UZBEKISTAN STATE WORLD LANGUAGES UNIVERSITY

ENGLISH PHILOLOGY – I

Pronunciation
Theory of English

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Foreword

The present manual in pronunciation theory of English is worked out for students of Foreign Language Faculties who are being trained to become teachers of English.

The training of highly skilled teachers of English comprises the study and mastery the theoretical problems of pronunciation on phonetics and phonology. The course book includes two aspects of pronunciation in phonetics: practical and theoretical.

The aims of the practical course are predominantly the following:

1. The students must master the norms, or pronunciation standards, of the English language, i.e. speech sounds, syllable structure, word-stress and intonation in the broadest sense of the word.

2. The students must acquire, for this purpose, a basic knowledge on pronunciation of practical and theoretical aspects of English.

3. The students must learn the most commonly used phonetic terms.

The course book is a continuation of the practical course of English Phonetics and is complementary to it. Therefore, before the beginning of the study of this course the students must have a thorough knowledge on the pronunciation norms of practical English phonetics.

The book pursues the following aims.

1. To refresh the students' knowledge on the pronunciation standards of general and practical phonetics.

2. To describe theoretical aspects of pronunciation and use it in the lessons of present day phonology.

3. To systematize the elements of theoretical phonetics acquired by the students while studying the practical course and give them a better and detailed knowledge of the English phonetics and of its pronunciation as a system.

4. To acquaint the students with moot points and unsolved problems of pronunciation concerning the theoretical and practical aspects of English phonetics.

5. To help the students modern methods of phonetic and phonological investigation.

The author hopes that the study of this course will arouse the students' interest in pronunciation of English practically and theoretically; help them to read more about this subject; analyze, if it is necessary, the pronunciation phenomena and, finally, help them to apply their knowledge in their future work and, probably in phonetic researches.

The manual in phonetics is an integral part of the general linguistics, like the theoretical courses in grammar, lexicology and stylistics.

The author is also indebted to his collaborators in the arduous task of teaching English pronunciation at our university.

I am much indebted to my colleagues who have given their valuable and considerable supports in the preparation of this manual.

R. Alimardanov

Unit 1

Phonetics as a Linguistic Science

Questions to be discussed:

1. Introduction to Phonetics
2. Connection of Phonetics with Other Sciences
3. Aspects of Speech Sounds
4. Branches of Phonetics
5. Methods of Phonetic Investigation
6. Significance of Phonetics

1. Introduction to Phonetics

Language as "the most important means of human intercourse" exists in the material form of speech sounds. It cannot exist without being spoken. Oral speech is the primary process of communication by means of language. Written speech is secondary; it represents what exists in oral speech.

In oral speech grammar and vocabulary as language aspects are expressed in sounds. The modification of words and their combination into sentences are first of all phonetic phenomena. We cannot change the grammatical form of a verb or a noun without changing the corresponding sounds. The communicative type of sentences can often be determined only by intonation. Hence the importance of the sound (phonetic) aspect of a language is obvious. To speak any language a person must know nearly all the 100% of its phonetics while only 50-90% of the grammar and 1% (1) of the vocabulary may be sufficient.

The terms "phonetics" and "phonetic" come from the Greek word Υωνη (fo:ne:) sound. The term "phonetics" may denote either the phonetic system of a concrete language or the phonetic science. Both the phonetic system of a language and the phonetic science are inseparably connected with each other but at the same time the one cannot be taken for the other. The phonetic system of a language is an objective reality while the phonetic science is a reflected reality.

Phonetics as a science is a branch of linguistics. It is concerned with the study of the sound system of a language. Phonetics has a long history. It was known to the ancient Greeks and Hindus. But up to the 19th century it was considered to be a part of grammar. As an independent linguistic science it began to develop in Russia and Western Europe in the 2nd half of the 19th century.

Being an independent science, phonetics is at the same time closely connected with other linguistic sciences – grammar, lexicology, stylistics and the history of a language since the phonetic system of a language, its vocabulary and grammar constitutes one indivisible whole. It is also closely interconnected with such sciences as physiology, biology, physics, pedagogy, psychology, mathematics, cybernetics. The

object of phonetics is the sound matter of a language which comprises speech sounds and prosodic characteristics of speech (stress, pitch, rhythm, tempo, etc.)

Sounds and prosodic phenomena of speech are of a complex nature. They involve a number of simultaneous activities on the part of the speaker and the hearer: the movement of speech organs that is regulated by the central nervous system; the perception of sound waves resulting from the work of speech organs; the formation of the concept in the brain (at a linguistic level).

2. Connection of Phonetics with Other Sciences

Phonetics is connected with linguistic and non-linguistic sciences: acoustics, physiology, psychology, logic, etc.

The connection of phonetics with grammar, lexicology and stylistics is exercised first of all via orthography, which in its turn is very closely connected with phonetics.

Phonetics formulates the rules of pronunciation for separate sounds and sound combinations. The rules of reading are based on the relation of sounds to orthography and present certain difficulties in learning the English language, especially on the initial stage of studying. Thus, vowel sounds, for instance, are pronounced not only as we name the letters corresponding to them: the letter **a** as /eɪ/, the letter **e** as /i:/, the letter **I** as /aɪ/, the letter **y** as /waɪ/, the letter **u** as /ju:/ the letter **o** as /ou/, *but* **a** can be pronounced as: /æ/ - *can*, /ɑ:/ - *car*, /ɛə/ - *care*; **e** can be pronounced as: /e/ - *them*, /3:/ - *fern*, /ɪə/ - *here*, etc.

Though the system of rules of reading phonetics is connected with grammar and helps to pronounce correctly singular and plural forms of nouns, the past tense forms and past participles of English regular verbs, e.g. /d/ is pronounced after voiced consonants (*beg-begged*), /t/-after voiceless consonants (*wish-wished*). It is only if we know that /s/ is pronounced after voiceless consonants, /z/ after voiced and /ɪz/ after sibilants, that we can pronounce the words *books, bags, boxes* correctly. The ending - **ed** is pronounced /ɪd/ following /t/ or /d/, e.g. *waited* /'weɪtɪd/, *folded*, /'fəuld ɪd/. Some adjectives have a form with /ɪd/, e.g. *crooked* /'krukɪd/, *naked* /'neɪkɪd/, *ragged* /'rægɪd/.

One of them important phonetic phenomena - sound interchange - is another manifestation of the connection of phonetics with grammar. For instance, this connection can be observed in the category of number. Thus, the interchange of /f-v/, /s-z/ , /θ-ð/ helps to differentiate singular and plural forms of such nouns as: *calf-calves* /f-v/, *leaf-leaves* /f-v/, *house-houses* /s-z/.

Vowel interchange helps to distinguish the singular and the plural of such words as: *basis – bases* /`beɪsɪs - `beɪsi:z/, *crisis – crises* /`kraɪsɪs - `kraɪsi:z/, *analysis-analyses* /ə`næləsɪs- ə`næləsi:z/, and also: *man-men* /mæn-men/, *foot-feet* /fut-fi:t/, *goose-geese* /gu:s-gi:z/, *mouse –mice* /maus-maɪs/.

Vowel interchange is connected with the tense forms of irregular verbs, for instance: *sing-sang-sung; write-wrote-written*, etc.

Vowel interchange can help to distinguish between

a) nouns and verbs, e.g. *bath-bathe* /a:-eɪ/,
b) adjectives and nouns, e.g. *hot-heat* /ɔ -i:/,
c) verbs and adjectives, e.g. *moderate-moderate* /eɪ-ɪ/,
d) nouns and nouns, e.g. *shade-shadow* /eɪ-æ/,
e) nouns and adjectives, e.g. *type-typical* /aɪ-ɪ/.

Vowel interchange can be observed in onomatopoeic compounds:

jiggle - joggle *толчок, покачивание*
flip - flop *лёгкий удар, шлепок*
chip - chop *рубить топором, штыковать*
flap - flop *шлепать, шлёпнуть*
hip - hop *подпрыгивание при ходьбе*

Consonants can interchange in different parts of speech for example in nouns and verbs:

extent – extend /t-d/
mouth - mouth /θ-ð/
relief - relieve /f-v/

Phonetics is also connected with grammar through its intonation component. Sometimes intonation alone can serve to single out predication in the sentence. Compare:

`He came home. Not Mary or John.
He `came home. So you can see him now.
He came `home. He is at home,and you said he was going to the club.

In affirmative sentence the rising nuclear tone may serve to show that it is a question. Cf.:

He `came home.

He ˈcame ˏhome?

Pausation may also perform a differentiatory function. If we compare two similar sentences pronounced with different places of the pause, we shall see that their meaning will be different.

ˈWhat ˈwriting ˈpoet is doing is ˎinteresting.

If we make a pause after the word *what*, we are interested in what the poet is doing in general. If the pause is made after the word *writing* we want to know, what book or article the poet is writing.

Phonetics is also connected with lexicology. It is only to the presence of stress, or accent, in the right place, that we can distinguish certain nouns from verbs (formed by conversion), e.g.

ˈabstract *реферат* - to abˈstract *извлекать*

ˈobject *предмет* - to obˈject *не одобрять*

ˈtransfer *перенос* - to transˈfer *переносить*

Homographs can be differentiated only due to pronunciation, because they are identical in spelling, e.g.

bow /bəu/ *лук* - bow /bau/ *поклон*
lead /li:d/ *руководство* - lead /led/ *свинец*
row /rəu/ *ряд* - row /rau/ *шум*
sewer /səuə/ *швея* - sewer /sju:ə/ *сточная труба*
tear /tɛə/ *разрыв* - tear /tɪə/ *слеза*
wind /wɪnd/ *ветер* - wind /waɪnd/ *виток*

Due to the position of word accent we can distinguish between homonymous words and word groups, e.g.

`blackbird дрозд - ˈblack `bird чёрная птица

Phonetics is also connected with stylistics; first of all through intonation and its components: speech melody, utterance stress, rhythm, pausation and voice tamber which serve to express emotions, to distinguish between different attitudes on the part of the author and speaker. Very often the writer helps the reader to interpret his ideas through special words and remarks such as: *a pause, a short pause, angrily, hopefully, gently, incredulously*, etc. For example:

"Now let me ask you girls and boys, would you paper a room with representations of horses?"

After a pause, one half of the children cried in chorus, "Yes, sir!" Upon which the other half, seeing in the gentleman's face that "Yes" was wrong, cried out in chorus, "No, sir!"- As the custom is in these examinations.

"Of course, no. Why wouldn't you?"

A pause. (Ch. Dickens. *Hard Times*)

If the author wants to make a word or a sentence specially prominent or logically accented, he uses graphical expressive means, e.g.:

"You *must* paper it," said the gentleman, rather warmly.

"You *must* paper it," said Thomas Gradgrind, "whether you like it or not. Don't tell *us* you wouldn't paper it'. (*ibid*)

Phonetics is also connected with stylistics through repetition of words, phrases and sounds. Repetition of this kind serves the basis of rhythm, rhyme and alliteration.

3. Aspects of Speech Sounds

Consequently, sound phenomena have different aspects, which are closely interconnected: articulatory, acoustic, auditory and linguistic.

The articulatory (sound-production) aspect. Speech sounds are products of human organism. They result from the activities of the diaphragm, the lungs, the bronchi, the trachea, the larynx with the vocal cords in it, the pharynx, the mouth cavity with the speech organs situated in it and the nasal cavity.

Sound production is impossible without respiration, which consists of two alternating phases-inspiration and expiration. Speech sounds are based chiefly on

expiration, though in some African languages there are sounds produced by inspiration.

Expiration, during which speech sounds are produced, is called phonic expiration. Phonic expiration differs from ordinary biological non-phonic expiration. In phonic expiration the air comes from the lungs not freely but in spurts, because the speech organs often block the air-passage.

The lungs are the source of energy. They supply the air-pressure (the spectral component of sounds) and at the same time they regulate the force of the air-pressure, thus producing variations in the intensity of speech sounds.

Sound production actually takes place in the larynx, the pharynx and the oral and the nasal cavities. The air-stream coming from the lungs undergoes important modifications in them.

One part of sound production is phonation, or voice-production.

When the vocal cords, situated in the larynx, are tensed and brought loosely together, the air-pressure below the vocal cords becomes very high and the air comes from the lungs in regular puffs making the vocal cords vibrate. Their vibrations are complex and, mainly, regular or periodic. The regular vibrations of the vocal cords are transmitted to the air-stream and the acoustic effect perceived by the human ear is that of a vocal tone.

This is what we call voice.

The other part of sound-production is articulation, i.e. all the movement and positions of the speech organs necessary to pronounce a speech sound. The movements of speech organs modify the shape, size and volume of the supralaryngeal cavities (the pharynx, the mouth and the nasal cavity) and the voice coming from the lungs receives characteristic resonance depending on the shape, size and volume of the cavities (resonance chambers). As a result, a vowel sound of a certain quality is produced.

When in the supralaryngeal cavities there is an obstruction to the air-stream, a certain noise is produced. The character of the noise-friction or plosion – depends on the type of obstruction (a complete closure or a constriction) and determines the particular quality of a consonant. When an obstruction is created and the vocal cords vibrate, a voiced consonant is produced. When the vocal cords do not vibrate, the result is a voiceless consonant.

Thus sound production is a complicated phenomenon. The main sourced of vibration in the production of speech sounds are the vocal cords and various kinds of obstruction.

Complex periodic vibrations of the vocal cords are the physiological basis of speech melody and voice-timbre as components of prosody. The amplitude of vibration is the physiological basis of intensity-the dynamic component of prosody.

The acoustic aspect. Like any other sound of nature speech sounds exist in the form of sound waves and have the same physical properties-frequency, intensity, duration and spectrum.

Frequency is the number of vibrations per second generated by the vocal cords. Frequency produced by the vibration of the vocal cords over their whole length is the

fundamental frequency. It determines the musical pitch of the tone and forms an acoustic basis of speech melody.

Frequency is measured in hers or cycles per second (ops).

Intensity of speech sounds depends on the amplitude of vibrations. Changes in intensity are associated with stress in those languages which have force stress, or dynamic stress.

Intensity is measured in decibels (dbs).

Like any other form of matter, sound exists and moves in time. Any sound has a certain *duration*. The duration of a sound is the quantity of time during which the same pattern of vibration is maintained. For this reason the duration of a sound is often referred to as its quantity. The duration of speech sounds is usually measured in milliseconds (msec.).

It has already been mentioned that the vocal tone is the result of complex vibrations. The whole length of the vocal cords vibrates to produce the fundamental tone (see Fig.1). In addition, each part of the vocal cords vibrates simultaneously to produce partial tones (overtones or harmonics, see Fig.2).

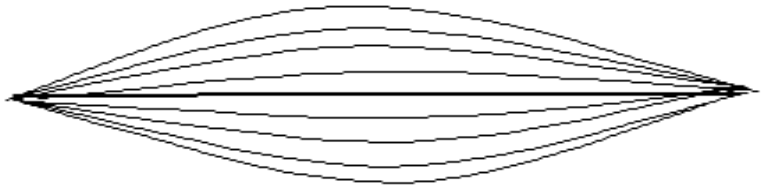

Fig.1. Vibration of entire cord.

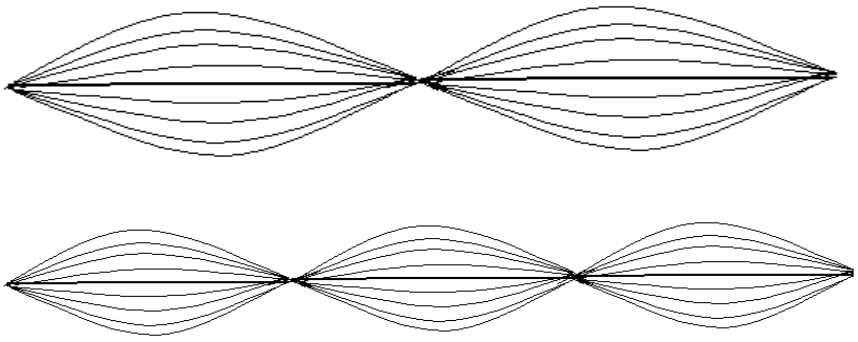

Fig.2. Vibration of its parts.

The frequency of the overtones is higher than that of the fundamental tone. Complex vibrations resulting from the superposition of the fundamental and partial vibrations can be presented in the following way.

The complex tone is modified in the resonance chambers (the pharyngial, oral and nasal cavities). These chambers can assume an infinite number of shapes, each of which has a characteristic vibrating resonance of its own. Those overtones of the complex tone which coincide with the chamber's own vibrating resonance are considerably intensified. Thus, certain bands of strongly intensified overtones are characteristic of a particular shape, size and volume of the resonator which produces a certain vowel sound. These bands of frequencies are intensified whatever the fundamental frequency. The vowel /*a*:/, for instance, has one such characteristic band of energy in the region of 800 cps and another at about 1,100 cps; the vowel /i:/ has bands of energy at about 280 cps and 2,500 cps, irrespective of the pitch of the voice.

The complex range of frequencies of varying intensity which form the quality of a sound is known as the *acoustic spectrum. The* bands of energy in the spectrum which are characteristic of a particular sound are known as the sounds *formants.* Thus formants of /*a*:/ occur in the region 800 and 1,100cps; the formants of /i:/ occur in the region of 280 and 2500 cps. It is known that vowel sounds have at least two formats – F_1 and F_2, which are responsible for the particular quality (timbre) of each vowel type. F_1 is characterized by lower frequencies than F_2. The format of the fundamental tone (marked by F_0) is irrelevant to vowel differentiation. F_0 is present in the spectra of vowels, sonants and voiced consonants because these sounds are formed with voice. It is absent in the spectra of voiceless consonants.

The spectra of consonants have no sharply defined formant structure. There are concentrations of energy at high frequencies or no energy, at a low, fundamental frequency.

The auditory (sound-perception) aspect Every act of oral communication presupposes the presence of at least two persons: the speaker and the hearer. The former produces speech sounds, the latter perceives them. Thus speech sounds may also be analysed from the point of view of perception.

The perception of speech sounds involves the activity of our hearing mechanism, which can be viewed in two ways.

On the one hand, it is a physiological mechanism which reacts to acoustic stimuli. The human ear transforms mechanical vibrations of the air into nervous stimuli and transmits them to the brain.

On the other hand, it is also a psychological mechanism which selects from the great amount of acoustic information only that which is linguistically significant. The human brain interprets acoustic phenomena in terms of a given language system. In this way, different acoustic stimuli may be interpreted as being the same sound unit. Thus for an Englishman the soft /l/ as in "let" and the hard / ł / as in "tell" are one and same unit, as the difference between them is not significant in distinguishing words or grammatical forms in English. A Russian would consider these sounds as different units, since in the Russian language the soft /л'/ as in "мель" and the hard /л/ as in 'мел" serve to differentiate words. A listener's reactions are conditioned by his experience of handling his own language.

In what way does the human ear perceive and interpret the acoustic properties of speech sounds-frequencies, intensity, duration?

The same frequency of vibrations is always perceived as the same *pitch* regardless of the other qualities of the vibrating body. The greater the frequency, the higher is the pitch of the voice and vice-versa. Our perception of the pitch of the voice depends largely (but not solely) on the fundamental frequency carried by vowels and other voiced sounds. Impressions of a change of pitch may be induced by variations of intensity on the same frequency. Our perception goes further than the limits of fundamental frequency (the total range of a speaking voice being as extensive as 80-350 cps). The human ear perceives frequencies from 16 cps to about 20,000 cps.

Formant frequencies, which are much higher than the fundamental frequency, determine our identification of different *qualities* of speech sounds.

Changes in intensity are perceived by our ear as variations in the *loudness* of a sound. The greater the intensity of a sound, the louder the sound. But our perception of loudness does not depend on intensity alone. A sound or a syllable may be perceived as louder, in comparison with neighboring sounds or syllables, because there is a marked pitch change on it or because it is longer than the others.

Furthermore, some sounds, owing to their nature, are louder or more sonorous than others. This /ɑ:/ is more powerful than /i:/, and vowels generally have more carrying power than consonants.

Our judgments relating to loudness are not as fine as those relating to either quality or pitch.

Different duration of speech sounds is perceived as a difference in their *length.* The time necessary for the recognition of a sound depends on the nature of the sound and the pitch. The minimum duration of a vowel to be recognized may be 4 msec. But our perception of length does not always correspond to the actual duration of speech sounds or other units. Thus the length of rhythmic groups in an English utterance is considered to be approximately the same since it is a characteristic feature of English rhythm that stressed syllables occur at more or less equal intervals of time. But the actual duration of rhythmic groups is far from being equal. This is an example of how our brain interprets from the acoustic material only that which is linguistically significant.

Our hearing mechanism plays an important role in controlling our own speech. The control of our sound production is complementary to our articulatory habits. The process of communication would be impossible if the speaker himself did not perceive the sounds he pronounces. If this control is disturbed, disturbances in the production or speech sounds are likely to appear.

The linguistic aspect. Speech sounds and prosodic features are linguistic phenomena. They are realizations of language units-phonemes and prosodies. Representing language units in actual speech, speech and prosodic features (pitch, stress, temporal characteristics etc.) perform certain linguistic functions. They constitute meaningful units-morphemes, words, word forms, utterances. All the words of a language consist of speech sounds and have stress. All the utterances consist of

words, and, consequently, of sounds; they are characterized by certain pitch-and-stress patterns, temporal features, rhythm.

Speech sounds and prosodic features serve to differentiate the units they form. Communication by means of language is possible only because speech sounds (and prosodic features) can be opposed to one another for purposes of differentiating words, wordforms, and communicative units-utterances.

Simultaneously all the sound phenomena provide a basis for the hearer to identify them as concrete words, word forms or utterances.

Thus, speech sounds and prosodic features of speech perform constitutive, distinctive and identificatory functions.

The linguistic aspect of speech sounds is also called the function or social aspect, because of the role which sound matter plays in the functioning of language as a social phenomenon. Thus, speech sounds and prosodic features are functional and significant phenomena of language.

Depending on which of the aspects of speech sounds is studied, phonetics is subdivided into the following branches.

Physiological phonetics is concerned with the study of speech sounds as physiological phenomena. It deals with our voice-producing mechanism and the way we produce sounds, stress, intonation. It studies respiration, phonation (voice-production), articulation and also the mental processes necessary for the mastery of a phonetic system. Since sounds of speech are no only produced but are also perceived by the listener and the speaker himself, physiological phonetics is also concerned with man's perception of sounds, pitch variation, loudness and length. In fact, physiological phonetics can be subdivided into articulatory and auditory (perceptual) phonetics.

Methods employed in physiological phonetics are experimental. They involve palatography, laryngoscopy, photography, cinematography, X-ray photography, X-ray cinematography, electromyography and various kinds of technique to study sound-perception.

Acoustic phonetics is concerned with the acoustic aspect of speech sounds. It studies speech sounds with the help of experimental (instrumental) methods. Various kinds of apparatus are applied for analyzing sounds, stress, intonation and other phonetic phenomena. For example, we use spectrographs to analyse the acoustic spectra of sound, oscillographs and intonographs to analyse frequency, intensity and duration. With the help of an electro-acoustic synthesizer synthetic speech is produced which is a good means of testing the results of the electro-acoustic analysis.

Because of the methods used acoustic phonetics is often called experimental phonetics.

Besides these objective methods physiological phonetics uses its oldest subjective method-the method of direct observation. This method involves observation of the movements of speech organs when pronouncing sounds and analysis of one's muscular sensations during the articulation of speech sounds.

Phonology, or function phonetics, is a purely linguistic branch of phonetics. It deals with the functional aspect of speech sounds. Phonology sets out to determine the

phonetic distinctions which have a differential value in a language is as to establish the system of phonemes and prosodemes.

The basis of phonology is the phoneme theory, created in Russia by I.A.Baudonin de Courtenay (1845-1929) and developed by his pupils and followers L.V.Shcherba, N.V.Krushevsky and later by other Russian and foreign linguists. Phonology was founded in Prague by a group of linguists (Trubetskoy, Jacobson and others).

The methods employed by phonology are linguistic.

All the above branches of phonetics are closely connected since the object of their study-speech sounds-is a close unity of acoustic, physiological and linguistic aspects. But not all linguists are of the opinion that phonology is an integral part of phonetics.

N.S.Trubetzkoy claims that phonology should be separated from phonetics. According to the Prague School phonetics and phonology are independent sciences: phonetics is a biological science and is concerned with physical and physiological characteristics of speech sounds, phonology is a linguistic science and is concerned with the social function of phonetic phenomena. This point of view is supported by the Danish linguist L.Hjelmslev who advocates total separation of phonetics and phonology. But the vast majority of Russian phoneticians do not consider it logical to separate function from form and thereby completely exclude phonetics from the linguistic sciences. A great number of phoneticians abroad adhere to the same point of view. For instance, B. Malmberg, a Swedish phonetician, writes as follows:

"It was a grave error on the part of the Prague School to want to establish a strict separation between phonetics and phonology". "The two types of studies are interdependent and condition each other. Consequently it seems preferable to group them together under the traditional general heading of phonetics".

4. Branches of Phonetics

Besides the three branches given above there are other branches of phonetics: special, general, historical, descriptive, comparative, applied.

Special phonetics is concerned with the study of the phonetics system of a concrete language. When the phonetic system is studied in its static form, at a particular period (synchronically, we speak about descriptive phonetics. When the system is studied in its historical development (diachronically) we speak about historical, or evolutionary phonetics. Historical phonetics uses the philological method of investigation. It studies written documents and compares the spelling and pronunciation of one and the same word in different periods of the history of the language.

Generally phonetics is concerned with the study of man's sound-producing possibilities and the functioning of his speech mechanism. It finds out what types of speech sounds exist in various languages. How they are produced and what role they play when forming and expressing thoughts. General phonetics is based on the

extensive material which is provided by the special phonetics of a great number of languages and on the material of other sciences. As a result of this, general phonetics has been able to make a number of general conclusions concerning the complex nature of speech sounds and to formulate a number of theories: the phoneme theory, the theory of syllable formation, theories of stress, intonation, etc.

Comparative phonetic is concerned with the comparative study of the phonetic systems of two or more languages, especially kindred ones.

By practical, or applied phonetics we mean all the practical applications of phonetics. Phonetics is of considerable importance for other fields of language study, which have made use of the structural approach and those linguistic methods worked out by phonetics.

Phonetics is applied in the teaching of diction; in correcting speech defects (pathological phenomena and aphasia); in teaching children to read and write their mother tongue and in teaching foreign languages ; in the teaching of deaf-mutes; for creating orthographies for unwritten languages.

Phonetics is used in the field of sound transmission: in telephony, broadcasting, etc. Sound engineers have to solve the same problems that occupy the minds of phoneticians.

Close interaction and collaboration between phonetics and other sciences has given birth to new branches of phonetics (technical phonetics, psycho phonetics, etc.)

5. Methods of Phonetic Investigation

The methods of investigation used in phonetics vary, but there are three principal methods: (1) the direct observation method; (2) the linguistic method; (3) the experimental method.

1 The direct observation method comprises three important modes of phonetic analysis: by ear, by sight and by muscular sensation. Investigation by means of this method can be effective only if the persons employing it have been specially trained to observe the minutest movements of their own and other people's speech organs, and to distinguish the slightest variations in sound quality. Every phonetician undergoes a special training, in the course of which his "phonetic ear", and also his muscular sensation, are developed. By a "phonetic ear" is meant the capability to distinguish the exact quality of sounds pronounced in various sound sequences or in isolation, whether in one's mother tongue or in a foreign language.

The muscular sensation is developed by constant and regular practice in articulating various sounds. A trained phonetician should be able to pronounce sounds of a given quality (e.g. an open back unrounded vowel, a trilled [r], a fronted [k], etc.), as well as to recognize, by means of his highly developed muscular sensation the exact nature of the articulation of any speech sound that he hears.

2. The aim of the linguistic method of investigation of any concrete phonetic phenomena, such as sound, stress, intonation or any other feature, is to determine in what way all of these phonetic features are used in a language to convey a certain

meaning. An accurate phonetic analysis (made either by ear or by means of some instruments or apparatus) is of no use whatever unless it serves as a clue that will help to interpret the linguistic function of a phonetic phenomenon.

The linguistic method utilizes linguistic analysis in observing the actual facts of language and interpreting their social significance. It likewise makes use of linguistic experiment to determine, with the help of native informants, the functioning power of some concrete phonetic feature in a language or in a specific dialect which is being subjected to investigation.

The linguistic method, therefore, is of paramount importance.

3. The experimental method is based, as a rule, upon the use of special apparatus or instruments, such as the laryngoscope, the artificial palate, the kymograph, the magnetic tape recorder, the oscillograph, the intonograph.

Special laboratory equipment, such as kymograph, spectrograph, oscillograph and intonograph help to obtain the necessary data about prosodic properties of speech sounds.

A kymograph records qualitative variations of sounds in the form of kymographic tracings.

A spectrograph produces sound spectrograms which help to list the frequencies of a given sound and its relative amplitudes.

An oscillograph records oscillograms of sound vibrations of any frequency. Automatically recorded oscillograms can be observed upon the screen.

An intonograph measures automatically: 1) the fundamental tone of the vocal cords, 2) the average sound pressure, 3) the duration or length of speech (pausation). The results are recorded: 1) visually upon the screen of the electron-ray tube, 2) on paper or film with the continuous reproduction by tape recorder, 3) in digits (while estimating the limits of the recorded area along the screen of the electron-ray tube).

6. Significance of Phonetics

Theoretical significance of phonetics is connected with the further development of the problem of the synchronic study and description of the phonetic system of a national language, the comparative analysis and description of different languages, the study of the correspondences between them, the diachronic description of successive changes in the phonetic system of a language or different languages.

Practical significance of phonetics is connected with teaching foreign languages. Practical phonetics is applied in methods of speech correction, teaching deaf-mutes, film dubbing, transliteration, radio and television.

Self-control questions

1. What does the term “language” denote?
2. Explain the theoretical and practical importance of phonetics.
3. What types of phonetics do you know?
4. What aspects of phonetics do we distinguish?
5. What is the difference between phonological aspect and phonetic aspect?
6. What does segmental phonology study?
7. What does suprasegmental phonology study?
8. Why do we use transcription? What types of transcription do you know?
9. With what other fields of science is phonetics connected?
10. What methods of investigation do you know?

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Unit 2

Phonological Theories

Questions to be discussed:

1. I.A. Baudouin de Courtenay's Theory of Phonology
2. The St.Petersburg Phonological School. L.V. Scherba's Phonemic Concept
3. The Moscow Phonological School
4. The Prague Phonological School
5. The London Phonological School
6. Phonological Trends in the USA

1. I.A. Baudouin de Courtenay's Theory of Phonology

The formation of the phonological theory may be divided into two periods:

1. **The «prephoneme» period,** i.e. when there was no distinction between «speech sound» and «phoneme» until 1870;

2. **The «phonemic» period,** which began in 1870 and includes the twentieth century. In this period the basic phonetic and phonological terms and concepts were proposed, and the distinction between the actually pronounced speech sounds and the phonemes as functional units of the language was recognized. The first linguist to point out this distinction was I.A. Baudouin de Courtenay (1845-1929), an outstanding Russian and Polish scholar.

I.A. Baudouin de Courtenay defined the phoneme as the «psychological» equivalent of the speech sound». But he was aware of the fact that acoustic and motor images of the speech sound do not correspond to each other. I.A. Baudouin de Courtenay also tried to analyse phonemes on the bases of phonetic alternations in morphemes. Besides psychological and morphological definitions of the phoneme, he could propose the distinctive function of the speech sound in notions' as he considered that words may be realized in notions. I.A. Baudouin de Courtenay repeatedly stated that semantically the utterance breaks up into sentences, sentences into significative words, words into morphological components or morphemes and morphemes into phonemes. As a morpheme is only divided into components of the same nature as itself: these components - phonemes must also be significative.

