



THEORETICAL PHONETICS OF THE ENGLISH LANGUAGE

Novosibirsk State Technical University
Olga G. Shevchenko, PhD, Foreign Languages
Department, Faculty of Humanities

Theoretical Phonetics of the English language



**ELECTRONIC COURSE IN DISPLACE#
3355**

**[HTTPS://DISPACE.EDU.NSTU.RU/DID
ESK/COURSE/SHOW/3355](https://dispace.edu.nstu.ru/did/esk/course/show/3355)**

TOPIC 1



PHONETICS AS A SCIENTIFIC DISCIPLINE

OUTLINE



1. **PHONETICS AS A BRANCH OF LINGUISTICS, ITS SUBJECT AND CONSTITUENTS OF THE SOUND STRUCTURE OF THE LANGUAGE.**
2. **BRANCHES OF PHONETICS.**
3. **CONNECTIONS WITH OTHER SCIENCES.**

What this course covers



Do you know?

- What are blends, overlapping?
- What is external / internal open juncture?
- How to make the difference between *my turn* / *might earn*?
- How to divide the word into syllables?
Extra? [e-kstrə] [ek-strə] [ekst-rə] [ekstr-ə]
[eks-trə]???
- What's the difference between broad and narrow transcription?
- What the difference between the stress and accent?
between the accent/ dialect/idiolect?

The subject of Phonetics



“**Phonetics** is the systematic study of the sounds of speech, which is physical and directly observable.

Phonetics is sometimes seen as not properly linguistic, because it is the outward, physical manifestation of the main object of linguistic research, which is language (not speech): and language is abstract” (Richard Ogden, 2009).

The subject of Phonetics (Borisova, 1980)



- Phonetics is a branch of linguistics which studies sounds in the broad sense, comprising segmental sounds and prosodic phenomena (pitch, stress, tempo, rhythm and pauses).
- Phonetics occupies itself with the study of the ways in which the sounds are organized in the system of units and variations of these units in all styles of spoken language.
- It also studies the acoustic properties of sound production and the sound phenomena that reveal the individual peculiarities of the speaker.

The subject of Phonetics



- ... phonetics is the science that “studies the sound system of the language, that is segmental phonemes, word stress, syllabic structure and intonation” (Sokolova & others, 2004 : 6).

The subject of Phonetics



Phonetics is more than descriptive; it is an experimental science that has theories and models that make testable predictions about the form of speech in different communicative situations. It legitimately addresses questions about how and why speech takes the forms it does (PLIN2108/PLING216 Intermediate Phonetics & Phonology).

Phonetics as a science



- **I.A. Baudouin de Courtenay** – the first who found the branch of Phonetics as separate branch of linguistics;
- Phonetics is more than 2000 years old;
- Nowadays **Phonetics is a branch of linguistics** that studies the whole sound system of language: sounds, phonemes, allophones, the phonetic phenomena; the syllabic structure, the distribution of stress and intonation;

Phonetic system of language



- **The system of segmental phonemes**

- ❑ the system of phonemes as discrete isolated units;
- ❑ the distribution of the allophones of the phonemes;
- ❑ the methods of joining speech sounds together in words and at their junctions, or the methods of effecting VC, CV, CC, and VV transitions;

