

HANDOUT 6: THE ANALYSIS OF SPEECH

The syllable.

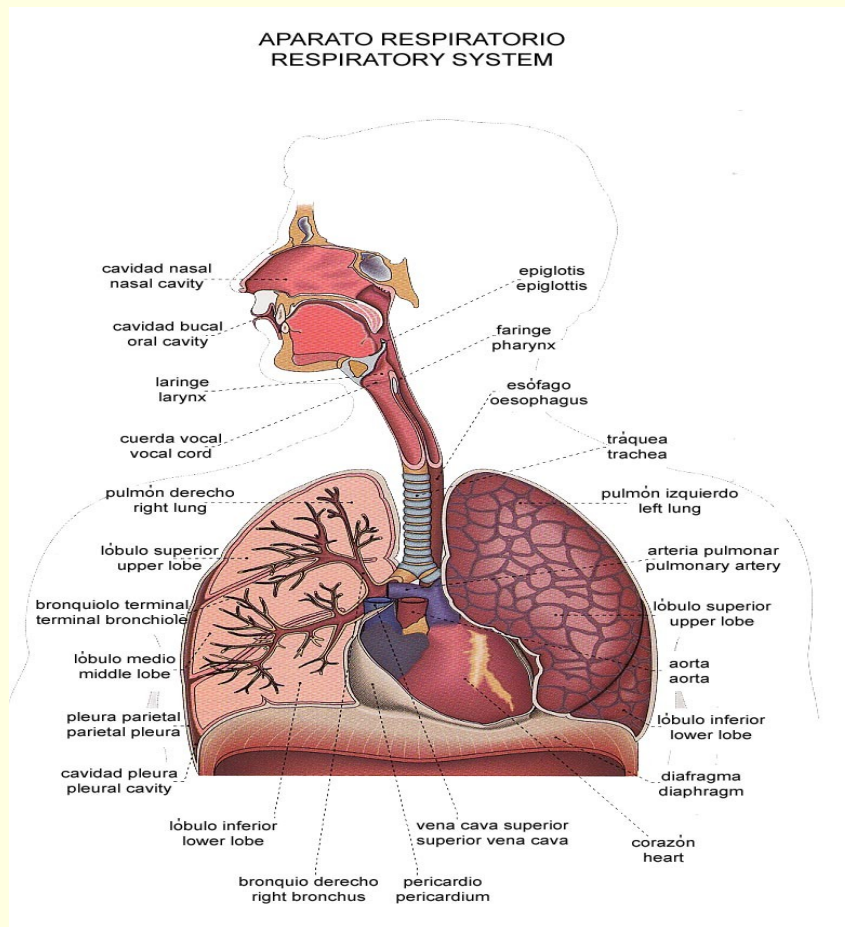
STUDY QUESTIONS.

- How does the pulmonic air-stream mechanism theory explain the syllable?
- Define in your own words the following terms:
 - Chest-pulse.
 - Stress-pulse.
 - Vowel.
 - Consonant.
 - Vocoid.
 - Contoid.