He admitted the division of morphemes into physical or physiological elements to be unjustified in linguistic analysis. He criticized N V. Krushevsky's conception of this problem. Incidentally, N.V. Krushevsky, was one of his students who introduced the term «phoneme» at the same time as F. de Saussure, an eminent Swiss linguist did. I.A. Baudouin de Courtenay's fundamental ideas had a great influence on the development of later phonological theories both in our country and abroad. In early phonological works many linguists defined the phoneme as «sound image», «conscious sound image», «sound intent» (N. S. Trubetzkoy), and also as the sum of acoustic impressions and of articulatory movements (F. de Saussure) but none of them suggested any other to substitute the term «phoneme». Nevertheless I.A. Baudouin de

Courtenay's psychological interpretation of the phoneme concept could not lead to an obliteration of the boundary between sound and phoneme; it was merely a terminological mixture of psychological and linguistic concepts which greatly influenced each other in that period. Many interesting ideas stating linguistic functions of speech sounds may be found in his works. He showed the articulatory - *acoustic*, *morphological* and *semantic* aspects of sound material and their relationship. I.A. Baudouin de Courtenay's idea of the distinctive-semantic function of speech sound was very important in relation to the modern theory of distinctive features of the phoneme, according to which the phoneme of a given language may be divided from a system of sequences which is formed by their constituents, i.e. by distinctive features. As the morphemes may be divided into phonemes, likewise phonemes are divided into distinctive features which are interpreted either in articulatory or acoustic terms. In spite of the various approaches to the problem of establishing an inventory of the phonemes in a given language, which should be possible on the basis of breaking up utterances or words into the smallest segments or by the method of commutation test, counting minimal pairs of words like **pill - bill, till - mill, kill - hill** etc. The fundamental discussion on the problems of phonemic analysis is still going on among phonemicists.

2. The St. Petersburg Phonological School. L.V. Scherba Phonemic Concept

The St. Petersburg Phonological School's theory is closely connected with the name of academician Lev Vladimirovich Shcherba (1880-1944), a talented student of I.A. Baudouin de Courtenay. L.V. Shcherba developed the phonemic concept represented by his research advisor. L.V. Shcherba repeatedly stressed the differential function of the phoneme. He gave the following definition of the phoneme: «The shortest general sound image of a given language, which is capable of associating with images of meaning differentiating words, …, is called phoneme». In this definition besides the term «sound image», which shows the influence of psychology, everything is clear from the phonological view point. Although L.V. Shcherba realized that phonemes are not general images in the logical sense, he considered phonemes as concrete sound images which are the result of different perceptions. L.V. Shcherba illustrated his phonemic theory with examples from various languages. The quantitative and qualitative variations in the pronunciations of languages may depend on their phonetic structures and linguistic habits the sum of which L.V. Shcherba called the articulation basis.

He emphasized the importance of the variants of phoneme. For example, citing D. Jones' idea of the existence of two allophones of the phoneme /l/ in English - **dark** and **clear.** L.V. Shcherba wrote that they cannot be associated with meanings consciously. As for the Russian pair of **ль - л** it is capable to distinguish meanings: **бил - был**. Thus L.V. Shcherba emphasized the practical value of sound types in the pronunciation of a given language. He explained that in concrete speech we pronounce a number of speech sounds which may be summed up in a comparatively small

number of sound types capable of distinguishing words and word forms. Such sound types are called phonemes. Actually pronounced speech sounds, in which phonemes may be realized, would be called the phoneme shades (allophones or variants of the phoneme). But among those shades of the phoneme usually there may be one that is the typical representative of the phoneme which can be pronounced isolately, actually, this is what is perceived by us consciously as an element of speech. All other shades cannot be understood consciously and it is difficult to perceive them all by ear normally. These explanations make it clear to understand the distinction between general sound types and concrete speech sounds, which can prove the distinction between a phoneme and allophone (speech sound).

L.V. Shcherba also indicated three aspects of speech sounds: biological (physiological), physical and linguistic (social), of which he paid special attention to the last aspect. In speech communication physiologically and physically different articulations (for example [a]) may be generalized by one meaning. Such a generalized unit is called **a phoneme.** Thus, L.V. Shcherba underlined the **concrete**, **generalized** and **functional** aspects of the phoneme. He explained that each phoneme may be distinguished from all other phonemes by its features, while all the phonemes of a given languages form a unit system of oppositions in which each phoneme is defined by its oppositions against another separate phoneme or phoneme groups.

L.V. Shcherba invented his own system of transcription. He wrote about different pronunciation styles and advanced very interesting ideas on the subjective and objective methods of scientific investigation. L.V. Shcherba's phonological theory was developed and improved by many linguists. His followers and pupils L.R. Zinder, M.I. Matusevich, L.V. Bondarko, A.N. Gvozdev, V.I. Litkin, Y.S. Maslov, O.I. Dickushina are representatives of the St. Petersburg phonological school.

L.R. Zinder defines the phoneme as the smallest, i.e. indivisible in time (or linearly) unit, but from the structural view point, it may have different features some of which are considered to be common with other phonemes and some other features which distinguish it from all other phonemes. The phoneme is very complex unit and it may be realized in different allophones (or shades, variants). There are two of allophones: positional and combinatory i.e. depending on their positions and on the neighboring sounds. If the distinctions between the sounds are not capable of distinguishing the meanings of words or word-forms, then such sounds are the allophones of a phoneme. For example, let us examine consonant sounds t, t°, t', t'° in the words **так** /tak/, **тот** /t°ot/, **стяг** /st'ak/, **тётя** /t'otъ/ etc. The distinction between the first and second sounds, and between the third and fourth sounds can not serve to distinguish the meanings of the words. Thus, they represent one phoneme. The distinctions between the first and the third sounds and between te second and fourth sounds are capable of differentiating the meanings of the words. Therefore they may represent different phonemes. Accordingly we can state that some sound distinctions may be phonematic and some of them may be phonetic.

L.R. Zinder points out the reality of the phoneme i. e, its existence in a given language, being the sound unit of a language phoneme through its different representatives may have very complex phonetic characteristics. Besides, being

independent and autonomous unit of a language expression, the phoneme can be separated from the sound material of words. For example, the word **прут** /prut/, may be broken up into /p/, /r/, /u/, /t/. This comes from the discrete character of the phoneme. L.R. Zinder also proposes rules to determine phonemes and phoneme combinations. He thoroughly analyses the most valuable phonological ideas of I.A. Badouin de Courtenay, L.V. Shcherba, N.S. Trubetzkoy and other linguists.

It must be kept in mind that the St. Petersburg Phonological School's definition of a phoneme is based on words and word forms, i.e. the phoneme is the smallest unit capable of differentiating words and word forms. This phonemic concept is applied to the description of English phonemes by G.P. Torsuyev, V.A.Vassilyev, O. I. Dickushina and V.N. Vitomskaya.

3. The Moscow Phonological School

Another scientific approach to the phoneme concept in Russia is known as the Moscow phonological school. This school is represented by R.I. Avanesov, V.N. Sidorov, A.A. Reformatsky (1901-1978), P.S. Kuznetzov (1899-1968), A.M. Sukhotin, M.V. Panov, N.F. Jakovlev.

One of the first linguists to give a definition of phoneme void of psychologic elements was N.F. Jakovlev: «Phonemes are understood those phonic properties that can be analyzed from the speech flow as the shortest elements serving to differentiate units of meaning.

The representatives of the Moscow phonological school based their definition of a phoneme on the concept of the morpheme. A.A. Reformatsky gave the following definition of the phoneme: «Phonemes are minimal units of the sound structure of a language, serving to form and differentiate meaningful units: morphemes and words». Phonemes are meaningless units of a language but they are capable of distinguishing meaningful units as their sequences may form morphemes and words. For example, **pit - lit, but - bet** etc.

Analyzing the sound changes in the morphemic structure of a language, it is possible to establish two different positions: **stressed** and **unstressed**. In a stressed position phonemes can preserve their phonetic characteristics, while in an unstressed position they change their articulatory and acoustic features. This fact is very important in the phonetic analysis of Russian vowels. In the Russian word **вода** /vad' ʌ/ there are two variants or allophones of the phoneme /ʌ/: stressed and unstressed, which are different as to their quantitative feature because usually stressed vowels are longer than unstressed ones. But if we take the word forms **воды** /vodi/, **водный** /vodnij/, **водяной** /və djanoj/ in the morpheme **вод** we can distinguish the sound alternations /ʌ'-o-ə/. In such cases R.I. Avanesov proposes to define each member of alternations /ʌ'-o-ə/ as variants of one phoneme /o/. Likewise in the words **вода** / vʌdʌ′/, **вод** /vo´t/, **воде** /vʌde/ the consonants /t/ and /d/ may also be interpreted as variants of the phoneme /d/, but the members of alternations /d-t-d'/ may be considered as the

realizations of one phoneme. In all these cases the relationship between the notions of phoneme and morpheme becomes very important. In such alternations, which depend on their position in morphemes or words, and there are no distinctive functions between the members of alternations, it is possible to use the term **phonemic line** («фонемный ряд»). According to R.I. Avanesov a phoneme is an element of a wordform and «phonemic line» is an element of a morpheme. There are some differences in the phonemic solutions of the representatives of this school. A.A. Reformatsky did not use the term «phonemic line». Thanks to the perceptual and significative functions, he divided the stressed and unstressed positions into the following types: perceptually the stressed position is that where a phoneme is represented in its basic form independent of its position; as to the unstressed position, where under the influence of positions, a phoneme is represented in its variations. For example, in the words **мал — мял** and **мил — мыл** we can observe pairs of vowels /a/ - /æ/ and /и/ — /ы/. In the first pair the basic form of the phoneme is /a/, while /æ/ is variation, likewise in the second pair /и/ is the basic form of the phoneme, while /ы/ is its variation.

Phonemes organize different phonological oppositions, resulting in their significant functions. In a stressed position phonemic oppositions may be preserved, while in an unstressed position they are neutralized. Usually neutralization is the result of coincidence of two phonemes which are differentiated by one feature. For example, in words **плод** and **плот, луг** and **лук** voiced consonants become voiceless at the end of words. The Moscow phonologists suggested the term «hyperphoneme» which is defined as a unit which appears in the position of neutralization of a group of phonemes. For example, in Russian neutralization may take place in unstressed syllables where the vowels /a/, /o/, /i/, /e/, /u/ can be distinguished from each other; in this case they are not phonemes but hyperphonemes /a/ o, i /e/ and /u/. The unit hyperphoneme as presented by the Moscow phonologists does not coincide with the «archiphoneme» unit suggested by the Prague phonological school. The latter is understood as a unit, when two phonemes, distinguished only by one feature, for example, voiced -voiceless consonants /p - b/, /t - d/ etc., may coincide with their feature in the position of neutralization: **луг - лук, пруд - прут.** In such cases archiphonemes /p/b and t/d/ may appear in Russian.

Phonemes and their distinctive features differ. A phoneme is a sum of distinctive features. Distinctive sounds, i.e. phonemes and distinctive features are considered to be two levels of the phonological structure of a language. The level of distinctive features is called «merismatic level». One of the fundamental notions of phonology is that of position, which creates conditions for the realization of phonemes in speech. Positions may depend not only on the phonetic context but also on the morphological conditions. For example, in joining basic and affixal morphemes some sound combinations become an affricative: **штатский**, **шведский** where /тс/ and /дс/ form the affricate /ц/.

Some Moscow phopnologists, especially, A.A. Reformatsky gave a classification of phonological oppositions and presented a new approach to the problem of neutralization. It should be stated that their theory is commonly applied to

the description of Russian phonemes; it was also fruitful in the analysis of the phonological systems of other languages. The Moscow phonologists described the suprasegmental features of syllables, stress and intonation. Besides, they improved the morphonological theory advanced by N.S. Trubetzkoy. According to A.A. Reformatsky morphonology is a «bridge» level between phonology and morphology. N.S. Trubetzkoy included almost all the phonemic alternations into morphonology and used the term «morphoneme». However, morphonology must not only study the alternations of segmental phonemes but can analyse the alternations of suprasegmental elements i.e. stress alternations in morphemes. In the Russian words **рука - ручной**, **нога - ножной**, **слух - послушный** we can observe alternations both of a segmental and suprasegmental character. Such alternations in English as **foot - feet**, **tooth - teeth**, **ox -oxen**, **child - children,** which are interpreted as morphonological by the American linguists, belong to the grammatical meanings formed by the internal inflexion. The alternations, which do not depend on their positions in morphemes, would be studied in morphonology.

4. The Prague Phonological School

The fundamental scientific works have been done by the representatives of the Prague phonological school - well-known linguists W. Matezius (1882-1945), B. Havranek (1893-1978), N.S.Trubetzkoy (1890-1938), B. Trnka, I. Vachek, V. Skalichka and.otbers. Among them very important phonological ideas were advanced by the Russian scholar N.S. Trubetzkoy. In his book «Principles of Phonology» first published in German in 1939, N.S. Trubetzkoy discussed the relation of phonology to other studies, the nature of phonemes and their variants, how to determine the phonemes of a language, relations between phonemes in general analysis and in particular languages, the classification of phonological and non-phonological oppositions, neutralization, mono- and biphonemic combinations, phonological statistics, boundary-markers (junctures) and prosodic elements (syllables, stress and intonation). His theoretical work on phonology shows «... the breadth of Trubetzkoy's knowledge and the intricacy and incisiveness and cerebral character of his scientific analysis».

N.S. Trubetzkoy came to the phoneme concept through the classification of phonological oppositions. The concept of distinctiveness presupposes the concept of opposition. One thing can be distinguished only from another thing insofar as a relationship of opposition exists between the two. Likewise one sound property may be opposed to another phonic property. Oppositions of sound, capable of differentiating the lexical meaning of two words in a particular language are phonological or phonologically distinctive or distinctive oppositions. In contrast, those oppositions of sound that do not have this property are phonologically irrelevant or no distinctive. For example, in English the opposition /e - æ/ as in /bet - bæt/ phonological (distinctive) while the opposition between aspirated /p^h, t^h, k^h/ and non-aspirated /p, t, k/ sounds and also opposition between dark and soft /1/ sounds are non-distinctive as there is not a

single word pair in English that is differentiated by these oppositions. Each member of a phonological opposition is called a phonological (or distinctive) unit. Phonological units that, from the standpoint of a given language, cannot be analyzed into still smaller successive distinctive units are called phonemes. N.S. Trubetzkoy points out that phonemes should not be considered as «building blocks» out of which individual words are assembled. Each word is a phonic entity and the phonemes are then the distinctive marks of the configurations of words.

Sounds participate in phonological oppositions only by means of their phonologically relevant properties. Another definition of phoneme given by N.S. Trubetzkoy is «the sum phonologically relevant properties of a sound (laut-gebilde)».

Phonemes are functional sounds of a language while speech sounds are the realizations or manifestations of phonemes in speech. This distinction between language and speech was borrowed by N.S. Trubetzkoy from F. de Saussure's and K. Bühler's works. N.S. Trubetzkoy insisted on defining a phoneme solely on the basis on its function in the system of a language.

One of the rules for the determination of phonemes was formulated in the following way: «If two sounds occur in exactly the same position and cannot be interchanged without a change in the meaning of the words or without rendering the word unrecognizable, the two sounds are phonetic realizations of two different phonemes». For example in beet /bi:t/ — but /bʌt/, /i:/ and /ʌ/ are interpreted as realizations of two different phonemes.

The rule for the determination of individual phonemes and phoneme combinations is very important in solving the problem of phonemic interpretation of diphthongs and affricates. N.S. Trubetzkoy wrote: «A combination of sounds can be interpreted as the realization of a single phoneme only if it is produced by a homogeneous articulatory movement or by the progressive dissolution of an articulatory complex». This rule was illustrated by the English diphthongs /eɪ/ and /ou/ which are regarded as monophonematic. This rule is solely phonetic but not phonematic as it is based on the articulatory movement, i.e. it is an articulatory characteristics of a diphthong. This is one of the interesting points which clearly show the close relationship of phonetics and phonology separated by N.S. Trubetzkoy into two independent sciences.

According to another rule if the constituent parts of combinations of sound are not distributed over two syllables then such combinations of sounds are to be regarded as the realization of single phonemes. This rule is true for the English diphthongs and affricates /tʃ/, /dʒ/. The combinations of sounds which cannot be determined by the rules are called phoneme clusters.

N.S. Trubetzkoy presented the classification of phonological oppositions in terms of logic. Two things which have no features in common cannot be contrasted, likewise two phonemes which have no common features cannot be opposed. Firstly, oppositions are classified in relation to the entire system of oppositions. According to this principle oppositions may be unidimensional and pluridimensional (or bilateral and multilateral). Two phonemes possessing a common feature, which no other

phoneme has, are in unidimensional opposition. For example in English /t-d/, /p-b/, /k-g/, /b-m/, /d-n/, /g-ŋ]/ /f-v/, /s-z/, /s-ʃ/, /z-ʒ/. /t-ʧ/, /d-ʤ/, /r-1/ are unidi mensional (bilateral) oppositions.

Two phonemes, whose feature is common to some other phoneme, are in pluridimensional (multilateral) opposition. For example, the opposition /b - d/ in English is pluridimensional as the common features of the members of this opposition (plosive + voiced - lenis are characteristic of the phoneme /g/.)

According to N.S. Trubetzkoy the unidimensional oppositions are fewer but more interesting than the others. Pairs of phonemes, having similar oppositions between them, are called proportional oppositions. In English pairs of phonemes /p-b/, /t-d/, /s-z/, /ʃ-ʒ/, /ɵ−ð/, /ʧ- ʤ/, /f-v/, /k-g/ have similar oppositions in which the distinctive feature is voiceless - voiced (resp. fortis - lenis (tense - lax). These pairs of phonemes constitute proportional oppositions.

If there is no pair of phonemes in similar relation to the existing pair of phonemes, such an opposition is called isolated. For example, /r-1/ is an isolated opposition in English, Russian and Uzbek.

Secondly, oppositions may be classified on the basis of relationship between their members. According to this principle they may be private, gradual and equipollent.

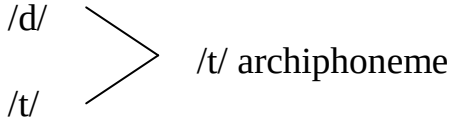
If the member of opposition is differentiated from the other by one distinctive feature such an opposition is called private. For example /d-t/, /f-v/ etc. Which differentiated by a voiced-voiceless (resp. fortis-lenis) feature. The member of such an opposition, characterized by the presence of a feature, is called marked and the member of opposition, which is characterized by the absence of a feature, is called unmarked. Thus, a voiced member is marked (+) while an unvoiced member is unmarked (-).

Gradual oppositions are those whose members are characterized by different gradations of one and the same feature. In English /i:-a:/ according to the highs of the tongue they may be distinguished as close-open where half-open and half close members are omitted. Likewise /p-k/ is a gradual opposition, because, according to the place of articulation, /p/ is labial and /k/ is back lingual, between which forelingual (alveolar, apical) and interlingual /j/ members of opposition are omitted.

If both members of opposition have the same distinctive features except one, which is different, such an opposition is called equipollent, in English /p-f/, /b-v/, /t-ɵ/, /d-ð/, /k-h/ are equipollent oppositions.

Thirdly, oppositions may be classified on the basis of distinctive force and their occurrence in different positions according to which oppositions may be neutralizable and constant. In particular positions the feature of one member of the opposition may have a different distinctive force. As in Russian and in Uzbek voiced members of the oppositions become unvoiced at the end of words: пруд /прут-прут/ прут/, teg /tek/ - tek/tek etc. The opposition where the opposition is neutralized is called the position of neutralization.

N.S.Trubetzkoy stated that usually only unidimensional (bilateral) oppositions may be neutralized. In the position of neutralization one of the phonemes becomes the representative of an archiphoneme. An archiphoneme is the sum of the relevant (distinctive) features common to both members of the opposition. In the above examples:



This unit may have different features in other languages The unidimensional, privative, proportional opposition, the members of which are in similar relations with each other, combined into correlation /p-b/, /t-d/, /s-z/, /ʃ-ʒ/, /f-v/, /θ−ð/, /ʧ−ʤ/, /k-g/. Such pairs of phoneme are called correlation pairs and the feature voiced - voiceless (resp. fortis - lenis) is called the feature of correlation.

Constant oppositions are those which are not neutralized in some positions and always preserve their distinctive features. But there may be cases when two phonemes are opposed in some position, but not in others. For example, English /p/ and /b/ are not opposed after /s/, because only one of them can occur after /s/ as in the word **spin**. Such types of neutralization is called contextual which appear in many languages. After N.S. Trubetzkoy's definition of neutralization there were attempts to classify neutralizations into several other types.

N.S. Trubetzkoy advanced a valuable theory and methods available in paradigmatic analysis of phonemes i.e. in establishing phonological and non-phonological oppositions. But there are some shortcomings in his description of syntagmatic relations of phonemes. N.S. Trubetzkoy's theory was applied to the description of the phonemic system of English by B.Trnka, J.Vachek, by V.A.Vassilyev and A.Cohen.

5. The London Phonological School

There is a long tradition of phonetic and phonological studies in England. One of the first linguists who made a serious study in English phonetics was Henry Sweet. He distinguished broad and narrow transcriptions and gave the classification of English vowels and consonants in his "Handbook of Phonetics" (Oxford, 1877).

Under "The London Phonological School" we mean the theory and methods of phonetic and phonological analysis proposed by the British linguists. This school is represented by J.R. Firth, Daniel Jones, D. Abercrombie, I. Ward, L. Armstrong, D. B. Fry, H. Kingdon, J.D. O'Connor, A.C. Gimson. The British linguists presented original idea on phonemic and prosodic analysis. Well-known British linguist D. Jones and J.R. Firth gave brief explanations of the phoneme concept.

D.Jones admits the fact that the idea of the phoneme was first introduced to him by Leningrad professor L.V. Shcherba in 1911, but both the theory and the term itself had existed for more than thirty years even then. D. Jones wrote: "According to J.R. Firth the term "phoneme" was invented as distinct from "phone" in 1879 by

Krushevskiy". Thus, both outstanding English linguists were familiar with theory and term "phoneme" used by Russian linguists.

D. Jones prefers to speak about an "explanation" of phoneme rather then a "definition", the latter is impossible without making use of terms such as "language", "speech sounds" and "words". He gave the following explanation of a phoneme: "... a phoneme is a family of sounds in a given language which are related in character and are used in such a way that no one member ever occurs in word in the same phonetic context as many other members". D. Jones explanation of a phoneme is a physical (acoustic) one, since the phoneme is treated as a "family of sounds". His Physical interpretation is distinct from the articulatory approach to the phoneme. D. Jones explained a phoneme on the basis of auditory distinctions, which only secondarily is based on presumed articulatory positions. He also distinguishes "principal and subsidiary member" of the phoneme which are equal to the terms "allophone" and a "variant" of the phoneme. According to his view point a phoneme consists of more than one member, and one of the sounds seems more important and common than the others, or because it is the one used in isolation or is intermediate between extreme members. Such a sound is called by D. Jones the "principal members of the phoneme". The other sounds in the same phoneme are called "subsidiary members". One of the rules for the determination of a phoneme is that if two sounds of a language can occur in the same phonetic context they belong to separate phonemes. For instance, /i/ and /ə/ belong to separate phonemes in English because they can both occur initially before the same consonant as in the words illusion /ɪ`lu:ʒn/ - allusion /ə'lu:ʒn/. Such differences between phonemes are significant i.e. capable of distinguishing one word from another. These ideas of D. Jones emphasize the importance of the semantic function of phoneme in a language. Two members of the same phoneme cannot be significant if they cannot distinguish words. The aspirated /k^h/ and non-aspirated /k/ sound as members of the phoneme /k/ cannot distinguish two words and they are used in different positions. The aspirated /k^h/ is used before vowels while non-aspirated /k/ is used in all other positions in English.

Besides the phoneme concept D. Jones presented his ideas on the problems of syllable structure, stress and intonation applied to the description of English in a number of his work. Particularly in "Out line of English Phonetics" (Cambridge, 1957), "The pronunciation of English" (Cambridge Univ. Press, 1956) etc. D. Jones' "Everyman's English Pronouncing Dictionary" (reprinted with minor correction and short supplement. Eleventh edition, L., 1958) is the best handbook on literary British pronunciation. The well-known English linguist J.R. Firth who is considered to be the head of the London Phonological school, began to work in the area of phonology in 1930 although his fundamental work "Sounds and Prosodies" was published in 1948. J.R. Firth distinguished prosodic system from phonematic system on the basis of the analysis of works. J.R. Firth stated: "Looking at language material from syntagmatic point of view, any phonetic features, characteristic of and peculiar to such positions or junctions, can just as profitably and perhaps more profitably be stated as prosodies of the sentences or word. Penultimate stress or functional germinations are also obvious

prosodic features in the syntagmatic junctions. Thus, the phonemic and phonological analysis of the word can be grouped under … sounds and prosodies"

J.R. Firth purposely avoided the term "phoneme" in his work as "sound" is sufficient for his analysis. He illustrated his prosodic theory with the character of the English neutral vowel which marks junctions and required by the prosodies of word formation, especially in the formation of derivatives. The occurrence of Southern English diphthongs is a good illustration of the value of his prosodic treatment. Besides J.R. Firth regarded the so-called **intrusive r, linking r,** the glottal stop etc. as prosodies. He also distinguished prosodies of strength quantity, tone in which the prominent syllable is regarded as the nucleolus of the group of syllables forming a word. He wrote: "The prominent syllable is a function of the whole word or piece structure", naturally, therefore, the prosodic features of a word include:

1. The number of syllables.
2. The number of syllables - open or closed.
3. The syllabic quantities.
4. The sequence of syllables (radicals and flexional elements separately treated)
5. The sequence of consonants
6. The sequence of vowels
7. The position, nature and quantity of the prominent.
8. The dark or clear qualities of the syllables.

J.R. Firth's prosodic theory was developed and applied in the description of different languages. R.H. Robins classified syllable prosodies, prosodies of syllable groups, phrase or sentence - part prosodies, sentence prosodies, word and morpheme prosodies. John Lyons included some consonantal and vocalic features (aspiration, vowel harmony etc.) into the object of prosodies besides tone, stress and quantity as they all operate as "long components".

A new approach to the description of English phonemics and prosodies is given by A.C. Gimson who revised some ideas of D. Jones and other representatives of the London phonological school.

6. Phonological Trends in the USA

There are several phonological trends in the USA. The head of the American descriptive linguistics L.Bloomfield was one of the first phonologists whose ideas were very fruitful in the further development of phonological theories in USA. Another well-known American linguist E.Sapir also formulated his own approach to phonemic solutions. Below we give a short review of phonological trends in the USA.

Bloomfieldian descriptive phonology is also called the relative-acoustic theory, as it is based on the analyses of structural functions and acoustic features of phonemes. According to L.Bloomfield, a phoneme is a minimal distinctive unit of a language, which has no meaning itself but may be determined as a special unit, owing to its physical and structural contrasts in relation to all other sounds types of a particular

language. His other definition of the phoneme as a minimal unit of the phonetic feature is purely a phonetic one. He sometimes mixed up the notions of a "speech sound" and a "phoneme". His idea on the primary and secondary phonemes was very important in the further classification of segmental and suprasegmental phonemes. He also gave descriptions of the phoneme combinations in initial, medial and final positions of the words.

L.Bloomfield's theory was developed and improved by a number of linguists and is called the **post-Bloomfieldian theory** of descriptive phonology. The representatives of this are Z.Harris, Ch.F.Hockett, H.A.Gleason. According to this theory a phoneme is a class of sound or a class of allophones (phones) which have both phonetic similarity and functional identity, in the sense that the substitution of one for another in the same context does not change its syntactic or semantic function, i.e. makes no change in its meaning. This theory defines a phoneme on the basis of the distributional method. Usually the phoneme is defined as the repsentative of phones in free variation or complementary distribution, which are phonetically similar. The allophones of phonemes may also be determined on the basis of the distributional method. Some representatives of this trend define a phoneme as a sum of distinctive features. They state the physical and functional aspects of the phoneme from the centralistic point of view, as their theory is based on the stimulus-response segments that are the same or different.

American tagmemic school of linguistics advanced its own phonological theory which differs from the theories of descriptive phonology. According to the tagmemic trend a language is the result of verbal behavior and mind and it consists of three levels: grammatical, lexical and phonological. Each of these levels has its own units: morpheme, tagmeme and phoneme, the latter is a minimum unit of the phonological level.

The phoneme is characterized as composing disjunctive, emic portions of the verbal behavior phonetically represented. A phoneme is not a class of sounds, but a phonetic unit with particular features, which is connected with the units of the other levels. A new unit, which is called a tagmeme, is defined as the implication of a slot or position for a functional meaning and a morpheme. The head of the tagmemic school of American linguistics Kenneth Pike uses the term "archiphoneme" in a different sense that N.S.Trubetzkoy did. Two phonemes, which cannot be identified with the phoneme, is called an archiphoneme. For example, in the English words night-rate and nitrate we may predict the medial unaspirated long /t/ as opposed to the aspirated short/t/. Without using junctures they form an archiphoneme in such morphemes. K.L.Pike states: "Phonemes cannot be analyzed without some knowledge - though it may be very slight of grammatical facts". In his work "Coexistent Phonemic Systems" (1949) K.L.Pike attempts to demonstrate the possibility of two or more phonemic systems in monolingual speech. The tagmemic theory is also based on behavior. The phonological theory, which was suggested by K.L.Pike, is called **phonotagmemics** according to which all languages have a phoneme level, most have a syllable level, a pause group level and the level between the syllable and pause group. Intonation takes its characteristics on the phonological phrase level. Thus, the relation between the

levels of a language, strictly speaking, the sublevels of speech, is very important in phonotagmemics.

The theory which is being developed in modern American linguistics is **a generative-transformational phonology** (often called a "generative phonology"). Generative phonology is one of components of generative grammar as a syntactic component and component of lexicon. Generative phonology serves to provide phonetic representations of utterances in a language. It studies the phonological form of morphemes and morph listed in the lexicon and determines the rules of how the phonetic units (sounds, syllables, stress and partly intonation) are pronounced in various environments in which they are found. The resulting phonetic representation level provides a transcription of a sound segment used in actual utterances. According to generative phonology distinction between phonemes and allophones requires levels of phonological representation to be recognized: the level of pronunciation (the phonetic level) and the level of contrast or opposition (the phonemic level). As to articulatory and acoustic feature they fulfill three functions: 1) they are capable of describing the systematic phonetics - a phonetic function; 2) at a more abstract level they can differentiate lexical items - a phonemic level; 3) they define natural classes, that is, those segments, which, as a group undergo similar phonological processes. The main aim of generative phonology is to find the rules and answer the following questions: 1) What segments change? How do they change? Under what conditions do they change? This theory cannot be universal as each language requires its specific rules for phonological analysis.

Almost all phonological theories in USA regard variations in phonological form at or across morphological boundaries as the morphophonemics of a language. N.Chomsky and M.Halle suggest the principle of cycle to predict accent elements in their work "The Sound Pattern of English" (N.Y., 1968). Discussions on the problems of adequacy and predicative power in recent phonological theories are still going on among American linguists.

