*Lecture 4*

# MODIFICATIONS AND ALTERNATIONS OF SPEECH SOUNDS IN THE ENGLISH LANGUAGE

## § 1. Types of sound variations in connected speech

In the process of speech communication language sounds undergo different kinds of variations because of articulatory transitions in the production of neighbouring sounds.

Every speech-sound pronounced in isolation has three stages of articulation:

(1) the initial stage (the on-glide) when speech organs move to the position of articulation;

(2) the medial stage (the retention/hold stage) when speech organs are kept in the position of articulation;

(3) the final stage (the off-glide/release) when speech organs return to the position of rest.

But in actual speech sounds are seldom pronounced by themselves, they are used in combination with other sounds. There are four types of sound junction in English:

(1) a combination of a consonant and a vowel (CV transition): *me* [mi:];

(2) a combination of a vowel and a consonant (VC transition): *in* [ɪn];

(3) a combination of two consonants (CC transition): *blow* [bləu];

(4) a combination of two vowels (VV transition): *reality* [rɪ'ælɪtɪ].

The adjacent speech sounds influence each other and modify the process of sound production. The variations of the stages of articulation result in their merging or interpenetration.

Merging of stages usually takes place if two sounds of a different nature are joined together: vowels and consonants, noise consonants and sonorants, etc. In this case the end of the preceding sound penetrates into the beginning of the following sound and they are articulated almost simultaneously (*law* [lo:]).

Interpenetration of stages usually takes place when consonants of a similar or identical nature are joined together. In this case the end of the first sound penetrates not only into the beginning but also into the middle of the second sound (*act* [æ**kt**], *begged* [be**gd**]).

Sound variations are caused by different types of phonetic units: segmental or suprasegmental.

Combinative changes are conditioned by segmental units and result in the reciprocal influence of neighbouring sounds (*tune* [**tj**u:n], *in the* [i**n ð**ə]).

Positional changes are conditioned by suprasegmental units and result in the stylistic and intonational influence on sounds (word combinations *slight pressure*, *hot muffins* may sound in colloquial speech like ['slaip 'preʃə], ['h∧p 'm∧fnz]).

The majority of sound variations in connected speech are combinative, they may influence either phonemic or allophonic composition of a word.

Phonemic variations are generally termed '**sound alternations**'. They include changes between related phonemes and have great phonological value.

Allophonic variations in the phonetic sequence are called '**sound modifications**'. They are very important for practical language teaching.

## § 2. Modifications of sounds in connected speech

**Sound modifications** are allophonic variations of speech sounds caused by their position in a word. They are usually quite regular and can be stated in the form of rules which predict the use of certain allophones in each position. Sound modifications are observed both within words and at word boundaries. There are different types of sound modification in modern English, which characterize consonants, vowels, or both.

## 2.1. Modifications of consonants in connected speech

Consonants are characterized by the following types of sound modifications: assimilation, accommodation, elision, and inserting.

**I. Assimilation** is the adaptive modification of a consonant by a neighbouring consonant within a speech chain. There are different types of assimilation.

1. According to the direction of sound modification assimilation is divided into:
   - — progressive (*dogs* — voiced [z], *cats* — voiceless [s]);
   - — regressive (*width* — [d] becomes dental);
   - — reciprocal (*tree* — [t] becomes post-alveolar, [r] is partly devoiced).
2. According to the degree of sound modification assimilation can be:
   - — complete, when two sounds become completely alike or merge into one another (*sandwich* ['sænnwɪʤ] → ['sænwɪʤ] → ['sænɪʤ]);
   - — incomplete, when the adjoining sounds are partially alike (*sweet* [w] is partially devoiced).

These types of assimilation may result in different modifications of the place of articulation, the manner of articulation, and the force of articulation.

1) Assimilation affecting the place of articulation includes the following modifications of consonants:
   - — alveolar [t, d, n, l, s, z] become dental before interdental [ð, θ] (*eighth*, *breadth*, *on the*, *all the*, *guess that*, *does that*);
   - — alveolar [t, d] become post-alveolar before post-alveolar [r] (*true*, *dream*);
   - — alveolar [s, z] become post-alveolar before apical forelingual [ʃ] (*this shelf*, *does she*);
   - — alveolar [t, d] become fricative before palatal mediolingual [j] (*graduate*, *congratulate*);
   - — nasal [m, n] become labio-dental before labio-dental [f, v] (*comfort*, *infant*);

— nasal [n] becomes dental before interdental [θ] (*seventh*);

— nasal [n] becomes velar before backlingual [k] (*think*);

— nasal [n] becomes palato-alveolar before palato-alveolar [tʃ, dʒ] (*pinch*, *change*).

