Ministry of higher and secondary education
Samarkand State Institute of Foreign Languages
Chair of "English Phonetics"

Lectures on

THEORETICAL PHONETICS

For the third year students.

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CONTENTS:

THEORETICAL PHONETICS

1. Theoretical phonetics as a science. Branches of phonetics. Methods of investigation.

Lecture 1

Phonetics is the branch of linguistics devoted to the study of the events associated with the production of human speech sounds. Phonetics is concerned with the human noises by which the thought is actualized or given audible shape: the nature of these noises, their combinations, and their functions in relation to the meaning. By extension, it is also the study of the perception of these sounds, and of their physics. Phonetics is therefore anchored in anatomy, psychology, and neurology. Phonetics, however, is basically *not* concerned with meaning, in that respect it differs from all other branches of linguistics.

Traditionally, phonetics has dealt with the positions and activities of the parts of the human body that produce speech sounds, with the transition from one position to another, and with the qualities and direction of the air stream that is emitted when a person speaks. All of these considerations come under the heading of articulatory phonetics. Left out of account are the speaker's brain, which triggers speech acts, and the listener's brain, which interprets the vocal message. Ideally, phonetics should begin with the study of the encoding of the speech sounds in human brain, and end with the study of their decoding in the hearer's brain.

To the phonetician no sound is exotic if it is produced by the human speech apparatus and used for communication. To the non-specialist, however, many of the sounds of other languages seem strange.

Practical or normative phonetics studies substance, the material form of phonetic phenomena in relation to meaning.

Theoretical phonetics is mainly concerned with the functioning of phonetic units in the language.
The phonetic system of English is consisted of the following four components: **speech sounds, the syllabic structure of words, word stress,** and **intonation (prosody).** These four components constitute what is called the `pronunciation` of English.

Phonetics studies the sound system of the language that is segmental units (phonemes, allophones); suprasegmental units (word stress, syllabic structure, rhythmic organization, intonation). Phonetics is closely connected with general linguistics but has its own subject matter (Investigation).

Thus, phonetics is divided into two major components: segmental phonetics, which is concerned with individual sounds (i.e. "segments" of speech), their behavior; and suprasegmental phonetics whose domain is the larger units of connected speech: syllables, words, phrases and texts.

All speech sounds have **4** aspects (mechanisms):
- Articulatoty – it is the way when the sound-producing mechanism is investigated, that is the way the speech sounds are pronounced
- Acoustic – speech sound is a physical phenomenon. It exists in the form of sound waves, which are pronounced by vibrations of the vocal cords. Thus, each sound is characterized by frequency, certain duration. All these items represent acoustic aspect.
- Auditory – sound perception aspect. The listener hears the sound, percepts its acoustic features and the hearing mechanism selects from the acoustic information only what is linguistically important.
- Functional – every language unit performs a certain function in actual speech. Functional aspect deals with these functions.

Lecture 2

In accord with these 4 aspects of speech sounds 4 branches are distinguished, each of them has its own method of investigation:

- Articulatoty phonetics - studies (investigates) sound producing mechanism. Its method consists of observing the way in which the air is set in motion, the movements of the speech organs and the coordination of these movements in the production of single sounds and trains of sounds. It borders with anatomy and physiology and the tools for investigating just what the speech organs do are tools which are used in these fields: direct observation, wherever it is possible, e.g. lip movement, some tongue movement; combined with x-ray photography or x-ray cinematography; observation through mirrors as in the laryngoscopic investigation of vocal cord movement, etc.

- Acoustic phonetics - studies the way in which the air vibrates between the speaker's mouth and the listener's ear. Has its basic method – instrumental. Speech sounds are investigated by means of operator called spectrograph. Intonation is investigated by intonograph. Acoustic phonetics comes close to studying physics and the tools used in this field enable the investigator to measure and analyse the movement of the air in the terms of acoustics. This generally means introducing a microphone into the speech chain, converting the air movement into corresponding electrical activity and analyzing the result in terms of frequency of vibration and amplitude of vibration in relation to time. The use of such technical devices as spectrograph, intonograph and other sound analyzing and sound synthesizing machines is generally combined with the method of direct observation.

- Auditory phonetics- the branch of phonetics investigating the hearing process. Its interests lie more in the sensation of hearing, which is brain activity, than in the physiological working of the ear or the nervous activity between the ear and the brain. The means by which we discriminate sounds — quality, sensations of pitch, loudness, length, are relevant here. The methods applied in auditory phonetics are those of experimental psychology: experimenting, usually based on different types of auditory tests,

- Functional phonetics – is also termed phonology. Studies the way in which sound phenomena function in a particular language, how they are utilized in that language and what part they play in manifesting the meaningful distinctions of the language. So this is the branch of phonetics that studies the linguistic function of consonant and vowel sounds, syllabic structure, word accent and prosodic features, such as pitch, stress and tempo. In linguistics, function is usually understood to mean discriminatory function, that is, the role of the various elements of the language in the distinguishing of one sequence of sounds, such as a word or a sequence of words, from another of different meaning. The basic method is commutation or substitution (замены), substituting sounds in different environments.