Self-control questions

1. Who is the founder of the phonological theory?
2. Explain I.A. Baudoin de Courtenay’s phonological theory. How did he define the phoneme?
3. Give L.V. Scherba’s definition of the phoneme.
4. Give the definition of the phoneme by the Moscow Phonological School.
5. What marked differences exist between the theories of St. Petersburg and Moscow phonological schools?
6. What representatives of the Prague phonological school do you know?
7. What definition of a phoneme was given by N.S. Trubetzkoy?
8. Give D. Jone’s explanation of a phoneme.
9. What phonological trends exist in the USA?
10. What functions of the phonological units do you know?

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Unit 3

Types of English Pronunciation

Questions to be discussed:

1. Types of English Pronunciation
2. Types of Received Pronunciation
3. Northern English Pronunciation
4. Scottish English Pronunciation
5. American English Pronunciation
6. Canadian English Pronunciation
7. Australian English Pronunciation
8. New Zealand English Pronunciation
9. The South African English Pronunciation

1. Types of English Pronunciation

There is wide range of pronunciation of any language, the English language as well. The pronunciation of almost every locality in the British Isles has peculiar features that distinguish it from other varieties of English pronunciation. Moreover pronunciation is socially influenced, i.e. it is influenced by education and upbringing. At the same time all these varieties have much more in common that what differentiates them. They are varieties of one and the same language, the English language.

The varieties that are spoken by a socially limited number of people only in certain localities are known as dialects.

Due to communication media (radio, TV, cinema), the increased mobility of the population, concentration of the population in the cities, the dialectal differences are becoming less marked. That, of course, does not mean that the pronunciation of a Manchester dialect speaker does not differ from the pronunciation of a London dialect speaker. Dialect speakers are, as a rule, the less educated part of the population. With the more educated people pronunciation generally tends to comfort to a particular standard. In present-day English the number of local speech dialects is being reduced to a fewer, more or less general , regional types.

Every regional type of pronunciation is characterized by features that are common to all the dialects used in the region. The dialects, in their turn, are marked one from another by a number of peculiarities specific to each of them.

The orthoepic norm of a language is the standard pronunciation adopted by native speakers as the right and proper way of speaking. It comprises the variants of pronunciation which reflect the main tendencies in pronunciation that exist in the language. It is the pronunciation used by the most educated part of the population, the pronunciation that is recorded in pronouncing dictionaries as the best.

The orthoepic norm of the English language is generally considered to be "Received Pronunciation" (RP), though, as many scholars state, it is not the only orthoepic norm current in present-day Britain.

2. Types of Received Pronunciation

Received pronunciation (RP) appeared about a century ago. It is mainly based on Southern English Pronunciation, but it has developed its own features which have given it a non-regional character, i.e. there is no district in Britain to which it is native. RP is spoken all over Britain by a comparatively small number of Englishmen who have had the most privileged education in the country-public school education, public schools being the best and most expensive fee-paying schools in the country. Suffice it to say, that almost all the leading positions in the Cabinet, the armed forces, the judiciary are occupied by those who have had public school education. RP is not taught at these schools, "it is absorbed automatically by the pupils" (as D. Jones puts it), for children are sent to live there at the age of 11 when pronunciation is most flexible. The children isolated in the school from their parents and other children, contact only with their teachers and schoolmates, and very soon acquire the so-called "public school accent", or RP.

Though RP is carefully preserved by the public schools and the privileged class in England, the RP of today differs in some respects from the former classic RP used half a century ago. A. Gimson claims that the exclusive purity of the classic RP has been diluted, as some features of regional types of speech are "received" now, though some 50 years ago those features were considered to be regional, non-RP.

The main changes are as follows:

1. The diphthongization of the RP/i:/ and /u:/ which in final position are often pronounced with a glide (e.g. "see", "who").
2. The centering of the former /ou/ to /əu/, which "is perhaps the most striking of the changes which have affected the pronunciation of British English in recent times".

This change is obvious from the following: for D. Jones the vowel in the first weak syllable of such words as "November" had three possible pronunciations – the recommended /ou/ (/nou`vembə/), shortened monophthongal form /o/ (/no`vembə/), or, in rapid speech /ə/ (/nə`vembə/). Now, there is a tendency to pronounce /əu/ in careful speech (/nəu`vembə/), and /ə/ in rapid speech (/nə`vembə/).

Another English linguist S. Potter states on this account : "Increasing numbers of young people pronounce home as /həum/ centralizing the initial element of this narrow diphthong. This is a prominent and outstanding change because it is so widespread in all classes of society. There are clear indications that /həum/, not /houm/, will be the pronunciation on of tomorrow."

3. A greater weakening of vowels in weakly stressed syllables, which results in the use of the neutral /ə/ where the more conservative form had and has the strong /ɪ/, e.g.

/ bə`li:v / for / bɪ`li:v /

/ ɪntrəstɪŋ / for / ɪntrɪstɪŋ /.

But RP does not accept a loss of the /ə/ - /ɪ/ distinction in final open syllables, e.g., between “better – Betty”, “dollar – dolly”. RP retains the /ɪ/ in such morpheme endings as -ed, -es, e.g. “matted, teaches” (as opposed to “mattered, teachers”).

4. The assimilation of the following sounds: /sj/ > /ʃ/, /zj/ > /ʒ/, /tj/ > /ʧ/, /dj/ > /ʤ/, e.g. “issue”, “crozier”, “situation”, “education”.

5. The final /b, d, g/ are now partially devoiced. But the distinctions between /b – p, d – t, g – k/ are just as clearly marked, because /p, t, k/ are energetic sounds (fortis), while /b, d, g/ are weak (lenis). (“cab – cap”, “had – hat”,“bag –back”)

6. The use of the intrusive /r/, which some 20-30 years ago was carefully avoided by RP speakers.

Nowadays RP tolerates the intrusive /r/ in such phrases as “the idea /r/ of it”, “Asia /r/ and Africa”, “drama /r/ and music”.

Those modifications are accepted and have become well-established nowadays, but they are not equally widespread among all the RP speakers. On this account A. Gimson distinguishes three types of RP today : (1) the conservative RP forms used mainly by the older RP speakers, (2) the general RP forms heard on radio and TV, are less conservative and have received all the changes mentioned above, (3) the advanced RP forms mainly used by the younger RP speakers, which as often as not have received many more changes, even the use of the glottal stop.

The modifications of RP which have been mentioned above are rather numerous and provide sufficient evidence of the evolution of RP during the past quarter of a century. RP has accepted so many features of the Southern English regional accents that many linguists use the terms “Southern English” or “Southern English type of pronunciation” for RP.

RP has been investigated and described more thoroughly than any other type of English pronunciation. It was excellently described in the works of D. Jones and his “English Pronouncing Dictionary” is still the most reliable reference book on RP. Many features of RP have been studied in the Russia and other countries. That is why it is RP or Southern English Pronunciation that is often accepted as the teaching standard in many countries where English is taught as a foreign language.

There are many educated people in Britain who do not speak RP, though their English is good and correct as well. They speak Standard English with a regional type of pronunciation.

D. Abercrombie divides English people by the way they talk into three groups:

(1) RP speakers of Standard English (those who speak Standard English without any local accent);

(2) non-RP speakers of Standard English (those who speak Standard English with a regional accent);

(3) Dialect speakers.

Scholars often note that it is wrong to assume that only one type of pronunciation can be correct. If a particular pronunciation is well-established and current among educated speakers, it should not be treated as incorrect.

The types of pronunciation that are widely used by educated people in Britain, besides RP and Southern English Pronunciation (which have much in common), are the Northern type and the Scottish type of English pronunciation.

3. Northern English Pronunciation

The Northern regional type of English pronunciation is characterized by features that are common to all the dialect used in the northern part of England.

Thus, the main distinctions of the Northern type of English pronunciation, as opposed to RP, are as follows:

(a) the vowel /æ/ is more open and more retracted back, as in /a/ (e. g. "back, bad").

(b) /ɑ:/ is fronted compared with /ɑ:/ in RP and it approximates to /æ/ (e. g. "glass, fast, after"),

(c) /u/ is used instead of /ʌ/ (e.g. "cup, love, much"),

(d) /ou/ is pronounced as a monophthongal /o:/ (e.g. "go, home"),

(e) /e/ or /ɛ: / are pronounced instead of /eɪ/ (e. g. "may, say, take").

(f) All tones are drawled.

4. Scottish English Pronunciation

The Scottish type of English pronunciation is based on the dialects spoken in Scotland which vary among themselves in some respects. Some of their common features, which distinguish the Scottish type of pronunciation from RP, are as follows:

(a) the use of the rolled /r/ not only between and before vowels (as in "hurry, brown"), but also after vowels (as in "born");

(b) the use of the back-lingual fricative /x/, which resembles the corresponding Russian sound (e. g. "loch");

(c) the use of the dark /l/ in all positions ("like, least");

(d) the use of monophthongs instead of diphthongs before /r/ (as in "beard, there, pure, poor, sure");

(e) the pronunciation of all the vowels short. There is no distinction in length between the vowels in words like "food-good", with the exception that the vowel in inflected words is not as short as the vowel in non-inflected words ("road-rowed, greed-agreed").

There are certain peculiarities in the intonation of the Scottish type of English pronunciation, such as

(a) Special Questions may end with a high level tone after a fall on the interrogative word, e.g.

RP ˈWho's ˈhaving the `grape fruit?

Scot. `Who's ˌhaving the ˈgrape fruit?

(b) A final vocative does not necessarily continue the tune of the General Question,

e.g.

RP ˈWill you ˈin to ˊ lunch, Mr. Brown?

Scot. ˈWill you be ˌin to ˊ lunch, ˌMr. ˋ Brown?

We may now summarize by saying that one should distinguish between RP and "educated" regional types of pronunciation (such as Southern, Northern and Scottish types of English pronunciation), of the one hand, and local dialects, on the other.

One of the best examples of uneducated local dialects is Cockney.

Cockney is used by the manual workers, in the region of London, Cockney has not been investigated, but there are certain striking peculiarities that should be mentioned here. In Cockney:

(a) a nasalized /aɪ/, or /ɛɪ/, is used for /eɪ/ (as in "railway", "take");
(b) a nasalized /ɔɪ/ is used for /aɪ/ (as in "ɪ", "right", "night");
(c) /h/ is omitted in " his, her";
(d) /p, t, k/ are over aspirated;
(e) the final /ŋ/ sounds like /n/ (as in "evening, havening").

English is spoken not only in the British Isles. It is the national language in the USA, Australia, New Zealand, and of a great part of the population in Canada. Each of those national has its own orthoepic norm which exists a long side of regional types and numerous dialects.

Though those national languages have distinctive features of their own which differentiate them from British English and from each other, they have much more in common. That is why they are considered to be variants of the same language, the English language.

5. American English Pronunciation

American English which is a variant of the English language, has developed its own peculiarities in vocabulary, grammatical structure and pronunciation. There are three main types of AE pronunciation, the Eastern, the Southern, and the General American type.

The G.A. type of pronunciation is considered to be the standard pronunciation of American English. It is used by the majority of Americans, and is, therefore, less regional, where as the other two types of pronunciation are easily detected as either Eastern or Southern. G. A. is used by radio and TV in the USA.

The peculiarities of GA lie in

(1) the pronunciation of sounds,
(2) differences in the accentual structure of words, and
(3) intonation.

1) Peculiarities of the pronunciation of GA sounds as compared to RP sounds are as follows:

a) /r/ in GA is retroflexive, the tip of the tongue is curled back;

b) /t/ between a vowel and a sonorant, or between two vowels the second of which is unstressed, is vocalized: it is a short voiced /t/. But the distinction between /t/ and /d/ is not neutralized. American easily distinguish the words in such minimal pairs as "writer-rider".

E.g. "better, pity, battle, twenty" (Exception: "return").

(c) /l/ is always dark, even before vowels (e.g. "film, look, like");

(d) /ʃ/ is vocalized in words like "excursion" /ʒn/, "version" /ʒn/, "Persia" /ʒ/;

(e) /d/ is omitted after /l/ and /n/ (e. g. " cold, old, sold, individual");

(f) /k/ is omitted before /t/ (e. g. "asked" /æst /);

(g) /j/ is omitted before /u/ (e.g. "duty" /du:ti/, "student" /`studnt/ , "tutor" /tu:tə/, "new"/nu:/);

(h) /hw/ is used in words spelt with "wh" (e. g. "which, why, while, whine, wheel");

(i) the use of the glottal stop /'/ instead of /t/ before /m, n, l, r, j, w/; (e.g. "certainly" /`sɜ:'nlı/, "that one" /ðæt'wən/

(j) GA vowels are not differentiated by their length. D. Jones notes that all American vowels are long.

(k) /æ/ is used instead of /ɑ: ("path, grass, staff, laugh, can't, last, pass, ask, half") EXCEPTIONS: father, palm, balm, alms, March, part");

(l) /æ/ in GA is wider and longer than /æ/ in RP, the Americans pronounce it with a twang ("ma"', "can");

(m) AE vowels are nasalized in all positions.

(n) In AE /ou/ is much less diphthongal than in RP. It may be represented as /o:/ or /o/.

G.P. Krapp writes: "In the British speech a great variety of diphthongal shadings occur, some of them are familiar in the exaggerated representations of Englishmen and their speech on the American stage".

2) Peculiarities in the accentual structure of words in GA as compared to RP.

American speakers make much greater used of secondary stress in polysyllabic words than British speakers do. In words ending in "-ary, -ory, -ery, -mony, -ative" the syllable containing the but last vowel bears tertiary stress (i.e. stress is somewhat weaker than secondary stress).

E.g. ˈdictioˌnary, ˈterriˌtory, ˈmilliˌnery, ˈcereˌmony, comˈmuniˌcative.

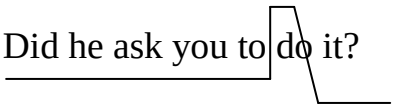
(3) Peculiarities of GA intonation.

The most frequent intonation contour for statements and requests in GA is the tune, beginning low, rising to a high level, and then steadily falling.

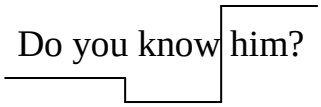
e.g. He asked me to do it. or He asked me to do it.

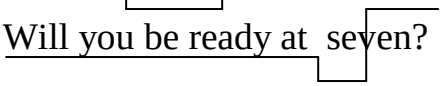
You better do it . or You better do it.

The same type of falling intonation contour characterizes the so-called General Questions in GA.



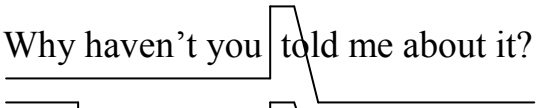
"Rising" tunes that rise from a low pitch level and end on a high pitch level occur with some General Questions, especially in situations where a very polite form is desirable.

e.g. 

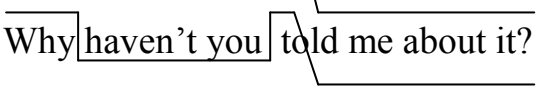


Such intonation contours used in GA unemphatic questions are generally perceived by RP speakers in Britain as implying surprise or disappointment. On the other hand, the RP General Questions (pronounced with a Descending Scale ending with a Rise) are considered by the American to sound pretentious.

Though the so-called Special Questions are pronounced with a falling tone in both RP and GA, the difference lies in the pronunciation of the Scale. If in RP it is usually the Descending Scale (e.g. ˈWhy ˈhaven't you `told me a¸bout it?), in GA the whole utterance is generally pronounced on a level tone.

e.g. 

or



Such questions sound dispassionate and disrespectful to an RP speaker.

The RP Special Question pronounced with a rising tone (polite question) are perceived by the Americans as questions implying curiosity.

To end a sentence with a high-pitched fall-rise (which differs from the RP fall-rise) is another frequent intonational characteristic in GA.

e.g. Can you do it? We ¸certainly ˇcan.

We ¸happened to be ˇpassing by.

On account of the fact that the features which distinguish AE from the British English are numerous, some linguists claim that AE can no more be considered a variant of the English language. H. L. Mencken, for instance, wrote that "the American form of the English language was plainly departing from the parent stem, and it seemed at least likely that the differences between American and English would go on increasing".

But most of the linguists express the opposite point of view. Prof. Shveitser, a Russian linguist who has made a thorough study of AE, has proved that the distinctions between AE and BE do not affect the inventory of the main language units which are common to both variants of the English language: AE and BE.

The Pronunciation of English in Other Countries

6. Canadian English Pronunciation

English came to Canada in the seventeenth century when the British colonists arrived there. English is one of the national official languages (about 14 million speakers) together with French (about million speakers) in Canada.

Canadian English (CaE) has common phonetic features both with RP and GA. English, which is spoken in Ontario region, is more similar to GA than in other parts of Canada as this region is situated very close to the USA. The most specific phonetic features of CaE are the following:

a) before the voiceless consonants the first element of the diphthongs /aɪ/ and /au/ may be substituted by the vowels /ʌ/and /ɛ/ in words like **out** /ʌut/ or /ɛut /, **nice** /nʌɪs/ or /nɛɪs/, **house** /hʌus/or /hɛus/;

b) in word final position before the sonants /l/ , /m/, /n/, the vowel sounds as /u/,/ə/, /ɪ/ may be added: **mail** /meiul/, **film** /filəm/, **known** /nouən/ etc.;

c) the vowel sound /ɔ:/ is used both in **pod** and **pawed** which sound homophonic, i.e. similar;

d) Scottish influence is apparent in Canada, especially in the use of the intermediate /a/ for /æ/ in words like **man**, **hat**, **bad** in the regions of Nova Scotia and Alberta. For the /au/ diphthong /ou/ and /u/ are heard, which probably reflects Scottish influence as well;

e) the American retroflex /r/ is used in CaE too, nonetheless the retroflex /r/ sounds "brighter" (further front in the Canadian Maritimes than Canada West of the French-speaking belt. It is regarded as a valid dialectological statement);

f) the glottal stop /?/ used in GA is typical of CaE too: **mountain, fountain, sentence, accountant**;

g) /æ/ is usually used instead of /*a*:/ in words like **path** /pæθ/, **task** /tæsk/ etc.;

h) **dark** /l/ is used in CaE in almost all position: **pull** /pul/, fellow /fɛlau/ etc.;

i) both GB and GA forms of accentuation are used in words ending with -ary, -ory, -iry; dictionary /dɪkʃənrɪ/ or /ˋdɪkʃən ˏɛrɪ/, **laboratory** /ləˋbɔrətri/ or /ˊlæbrə ˏtɔrɪ/

j) CaE intonation possesses many features in common with both RP and GA. However it is still not scientifically investigated by the methods of instrumental phonetics.

7. Australian English Pronunciation

Australian English is one of the literary national types used since the end of the eighteenth century. There are three types of pronunciation in Australia:

1 .Educated or Cultivated Australian English;

2. Broad Australian English;

3. General Australian English (GAu) which is regarded as a literary type.
The following simple vowels (monophthongs and diphthongized vowels) exist in GAu;

/i/ as in the word **seat** /sɪt/

/ɪ/ » **sit** /sɪt/
/ɛ/ » **head** /hɛd/
/æ/ » **had** /hæd/
/ʌ/ » **father** /' fʌðə/
/ɔ/ » **hot** /hɔt/
/ɔ:/ » **sort** /sɔ:t/
/u/ » **put** /put/
/u:/ » **boot** /bu:t/
/ʌ/ » **but** /bʌt/
/ɛ/ » **bird** /bɛ:d/
/ə/ » **alone** /ə`loun/

The following diphthongs exit in GAu:

/ɛɪ/ as in the word **day**
/ou/ » **so**
/aɪ/ » **try**
/ʌu/ » **down**
/ɔ ɪ/ » **boy**
/ɪa/ » **clear**
/ɛə/ » **dare**
/uə/ » **tour** (tuə)

GAu /ɪ/ is a diphthongized vowel as /u/ or diphthong /aɪ/, /ɪ/ is more close and somewhat prolonged especially in a stressed position. GAu uses diphthong /ʌ̆ɪ/ for /ʌ̆ˑɪ/ instead of /ɛɪ/: **say** /sʌ̆ɪ/ **made** /mʌ̆ˑɪd/. It often alternates between /ɛɪ~ʌ̆ɪ~æɪ/ in Australian speech. GAu diphthong /aɪ/ sounds like /ʌɛ/, /ɔɪ/, /ɔ·ɪ/: **time** /taɪm/, /tɔɪm/etc. GAu /A/ is used instead of RP /a:/: **father** /fʌ̆ðə/. The opposition /ʌ̆-A/ is neutralized in GAu: **cut - cart**, **much - march** sound identical, i.e. become homophones.

In principal the phonetic inventory of GAu does not differ much from RP but the distribution of phonemes is different in both literary types. There are also slight differences in word accentuation and intonation between GAu and RP. But in many cases GAu is much closer to the RP pronunciation than that of GA.

8. New Zealand English Pronunciation

This type of pronunciation has many features in common with RP. The most striking phonetic features of the New Zealand English pronunciation are the following:

a) the short vowel /ɪ/ is prolonged in the final unstressed position: **city** /sɪti:/, **very** /verɪ:/ etc.
b) in the unstressed position /ɪ/ becomes /ə/. Phonologically the opposition /ɪ-ə/ is neutralized in an unstressed position: **did** /dəd/, **it is** /ət əz/, **charges** /ʧa:ʤəz/.
c) Words like **dance**, **chance**, **glass** have two forms of pronunciation one, which coincides with RP, the other – with GA :/da:ns/ - /dæns/, /ʧa:ns/ - /ʧæns/, /gla:s/ - /gæls/ etc.;
d) The diphthong /au/ is substituted by /æu/: **town** /tæun/,**cow** /kæu/ etc.;
e) Besides the influences of GA, as in the usage of /æ/ and substitution of /ʃ/ by /ʒ/ in words like **Asia** /ˋeɪʒ /, **version** /və:ʒn/ the influence of Eastern English and Cockney dialects may be noticed in the New Zealand pronunciation.

9. The South African Pronunciation

The following are the most striking phonetic features of this pronunciation type:
a) the vowels may be nasalized when the nasal consonant precedes or follows them;
b) all the vowel sounds are half-long, i.e. all short vowels become longer and long vowels – shorter.
c) a special vowel /ë/ which is half-close, front-central, half-tense and rounded, is used instead of /ɪ/, /ɛ/, /ə/, /ə:/ both in stressed and unstressed positions;
d) in an initial position /h/ may be dropped: house /aus/
e) the rolled or thrilled (r) is used in all positions: **great** /greɪt/, **dear** /dɪr/, **warm** /wɔ˙rm/etc.;
f) word accentuation and intonation are different in this type than in RP and GA. For example, auxiliary verbs, pronouns and meaningless words may be stressed and therefore they are pronounced in full;
g) the glottal stop is often used to retain the "jerky" South African pronunciation.

There are also other types of pronunciation in Asia (India, Pakistan, Philippines), in America (Puorto-Rico), which are regarded as dialects or idiolects. Besides there are mixed or hybrid languages which have peculiarities of English.

Self-control questions

1. What is a national language?
2. What is a literary variant of a language?
3. What is an orthoepic norm?
4. Why has RP been chosen as a standard for teaching in many countries?
5. Explain the Northern English spread.
6. What pronunciation types exist in the USA?
7. What pronunciation type is accepted as literary in the USA?

8. What differences exist between the distribution of vowel (or consonant) phonemes in RP and GA?
9. What are the marked differences in word accentuation between RP and GA.
10. Explain the main features of Canadian pronunciation.
11. What do you know about the Australian pronunciation?
12. What main pronunciation features of New Zealand English are known?

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Unit 4

The Vowel System of English

Questions to be discussed:
1. Vowel-Consonant Distinction
2. General Principles of Vowel Formation
3. The Phonological Status of Diphthongs
4. The Articulatory Classification of Vowels
5. The Acoustic Classification of Vowels
6. Unstressed Vowels in English

1. Vowel-Consonant Distinctions

Speech sounds are divided into two main classes – vowels and consonants.

The main articulatory principles according to which speech sounds are classified are as follows:

the presence or absence of obstruction;
the distribution of muscular tension;
the force of the air stream coming from the lungs.

Vowels are speech sounds based on voice which is modified in the supralaryngeal cavities. There is no obstruction in their articulation. The muscular tension is spread evenly throughout the speech organs. The force of the air stream is rather weak.

Consonants are speech sounds in the articulation of which the air stream is obstructed. The removal of this obstruction causes noise, an acoustic effect (plosion or friction) which is perceived as a certain consonant. The muscular tension is concentrated at the place of obstruction. The air stream is strong.

The articulatory boundary between vowels and consonants is not well marked. There exist speech sounds that occupy an intermediate position between vowels and consonants and have common features with both. These are sonants (or sonorous sounds /m, n, ŋ , j, l, w, r/). Like vowels they are based on voice. There is an obstruction in their articulation and the muscular tension is concentrated at the pale of obstruction as in the production of consonants. But the air passage is wide and the force of the air is weak as in the case of vowels. Because of their strong vocalic characteristics some sonants /w, j, r / are referred to as semi-vowels.

From the acoustic point of view vowels are complex periodic vibrations-tones. They are combinations of the main tone and overtones amplified by the supralaryngeal cavities.

Consonants are non-periodic vibrations-noises. Voiceless consonants are pure noises. But voiced consonants are actually a combination of noise and tone. And sonants are predominantly sounds of tone with an admixture of noise.

Thus, the acoustic boundary between vowels and consonants is not well marked either.

V.A. Bogoroditsky pointed out to different groups of muscles which operate in vowel and consonant production and the resulting different articulatory energy in vowels and consonants.

The spectrum of a vowel has a sharply defined formant structure and high total energy which are not observed in the spectra of noise consonants.

In the spectrum of a consonant there is a formant of noise, which is absent in the spectrum of a vowel.

Numerous experiments prove this criterion to be a reliable one in classifying speech sounds into vowels and consonants.

2. General Principles of Vowel Formation

The distinction between vowels and consonants is a very old one. The principle of this division, however, is not sufficiently clear up to the present time, the boundary between them being rather uncertain. The old term "consonants" precludes the idea that the consonants can not be pronounced without vowels. Yet we know that they can and often are; for instance, in the sound that calls for silence: /ʃ:/.

The fact the vowels are usually syllabic, doesn't mean that consonants are incapable of forming syllables. On the contrary, they may be syllabic too, and we find many instances in the English language of the syllabic sonorants forming syllables by themselves.

Acoustically, vowels are musical sounds. Nevertheless, in the formation vowels considarable noise-producing narrowings are sometimes created; on the other hand, some consonants possess musical tone.

According to Prof. D. Jones: "The distinction between vowels and consonants is not an arbitrary physiological distinction. It is in reality a distinction based on acoustic considerations, namely, on the reletive sonority or carring power of the various sounds." In the opinion of D. Jones, vowels are more sonorous than consonants. This is correct in most cases, but some consonants, espessialy sonorants, are very sonorous (for example, /l/, /m/, /n/, /ŋ/).

D. Jones gives the following definition: "A vowel (in normal speech) is defined as a voiced sound in forming which the air issues in a continuous stream through the pharynx and mouth, there being no obsruction and no narrowing such as would case audible friction.

All other sounds (in normal speech) are called consonants."

E.A. Boudouin de Courtenay has discovered a physiological distinction between vowels and consonants; according to his theory the main principle of their articulation is different: in consonant articulation the muscular tension is concentrated at one point which is the place of articulation, in vowel articulation the muscular tension is spread over all the speech organs. Knowing this, we have no

difficulty in ascertaining whether one or another particular sound is a vowel or a consonant.

Acoustically, a vowel is a musicl sound, it is formed by means of periodic vibrations of the vocal cords in the larynx.

The resulting sound waves are transmitted to the supra-laryngal cavities (the pharynx and the mouth cavity), where vowels receive their characteristic tamber.

We know from acoustics that the quality of a sound depends on the shape and the size of the resonance chamber, the material which it is made of and, also, on the size and shape of the aperture of its outlet. In the case of vowels, the resonance chamber is always the same – the supra-laryngal cavities. However, the shape and size of the chamber can be made to vary, depending upon the different position that the tongue occupies in the mouth cavity, and also depending on any slight alternations in the position of the back wall of the pharynx, the position of the soft palate and of the lips which form the outlet of the resonance chamber. The lips may be neutral or rounded, protruded or not protruded, forming a small or a large aperture, or they may be spread, forming a narrow slit-like opening. When the lips are protuded, the resonance chamber is lengthened; when he lips are spread or neutral, the resonance chamber is shortened, it is front boundary being formed practically by the teeth.

It has already been mentioned that in producing vowels, the muscular tension is spread equally over all the speech organs, yet the tension may be stronger or weaker. If the muscular tension in the walls of the resonance chamber is weaker, the vowel has a less distinct quality, it may sometimes be quite obscure. If the muscular tension is stronger, the vowel has a well defined quality. In the first case, the vowels are called lax, in the second – tense.

It is difficult, however, if not next to impossible, to classify vowels corerctly from the point of view of tenseness. The degree of tenseness may be ascertained chiefly by comparison, while the result of comparison depends largely upon the articulation basis of the mother-tongue of the person who makes the comparison. To a Russian, for instance, all vowels seem tense, because Russian vowels are lax.

We can now formulate the general principles of vowel articulation.

1. Vowels are based on voice which is modified in the supra-laryngal cavities.

2. The muscular tension is spread overall the speech organs.

3. The air-stream passes through the supra-laryngal cavities freely, no narrowings being expressly formed on its way.

4. The breath force is rather weak for, it is expanded when the air-stream passes through the larynx and causes the vocal cords to vibrate.

Thus, vowels have no special place of articulation, - the whole of the speech apparatus takes part in producing them. The classification of vowels, as well as the description of their articulation, is therefore based upon the work all the speech organs.

3. The Phonological Status of Diphthongs

There are two basic approaches to the phonological status of English diphthongs, which are known as the "unit theory" and "analytic treatment". The unit theory suggested by the Prague phonologists (N.S.Trubetzkoy, B.Trnka, J.Vachek) is based on the certain rules for the determination of the mono- and biphonematic realizations of the combinations of two phonemes. The criteria used in the unit theory are as follows: 1) diphthongs may be produced by unit articulatory movements and their length is almost equal to that of simple vowels (monophthongs); 2) diphthongs are monosyllabic combinations, i.e. their two elements – a nucleus and a glide – do not belong to different syllables of a word; 3) according to the functional criterion the distinctive function of a diphthong may be established by two rules: a) the combination is biphonemic if its components may function as distinctively different elements, i.e. if it can be substituted. If the combinations may fulfill its distinctive function, it is monophonematic; b) if the combination has its correlation pair among the simple phonemes, then it is monophonematic.

According to the above criteria long vowels and diphthongs can be defined as single vowel phonemes, since both categories with the exception of /a:/ and /ɜ:/ are free vowels with a variable degree of opening. In this case /i:/ and /u:/ are interpreted as /ii/ and /uu/ (but not as /ij/ and /uw/ in which the second elements appear as semi-vowels or consonants). According to the articulatory direction of the second elements, the diphthongs /eɪ, aɪ, aʊ, əʊ, ɔɪ/ are parallel to those of the high, long vowels. They are opposed to the remaining diphthongs, whose second elements move towards the central neutral vowel /ə/. Usually these two groups of diphthongs are called closing and centring diphthongs. J.Vachek classifies them as "movement diphthongs" which are constituted by a direct articulatory movement and cannot be divided into two vowels /eɪ, aɪ, aʊ, əʊ/ and therefore, they are regarded as single phonemes and "positional diphthongs" which preserve the individual articulatory nature of these two elements /ɪə, ɛə, ʊə, ɔə/.

