



**When a rich man sent his youthful son to Socrates, so that he could see the promise of his son, the slave, who brought him, said, “Socrates, the father sends his son, so you can see him”. Socrates replied to the boy: “Speak, so that I may see you. Thus he meant that the speech is the most reliable and least deceitful mirror of the soul”.**

**How we speak, is important...**



Lecture 7 (2 hours)

**PROSODY/INTONATION AS A COMPLEX  
SEMANTIC UNIT.**

**COMPONENTS OF INTONATION**

- **Learning objectives:** to define the prosodic system of English, its components and their functions in communication.
- **The main idea:** communicative potential of intonation.
- **Main problems:** definition of intonation; subsystems of intonation and their functional loading; structure of intonation on the acoustic and perceptual levels.

# Points of discussion:

1. Prosody/ Intonation as a complex semantic unity.
2. Different approaches to the definition of the intonation functions.
3. Components of intonation (speech melody, sentence stress, rhythm, tempo, pauses, loudness, timbre).

# Definitions of intonation. Group 1

- ***intonation = speech melody or pitch movement*** (Armstrong L.E., Ward I. C., Bolinger D. L., Cook V. J., Cruttenden A., Jones D., Gimson A. C., Kingdon R., Ladefoged P., O'Connor J. D., Pike K. L., etc.);

# Definitions of intonation. Group 2

- ***a complex entity***, besides pitch other prosodic features are included (Антипова А. М., Ахманова О. С., Бондарко Л. В., Борисова Л. В., Метлюк А. А., Дубовский Ю. А., Калита А. А., Кантер Л. А., Светозарова Н. Д., Соколова М. А., Черемисина Н. В., Brazil D., Crystal D.).
- **О.С. Ахманова, А. М. Антипова**: Intonation is a complex unity of prosodic features, including speech melody, rhythm, intensity, tempo, duration, pauses, intonational timbre, sentence stress, which on the utterance level are used to express various syntactic meanings, as well as emotional connotations.

# Levels of intonation

## Acoustic level

instrumentally measured  
objective

fundamental  
frequency (40T) Hertz  
intensity[1] (force,  
amplitude of oscillations),  
decibel  
duration (millisec.)

## Perceptual level

auditors/listeners – subjective  
evaluation of intonation

pitch (voice range)/  
speech melody  
loudness  
tempo, pauses

[1] More air is pushed through the lungs, the amplitude of the vocal cords vibration is larger, vc are pushed apart more rapidly, sucked together more rapidly – louder sound + pitch goes up

**Prosody/prosodic features** (Greek *prosodia* – stress, refrain) is a term that refers collectively to variations in pitch, loudness, sentence stress, tempo, pauses, timbre and rhythm.

Prosodic features extend over the whole utterance, they are superimposed on speech sounds, **supra-segmental**.