Another subdivision of phonetics:

1. General phonetics – studies general laws, formulates general theories (theory of intonation, syllable, formation, phoneme)

2. Special phonetics – based on general phonetics. Deals with phonetic peculiarities of certain language.

3. Some linguists distinguish historical phonetics – it traces the development of the phonetic system in the course of time finding out the basic laws of the system.

Questions and practical tasks on the unit

1. What are the 4 major components of the English phonetic system (or English pronunciation)?
2. What is the main concern of Phonetics; what does it mainly study?
3. What do you know about the division of phonetics into segmental and suprasegmental phonetics. What are the units of these two components?
4. What do you know about 4 aspects (mechanisms) of speech sounds?
5. What does articulatory phonetics study? Its methods of investigation.
6. What does acoustic phonetics study? Its methods of investigation.
7. What does auditory phonetics study? Its methods of investigation.
8. What does auditory phonetics study? Its methods of investigation.
9. What are the studying spheres and objects of the following subdivision of phonetics:

   General phonetics, special phonetics, and historical phonetics?

10. What are the specific investigation areas of the followings: phonetics, articulatory phonetics, acoustic phonetics, auditory phonetics?

2. Phoneme. Series of phoneme.

Lecture 3

The definitions of the phoneme vary greatly.
L.V.Shcherba: the phoneme may be viewed as a functional, material and abstract unit.
V.A.Vassilyev: The phoneme is a smallest unit capable of distinguishing one word from another word, one grammatical form of word from another
Bloch: phoneme is a class of phonemically similar sounds contrasting and mutually exclusive with all similar classes in the language
Jacobson: phoneme is a minimal sound by which meaning may be discriminated
Let us consider the phoneme from the point of view of its thee aspects.

1. The phoneme is a functional unit. Function is usually understood to mean discriminatory function, that is, the role of the various components of the phonetic system of the language in distinguishing one morpheme from another, one word from another or also one utterance from another.
The opposition of phonemes in the same phonetic environment differentiates the meaning of morphemes and words, e.g. said— says, sleeper — sleepy, bath — path, light — like.
Also phoneme can fulfill a distinctive function - Sometimes the opposition of phonemes serves to distinguish the meaning of the whole phrases, e.g. He was heard badly — He was hurt badly.

2. the phoneme is material, real and objective. That means that it is realized in speech in the form of speech sounds, its allophones. The sets of speech sounds, that is the allophones belonging to the same phoneme are not identical in their articulatory content though there remains some phonetic similarity between them.
F.e. English phoneme [d] when not affected by the articulation of the preceding or following sounds is a plosive, fore-lingual apical, alveolar, lenis stop. This is how it sounds in isolation or in such words as door, darn, down, etc., when it retains its typical articulatory characteristics. In this case the consonant [d] is called the principal allophone. The allophones which do not undergo any distinguishable changes in the chain of speech are called principal. At the same time there are quite predictable changes in the articulation of allophones that occur under the influence of the neighboring sounds in different phonetic situations. Such allophones are called subsidiary,

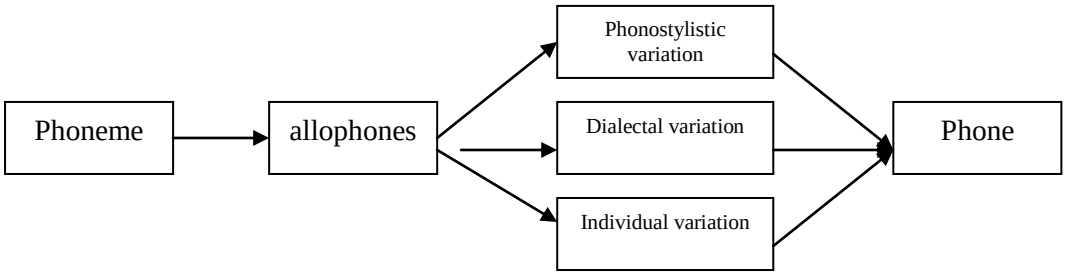
[d] is slightly palatalized before front vowels and the sonorant [j], e.g. deal, day, did, did you. [d] is pronounced without any plosion before another stop,. e.g. bedtime, bad pain, good dog; it is pronounced with the nasal plosion before the nasal sonorants [n] and [m], e.g. sudden, admit, could not, could meet; the plosion is lateral before the lateral sonorant [l], e.g. middle, badly, bad light. The alveolar position is particularly sensitive to the influence of the place of articulation of a following consonant. Thus followed by [r] the consonant [d] becomes post-alveolar, e.g. dry, dream; followed by the interdental [ ], [ ] it becomes dental, e.g. breadth, lead the way, good thing. When [d] is followed by the labial [w] it becomes labialized, e.g. dweller. In the initial position [d] is partially devoiced, e.g. dog, dean; in the intervocalic position or when followed by a sonorant it is fully voiced, e.g. order, leader, driver; in the word-final position it is voiceless, e.g. road, raised, old. These modifications of the phoneme [d] are quite sufficient to demonstrate the articulatory difference between its allophones, though the list of them could be easily extended. If you consider the production of the allophones of the phoneme above you will find that they possess three articulatory features in common, all of them are forelingual lenis stops.