N.S.Trubetzkoy's first functional criterion, which may function as single phonemes, it is a biphonematic combination, is entirely useless. By using this principle the diphthongs /eɪ/ and /ou/ become biphonematic, though Trubetzkoy regarded them as single phonemes, i.e. he admitted their monophonematic value. In this case he takes into consideration the stability of diphthongs in morphological changes. This approach is formal and cannot explain the phonological status of diphthongs.

The morphological criterion which works in favour of a morphemic boundary between the two elements of a diphthong leads to its interpretation as a biphonematic combination. For example, **loyal** /lɔ:jəl/, **lower** /lɔ: - ʊə/, **sawing /s** ʊə-uɪŋ**/, poet** /pəu-ɪt/ etc. In such words they occur at morphemic junctures in native words, or in two contiguous syllables of the same morpheme in distinctively foreign words. In words like **seer** /si:ə/, **fewer** /fju:ə/. B.Trnka notices the combinations of two phonemes in which the first element preserves the tendency of length.

The analytic treatment suggested by some American and Copenhagen linguists regards diphthongs to be biphonematic combinations. The criterion used by American linguists is based on the method of complimentary distribution. As complex segments (diphthongs) consist of two components. The first components of the diphthongs /eɪ, ɑɪ, əu, au/ are in complementary distribution with the simple vowels /ɛ/ and /a/ used in such words as **let, sun.** The second elements are also in complementary distribution with the semi-vowels or glides /j/ and /w/. The diphthongoids /i:/ and /u:/ are also treated as /ij/ and /uw/. According to this approach English diphthongs are regarded as the combinations of two phonemes, because their first and second elements can function as single phonemes.

On the paradigmatic axis the English diphthongs may form phonological oppositions both with simple phonemes and with each other. They have constitutive, distinctive and recognitive functions in the structure of English.

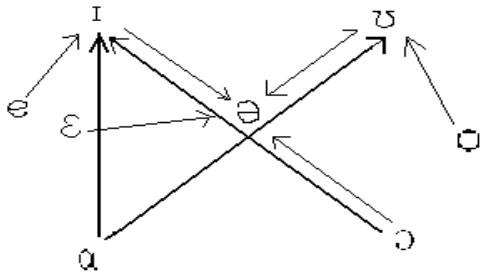
On the syntagmatic axis the structure of a diphthong is represented by three properties: a) the first component, called its nucleus; b) the second element, called its glide; c) its monosyllabic character, i.e. forming the crest of the syllable as in the word **time** /taɪm/.

The length of the diphthong, which is equal to that of the simple vowel, also proves its monophonematic character.

D. Jones defined diphthongs from the phonetic point of view. He also regarded diphthongs as monosyllabic units pronounced by one expiration. He distinguished "rising" /ɪə, uə/ and "falling" (all other diphthongs) diphthongs. The endings of the rising diphthongs have greater prominence than their beginnings, while in falling diphthongs their beginnings have greater prominence than their endings.

D. Jones' treatment is based on the articulatory indivisibility of English diphthongs and their monosyllabic character. Besides he represented positional variants of the diphthongs /ɔɪ, eə, ɔə/ in his dictionary. But /uɪ/ can not function as a diphthong owing to its articulatory divisibility and disyllabic character.

The substitution of diphthongs by monophthongs takes place in morphological alternations: **devine** /dəˈvaɪn/ - **devinity** /dəˈvɪnɪtɪ/, **chubby** /tʃʌbɪ/ - **chubbier** /tʃʌbɪə/ etc. The gliding of English diphthongs may be represented in the following form:



Speaking about diphthongs we should mention two triphthongs: /aɪə/ and /auə/. The first two elements of these combinations may be regarded as diphthongs /aɪ/ and /uə/ while the third element represents the neutral vowel /ə/. There is no stable articulatory and syllabic indivisibility among the elements of these combinations.

Usually they are divided into two syllables: **tire** /taɪ-ə/, **fire** /faɪ-ə/, **cower** /kau−ə/, **shower** /ʃau−ə/. The element /ə/ cannot be omitted in the pronunciation, otherwise words like **high** /haɪ/ - **higher**/ haɪə/ , **tie** /taɪ/ - **tire** /taɪə/ may be mixed.

The combinations /eɪə/, /ouə/ and /ɔjə/ occur in word-forms as **player** /pleɪə/ **rower** /rouə/ **destroyer** /dɪstrɔjə/ and they are also considered to be combinations of vowel phonemes or groups of vowel phonemes.

4. The Articulatory Classification of English Vowels

Various qualities (timbres) of English vowels are determined by the oral resonator – its size, volume and shape. The resonator is modified by the most movable speech organs – the tongue and the lips. Moreover, the quality of a vowel depends on whether the speech organs are tense or lax and whether the force of articulation weakens or is stable throughout articulation.

The position of the speech organs in the articulation of vowels may be kept for a variable period of time.

All these factors predetermine the principles according to which vowels are classified:

according to the horizontal movement of the tongue;
according to the vertical movement of the tongue;
according to the position of the lips;
according to the degree of the muscular tension of the articulatory organs;
according to the force of articulation at the end of a vowel;
according to the stability of articulation;
according to the length of a vowel.

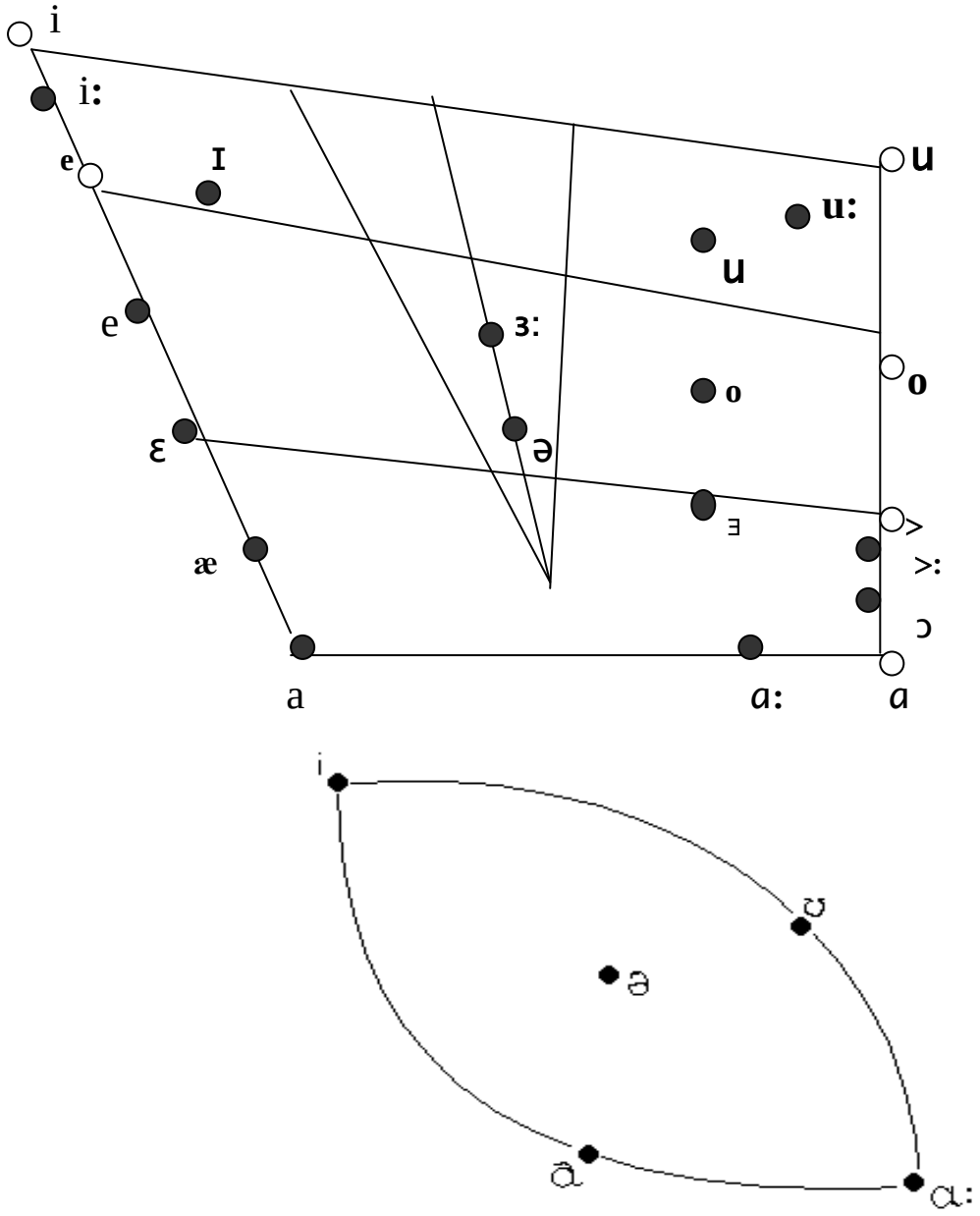
1. According to the first principle English vowels are classified into front /i:, e, æ/ and the nuclei of the diphthongs /eɪ, ɛə, aɪ/, front-retracted /ɪ/ and the nucleus of the diphthong /ɪə/, mixed /ɜ:, ə/, back-advanced /ʊ, ʌ, ɑ:/ and the nuclei of the diphthongs /oʊ, ʊə/ and back /u:, ɔ:, ɔ/.

2. According to the vertical movement of the tongue, English vowels have been traditionally subdivided into close (high), mid and open (low). It is insufficient, however, to define the articulatory features of vowels in terms of the 3 degrees of the opening of the mouth cavity, since functionally different vowels, such as /i: - ɪ/, /u: - ʊ/, /ɔ: - ɔ/ are not described from the point of view of their articulatory destinations.

Russian phoneticians G.P. Torsuyev, A.L. Trakhterov, V.A. Vassilyev have made the classification more precise by subdividing each class (close, mid, open) into two subclasses – vowels of narrow and broad variation. Thus, according to the height of the tongue, vowels can be classified as high-narrow /i:, u:/, high-broad /ɪ, ʊ/, mid-narrow /e, ɜ:, o (ʊ)/, mid-broad /ə, ɛ(ə)/, low-narrow /ʌ, ɔ:/, low-broad /æ, a (ɪ, ʊ), ɑ:, ɔ/.

This more exact classification reflects the distinctive differences in the quality of the historically long and historically short vowels.

The terms used to describe English vowels are applicable to other languages as well. For instance in Russian., German and French, front and back vowels are distinguished. Some of them are close, others more open. But they seldom correspond exactly to the English vowels which, though apparently similar sounds, are not identical. Thus both Russian and English /u/ and /i: / sounds are close and fronted, but /u/ is closer than the English /i:/. To enable a linguist or a language-learner to give the exact position of the tongue for a certain vowel of any language, a system of standard or cardinal vowels was devised by D. Jones and is presented in the following quadrilateral. This is a simplication of the real positions of the tongue for various vowels. The high point of the tongue describes an area of the shape shown next to the quadrilateral.



The four corners of this quadrilateral and the lines connecting them indicate the limit of possible tongue position for vowels.

Other vowels of whatever language have their tongue position within this figure. In relation to the cardinal vowels English vowels occupy the positions marked by larder dots.

The cardinal vowels are not the vowels of any particular language. They present an absolute standard in relation to which the vowel sounds of individual languages can be described and placed in the quadrilateral. In order to use them one must have them recorded of learn from a teacher who knows them.

The Cardinal Vowel system is used mainly in purely scientific linguistic work, where no comparison with one's mother-tongue is possible, e.g. in description and classifications of the vowel system of individual languages to be read by linguists of different nationalities.

In language-teaching it can be used only when one has the recording at one's disposal or can get oral instruction from a teacher familiar with the cardinal vowels.

3. According to the position of the lips, i.e. whether they are rounded, spread or neutral, English vowels are divided into rounded /ɔ:, ɔ, u:, ʊ/ and unrounded /i:, ɪ, e, æ, ʌ, ɑ:, ɜ:, ə/. Subdivision of vowel into lip-spread and lip-neutral is unnecessary for phonological analysis, but may be useful in describing concrete realizations of the phonemes.

4. According to the degree of muscular tension English vowels are classified into tense and lax. Thus, for instance, English /i:/ and /u:/ are characterized as tense, because the speech organs that participate in their formation – the tongue and the lips, are considerably tensed. In the articulation of short /ɪ/ and /ʊ/ these organs are relatively relaxed, so these vowels are characterized as lax.

All the long vowels are believed to be tense, while short vowels are lax (Torsuyev G.P.). This is due to the time for which the speech organs are kept is a certain position, and this requires greater muscular tension of the speech organs. Not all phoneticians share this opinion. According to D. Jones only the long /i:/ and /u:/ may be considered a tense. D. Jones applies the terms "tense" and "lax" only to close vowels, because in the case of open vowels it is difficult to define whether there is any tenseness or not. This point can be clarified with the help of special electromyographic investigations.

5. According to the force of articulation at the end of the vowel (the character of the end) English vowels are divided into free and checked. Free vowels are pronounced in an open syllable with a weakening in the force of articulation towards their end, i.e. they have a fading character. These are all the English long monophthongs and diphthongs and unstressed short vowels.

Checked vowels are those in the articulation of which there is no weakening of the force of articulation. They are pronounced abruptly at the end, immediately followed by a consonant that checks them. These are historically short vowels under stress. They occur in closed syllables.

6. According to the stability of articulation English vowels are divided into monophthongs /i:, ɪ, e, æ, ɑ:, ʌ, ɔ:, ɔ, u:, ʊ/, diphthongs /eɪ, aɪ, ɔɪ, aʊ, oʊ, ɪə, ɛə, oə, ʊə/ and diphthongoids, or diphthongized vowels /i:, u:/.

The stability of articulation (as in the case of monophthongs or its instability (as in the case of the diphthongs and diphthongoids) is, actually, the stability (or instability) of the shape of the oral resonator. When the position of the tongue and the lips during the pronunciation of a vowel is altered to some extent, a new vowel quality is produced. In diphthongs two vowel elements are distinguished – a nucleus and a glide. The nucleus is stronger, longer, more definite in timbre, more prominent and syllabic.

In different languages the nucleus of a diphthong may be either the first or the second element. Diphthongs that consist of a nucleus followed by a glide are falling diphthongs because the total amount of articulatory energy falls towards the second element. Those consisting of a glide followed by a nucleus are rising diphthongs, since the articulatory energy rises towards the second element. English diphthongs are falling. Rising diphthongs are common in Italian.

In some phonetic contexts English diphthongs /ɪə, ʊə/ may be pronounced with the second element stronger and more prominent than the first, and are, consequently, rising.

When the diphthong /oʊ/ is pronounced as an exclamation with the high rising tone, the /ʊ/ element in it is as strong and prominent as /o/. So /oʊ/ can be called a level diphthong.

D. Jones points out that in unstressed syllables the /ɪ/ and /ʊ/ elements in /ɪə/, /ʊə/ may be weaker than the second element /ə/. E.g. /ˈsɪərɪəs/ “serious”, /ˈpɪərɪəd/ “period”; /ˈɪnfʊəns/ “influence”; /ˈkɔŋge`uənt/ “congruent”.

7. Closely connected with the quality of vowels is their quantity, or length. Any speech sound must have certain duration to display its quality, to be perceived as such. According to their length English vowels are divided into long /i:, a:, ɔ:, u:, ɜ:/ and short /ɪ, e, æ, ʌ, ʊ, ə/. This length is historical. It differs from the positional length of the same vowels. In connected speech historically long vowels may be of the same length as historically short ones and even shorter. Cf, /bi:t/ - /bɪd/, /si:t/-/sɪd/.

5. The Acoustic Classification of English Vowels

Each vowel has its own acoustic spectrum, its own formant structure. The frequency of the formants and their position in the spectrum distinguish one vowel from another. The acoustic characteristics of vowels are based on their articulatory distinctions. Certain formants are characteristic of a particular volume, shape, and size of the resonators which produce a certain vowel. Thus, F_1 is conditioned by the vertical position of the tongue. When the tongue is high in the mouth, F_1 is low and vice versa. E.g. /i:/ and /u:/ have F_1 in the region of 280-300 cps, whereas /ɑ:/ and /ɔ/ have F_1 in

the region of 600-800 cps. The second formant (F_2) is conditioned by the horizontal position of the tongue and by the position of the lips. F_2 is high in the case of a front vowel and it is low in the case of a back vowel. Thus /i:/ has F_2 at about 2500 cps, where as /u:/ has F_2 at about 900cps. F_2 of rounded vowels is lower than of unrounded vowels, e.g. F_2 of /ʌ/ is 1320 cps whereas F_2 of /ʊ / is 940 cps.

If the formants F_1 and F_2 are in the middle of the spectrum, i.e. close to each other as for /ɑ:, ɔ, æ/, the vowels are classified as compact. If the formants are at each of the extremities of the spectrum as for /u:, ʊ, i:, ɪ/ the vowels are diffuse. Open vowels are compact, close vowels are diffuse.

If the second formant is high, as for /i:, e/, the vowels are of a clear or acute timbre. If it is low, so that both F_1 and F_2 are in the low section of the spectrum (as for /u:, ʊ, ɔ:/, a vowel has a dark or grave timbre. Front vowels are acute, back vowels are grave. F_2 is lower in rounded vowels (as ɔ, ɔ:, ʊ, u:) than it is in unrounded vowels (as i:, ɪ, e, æ, ʌ, ɑ:). Acoustically, rounded vowels are opposed to unrounded as flat to plain.

Thus, from the point of view of their acoustic characteristics, the vowel /e/, for instance, is described as acute, compact, and plain. The vowel /ɔ/ is compact, grave and flat, and /u:/ is diffuse, grave and flat.

6. Unstressed Vowels in English

As stated above the unstressed vocalism of, English includes all vowel phonemes and the neutral phoneme /ə/ which appears as a result of weakening of the vowels in the unstressed position. The vowel /ə/ articulated by weak articulatory affect, has an indefinite tamber and changes its quality under the influence of neighbouring sounds depending on its position, and in certain positions it may be omitted. Therefore, it may have different variations distinct from each other, especially, by the height of the tongue and duration. The X-ray picture of /ə/ in **a cat** /ə`kæt/ shows that this vowel may be classified as mixed, mid-broad variation, unrounded (either lips are spread or neutral) vowel. Usually linguists distinguish from two to four variations of /ə/.

The neutral vowel, which appears in final unstressed position, is somewhat close to the tamber of the vowel /ʌ/, perhaps, to the Russian /a/ and the Uzbek /a/, but is shorter than they are: **worker** /wə:kə/ **matter** /mætə/etc.

The next version of /ə/ is used in initial and median unstressed positions except the neighbouring /k/ and /g/. This type of /ə/ is pronounced by a higher position of the tongue than in the first version: **announce** /ə`nauns/, **about** /ə`baut/. These two versions of /ə/ are regarded basic in practical studying of English.

The version of /ə/ used by the neighbouring /k/ and /g/ is regarded to be a very short and back, close-narrow variation: continue /kən`tɪnju:/, **aggregate** /ə`grɪgeɪt/.

The fourth version occurs before the consonants /z/ and /d/ which are used as morphemes expressing the plural form of nouns and the tense of verbs: **matters** /mætəz/, **hunters** /hʌntəz/, **covered** /kʌvəd/. It resembles /ɜ:/ though it is pronounced half-long.

All these versions have different degrees of laxity. They are notated by the symbols /əˆ, ə³, əᵘ, ə/.

They all represent the reduced forms of the neutral vowel /ə/, as they all occur in unstressed positions under the influence of reduction. Weakening of the unstressed syllables, as a result of which vowels (sometimes, consonants) change their quality and quantity features, is called **reduction**. The shortening of the vowel-length in unstressed position is known as a **quantity reduction,** while the omission of the clear tamber of a vowel is termed as a **quality reduction**. The most widespread type of quality reduction is neutralization, used in the phonetic but not phonological sense. The vowels of the neutral tamber have features similar to vowels with a certain quality called **"cardinal tambers"** by A.L.Trakhterov. Speaking about /ə/ it is better to describe it as **"neutral tamber"**, than **"neutral position"** of speech organs. Usually "neutral position" is used to describe the configuration of the speech organs just prior to a certain articulation of a speech sound. In **a neutral** position the velum is raised and the air-flow through the nose is shut off. Such a universal neutral position does not exist in the articulation of any speech sound. However, some linguists consider that the sounds /æ/, /ɜ:/, /ʌ/, /e/, /ə/ may be produced by a neutral position. The neutral position stated above is possible in "hesitation vowels", interpreted also as a " vocalic filled pause" which is defined as having a (+vocalic,-consonantal) feature. X-ray pictures of the articulation /ə/ do not show any neutral position of the speech organs. Thus /ə/ is called a neutral vowel not for its articulation by the "neutral position", but owing to the fact that during its articulation it has a neutral, non-distinct tamber or quality which is significant.

Besides the neutral vowel /ə/ there is an unstressed /ɪ/ which is regarded as an unstressed allophone of the English phoneme /ɪ/. The unstressed /ɪ/ is used in unstressed syllables, in prefixes, in medial and final positions: **mischief** /mɪstʃi:f/, **abdicate** /ə`bdɪkeɪt/, **infinite** /ɪn`fɪnɪt/, **discover** /dɪs`kʌvə/, **impose** /ɪm`pəuz/, **enjoy** /ɪn`ʤɔɪ/, **credit** /`kredɪt/ etc. It should be stated that the neutral vowel /ə/ may often be omitted in colloquial rapid style of speech, but never so in the unstressed /ɪ/: **cotton** /kɔt(ə)n/, **London** /lʌnd(ə)n/, **darkness** / d*ɑ*:knɪs/, **sausage** /sɔ:sɪʤ/ etc. According to their occurance some authors distinguish vowels of: 1) full formation; 2)semi-weak vowels, i.e. those which take an intermediate position between strong vowels and the neutral /ə/ and 3) weak vowels. The idea of the semi-weak vowels have been made clear by G.P. Torsuyev and V.A. Vassilyev: "From the distributional point of view a semi-weak vowel… be defined as a partially reduced vowel which is used in more careful style of pronunciation instead of the neutral vowel used in the rapid colloquial style and instead of the corresponding vowel of full formation used in the full style". All the unstressed vowels of constantly full formation are used in all styles of pronunciation and even in many words of foreign origin, especially Latin and Greek,

which have not yet been fully adopted in English: **insect** /ɪnsekt/, **epochs** /i:pɔks/, **diagram** /daɪəgræm/,**marquee** /m*a*:ki:/ etc.

The vowels of constantly full formation have a relatively stable quality and may preserve their less clear tamber in an unstressed position: **apple-tree** /`æpltri:/, **architect** /`*a*:kɪtekt/, **objective** /əb`jektɪv/, **artistic** /*a*:`tɪstɪk/, **programme** /prəu`ræm/, **ensign** /en`saɪn/, **upturn** /ʌp`tɜ:n/, **Uganda** /u:gændə/, **obey** /əu `beɪ/, **idea** /aɪ`dɪə/ etc.`

Self-control questions

1. What are the main differences between vowels and consonants?
2. What are the 7 principles of classification of vowels?
3. What are the two basic approaches to the Phonological status of vowels?
4. What classes of vowels are distinguished by the horizontal movement of the tongue?
5. What classes of vowels are distinguished by the vertical movement of the tongue?
6. What vowels are rounded and unrounded?
7. What vowels are tense and lax?
8. What is the difference between checked and free vowels?
9. According to what principles we classify vowels into monophthongs and diphthongs?
10. According to what principles we distinguish vowels as compact and diffuse?
11. How do you explain reduction?

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Unit 5

The Consonant System of English

Questions to be discussed:
1. General Principles of Consonant Formation
2. The Articulatory Classification of English Consonants
3. The Acoustic Classification of English Consonants
4. Dichotomic Classification of the Acoustic Distinctive Features of English
5. Consonant Phonemes and its Articulatory Correlates
6. Allophonic Variations of English Consonant Phonemes

1. General Principles of Vowel Formation

The distinction between vowels and consonants is a very old one. The principle of this division, however, is not sufficiently clear up to the present time, the boundary between them being rather uncertain. The old term, "consonants" precludes the idea that consonants cannot be pronounced without vowels. Yet we know that they can and often are; for instance, in the sound that calls for silence: [ʃ:].

The fact vowels are usually syllabic, does not mean that consonants are incapable of forming syllables. On the contrary, they may be syllabic too, and we find many instances in the English language of syllabic sonorants forming syllables by themselves.

Acoustically, vowels are musical sounds. Nevertheless, in the formation of vowels considerable noise-producing narrowings are sometimes created; on the other hand, some consonants possess musical tone.

According to Prof. D. Jones: "The distinction between vowels and consonants is not an arbitrary physiological distinction. It is in reality a distinction based on acoustic considerations, namely on the **relative sonority or carrying power** of the various sounds." In the opinion of D. Jones, vowels are more sonorous than consonants. This is correct in most cases, but some consonants, especially sonorants, are very sonorous (for example, [l], [m], [n], [ŋ]).

D. Jones gives the following definition: "A vowel (in normal speech) is defined as a voiced sound in forming which the air issues in a continuous stream through the pharynx and mouth, there being no obstruction and no narrowing such as would cause audible friction.

"All other sounds (in normal speech) are called **consonants"**.

I.A. Baudouin de Courtenay has discovered a physiological distinction between vowels and consonants; according to his theory the main principle of their articulation is different: in consonant articulation the muscular tension is concentrated at one point which is the place of articulation in vowel articulation the muscular tension is spread

over all the speech organs. Knowing this, we have no difficulty in ascertaining whether one or another particular sound is a vowel or a consonant.

Acoustically, a vowel is a musical sound; it is formed by means of periodic vibrations of the vocal cords in the larynx.

The resulting sound waves are transmitted to the supra-laryngeal cavities (the pharynx and the mouth cavity), where vowels receive their characteristic tamber.

We know from acoustics that the quality of a sound depends on the shape and the size of the resonance chamber, the material which it is made of and, also, on the size and shape of the aperture of its outlet. In the case of vowels, the resonance chamber is always the same – the supra-laryngeal cavities. However, the shape and size of the chamber can be made to vary, depending upon the different positions that the tongue occupies in the mouth cavity; and also depending on any slight alterations in the position of the back wall of the pharynx, the position of the soft palate and of the lips which form the outlet of the resonance chamber. The lips may be neutral or rounded, protruded or not protruded, forming a small or a large aperture, or they may be spread, forming a narrow slit-like opening. When the lips are protruded, the resonance chamber is lengthened; when the lips are spread or neutral, the resonance chamber is shortened, its front boundary being formed practically by the teeth.

It has already been mentioned that in producing vowels, the muscular tension is spread equally over all the speech organs, yet the tension may be stronger or weaker. If the muscular tension in the walls of the resonance chambers is weaker, the vowel has a less distinct quality; it may sometimes be quite obscure. If the muscular tension is stronger, the vowel has a well defined quality. In the first case, the vowels are called lax, in the second-tense.

It is difficult, however, if not next to impossible, to classify vowels correctly from the point of view of tenseness. The degree of tenseness may be ascertained chiefly by comparison, while the result of comparison depends largely upon the articulation basis of the mother-tongue of the person who makes the comparison. To a Russian, for instance, all vowels seem tense, because Russian vowels are lax.

We can now formulate the general principles of vowel articulation.

1. Vowels are based on voice which is modified in the supralaryngeal cavities.
2. The muscular tension is spread over all the speech organs.
3. The air-stream passes through the supra-laryngeal cavities freely, no narrowings being expressly formed on its way.
4. The breath force is rather weak for, it is expended when the air stream passes through the larynx and causes the vocal cords to vibrate.

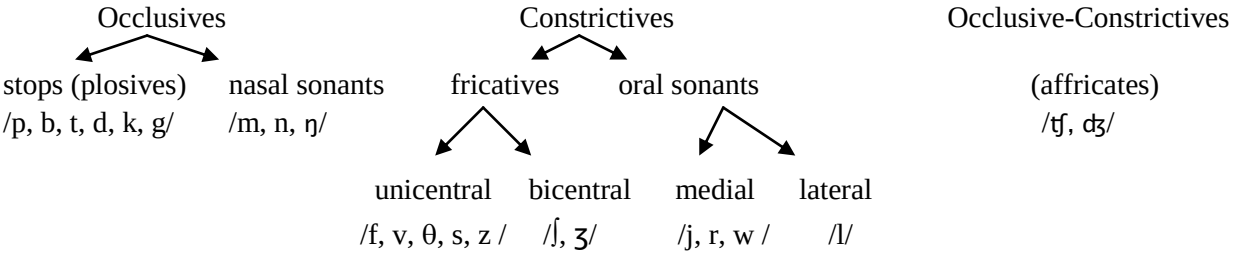
Thus, vowels have no special place of articulation; - the whole of the speech apparatus takes part in producing them. The classification of vowels, as well as the description of their articulation, is therefore based upon the work of all the speech organs.

2. The articulatory of English Consonants

An indispensable constituent of a consonant is noise. The source of noise is an obstruction. There are the following types of obstruction in the production of consonant: 1) complete occlusion (closure), 2) constriction (narrowing) and 3) occlusion-constriction (closure immediately followed by a constriction).

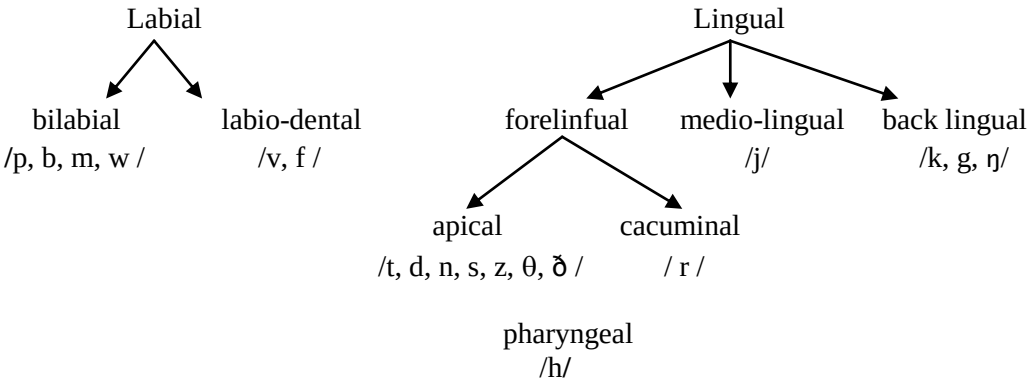
The noise produced by the removal of a closure is that of a plosion, the noise resulting from the movement of the air stream in the narrowing is that of friction. The two effects are combined when closure is followed by a narrowing.

1. According to the type of obstruction and the manner of the production of noise English consonants are classified in the following way:



Obstructions may be formed either by two active speech organs or by one active speech organ (articulator) and a passive organ of speech (point or place of articulation).

2. According to the active speech organ English consonants are divide into:



3. According to the place of obstruction consonants are classified into <u>dental</u> /θ/, <u>alveolar</u> /t, d, n, l, s, z/, <u>post-alveolar</u> /r/, <u>palatal</u> /j/, <u>palate-alveolar</u> /ʃ, ʒ, tʃ, ʤ/, <u>velar</u> /ŋ/.
4. According to the presence or absence of voice, English consonants are divided into <u>voiced</u> /b, d, g, v, z, ð, ʒ, ʤ/ and <u>voiceless</u> /p, t, k, f, s, θ, ʃ, tʃ/.
5. According to the force of articulation, English consonants are classified as <u>lenis</u> and <u>fortis.</u>

In the articulation of English voiced consonants the muscular tension is weak – lenis articulation. In the articulation of English voiceless consonants the muscular tension is strong-fortis articulation.

6. According to the position of the soft palate English consonants are divided into oral /p, b, t, d, k, g, f, v, θ, s, z, ʃ, ʒ, h, tʃ, dʒ, w, l, r, j/ and nasal /m, n, ŋ /.