1. The syllable.

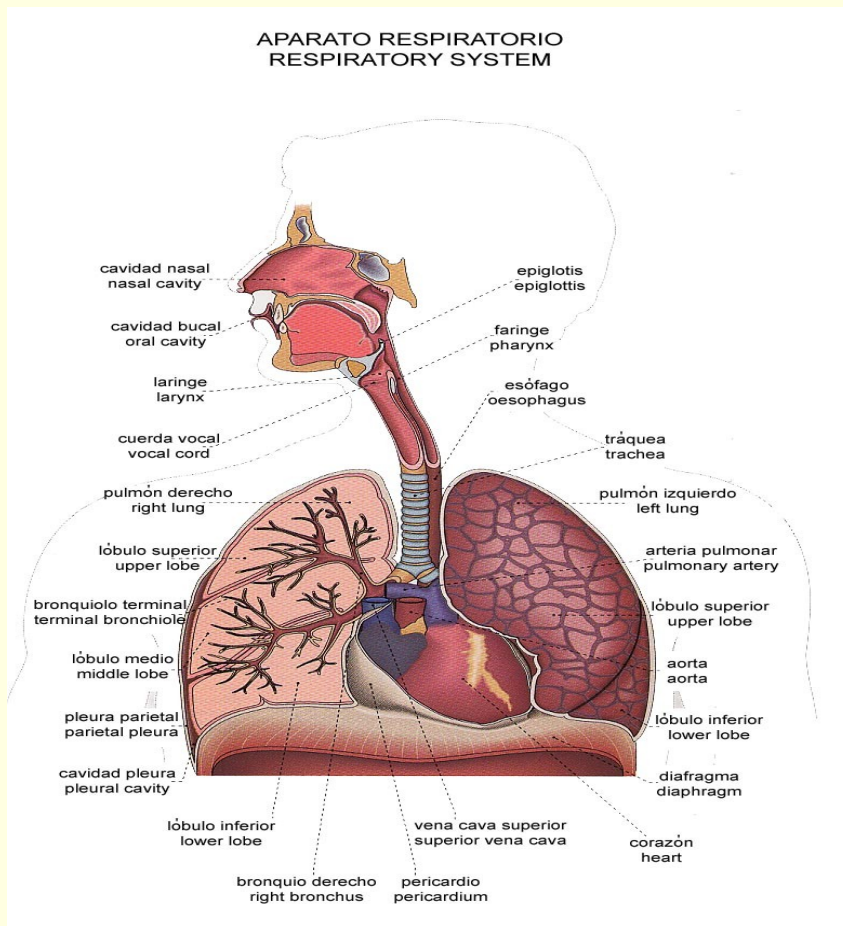
- In order to be able to describe and compare the pronunciation of different languages, we have to analyse speech.
- Speech can be divided into smaller units called *syllables*.
- *The pulmonic air-stream mechanism* is perhaps the best theory that has been put forward so far to explain how the syllable is produced or how it is perceived.

1.1. The pulmonic air-stream mechanism theory.



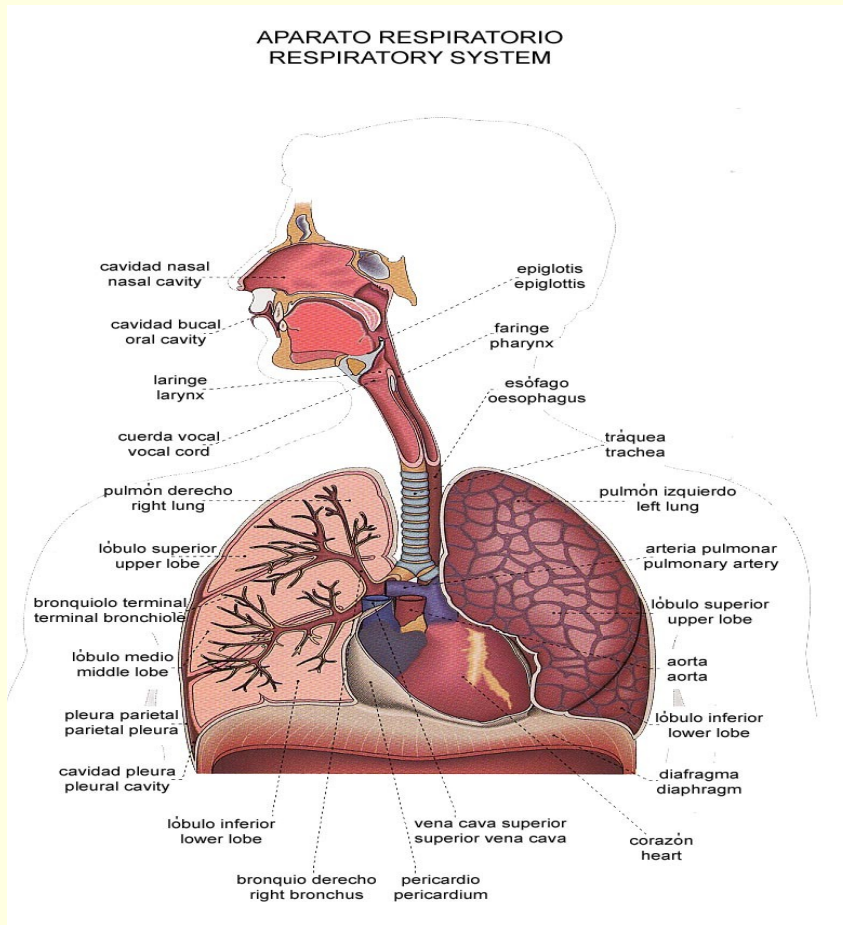
- This theory maintains that when the pulmonic air-stream mechanism is in action, the respiratory muscles alternately contract and relax at a rate of five times per second, so that the air is expelled in a succession of small puffs.
- Each contraction, together with the resulting puff of air, constitutes the basis of a syllable.