2) Assimilation affecting the manner of articulation includes the following modifications of consonants:

— loss of plosion in the sequence of two stops [p, t, k, b, d, g] (*and dad*, *that tape*, *fact*) or in the sequence of a stop and an affricate (*a pointed chin*, *a sad joke*);

— nasal plosion in the combination of a plosive consonant and a nasal sonorant (*sudden*, *happen*, *at night*, *submarine*, *let me*);

— lateral plosion in the sequence of an occlusive consonant and a lateral sonorant (*settle*, *please*, *apple*);

— anticipating lip-rounded position in the combination of consonants [t, d, k, g, s] and a sonorant [w] (*quite*, *swim*, *dweller*).

3) Assimilation affecting the work of the vocal cords includes the following modifications of consonants:

— progressive partial devoicing of the sonorous [m, n, l, w, r, j] before voiceless [s, p, t, k, f, θ, ʃ] (*small*, *slow*, *place*, *fly*, *sneer*, *try*, *throw*, *square*, *twilight*, *pure*, *few*, *tune*, *at last*, *at rest*);

— progressive voicing or devoicing of the contracted forms of the auxiliary verbs *is*, *has* depending on the preceding phoneme (*That's right. Jack's gone. John's come*.);

— progressive voicing or devoicing of the possessive suffixes *-'s / -s'*, the plural suffix *-(e)s* of nouns or the third person singular ending *-(e)s* of verbs according to the phonetic context (*Jack's*, *Tom's*, *Mary's*, *George's; girls*, *boys*, *dishes*, *maps; reads*, *writes*, *watches*);

— progressive voicing or devoicing of the suffix *-ed* depending on the preceding sound (*lived*, *played*, *worked*);

— regressive voicing or devoicing in compound words (*gooseberry*, *newspaper*);

— regressive voicing or devoicing in closely connected pairs of words, which usually include two functional words or a combination of a notional and a functional word (*I have to do this. She's fine. Of course.*).

It's important to mention that English consonants are not subjected to voiced-voiceless or voiceless-voiced assimilation within non-compound words (*anecdote*, *birthday*, *obstinate*) or in free combinations of two notional words (s*it down*, *this book*, *these socks*, *white dress*).

**II. Accommodation** is the adaptive modification of a consonant under the influence of a neighbouring vowel which includes the following changes:

— labialization of consonants under the influence of the following back vowels [ɔ, o:, u, u:, a:], resulting in lip rounding (*pool*, *rude*, *ball*, *car*);

— labialization of consonants under the influence of the following or preceding front vowels [ɪ, i:], resulting in lip spreading (*tea — eat*, *feet — leaf* , *keep — leak*, *pill — tip*);

— palatalization of consonants under the influence of front vowels [ɪ, i:] (cf: *part — pit*, *top — tip*, *far — feet*, *hard — hit*, *chance — cheese*).

**III. Elision** is a complete loss of sound in the word structure in connected speech. The following examples of consonant elision are observed in modern English:

— loss of [h] in personal and possessive pronouns *he*, *his*, *her*, *hers* and the forms of the auxiliary verb *have* (*What has he done?*);

— loss of [l] when preceded by [o:] (*always*);

— loss of plosives [p, t, k, b, d, g] in clusters followed by another consonant (*next day*, *just one*, *last time*, *old man*);

— loss of [θ, ð] in clusters with [s, z, f, v] (*months*, *clothes*, *fifth*, *sixth*);

— loss of [v] before other consonants in rapid speech (*give me your pen*).

**IV. Insertion** is a process of sound addition to the word structure. There are the following cases of this consonant modification type in English:

— linking [r], which reveals its potential pronunciation (*car‿owner*);

— intrusive [r] pronounced in word combinations with vowels in the word-final and word-starting positions (*china‿and glass*);

— inserted [j] after word-final diphthongs gliding to [ɪ] (*saying*, *trying*);

— inserted [w] after word-final diphthongs gliding to [u] (*going*, *allowing*);

— inserted [tʃ, dʒ] instead of word-final [t, d] before [j] (*could you*).

## 2.2. Modifications of vowels in connected speech

The main types of sound modifications characterizing vowels are reduction and elision.

**I. Reduction** is the weakening of vowels in unstressed positions, determined by the position of a vowel, the stress structure of a word or the tempo of speech. This type of vowel modification may be qualitative, quantitative, or both.