3. The Acoustic Classification of English Consonants

The acoustic character of a consonant is conditioned by its articulation.

Plosives and affricates (e.g. /t, d, tʃ, dʒ/) differ from fricatives (e.g. /f, v/) mainly in that part of their spectra which corresponds to the articulatory "stop". A plosive is characterized by the absence of noise in part of the spectrum. The plosion is marked by a burst of noise, i.e. the formant of noise appears.

Fricatives are characterized by the presence of a noise formant throughout the spectrum.

Hence plosives and affricates are classed as discontinuous and fricatives as continuant.

Voiceless consonants (fortis) are characterized acoustically as tense and voiced (lenis) as lax, since the burst of noise in voiced plosives and the formant of noise in voiced fricatives are less strong than those in voiceless plosives and fricatives.

The noise peculiar to alveolar and dental consonants /t, d, s, z, n, l, θ, ð/ is contrasted with that of labial and labio-dental ones /p, b, m, f, v/ because it is sharper in character. This means that in the spectra of /t, d, s, z, n, l, θ, ð/ high frequencies are predominant and in the spectra of /p, b, m, f, v / the formant of noise is lower.

The fricatives (alveolar and dental) /s, z, θ, ð/ have the highest frequencies of noise in the spectrum-up to 8000 cps. The frequencies of the noise formant in the spectrum of /f, v/ are low. Therefore, /t, d, s, z, θ, ð, n/ are characterized as acute and /p, b, m, v/, as grave. The consonants /k, g, ʃ, ʒ, tʃ, dʒ/ are intermediate in this contrast.

The spectrum of velar and palatal consonants / k, g, ŋ, ʃ, ʒ, tʃ, dʒ/ is compact while the spectrum of alveolar, labial and dental ones /t, d, n, s, z, m, p, b, f, v, θ, ð/ is diffuse. Consequently, the former are classified as compact consonants and the latter as diffuse ones.

The sonants /m, n, ŋ/are opposed to all the other consonants as nasal to oral, because in their spectrum there is a special nasal formant.

The consonants /s, z/ having a round narrowing are opposed to /θ, ð/ having a flat narrowing and the affricates /tʃ, dʒ/ are opposed to the plosives /t, d/ as strident to mellow. In the spectrum of strident consonants the intensity of noise formant is greater in the spectrum of mellow consonants.

The first attempt to classify speech sounds on the basis of their acoustic distinctions was made by a group of phoneticians and linguists Jacobson, Fant and Halle, in their work "Preliminaries to Speech Analysis". The authors establish the acoustic distinctions used in human language. These distinctions form 12 binary (or dichotomous) distinctive oppositions. The authors claim that their classification can be applied to all the languages of the world, but not all the 12 oppositions are to be used

to classify the phonemes of a particular language. For the English language, according to the authors, 9 binary oppositions are sufficient: 1) vocalic –non-vocalic; 2) consonantal – non-consonantal; 3) compact – diffuse; 4) grave –acute; 5) flat – plain;6) nasal – oral; 7) tense – tax; 8) discontinuous – continuant; 9) strident – mellow.

Vowels are vocalic and non-consonantal; consonants are consonantal and non-vocalic. The sonants /l, r/ are vocalic and consonantal /w, j/ are non-vocalic and non-consonantal.

The traditional vowel /consonant opposition is divided into two oppositions to define the sounds /r, l, w, j/.

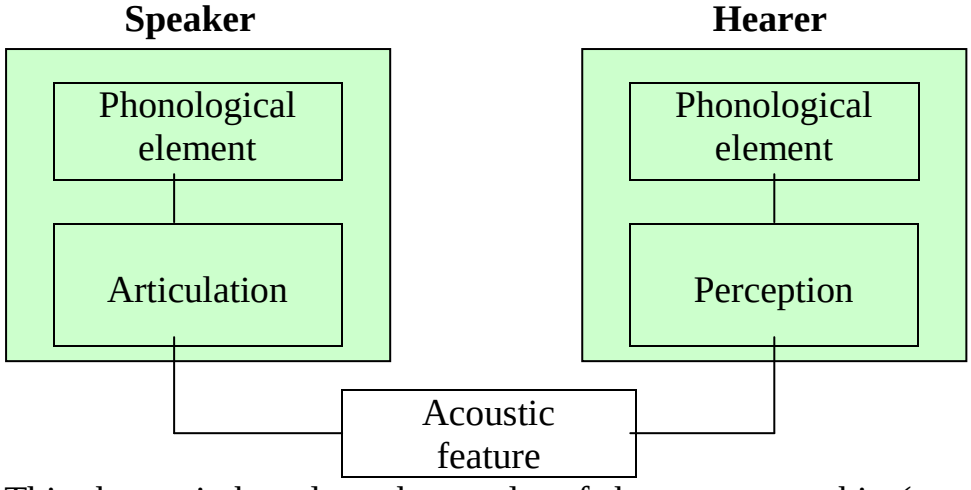
The acoustic classification of speech sounds worked out by Jacobson, Fant and Halle is perhaps not absolutely definite. But it is a new classification based on the discoveries of modern electro-acoustics.

Acoustic definitions and classifications of speech sounds are of great theoretical importance to linguists. Their practical importance and application is also undeniable. Acoustic characteristics of speech sounds are indispensable in technical acoustics for the solution of the problem of speech synthetics and sound transmission, for the construction of speech recognizers as well as machines capable of putting out information in spoken words.

As for language teaching the acoustic classification of speech sounds is practically inapplicable. But the acoustic data of spectrographic analysis are of great use when related to the articulatory characteristics of speech sounds.

4. Dichotomic Classification of the Acoustic Distinctive Features of English Consonant Phonemes and its Articulatory Correlates

The theory of distinctive features, which was suggested by Jakobson-Fant-Halle, is known as the acoustic classification. In fact, this theory represents the act of communication and shows the steps involved in inducing the hearer to select the same phonological element the speaker has selected. It may be illustrated as follows:



This theory is based on the results of the spectrographic (acoustic) and X-ray (articulatory) investigation. Each feature is described in articulatory and acoustic levels (including perception).

The acoustic representation of a distinctive feature corresponds to more than one articulatory feature. In many cases it does not take into consideration the existing allophones, i.e. non-distinctive features of phonemes. In such cases as distinguishing the dental /n/ as in **tenth** /tenθ/ from the alveolar /n/ no acoustic or perceptual feature can be used. These two allophones of the phoneme /n/ can be described only in articulatory terms.

The dichotomic (or binary-meaning to choose two elements or a pair of elements in logic sense) theory has many other shortcomings. Each of the distinctive features involves a choice between two terms of opposition. The mark (+) means "yes", (-) - "no", (0) - both distinctive features are possible.

According to this theory 12-15 distinctive features are possible both for vowels and consonants in all languages. The starting point of this classification shows that two binary features define four major classes of segments (minimal segments of sound, which can be distinguished by their contrast within words are called phonemes).They are:

Consonant (C)	**Vowel (V)**	**Liquid (L)**	**Glide (G)**
+C	-C	+C	-C
-V	+V	+V	-V
/p/	/a/	/l/	/ j /
stop	all	/r/	/w/
fricatives	vowels	*intermediate between*	
affricates		*the 1st and 2d classes*	
nasals			

The consonant features correlation in acoustic and articulatory terms, their correspondence and representation can be illustrated in the following table:

№	*Binary acoustic features*	*Articulatory correlates*
1.	Vocalic/ non-vocalic	a periodic excitation and constriction/non-periodic
2.	Consonantal /non-consonantal	excitation and obstruction in oral cavity produced with occlusion of contact / with lesser degrees of narrowing
3.	Compact/diffuse	palatal, velar, guttural /labial/ dental, alveolar consonants opposition
4.	Grave/acute	labial, velar/dental, alveolar, palatal
5.	Flat/plain (non-flat)	labial/non-labial
6.	Nasal/oral	nasal/oral
7.	Discontinuous/continuant	stops (plosives), affricates/fricatives, liquids, glides
8.	Voiced /voiceless	voiced/voiceless

9.	trident/mellow	noisy fricatives (labio-dental, alveolar, alveo-palatal affricate)/less noisy fricatives (interdental, palatal, velar), plosives, glides, liquids
10.	Checked/unchecked	glottalization/non-glottalization
11.	Tense/lax	fortis/lenis
12.	Sharp/plain (non-sharp)	palatalized/non-palatalized (in Russian)

In the table of the distinctive features representation eight pairs of them are characteristic of English consonant phonemes.

Distinctive Feature Representation of the English Consonants

Distinctive features	l	ŋ	ʃ	tʃ	k	ʒ	dʒ	g	m	f	p	v	n	s	θ	t	z	ð	d	h	≠
Vocalic/non-vocalic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consonantal/non-consonantal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
Compact/diffuse	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grave/acute								+	+	+	+	+	-	-	-	-	-	-	-	-	-
Nasal/oral		+	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
Tense/lax			+	+	+	-	-	-		+	-	-	-	+	+	+	-	-	-	+	-
Discontinuous/continuant			+	-	-	+	-	-		+	-	+	-		+	+	-	+	+	-	-
Strident/mellow				+		-	+	-									+	-		+	-

As we can notice in the above table /i/,/r/, /w/, /j/, are omitted be cause the liquids /l, r/ are vocalic and consonantal and the glides /j, w/ are non-vocalic and non-consonantal. Usually American linguists regard the semivowels /j/, /w/ to be positional variants of the lax vowels /i/, /u/, respectively. Thus, this binary classification has restrictions on these four classes. Besides, correlation between the acoustic and the articulatory classification is not very clear in this theory. In spite of the fact that the binary classification of the acoustic features has some shortcomings, it is often used as a universal framework in the description of the distinctive features of phonemes without any experimental research. It is useful to use the binary classification of the acoustic distinctive features after instrumental investigations, as the latter is helpful in making a correct classification. The articulatory correlates of the twelve pairs of acoustic features may correspond to more than twenty features, thanks to the division of the consonant classes. This correlation has its own difficulties which require

experimental investigation as well. The articulatory classification is more useful in language teaching practice than the acoustic one.

The feature strident-mellow is distinctive for eight consonant phonemes of English, whereas it is not distinctive for the Uzbek consonants the distinctive feature strident-mellow is very important in Russian as the consonant phonemes form one more correlation on the basis of this feature (in Russian it is called "мягкие-твёрдые") besides voiced-voiceless correlation.

6. Allophonic Variations of English Consonant Phonemes

G.P. Torsuyev distinguishes two types of variations of the English phonemes: a) diaphonic variation which does not depend on the position, i.e. the consonant quality and quantity of the phonemes; b) allophonic variation which depends on the position and changes its quality and quantity. He also gives a complete description of these variations is English.

The allophonic variations of the English and Uzbek consonant phonemes depend on their distribution in words, syllables and junctures and also on the phonotactic rules (combinations of sounds or sound sequences). The allophones of a phoneme may be established on the basis of the complementary distribution. Two acoustically similar speech sounds which never occur in a certain position are regarded the allophones of a phoneme. The pronunciation of the allophones may vary in different positions i.e. in initial, medial, final positions of words, syllables and also in neighbourhood positions, in stressed and unstressed positions. The way three phases of articulation act to combine the sounds in the structure of words and syllables is also essential. It is very complicated to describe all the allophonic variations of the consonant phonemes. Therefore, we give the general rules of the occurrence of the allophones.

The phonemes /p, t, k/ have rather marked positional allophones. Before a stressed vowel, whether alone or followed by a sonorant or other consonant; they have aspirated allophones /p^h, t^h, k^h/: **pin, play, proud, pure, tin, true, twice, tune, key, clean, crop, cure, quick.** The alveolar phonemes /t, d, n, l/ have dental allophones before the fricative consonants /θ/ or /ð/ of the same or following word: **health, eighth, tenth, width, the ticket, all those, bell tune** etc. The phonemes /t, d, n, l/ have post alveolar allophones before /r/: **true, drink, country, hungry, children**, etc. The lateral sonant /r/ has rather striking allophones and regional diaphones, when /r/ follows /θ / or /ð/ it has an alveolar allophone, for example – **through, the right hand.** In prevocalic and intervocalic positions it has an apical allophone: **cherry, merry, glory, far out, store it** etc. After aspirated voiceless stops, as in **proud, try, cry,** it has a partially voiceless allophone.

Diaphone variation may be observed when /n/ is pronounced in stead of /ŋ/ in words like **strength, length.** The prefixes **con-, in-, syn-,** when stressed, have /ŋ/ besides a following /n/ before a following /k/, as in **conquest, concord, income, syncope** etc.

The vowel-like allophone of the phoneme /j/ may occur in such words as **curious, Indian, Genius** etc.

Many other allophones of the English consonant phonemes may occur in the various sound combinations. English is rich in initial medial and final combinations of consonants. Many of them do not occur in Uzbek.

Self-control questions

1. What are the general principles of Consonant function?
2. How are English consonants classified according to the type of obstruction and the manner of production of noise?
3. How are the English Consonants classified according to the active speech organ?
4. How do we classify consonants according to the place of obstruction?
5. How do we classify consonants according to the presence or absence of voice?
6. How do we classify consonants according to the force of articulation?
7. How are the consonants classified according to the position of the soft palate?
8. What consonants are called discontinuous and continuant?
9. What consonants are characterized as tense and lax?
10. What are the acute and grave consonants?
11. According to what principle we classify consonants as compact and diffuse?
12. What are 9 binary oppositions of English Consonants according to their acoustic distinctions?

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Unit 6

Modification of Phonemes in Speech

Questions to be discussed:

1. The Phenomenon of Assimilation
2. Phonetic Modifications of the Sound Structure of Speech
    a) Three phases of articulation of speech sounds
    b) The process of accommodation and its types
    c) The process of assimilation and its types
    d) Elision
    e) Liaison
3. Modifications of the Syllabic Structure of Speech
4. Modifications of the Accentual Structure of Words in Speech.

1. The Phenomenon of Assimilation

Every utterance is a continuous flow of speech interrupted by pauses. There is no break between the sounds, not even between the words. In connected speech the sounds undergo various modifications under the influence of neighbouring sounds and the rhythmic patterns they occur in. Consequently, sounds uttered in isolation are not identical to the sounds uttered in connected speech, not even in smaller phonetic units as a rhythmic group, or a syllable. /p/, for instance, loses its aspiration when preceded by /s/; /l/ is clear when followed by /j/ or a vowel.

When interpreted linguistically, it means that in a speech continuum there appears a variety of realizations of one and the same phoneme, its allophones. The number of allophones of each phoneme is, therefore, no less than the number of phonetic positions in which the phoneme occurs.

The modifications that the sounds undergo in connected speech vary a great deal. The speaker avoids articulatory movements which are not absolutely necessary for intelligibility of speech. But this process is to some extent regulated by the articulatory habits, the orthoepic norm, by the system of phonemes in the language and the system of phonological oppositions the phonemes form in the language.

Thus, in English lenis consonants /b, d, ɡ/ in final position can be voiceless, but they cannot be replaced by fortis /p, t, k/, as in English fortis and lenis consonants distinguish words (e.g. “cab-cap”, “had-hat”, “bag-back”). It has been noted that /l/ may be “clear” or “dark” in one and the same phonetic position; but the “clear” allophone of /l/ does not occur in the positions in which the “dark” allophone of /l/ is used, if the former is used instead of the latter, it is immediately detected by the native speakers as a foreign accent.

These are just a few example of how the orthoepic norm and the articulatory habits regulate the various modifications of sounds in connected speech. Yet certain phonetic modifications are have been for many centuries, characteristic of English.

The phonetic modifications that occur in a speech continuum may affect (1) its sound structure (those modifications are due to assimilation, accommodation, reduction, elision of consonants, the appearance of the linking /r/ or the intrusive /r/); (2) its syllabic structure (due to the elision of syllabic sounds); (3) the accentual structure of words (due to rhythm).

2. Phonetic Modifications of the Sound Structure of Speech

In a speech continuum sounds are so closely one to another it is hardly to say exactly where the articulatory and acoustic boundary between the sounds occurs. The reason of this is the fact that while one sound is being formed the speech organs are already moving on to the position in which the next sound is to be formed. So the articulation of a sound in a speech continuum is modified under the influence of neighbouring sounds.

For purposes of analysis it is convenient to distinguish between the following three phases in the articulation of an isolated speech sound;

(1) the initial phase, when the speech organs are placed in the position necessary to produce the sound;

(2) the central phase, during which the speech organs retain their position for a certain period of time;

(3) The final phase, during which the speech organs return to a position of rest.

In connected speech the phases of the sounds interpenetrate.

The extent to which the phases of the neighbouring sounds interpenetrate depends mainly on the nature of those sounds (whether both the sounds are consonants, or one of them is a consonant and the other a vowel).

When the neighbouring sounds are of a different nature (e.g. a consonant+ a vowel, or vice versa), the final phase of the first sound penetrates into the initial phase of the following sound, and both the sounds are but slightly modified. This process is called accommodation.

Accommodation is the process of adapting the articulation of a consonant to a vowel, or a vowel to a consonant.

Accommodation results in allophonic modifications only. It never affects the essential qualities (i.e. the phonologically relevant features) of each of the two sounds.

The different phenomena that occur when a consonant and a vowel accommodate are as follows:

1. Canalization – the lowering of the soft palate due to which vowels assume a nasal shade when they are in contact with nasal consonants (/n/, /m/, /ŋ/). (of “men”-“tell”).
2. Shortening of vowels before consonants, especially before fortis consonants (of “see”-“seize”-“cease”).
3. The lengthening of /m, n, ŋ, l/ after short vowels (of “sun”-“soon”).
4. Labialization – the rounding of the lips which consonants acquire when in contact with rounded vowels (ɔ:/, /u:/, /ou/).

5. Velarization – the raising of the back of the tongue towards the soft palate, hence the velar grave colouring which consonants acquire in contact with back vowels (/u/, /ɔ/, /uə/).
6. Labio-velarization – the raising of the back of the tongue and the rounding of lips, hence the velar and labial features which consonants acquire when in contact with lip-rounded back vowels (/ɔ:/, /u:/).
7. Palatalization – the raising of the central part of the tongue, hence the palatal shade which such consonants as /ʃ, ʒ, tʃ, dʒ, l/ acquire when followed by vowels or /j/. But it should be noted that palatalization in English is rather weak, and the palatalizing tendency is much less obvious in English than it is in Russian and French.

All these phenomena, except the shortening of vowels and the lengthening of /m, n, ŋ, l/, involve a change in the work of the active organs, which modify the acoustic features of the sounds (that can be clearly seen on spectrograms).

Accommodation can be progressive, regressive, or mutual.

If the articulation of a sound is modified under the influence of the preceding sound, i.e. its articulation is adapted to the articulation of the preceding sound, the accommodation is progressive. (E.g. the nasalization of /i:/ in “me”).

If the articulatory of a sound is adapted to the articulation of the following sound, the accommodation is regressive. (E.g. the labialization of /t/ in “toe”).

If the articulatory movements of both the sounds are adapted to each other, the accommodation is mutual.

Assimilation is the process of adapting the articulation of sounds that are of a similar as identical nature.

Assimilation involves changes in the central phases of the adjoining sounds (as in /nð/) or even in all their phases (as in /sj/>/ʃ/).

When two consonants assimilate, different phonetic phenomena may occur, such as

1. Vocalization and devocalization, which involve the work of the vocal cords (as in /tra:nz`leɪt/ for /tra:ns`leɪt/; /aɪ ʃt`θɪŋk ˌsou/ and /aɪ ʃd `du: ɪt/; /aɪ`hæf tə `gou/).
2. Coalescent assimilation, when under the influence of mutual assimilation there appears a new phoneme (as in /sj/>/ʃ/, /zj/ >/ʒ/,/tj/ >/tʃ/, /dj/>/dʒ/).
3. Labialization under the influence of /w/ (as in /tw/, /kw/, etc.)
4. Dentalization, which is a change in the articulation of alveolar sounds under the influence of dental sounds /as in /nθ/, /zð/).
5. Loss of aspiration, when a fortis plosive is unaspirated under the influence of a neighbouring sound (as in /spi:k/, spɔ:t/.
6. Changes in the articulation of plosives, such as:
   a) nasal plosion produced by the soft palate when a plosive is followed by a nasal consonant (as in /tl/, /dn/, /pm/);
   b) lateral plosion produced at the sides of the tongue when a plosive is followed by /l/ (as in /tl/, /dl/);

c) restricted plosion, which is an incomplete plosion that occurs when a plosive is followed by a constrictive (as in /pl/, /gr/, /kr/).

d) Loss of plosion when a plosive is followed by a plosive (as in /dt/, /tt/, /kk/, etc.)

7. Changes involving both the work of the active organs and the place of obstruction, which result in allophonic and phonemic changes. (E.g. /kən ˈgrætjuleɪt/ or /kəŋ ˈgrætjuleɪt/ where /n/>/ŋ/ under the influence of /g/).

The mutual influence that the sounds of a similar or identical nature exert upon each other may result in either allophonic modifications or phonemic changes.

Phonological analysis shows that assimilation resulting in phonemic changes occurs mainly at the juncture between words: won't you /tj/>/tʃ/, would you /dj/>/dʒ/, of course /vk/>/fk/.

It may also occur at the juncture between the parts of a compound word: gooseberry /sb/>/zb/, newspaper /zp/>/sp/, horseshoe /sʃ/>/ʃʃ/.

Assimilation resulting in allophonic modifications may occur within a syllable (e.g. in "train" /r/ is voiceless, or party devoiced), at the juncture of syllables (e.g. in "anthem" /n/ is dental under the influence of /θ/, or at the juncture of two words (e.g. "but the" where /t/ is dental).

The assimilation that occurs at word juncture is termed junctural assimilation.

The nature of the adjoining sounds determines the degree of the modifications that these sounds undergo. It should also be noted that the extent of these modifications depends largely upon the tempo of speech and the style of pronunciation. The faster and more careless the delivery, the greater is the degree of these modifications.

The degree of the modifications that the assimilated sound undergoes may vary.

If the assimilated sound is completely altered and acquires all the main features of the assimilating sound (as in "horseshoe"), the assimilation is said to be complete.

If the assimilated sound is partially altered and acquires only some feature of the assimilating sound (as in "try", where /t/ is post-alveolar), the assimilation is said to be partial.

The influence that sounds exert upon each other may vary in direction.

If a sound is influenced by the preceding sound and acquires some of its features (as in "cry", where /r/ is partly devoiced under the influence of /k/), the assimilation is progressive.

If a sound is influenced by the following sound and acquires some of its features (as in "gooseberry", where /s/ is voiced and replaced by /z/ under the influence of /g/), the assimilation is regressive.

If the sounds influence each other equally, i.e. each sound acquires some features of the other sound (as in "twenty", where /t/ is labialized under the influence of /w/, and /w/ is partly devoiced under the influence of /t/), the assimilation is mutual.

Besides that, we distinguish obligatory assimilation and non-obligatory assimilation.

Obligatory assimilation occurs in everybody's speech, no matter what style of pronunciation is used.

Non-obligatory assimilation appears mainly in rapid and careless conversational styles. The more rapid and careless the speeches, the more cases of non-obligatory assimilation occur in it.

In "in the (dental /ð/), "last Tuesday", (/tt/), "horseshoe' /ʃʃ/ Assimilation is obligatory. But /ʤenouə/ for "Do you know her,", /aɪʃl `ɪ:tʃə/ for "I shall hit you", /amgənə`gouðɛə/ for "I'm going to go there" sound vulgar and are instances of non-obligatory assimilation.

Junctural assimilation may also vary in the extent of the modifications that take place. It may either be complete (as in "is she" /`ɪʃʃɪ/, "has she" /`hæʃʃɪ/, "good bye" /gub`baɪ/), or partial (as in "in the", "at the", where /n/ and /t/ are central). It may vary in direction as well, and we distinguish progressive junctural assimilation (as in "what's /wɔts/, "it's" /ɪts/, "Open the door" /ˈoupm ðə dɔ:/), regressive junctural assimilation (as in "of course" /əfˈkɔ:s/, "with thanks" /wɪθˈθæŋks/, "in case" /ɪŋˈkeɪs/, "I have to go" /aɪˈhæftə`gou/), and mutural junctural assimilation (as in "won't you" /ˈwountʃə/, "would you" /ˈwuʤə/).

Junctural assimilation may be either obligatory (as in "in the", "at the") or non-obligatory (as in "let me" /ˈlemmɪ/, "give me' /ˈgɪmmɪ/, "during" /ˈʤuərɪŋ/, "How do you do" /ˈhauʤə`du:/, "good bye" /gubˈbaɪ).

The investigation of non-obligatory assimilation in a language is important, as it disclosed the main phonetic tendencies of the language. Very often phonetic changes first occur among the uneducated before they are recognized by the educated speakers. For instance, Ch.Barber notes that before the Second World War the pronunciation with /ʤ/ in "duke", "during", "education" were vulgar, while nowadays that is quite common in rapid educated speech.

Assimilation in different languages has been studied by a number of well-known scholars (M. Grammont, P.Passy, A. Martinet and others). Most of them consider that such phonetic modifications are to a great extent caused by an unconscious economy of effort referred to as "the law of least effort", which is universal for all languages.

In a speech continuum not all the syllables are equally stressed. Therefore, not all the sounds are produced with equal articulatory effort.

Reduction is the modification of the quality and length of a vowel due to a weakening of its articulation and a shortening of its duration.

Reduction of vowels occurs only in weakly stressed position.

Vowels can be partially reduced (these are generally called semi-weak vowels). Vowels can also be reduced to /ə/ which is the weakest English vowel and its quality is most indistinct.

E.g. /sou/ - where the vowel is of full formation,

/soˈleɪt/ - where the word "so" contains a semi-weak vowel,

/ˈnɔt səˈleɪt/ - where /ou/ is obscured to /ə/.

The degree of reduction depends on a number of factors:

1) the extent to which the duration of the sound is shortened, which L.Scherba considers to be the main factor, as the shorter the sound, the less time there is for its articulation, and, therefore, the less distinct is its quality;

2) the extent to which the articulatory effort is decreased, that results in indistinctness of the quality of the sound.

Any English vowel can be reduced if it occurs in weakly stressed syllables. The general tendency is that /i:/ and /e/ are reduced to a weaker front vowel /ɪ/, while the rest of the vowels are obscured to the central vowel /ə/.

It is characteristic of present-day English to use /ə/ in weakly stressed syllables where the more conservative form had and has the stronger /ɪ/, as has been noted by A.Gimson. E.g. /aɪ bəˈli:v/ for /aI bɪˈli:v/, /ˈintrəstɪŋ/ for /ˈɪtrɪstɪŋ/. That very often results in neutralization of the oppositions between words, e.g. accept - except, forward - foreword, affect - effect, etc. But /ɪ/ in such morpheme endings as “-ed”, “-es”, “-y” is generally retained, and the opposition of “-ed”, “-ered”, (matted - mattered), “-es” - “-ers” (mixes - mixers), “-y” - “er” (Betty - better) are not neutralized as a rule.

The phonetic phenomenon known as reduction presents special problems, one of the principal bring the phonological status of reduced vowels. The way the problem is solved depends upon whether one accepts or rejects the phenomenon termed as “neutralization of phonological oppositions” (which has been discussed in “Problems of Phonological Analysis”).

It is feature of English that in clusters of consonants there takes place a phonetic phenomenon known as elision.

Elision is the leaving out of a sound as a means or simplifying the pronunciation of a word or a rhythmic group.

One of the peculiarities of English is that in a cluster of three consonants within a word, the middle one (usually a plosive) is elided. For example, in “empty”, “tempt’, “Christmas”, “castle”, the elision of /t/ and /p/ is the norm. In “exactly”, “restless”, “handbag”, “handsome”, “friendship” elision takes place only in rapid colloquial speech, the pronunciation of the alveolar /t/ and /d/ being characteristic of careful speech. Whenever the consonant is retained, it loses its plosion.

Such cases of elision occur rather often even in careful speech.

E.g., pos(t)man, gran(d)father, nex(t) day, kep(t) quiet, ask(ed) them, bread an(d) butter, up an(d) down, wasn’(t) that. Doesn’(t) she know?

The elision of one of a cluster of two consonants at the boundary of words is considered to be vulgar and occurs in rapid careless speech only.

E.g., he went away (hɪ ˈwen əˈweɪ/,

I want to come /aɪ ˈwʌnə ˈkʌm/,

Let me see /ˈlemɪˈsi:/,

Give me /ˈgɪmɪ/

The elision of consonants modifies the sound structure of words.

In a speech continuum words are generally linked into higher phonetic units: the intonation groups. Every language has its own peculiarities of linking words. The manner of linking neighboring words is known as liaison. Liaison is a phonetic phenomenon which modifies the sound structure of an utterance.

Though liaison has not as yet been fully investigated, there are two features which are clearly distinguished: the occurrence of the "linking" /r/ and the use of the "intrusive" /r/.

The linking /r/ is inserted after words that in their old pronunciation (the 16th century and earlier) had a final /r/, which still remains in the spelling of those words.

Phonetic analysis shows that the linking /r/ is inserted after /ɑ:, ɔ:, ɜ:, ə/, or after diphthongs that have a /ə/ glide (such as /ɪə ,ʊə, ɛə/, if they are immediately followed by a word beginning with a vowel.

E.g., here /r/ and there,
for /r/ a minute,
later/r/ on,
for /r/ instance.

But if the above mentioned sounds are preceded by /r/ (as in "bearer', "drear", "error", "horror", "roar"), there generally does not arrear any linking sound.

E.g., a roar of laughter /əˈrɔ: əv ˈlɑ:ftə/,

an error of judgment /ənˈerə əvˈʤʌʤmənt/,

horror of war /ˈhɔrə əv ˈwɔ:/.

The linking /r/ does not normally occur before words pronounced with emphasis.

E.g. we were ˈˈabsolutely sure.

The linking /r/ is usually inserted at the juncture of two words belonging to one and the same intonation group.

E.g., the door /r/ opened and I peeped in.

But: He locked the door and put the key into his pocket.

D.Jones writes: "The insertion of /r/ is unusual if a pause is possible between the words, even if no pause is actually made".

The intrusive /r/, which has been brought about by analogy with the linking /r/, is believed to have appeared in the 17th century. But until lately it was looked upon as a vulgarism. In the latest papers and article on English pronunciation it is generally noted that the intrusive /r/ is being used more widely, even by RP speakers.

The intrusive /r/ is more commonly inserted after /ə/ or any diphthong containing /ə/ as a glide.

E.g., Asia /r/ and Africa,
the idea /r/ of it,
the sofa /r/ over there.

It is sometimes inserted after /ɔ:/ and /ɑ:/.

E.g., the law /r/ of the sea,

Papa /r/ isn't in.

It should be noted that not all Englishmen use the intrusive /r/. Moreover, not all Englishmen use the linking /r/. Nevertheless it is clearly evident that the usage of the linking /r/ is the standard. As for the intrusive /r/ it is more widely used by RP speakers than it was some 20-30 years ago.

3. Modifications of the Syllabic Structure of Speech

Elision of vowels is closely connected with the process of reduction. Just as reduction, it is conditioned by the general tendency to produce the weakly stressed syllables with minimal articulatory effort.

Elision of a vowel is the leaving out of a vowel.

In English there are certain phonetic position in which the elision of a weakly stressed vowel does not affect intelligibility of speech. Moreover, instances of such elision are commonly used by RP speakers.

