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ТЕОРЕТИЧЕСКАЯ ФОНЕТИКА АНГЛИЙСКОГО ЯЗЫКА

УЧЕБНИК И ПРАКТИКУМ ДЛЯ АКАДЕМИЧЕСКОГО
БАКАЛАВРИАТА

2-е издание, исправленное и дополненное

*Рекомендовано Учебно-методическим отделом
высшего образования в качестве учебника и практикума
для студентов высших учебных заведений,
обучающихся по гуманитарным направлениям*

*Допущено УМО по классическому университетскому образованию
для студентов высших учебных заведений в качестве
учебного пособия по направлению подготовки «Филология»*

Книга доступна в электронной библиотечной системе
biblio-online.ru

Москва ■ Юрайт ■ 2016

УДК 811.1111(075.8)

ББК 81.2Англ923

Ц22

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Ц22

Теоретическая фонетика английского языка : учебник и практикум для академического бакалавриата / М. М. Цатурян. — 2-е изд., испр. и доп. — М. : Издательство Юрайт, 2016. — 180 с. — Серия : Бакалавр. Академический курс.

ISBN 978-5-9916-9253-3

Курс теоретической фонетики английского языка раскрывает основные понятия фонетики, понятие фонемы как единицы языка. Подробно изложены принципы классификации звуков речи, орфоэпические и акцентологические нормы, дана характеристика национальных вариантов английского произношения. Приведены вопросы к экзамену, тесты для контроля знаний по фонетике, рекомендуемая литература, библиографический список, а также глоссарий, содержащий основные понятия курса. Данное издание призвано удовлетворить индивидуальные потребности студентов при самостоятельном изучении учебного материала.

Соответствует актуальным требованиям Федерального государственного образовательного стандарта высшего образования.

Для студентов высших учебных заведений, обучающихся по гуманитарным направлениям.

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ISBN 978-5-9916-9253-3

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Оглавление

ВВЕДЕНИЕ	5
1. PHONETICS AND PHONOLOGY	9
1.1. Phonetics as a linguistic science. Phonetics and other branches of linguistics.....	9
1.1.1. Branches of phonetics. Methods of phonetic analysis	11
1.2. Aspects of speech sounds. Articulatory aspect. Four mechanisms of articulation	14
1.2.1. The articulatory basis. The difference in the articulatory basis of Russian and English	16
1.2.2. Acoustic, auditory and functional aspects of speech sounds.....	17
1.3. Phonology	19
1.3.1. Phoneme and allophones. Aspects and functions of phoneme	19
1.3.2. Principles of classification of consonants.....	21
1.3.3. The system of vowels	27
1.3.4. Modifications of consonants and vowels in connected speech.....	30
1.4. A historical survey of the development of the phoneme theory	32
1.4.1. Moscow and St. Petersburg schools of phonology	33
1.4.2. Prague Linguistic School with reference to the phoneme theory. Phonological school abroad	35
1.4.3. Phonological School abroad.....	38
2. THE PHONETIC SYSTEM OF ENGLISH	48
2.1. The phonetic system of english: the phonetic structure, syllabication and accentuation	48
2.1.1. Components of the phonetic system of English: the phonemic structure	48
2.1.2. Components of the phonetic system of English: syllabication	48
2.1.3. Components of the phonetic system of English: accentuation	51
3. INTONATION	58
3.1. The background of intonation.....	58
3.1.1. Systems of nuclear tones	62
3.1.2. Functions of intonation.....	67
3.1.3. Stylistic use of intonation.....	69

4. SOCIOPHONETICS	72
4.1. Received and general American pronunciation	72
4.1.1. Functional stylistics and dialectology	72
4.1.2. Spread of English	77
4.2. English-based pronunciation standard of English	83
4.2.1. Changes of vowel quality	84
4.2.2. Changes in consonant quality	85
4.3. American-based pronunciation standards of English	86
4.3.1. The system of vowels	87
4.3.2. The system of consonants	87
5. PHONOSTYLISTICS	92
5.1. Formal and informal talk	92
5.2. The art of speech: phonetic aspects	96
FAMOUS PHONETICIANS	101
TESTS	107
EXAM QUESTIONS	126
FURTHER READING	128
BIBLIOGRAPHY	129
GLOSSARY	130
Новые издания по дисциплине «Английский язык» и смежным дисциплинам	180