1. Quantitative reduction is the decrease of vowel quantity when its length is shortened under the influence of the following factors:
   — word stress: vowels in unstressed positions are usually shorter (cf: *Is ˎ he* [hi:] or *ˏ she to blame?* vs. *At 'last he* [hi] *has ˏ done it*.);
   — position of a vowel in a word: the positional length of English vowels is the longest in the end, shorter before a lenis consonant, and the shortest before a fortis consonant (cf: *he* [hi:] — *heel* [hi·l] — *heat* [hit]).
2. Qualitative reduction is the loss of vowel quality (colour) which generally results in the following changes:
   — reduction of the vowels of full value to the neutral sound [ə] in unstressed positions (*analyze* ['ænəlaɪz] — *analysis* [ə'nælɪsɪs]);
   — slight nasalization of vowels preceded or followed by nasal consonants [n, m] (*no*, *my*, *can*, *come*).

**II. Vowel elision** (zero reduction) is the complete omission of the unstressed vowel which is realized in connected speech under the influence of tempo, rhythm and style of speech. It usually occurs:

— in notional words within a sequence of unstressed syllables (*history* ['hıstərı] → ['hıstrı], *territory* ['terıtərı] → ['terıtrı]);

— in notional words within unstressed syllables preceding the stressed one (*correct* [kə'rekt] → [k'rekt], *suppose* [sə'pəuz] → [s'pəuz]);

— in unstressed form words within a phrase (*Has he done it?* [hæz hi· / d∧n ıt] → [həz hı / d∧n ıt] → [əz ı / d∧n ıt] → [z ı / d∧n ıt]).

### 2.3. Complex vowel and consonant modifications

Contemporary modifications of sounds in English include the cases of complex sound modifications with both vowels and consonants. They are quite difficult to classify.

For example, here belong the pronunciation of the construction '*be going to*', the Infinitive after the verb '*want*', and the verbal form '*have got to*' in rapid speech:

*I want to drink*. [aı 'wɔnə 'drınk]

*We've got to go there*. [wıv 'gɔtə 'gəu ðɛə]

*He's going to come*. [hız 'gɔnə 'k∧m]

## § 3. Notion of alternation and its types

As it has been stated, allophonic modifications of speech sounds are quite regular. They are predicted by the context establishing changes of allophones in each position. But there are variations of a different kind in English called **sound alternations** which involve interchange between related phonemes as well. Two types of alternations are presented in English on the synchronic and diachronic levels: historical and contemporary.

**I.** Sound alternations that are traced back to the phonemic changes in earlier periods of language development and are known as **historical**. In this case the alternating sounds are affected not by the present-day phonetic position or context but by certain diachronic processes which reveal sound changes made in the course of language history. They are nowadays reflected in English as alternations of phonemes used for differentiating words, their derivatives and grammatical word-forms. Historical alternations mark both vowels and consonants. They usually have certain orthographic representation and may be supported by suffixation and stress shifting.

1. Vowel alternations are exemplified by:
   - — distinctions of irregular verbal forms (*get — got — got*, *know — knew — known*);
   - — distinctions of causal verbal forms (*to rise — to raise*);
   - — distinctions of singular and plural noun forms (*goose — geese*, *man — men*);
   - — distinctions of parts of speech in etymologically correlated words (*long — length*).
2. Consonant alternations represent:
   - — distinctions of irregular verbal forms (*send — sent — sent*);
   - — distinctions of parts of speech in etymologically correlated words (*defence — to defend*);
   - — reduction of consonant clusters in the initial (*write*, *know*, *gnat*), medial (*listen*, *whistle*) or final positions (*lamb*).
3. Vowel and consonant alternations are presented by distinctions of parts of speech in etymologically correlated words (*live — life*, *bath — to bathe*).

**II.** Sound alternations on the synchronic level are known as **contextual** or **contemporary**. They concern the phonemic structure of morphemes under the influence of other morphemes joined to them. Such phonemic changes do not have any spelling representation and characterize sounds in weak positions, namely unstressed positions for vowels and final or pre-consonantal position for consonants.

The study of contextual alternations differs from the study of sound modifications. The latter is mainly connected with the articulatory and acoustic aspects of sound phenomena whereas the first one deals with phonology and touches upon the problem of phoneme identification of alternated sounds in weak positions.

Let's consider the following example. If we take the first syllabic vowel of the words *ac'tivity* and *con'trast* and compare it with the first syllabic vowel of the words '*active* and '*contrast*, we'll clearly see the difference in sound representation. It is the weak position of a vowel in the first case and its strong position in the second one.