A.C.Gimson notes that the elision of vowels can now be observed in the following phonetic position:

1) in post-nuclear positions in the sequence Consonant+ /ə/ + /r/+ weak vowel, e.g. "preferable" /`prefrəbl/, "temperature" /`temprətʃə/, "territory" /ˈterɪtrɪ/, "murderer" /ˈmɜ:drə/, "nursery" /ˈnɜ:srɪ/, "camera" /ˈkæmrə/, robbery /ˈrɔbrɪ/;

2) in post-nuclear position in the sequence Consonant +weak vowel + /l/ + weak vowel, e.g. "easily" /ˈi:zlɪ/, "carefully" /ˈkɛəflɪ/, "novelist" /ˈnɔvlɪst/, "family" /ˈfæmlɪ/;

3) in pre-nuclear positions, /ə/ or /ɪ/ of the weak syllable preceding the primary stress is apt to be elided in very rapid speech, e.g. "police" /pli:s/, "terrific" /ˈtrɪfɪk/, "correct" /krekt/, "believe" /bli:v/, "direction" /drekʃn/, "phonetics" /ˈfnetɪks/, "photography" /ˈftɔgrəfɪ/, "suppose" /spoʊz/, "perhaps" /præps/.

Elision of vowels may occur at word boundaries as well. The elision occurs in rapid colloquial speech when followed by linking /r/ + weak vowel,

e.g. "after a while" /ˈɑ: ftərəwaɪl/,

"as a matter of fact" /æ zəˈmætrəvˈfækt/,

"father and son" /ˈfɑ:ðrənˈsʌn/.

Many words, which are usually weakly stressed in speech, are also obscured and some of the sounds that constitute them are elided. If the elided sounds are vowels or syllabic sonorants, the syllabic structure of such words is modified.

E.g. "I had" or "I would" are often pronounced as /aɪd/,

"it is" as /ɪts/,

"he will" as /hi˙l/,

"he is" or "he has" /hi˙z/,

"This is a fine day!" as /ðɪssəˈfaɪn `deɪ/.

4. Modifications of the Accentual Structure of Words in Speech

The accentual structure of English words is generally retained in speech. But it appears that English is a language in which a relatively high percentage of words change their accentual structure in the speech continuum under the influence of rhythm.

Modifications of the accentual structure (or shifting of stress) in English involves words that in isolation are double-stressed. In English double-stressed words may be either simple, or compound.

e.g. ˈdisaˈgree ˈafterˈnoon

ˈthirˈteen ˈwell-ˈknown

ˈsixˈteen ˈso-ˈcalled

ˈinˈcapable ˈgrey-ˈhaired

When in the speech continuum such words are preceded or followed by a strongly stressed syllable, their accentual structure is modified,

e.g. ˈthis afterˋnoon ˈafternoon ˋtea

Itˋs ˈnine ˌthirˋteen ˈthirˌteen ˋpence

ˈnot ˌfull-ˋgrown a ˈfull-ˌgrownˋman

Thus, in a speech continuum there can be observed a variety of phonetic phenomena, which affect the sound structure, the syllabic structure and the accentual structure of words constituting the speech continuum.

The pronunciation of one and the same word uttered in the speech continuum will not be identical if its phonetic environment and phonetic position differs. The neighbouring sounds, the rhythmic patters, the degree of prominence, the speed of utterance and other factors affect the extent of the phonetic modifications, such as accommodation, assimilation, reduction, elision, liaison and shifting of stress. This is why; the extent of these phonetic modifications varies in different styles of pronunciation: in rapid and careless colloquial style the modifications that a word may undergo are much greater than those that occur in careful styles of pronunciation.

Besides, the pronunciation of a word with special prominence in the utterance (the nucleus of the utterance) is modified less than the pronunciation of the same word when weakly stressed.

Therefore, the phonetic modifications of the sound structure, the syllabic structure and the accentual structure of a word in the speech continuum depend on

a) the phonetic environment of the word,
b) its phonetic position in the speech continuum,
c) the prosodic features of the speech continuum the word occurs in (the main prosodic features being the pitch pattern, the tempo of speech, the rhythmic pattern, the degree of prominence).

At the same time, the extent of phonetic modifications is regulated by the orthoepic norm of the language and intelligibility, which prevent modifications that may hinder intercommunication.

The investigation of the phonetic modifications that occur in the speech continuum reveals the phonetic tendencies of a language. This is one of the main reasons why there is a need for further investigation of this problem, especially of the influence of the prosodic features upon the sound structure of speech which has received almost no treatment at all.

Self-control questions

1. What are three phases of speech sounds?
2. Explain the phenomenon of adaptation.
3. What types of accommodation do you know?
4. Explain the phenomenon of assimilation.
5. What types of assimilation do you know?
6. Explain two degrees of assimilation.
7. What is progressive and regressive assimilation?
8. What is elision?
9. What do you understand by liaison?
10. Explain modifications of the syllabic structure of speech.
11. How do you understand by modifications of the accentual structure of words?

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Unit 7

The Syllabic Structure of English

Questions to be discussed:
1. The Definition of a Syllable
2. Theories of Syllable Formation and Syllable Division
3. Syllable Formation and Syllable Division in English
4. The Syllable Structure of English
5. Functions of Syllable
6. The Phonological Status of Factures

1. The Definition of a Syllable

In the speech continuum sounds are not pronounced separately "by themselves". The final and the initial phases of the articulation of two neighbouring sounds interpenetrate. So it is practically impossible to draw articulatory and, consequently, acoustic boundaries between them. Sounds are the smallest phonetic units resulting from the linguistic analysis as representatives of phonemes, though they are not articulatory ones.

The minimal pronunciation (articulatory) unit is the syllable which may consist of sound or a group of sounds. The notion of the syllable is one of the fundamental notions of phonetics.

The problem of the syllable in modern phonetics is the problem of syllable formation, syllable division and the phonological status of the syllable. Phoneticians are not always in agreement in their definition of the syllable. This is due to the fact that the syllable may be defined in different ways – functionally, physiologically, acoustically.

According to the oldest conception, expressed by the ancient Greek scholars, the syllable consists of a vowel, surrounded by consonants. The function of the vowel in the syllable is to serve as its nucleus, or peak. The function of the consonants is to be the margins of the syllable. Hence the name consonant, which means "sounding with something" (con + sonorant), incapable of sounding alone. This definition of the syllables is inapplicable to all languages. There are languages where a syllable may consist of consonants only. For instance, in Czeck – "krk" (neck), in English – the second syllable of words like "garden" /gɑ:-dn/, "needn`t" /`ni:-dnt/, "fasten" /fɑ:-sn/, lighten" /laɪ-tn/.

2. Theories of Syllable Formation and Syllable Division

One of the physiological theories is the expiratory, or chest pulse, theory. It defines the syllable as a sound or a group of sounds that are pronounced in one chest

pulse, accompanied by increases in air pressure. There are as many syllables in a word as there are chest pulses (expirations) made during the utterance of the word. Each vowel sound is pronounced with increased expiration. Consequently, vowels are always syllabic. Boundaries between syllables are in the places where there occur changes in the air pressure. The American phonetician R.H. Stetson, who tried to prove the validity of the expiratory theory, measured the action of the respiratory muscles and pointed out the existence of a relationship between syllables and the stimulation of the respiratory muscles. But later scholars doubted Stetson's results. A.C. Gimson notes that it is doubtful whether a double chest pulse will be evident in the pronunciation of juxtaposed vowels as, for instance, in "seeing" /si:-ɪŋ/, though such words consist of two syllables. It is impossible to explain all cases of syllable formation on the basis of the expiratory theory, and therefore, to determine boundaries between syllables.

To study the physiological mechanism of syllable formation a further investigation was carried out. It was done in Edinburgh by P. Ladefoged, M. Draper and D. Whitteridge. The results of the electromyographic experiments show that the mechanism of syllable formation and syllable division is very complicated and involves the work of a greater number of muscles than were described by Stetson.

Another theory of the syllable is the relative sonority theory, or the prominence theory, created by the Danish phonetician Otto Jespersen. This theory is based mainly on auditory judgments on the prominence of speech sounds, e.g. their sonority, or audibility.

Pronounced with uniform force, length and pitch, speech sounds differ in prominence (sonority). The most sonorous are vowels, less sonorous are sonants and the least sonorous are noise consonants. Otto Jespersen classifies sounds according to the degree of sonority in the following way (beginning with the most sonorous):

1. Open vowels /æ, ɔ, ɑ:, ɔ:/
2. Mid-open vowels /e, ɜ:, ə, ʌ/
3. Close vowels /i:, ɪ, u:, ʊ/
4. Sonants /r, l, m, n, ŋ, w, j /
5. Voiced fricatives /v, ð , z, ʒ/
6. Voiced stops /b, d, g/
7. Voiceless fricatives /f, θ, s, ʃ/
8. Voiceless stops /p, t, k/

In a syllable sounds are grouped around the most sonorous ones which are syllable-vowels (and sometimes sonants). They form the peaks of sonority in a syllable. One peak of sonority (prominence) is separated from another peak by sounds of lower sonority. So, the syllable is an arc of sonority. The number of syllables is determined by the number of peaks of prominence. Thus in the word /melt/ "melt" there is one peak of sonority /e/ and the word is monosyllabic. In the word /metl/ "metal" there are two peaks of sonority /e/ and /l/ separated by the least sonorous /t/, and, consequently, there are two syllables.

Here are some examples to illustrate the sonority theory: play /pleɪ/, tidy /taɪdɪ/, frighten /fraɪtn/, wound /wund/, wooden /wudn/.

But there are syllables in English and in Russian that are in contradiction with Jespersen's theory.

e.g. star /stɑ:/, skate /skeɪt/, next /nekst/.

In these words the sound /s/ is more sonorous than /t/ and /k/ and forms the second peak of sonority. Yet, the words are monosyllabic.

It is evident that the relative sonority theory does not explain the mechanism of syllable formation. It is based only on our perception of a syllable as varying sonority. Neither is it helpful in determining the position of the syllabic boundary when there are consonant clusters between syllabic peaks, as in extra /ekstrə/, admit /ədmɪt/, and when utterance have identical phoneme sequences, as in "an iceman" /ən aɪsmæn/ and "a nice man" /ə naɪs mæn/, "an aim" /ən eɪm/ and "a name" /ə neɪm/, "some addresses"/sʌm ə `dresɪz/ and "summer dresses" /sʌmə dresɪz/.

Nevertheless, the relative sonority theory has been accepted by a number of phoneticians, the British phonetician Daniel Jones among them.

The syllable theory of the Russian phonetician Avanesov has much in common with Jespersen's theory.

The Swiss linguist Ferdinan de Saussure formulated a definition of the syllable on the basis of articulation. Syllable formation is conditioned by the degree of opening of the sounds. If we examine Jespersen's table of sonority we find that the degree of opening coincides with the degree of sonority.

So, independently of Jespersen, Saussure pointed out that the nucleus of the syllable is the most open sound.

This theory cannot be applied to all cases either.

Of all physiological theories of the syllable, the most wide-spread among Russian linguists is the muscular tension (or the articulatory effort) theory which is known as Scherba's theory.

According to the muscular tension theory a syllable is an arc of muscular tension. The energy of articulation increases at the beginning of a syllable reaches its maximum with the vowel (or the sonant) and decreases towards the end of the syllable. Vowels are always syllabic. Sonants may be syllabic when they are pronounced with renewed muscular tension, i.e. with new articulatory energy. So, the formation of a syllable is explained by the variation in muscular tension. The boundaries between syllables are determined by the occurrence of the lowest articulatory energy.

Scherba has analyzed the character of consonants according to the distribution of articulatory energy in them. The following three type of consonants were revealed:

1) Initially strong consonants, in the articulation of which the beginning is stronger while the end is weaker. They occur at the end of a closed syllable.

E.g. ɪ t, ʌ s, pɪ n, sæ d, pɑ: t

2) Finally strong consonants, in the articulation of which the beginning is weak while the end is more energetic. They occur at the beginning of a syllable.

E.g. m i:, ta ɪ, p *a*:t, s æd

3) Double-peaked consonants, in the articulation of which both the beginning and the end are energetic whereas the middle is weak. Acoustically they produce the impression of two consonants. These consonants occur at the junction of words or morphemes.

E.g. pe nn aɪf, ðæ tt aɪm, mɪ dd eɪ

If we know the type of consonant in such sequences as /ənaɪs haus/ or /s∧mədresɪz/ we can say where the syllabic boundary is. If in /ənaɪs haus/ the sound /n/ is initially strong, the syllabic boundary is after the /n/ - /ən ˈaɪs `haus/. If the sound /n/ is finally strong, the boundary is before it - /ə ˈnaɪs `haus/. In other words, if there is a new onset of muscular tension on the sound /n/, the latter belongs to the second syllable, and if the new onset of articulatory energy is on /aɪ/, the sound /n/ belongs to the first syllable.

N.I. Zhinkin has put forward a new theory based on physiological principles. It is called "the loudness theory". The syllable is defined from the point of view of both speech production and speech perception (the articulatory and auditory aspects). On the perceptual level a syllable is an arc of actual loudness, not the inherent loudness of speech sounds. The experiments carried out by Zhinkin, showed that the organ immediately responsible for the formation of a syllable is the pharynx. Both the narrowing of the pharyngeal passage and the increasing muscular tension reinforce the actual loudness of the vowel so that it becomes the peak of the syllable while the loudness of the marginal consonants is lower. Thus on the speech production level the correlate of "the arc of loudness" is the arc of articulatory effort.

The acoustic aspect of the syllable has been studied by E. Zwirner, R. Jacobson and M. Halle. According to the results obtained, the peak of the syllable (a vowel or a sonant) has higher intensity than its marginal consonants and in many cases a higher fundamental frequency. Perceptually, it is louder and higher in pitch. These acoustic features easily agree with the physiological definition of the syllable as an arc of articulatory effort (or energy). If the tension of the sound production mechanism is increased, it is expressed acoustically by a strengthening of the intensity of the sounds produced and perceptually it is characterized by higher loudness.

The problem of the phonological status of the syllable is a disputable one. Linguists recognize the syllable as a phonetic unit. But is it at the same time a phonological unit? Does it perform linguistic functions and if so what are these functions? The latest works on the syllabic structure of Russian, English and other languages show that the syllable cannot be treated as a phonetic unit only.

Like the phoneme the syllable is an abstraction, which is realized in speech in phonetically definite units. In each language there is a limited number of syllable structures. Like the phoneme the syllable is meaningless. But it is significant in the formation of meaningful units.

3. Syllable Formation and Syllable Division in English

As stated above the syllabic structure, as a component of the phonetic system, consists of syllable formations and syllable division which are in close relationship to each other. All theories of the syllable have more often attempted to explain the syllable formation, but the problem of syllable division has not been thoroughly investigated, which is both theoretically and practically important in language description. Nevertheless, it is possible to formulate some general rules of syllable formation and syllable division in English.

In English a syllable is formed by a vowel (monophthong or diphthong) alone or in combination with one or more consonants. E.g., ore /ɔ:/ , more /mɔ:/ , at /æt, ət/, cap /kæp/, consideration /kənsɪdə-reɪ-ʃn/ etc. In the English words bottle /bɔt-l/, batten /bæt-n/, rhythm /rɪð-m/ the final sonorants (lateral /n/ and nasal /m/, /n/ and sometimes /ŋ/) may form separate syllables. But the English sonorants /w/, /j/, /r/ cannot form syllables. Thus, we can distinguish syllabic /m, n, l/and non-syllabic /r, j, w/ sonorants.

In English a syllable formation and syllable division depend on many factors among which the phonotactic rules, which determine the combination of phonemes or clusters and the nature of adjoining them, are regarded very important. The permissible clusters of consonants are, in part, conditioned by historical but chiefly by physiological factors. These include the following: 1) whether two phonemes which might adjoin in the same cluster have the same articulator; 2) whether they have the same type of articulation; 3) whether they are both voiced or voiceless; 4) whether they have the same or varying conditions of structure; 5) whether, especially in phonemes of the same articulation type, one is slightly more prominent than the other. Thus, /r/, an apical consonant, is never preceded by /s/, also apical stops do not combine initially with stops, etc.

Syllabic consonants occur when a syllable ends in /t/, /d/ or /n/ and the next syllable is unstressed and contains /l/, /n/, or /m/. If the other consonant clusters except C + /l/, /n/, /m/ occur at the end of words they are regarded to be non-syllabic. This conditions the existence of the contrast “no syllable vs. a syllable”. E.g. cattle /kæt-l/ - cats /kæts/, battle /bæt-l/ - bats /bæts/, muttony /m∧t-nɪ/-matches /mætʃz/ etc. Thus, the syllable formation and syllable division in English have a phonological (distinctive) function. From the articulatory point of view the clusters /t/, /d/ + /l/, /n/ are formed with the tip of the tongue touching the tooth ridge, i.e. they have the similar type of articulation. Clifford H. Prator, Jr. points out two other cases of the occurrence of syllabic consonants in rapid conversational speech where stops and continuants have the same points of articulation: (1) between /p/ or /b/ and /m/ as in stop’em /stop

them/stɔp-m/; and (2) between /k/ or /g/ and /n/, as in I can go /aɪ kŋgəu/. The English consonants are not syllabic when they follow vowels. E.g. Sweden /swɪdən/, heighten /haɪtən/, lantern /læntən/ etc.

The following final clusters, in which the second member constitutes sonorants /m/, /n/ and /l/ may form separate syllables: /-tm/, /- ðm/, /-sm/, /-zm/, /-lm/: bottom /bɔt-m/, rhythm /rɪð-m/, blossom /blɔsm/, prison /prɪzn/, film /fɪlm/; /p, b, t, d, k, g, ʤ, f, v, θ, s, z, ʃ ,l/ ++ /n/: open /əu-pn/, ribbon /rɪ-bn/, eaten /i:-tn/, garden /gɑ:-dn/, darken /dɑ:-kn/, dragon /dræ-gn/, region /ri:-ʤn/, often /ɔ-fn/, seven /se-vn/, earthen /ɜ:- θn/, lesson /le-sn/, season /si:-zn/; /p, b, t, d, k, g, ʧ, ʤ, v, f, s, z/ +(l): people /pi:pl/, table /teɪ-bl/, settle /se-tl/, middle /mɪd-l/, cycle /saɪ-kl/, bugle /bju:-gl/, racial /reɪ-ʃl/, cudgel /kʌʤl/, rifle /raɪ-fl/, civil /sɪ-vl/, castle /kɑ:-sl/, drizzle /drɪ-zl/, special /speɪ-ʃl/.

In some cases two syllabic consonants may occur in the derivatives of English words. E.g. national /næʃnl/, regionally /rɪʤnlɪ/ etc.

Acoustically, the syllabic feature of /n/ and /l/ may be characterized by relative duration and intensity, which are interpreted as their prosodic properties. As to the distribution of the non-syllabic consonants, it is conditioned by the occurrence of /ə/ or /ɪ/ sounds between the two elements of the clusters cited above, whereas their omission is necessary for the formation of syllables.

None of the above clusters exist in final position of Uzbek words. On the contrary, in such Uzbek wordforms as qoldi “stayed”, senga “for you”, tomda “on the attic”, bordi “went” etc. combinations of /l, m, n, p/ + S appear which are divided into two syllables. The consonants /l, p, y, v, n, m, p/ cannot form syllables in Uzbek isolately. When they occur before vowels, they signal the existence of a syllable division before or after them. E.g. bola /bo-la/ “a child”, qani /qa-ni/ “where”, borgan /bor-gan/ “gone”, qorda /qor-da/ “on the snow”, uyga /uy-ga/ “to the house”, suvda /suv-da/ “in the water”, ko’rdingmi? /ko’r-ding-mi/ “have you seen?” etc. All Uzbek vowels are freely used before or after consonants and it is an important factor of syllable division and non-syllabic character of the consonants /l, m, n/. Thanks to this difference there may be cases of syllabic interference. The syllable division may depend on the free and checked character of English vowels. All the long monophthongs, two diphthongoids and diphthongs of English are regarded free, as they occur both in open and closed syllables, while all the checked vowels occur in a closed syllable. The free vowels may be separated from the word-final syllabic sonorants, when the latter form separate syllable with the preceding consonants, e.g. cable /keɪ-bl/, people /pi:-pl/, garden /gɑ:-dn/. When the checked vowels are separated from other vowel sounds by only one consonant sound, the exact determination of the syllabic boundary is a moot point. Theoretically this means that the syllable division can only be either within or after the intervocalic consonant and never before it, since the vowel is checked by it, and the syllable is closed. Matter /mætə/, sitter /sɪtə/,

manner /mænə/, lesser /lesə/ etc. Though after the stressed checked vowels of such words as middle, sunny, flannel, the syllable division regularly occurs before the consonants: /`mi-dl/, /`s∧-nɪ/, /flæ-nl/. In many English words the syllable division automatically coincides with the morphemic boundary. E.g. take over /teɪk` əuvə/, daytime /`deɪtaɪm/, over-dressed /`əuvədrest/. Such a coincidence of syllabic and morphemic boundaries often occurs in English complex and compound words.

G.P. Torsuyev points out that there are many cases of the variation of phonemic structure of English words, which are conditioned by different types of assimilation and reduction. For example, /mpt/→/mt/: attempt, /kən/→/kn: bacon, /nʧ/→/nʃ/: bencher, open /əup(ə)n/, total /təut(ə)l/ etc. G.P. Torsuyev states that the articulatory transition is constant in syllable boundary but all other features of a syllable may be varied by the influence of different phonetic factors.

There are also cases when the syllable boundary is within the consonant sound in an intervocalic position or within the C + sonorant: cluster in word-medial position. E.g. ever /ev-və/, difficult /dɪfɪ-k(ə)lt/, sunny /s∧−nɪ/, middling /mɪdl-lɪŋ/. A similar case may be noticed in some Uzbek words: olla /ol-la/ “black”, Ashirmat /Ashir-mat/ “a name of a man”. Incidentally, such cases appear as the result of metanalysis of syllables into two syllables which often occur in rapid pronunciation, but they are theoretically doubtful.

The syllabic structure of English is very complex and we have analyzed some of its general problems of theoretical importance.

4. The Syllabic Structure of English

The syllabic structure of English has certain peculiarities that distinguish it from other languages. They are as follows:

1. Syllabic sound in English are not only vowels, but also sonants /l, n, m/, when they are preceded by a noise consonant.

E.g. /teɪbl, gɑ:dn, bi:tn, fɪlm, prɪzm, s∧dnlɪ/

The sonants /w, r, j/ are never syllabic.

2. As to the type of sounds constituting the syllable (vowel-V, consonant-C) there exist 23 syllable structures in the English language.

Depending on the position of the vowel, which is the peak of the syllable, and that of the consonants, which form the margins of the syllable, we distinguish the following types of syllables:

Open syllables, when there is no consonant after the vocalic peaks, (CV) e.g. /fa:/ far, /taɪ/ tie, /si:/ sea.

Closed syllables, when the vocalic peak is followed by a consonant, (VC) e.g. /a:t/ art, /sɪt/ sit, /bɪl/ bill.

Covered syllables, (CV(c)), when the peak is preceded by a consonant, e.g. /lɔŋ/, /ʃɔ:/ shore.

Uncovered syllables, (v(c)), when there is no consonant before the peak, e.g. /æpt/ apt, /i:t/ eat, /ɪn/ in.

The fundamental syllable type in English is the closed syllable, whereas in Russian it is the open syllable. The most frequent type in English is CVC.

3. Consonant clusters are very characteristics of the syllable structure of English, 19 structures out of 23 have consonant clusters.

The largest possible initial number of consonants in a cluster is 3. Final clusters contain up to 4 (5 are very rare). Consonant clusters present particular interest in the studies of the syllable because it is due to consonants that the structure of the syllable varies.

4. English checked vowels (i.e. all historically short vowels under stress) occur only in a closed syllable. They cannot occur at the end of a syllable as there is no tailing off in articulatory tension. Checked vowels are always followed by initially strong consonants.

E.g. bed /bed/, Sunday /s∧n-dɪ/, hot /hɔt/, put /put/.

English free vowels (historically long monophthongs, diphthongs and unstressed short monophthongs) can occur both in the open and in the closed syllable, because the end of free vowels is weaker than the beginning.

E.g. car / k*ɑ*:/, cart /k*ɑ*:t/, tea /ti:/, teeth /ti:θ/, tie /taɪ/, tide /taɪd/, Sunday /s∧n-dɪ/, forehead /fɔrɪd/.

The character of the end of a vowel, i.e. the retention or the weakening of articulatory energy is important for determining the rules of syllabification in English.

5. The syllable boundary never occurs after a checked vowel. It lies after the following consonant, as in.

E.g. twenty /`twen-tɪ/, quickly /kwɪk-lɪ /, hotly /hɔt-lɪ/, /gud-nɪs/ or within it, if it is the only consonant between the checked vowel and the succeeding vowel.

E.g. letter /letə/, bigger /bɪgə/, hotter /hɔtə/, shilling /ʃɪlɪŋ/.

The preceding and following vowels attract this consonant and the consonant is split into two. In speech the consonant forms a close link between the two syllables. It is especially important to know the point of syllable division in such English words, because similar Russian words are divided into syllables in a different way. Cf.

English		Russian
/sɪtə/	sitter	/с’итъ/ сито
/letə/	letter	/л’этъ/ лето
/r∧nə/	runner	/ранъ/ рана

If a checked vowel is separated by one consonant from a syllabic sonant the boundary between the two syllables is also within the consonant.

E.g. /lɪtl, kɔtn, fætn, bɪtn, rɪðm/

6. When a free vowel is separated from a succeeding stressed vowel by only one consonant sound, the syllable in which such a vowel occurs is always open.

E.g. idea /aɪ-`dɪə/, cartoon /k*ɑ*:-`tu:n/, erect /ɪ-`rekt/

When a post-stressed free vowel is separated from a succeeding vowel by a single consonant it is hardly possible to determine the point of syllable division – whether it is before, within or after the intervocalic consonant. In all probability it is before the consonant.

E.g. family /`fæmɪlɪ/, policy /`pɔlɪsɪ/, economy /ɪ`kɔnəmɪ/, possibility / ˌpɔsɪ`bɪlɪtɪ/

But the establishment of the place of syllable division is of no practical importance being of academic interest only.

7. When there is a cluster of consonants between two vowels the place of the syllabic boundary is conditioned by whether this cluster occurs word-initially or not. If it does occur at the beginning of words, the syllabic boundary is before it. If it doesn't, the boundary is between the consonants. For instance, the cluster /gr/ is used word-initially in English, therefore it can occur at the beginning of a syllable and the syllabic boundary is before the cluster.

E.g. agree /ə`gri:/, regret /rɪ`gret/.

The clusters /dm/, /dv/ do not occur word-initially and cannot occur at the beginning of a syllable. The syllabic boundary is, therefore, between the consonants constituting the clusters.

E.g. admit /əd`mɪt/, admire /əd`maɪə/, advice /əd`vaɪs/, admission /əd`mɪʃn/.

When two vowels are separated by more than two consonants as for example in /ekstrə/ the boundary may be both before /s/ and /t/ because both /str/ and /tr/ occur at the beginning of words.

8. The so-called triphthongs in English are disyllabic combinations.

E.g. /`saɪ-ənz/ sciences, /`flau−ə/ flower, /`vau−əl/ vowel.

9. The structure of the stressed syllable in English is different from the structure of the unstressed syllable. The main difference is in the peak. The peak of the stressed syllable is always vocalic. In the unstressed syllable the peak may be a vowel or a sonant. When the peak of the stressed syllable is checked, the syllable must be "closed" by a consonant. The structure of the stressed syllable (open and closed) may be presented by the following formula.

a) (C)v(c) - where v is a historically long monophthong or a diphthong and the brackets show that the consonant may be absent;

b) (C)vc - where v is a historically short monophthong.

To sum up, we can say that syllable formation and syllable division can more usefully be described with reference to the structure of an individual language since each particular language has its own syllabic structure.

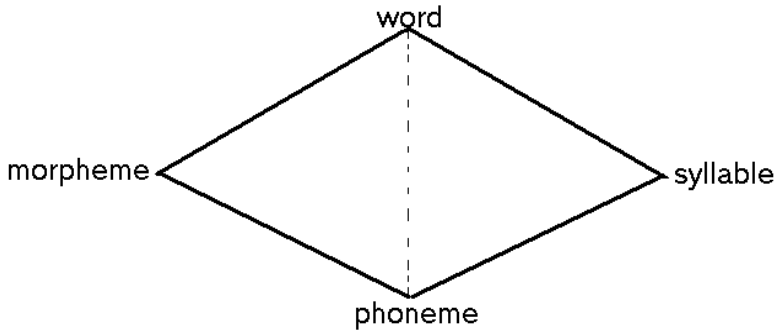
5. Functions of Syllable

As a linguistic unit the syllable performs the following functions.

1. The constitutive function. The syllable is a constituent element of larger units – words, rhythmic group, utterances. Two aspects of this function can be emphasized. On the one hand the syllable is a unit which segmental phonemes are materialized and perform their functions. On the other hand, within a syllable (or a number of syllables) prosodic (or suprasegmental) features of speech are also realized. These are the phenomena of stress, pitch, tempo, etc. Syllables may be stressed and unstressed, long or short, high- or low-pitched, etc. The prosodic characteristics of the syllable depend on its position in an utterance and on its function, i.e. on whether it is the first stressed syllable (the head) of the utterance, the nuclear syllable (the nucleus), the initial or the final unstressed syllable (the pre-head or the tail).

Thus the syllable is a unit which serves to convey both segmental phonemes and prosodic phenomena of speech, thus constituting hierarchically higher units.

In the system of language units the syllable can be placed between the phoneme and the word. The relations between the units can be illustrated in the following diagram.



Being a semantic unit, the word can be regarded at the same time as a phonetic structure within which several substructures may be distinguished: the sound (phonemic) substructure, the syllabic substructure and the accentual substructure.

In forming words and utterances the syllable performs the delimitative function which is inseparable from the constitutive function. Some syllables can occur only word-initially and others only word-finally: thus marking the boundaries between words. For instance, the syllables /dn/, /zl/, /stl/ cannot occur at the beginning of English words, and can only occur at the end or in the middle of words /gɑ:-dn/, /pou−stl/.

The distribution and grouping of phonemes in syllables and words are fixed in each individual language. They are dealt with in the area of phonology which is called “phonotactis”

2. The distinctive function. The syllable is a unit that serves to differentiate words. It has been mentioned that phonemes exist and function within the syllable. Therefore words are actually differentiated by the syllable as a whole, as one articulatory and perceptible unit. For instance, the words /ri:də/ “reader” and /li:də/ are distinguished not only by /r/ and /l/ phonemes but also by the syllables /ri:/ and /li:/.

Such words as /gɑ:dn/ “garden, /gɑ:dz/ “guards”, /bi:tn/ “beaten”, /bi:ts/ beats are distinguished not only by the phonemes /n/ versus /z/ and /n/ versus /s/ but also by their syllables as bisyllabic and monosyllabic words.

V.A. Vassilyev gives the following example where syllabicity alone is responsible for the differentiation of the words:

/laɪtnɪŋ/ lightening (освещение) and /laɪtnɪŋ/ lightening (молния).

V.A. Vassilyev says that the existence of such pairs of words makes it possible to consider syllabicity the only distinctive feature and, therefore, it may be considered a separate phonological unit – the “syllabeme”.

Syllable division (syllabification) is very important too in distinguishing words and utterances.

The distinctive role of syllabification is illustrated by examples like /naɪtreɪt/ nitrate - /naɪtreɪt/ night-rate, /ə neɪm/ a name – /ən eɪm/ an aim, /wɪloun/ we’ll own – /wɪ loun/ we loan, /aɪ skri:m/ I scream – /aɪs kri:m/ ice-cream, /ənaɪs haus/ a nice house – /ənaɪshaus/ an ice house, /aɪsɔ:hər aɪz/ I saw her eyes – /aɪ sɔ:hər aɪz / I saw her rise.