# Interrelation of prosody and intonation

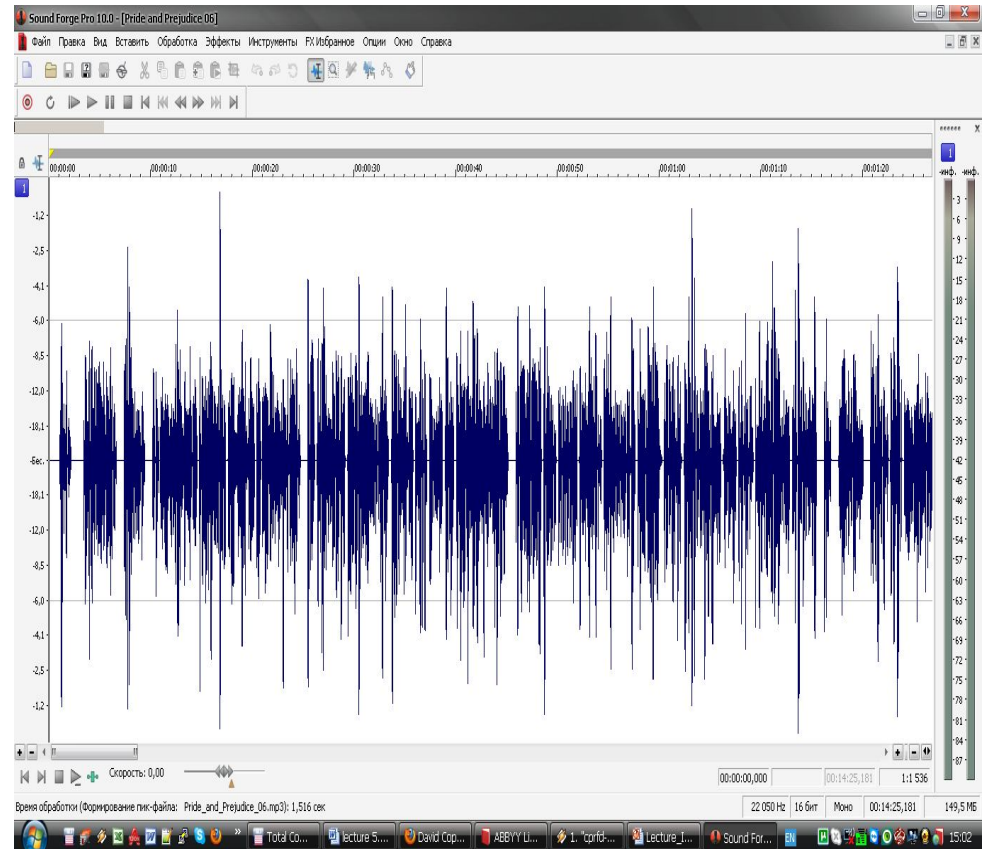
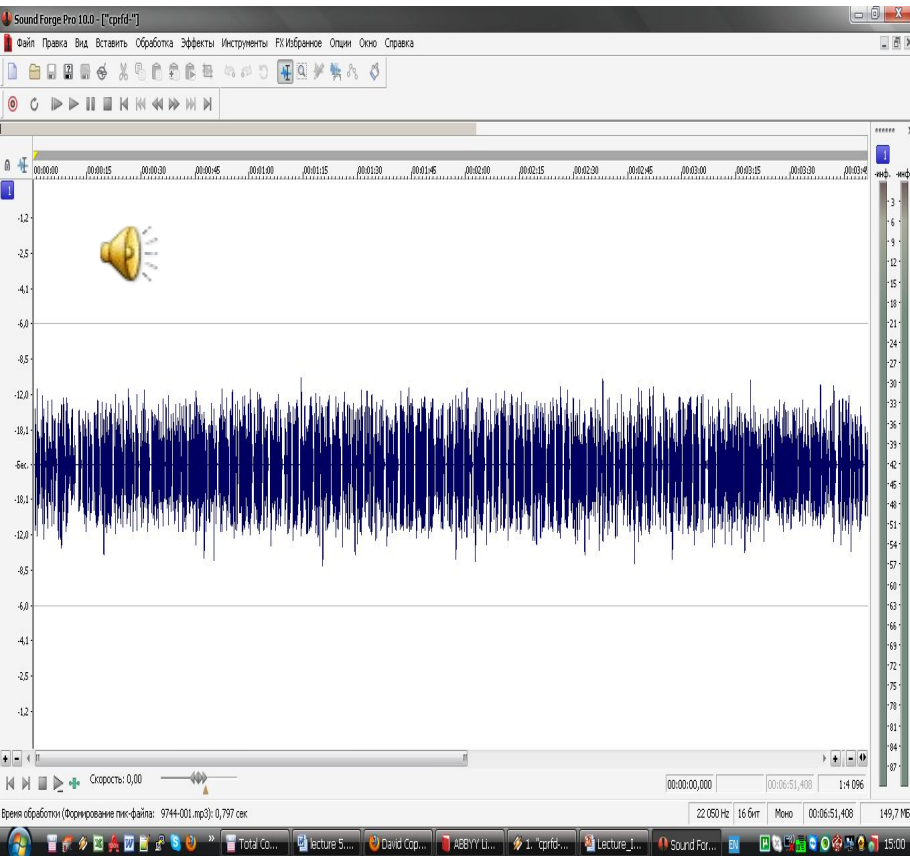
- 1) **Prosody : intonation = whole : part** (Артёмов В. А., Борисова Л. В., Метлюк А. А., Светозарова Н. Д.);
- 2) prosody = intonation, synonyms (Crystal D.).

Ю. О. Дубовський: **prosody** – structural organization of speech intonation model, reflecting the changes of its intonation parameters, includes intonation. **Intonation** has a communicative value in speech.