- **The syllabic structure of words**

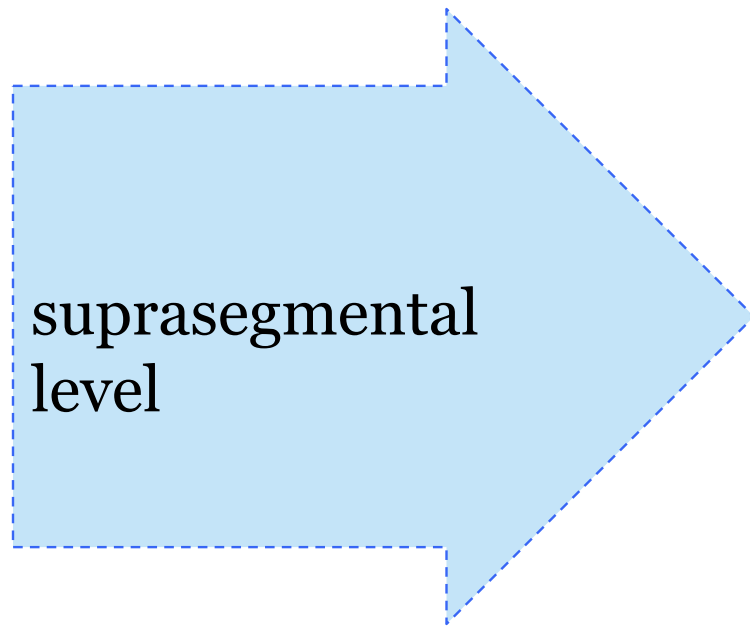
- ❑ syllable formation;
- ❑ syllable division;

Phonetic system of language



- **The accentual structure of words**
 - ❑ the physical nature of word stress;
 - ❑ the position of accent in words;
 - ❑ the degrees of word stress;
- **The intonational structure of utterances**

