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!, Hmm!
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.

- **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

(The release)       (The vowel)

(The arrest)
3.2 Types of syllables.

- Open syllable: *bee*
- Closed syllable: *cease, bib.*
3.2 Vocoids and contoides

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.