

STUDY QUESTIONS FOR THE MID-TERM EXAM (June 17, 2005)

A. PHYSIOLOGICAL PHONETICS: ANATOMY AND PHYSIOLOGY OF SPEECH PRODUCTION

1. What is the difference between anatomy and physiology? Discuss.
2. Discuss the concept "speech organs".
3. Is speech an overlaid function? Discuss and provide three arguments to illustrate your point.
4. Briefly summarize the implications of current research with regard to the assumption concerning the existence of an intermediate vocal tract.
5. List and define briefly the three physiological components of speech production.
6. Supraglottal organs: enumerate, describe and define their roles.
7. Give brief definitions of the following terms relevant to the study of the supraglottal organs; refer to their function in speech production where relevant:
 - a. alveolar processes
 - b. mandible
 - c. apex, lamina, anterodorsum, posterodorsum, radix
 - d. alveolar ridge
 - e. palate
 - f. velum
 - g. velic port
 - h. uvula
 - i. vocal tract
 - j. oral cavity
 - k. nasal cavity
 - l. pharyngeal cavity
8. The larynx: describe and define its function.
9. List and briefly describe the cartilages of the larynx.
10. Give brief definitions of the following terms relevant to the study of the larynx:
 - a. hyoid bone
 - b. epiglottis
 - c. thyroid cartilage (superior horns, inferior horns, thyrohyoid membrane)
 - d. cricoid cartilage
 - e. arytenoid cartilages
 - f. vocal folds
 - g. conus elasticus
 - h. adduct/abduct
 - i. ventricular folds
 - j. ventricles of Morgagni

11. Briefly describe the following phonation types:
 - a. Voicelessness: (i) nil phonation, (ii) breath phonation, (iii) whisper phonation
 - c. Voiced phonation: explain the myoelastic-aerodynamic theory of voice production
 - d. Creak phonation
 - e. Combined phonation types: (i) breathy voice, (ii) creaky voice
12. What does the frequency of vocal fold vibration depend on? Discuss.
13. Can the length of the vocal folds be adjusted? Discuss.

B. RESPIRATORY MECHANISM

1. Explain the concept of *negative pressure breathing*.
2. Define these terms: tidal volume, vital capacity, residual volume.

C. SPEECH MUSCLES

1. The muscles of speech: describe the characteristics of muscle movements in general.
2. Enumerate and briefly describe the functions of the relevant speech muscles that make the following articulations possible:
 - a. nasal vs. non-nasal articulation
 - b. tongue arching, as for palatal sounds, velar sounds, and high or mid vowels
 - c. tongue lowering, as for low vowels
 - d. tongue-tip raising, as for alveolars and dentals
 - e. tongue width adjustment, as for laterals versus nonlaterals
 - f. high back articulation, as for high back vowels and velar consonants
 - g. low back articulation, as for low back vowels and various rhotic sounds
 - h. lip-spreading, as for [i], [e] and [j]
 - i. lip-rounding, as for [o], [u], [ɸ] and [ʁ]
 - j. jaw opening, as for all speech sounds, especially low (open) ones

D. LARYNGEAL MUSCLES

Name and briefly describe those laryngeal muscles that are relevant in the following functions:

- a. vocal fold abduction
- b. vocal fold adduction
- c. vocal fold tensioning
- d. larynx lowering
- e. larynx raising

E. PRACTICAL EXERCISE

On the basis of the Guide to Transcription Practices list the articulatory and coarticulatory phenomena in the following sentence.

Example:

The little girl was eating an apple.

little [t̬]

The alveolar stop is *laterally released* (before the lateral); the alveolar lateral approximant is *velarized* (because it is word-final) and *syllabic* (because it is preceded by a consonant).

girl [əɾ]

The vowel is *rhotacized* (before a rhotic approximant in the same syllable) the alveolar lateral approximant is *velarized* (because it is word-final).

eating [ɛ̃]

There will be a *flap* articulation here (because the alveolar stop is between two vowels and the first one is stressed); the vowel is *nasalized* (because it is followed by a nasal in the same syllable).

an apple [næpəɾ]

The last consonant of *an* and the first vowel of *apple* are coarticulated (thus there is no nasalization of the vowel); the alveolar lateral approximant is *velarized* (because it is word-final).

NOTE: You may discover additional articulatory and coarticulatory phenomena. Try to list as many as possible and provide explanations for their occurrence.