ВВЕДЕНИЕ

Коренные изменения системы народного образования в России требуют принципиально нового подхода к дисциплине «Теоретическая фонетика современного английского языка» для студентов языковых специальностей. Обществу нужны высококвалифицированные специалисты, владеющие иностранными языками. Трансформировались интересы и потребности студентов языковых специальностей, появилось желание хорошо владеть иностранными языками. Изменение значения данной учебной дисциплины и требований к ней обусловило необходимость создания программы, ставящей новые цели и предлагающей инновационные подходы, методические, лингвистические и др. Программа подготовки бакалавров по данной дисциплине предусматривает увеличение учебных часов на самостоятельную работу.

Цель обучения – формирование навыков правильного английского произношения и профессиональной ориентации студентов. Постановка и коррекция английского произношения ориентированы на предупреждение и исправление типичных ошибок студентов. Курс состоит из теоретической части, где излагаются основные аспекты теории фонетики английского языка, и практической, включающей упражнения, направленные на закрепление материала. Теоретический курс ставит целью ознакомить студентов с современным состоянием науки о фонетическом строе английского языка, обобщить и углубить знания по фонетике, полученные студентами при изучении нормативного курса, развить у них способность делать выводы из наблюдений над теоретическим материалом, научить студентов использовать теоретические положения курса в таких вопросах, как выбор учебной нормы произношения, транскрибирование, типы произносительных ошибок, применение результатов фонологического анализа при обучении произношению и др.

Задача обучения – систематизировать элементы фонетической теории и дать на этой основе более полные знания о всех компонентах фонетического строя современного английского языка.

Успех обучения в значительной мере зависит от принципов, которые лежат в основе организации и контроля за этим процессом. Контроль обучения заключается в следующем:

– психологически и практически переориентировать студентов с понимания иностранного языка как внешнего источника информации и иноязычного средства коммуникации на усвоение и использование его в личных целях, для выражения собственного мыслительного содержания и понимания такового других людей;

– научить студентов видеть в иностранном языке средство получения, расширения и углубления системных знаний по специальности, т.е. средство самостоятельного повышения квалификации.

Учебная дисциплина «Теоретическая фонетика современного английского языка» предназначена для студентов языковых вузов. Звуки речи описаны в ней и как артикуляционные, и как функциональные единицы, что дает возможность студентам повторить нормативный курс, связать теорию с практикой живой речи. Большое внимание уделено описанию артикулярно-дистрибутивных свойств фонем, что способствует пониманию роли их реально звучащих в речи звуковых вариантов – аллофонов. Использование транскрибирования имеет немаловажное значение для создания прочной произносительной базы и дальнейшего сохранения нормативного произношения. Систематический курс произношения английского языка построен по принципу нарастания трудностей в сочетании с постепенным развитием и совершенствованием артикуляционных и интонационных способностей студентов. Программой предусмотрены аудиторские лекционные занятия по теоретической фонетике, а также семинарские занятия по практической фонетике английского языка.

Индивидуальные способности студентов к слуховому распознаванию и воспроизведению звуков иностранного языка, различению высоты тона голоса, а также чувство ритма и степени гибкости и управляемости органов речевого аппарата не являются постоянными факторами. Посредством систематической тренировки их следует развивать с тем, чтобы в кратчайший срок перечисленные аспекты индивидуальной квалификации стали

надежными факторами, активно способствующими достижению успешных результатов. Значительную роль в теоретической фонетике английского языка играет раздел «Интонация», содержащий упражнения, рассчитанные на понимание структурных особенностей интонации, ее роли в овладении английской речью, а также «Типы английского произношения», где рассматривается стандартное и нестандартное произношение, определяются региональные типы произношения, характеризуются национальные варианты английского произношения: британский английский, американский английский, канадский английский, австралийский английский. Учебные нормы произношения, выработанные кафедрой английской филологии, соответствуют английскому литературному стандарту и произносительным нормам ведущих университетов Великобритании. Для интенсификации учебного процесса рекомендуется отводить определенную часть материала теоретической и практической фонетики на самостоятельную работу студентов с последующим контролем и обсуждением на практических, семинарских занятиях. В связи со спецификой работы на языковых факультетах рекомендации по изучению теоретической фонетики носят общий характер. Преподаватель в конкретном случае может творчески адаптировать материал в соответствии с особенностями аудитории и уровнем подготовки группы.