**Intonation description** – qualitative and quantitative changes in prosodic parameters, observed through experimental research. **Intoneme** – (V.A.Artyomov, B.A.Vassilyev), a bundle of distinctive features, a bundle of acoustic parameters, a complex intonation model of a certain utterance (esp. for communicative sentence types). J.D.O'Connor: 10 intonemes in English – The Low Drop, The High Drop, The Take-Off, The Low Bounce, The Switchback, The Long Jump, The High Bounce, The Jackknife, The High Dive, The Terrace.

**Prosodic description** – abstracting from concrete, singular, theoretical review of general regularities or coordination of intonation means. **Prosodeme** – (T.M.Nikolayeva, O.O.Reformatskyi, S.M.Gaiduchik) – “minimal unit of pitch (toneme or melodeme), intensity (accenteme) and duration (chroneme)”.

# Computer-synthesized and human speech on the oscillograms



# František Daneš (1919)

Initiator of the functional approach to prosody (intonation)



General function – *transformation* of potential language units *into communicative units*.

Special functions: *delimitation* (into tone-units, utterances), *setting connections* between them.

Secondary functions: *modal* (purpose of the utterance), *emotional*.

- ***intellectual/logical*** character (rational information),
- ***modal*** character – information about the emotional state of the speaker. Intonation – one of the most effective means of influencing people (emotional, evaluative, esthetic functions).

*Emotional function* (Анісімова Р. В.; Багмут А. Й.) – expression of speaker's emotional sphere phenomena: feelings, emotions. In various contexts and with various persons - dozens of modal meanings.

Experiments of K.S.Stanislavskyi, later repeated by R.Jacobson, a phrase "сьогодні ввечері" was pronounced with 40-50 emotional shades.

**B.Shaw:** "There are 50 ways of saying "Yes", and 50 ways of saying "No", and only one way of writing it".

# Functions of intonation

## A. Gimson:

- 1) *accentual*, pitch changes – the most efficient means of highlighting parts of the utterance, on which the speaker wishes to concentrate the attention of the listener (*highlighting*);
- 2) *non-accentual*, differentiation of different sentence types (*differentiation*).

## A. A. Kalyta:

- 1) *constitutive* (organization of utterances, texts – *textforming*, styles – *styleforming*), also *delimitative*;
- 2) *distinctive* (communicative types of sentences, texts of various styles and genres, attitude of the speaker, his intentions and emotional state);
- 3) *identificatory* (the speaker identifies communicative, modal and emotional types of utterances, their semantic and syntactic structures, type of communicative situation, etc.).

# Components of intonation

**Л.К.Цеплітіс:** intonation – semantic means, only those changes in intensity, fundamental frequency, duration and spectrum should be taken into consideration, which express certain meaning.

**Л.А.Кантер:** intonation – entity of prosodic features, fundamental frequency (perception level – pitch component), intensity (perception level – force (loudness, sentence stress) component), duration (perception level – temporal component). Close to **Ахманова О.С.:** intonation – complex unity of prosodic features: speech melody, rhythm, intensity, tempo, intonational timbre and sentence stress.

- **В.О.Васильєв:** speech melody, sentence stress, temporal features (duration, rhythm) and timbre.
- **А.М.Антіпова:** complex unity of 1) speech melody; 2) sentence stress; 3) time (temporal) features (duration, tempo, pauses); 4) rhythm; 5) timbre (voice quality).



# Inventory of intonation components

Калита А. А. Фонетичні  
засоби актуалізації  
смыслу англійського  
емоційного  
висловлювання:  
Монографія / Алла  
Андріївна Калита. – К.:  
Видавничий центр  
КДЛУ, 2001. – С. 97–98



1) speech melody; 2) sentence stress; 3) rhythm; 4) loudness; 5) tempo and pauses; 6) timbre.

- **1. speech melody**: 1.1. *pitch level* (high; medium high; medium low; low); 1.2. *pitch range* (wide; widened; medial; narrowed; narrow); 1.3. *pitch interval* (*positive*: wide; widened; medial; narrowed; narrow; *negative*: wide; widened; medial; narrowed; narrow; zero).
- **2. sentence stress**: 2.1. *nuclear*, change in pitch level (falling; rising; falling-rising, rising-falling; rising-falling-rising; level); 2.2. *non-nuclear, stressed; partial; weak* (unstressed syllable).
- **3. rhythm**: *simple; complex; mixed*.
- **4. loudness**: *increased; moderate; lowered*.
- **5.1. tempo**: *accelerated; moderate; decelerated*); 5.2. **pauses** (*with a stop in speaking (non-filled)*: short; medium-length; long; *without stop in duration* (perceptual); *filled*; inside tone-unit; on the boundaries of tone-units)
- **6. timbre**: *universal* (based on psychological states of speakers); *national; individual; acquired*, etc.