Consequently, though allophones of the same phoneme possess similar articulatory features they may frequently show considerable phonetic differences.

Allophones are arranged into functionally similar groups, that is groups of sounds in which the members of each group are opposed to one another, but are opposable to members of any other group to distinguish meanings in otherwise similar sequences. Consequently allophones of the same phoneme never occur in similar phonetic contexts, they are entirely predictable according to the phonetic environment, and thus carry no useful information, that is they cannot differentiate meanings.

But the phones which are realized in speech do not correspond exactly to the allophone predicted by this or that phonetic environment. They are modified by Phonostylistic, dialectal and individual factors. In fact, no speech sounds are absolutely alike.

The relationships between the phoneme and the phone (speech sound) may be illustrated by the following scheme:



Lecture 5

3. Allophones of the same phoneme, no matter how different their articulation may be, **function as the same linguistic unit.** Phonemes differentiate words like tie and die from each other, and to be able to hear and produce phonemic differences is part of what it means to be a competent speaker of the language. Allophones, on the other hand, have no such function: they usually occur in different positions in the word (i.e. in different environments) and hence cannot be opposed to each other to make meaningful distinctions. For example the dark [ɫ] occurs following a vowel as in pill cold, but it is not found before a vowel, whereas the clear [**l**] only occurs before a vowel, as in lip, like. These two vowels cannot therefore contrast with each other in the way that [1] contrasts with [r] in lip — rip or lake — rake, there are no pairs of words which differ only in that one has [ɫ] and the other — [1].

The function of phonemes is to distinguish the meaning of morphemes and words. So the phoneme is an abstract linguistic unit, it is an abstraction from actual speech sounds, that is allophonic modifications.

Allophones of each phoneme possess a bundle of distinctive features, that makes this phoneme functionally different from all other phonemes of the language concerned. This functionally relevant bundle of articulatory features is called the invariant of the phoneme. Neither of the articulatory features that form the invariant of the phoneme can be changed without affecting the meaning. All the allophones of the phoneme [d], for instance, are occlusive, forelingual, lenis. If occlusive articulation is changed for constrictive one [d] will be replaced by [z], cf. breed— breeze, deal — zeal; [d] will be replaced by [g] if the forelingual articulation is replaced by the backlingual one, cf. dear — gear, day - gay. The lenis articulation of [d] cannot be substituted by the fortis one because it will also bring about changes in meaning, cf. dry — try, ladder— latter, bid— bit. That is why it is possible to state that occlusive, forelingual and lenis characteristics of the phoneme [d] are generalized in the mind of the speaker into what is called the invariant of this phoneme.

On the one hand, the phoneme is objective real, because it is realized in speech in the material form of speech sounds, its allophones. On the other hand, it is an abstract language unit. That is why we can look upon the phoneme as a dialectical unity of the material and abstract aspects. Thus, we may state that it exists in the material form of speech sounds, its allophones. Speech sounds are necessarily allophones of one of the phonemes of the language concerned. All the allophones of the same phoneme have some articulatory features in common, that is all of them possess the same invariant. Simultaneously each allophone possesses quite particular phonetic features, which may not be traced in the articulation of other allophones of the same phoneme. The articulatory features that form the invariant of the phoneme are called distinctive or relevant. If the opposed sounds differ in one articulatory feature and this difference brings about changes in the meaning of the words the contrasting features are called relevant - f.e. port and court.

The articulatory features that do not serve to distinguish meaning are called non-distinctive, irrelevant or redundant; for instance, it is impossible in English to oppose an aspirated [p] to a non-aspirated one in the same phonetic context to distinguish meanings. That is why aspiration is a non-distinctive feature of English consonants.

Basic functions of the phoneme are:

1. Constitutive – phoneme constitutes words, word combinations etc.
2. Distinctive – phoneme helps to distinguish the meanings of words, morphemes
3. Recognitive – phoneme makes up grammatical forms of words, sentences, so the right use of allophones.

Questions and practical tasks on the unit

1. How did *L.V. Shcherba* define *phoneme*?
2. How did *V.A. Vasilyev* define *phoneme***?**
3. Please compare the definitions of phoneme given by *Bloch* and *Jacobson*.
4. How is phoneme considered as a *functional unit*?
5. What is the analysis of phoneme when it is considered as *material, real and objective* unit?
6. Define the term *allophone* with examples.
7. What is the difference between *principal* and *subsidiary* allophones? Exemplify your opinion?
8. Explain the phenomenon allophone in the example of the phoneme [d]; consider in details its various allophones in various phonetic environments.
9. Please describe the relationship between *phonemes* and *allophones* through examples?
10. What is the difference between the functions of *phonemes* and *allophones* in actual speech? Exemplify your opinion?
11. Explain *phoneme* from the standpoint of its being *abstract linguistic unit*.
12. What is the *invariant* of phoneme? Exemplify your statements?
13. What are the specific purposes of the following *basic functions of the phoneme*?