Due to the distinctive importance of syllable division the syllabic boundary is often regarded as a separate phonological unit – juncture phoneme.

There are two types of juncture: 1) open; 2) close. Open juncture (or open transition, or plus juncture, according to H.A. Gleason) occurs between syllables and may also be called intersyllabic juncture. This juncture is signaled by a new articulatory effort. Thus, in “we’ll own” /wɪl+oun/ the open juncture is between /l/ and /ou/ and in “we loan” / wɪ+loun / it is between /ɪ/ and /l/.

Close juncture occurs between sounds within one syllable, i.e. within one articulatory arc. Therefore the transitions form one sound to another are closer within the syllable than between the syllables. Thus, in “we loan” / wɪ loun / the close juncture is between /l/ and /ou/, /ou/ and /n/.

This juncture may also be called intrasyllabic juncture.

The latest acoustic investigations of juncture show that the factors determining the presence of a juncture are the duration of the sounds, their intensity and formant transitions. Thus, according to the data obtained by I. Lehiste the initial /n/ in “a nice man” is longer than the final /n/ in “an iceman”. The prejunctural /n/ has falling intensity, while the postjunctural /n/ has rising intensity. Formant transitions of /n/ and /ɑ:/ are different in the contrasted pairs. While the phonetic realization of open juncture is desorbed in approximately the same terms, there is less uniformity in the phonological interpretation of the phenomena. The following interpretations of open juncture appear to be current.

1. The open juncture is a segmental phoneme.
2. The open juncture is a suprasegmental phoneme.
3. The open juncture is a phoneme in its own right – a “juncture phoneme”.
4. Juncture is a contrastive feature of high-level units but not a phonological unit in its own right.

As a result of a comprehensive experimental investigation of juncture I. Lehiste has come to the conclusion that the status of a phonological unit is attributed to a bounded sequence, (a word, or a group of words), and not to a juncture.

Further investigation of junctures of all kinds between words, utterances and parts of utterances (including pauses) may help to clarify the junctures of the syllable in an utterance and contribute to the solution of the problems of speech segmentations, rhythm and other problems of prosody. The problem of juncture can also be studied from the point of view of interpenetration between the levels of the language – phonology, morphology and syntax, i.e. from the point of view of what phonological, morphological and syntactical units are separated by junctures as phonetic phenomena.

The indemnificatory function of the syllables is conditioned by the bearer's perception of syllables as entire phonetic units with their concrete allophones and by the perception of the syllabic boundaries. This is why shifting of syllabic boundaries, especially at the junction of words as, for instance, in /mɔ:rouvə/ "more over" instead of /mɔ:r ouvə/ and in /sɪ-tɪ/ "city", /ʃɪ-lɪŋ/ "shilling" instead of /sɪtɪ/ and /ʃɪlɪŋ/ produces a strong phoneme accent in English speech. This should be borne in mind by Russian learners of English.

6. The Phonological Status of Junctures

The American linguists use the term **juncture phoneme** to indicate the distinctions in the syllabic boundary at the junction of words and morphemes. We do not use the term "juncture phoneme" but suggest the term "juncture" which is sufficient to analyse open and closed transitions between vowels and consonants in the syllabic boundary of words and morphemes. Phonemes are segmental units of language, particularly, units of the phonological level of a language. As to syllables, stress and intonation they are suprasegmental or prosodic features of language and as phonological units they exist only in the phonological level of a language. Thus, phonemes, which exist in the form of speech sounds and suprasegmental units or prosodemes, are not equal as to their function in a language. Therefore, we do not shade the terms **suprasegmental phonemes, juncture phonemes, the accentual phonemes** etc. which are used by some linguists.

The syllable division is phonologically distinctive in English. The position of the syllable boundary at the junction of words or morphemes, which are often accompanied by differences in length, pitch and rhythm can distinguish the meaning of words and word combinations. Such distinctive units are termed "junctures" which may be of two types: **open juncture** (+) and **close juncture** (-). Thus, in **a tall** /ə`tɔ:l/ there is an open juncture between /ə/ and /t/ which may be contrasted to the closed juncture in **at all** /ət`ɔ:l/ in which /t/ and /ɔ:/ are linked more loosely than in the previous case. There are other examples illustrating the difference in junctures; **they'd rest – they dressed, not the terrain – not that a rain, in to play – into play, some**

ice – some mice, its tips – it stips, that stop – that's top etc. The distinctive function of the open juncture is rather limited in English.

The following examples may illustrate the phonological function of junctures in Uzbek and Russian: **yettita kampir** "seven old women" – **yettita kam bir** "seven minutes to one" when (п) becomes voiced by the influence of (m) in "**kampir**" ("old woman"), **yotoq oldi** "got the place in hostel" – **yota qoldi** "went to bed", **к Ире** "to Ira" – **Кире** "to Kira", **Виталию** "to Vitaly" - **в Италию** "to Italy".

In **pea stalks**, open (i.e. as before a pause) juncture relates to /s/ and close, (i.e. as within a word) juncture relates /s/ to /t/, with relevant phonetic cues. If the two utterances were not distinguished in such terms, it would be necessary to postulate, for instance, a phonetic opposition between the full and reduced forms of /i:/ and between the aspired and uninspired types of /t/, the latter is not a distinctive feature in English.

A.C. Gimson and D. Jones have given the following in which phonetic cues may mark word boundaries: /ə`neɪm/ **a name** (relatively long /n/, associated with stress onset and possible pitch change);

an aim (relatively short /n/, stress and pitch change beginning in /eɪ/).

/ðætstʌf/ - **that stuff** (uninspired /t/, strong /s/)

/ðæts`tʌf/ - **that's tough** (aspired /t/, weaker /s/)

/ðə weɪtəkʌtɪt/ - **the waiter cut it** (reduced /eɪ/, rhythmic group /ðə `weɪtə`kʌt ɪt);

the way to cat it (long /eɪ/, rhythmic group /ðə weɪ tə kʌt ɪt);

/hau streɪnd/ - **how strained** (long /au/, strong /s/, little devoicing of /r/);

house trained (reduced /au/, weaker /s/, devoiced /r/).

Similarly, simple word entities may be distinguished from words composed of separable morphemes;

/haɪnɪs/ - **highness** (/aɪ/ and /n/ in close juncture, rhythmical shortening of /aɪ/);
high-ness (/aɪ/ and /n/ in open juncture, full length of /aɪ/);
/naɪtreɪt/ **- night-rate** (/t/ and /r/ in open juncture of relationship, little devoicing of /r/);
nightrate (/t/ and /r/ close juncture, devoiced /r/).

The given examples illustrate the phonological status of junctures in modern English. In defining junctures it is necessary to take into consideration the stages of transition between the sound sequences and establish the combinatory changes taken place in the syllabic boundary at the junction of words and morphemes.

Self-control questions

1. What is a syllable?
2. What theories of syllable formation and syllable division do you know?
3. What is relative sonority theory?
4. What is the essence of the expiratory theory?
5. Explain L. V. Sherba's 3 types of consonants theory.
6. What types of structure do you know?
7. What peculiarities of syllabic structure do you know?
8. What types of syllable do you know?
9. Explain peculiarities of syllable formation and syllable division.
10. What can you say about the distinctive function of syllable?

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Unit 8

Word Stress in English

Questions to be discussed:

1. Stress as a Suprasegmental Unit
2. Types of Stress in Languages
3. Approaches to Explain Nature of Stress
4. Degrees of Stress
5. Accentual Structure of English Words
6. The Place of Word Stress in English
7. Functions of Word Stress
8. Accentual Tendencies in English

1. Stress as a Suprasegmental Unit

Stress is a prosodic (suprasegmental) phenomenon, which characterizes phonetic units higher than segmental phonemes. It can characterize syllables, rhythmic groups, intonation groups and utterances.

Linguists generally distinguish between two types of stress: word stress and sentence stress.

Word stress is a feature of the phonetic structure of a word as a vocabulary unit, i.e. of a word pronounced in isolation. Word stress, as all other phonetic phenomena, can be described and analyzed on three different levels: the auditory level, the acoustic level and the linguistic level.

The auditory impression of word stress is that of prominence. Therefore, on the auditory level, word stress is generally defined as the greater degree of special prominence given to one or more syllables in one and the same word.

But it should be emphasized that word stress refers to the relative prominence of all the syllables of a word. One or more syllables of the word may be marked by different degrees of prominence as compared to the rest of the syllables of the same word. There may be one prominent syllable in a word (as in “mother’), two equally prominent syllables (as in “ˈmisbeˈhave”), two unequally prominent syllables (as in “eˌxamiˈnation”) or more prominient syllables (as in “ˈunreˌliaˈbility”). And this correlation of degrees of prominence in the syllables of a word forms the accentual structure of the word.

Monosyllabic words, therefore, have no accentual structure, and they cannot be said to have, by themselves, one degree of stress rather than another. But it is generally agreed that in isolation a monosyllabic word is stressed.

The accentual structure of a word is generally perceived without difficulty. People easily distinguish between “ˈsubject” and “subˈject”.

Auditory analysis shows that the effect of prominence may be produced by a greater degree of loudness, greater length of the stressed syllabic, some modifications in its pitch and quality.

Investigations of the acoustic nature of word stress show that the perception of prominence may be due to definite variations or the following acoustic parameters: intensity, duration, frequency, formant structure. All these parameters generally interact to produce the effect of prominence.

2. Types of Stress in Languages

In different languages stress may be achieved by various combinations of these parameters. Depending upon which parameter is the principal one in producing the effect of stress, word stress in languages may be of different types.

There are languages with dynamic word stress. Stress in such languages is mainly achieved by a greater force of articulation which results in greater loudness, on the auditory level, and greater intensity, on the acoustic level. The stressed syllables in such languages are louder than the unstressed ones. All the other parameters play a less important role in producing the effect of stress in such languages.

In languages with musical word stress prominence is mainly achieved by variations in pitch level, the main acoustic parameter being fundamental frequency. Chinese, Japanese, Vietnamese are languages with musical word stress (or tonic word stress). The meaning of the words in those languages depends on the pitch levels of their syllables.

Swedish word stress is characterized as dynamic and musical, because both loudness and pitch variations are relevant factors in producing prominence.

In languages with quantitative word stress the effect of stress is mainly based on the quantity of the sound, i.e. its duration. In such languages the vowel in the stressed syllable is always longer than the same vowel in an unstressed syllable. Russian word stress is considered to be quantitative by a number of linguists. But Russian phoneticians have proved that duration is not the only parameter that produces the effect of stress in Russian.

Besides those types of word stress, some linguists (e.g. G. Torsuyev) distinguish qualitative word stress, as in many languages (including English) the quality of the vowel in a stressed syllable is unobscured and consequently differs greatly from the quality of the same vowel in unstressed syllables where it is reduced and obscured. Cf. the vowels in “subject” /ˈsʌbʤɪkt/ and “subject” /səbˈʤekt/. On the acoustic level the physical correlate of quality is the formant structure. The spectrum of a vowel is unobscured when stressed and obscured when unstressed.

What type of word stress is English word stress? What i its acoustic nature?

Until recently, English word stress was considered to be dynamic, as the role of loudness in rendering a syllable more prominent than the neighbouring syllables is indisputable in English. But numerous investigations of the acoustic nature of English

word stress have it clear that the effect of word stress in English does not depend on intensity alone, and that English word stress is of a complex nature.

3. Approaches to Explain the Nature of Stress

Thus, D. Fry synthesized pairs of non-verb homonyms (e.g. "ˈobject-obˈject") on monotones, and varied the relative durations and intensities of the two vowels. His experiment showed that as long as duration and intensity were increased together, reinforcing each other, there was agreement on which syllable was stressed; but, when increased separately, duration appeared to be more important than intensity.

D. Bolinger's experiments have shown that pitch movement in English is also one of the most important cues to stress. But it is not the pitch direction that is significant in English; it is the pitch contrast that really matters. In other words, changes in the pitch direction will not change the meaning of a word, e.g. "`abstract", "ˊabstract", "ˇabstract" remain to be one and the same word. But a pitch movement involving a rapid and relatively wide departure from a monotone level is always perceived as a change in the degree of prominence of the syllables of the word.

And finally, A. Gimson notes that if a nonsense word /ɪlɔlelæ/ is presented to English listeners, with no pitch or length variations but with vowels of different quality, the vowels which are the most sonorous (i.e. the most open vowels) will be judged most prominent. In this nonsense word /ɔ/ and /æ/ are usually judged as the points of greatest prominence. This shows what an important role the quality of a vowel plays in producing the effect of stress.

Therefore, as far as English word stress is concerned, relative prominence in the listeners' mind is created by an interaction of at least four acoustic parameters: intensity, fundamental frequency, duration and formant structure. Which of these parameters is the principal one in creating English word stress still remains a controversial problem.

C. Torsuyev, who has conducted a series of investigations into the acoustic nature of English word stress, calls it dynamic, quantitative and qualitative. He does not call it musical, because he considers pitch variations in English to be an inherent feature of a phrase (not a word). Consequently, he defines pitch variations in English as an important feature of sentence stress (not word stress).

As for Russian word stress, it is considered to be primarily quantitative and, secondarily, qualitative and dynamic.

4. Degrees of Stress

One of the main questions for the linguist is to determine the number of contrastive degrees of word stress in a language.

How many contrastive degrees of word stress exist in English? How many degrees of word stress are linguistically relevant in English?

Instrumental investigations show that a polysyllables word has as many degrees of stress as there are syllables in its.

D. Jones has indicated the degrees of stress in the word “opportunity”. The strongest stress is denoted by figure l, the second degree which is less strong-by figure 2, and so on.

2 4 1 5 3

/ˌɔ p ə ˈt j u: n ɪ t ɪ/

But not all these degrees of stress are linguistically relevant. The problem is to determine which of these degrees of stress are linguistically relevant.

There are two views of the matter. Some (e.g. D. Jones, R. Kingdon, V. Vassilyev) consider that there are three degrees of stress in English, namely, primary (or strong stress), secondary (or medium stress), and weak (the so-called “unstressed” syllables have weak stress). Secondary stress is chiefly needed to define the accentual structure of words containing four or more syllables, and compound words, e.g.

“eˌxamiˈnation” “ˌqualifyˈcation” “ˈhair-ˌdresser”

All these three degrees of stress are linguistically relevant as there are words in English the meanings of which depend upon the occurrence of either of the three degrees of stress in their accentual structure.

E.g. “ˈimport - imˈport”, “ˌcertifiˈcation”-“cerˌtifiˈcation”

But auditory analysis shows that there are certain positions in the accentual structure of English words where the vowel remains unobscured and its duration is considerable (though the syllable it occurs in does not actually bear either primary or secondary stress, but is more prominent than weakly stressed syllables). This can be clearly seem in verbs ending in “-ate”, “-ise”, “-y”, (as in “elevate, recognize, occupy”). Besides, this can also be observed in GA nouns ending in “-ary”, “-ony”, “-ory” (as in “dictionary, territory, ceremony”). On this account, some linguists (G. Trager, A. Hill and other American linguists) distinguish four degrees of stress:

primary stress /ˊ/ (as in “cúpboard”),

secondary stress /^/ (as in discrimináti̇on),

tertiary stress /ˋ/ (as in “ánalỳse”),

weak stress /ˇ/ (as in “cúpboard”, but very often the weakly stressed syllable is left unmarked).

American linguists consider that secondary stress generally occurs before the primary stress (as in “examináti̇on”) while tertiary stress occurs after the primary stress (as in “hándbòok, spécialìze”).

Though the second view seems to be more exact, it lacks objective indicators of the distinctions between secondary and tertiary degrees of stress, the distinctions between them being too subtle to be noticed by an untrained ear.

Linguistically, tertiary word stress can be taken for a variant of secondary word stress, as there are no words in English the meanings of which depend on whether their accentual structure is characterized by either secondary or tertiary stress.

That is why the accentual structure of English words is defined by most linguists as a correlation of three degree of stress (or prominence).

5. Accentual Structure of English Words

G.Torsuyev analyses the accentual structures of English words. He distinguishes 11 types of accentual structure of English words, the most widely spread of them are:

⊥ (words with one primary stress as in “ˈafter”),

⊥ ⊥ (words with two primary stresses as in “ˈweek-ˈend”),

┬ and ⊥ (words with one primary and one secondary stresses as in “ˈhair-ˌdresser, ˌmagaˈzine”).

These are the most typical accentual structure for the common English words. Besides, they are the most productive, i.e. borrowings and new words that appear in English are generally accentued accordingly.

The remaining accentual structures (⊥ ⊥ ⊥ “ˈU'S'A”, ⊥ ⊥ ⊥ ⊥ “ˈU'S'S'R”, ⊥ ⊥ ┬ “ˈunˈseaˌworthy”, ⊥ ┬ ⊥ “ˈmisˌinˈterpret”, ⊥ ┬ ┬ “ˈunˌcircumˌcision”, ┬ ┬ ⊥ “ˌindiˌvidualiˈzation”, ┬ ⊥ ┬ “ˌgingerˈbeer-ˌbottle”) are less common in English.

6. The Place of Words Stress in English

The accentual structures of languages differ from each other by the position of word stress in the syllable structures of words.

There are languages in which the main stress falls on a definits syllable of any word. It may on the first syllable, as in Czech, Finnish, or the last syllable, as in French, Turkish.

E.g. naŕodni, cí:sio, moћu – in Czech,

francaś, parleŕ, bonjouŕ – in French

Stress in such languages is said to be <u>fixed</u>. Fixed stress performs a delimitative function, because it delimits one word from another by signaling its boundaries, e.g. the stressed syllable in Czech signals the initial boundary of a word, in French it signals the final boundary of a word.

Stress that is not fixed to any particular in all words is called <u>free.</u> Stress in the English language is free.

Free word stress does not perform the delimitative function.

Free word stress may be of two subtypes:

1. The constant subtype – when word stress remains on the same morphemes in all the derivatives:

ˈwonderful	phoˈnetic
ˈwonderfully	phoˈnetically
ˈwonder	phoˈnetics

2. The shifting stress which may fall on different morphemes in the derivatives of a word:

ˈphotograph	ˈorigin
photoˈgraphic	oˈriginal
phoˈtography	

7. Functions of Word Stress

Word stress in English has several functions: the constitutive function, the distinctive function and the identificatory function.

Word stress has a constitutive function, as it moulds syllables into a word by forming its accentual structure. Without a definite accentual structure a word ceases to be a word and because a sequence of syllables.

Word stress has a distinctive function in English, because there exist different words in English with analogical sound structure which are differentiated in speech only by their accentual structure. E.g.,

Noun/Adjective	Verb
ˈinsult	inˈsult
ˈabˌstract	ˌabˈstract or abˈstract
ˈacˌcent or ˈaccent	ˌacˈcent or acˈcent

But are these words distinguished by different degrees of stress or are they distinguished by different accentual structures?

There exist two views on the problem.

Some linguists (G. Trager, A. Hill and V.Vassilyev) consider that degrees of word stress can be regarded as phonological units. Most of the American linguists consider degrees or word stress to be separate phonemes. Alongside the generally accepted phonemes they have introduced into their list 4 stress phonemes: primary, secondary, tertiary and weak stress phonemes.

V. Vassilyev analyses minimal pairs as "ˋˈimport - imˈport" and states that in them primary stress and weak stress form phonological oppositions (primary stress vs. weak stress). The distinction in the meaning of the words "ˌcertifiˈcation-cerˌtifiˈcation", according to V.Vassilyev, is based on the phonological opposition of secondary stress vs. weak stress.

On account of this, he regards the degrees of stress as phonological units, which he calls “accentemes”. He distinguishes three word accentemes in English, namely

primary accenteme,
secondary accenteme,
weak accenteme.

The second view is expressed by G. Torsuyev, H. Kurath, A. Gimson and others. They consider that it is the accentual structure of words that contrast with each other and not the degrees of stress.

Degrees of word stress can be perceived only in accentual structures as relatively strong, medium or weak stress, i.e. one syllables has stronger stress than any other, another syllable is less strong but stronger than the weak ones. Moreover in one accentual structure secondary stress may be stronger than primary stress in another accentual structure. Therefore, it is the accentual structures “primary stress + weak stress” and “weak stress + primary stress” that distinguish words as “'import - im'port”, “'insult - in'sult”.

Word stress has an identificatory function (or recognitive function) as well, because the accentual structures of words enable people to identify definite combinations of sounds as meaningful linguistic units, namely, words. A distortion of the accentual structure may either hamper understanding or produce a strange accent.

Word stress in English has no delimitative function, as it is free shifting word stress.

8. Accentual Tendencies in English

Though word stress in English is called free, it is not really free of any accentual tendencies. There are certain tendencies in English which regulate the accentuation of words to a certain extent.

Linguists, who have made a thorough study of English word stress, have agreed upon the existence of two main accentuation tendencies in English: the recessive tendency and the rhythmic tendency.

According to the recessive tendency stress falls on the first syllable which is generally the root syllable (e.g. “'mother, 'father, 'sister, 'brother, 'ready, 'window”) or on the second syllable in words which have a prefix of no special meaning (e.g. , “be'come, in'deed, for'give, be'hind”).

The recessive tendency in stressing words is characteristic of words of Anglo-Saxon origin, and the recessive tendency has influenced many borrowings (e.g. “'excellent, 'garage”).

The second tendency in word stress is the so-called rhythmic tendency.

In the English language a considerable part of the vocabulary consists of monosyllabic words, some of which are stressed, others not.” This created the rhythmic tendency to alternate stressed and unstressed syllables. According to the

rhythmic tendency, stress is on the 3rd syllable from the end in a great number of words (e.g. “ˈrecognize, ˈpossible, possiˈbitity”).

It is the usual way of stressing four-syllabled words. E.G., “poˈlitical, deˈmocracy, iˈdentify, comˈparison”.

In word with more than four syllables we very often find the influence of both the rhythmic and the recessive tendencies. E.g., “ˌindiˈvisible, ˌinefˈficiency, ˌphysiˈology, ˌphonoˈlogical”

In rapid colloquial style the two tendencies very often coincide as one of the vowels is elided. E.g. ˈterrit (o) ry, ˈdiction(a)ry.

The rhythmic tendency remains a strong one and it affects the accentual structures of a large number of words in modern English. Thus, in some polysyllabic words there is a tendency nowadays to avoid a succession of weak syllables, especially is these have /ə/ or /ɪ/.

As a result, there appears as accentuation shift with a rhythmic alternation of stressed and unstressed syllables. This tendency is clearly evident in the second (new) pronunciation of the following words:

ˈexquisite or exˈquisite	ˈcapitalist or caˈpitalist
ˈprecedence or preˈcendence	ˈcontroversy or conˈtroversy
ˈsonorous or soˈnorous	ˈhospitable or hosˈpitable

Analyzing the accentuation structures of derivatives and their parent words, I. Wolfson noticed that the stress of the parent word is often retained in the derivatives.

Cf. ˈsimilar - assimiˈlation, simiˈlarity

ˈpersonal - ˌpersoˈnality, ˈnation -ˌnatioˈnality.

I. Wolfson calls it the retentive tendency in English.

There is one more accentuation tendency in English: the tendency to stress the most important elements in words. Such meaningful prominence is given to negative prefixes (as in “ˈunˈknown, ˈinarˈtistic, ˈmisbeˈhave”), meaningful prefixes (as in “ˈexˈpresident, ˈvice-ˈpresident, ˈsub-ˈeditor, ˈunderˈmine”), suffix “-teen” (as in ˈthirˈteen, ˈfourˈteen”), semantically important element in compound words (as in “ˈwell-ˈknown, ˈred-ˈhot, ˈbad-ˈtempered”).

These are the numerous tendencies that to some extent regulate the accentuation of words in English.

Self-control questions

1. What is the definition of stress?
2. Explain Segmental and Suprasegmental units.
3. What approaches exist to explain the nature of stress?
4. What can you say about degrees of stress?
5. How many accentual structures of English word stress do you know?
6. What do you know about the place of word stress?
7. Explain functions of stress.
8. What accentual tendencies in English do you know?
9. What is the difference between BE and AE?
10. How many degrees of stress exist in AE?

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Unit 9

The Intonation System of English

Questions to be discussed:

1. Narrow and Broad Definitions of Intonation
2. Intonation and Prosody
3. Rhythmic Group and Intonation Group
4. Syntagm Theory
5. Elements of an Intonation Group
6. Functions of Intonation
7. Summary

1. Narrow and Broad Definitions of Intonation

Phonemes, syllables and words, as lower – level linguistic units, constitute a higher phonetic unit – the utterance. Every concrete utterance, alongside of its phonemic and syllabic structures has a certain intonation.

Most Russian and Uzbek phoneticians define intonation as a complex unity of speech melody, 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. Speech melody, sentence stress, tempo, rhythm and timbre are all components of intonation. These are perceptible qualities of intonation.

Acoustically, intonation is a complex combination of varying fundamental frequency, intensity and duration (see the intonograms).

Speech melody is primarily related with fundamental frequency, tempo – with duration. But there is no one – to – one relation between any of the acoustic parameters and stress, any parameter and rhythm. About the acoustic nature of voice timbre little is known as yet.

On the articulatory, or production, level intonation is a complex phenomenon. In the production of speech melody the subglottal, laryngeal and supraglottal respiratory nucleus regulate the subglottal air – pressure, which makes the vocal cords vibrate. An increase of subglottal pressure raise the pith of the voice, and its decrease lowers the pith.

There is no single mechanism to which the production of stress can be attributed.

Further investigations are necessary to discover the articulatory mechanisms of the components of intonation.

The definition of intonation given above is a broad definition. It reflects the actual interconnection and interaction of melody, sentence stress, rhythm and timbre in speech.

A great number of phoneticians abroad, including Jones, Armstrong and Ward, Pike, Kingdon, Gimson, O'Connor and Arnold define intonation as the variation of the

pitch of the voice, thus reducing it to just one component – speech melody. This is a narrow definition of intonation.

Thus Jones writes: "Intonation may be defined as the variations which take place in the pitch of the voice in connected speech, i.e. variations in the pitch of the musical note produced by the vibrations of the vocal cords".

In spite of the fact that many scholars do not include sentence another. According to Kingdon, tones are combinations of stress and pitch.

Some foreign phoneticians give broader definitions of intonation. thus Hultzen includes the variations of pitch, loudness and duration, Danes – the variations of pitch and intensity, Haugan – a combination of tone, stress, duration and juncture.

2. Intonation and Prosody

Alongside of the term "intonation" the term "prosody" is widely used. "Prosody" and "prosodic" denote non – segmental phenomena, i.e. those which do not enter into the system of segmental phonemes. The British phonetician Crystal defines prosodic features as "vocal effects consituted by variations along the parameters of pitch, loudness, duration and silence".

Some phoneticians distinguish the prosody of the syllable from the prosody of the word and the prosody of the syllable from the prosody of the word and the prosody of the utterance. Others apply the terms "prosody" and "prosodic" only to the features pertaining to the syllable and phonetic word or rhythmic group (which are regarded as meaningless prosodic units) and oppose prosody to intonation (which is a meaningful phenomenon).

We adhere to the point of view, that prosodic features pertain not only to syllables, words and rhythmic group, but to the intonation group and the utterance as well, since the latter are constituted by these units.

Therefore the notion of prosody is broader than the notion of intonation as it can characterize both the utterance and its smaller units.

Whatever the views on the linguistic nature of prosodic phenomenon, the phonic substance of prosody is regarded by all phoneticians as the modifications of fundamental frequency, intensity and duration. The most complicated and unsolved problems of prosody are 1) the interaction between its acoustic properties, 2) their functioning in speech and 3) their systematization. Jacobson says that prosody is one of the most difficult and controversial problems of modern linguistic studies.

3. Rhythmic Group and Intonation Group

Concrete realizations of speech prosody and its systematic nature can be described adequately in terms of the syllable, the rhythmic (or accent) group, the intonation group and the utterance.

The syllable is the smallest prosodic unit. It has no meaning of its own, but it is significant for constituting higher prosodic units. Prosodic features of the syllable (pitch, loudness, duration) depend on its position and function in the higher-level units.

A rhythmic group (or an accent unit) is either one stressed syllabic or a stressed syllabic with a number of unstressed ones grouped around it.

The stressed syllable is the nucleus of the rhythmic group. There are as many rhythmic groups in an utterance as there are stressed syllables in it. The unstressed syllables are clitics. Those precedings the stressed syllable are called proclitics, and those following it – enclitics. The syllables of a word always belong to one rhythmic group. Form words may be both proclitics and enclitics, depending on their semantic and syntactic relations with the notional words preceding and following them. Rhythmic groups are actual perceptible units, capable of being isolated out of an utterance due to the meanings, expressed by their prosody. These may be the meanings of assertiveness, separateness, newness (when the pitch falls within the stressed syllable or within the enclitics or within both) as in the first rhythmic group of the following utterance:

But `nobody `knew abut it.

the meanings of connectedness and incompleteness (when the pitch rises within the stressed syllable, or the pitch of the stressed syllable is higher then that of the proclitics) as in the second and the first rhythmic groups of the utterance:

The `warmer they˛ are the `better.

The intonation group is higher than the rhythmic group. It has also been termed “syntagm”, “sense-group”, “breath-group”, “divisible accent unit”, “tone-group”, “tune”, “tore-unit”.

4. Syntagm Theory

The term “syntagm” has a drawback: it suggests only syntactic relationship of a group of words. Moreover, the term “syntagm” is often used by many well-known linguists with two different meanings which have nothing to do with the prosodic unit under consideration.

Baunduin de Cournetay applied the term “syntagm” for a word used in a sentence in contradistinction to a word taken as a lexical unit (“a lexeme”).

Sausure used this term to mean two or more linguistic elements joined together: two successive morphemes or two elements of a compound word or a noun with an attribute.

Scherba’s syntagm theory is based on the syntactic, semantic and phonetic relations of words in an utterance. Scherba defined the syntagm in the following way: “The phonetic entity, which expresses a semantic entity in the process of speaking (and thinking), and which may consist either of one rhythmical group or of a number of such groups is what I call a syntagm.”

The term “sense-group” calls attention to the fact that it is a group of words that make sense when put together. But it doesn’t indicate its intonational character.

The term “breath-group” emphasizes the physiological aspect of the syntagm, which is uttered with a single breath. A breath-group usually coincides with a syntagm because pauses for breath are normally made at points where pauses are necessary or possible from the point of view of meaning.

But a pause for breath may be made after two or more syntagm are uttered, so a breath-group may not coincide with a syntagm.

To be consistent in the use of the criterion of accentual division, the term “divisible accent unit” is preferable. The divisible accent unit may consist of several rhythmic groups, which are indivisible accent units. The terms “tone-group”, “tune”, “tone-unit” also emphasize the role of just one (pitch) component of prosody for the formation of the unit. In our opinion, the term “intonation group” better reflects the essence of this unit. It shows that the intonation group is the result of the division in which not only stresses, but pitch and duration play a role. It also shows that intonation group is meaningful unit. The most general meanings expressed by the intonation group are, for instance, those of completeness, finality versus incompleteness, non-finality.

Structurally the intonation group has some obligatory characteristics. These are the nuclear stress, on the semantically most important word, and the terminal tone i.e. pitch variations on the nucleus (and the tail if any). They shape the intonation group, delimit one intonation group from another and show its relative semantic importance.

The length of an intonation group may vary. The minimal intonation group is represented by a rhythmic group and potentially may be reduced to a syllable.