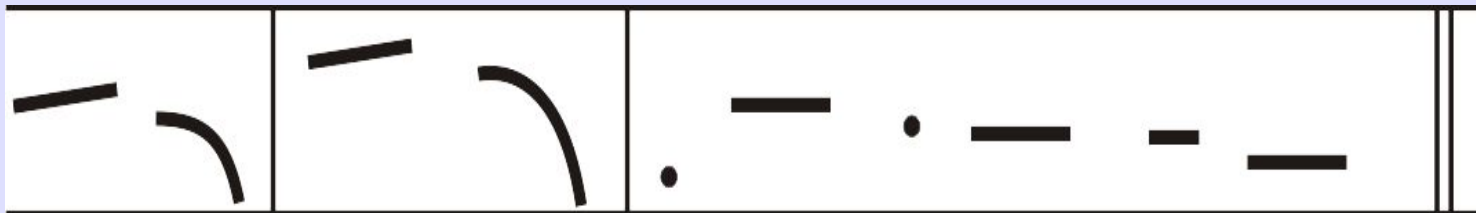


# ***Functions of pitch changes:***

- 1) division of utterances into TONE-UNITS (other phonetic means, too, often mark such boundaries: pause, final syllable lengthening, etc.); rapid change of the pitch height of unstressed syllables will generally only occur at boundaries.
- 2) signal syllables with nuclear stress;
- 3) the shape of the tunes – various types of meaning, *discourse* (i.e. the links between various parts of utterances) and *attitudinal*.

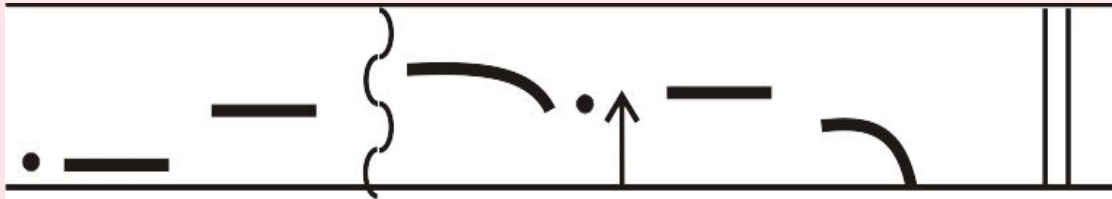
# Pitch component

## 5. *Pitch range of the tone-unit* (narrow, narrowed, medium, widened, wide);



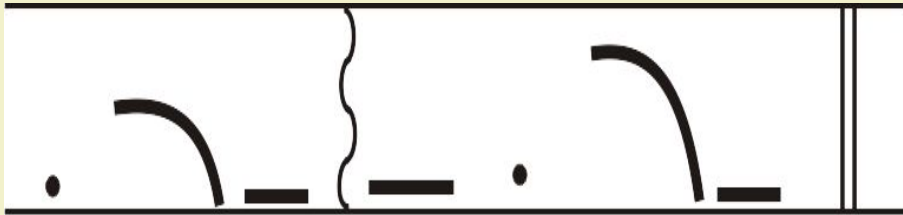
# Pitch component

**6. *Pitch range of the head*** (narrow, narrowed, medium, widened, wide);



# Pitch component

**8. Pitch interval between the pre-head & head; pre-terminal part & the nucleus, between the tone-units (positive/negative, zero, narrow, narrowed, medium, widened, wide);**