3. The classification of English consonant sounds

Lecture 6

There are two major classes of sounds traditionally distinguished by phoneticians in any language. They are termed consonants and vowels. The distinction is based mainly on auditory effect. Consonants are known to have voice and noise combined, while vowels are sounds consisting of voice only. From the articulatory point of view the difference is due to the work of speech organs. In case of vowels no obstruction is made. In case of consonants various obstructions are made. So consonants are characterized by so-called close articulation that is by a complete, partial or intermittent blockage of the air-passage by an organ or organs. The closure is formed in such a way that the air-stream is blocked or hindered or otherwise gives rise to audible friction. As a result consonants are sounds which have noise as their indispensable and most defining characteristic.

On the articulatory level, each consonant may be identified by stating two general facts about it:
1) what sort of articulatory posture it is formed by;
2) whereabout in the mouth (or pharynx) it is produced.
Besides these major characteristics the particular quality of a consonant may depend on a lot of other factors, that is by what articulatory organ (or organs) an obstruction is made, how vocal cords work at the moment of production, what cavity is used as a resonator, what is the force of articulatory effect and many others.
According to V.A.Vassilyev, primary importance should be given to the type of obstruction and the manner of production of noise. On this ground, he distinguishes two large classes of consonants:
a) occlusive, in the production of which a complete obstruction is formed;
b) constrictive, in the production of which an incomplete obstruction is formed.
The phonological relevance of this feature could be exampled in the following oppositions:
[ti:] – [si:] – tea – sea (occlusive – constructive)
[si:d] – [si:z] – seed – seas (occlusive – constructive)
[pul] – [ful] – pull – full (occlusive – constructive)
[bɜut] – [vɜut] – boat – vote (occlusive – constructive)
Each of two classes is subdivided into noise consonants and sonorants. The division is based on the factor of prevailing either noise or tone component in the auditory characteristic of a sound. In their turn noise consonants are divided into plosive consonants (or stops) and affricates.

Another point of is that the first and basic principle of classification should be the degree noise. Such consideration leads to dividing English consonants into two general kinds:
A — noise consonants
B — sonorants
in production of sonorants the air passage between the two organs of speech is fairly wide, that is much wider than in the production of noise consonants. As a result, the auditory effect is tone, not noise - [r], [j], [w], for example. They are also characterized by sharply defined formant structure and the total energy of most of them is very high.

The phonological relevance of the degree of noise could be proved by the following oppositions:
[beik] — [meik] bake — make (noise consonant — sonorant)
[vi:l – [wi:l] veal — wheel (noise consonant — sonorant)

Lecture 7

The place of articulation is determined by the active organ of speech against the point of articulation. According to this principle the English consonants are classed into:
1) labial,
2) lingual,
3) glottal.
The class of labial consonants is subdivided into: a) bilabial; b) labio-dental; and among the class of lingual consonants, three subclasses are distinguished; they are: a) forelingual, b) mediolngual and c) backlingual.

[pæn] — [tæn] pan — tan (bilabial - forelingual)
[wai] - [lai] why — lie (bilabial — forelingual)
[weil] - [jeil] weil — yale (bilabial - mediolingual)
[pik] - [kik] pick — kick (bilabial - backlingual)
[les] — [jes] less — yes (forelingual .— mediolingual)
[dei] — [gei] day — gay (forelingual — backlingual)
[sai] - [hai] sigh — high (forelingual — glottal)
[fi:t] - [si:t] feet — seat (labio-dental — forelingual)

Also, American phoneticians specifically distinguish consonants made in dental, interdental, alveolar, palatal, alveopalatal, velar, uvular, pharyngeal, glottal positions.
Another sound property is voiced — voiceless characteristic which depends on the work of the vocal cords. **[p, b], [t, d], [k, g], [s, z], [f, v], [ʃ, ʒ],''[tʃ, dʒ]**. All voiced consonants are weak (lenis) and all voiceless consonants are strong (fortis).
Thus it may be said that the oppositions **[p — b], [t — d], [k — g], [f — v], [s — z], [ʃ— ʒ], [tʃ — dʒ]** are primarily based on energy difference, that is on fortis — lenis articulation, which are their phonologically relevant features. It is for this reason that such characteristics as voiceless — voiced have given place to "fortis" — "lenis" terms.
There is one more articulatory characteristic which is usually included into the set of principles, on the basis of which the English consonants are classified, that is the position of the soft palate. According to this principle, consonants can be oral and nasal. There are relatively few consonantal types in English, which require the lowered position of the soft palate. They are the nasal occlusive sonorants **[m], [n]** and **[ŋ]**. They differ from oral plosives in that the soft palate is lowered allowing the escape of air into the nasal cavity.