Учебник нового поколения дает возможность повысить качество подготовки бакалавров. Используя данное издание при подготовке к экзамену, студенты смогут систематизировать и конкретизировать знания, приобретенные в процессе изучения дисциплины. Кроме того, по окончании курса «Теоретическая фонетика английского языка» студенты должны:

знать

- общую классификацию гласных и согласных фонем, их артикуляцию;
- английскую транскрипцию;
- слоговоеделение;
- ударение;
- ритм;
- интонирование предложений;
- особенности и различия фонетических систем родного и изучаемого языка;

- теоретические основы формирования правильных произносительных навыков;

уметь

- правильно произносить английские звуки;
- транскрибировать слова;
- делить слово на слоги;
- читать фразы, рифмовки, диалоги, текст с размеченной интонацией;
- определять разновидность тона по разметке;
- интонировать предложения в соответствии с ситуацией общения;
- выражать различные эмоции с помощью интонации;
- определять стили в фонетическом контексте;
- пользоваться различными видами интонации в различных стилях;

владеть

- теоретической и практической базой курса фонетики;
- навыками правильного произношения, слогоделения, транскрибирования и интонирования;
- навыками анализа фонетических явлений.

УСЛОВНЫЕ СОКРАЩЕНИЯ

IPI – International Phonetic Alphabet

C – Consonant

V – Vowel

RP – Received Pronunciation

GA – General American

PF – phonetic form

LF – logical form

vs. (лат. versus) – против

1. PHONETICS AND PHONOLOGY

1.1. PHONETICS AS A LINGUISTIC SCIENCE. PHONETICS AND OTHER BRANCHES OF LINGUISTICS

Phonetics is an independent branch of linguistics like lexicology, grammar and stylistics. It studies the sound matter, its aspects and functions. Phonetics formulates the rules of pronunciation for separate sounds and sound combinations.

Phonetics is concerned with how speech sounds are produced or articulated (articulation) in the vocal tract (articulatory phonetics), the physical properties of speech sounds waves generated by the vocal tract (acoustic phonetics).

The term phonology is used to refer to the abstract rules, principles that govern the distribution of sounds in a language.

Phonetics as a science is concerned with the human noises by which the thought is actualized or given audible shape: the nature of these noises, their combinations, their functions in relation to the meaning.

Language is a specific social phenomenon, it's the principal means of communication among people. Any society stops existing if its language stops existing – there is no society without language.

Since language is a unity or a system, it has three aspects:

- 1) grammar system;
- 2) the vocabulary;
- 3) the phonetic system.

These three aspects are studied correspondingly by grammar, lexicology, and phonetics.

These linguistic sciences have one and the same object of study, they are sure to interrelate.

Dr. Vasiliev defines Phonetics as a branch of Linguistics which studies the origin: development and the functions of the sound matter of a language.

Phonetics is closely interrelated with Grammar, Lexicology and Stylistics.

Phonetics is connected with **Grammar** through Reading Rules.

1. Plural forms of sounds.

Examples: books, bags, boxes.

2. Phonetics helps to distinguish plural forms.

Examples: man – men, mouse – mice.

3. Tense forms of irregular verbs

Examples: swim – swam – swum.

4. Phonetics is connected with Grammar through Intonation: one and the same sentence, pronounced with different intonation, can mean different communicative types of sentences.

Phonetics is also connected with **Lexicology**.

1. Nouns and verbs can be distinguished by the place of the stress.

Examples: 'insult – to in'sult; 'transfer – to trans'fer;

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

Examples: bow [ou] (луг) – bow [au] (поклон), row [ou] (ряд) – row [au] (шум).

3. Due to the position of word accent we can distinguish between homonymous words and word groups, e.g. 'blackbird – black 'bird.

Phonetics is also connected with **Stylistics**.

1. It is connected through intonation and its components: speech melody, word stress, rhythm, pausation, voice timbre, tempo, utterance.