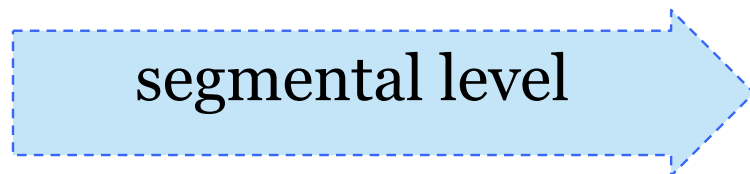
PHONETICS deals with



intonation

stress

syllables



sounds

to teach and learn how to
speak a foreign language

to form native speakers'
phonological awareness

to create sound analyzing
and sound synthesizing
devices

REASONS FOR DEVELOPING PHONETICS AS A SCIENCE

to cope with individual
problems of pronunciation
in the native language

to identify individuals by
voices in criminology

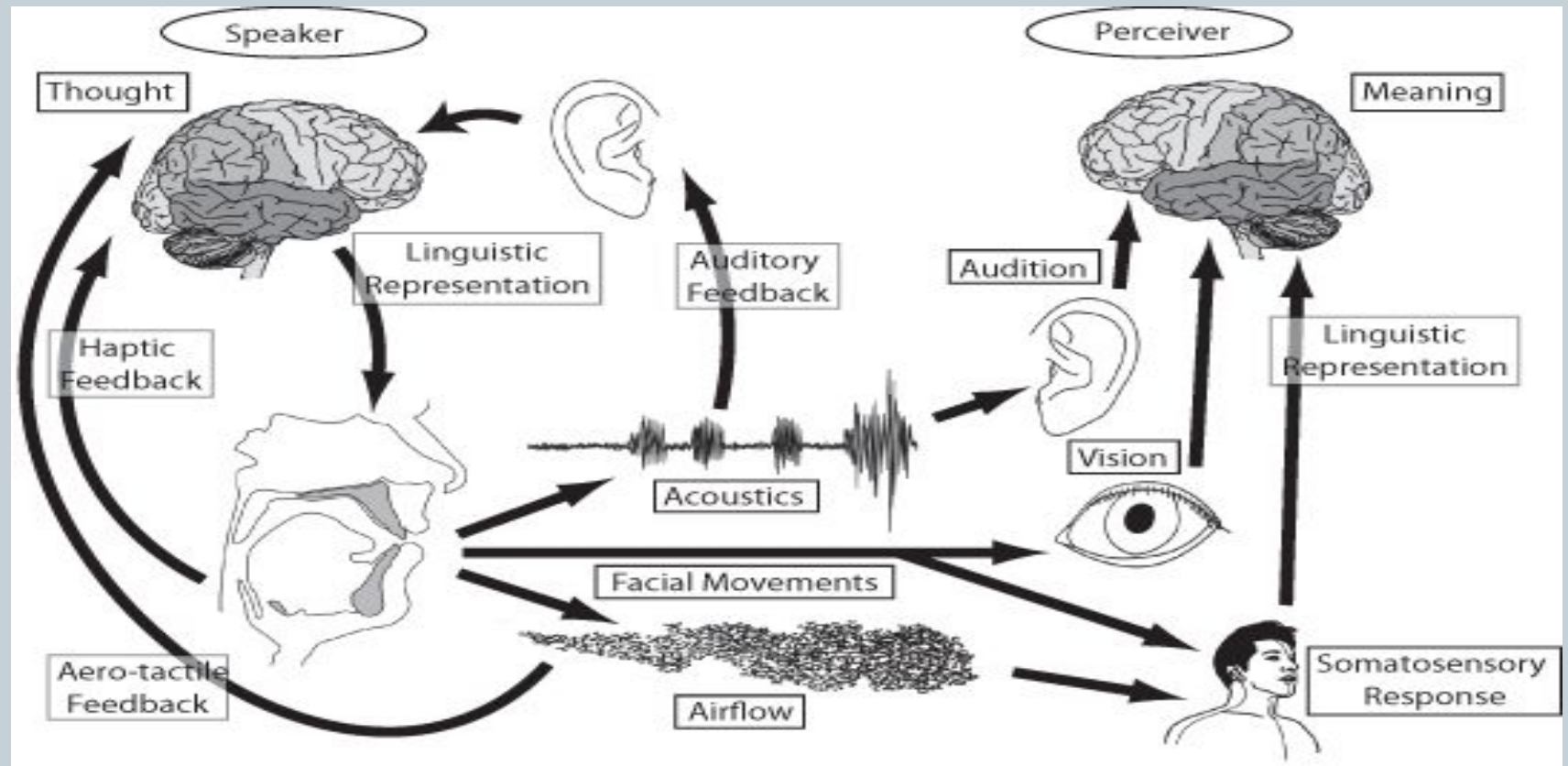


*It is just interesting to investigate the sounds
because the sound is the very beginning of oral
speech in any language.*

Speech chain



(image by W. Murphey and A. Yeung).



**FUNCTIONAL
PHONETICS
(PHONOLOGY)**

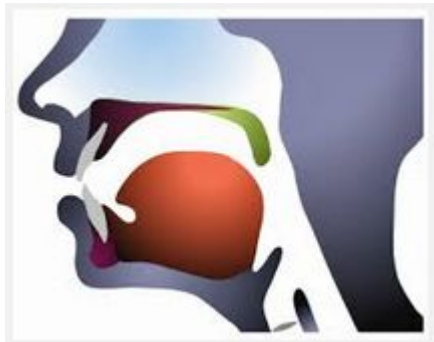
**AUDITORY
PHONETICS**

**ACOUSTIC
PHONETICS**

**ARTICULATORY
PHONETICS**

DOMAINS IN WHICH PHONETICS INVESTIGATES SPEECH SOUNDS

ARTICULATION OF SOUNDS



ARTICULATORY PHONETICS

```
graph TD; A[ARTICULATORY PHONETICS] --> B[description of how individual sounds are made]; A --> C[classification of sounds on articulatory basis]; A --> D[description of how sounds interact in speech];
```