Fricatives. Fricatives are consonants produced with a continuous airflow through the mouth. English has voiceless and voiced labiodental fricatives at the beginning of the words *fat* and *vat*, interdental fricatives heard word initially in words *thin* and *those*, alveolar fricatives in *sing* and *zip*, and a voiceless alveopalatal fricative in *ship*. The voiced alveopalatal is rare in English; it is in words like *azure*, *pleasure*, and *rouge*. The voiceless glottal fricative of English is heard in words *hotel*, *hat*.
Affricates. When a stop articulation is released, the tongue moves rapidly away from the point of articulation. Some noncontinuant consonants show a slow release of the closure; these sounds are called affricates. English has two affricates. They are hears word initially in *church* and *jump*.

Questions and practical tasks on the unit

1. What are the distinguishing features of the *consonant* sounds from the *vowel* sounds according to their articulation?

2. What is the relevance of the terms *lenis* and *fortis* when speaking about the classification of consonants?

3. What are *two general facts* and *other minor factors* to be stated in identifying consonants and their quality on the articulatory level?

4. What is the *V.A. Vasilyev's classification* of consonants according to the *type of obstruction* and the manner of production of noise; and the *subdivisions* of each of these classes? Give examples.

5. What is the role of *degree of noise* in classifying consonants? Exemplify your statements.

6. Explain the classification of consonants according to active speech organs against the point of articulation? Exemplify your statements.

7. What is principle of *oral and nasal classification* of consonants? List the examples.

8. How many controversial ideas are there about the number of *affricates* in the English language? What are they?

4. The classification of English vowel sounds

There are two major classes of sounds traditionally distinguished by phoneticians in any language. They are termed consonants and vowels. The distinction is based mainly on auditory effect. Consonants are known to have voice and noise combined, while vowels are sounds consisting of voice only. From the articulatory point of view the difference is due to the work of speech organs. In case of vowels no obstruction is made. In case of consonants various obstructions are made. So consonants are characterized by so-called close articulation, that is by a complete, partial or intermittent blockage of the air-passage by an organ or organs. The closure is formed in such a way that the air-stream is blocked or hindered or otherwise gives rise to audible friction. As a result consonants are sounds which have noise as their indispensable and most defining characteristic.

Lecture 8

Vowels unlike consonants are produced with no obstruction to the stream of air, so on the perception level their integral characteristic is naturally tone, not noise. The most important characteristic of the quality of these vowels is that they are acoustically stable. They are known to be entirely different from one another both articulatorily and acoustically. Different vowel sounds are produced by varying the placement of the body of the tongue and shaping the lips.

Vowels are sonorous, syllabic sounds made with vocal tract with more open than it is for consonant or glide articulation.

The quality of a vowel is known to be determined by the size, volume, and shape of the mouth resonator, which are modified by the movement of active speech organs, that is the tongue and the lips. Besides, the particular quality of a vowel can depend on a lot of 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 vowel quality could be thought of as a bundle of definite articulatory characteristics, which are sometimes intricately interconnected and interdependent.

The analysis of the articulatory constituents of the quality of vowels suggests the following criteria termed:

a) stability of articulation;
b) tongue position;
c) lip position;
d) character of the vowel end;
e) length;
f) tenseness.

Stability of articulation specifies the actual position of the articulating organ in the process of the articulation of a vowel. There are two possible varieties: a) the tongue position is stable; b) it changes, that is the tongue moves from one position to another. In the first case the articulated vowel is relatively pure, in the second case a vowel consists of two clearly perceptible elements. There exists in addition a third variety, an intermediate case, when the change in the tongue position is fairly weak. So according to this principle the English vowels are subdivided into:

a) monophthongs, b) diphthongs, c) diphthongoids.

Diphthongs consist of two elements, the first of which, the nucleus, being strong and distinct and the second, the glide, being very weak and indistinct.

Though the interpretation we have just given is an obvious matter for Soviet phoneticians it does not mean that this way of seeing the situation is shared-by British phoneticians. A.C.Gimson, for example, distinguishes twenty vocalic phonemes, which are made of vowels and vowel glides. Seven of them are treated as short phonemes: [i], [e], [æ], [ ], [u], [ʌ], [ə] and thirteen as long ones: [a:], [o:] [ɜ:] [i:], [u:], [ei], [ɜu], [ai], [au], [u],

[iə], [ə], [uə] five of which are considered relatively pure: [a], [o:] [ɜ:], [i:], [u:]; the rest are referred to long phonemes with different glides: [ei], [ai], [i] with a glide to [i]; [ɜu], [au] with a glide to [u]; and [iə], [uə], with a glide to [ə].

According to North American phoneticians, English vowels are divided into two major types – **simple vowels** and **diphthongs**. Simple vowels do not show a noticeable change in quality during their articulation. The vowels of *pit*, *set*, *cat*, *dog*, *but*, *put*, and the first vowel of *suppose* are all simple vowels.