# SEMANTICS OF NUCLEAR TONES

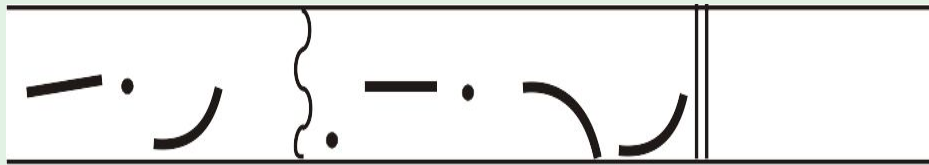
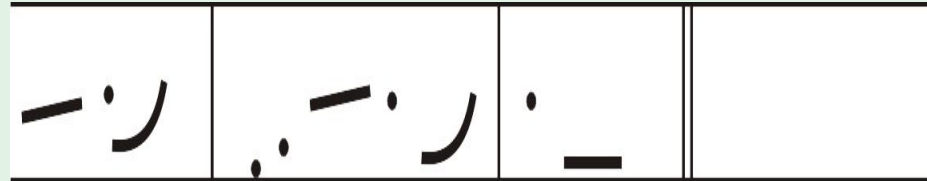
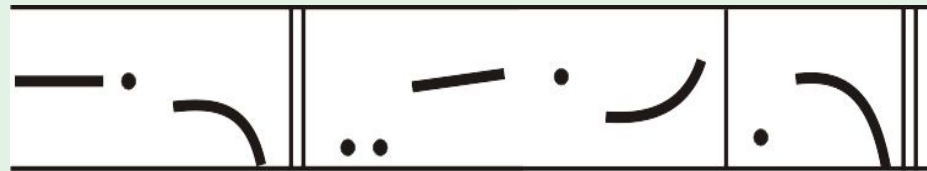
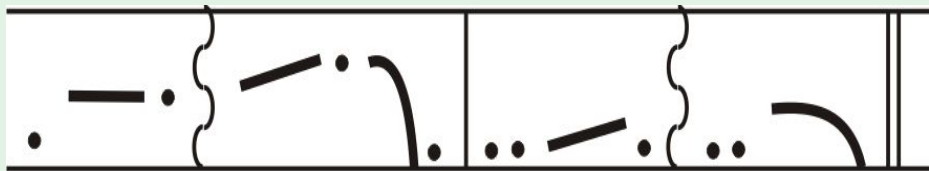
**А. А. Калита:** meaning of tones – *general communicative* (abstract, available in each case) and *situational*.

***Falling*** tones – a sense of COMPLETION and FINALITY, categoric. ***Rising*** tones – INCOMPLETION, non-categoric. ***Level*** tones – HESITATION and UNCERTAINTY.

The most rational classification – 6 basic tones (*fall, rise, fall-rise, rise-fall, rise-fall-rise, level*). Shades of meanings – form of tones (convex/опукла, hollow), rate of pitch movement direction change (gently sloping, steep).

# Pitch component

**12. Type of the terminal tone** (fall: low/medium low/medium high/high, mildly sloping/steep/medial, with a complex structure; rise; fall-rise; rise-fall; mid/high/low level);



# ***Will you marry me?***

- ☹ **THE LOW FALL:** Final, complete, definite, categoric, calm, reserved, considered, weighty, neutral tone; a detached, unemotional statement of fact.

*(Unlikely, though it could be quite a dramatic answer, after passionate preliminaries)*

Low Narrow Fall – bored, uninterested.



# ***Will you marry me?***

☺ **THE HIGH WIDE FALL:** Emotionally involved; the higher the starting point of the tone, the more involved the speaker; emotion (surprise, excitement, irritation) depends on the speaker's facial expression.

*(Possible, especially if accompanied by breathy voice)*

High Narrow Fall – routine commentaries, not so enthusiastic. Too many falls – the effect of self-confidence, persistence.





# ***Will you marry me?***

- ☺ **THE LOW RISE:** not categoric, friendly, soothing, reassuring, encouraging further conversation. Typical for non-final tone-units (something more is to follow), closely connected with the following one. Facial expression important; with a 'happy' face, the tone is sympathetic and friendly; with a 'grim' face, it is guarded, tough, pitiless and ominous.
- (*The speaker might be thinking, 'What's the catch?'*)
- Low Wide Rise – discouragement, distrust, criticism, threat. Too many rising tones – uncertainty, shyness, irritation of the speaker.



# ***Will you marry me?***

- ☹ **THE HIGH RISE:** an interrogatory tone. Non-finality and incompleteness are brought to its extreme, **active search for information**. Often used in echoed utterances (*We start tomorrow. — **You start tomorrow?***), calling for repetition or additional information or with the intention to check if the information has been received correctly. Mild query or puzzlement.
- (*Unlikely, though it might be used to convey 'Are you sure you know what you're saying?'*)



# ***Will you marry me?***

☺ **THE MID-LEVEL:** non-final tone-units, non-finality: *What did Tom say? – Naturally, he was delighted.* Restricted context: saying something routine, sarcastic, ironic, uninteresting, boring (e.g. being asked a series of routine questions – applying for an insurance policy, like 'Have you ever been in prison?', 'Do you suffer from any serious illness?', 'Is your eyesight defective?', etc.) with \_No.