Example: He can't accept his offer. He can't accept his offer? He can't accept his offer!

2. It is connected through repetition of words, phrases and sounds. Repetition of this kind serves as the basis of rhythm, rhyme and alliteration, parallelism, assonance. To emphasize an important word or sentence the author uses graphical express of means – *italics*.

Example: “In speech, changes in the intensity of sounds are associated with stress, or accent...” (V.A. Vassilyev)

3. Through assonance.

Try to light the fire; fleet feet sweep by sleeping Greeks.

4. Through alliteration (the repetition of identical or similar sounds, which helps to impart a melodic effect to the utterance and to express certain emotions).

Example: Peter Piper picked a peck of pickled peppers.

A peck of pickled peppers Peter Piper picked.
If Peter Piper picked a peck of pickled peppers,
Where's the peck of pickled peppers Peter Piper picked?

5. Onomatopoeia, a combination of sounds which imitate sounds produced in nature, is one more stylistic device which can serve as an example of the connection between Phonetics and Stylistics: clink, ting, chink, chatter, jabber, clatter, babble, dab, clap, smack, crash, bang, buzz, cheep, chirp, slap, smack, tinkle, jingle, twitter, chirrup.

Phonetics is interrelated not only with Linguistics, but with many other sciences such as Acoustics, Anatomy, Physiology and History.

1.1.1. Branches of phonetics. Methods of phonetic analysis

First of all phonetics can be divided into general and special.

General phonetics studies the general laws of pronunciation in different languages. It is a part of general linguistics.

Special phonetics studies the laws of pronunciation of a certain language.

All phonetic phenomena can be studied either diachronically (in the course of time) or synchronically (at some definite period of the language development).

The branches of phonetics are called synchronical and diachronical correspondingly. Another name of diachronical and synchronical phonetics is descriptive. The diachronical is called historical.

Another subdivision is due to the fact that pronunciation can be studied from 2 points of view: phonetically and phonologically.

Phonetics studies the way the person can articulate, transmit and perceive speech sounds. It is divided into 3 main branches correspondingly to these 3 distinctions.

1. *Articulatory phonetics* studies the way the vocal organs are used to produce speech sounds. It is the oldest, the most developed and productive branch of phonetics which is concerned with the study, description and classification of speech sounds. Many special instruments have been developed to investigate the pressure of the air in the lungs and the vocal tract; x-rayed techniques have been

developed to observe the complex coordination of the activity in the muscles of the articulators.

2. *Acoustic phonetics* (or more exactly, a physical one) studies the physical properties of speech sounds and investigates the hearing process. It helps to discover how English speakers produce their speech sounds and to demonstrate to learners of English their pronunciation errors in a way that helps them to correct the errors. The recent developments in the use of computers are making possible to carry out the analysis on a much larger scale.

3. *Auditory phonetics* studies how people perceive speech sounds. It is a field of linguistic study which has to rely heavily on biology or more specifically on anatomy and physiology.

Phonology studies how phonemes function in the language, the relationship between different phonemes. In other words it studies the abstract side of the language.

Another subdivision is into segmental and suprasegmental phonetics.

1. Segmental phonetics.

Studies all phonetic phenomena which can be segmented from the flow of speech, it studies phonemes realised in various speech sounds. These are sounds, clusters of sounds and transition.

2. Suprasegmental phonetics.

Studies intonation, melody, rhythm, pauses, tempo, pausation, stress. It studies the distinctive features realised in syllables, stress and intonation.

Phonetics can also be:

– practical (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);

– theoretical (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);

– experimental (the experimental method is based, as a rule, upon the use of special apparatus or instruments, special laboratory equipment, such as kymograph, spectrograph helps to obtain the necessary data about prosodic properties of speech sounds).

All methods used in phonetics can be subdivided into two large groups:

- subjective;
- objective.

The subjective method of investigation is the method of direct observation. It is subjective because it depends on the individual perception of the investigator. It implies the visual analysis and the auditory analysis.

The objective method of investigation presupposes the usage of the instrumental techniques (paleography, laryngoscopy, photography, cinematography, X-ray photography and cinematography and electromyography) and statistical analysis.