Diphthongs are vowels that exhibit a change in a quality within a single syllable. English diphthongs show changes in quality that are due to tongue movement away from the initial vowel articulation toward a glide position. This change in vowel quality is clearly perceptible in words such as *say*, *buy*, *cow*, *ice*, *lout*, *go* and *boy*. The change is less easy to hear in the vowels of words like *heed* and *lose*.

Lecture 9

Another principle of classification is the position of the tongue. The position of the tongue in the mouth cavity is characterized from two aspects that is the horizontal and vertical movement.

According to the **horizontal movement**, there are five classes of English vowels. They are:

1) front: [i:], [e], [ei], [a], [æ]; [ɛə]
2) front-retracted: [i], [i(ə)];
3) central: [ʌ] [ɜ:] [ə], [ɜ (u)], [ɛ (u)];
4) back [ ], [o:], [u:], [a:];
5) back-advanced: [u], [u(ə)].

Vertical movement of the tongue:

1) close a) narrow: [i:] [u:];
   b) broad: [i], [u], [i(ə)], [u(ə)];
2) mid a) narrow: [e], [ɜ:], [ə], [e(i)], [ɜ:(u)];
   b) broad: [ə], [ʌ];
3) open a) narrow: [ɛ (ə)] [o:], [o (i)];
   b) broad: [æ], [a(i, u)], [ ], [a:]

[pen — pæn] pen — pan; [kæp — ka:p] cap — carp; [pen — pin] pen — pin; [kæp — k p] cap — cup; [bin — bi:n] bin — been; [b n — ba:n] bun — barn

Another principle of classification is lip rounding. Three lip positions are distinguished: spread, neutral and rounded. For the purpose of classification, it is sufficient to distinguish between two lip positions: rounded and unrounded, or neutral. Any back vowel is produced with rounded lips, the degree of rounding is different and depends on the height of the raised part of the tongue; the higher it is raised the more rounded the lips are. So lip rounding is a phoneme constitutive indispensable feature, because no back vowel ran exist without it.

Our next point is checkness. This quality depends on the character of the articulatory transition from a vowel to a consonant. As a result all English short vowels are checked when stressed. The degree of checkness may vary and depends on the following consonant. Before fortis voiceless consonant, it is more perceptible than before a lenis voiced consonant or sonorant. All long vowels are free.

Another articulatory characteristic of English vowels is their length or quantity. The monophthongs are divided into two varieties according to their length:

a) short vowels: [i], [e], [æ], [ ], [u], [ʌ], [ə];
b) long vowels: [i:], [a:], [o:], [ɜ:], [u:].

Vowel like any sound has physical duration — time which is required for its production (articulation). When sounds are used in connected speech, they cannot help being influenced by one another. Duration is one of the characteristics of a vowel which is modified by and depends on the following factors:

1) its own length,
2) the accent of the syllable in which it occurs,
3) phonetic context,

4) the position of the sound in a syllable,
5) the position in a rhythmic structure,
6) the position in a tone group,
7) the position in a phrase,
8) the position in an utterance,
9) the tempo of the whole utterance,
10) the type of pronunciation,
11) the style of pronunciation.

There is one more articulatory characteristic - tenseness. It characterizes the state of the organs of speech at the moment of production of a vowel. Historically long vowels are tense while historically short vowels are lax.

Questions and practical tasks on the unit

1. What are the articulatory and acoustic characteristics of vowels?
2. What is the primary classification of vowels according to their articulatory constituents?
3. The varieties of articulating organ position in the process of vowel production. The classification of vowels according to these varieties.
4. The classification of vowels according to the position of tongue in horizontal movement.
5. The classification of vowels according to the position of tongue in vertical movement.
6. Vowel classification principle of lip rounding.
7. List the *two varieties* of monophthongs according to their *length* and all the monophthongs accordingly.
8. Physical *duration* of monophthongs. What factors does the *duration* of a monophthong depend on and modified by?

5. The accent in English words. Intonation.

Lecture 10

All phones have certain inherit **suprasegmental** or **prosodic properties** that form part of their makeup no matter what their place or manner of articulation. These properties are **pitch, loudness** and **length.**

All sounds give us a subjective impression of being relatively higher or lower in pitch. Pitch is auditory property that enables us to place it on a scale that ranges from low to high. Pitch is especially noticeable in sonorous sounds like vowels, glides, liquids, and nasals. Even stop and fricative consonants convey different pitches. This is particularly noticeable among fricatives, as you hear by extending the pronunciation of [s] and then of [ʃ]; the [s] is clearly higher pitched. All sounds have some degree of intrinsic loudness as well or they can not be heard. Moreover, all sounds occupy a certain stretch of time – they give the subjective impression of length.