1.1. The pulmonic air-stream mechanism theory.



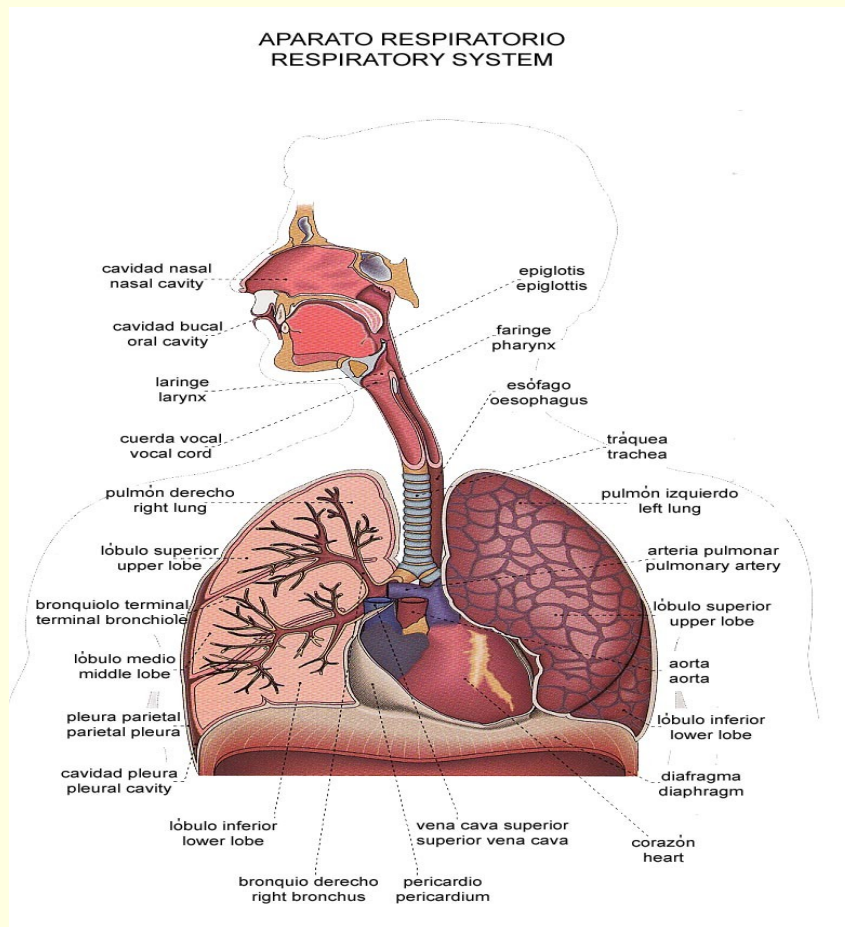
- The syllable is essentially a *movement of the speech organs*, and not a characteristic of the sound of speech.
- The syllable-producing movement of the respiratory muscles has been called *chest-pulse* or a *breath-pulse*, or *syllable-pulse*.
- At least one such movement must be involved in whatever we say: *Sh!*, *Ah!*, *Hmmm!*

1.1. The pulmonic air-stream mechanism theory.



- A chest-pulse may be produced by exceptionally great muscular action: it is then a reinforced chest-pulse or stress-pulse.
- A syllable produced by a stress-pulse is a stressed syllable.

1.1. The pulmonic air-stream mechanism theory.



- The *syllable process* and the *stress process* together make up the pulmonic mechanisms and they are the basis on which the whole of the rest of speech is built.
- Different languages coordinate the two processes in different ways and the manner in which they are combined produces the *rhythm* of the language.

2. Analysis of the syllable.

- The syllable has an essential unity.
- It is a complex and integrated act with numerous different organs taking part in it: the pulmonic air-stream mechanism, the vibration of the vocal cords, the articulatory movements of the tongue and lips.



2. Analysis of the syllable.

- The syllable is too large and complex unit to serve the purposes of general phonetic description adequately.
- Syllables can be divided into smaller movements or segments.

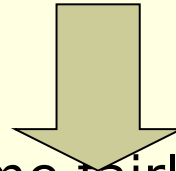


2.1 Analysis of the syllable: difficulties

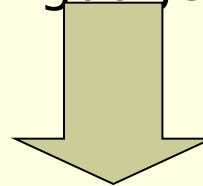
- The movements to be analysed are very *complex*: lips, jaw, velum, vocal cords, and lungs.
- The movements are very *rapid*: the tongue alone may make as many twelve adjustments of shape and positions per second.
- The movements are very *small*: the human ear is sensitive to the effects of tiny adjustments of the tongue, lips, and other organs.
- The movements are *continuous*.