*(Unlikely. Meaning something like 'If I really must' or 'I give up', or possibly, 'Here we go again, the same old routine'.)*

- Low Level – bored, sarcastic, routine.



# ***Will you marry me?***

- ☺ **THE FALL-RISE** (Low Fall+ Low Rise, High Fall+ Low Rise; Undivided (stronger implication): *NO*, Divided (less implication, more emotion): *i THINK his face is faMlliar.*). Mild correction, contradiction, warning, encouraging, pleading, friendly, polite
- **Roger Kingdon:** “*Fall-rise* is an *implicatory* tone. It always gives the impression that something has been left unsaid, and that the speaker expects his listener to imagine the extra meaning.” A strongly emotional tone; a 'negative' face – uncertainty, doubt; a positive one conveys encouragement or urgency.



*(Quite likely. Maybe there are some conditions to be met.)*

# ***Will you marry me?***

- ☺ **THE RISE-FALL:** definiteness, finality. The speaker is greatly impressed (favourably or not), strong feelings of approval, disapproval or surprise. This tone has an intensifying function very similar to the use of the word “**even**”. *You aren't trying.* = ... even trying. The RF is expressing warmth, admiration, sarcasm, indignation, sounds impressed, challenging, antagonistic, mocking. Depending on the face, the attitude might be delighted, challenging, or complacent. Excited, impressed + breathy timbre = ‘gossip’. Challenge.
- *(Very likely. With a bit of breathiness, the speaker can't wait.)*



# Variation in the pitch range: key

Falls and rises are high and low. They differ in range, mostly it is widened upwards (i.e. the 'top line' is raised). When there is more than one stressed syllable in a tone-unit, key is typically set by the height of the first stressed syllable. 1st stressed syllables is slightly lower in each successive group.



Key concerns the delimitation of **paratones** (often = topic), a new paratone being marked by a *wide key* (high) and the end of a paratone by a *narrow key* (low, and often followed by an extended pause).

Newsreading. Low key is often used for parentheses, e.g. *I ran into Jane last week // by the way/did you know she still has three children? // and she said ...*



# Variation in the pitch range: register

- Speakers normally use only the bottom third of their potential pitch range in speech. Both low and high pitches are raised, so that the pitch overall is higher but not wider.

**High register** (overall increase in fundamental frequency, additional tension in the vocal cords ← emotional tension or stress) is associated with *greater emotional tension*, to some extent conventionalized (a 'little-girl voice' signals helplessness, in Tamil (Sri Lanka) and Tzeltal (Mexico): social politeness, when sons speak to fathers, those of low caste speak to those of high caste), positive emotions (excitement, happiness), strong uncontrollable emotions (indignation).

**Low register** – often negative emotions (sadness, grief, dissatisfaction).

- In emotional states co-occur wide key and high register (*joy, anger, fear, and surprise*); narrow key and low register (*boredom, sorrow*).

# Sentence stress:

- The greater degree of energy or prominence which is given to one or more words in a phrase as compared to other words of the same phrase.
- Nucleus → 1<sup>st</sup> stressed syllable → stressed syllable → partially stressed syllable → unstressed/weak syllable

**Content/notional words    VS    Function/structure/form words**  
(de-emphasized/backgrounded)

*ArRlving    KENnedy AIRport    TUESday    03.45 p.m.*

*I am ARRIVING at KENNEDY AIRPORT on TUESDAY at 03.45 p.m.*



**strong** (stressed) **form** of function words is used:

- At the end of the sentence: *What are you looking **at**?*
- Emphasis: *Well, which one **do** you want?*
- Contrast: *He is working hard. **She** but not **he**.*

In opening remarks, or when a new topic is introduced, last notional word (normal syntactical stress). More freedom is possible in responses:

- **Example 1:** *She came last 'week, – 'Last week!* (incredulous: 'Wasn't it the week before?') or *Last 'week?* (i.e. 'Don't you mean last month?');
- **Example 2:** *What was the weather like? – It rained every 'day* (emphasizing the continuous nature of the rain) or *It 'rained every day!* (where the fact of raining is emphasized).