A language is said to be a **tone language** when differences in word meaning are signaled by differences in pitch and when tone of a word can have a grammatical function. Pitch on forms in tone language functions very differently from the movement of pitch in a non-tone language. When a speaker of English says *a car?* with a rising pitch, the word *car* does not mean anything different from the same form pronounced on a different pitch level or with a different pitch contour. In contrast, when a speaker of a tone language such as Mandarin pronounces the form *ma* with a high falling pitch, it means "scold", but when the same form pronounced with a mid rising pitch, the meaning is "hemp", with fall rise pitch level it is "horse", and it is "mother" when pronounced with a high tone. There is no parallel to anything like this in non-tone languages such as English and French. In Bini lang. spoken in Nigeria tone can signal differences in the tense of a verb, f.e. the word *ima* with LL (low - low) tone means present indefinite of "I show"; the same word with HL (high-low) tone is continuous "I am showing"; with LH tone past "I showed".

Pitch movement in spoken utterance that is not related to differences in word meaning is called **intonation.** The falling pitch we hear at the end of a statement in English such as *Fred parked the car* signals that the utterance is complete. For this reason, falling pitch at the end of an utterance is called **terminal (intonation) contour.** Conversely, a rising or level intonation, called **nonterminal (intonation) contour,** often signals incompleteness; we can find them in lists and telephone numbers, e.g. *Sally, Fred, Hellen, and Joe; two eight four two five one three*. In questions, final rising intonations also signal a kind of incompleteness in that they indicate that a conversational exchange is not finished: *did you have nice time?*

In many languages, there are both vowels and consonants whose articulation takes longer relative to that of other vowels and consonants. This phenomenon, known as **length** is indicated in phonetic transcription by colon [:].

In any utterance, some vowels are perceived as more prominent than others. In a word such as *telegraphic* [t ɛ l ə g r æ f i k] the two vowel nuclei that are more prominent than the others are [**ɛ æ**]. Syllabic segments perceived as relatively prominent are stressed. **Stress** is a cover term for the combined effects of pitch, loudness, and length – the result of which is perceived prominence. In each language, the effect of these prosodic features varies. In general, English stressed vowels are higher in pitch, longer and louder than unstressed ones. In phonetic transcriptions stress is marked with diacritics; North Americans use acute accent [ˈ] and grave accent [ˋ] to mark **primary** and **secondary** stresses.

Syllables – minimal pronounceable units into which sounds show a tendency to group themselves. The syllable or syllables of the word are said to be stressed or accented. The correlation (взаимосвязь) of varying prominences (выделение) of syllables in a word is understood as the accentual structure of the word or its stress pattern.

Lecture 11

Nature of word stress. According to A.C.Gimson, the effect of prominence is achieved by any or all of four factors - Force, tone, length, and vowel colour. The articulation of the stressed syllable greater muscular energy is produced by the speaker.
The English linguists D.Crystal, A.C.Gimson agree that in English word stress or accent is a complex phenomenon, marked by the variations in force, pitch, quantity and quality.
- When the tonic or musical component of word stress is involved it is the change of pitch level that is significant in making the syllable prominent, but not the type of tone direction.
If the words *import and im*port are said on a level tone and each vowel with its own length, it is rather difficult to distinguish them. The tonic or musical component may be helpful in defining the place of stress in a word, as it is observed within the syllable marked by the pitch change, which contributes to the syllable prominence.
- Quantitative and qualitative components of word stress. Certain distinctions of the vowel length and color are reduced or lacking in unstressed syllables. The fact strengthens the idea that the accentuation is influenced by the vowel length and quality. The vowel of the stressed syllable is perceived (пронимать, различать) as never reduced or obscure (непонятный) and longer than the same vowel in the unstressed syllables. Thus the word *stress* or *accent* is also defined as qualitative where the vowel color or quality is a means of stress and quantitative with relatively increased length of the stressed vowel. Compare the quality (colour) and quantity (length) of the same vowel in a word e.g. ab*stract,*car-park.
In English the quantitative component of word stress is not of primary importance because of the non-reduced vowels in the unstressed syllables which sometimes occur in English words, e.g. *architect, *transport, *partake.
Languages are also differentiated according to **the placement of word stress**. There are fixed stress (on the same syllable) and free stress (on different syllables). In languages with a fixed stress the occurrence of the word stress is limited to a particular syllable in a multisyllabic word. In languages with a free stress it is place not confined to a specific position in the word. On one word it may fall on the first syllable, in another on the second syllable, in the third word- on the last syllable, etc.
English: *appetite-be*ginning- ba*lloon
Russian:озеро-погода-молоко
There are three degrees of stress: primary, secondary and weak - it is British variant. The American linguists B. Bloch and G.Trager find four contrastive degrees of word stress, namely: loud, reduced loud, medial and weak stresses.
Characteristics of English stress:
1) Recessive tendency – the word stress originally fell on the initial syllable or the second syllable, e.g. foresee, begin, apart, withdraw.
2) Rhythmical tendency - primary stress on the third syllable from the end
e.g. revo*lution, organi*sation, as*similation.
3) Retentive tendency- the stress in the derivative, words have stress on the same syllable with it*s original or parent word. *similar – as*similate; ,recom'mend -,recommen'dation
The word stress in English is not only free, but it may also be shifting, performing the semantic function of differentiating lexical units, parts of speech, grammatical forms. It is

noteworthy that in English word stress is used as a means of word-building.
*contrast – con*trast; *music – mu*sician; *habit – ha*bitual

Word stress of a language performs three functions.
1. Constitutive - it organizes the syllables a word into a language unit having a definite accentual structure, function.
2. Identificatory (or recognitive) - it helps to identify a different combinations of sounds into meaningful linguistic units
3. Distinctive - differentiate the meaning of words or their forms. import — imp’ort; ‘billow — be"low.