The oldest, simplest and most readily available method is the method of direct observation. This method consists in observing the movements & positions of one's own or other people's organs of speech in pronouncing various speech sounds, as well as in analyzing one's own kinesthetic sensations during the articulation of speech sound in comparing them with auditory impressions. This type of investigation together with direct observation is widely used in experimental phonetics. The objective methods and the subjective ones are complementary and not opposite to one another. Nowadays we may use the up-to-date complex set to fix the articulatory parameters of speech – so called articulograph.

Acoustic phonetics comes close to studying physics and the tools used in this field enable the investigator to measure and analyze the movement of the air in the terms of acoustics. This generally means introducing a microphone into the speech chain, converting the air movement into corresponding electrical activity and analyzing the result in terms of frequency of vibration in relation to time. The spectra of speech sounds are investigated by means of the apparatus called the sound spectrograph. Pitch as a component of intonation can be investigated by intonograph.

The acoustic aspect of speech sounds is investigated not only with the help of sound-analyzing techniques, but also by means of speech-synthesizing devices.

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.

1.2. ASPECTS OF SPEECH SOUNDS. ARTICULATORY ASPECT. FOUR MECHANISMS OF ARTICULATION

Speech sounds are the material form in which language exists. It is the most genetic definition of speech sounds, which are produced by a man's speech apparatus and which are perceived by its hearing apparatus. In the language sounds function as phonemes. That's why we can speak about 4 aspects of speech sounds (articulatory, acoustic, auditory, functional).

To analyze a speech sound physiologically and articulatory some data on the articulatory mechanism and its work should be introduced.

1. The articulatory aspect:
 - a) four mechanisms of articulation;
 - b) articulatory basis.
2. The acoustic and auditory aspects.
3. The functional (social or phonological) aspect.

Articulation comprises all the movements and positions of the speech organs necessary to pronounce a speech sound. Speaking about articulation we mean positions and movements of the speech apparatus. According to their main sound-producing functions, the organs of speech can be divided into *4 mechanisms of articulation* according to their work:

- 1) the power mechanism;
- 2) the vibrator mechanism;
- 3) the resonator mechanism;
- 4) the obstruction mechanism.

The power mechanism consists of the diaphragm, the lungs, the bronchi, the windpipe or trachea, the glottis (the opening between the vocal folds), the pharynx, the mouth and nasal cavities. The source of energy for our vocal activity is provided by an air-stream expelled from the lungs. This air-stream undergoes important modifications before it acquires the quality of a speech sound. First of all in the trachea it passes through the larynx, containing the so-called vocal cords.

The vibrator mechanism (the voice production mechanism) consists of the vocal folds. They are in the larynx or voice box. The vocal cords are 2 horizontal folds of elastic tissue. They may be opened or closed (completely or incompletely). The pitch of the voice is controlled mostly by the tension of the vocal cords. Voice produced by the vocal cords vibration is modified by the shape and volume of the air passage.

H.A. Gleason mentions 2 sounds in the English language that are produced by the vocal cords: /h, η/, /h/ is the glottal voiceless fricative and /η/ is its voiced allophone. He states that "during the pronunciation of /h, η/ the mouth may be in position for almost any sound."

The vocal folds are responsible for voice producing. When the vocal folds are brought together and vibrate, *voiced consonants* are produced. When the vocal folds are set apart and do not vibrate, *voiceless consonants* are produced. The number of vibrations in the case of a man's voice is 100–150 times a second, a woman's – 200–325 per second. The vocal folds may vibrate all over and then we speak about the fundamental frequency of vibration; when they vibrate in parts, a number of overtones or harmonics are produced.

The resonator mechanism consists of the supra-glottal cavities of the pharynx, larynx, the mouth and nasal cavities. All these organs of speech are responsible for different voice timbres (Timbre I and Timbre II – emotional coloring of a human voice). By changing the position of the walls of the cavities different voice timbres are produced.

The obstruction mechanism is responsible for the production of consonants only; because there is an articulatory obstruction to the air stream (this obstruction can be complete, incomplete or intermediate). It consists of the teeth, the lips, the tongue, the soft palate with the uvula, the hard palate and the alveolar ridge.

It should be borne in mind that the four mechanisms work simultaneously and that each speech sound is the result of the simultaneous work of all of them.