description of
how
individual
sounds are
made

classification
of sounds on
articulatory
basis

description of
how sounds
interact in
speech

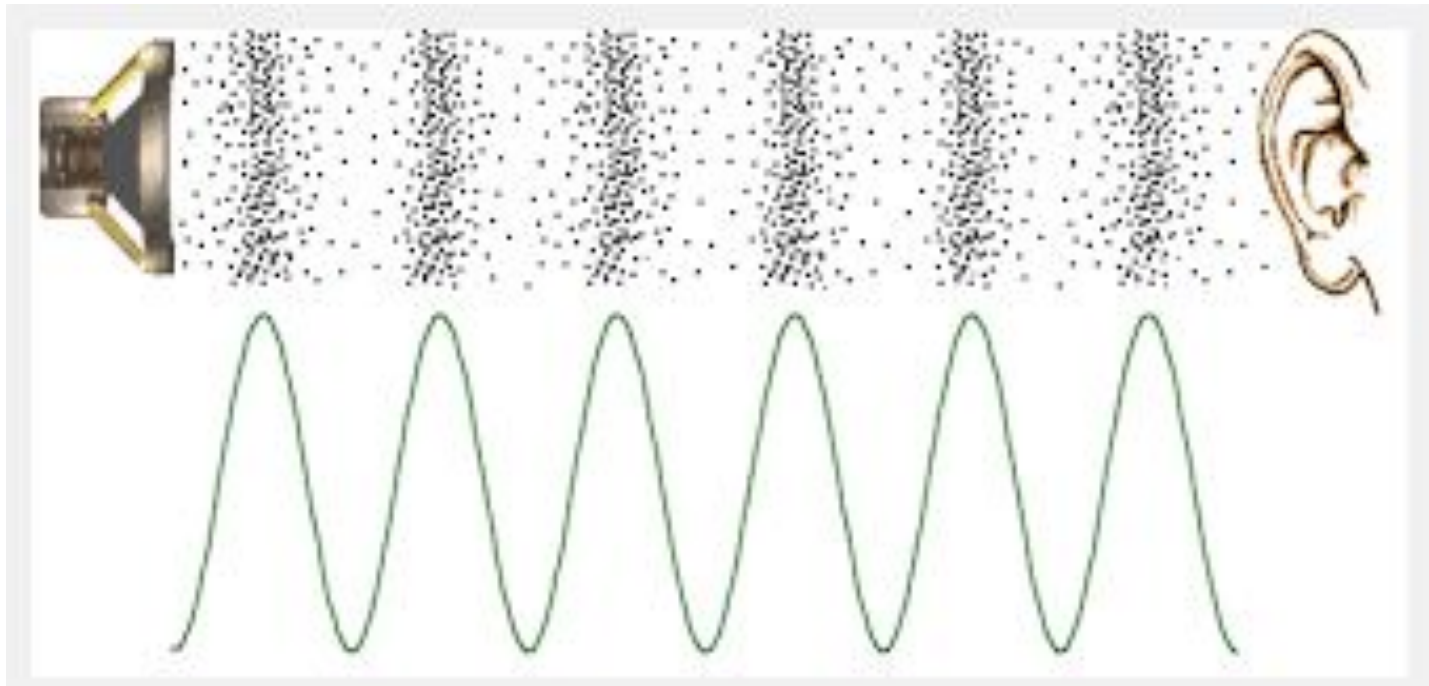
Methods in articulatory phonetics



- **Palatography** - helps to determine the interaction of tongue and palate in production of speech sounds;
- **Laryngoscopy** – examining the interior of the larynx
- **Photography** - helps to trace the position and movement of speech organs;
- **Cinematography**
- **X-ray photography**
- **X-ray cinematography**
- **Electromyography** – the graphical recording of the electrical activity of contracting muscles;
- **The method of direct observation**

DOMAINS IN WHICH PHONETICS INVESTIGATES SPEECH SOUNDS

SOUND WAVES



ACOUSTIC PHONETICS

```
graph TD; A[ACOUSTIC PHONETICS] --- B[the form in which sounds exist between mouth and ear]; A --- C[physical properties of sounds]; A --- D[acoustic categorization of sounds];
```

the form in
which sounds
exist between
mouth and ear

physical
properties of
sounds

acoustic
categorization
of sounds

Methods of acoustic phonetics



- **Spectrograph** – a device that records the frequencies of a given sound and its relative amplitudes in the form of spectrograms;
- **Oscillograph** – for indicating and recording alternating sound vibrations of any frequencies (sound waves) and their changing in time
- **Intonograph** – measures the fundamental tones of the vocal cords, the average sound pressure, the duration of speech;
- **Kymograph** – (used until 1960s) graphically recorded motion or pressure of speech sounds and their qualitative variations in the form of tracing on smoked paper;