3. Vowels and consonants.

- Vowels and consonants are traditional categories deriving ultimately from the Greek grammarians.



- They have by now become fairly ambiguous because they are often applied to letters of the written alphabet; not units of the spoken language at all.



- Vowels and consonants are two different sorts of syllable-segment distinguished from each other by the function they play in the syllable structure.

3. Vowels and consonants. Vocoids and contoids.

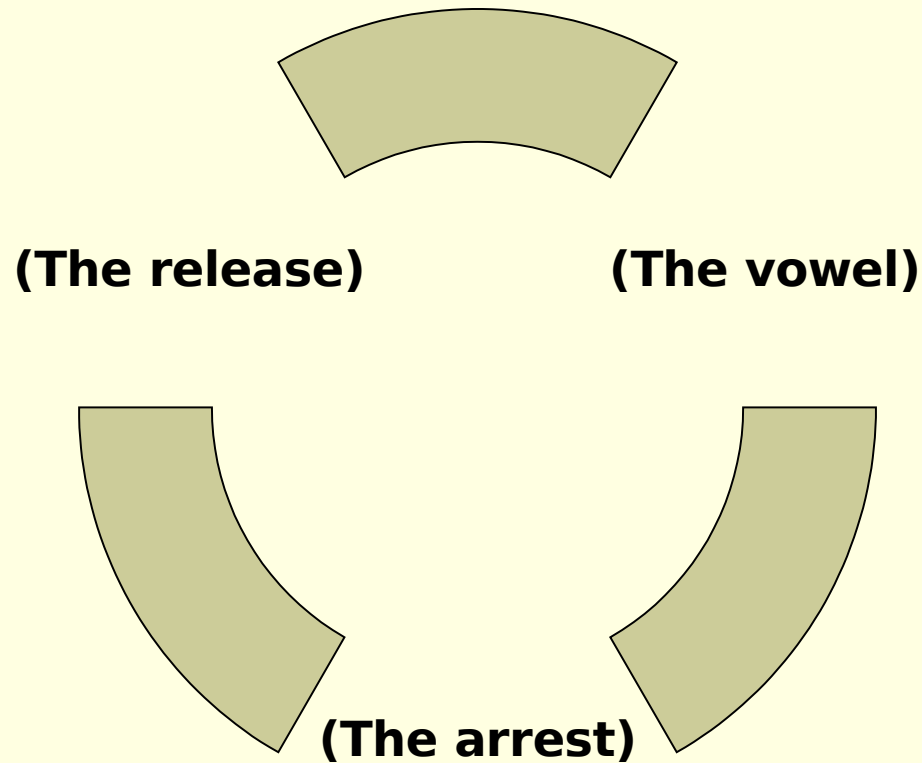
■ Vowels.

- The air expelled from the lungs needs for its escape to the outer air a relative free and unrestricted passage through the vocal tract.
- A vowel is the nucleus or central part of the syllable.

■ Consonants.

- The air expelled from the lungs can be both released and arrested by articulatory movements.
- A consonant is a marginal part, associated with the beginning and ending of the syllable.

3.1 The syllable: phases



3.2 Types of syllables.

■ Open syllable: *bee*

■ Closed syllable:
cease, bib.

3.2 Vocoids and contoids

- K.L. Pike (1943) introduced two new terms to replace the words *vowel* and *consonant* when used with reference to phonetic form without regard to syllable function: ***vocoids*** and ***contoids***.
- K.L. Pike has also put forward the term ***syllabic*** for a segment representing a *V* element of syllable structure, and ***non-syllabic*** for a segment representing a *C* element of a syllable structure.

3.3 Vocoids and contoids: classification

- (a) a syllabic vocoid in *awe* (vowels);
- (b) a non-syllabic vocoid at the beginning of *yet* (semivowels);
- (c) a syllabic contoid in the second syllable of *people* (syllabic contoids are often found in interjections, such as *sh!* or *hmm!*);
- (d) a non-syllabic contoid at the beginning of *pet* (consonants).
- Syllabic vocoids (vowels) and non-syllabic contoids (consonants) are the most common of the four categories in the languages of the world.