1.2.1. The articulatory basis. The difference in the articulatory basis of Russian and English

From the articulatory point of view every speech sound is a complex of definite coordinated and differentiated movements and positions of speech organs. The movements and positions necessary for the production of a speech sound constitute its articulation. All the movements and positions of the speech organs necessary to pronounce a speech sound constitute its articulation. These tendencies are quite different in different languages and result in typical mistakes of language learners.

Thus, in English the bulk of the tongue occupies more retracted, more flattened and lowered position than in Russian (i.e. only in this way the production of [ŋ] is possible). So, palatalization is not characteristic as a linguistic factor of English, but it performs an important semantic function in Russian.

The tip of the tongue is more active in English, and the number of positions of the tip of the tongue is more varied. English forelingual consonants are mostly apical and the Russian consonant sounds are dorsal.

As for vowels, in the English language the tongue occupies *five horizontal positions* (front, front retracted, central, back advanced and back) and *six vertical positions* (close, midopen and open, broad and narrow variation each) while in Russian the vowels are mostly central and midopen.

In the Russian language lips are considerably protruded and rounded, in the English language only some vowels are rounded and protrusion doesn't take place at all.

The soft palate is absolutely passive in Russian but participates in the articulation of English consonants.

There are no pharyngeal sounds in Russian but in the articulation of the English [h] sound the pharynx is the active organ of speech.

Typical mistakes of Russian learners in producing English *consonants*:

1. Russian learners of English often replace English consonants by Russian consonants.
2. Russian learners usually palatalize English consonants
3. Learners shouldn't devoice final consonants
4. Learners shouldn't also voice final consonants.
5. In case of sound [w] Russian learners usually produce sound [v].
6. In case of sound [v], when it is in the final position it shouldn't be followed by sound [ə].

Vowels

In the English language the tongue occupies 5 horizontal positions: front, front-retracted, central, back and back-advanced.

And 6 vertical positions (high (close), low (open) or mid-high (mid-open) and mid-low).

While in Russian lips are considerably rounded and protruded while in English there are only a few rounded sounds and protrusion is not characteristic at all.

1.2.2. Acoustic, auditory and functional aspects of speech sounds

From acoustic, or physical point of view a speech sound, like any other sound in nature, a physical phenomenon, a kind of moving matter and energy. A sound has a number of physical properties such as frequency, intensity, duration and spectrum.

Our hearing mechanism must be regarded from two points of view:

- 1) as a physiological mechanism which reacts to the acoustic stimuli;

2) as a psychological activity which, at the brain level, selects from all acoustic information the most relevant.

Our hearing mechanism also plays an important part in monitoring our own speech, our articulatory habits. If this 'feed-back' control is disturbed, the production of our utterance is also disturbed. Thus, those who are born deaf are rarely able to learn normal, speech; similarly, a severe hearing loss later in life is likely to lead to a deterioration of speech.

Acoustic descriptions, definitions and classifications of speech sounds are considered to be more precise than articulatory ones. But they are useless in language teaching, though they are of great theoretical value.

The acoustic aspect of speech sounds is inseparably connected not only with the articulatory aspect but with the auditory aspect, which deals with the perception of the sound waves by a human ear. It can be illustrated by the so-called Speech Chain.

Speech Chain. Speaker's brain → speaker's vocal tract → transmission of speech sounds through the air → listener's ear → listener's brain.

The frequency of the vibrations of the vocal cords over their whole length is called the fundamental frequency. Thus, fundamental frequency of vibrations (on the acoustic level), is perceived as change of pitch or intonation (on the auditory level), intensity of vibrations is perceived as loudness of speech sounds, duration as length and so on.

Functional aspect of speech sounds

The linguistic aspect of speech sounds is also known as their functional or social aspect. When sounds are regarded from the functional point of view we call them phonemes. The branch of phonetics which investigates them as units which serve people for communicative purposes is called phonology. The key terms of phonology are a phoneme and an allophone.

"Phoneme" is used to mean "sound" in its contrastive sense.

"Allophone" is used for sounds which are variants of a phoneme.

Allophones can be positional and combinatory. Positional allophones are used in certain positions traditionally. For example, the