DOMAINS IN WHICH PHONETICS INVESTIGATES SPEECH SOUNDS

PERCEPTION OF SOUNDS



AUDITORY PHONETICS

```
graph TD; A[AUDITORY PHONETICS] --- B[mechanisms of sound perception]; A --- C[mechanisms of sound interpretation]; A --- D[connection between articulation and hearing];
```

mechanisms
of sound
perception

mechanisms
of sound
interpretation

connection
between
articulation
and hearing

Methods of investigating in Phonetics



- **Objective / instrumental methods** – applied in experimental phonetics based on facts obtained with the help of different laboratory equipment or devices and instruments;
- **Subjective / perceptive methods** – applied in articulatory phonetics which are influenced by personal opinion; **The methods of direct observation** comprise three modes of phonetic analyses: by ear (auditory), by sight (visual) and by muscular sensation.

DOMAINS IN WHICH PHONETICS INVESTIGATES SPEECH SOUNDS

FUNCTIONS OF SOUNDS IN A LANGUAGE



FUNCTIONAL PHONETICS (PHONOLOGY)

establishment
of the sound
system of a
language

identification
of irrelevant
characteristics
of sounds

selection of the sounds
which perform the
discriminatory
function in a language

Branches of Phonetics



General phonetics (общая фонетика) – analyses, describes and compares phonetic phenomena as common to all languages;

Synchronic / descriptive phonetics

(синхронная, описательная) – investigates phonetic units at a single stage in language development to discover the sound patterns that can occur;

Diachronic / historical phonetics (диахроническая / историческая) – examines and constructs theories about the changes and modifications in speech sounds over a period of time;

Branches of Phonetics

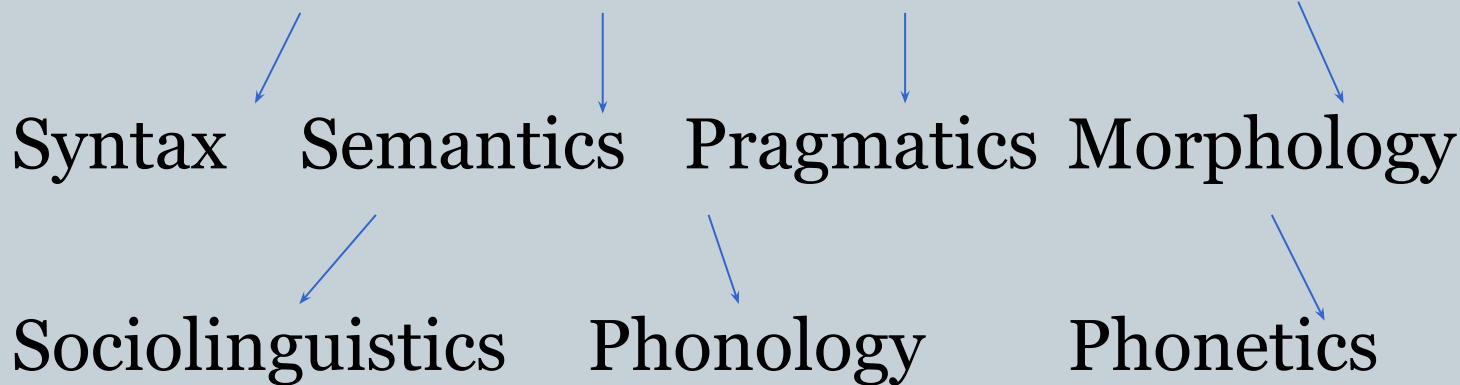


- **Experimental phonetics** – studies the material level, i.e. how the message formed in the speaker's mind is further transmitted along the nervous system to the speech organs; how it is articulated by the speaker, and perceived by the listener;