Exceptions to the rule of last lexical item – the nucleus:

- 1) **phrases having an intransitive verb or verb phrase whose subject is non-human or which loosely involves disappearance**, e.g. *That 'building's falling down. A 'doberman's on the prowl. The 'dog barked* (cf. *The man 'swore*);
- 2) **certain types of adverbial in final position**. Sentence adverbials and adverbials of time usually do not take the nucleus in this position, e.g. *I go to 'Manchester usually. It wasn't a very nice 'day unfortunately. There's been a 'mix-up possibly. He didn't 'succeed however*. Alternative – to divide the sentence into two tone-units with the adverb getting a separate phrase on its own, e.g. *I go to 'Manchester/ 'usually. It wasn't a very nice 'day/ un'fortunately*. Still, a few adverbs, in particular *however*, do not allow this alternative option.
- 3) **Direct addresses and author's words**, e.g. *Don't you a`gree, Peter? Don't be a `fool, he said*.

# Force component: Loudness

- A relative force of auditory perception that depends on the perceived energy of sound waves
- Is conditioned by the amplitude of the speaker's vocal cords vibration when producing speech
- High, increased, normal, reduced, low
- Loudness may vary within the tone-unit, giving additional emphasis to some of its parts.

# Rhythm in English

- Stress-timed
- Isochronous (stressed syllables occur at more or less equal periods of time)
- Rhythm unit/rhythmic group/phonetic word/foot consists of a stressed syllable and adjoining unstressed syllables (proclitics and enclitics);
- Simple/complex/mixed
- Even/legato (isochronous, didactic)/staccato



# Rhythm unit/phonetic word

*They couldn't have chosen a better time for their holiday.*

. ● . .

● . .

● .

● . .

● . .

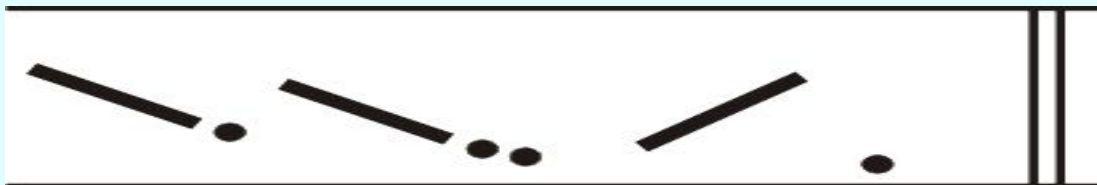
*reunion*

A syllable with a reduced vowel 'borrows time' from any immediately preceding syllable containing a full vowel (***the borrowing rule***).

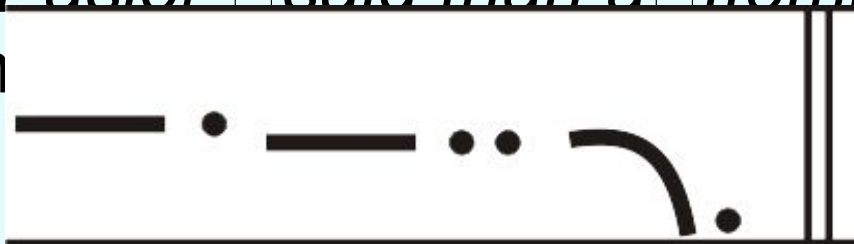
The adjoining unstressed syllables are called **proclitics** when they precede the stressed syllable and **enclitics** when they follow the stressed syllables.

# Staccato rhythm

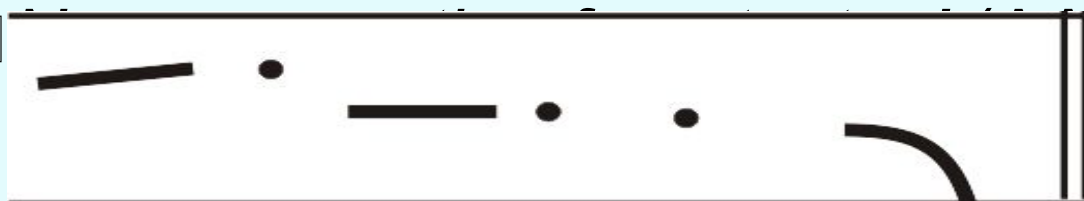
- (1) ☐ *Easier* ☐ *ssaid* *than a* ☐ *ttempted* (criticism, C97)



- (2) ☐ *Easier* ☐ *said* *than a* ☐ *ttempted* (PV) (blame)



- (3) ☐ *Easier* ☐ *said* *than a* ☐ *ttempted* (W) (blaming)



# Temporal component: tempo

**Speech tempo** – relative speed of utterance, measured by the rate of syllable succession and the number and duration of pauses in a sentence.