Questions and practical tasks on the unit

1. What are the **suprasegmental (**or **prosodic)** properties of speech sounds and what are their significance?

2. What is **tone language?** Is English a tone language? What is the difference between tone and non-tone languages? Give examples.

3. What is intonation? What is the difference between **terminal** and **non-terminal (intonation) contour**? Exemplify your explanation.

4. What is stress? What are its symbols in transcriptions? Exemplify your explanations.

5. What is syllable?

6. How many factors does A.C. Gimson list to bring in the *effect of prominence* of syllables?

7. What is the definition of word-stress or accent given by an English linguist D. Crystal?

8. What is **tonic component**? What is its significance? Exemplify your answer?

9) What is the importance of qualitative and quantitative components of word stress? Exemplify your answer.

10) What is prominence? What is the difference between "stress" and prominence? What is the factor causing "prominence" in speech?

11. What is the significance of the **placement of word stress?** Exemplify your answer.

12. Stress in English words can be shifting. What is the significance of it?

13. How many degrees of stress are there in English? The scientists' different approaches about the degrees of stress.

14. What are the characteristics of the English word stress on each of the *Recessive, Rhythmical* and *Retentive tendencies*?

15. What functions does word stress perform in a language?

6. The classification of functional phonetic styles

Lecture 12

Intonational style – a system of interrelated intonational means which is used in a social sphere and serves s definite aim of communication.
There is no universally recognized classification of styles. Vinogradov distinguishes 3 styles:
1) Colloquial (COMMUNICATION)
2) Informing (scientific styles are included)
3) Emotive (publicistic, belletrestyle).
This classification was criticized. There are 2 next marginal layers:
formal – suggests careful articulation of styles, relatively slow speed of the pronouncing
informal – everyday communication, rapid, colloquial, conversational
Stylistic use of intonation:
1) Informational - in press reporting, educational descriptive texts. May be represented in monologues, dialogues, polylogues. Phonostylistic characteristics: Loudness normal or increased; pauses are rather long; rhythm is stable, properly organized; falling tones on the semantic centers, falling-rsisng or rising in the initial intonation groups
2) Academic (scientific)- style of lectures (conferences, seminars). It is determined by the purpose of communication as the speaker*s aim is to attract the listener*s attention, to establish close contacts with the audience and to direct the public attention to the message carried in the contents of the text. Phonostylistic characteristics: Loudness increased; pauses are rather long; rhythm is properly organized; high proportion of compound terminal tones (high fall + low rise, fall – rise, rise-fall-rise), a great number of high categorical falls.
3) Publicistic (oratorical)-this term serves for many kinds of oratorical activities (especially this style uses in political speeches). Phonostylistic characteristics: Loudness enormously increased; pauses are definitely long between the passages; rhythm is properly organized; tones mostly emphatic, especially emotionally underlined semantic centers, in non-final intonational groups falling-rising tones are frequent
4) Declamatory (artistic)- this is the style of declamation. This is a highly emotional and expressive intonational style, that is why it needs special training. Attitudinal, volitional and intellectual functions of intonation are of primary importance here and serve to appeal to the mind, will and feelings of the listener. This style can be heard on the stage, on the screen, in a TV studio, thus we see that it is always a written form of the language read aloud or recited. Phonostylistic characteristics: Loudness varied according to the size of the audience and to the emotional setting; pauses are long especially between the passages, prolonged emphatic pauses are used to underline the emphasis; rhythm is properly organized; common use of categorical low and high falls in final and initial intonation groups and on semantic centers.
5) Conversational (familiar) - this kind of English is a means for everyday communication, heard in natural conversational interaction between speakers. This style occurs mainly in informal external and internal relationships in speech of relatives, friends, well - acquainted people and so on. So this is spontaneous, colloquial, informal, everyday speech.

Questions and practical tasks on the unit

1. What kind of intonational styles did Vinogradov distinguish?

2. Please give precise explanations to each of these layers of intonation:

a) Formal; b) Informal

3. How did M.A. Sokolova define the intonational style?

4. Describe the Informational style of intonation and its usage. Exemplify your answer.

5. Describe the Academic (Scientific) intonational style and its usage. Exemplify your answer.

6. Describe the Publicistic (Oratorial) intonational style and its usage. Exemplify your answer.

7. Describe the Declamatory (Artistic) intonational style and its usage. Exemplify your answer.

8. Describe the Conversational (Familiar) intonational style and its usage. Exemplify your answer.

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