The place of Phonetics in Linguistic disciplines



The sub-disciplines of Linguistics



Connection with other sciences



● Connection with grammar

▢ *Morphology*

1) the differences in pronunciation of morpheme -ed after voiced and voiceless consonants in past forms of verbs:

beg – begged, clog – clogged stop – stopped; knock – knocked

2) the differences in pronunciation of root consonants observed in singular and plural forms of nouns:

leaf – leaves, house – houses, bath – baths

3) the vowel interchanges helping to distinguish the singular and plural forms of nouns and the tense forms of irregular verbs:

nouns	verbs
--------------	--------------

basis	–	bases [si:z]
-------	---	--------------

crisis	–	crises [si:z]
--------	---	---------------

thesis	–	theses [si:z]
--------	---	---------------

Connection with syntax



- Different communicative types of sentences are pronounced differently:

He 'went to his _↓office – a statement of fact.

He 'went to his _∕office – a question.

↓He went to his _∕office – an implication (surprise, correction).

Connection with syntax



- **The sense of sentence depends upon the intonation of it:**

I have plans to `leave (a speaker is going to leave).

I have `plans to leave (a speaker must leave his plans not cards).

Connection with syntax



- **Prosodic means are responsible for dividing the sentence into syntagms:**

Those who sold ˘quickly/ made a ˘profit (Прибыль была получена теми, кто быстро продавал).

Those who ˘sold/ quickly made a ˘profit (Прибыль была быстро получена теми, кто продавал).

Connection with lexicology



nouns – verbs adjectives – verbs homographs

an 'accent – to ac'cent 'separate – to sepa'rate row [rau] – row [rəu]

a 'desert – to de'sert 'predicate – to predi'cate lead [li:d] – lead [led]

an 'object – to ob'ject graduate – to graduate wind [wInd] – wind
[waInd].

A 'moving-,van – фургон для перевозки мебели

A 'moving 'van – любой фургон

Connection with stylistics



- speed of delivery helps to differentiate formal and informal styles;
- intonation helps to distinguish various types of utterances;

He 'went to his \office – a statement of fact.

He 'went to his /office – a question.

↓He went to his \office – an implication (surprise, correction).

- Parallelism – the repetition of sounds: rhyme, alliteration and assonance;

Connection with dialectology



- Study the peculiarities of intonation of people with different dialects and regional pronunciation;

Connection with other non-linguistic sciences



- Connection with **sociolinguistics** – new branch of phonetics – sociophonetics – study of the pronunciation of people of different age, profession and national identity;
- Connection with **anatomy and physiology** – study of organs of speech;
- Connection with **acoustics** – study of the physical properties of sound;
- Connection with **psychology** – study what happens in brains at the moment of speaking;

Phonostylistics



- A branch of linguistic stylistics which studies the functioning of various phonetic means in a particular speech situation influenced by a number of extralinguistic factors;

Physiology



Deals with the functions and activities of an organism or any of its parts.

Psycholinguistics



- Studies the mental activities involved in the perception, production and acquisition of language, combining linguistics and psychology;

Sociolinguistics



- Studies the way phonetics, lexical and grammatical aspects of language function in society;

Sociophonetics



- Studies the interaction between pronunciation and the social, natural and regional groups of society;

Stylistics



- The study of the devices in a language that produce expressive level;

BIBLIOGRAPHY



1. *Леонтьева С.Ф.* Теоретическая фонетика современного английского языка: Учеб. для студентов педагогических вузов и университетов. – 3-е изд., испр. и доп. – М.: Издательство „Менеджер”, 2002. – 336с.
2. *Теоретическая фонетика английского языка / М.А. Соколова, И.С. Тихонова, Р.М.Тихонова, Е.Л.Фрейдина.* – Дубна: ФЕНИКС+, 2010. – 192с.
3. *Gimson A.C., Crutenden A.* An Introduction to the Pronunciation of English, 1994. – 304p.
4. *Jones D.* The Pronunciation of English. – Cambridge: the Press Syndicate of the University of Cambridge, 1909. -223p.
5. *O'Connor J.D.* Phonetics. – London: Penguin Books, 1973. – 320p.