The average rate may contain from about 2 to 4 syllables per second for **slow speech/lento**, from about 3 to 6 syllables for normal speech, and from about 5 to 9 syllables for **fast speech/allegro**.

Differences of rate are used to help the listener to differentiate the more important /slow/ and the less important /fast/ parts of the utterance (parentheses, tail). Emotional and attitudinal functions, e.g. *fast* – anger, grief, fear, uncontrolled emotions, emotional strain growing, *slow* – tired, depressive, contemptuous, uncertain, hidden emotions.

**D.Crystal:** conscious acceleration of tempo: 1) to prevent interruption; 2) to relate an unpleasant information and change the topic; 3) increase the volume of interesting information.

# Temporal component: pauses

## ***Pauses:***

1) Physical pauses: long / medium / short – unfilled

- between phonopassages |||
- between utterances ||
- between tone-units | (short), □ (perceptual)
- inside tone-units | (emphasis), e.g.: → *Knowledge* □ □ *is* |  
□ *power*.

2) Filled (with *hm*, *well*, etc.), 3) mixed

**К.С.Станіславський:** great importance of the *psychological* pause (active, rich in meaning, feeling, duration varies), VS logical pause (passive, formal, mind, mostly short), used to delimitate speech.

Regulates social relations: Shorter pauses between the utterances of speakers – impertinence, aggression. In official style is 30-80 percent longer.

- Pauses mark boundaries between tone-units.

*My aunt, who lives in Leeds, is coming for Christmas.*

*My aunt who lives in Leeds is coming for Christmas.*

# ***Pauses between tone-units*** |, □

- Often **the subject / subject group** forms a separate tone-unit (short/or perceived pauses): *Birds of a feather □ flock together, Fine feathers □ make fine birds.*
- **Adverbial modifier** (perceived pauses): *Keep your breath □ to cool your porridge.*
- **Parallel constructions** (short/or perceived pauses): *Out of sight, □ out of mind, First come □ first served, In for a penny □ in for a pound, No fuss □ no muss.*
- **Comparisons** (perceived pauses): *There's no fool □ like an old fool, It's better late, □ than never, Easier said □ than attempted.*
- **Between the clauses of compound and complex sent.** (mid length / rarely - short): *If Mohammed won't come to the mountain, □ the mountain will go to Mohammed, There's always one exception, □ which proves every rule, Take care of the sense, □ and the sounds will take care of themselves, If it must be so, □ it must, Think □ before you speak.*



# Timbre

***whisper*** – secrecy or conspiracy, ***breathiness*** – deep emotion or sexual desire, ***huskiness*** – unimportance or disparagement, ***nasality*** – anxiety, ***extra lip-rounding*** – intimacy (esp. to animals and babies).

Л.К.Цеплітис: ***non-semantic timbre*** (language, dialect, style, idiolect), ***semantic (logical*** (generally does not delimit, but highlighting the most important, etc.) and ***modal***). Intonation timbre is laid upon the individual one (anatomy of organs of speech).

Дж.Лавер “**The Gift of Speech**”: “speaker’s emblem “ (social, religious, regional background, occupation, social status; physique, sex, age, state of health and psychology (emotional state, usual or momentary).

- The most frequent types:

- 1) ***ordinary/unmarked***,
- 2) ***creaky*** (glottis is less open, powerful emotion, responsibility + low pitch, guttural sounding),
- 3) ***breathy*** (vocal cords are somewhat distant, vibrate, at the same time letting a lot of air through the glottis), *shock, respect, uncontrollable desire*,
- 4) ***palatalized*** (the body of the tongue is close to the hard palate).

# Timbre (voice quality)

- Timbre is described in terms of *sound* (high, low), *light* (light, dark), *touch* (soft, velvet) plans. **Positive** – soft, velvet, clear; **negative** – harsh, tense, abrupt, creaky, quavering.