5. Elements of an Intonation Group

The stressed and unstressed syllables of an intonation group perform different functions. Palmer was the first to single out consecutive elements of the intonation group (“tone-group”) which differ in their functions. These elements are “pre-head”, “head”, “nucleus”, and “tail”.

The number of functional elements distinguished by different phoneticians is not the same. Thus, Palmer, O’Connor and Arnold distinguish two elements in the per-nuclear part of the utterance – the pre-head (unstressed syllables, preceding the first stressed one) and the head (the first stressed syllable and the following stressed and unstressed ones). The notion of “head” in this sense coincides with the notion of “scale”, used by Russian phoneticians, e.g. Torsuyev, Tyrakhterov, Vassilyev, Antipova and others.

Kingdon uses the term “head” to mean only the first stressed syllable, which he considers to be independent functional element. The stressed and unstressed syllables following the head, form another functional element – the body.

The functional role of the pre-head of an utterance has been proved. It bears distinctively significant pitch variation. The high pre-head is opposed to the low or mid pre-head for differentiating attitudinal meanings.

But whether the first stressed syllables of an utterance plays a functional role or not is a moot point. Auditory observations and the analysis of acoustic data show that pitch

characteristics attributed to the first stressed syllable are actually characteristics of the unstressed syllables following it (part of the body). Eth Rising Head, for instance, is frequently characterized as such due to the higher pitch of the following unstressed syllables.

The first stressed syllables and the following ones seem to function as one whole, the first stressed syllable being the one which determines the pitch variations of the intonation group.

It is also disputable that the tail is an independent functional element of the intonation group, since its pitch variations are determined by the nuclear tone.

The "pre-head", "head" and "tail" are non-obligatory element of an intonation group, whereas the nucleaus is an obligatory and the important functional element.

Thus, the intonation group can be divided in two different ways: 1) into rhythmic groups and stllabic which are hierarchically related (the latter being an element of the former) or 2) into functional elements which are autonomous prosodic units.

Further experimental investigations are needed to study prosodic features of all theses units and to determine their correlation and their functional significance.

The largest prosodic unit is the utterance, which is characterized by its definite acoustic and auditory structure. It is the main communicative unit. One and the same intonation pattern of an utterance may be imposed on any syntactical structure of a senetnce. The term "sentence" may denote 1) a synactical unit only. A formal grammatical structure, and 2) a ssintactical and phonetic unit together.

The utterance is an actualized sentence (a formal grammatical structure which is uttered), or it is the phonetic aspect of the sentence in the broad sense.

An utterance may consis of one or more intonation groups.

The structure of an utterance is determined by its thought content and its modality, and also by the number of stressed and unstressed syllables in it.

The meaning of an utterance is to a great extent determined by its prosodic characteristics, or intonation.

6. Functions of Intonation

Intonation performs the following threee basic functions: constitutive, distictive and identificatory. Each of these is a complex function, capable of being analysed in several different ways.

1. The constitutive function of intonation is to form utterance communicative units on the basis of certain syntactical and lexical structures. Intonation unifies words into utterances, thus giving the latter the final form without which they cannot exit. A succession of words arranged syntactically is not a communicative unit until intonation is attached to it. E.g. "Pete has left for Moscow" is not a communicative unit until it is pronounced, until it acquires a certain pitch and stress pattern. It may then be <u>a statement</u> – "ˡPete has ˡleft for ˋMoscow" or "ˡPete has ˡleft forˇMoscow"; <u>a question</u> - "ˡPete has ˡleft for ˊMoscow?" or "ˊPete has left for Moscow?"; <u>an exclamation</u> -"ˮPete

has left for Moscow!" Intonation is the only language device that transforms words as appellative units (vocabulary items) into communicative units – utterances. In written speech intonation is, to some extent indicated by punctuation marks, e.g. Fire! – a command or an exclamation, depending on the situation in which it occurs, Fire? – a question, Fire – an answer.

Intonation, is therefore, the most common, the most elementary, the ever present constitutive factor of the utterance. It forms all communicative types of utterances – statements, questions, imperatives, exclamations and modal types: - e.g. categoric statements, non-categoric, perfunctory statements, quizzical statements, certainty and uncertainty questions, insistent questions, etc. In constituting an utterance, intonation at the same time performs the segmentative and delimitative function. It segments connected discourse and delimite utterance (and intonation groups) one from another and shows relations between them. It also signals the semantic nucleus of an utterance (an intonation group) and other semantically important words. Intonation also constitutes phonetic styles of speech.

2. The distinctive function of intonation manifests itself in several particular functions, depending on the meanings differentiated. These are communicative-distinctive, modal-distinctive, culminative ("theme-rheme") distinctive, syntactical-distinctive and stylistic-distinctive functions.

The communicative-distinctive function is to differentiate the communicative types of utterance, i.e. statements, questions, exclamations, imperatives, and communicative subtypes, e.g. within statements, - statements proper (собственно-повествование) informing statements (сообщение), announcements, etc., within questions – first instance questions, repeated questions, echo questions; within imperatives – commands, requests, orders and so on.

The modal-distinctive function of intonation consists in differentiating modal meanings of utterance, e.g. the speaker's attitudes and emotions, for instance, a reserved, dispassionate versus involved, interested attitude, antagonistic versus friendly attitude and so on. This function is often defined as expressive, or emotional, attitudinal.

Various modal meanings can also be expressed and differentiated by lexical and grammatical means, e.g. such modal words as "sure", "undoubtful", "definitely", "perhaps", "may be", "probably" and modal verbs "may", "might" and so on. Usually, the speaker's attitude corresponds to the contents of the words be chooses. But intonation may disagree with word content and is, then, the crucial factor in determining the modal meaning of the utterance. For instance, "Thank you" when pronounced with different tone, e.g. the High Falling and Rising-Falling Tone may express genuine gratitude and an antagonistic attitude. That is why in actual speech the hearer is more interested in the speaker's "tone" than in his words.

The culminative-distinctive function of intonation manifests itself in differentiating the location of the semantic nuclei of utterances and other semantically important words. This function is often called logical (Artyomov), predicative (Vinogradov), accentual (Gimson).

The adherents to the theory of "sentence perspective" claim that in this way intonation indicates the "theme-rheme" organization of an utterance, i.e. it shows the thing already known and the new thing said about it.

Theme rheme

e.g. The ˈteacher has `come

rheme theme

The `teacher has ˌcome.

The semantic nuclei in these utterances are different or, according to the theory of sentence perspective, the "theme-rheme" structure of the utterance is distinguished purely by intonation.

The syntactical-distinctive function of intonation is to differentiate syntactical types of sentences and syntactical relations in sentences.

E.g. "Her sister" ˌsaid ˌMary, |" was a ˈwell-known `actress" – a compound sentence.

Her sister said | Mary a well-known actress.

a complex sentence with an object subordinate clause.

ˈSmiling ˌTom | ˈentered the `hall.

ˌSmiling | ˈTom entered the `hall.

In the first utterance "smiling" is an attribute, in the second it is an adverbial modifier.

But it is disputable whether intonation performs in such cases a grammatical function. Crystal writes that the number of syntactical opposition, based on intonational features – is not large in English. Bolinger says, that intonation gives us a clue to the grammatical relations in utterances. But it is an accendental effect of two possible semantic (theme-rheme) organizations of the utterances. "The encounters between intonation and grammar are casual, not casual. Grammar uses intonation on those frequent encounters, but intonation is not grammatical." The same intonation is in "ˌSmiling| ˈTom ˈentered the `hall" might be used to emphasize the separate importance of "smiling" if the listener hasn't heard it. So, there is no direct relation between intonation and grammar. Intonation cannot be defined and described in terms of the syntactical structures with which it occurs.

The same can be said about the relation between intonation and the meaning of a word. Intonation can differentiate between two possible meanings of a word.

E.g. I have certain `proofs. (some proofs)

I have `certain proofs. (undoubtedly true)

ˈGive me some `apples. (a few)

ˈGive me ˈsome `apples. (any)[1]

[1] These examples are borrowed from Fr. Daněs. Sentence Intonation from a Functional Points of View. Word, vol.16, №1, 1960, p.51

But intonation does not determine the meaning directly. It only signals contrastive emphatic.

Stylistic-distinctive function of intonation manifests itself in that intonation differentiates pronunciation (phonetic) styles, determined by extralinguistic factors.

3. The indemnificatory function of intonation is to provide a basis for the hearer's identification of the communicative and modal type of an utterance, its semantic and syntactical structure in accordance with the situation of the discourse.

All the functions of intonation are fulfilled simultaneously and cannot be separated one from another. They show that intonation is linguistically significant and meaningful.

Now that the functions of intonation (prosody of utterance) are analyzed and recurrent intonation (prosodic) structures are described. (e.g. 10 tone-groups of O'Connor and Arnold in English, 5 basic intonation constructions of Bryzgunova in Russian) the problem is to establish the intonation (prosodic) units on the abstractional level like the phoneme.

Each language has a certain limited number of such meaningful units, capable of distinguishing utterance. They are defined as intonemes (Artyomov, Nork, Vassilyev) or utterance prosodemes. (Kuznetsov, Baryshnikova, Gaiduchik). The intonation (prosodic) system is characteristic of each language. The intonation patterns of one language are not the same in form as those of other languages. Nor do they necessarily express the same meanings, though there may be resemblances here and there.

Learners of English should bear in mind both peculiarities of forms and meanings of English intonation, i.e. to produce the intonation pattern correctly and to use it in appropriate situations.

The use of wrong intonation can cause vezation and misunderstanding. Imagine one saying "ˡGood `bye" intend of "ˊGood ˏbye"; "ˡShut the `door behind you" instead of "ˡShut the ˏdoor behind you" . In this connection O'Connor in his article "Styles of English Pronunciation" writes the following: "We English can make any amount of allowance for poor pronunciation of sounds… But let him (the speaker – A.M.) choose the wrong intonation pattern in a given situation, and we will hold him to it… He will be set down as a door with no chance appeal."

Emphasizing the role of intonation in speech, Kingdon says: "Intonation is the soul of a language while the pronunciation of the sounds is its body". "There is a practical reason why it is advisable to pay more attention to intonation than to pronunciation . The sounds of English as it is pronounced by different speakers and in different dialects vary within wide limits, so that the foreign learner has a certain latitude in this field, but in most dialects stressing and intonation conform fairly closely to the same pattern".

7. Summary

Thus, the linguistic character or intonation can be summarized in the following way:

1. Intonation is significant and meaningful.
2. Intonation is systematic. It is not invented in speaking but produced according to the system of intonation structures of a given language.
3. Intonation is a characteristic feature of each concrete language and cannot be used in speaking another language.

Self-control questions

1. How do you understand broad and narrow definitions of intonation?
2. What is the difference between intonation and prosody?
3. Is Rhythmic Group and Intonation group the same?
4. What other names of a syntagm do you know?
5. Can you explain the elements of an Intonation group?
6. What functions can Intonation perform?
7. What conclusions can we do on discussing Intonation?

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UNIT 10

PHONOSTYLISTICS

Questions to be discussed:
1. What is Style?
2. The Origin and Present-day Status of Phonostylistics
3. Phonetics and Discourse
4. Phonosemantics
5. Phonotactics
6. Communication and its Types

1. What is Style?

One of the most important notions of linguistics is that of **style.** In fact, the word "style" has a very broad meaning. The Latin word *stylus*, from which it has originated, meant 'a tool used for writing on waxed tablets'.

Besides linguistics, style can be found in other areas of human knowledge and activity. There is style in architecture (e.g. Gothic, baroque), painting (classical, impressionistic), fashion, and sports. Also, we can speak of the style of one's behaviour, (independent, authoritative, etc.) or lifestyle as a whole. G. Buffon, a French thinker, used to say: "The style is the man himself."

Style is a feature of not only human activity as such but also of its resultant artefacts - works of art, clothes, cars, buildings, etc. Each epoch facilitates the appearance and development of different styles and trends.

Our choice of style is actually determined by a set of codified rules and social restrictions (e.g. choice of particular clothes, speech etiquette acceptable on different social occasions, etc.). Such restrictions are liable to change and can differ from culture to culture.

In its most general meaning, style is a specific characteristic of human activity arising within the accepted norms as the result of choice. Style is given a more restricted meaning when it is used in an evaluative sense, referring to the effectiveness of a mode of expression. This is implied by such popular definition of style as 'saying the right thing in the most effective way' or as 'good manners' (Crystal and Davy 1974).

The speech of an individual, which is characterized by some peculiarities typical of that particular individual, is viewed as **idiolect.** It includes the person's habitual **idiosyncrasies,** i.e. his particular way of speaking clearly different from others.

Each person belongs to some social group, age, gender, interest, profession, education, and other. Because of this, speech retains certain features typical of the social group. Besides people, as a rule, possess some peculiar territorial (or orthoepic) traces of speech variation: they speak the way their

community speaks. The social varieties of people's speech are viewed as **social dialects,** or **sociolects;** the territorial differences in the speech are labeled as **territorial varieties.**

The issues described above are within the scope of phonetic stylistics as they reflect the existing variability of language-in-action. They are also confined to the phenomenon of appropriateness in speech behaviour of different language societies. The two most widespread territorial variaties of English are British and American English. The successful expansion of English throughout the world, its obvious dominance in many areas of international intercourse as well as the present official status of English as a *lingua franca* have forced into being an abundance of new "Englishes" *(Franglish, Spanglish, Japlish, Swedlish, Angleutsh,* etc.). This process is in the phase of active development, which affects both the donor and the recepient languages.

The study of new varieties of English is at the forefront of social phonetics and phonostylistics as there is much to be investigated, described and evaluated. According to David Crystal (1997), less than three percent of the British population speak RP in its pure form, with many educated people having developed an accent known as "Modified RP" - a combination of RP and regional features.

Peter Roach in his practical course of "English Phonetics and Phonology" (2000) underlines that "the most familiar as the accent used by most announcers and newsreaders on BBC and British independent television broadcasting channels is BBC pronunciation. The BBC itself does not improve an "official" accent - individual broadcasters all have their own personal characteristics, and an increasing number of broadcasters with Scottish, Welsh and Irish accents are employed. However, there is a useful degree of consistency in the broadcast speech of speakers with an English accent." The study of English Pronunciation standard is a great challenge in English Phonetics especially for foreign learners studying British English.

2. The Origin and Present-day Status of Phonostylistics

The branch of linguistics, which focuses on the study of styles, is called **stylistics.** The word *stylistics* was first registered in English dictionaries in 1882. It meant 'the science of literary style; the study of stylistic features'.

Modern stylistics was elaborated at the end of the 19th century - the beginning of the 20th century. It has inherited much from ancient **rhetoric,** the art of public speaking and writing that appeared in the 5th century BC. Rhetoric dealt with the choice of words in sentences and their detailed or-ganization *(elocutio).* Modern stylistics is reconsidering, from a different perspective, the problems that formerly constituted the object of rhetoric.

Stylistics further splits into a number of interrelated disciplines that in-vestigate style from different angles. The subject-matter of **phonetic styli-stics** (or **phonostylistics)** is versatile and not clearly determined. It studies variation in the use of sounds of a language, its phonetic expressive inventory, as well as typical prosodic features of different types of discourses and registers.

No unanimous approach to the study of styles and stylistic variation has been elaborated yet. In its broadest sense, phonostylistics deals with "style-sensitive" or "style-dependent" phonological processes, i.e. conditioned by style. The three major aspects of the study of styles: quantitative, qualitative, and functional. Discrete styles are present in some languages, which impose co-occurrence restrictions on forms within a given style.

Stylistic variation can also be caused by such factors as 1) topic, 2) setting, and 3) relationship between interlocutors.

Stylistic variation is often analysed as a linear continuum, according to the parameter of formality: due to the degree of attention given to speech by speakers, speech is classified from very casual to very careful (Labov 1974). A scale of styles is generally encompassed within the extremes of emphatic vs. informal, with formal in between. Emphatic style is well-exemplified by citation forms, informal styles include casual, colloquial, intimate words, while a speech, a lecture, or a job interview are examples of a formal style.

Casual speech is the most common and the most natural register speakers use. There exists the whole array of terms to label this type of speech: *fast, rapid, allegro, connected, informal, real, spontaneous, or conversational.* The primary style-differentiating criteria are tempo of speech and attention paid to speech. The relationship between the two criteria is inversely proportional: the higher the degree of attention, the slower the tempo.

Phonostylistic processes are language-specific. The same function is served by various means across languages, but also within a language.

Some new ideas and developments have been born (or at least grow very fast) in the last decades: face, politeness, accommodation and prototypes. Some research areas have expanded enormously: sex differences of all kinds, stylistic variables, and relationship between language and thought (Hudson 1996).

There is also an increasing study of the phonostylistic and pedagogic issues raised by the role of English as an international language, and by the worldwide teaching of non-native literatures in English. The main effect of

such developments has been a gradual displacement of the canon of Eurocentric and American texts by material such as popular fiction, writing by women, texts from different national literatures, and a wider range of spoken and written material. The role of style in such texts compels the study of the ideological determinants both on the texts and on the position of the reader/interpreter. Consideration of such sociolinguistic and sociocultural factors is facilitated by the developments in linguistic/stylistic/phonostylis-tic description moving away from extracts and from short, "deviant" lyric poems toward a study of larger units like discourse, genre and narrative as socially signifying practices.

The focus of the field of **applied stylistics** is the study of contextually distinctive varieties of language, with particular reference to style as a linguistic phenomenon of literary and non-literary texts. In the 1980s, strong influences have come from developments in linguistics in the fields of **pragmatics** and **discourse analysis.** Such influences have reinforced descriptions of style as predominantly

suprasentential textual phenomenon, and have broadened the base for the applications of stylistics and phonostylistics.

Literary stylistics and **phonostylistics** comprise the study of the aesthetic use of language (phonetic, prosodic and lexico-syntactic), both in texts that are predominantly aesthetic - canonical literature, oral narrative, jokes, etc. - and in texts with other predominant aims, e.g. conversation. Phonostylistics in particular contributes to the study of literary discourse and parallels the study of verbal texture in other discourse varieties. Phonostylistics mediates between the disciplines of linguistic and literary criticism, applying the methods and insights of linguistics to traditional problems in literary analysis, and the methods and insights of literary criticism to the analysis of language and intonation patterns.

The main orientations of phonostylistics are interdisciplinary, and toward literary studies in particular. Phonostylistics provides descriptive frameworks by which reader's hypotheses concerning the meanings and effects produced in texts can be explored through a systematic and principled attention to language and intonation patterns.

Aesthetic uses of language are defined within a typology of language functions. In most cases, a language function is associated with each of several 'factors' in communication (Jacobson 1987), as shown in Table.

Table 1

Factor	**Function**
addresser	emotive/expressive/interjection
addressee	rhetorical/persuasive/conative
context	referential/informative
code	metalinguistic
contact	phatic
message	poetic/aesthetic/literary

Within this typology, aesthetic uses of language focus on the message itself: we respond aesthetically to language when our dominant response is to appreciate some quality of the language, independent of other ends to which that language is directed.

Stylistics in general and phonostylistics in particular, has played an important part in the re-insertion of literature into the second language (L2) curriculum. However, their applications to the first language (LI) situations continue to be relevant, and are being developed in the ways which foster among the students the confidence to understand contextual meanings for themselves, in preference to the imposed views of teachers and critics.

The classification of speech acts of different styles (registers) is of great interest and importance to English speakers, although there is no single basis for classification. One can classify them on the basis of:

- the manner of speaking (for example, whispering versus shouting);
- how information flows between speaker and hearer (asking versus telling);
- where the words originate from (acting, reciting or spontaneous speech);

■ how the speaker evaluates it (promising versus threatening);
■ the effect it has on the hearer, i.e. its "perlocutionary force" (persuading versus dissuading).

One can even combine two or three of these bases; for example, preaching and lecturing are defined both by their manner and by the flow of information. Even the length of units classified - our speech acts - varies vastly, from such complex categories as preaching and lecturing, which apply to long stretches of speech, to the manner-based categories - (for example, whispering) that can apply just to single words.

At present, relations between phonostylistics and its neighbouring disciplines are tentative at best. In the 21st century, however, this situation may change. In recent years, linguists have begun to acknowledge the important role of aesthetic considerations in conventional language and intonational structuring.

The recent broadening of linguistic description - to include pragmatics, semantics, discourse, psycholinguistics, and sociolinguistics - also suggests closer relations between the study of grammar, phonology, and the study of style. In these new sub-fields, the traditional methodological differences between linguists and stylisticians dissolve, here linguists must face the difficulties of describing contextual choice, intention, meaning, and real-time processing.

3. Phonetics and Discourse

In its broadest sense, **discourse** can be viewed as speech activity in some communicative sphere. Discourse is often connected with specific means or rules of speech activity organization. N. D. Arutyunova defines discourse as a communicative act taken in all its structural, temporal, anthropological and modal aspects; it is speech as socially oriented activity influencing people's interaction and mechanisms of their consciousness (Арутюнова 1990).

Discourse can exist only in some real, physical time. It is "speech engrossed in life" (op.cit.).

Discourse investigation is at the forefront of interdisciplinary studies. Different types of discourses have been identified - academic or scientific discourse (lectures, seminars, tutorials, conferences, symposiums, etc.), ideopolitical discourse (speeches of statesmen, electoral campaigns, parliamentary debates, etc.), judicial, military discourse and others.

Linguistics explores discourse from various perspectives. Phonetics and phonology have much to do with recent approaches to the study of language-in-use and people's communication. Segmental and suprasegmental phenomena registered in different types of discourse are within the scope of the most urgent tasks of phoneticians and phonologists throughout the world. Phonetic data obtained in such studies elicit the solution of very important problems of applied character in the area of medicine, law and forensic science, artificial intellect and advanced technologies.

Most scholars oppose discourse to **text,** the latter being viewed as a fixed result or product of communication process, not rigidly adjusted to real time Лотман 1992).

Text is "packed' communication that includes all elements of the communicative act as well as signals for their decoding. Discourse, unlike text, cannot accumulate information - it is only the means of information transmission and not the means of its accumulation and increase.

To "record" discourse is as impossible as to "record" a man's life. Indeed, to record all the instantaneous manifestations of discourse seems to be an unrealizable task.

In modern linguistics the term "text" and "discourse" are given different interpretations. For example Michael Stubbs in his book *"Discourse Analysis "* (1983) underlines the theoretical distinction between "written text versus spoken": the latter implies interactive discourse, whereas written text implies non-interactive monologue, whether intended to be spoken aloud or lot. Another distinction is that discourse implies length, whereas a text may be very short.

All the efforts of investigators working on discourse analysis are aimed at exploration of the features pertaining to different discourses in their variability. The accomplishment of this grandiose task could result in the creation of the inventory of different discourse elements as well as the ultimate discourse typology. The experimental data obtained by phonetics and pho-lology can play an important role in the solution of this fundamental problem of modern linguistics and related disciplines.

4. Phonosemantics

Phonosemantics is a relatively new branch of phonetics that has arisen quite recently and is now in great flourish. Phonosemantics studies how phonetic features (sounds and intonation) affect the realization of meaning in different contexts and communication circumstances.

The **meaning** of every word in every language is *in part* inherent in its form. Individual phonemes and phonetic features are meaning-bearing. They each have **a** unique semantics. Every word which contains a given phoneme bears an element of meaning which is absent in words not containing this phoneme. In addition, all phonemes which have a common phonetic feature also have a common element of meaning. The effect of the phoneme-meaning varies with the position that the phoneme bears within the syllable.

On the most fundamental level, a word is a reflection of its articulation. The presence of a given phoneme in a word has a very specific semantic effect. This effect tends to resemble the articulation of the relevant phoneme.

M. Magnus - on the basis of study of the Natural Class words - came to the following conclusions. The physical forces and their reflection in word
semantics can be abstracted away from the Natural Class to which the word is assigned. The more concrete and unambiguous the **referent** for the word, the more difficult it is to fit into a phonosemantic classification. If the referent for a word by its very nature is **connotati**v**e** or **interpreti**v**e,** then the word's phonosemantics can cooperate with its referent. For example, "slide" is a smooth motion. The smoothness and slipperiness so common in /sl/ shows up in the actual referent for "slide". If,

however, the word refers to some very concrete and identifiable object in the world, then the phonosemantics of the word seems to impose a connotation or interpretation on the word rather than affecting what the word actually refers to. For example, the referent for "dog" is an animal. Its referent is not that of an ugly animal. The dreariness which appears disproportionately in words containing /d/ manifests in "dog" as a connotation superimposed on the word "dog".

The position that a consonant occupies in a syllable also affects its meaning. Consonants that appear before the vowel form the backdrop for the action of the word, and consonants that appear after the vowel express the result of the action implicit in the word.

Inclusion of a linguistic form in the context of other similar forms limits the semantic range of that form. For example, when one puts the word "take" in the context "take up", only one part of its semantic potential is being made use of. If one puts it in the context "take over", then a different part of its semantic potential is being highlighted. This also happens on the phoneme level. For example, "drown" and "drip" emphasize the downwardness and wateriness in /d/, whereas "dim" and "daunt" emphasizes its diminishing. Since not all aspects of a phoneme meaning are equally salient in every word, we have to look at all the words to become familiar with the meaning of the phoneme.

With few exceptions, the various senses of a word are interrelated by metaphoric extension, hyponymy and other semantic processes. There is an analogous process on the level of the phoneme.

Placing a word in a context imposes on it a limited function. A dictionary sense is nothing more than a heuristic description of a range of related functions that this word is commonly used for. In fact, every novel context (phrase or sentence) which a word appears in defines for it a new sense. What determines what a word refers to is how the word must be used.

Certain sounds cause changes in the meaning of a word and phrase. Hereby a general impression from the text is formed on the basis of extra-linguistic factors and its outer form (phonemic structure). It can also be influenced by key words which make a meaningful frame of the text. Thus, such words may be accurately chosen and introduced in the text deliberately to enlarge the number of phonemes which possess a certain (desired) phonetic meaning. In phono-semantic experiments such words are specially constructed from phonemes with definite phonetic meaning.

The semantic value of sounds is illustrated in nonsense verse, for example, in Lewis Carrol's "Jabberwocky":

Twas brilling, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogroves,
And the mome raths outgrabe.

The repetition of sounds similar in articulation gives special prominence and additional expressiveness to the sentence:

And I've lost you, lost myself

(Robert Browning "Men and Women")

His voice lifted into the whine of virtuous recrimination

(William Golding "Lord of the Flies")

But my darling he protested in the cajoling tone
of one who implores a child to behave reasonably

(Aldous Huxley "Point Counter Point")

Any text can be investigated from the point of view of its phonetic filling. Apart from segmental features, suprasegmental (intonational) phenomena condition the realization of the semantic potential of the text as a whole. This area of phonetic studies is open for further investigation and judgement.

5. Phonotactics

The question of how the phonemes of the language can be put together to make syllables and words is a part of the phonological study of a language. The branch of phonology whose aim is to discover the principles that govern the way sounds are organized to form linguistic units of higher levels is called **phonotactics.**

It has been observed that languages do not allow phonemes to appear in any order. A native speaker of English can figure out that the sequence of phonemes /stren0s/ makes English word *strengths* and that the sequence /zbf/ could not possibly be in an English word (Roach 2006). Knowledge of such facts is important in phonotactics.

Phonotactic studies of English come up with the findings that certain **sequences** tend to be associated with particular feelings or human characteristics. For example, the words *bump, lump, hump, rump, mump, clump* associate with large blunt shapes. A number of words ending in plosive and syllabic *IV* have something to do with a clumsy, awkward or difficult action: *muddle, fumble, straddle, cuddle, fiddle, buckle, struggle, wriggle* (Roach, op. cit.).

In recent years there has been an increasing interest in analyzing the way words work in a sequence of sentences to produce coherent texts. To the linguistic features that ensure **text coherence** refer separate sounds and sound combinations. Such factors as average length of words in terms of phonemes as well as phoneme frequency influence the semantic potential of the most vital parts in the text. Phonemes and their sequences also help to identify the theme and rheme of the text. A thoroughly chosen sound form of these parts of the text predetermines its effectiveness.

Text perception depends on the articulation and acoustic peculiarities of this or that phoneme. The organization of sound form in the text is one of the means directed at the intensification of its general meaning and expressiveness (Zhuravlyov 1974). Phonemes and their sequences are the factors that govern our choice of words in texts and effects of our choice on the recipients of the text. The selection of words in social interaction is always influenced by pragmatic factors and this choice in its turn depends on the sounds, which constitute this or that word, sentence, and text. In many languages, the pragmatic distinctions of formality and politeness are spread throughout the grammatical, lexical, and phonological systems.

Modern investigations into textual structure and semantics tend to start with the analysis of the smallest units as pragmatics of the text "works from the bottom up" (Crystal 1997). The phonemic structure of the text includes the elements that influence the readers and help to identify the intentions of the speaker as well as the implications that follow from expressing something in a certain way. Phonemes also act as **distinguishers.** They mark reference of text to this or that style. Using **distinctors** of this kind texts are analyzed by their segmental components to see whether the same kinds of phoneme sequences in words can be found in each type of text.

6. Communication and its Types

Communication is the process of sending and receiving messages to achieve understanding. Everyone has undoubtedly heard the expression "Say what you mean and mean what you say." Saying what one means is precisely what communication is all about. Anytime one speaks a sentence, makes a gesture, or merely grunts, one is "saying" one has some idea in one's mind that one wishes to transfer to another person. Words, body movements, facial expressions, and voice tones are all symbols one selects attempting to transmit the meaning in one's mind to the mind of the receiver (O'Connor 1988).

Communication is one of the most important aspects of our everyday activity. In fact, most things we do are directly or indirectly connected with communication. Even "talking" silently to oneself is a form of communication, called **"intrapersonal" (inner) communication.**

Speech communication, which involves more than one person, is called **"interpersonal" (outer) communication.** It falls into several types - one-to-one, group, public and mass communication. Speech can also be oral and written.

One-to-one **communication** is the first type of interpersonal communication (communication involving more than one person) and involves talking with one the other person. Included here are face-to-face conversations, telephone conversations and interviews. Usually the sender and receiver frequently switch roles during one-to-one communication.

Group discussion is a second type of interpersonal communication. It involves three or more people with a common purpose. The purpose may be to solve a common problem, to make a decision, or to answer a question that interests all the members of the group. Each member of the group generally has an opportunity to communicate. Group communication includes such things as committee meetings, seminars, conferences, and workshops. Most group discussions take place in fairly small groups of fewer than fifteen members.

Public communication is a type of interpersonal communication in which one or more people communicate with an audience. A typical example of public communication is public speaking. At least since the time of Aristotle and Socrates, public speakers have had a powerful influence on society. Teachers, attorneys, preachers, politicians, and many others have used this form of interpersonal communication to reach large numbers of people through the spoken word. Often those

who have developed their skill at public speaking have found they have become better all-around communicators.

Two other forms of public communication are **oral interpretation of literature** and **drama.** Oral interpretation of literature is a performing-art form in which literature is read aloud to an audience. Reading a story to a young child is perhaps the simpliest example of oral interpretation of literature. Drama is a performing art that uses both language and action to present a picture of human life to an audience.

In mass communication one person or perhaps several speakers communicate with a large number of listeners. Usually these listeners are not physically present when the sending takes place. Newspapers and magazines, television and radio are examples of mass communication (O'Connor 1988).

Self-control questions

1. Where did the term style come from? What did it mean first?
2. What factors influence our choice of style?
3. How did stylistics originate?
4. What is the subject matter of phonetic stylistics?
5. Give different definitions of discourse.
6. What is the difference between discourse and text?
7. What is the subject-matter of phonosemantics?
8. What does phonotactics study?
9. Define communication.
10. Describe two main differences between public and mass communication.

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