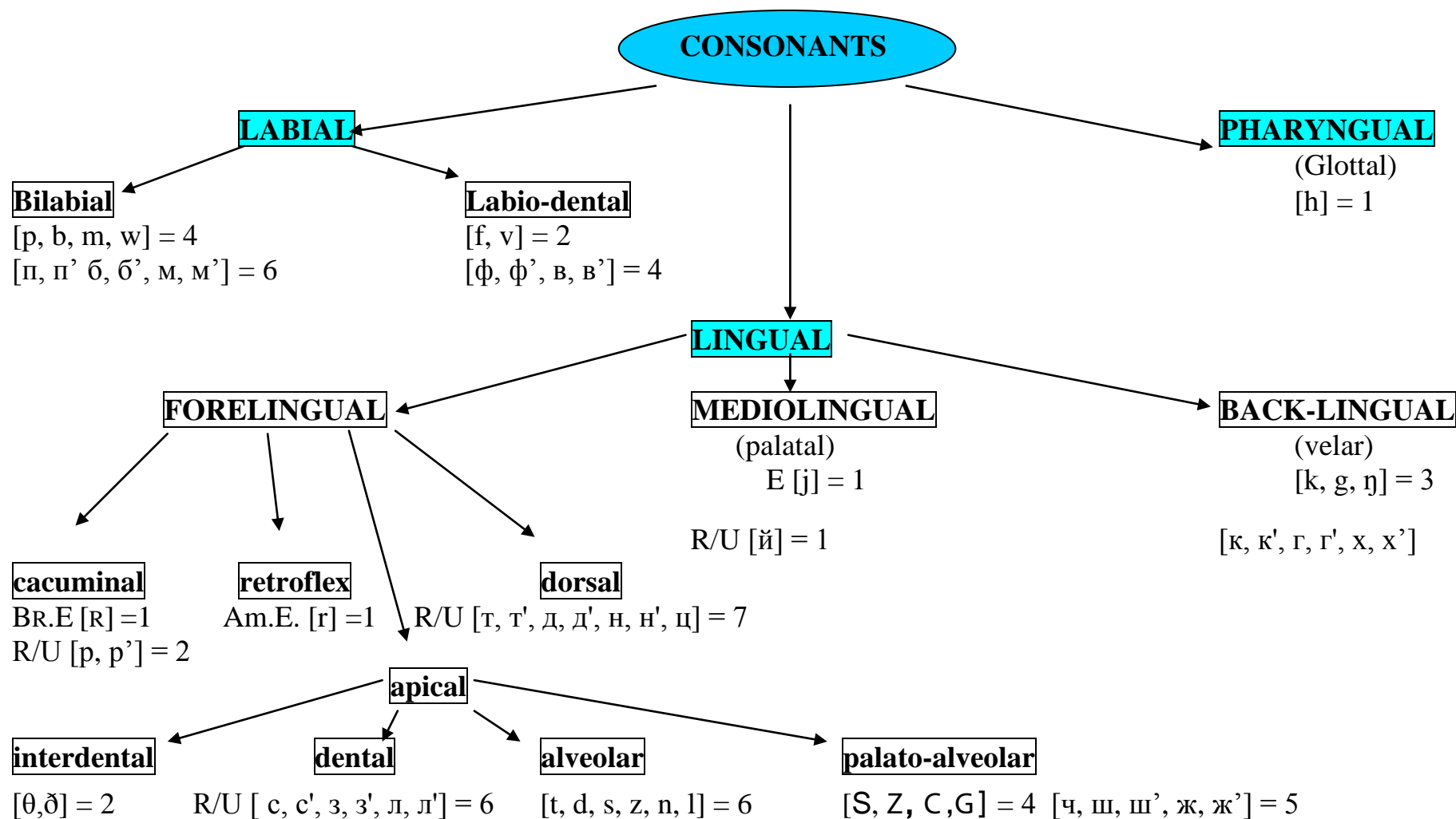
APPENDIX 3.

CLASSIFICATION OF VOWELS

PRINCIPLE 2: ACCORDING TO THE TONGUE POSITION

		FRONT	FRONT-RETRACTED	CENTRAL (MIXED)	BACK-ADVANCED	BACK
CLOSE/ HIGH	**narrow**	R/U [и] [i:]		R/U [ы]		R/U [y] [u:]
	broad		[i] [iq]		[υ] [υq]	
MID-OPEN	**narrow**	[e] [ei]		[E:]		
	broad	R/U [э] [Fq]		[qυ] [q]		
OPEN/ LOW	**narrow**			[A]		[O:] R/U [o]
	broad	[æ]	[aυ] [ai]	R/U [a]	[R]	[Oi] [P]

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