But the question is in defining the phonemic status of the vowel in its weak position. There are two possible variants when in the words *ac'tivity* and *con'trast* the first syllabic vowel may be considered:

— either as the principle allophone of a neutral phoneme [ə];

— or as subsidiary allophone of [æ] and [ɔ] in the words '*active* and '*contrast*, correspondingly.

The difference is quite significant, because the sound [ə] may be identified either as an independent phoneme, or as a neutralized allophone of some other phoneme. This problem still doesn't get a single decision in modern linguistics.

Yet in case of the English language the problem of contextual alternations and phoneme identification is said to be not so important. Numerous phonetic simplifications of units larger than phonemes manifested in connected speech don't seem to affect the meaning of English sentences. Omissions of speech sounds made in this or that word for the sake of the economy of pronouncing efforts do not lead to excessive ambiguity.

For example, the auxiliary verbs *have* and *be*, in the 3rd person singular (*has, is*) reduced to a single sound [z] are properly recognized by the listener because of their syntactic function in the context. So the sound sequences [z 'nik 'k∧miŋ] or [z 'nik 'k∧m] are easily reconstructed as '*Is Nick coming?*' or '*Has Nick come?*'

The same is with the possessive -*'s* and the plural -*s* of nouns pronounced as [z]. In the sound sequences [ðə 'bɔɪz 'skeɪt] or [ðə 'bɔɪz 'pen] the sound [z] is correspondingly recognized as the plural or possessive forms of a noun: '*The boys skate*' or '*The boy's pen*'.

The problem of phoneme identification is far more significant for the Russian language because of the widely spread voiced — voiceless phonemic consonant assimilation and vowel reduction.

## § 4. Problem of phoneme identification. Main phonological schools

There are different views on the problem of the phonemic status of sounds in neutral positions and the identification of phonemes they belong to.

**I.** The representatives of **Moscow phonological school** (R.I. Avanesov, P.S. Kuznetsov, A.A. Reformatsky, and others) support the theory of morphological neutralization of phonemes. They state that a phoneme may lose one or more of its distinctive features in a weak position within a morpheme. Thus phonemic alternations within one and the same unit are connected with morphology. According to this view:

— two different phonemes in different allomorphs of the same morpheme may be represented on the synchronic level by one and the same sound which is their common variant (*вода — во́ды*, *мороз — моро́зы*) and, consequently,

— one and the same sound may belong to one phoneme in one word and to another phoneme in another word (*кот — код*).

In order to decide to which phoneme the sounds in a phonologically weak position belong, it is necessary to find another allomorph of the same morpheme, in which the phoneme occurs in its strong position and retains all the distinctive features. The strong position of a Russian consonant is before a vowel in the same word, the strong position of a vowel is that under stress. So the given examples may get the following treatment:

— in '*вода — во́ды*' [а] and [о] are allophones of the same phoneme [о], in '*мороз — моро́зы*' [с] and [з] are allophones of the same phoneme [з];

— in '*кот — код*' the identification of the allophone depends on the identification of the strong position of allomorphs '*коты — коды*'.

**II.** The representatives of **Leningrad (St. Petersburg) phonological school** (L.V. Shcherba, L.R. Zinder, M.I. Matusevich, and others) sup-

port another view and advocate the autonomy of the phoneme and its independence from the morpheme. They state that allomorphs of a single morpheme may differ from each other on the synchronic level not only in their allophonic, but also in their phonemic composition. The content of the morpheme is constant. Speech sounds in phonologically neutral positions belong to that phoneme with whose principal variant they completely or nearly coincide. Thus:

— in '*вода*' the first vowel sound should be assigned to phoneme [a];

— in '*кот — код*' the sound in question belongs to phoneme [т].

**III.** According to the representatives of **Prague phonological school** (N.S. Trubetzkoy, R. Jacobson, and others), there are types of units higher and broader than phonemes: the so-called 'archiphonemes'. An archiphoneme represents a combination of distinctive features common to two different phonemes excluding their specific features. So in '*кот — код*' the sound in question is neither [т] nor [д] but an abstract unit combining their voiceless-fortis and voiced-lenis characteristics and making them similar in neutral positions.

It should be mentioned that none of these conceptions is recognized as ideal in modern linguistics.

## *Seminar 4*

1. What are the main types of sound junction in English?
2. Name and characterize the stages of articulation when speech sounds are pronounced in isolation.
3. Explain the notions of interpenetration and merging of stages of articulation.
4. Characterize the combinative and positional changes of articulation. What types of units are they caused by? Give examples.
5. Comment on the term 'sound modifications'. What types of variations do they concern? What units do they characterize?
6. Give an overview of consonant modifications in modern English. Discuss the following variations and give your own examples to illustrate each of them: