PHONETICS: OVERVIEW

Pr. Belfakir

Introduction

- Speech is a very complicated process, and to study it, requires a whole scientific subject- phonetics.

What is Phonetics?

Phonetics is…

- The study of speech sounds (Fromkin et.al., 2005:222).
- Study of the general characteristics of the speech sounds (Yule, 2006:30).

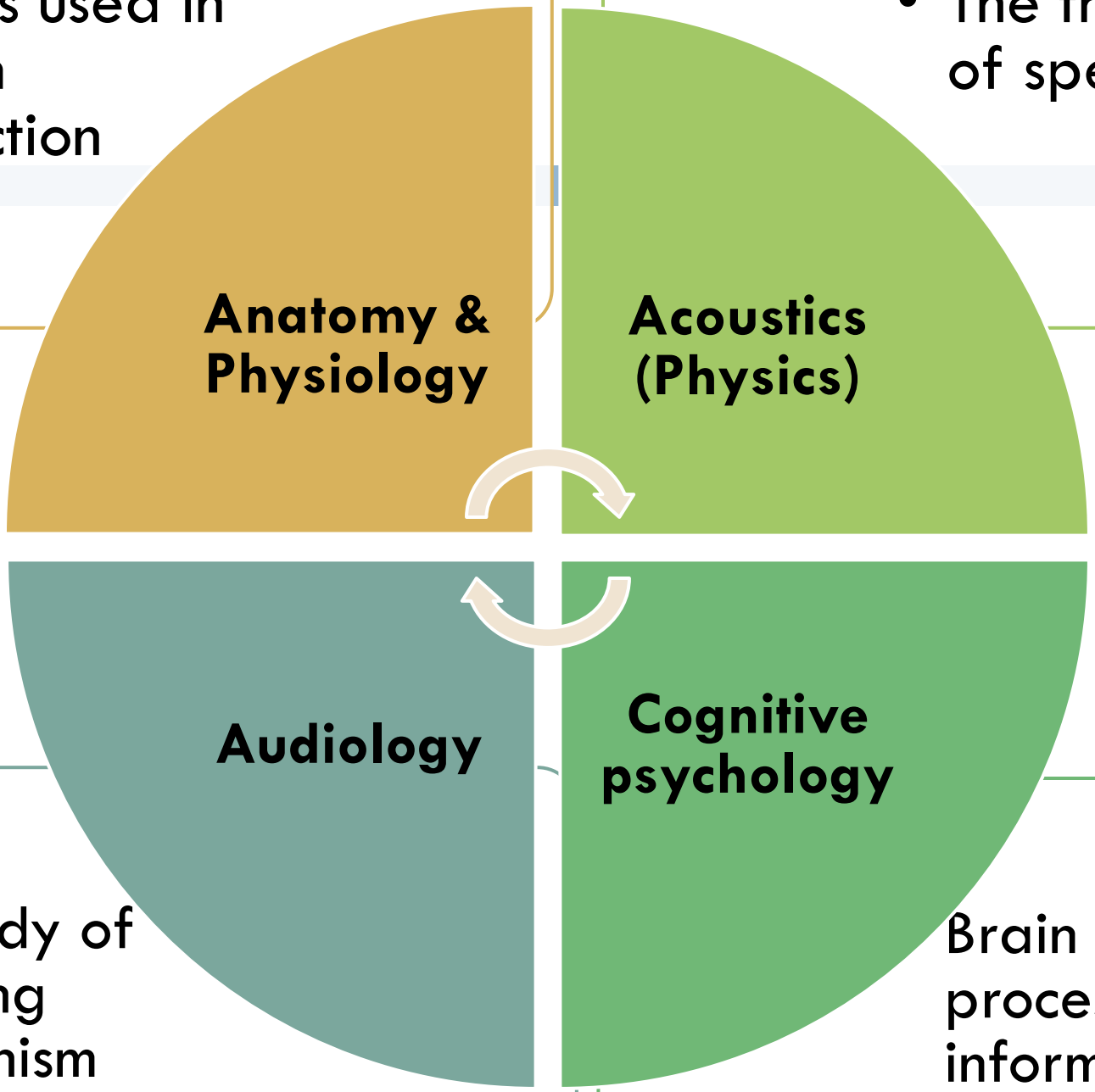
Phonetics is…

- The science which provides descriptions and classifications of speech sounds. (Sloat, Taylor & Hoard,1978: 9).
- The study of production, transmission and perception of speech sounds (Todd,1995:13).

Phonetics relies on **other areas of study.**

- Organs used in speech production

- The transmission of speech sound



- The study of hearning mechanism

Brain reception processing of information

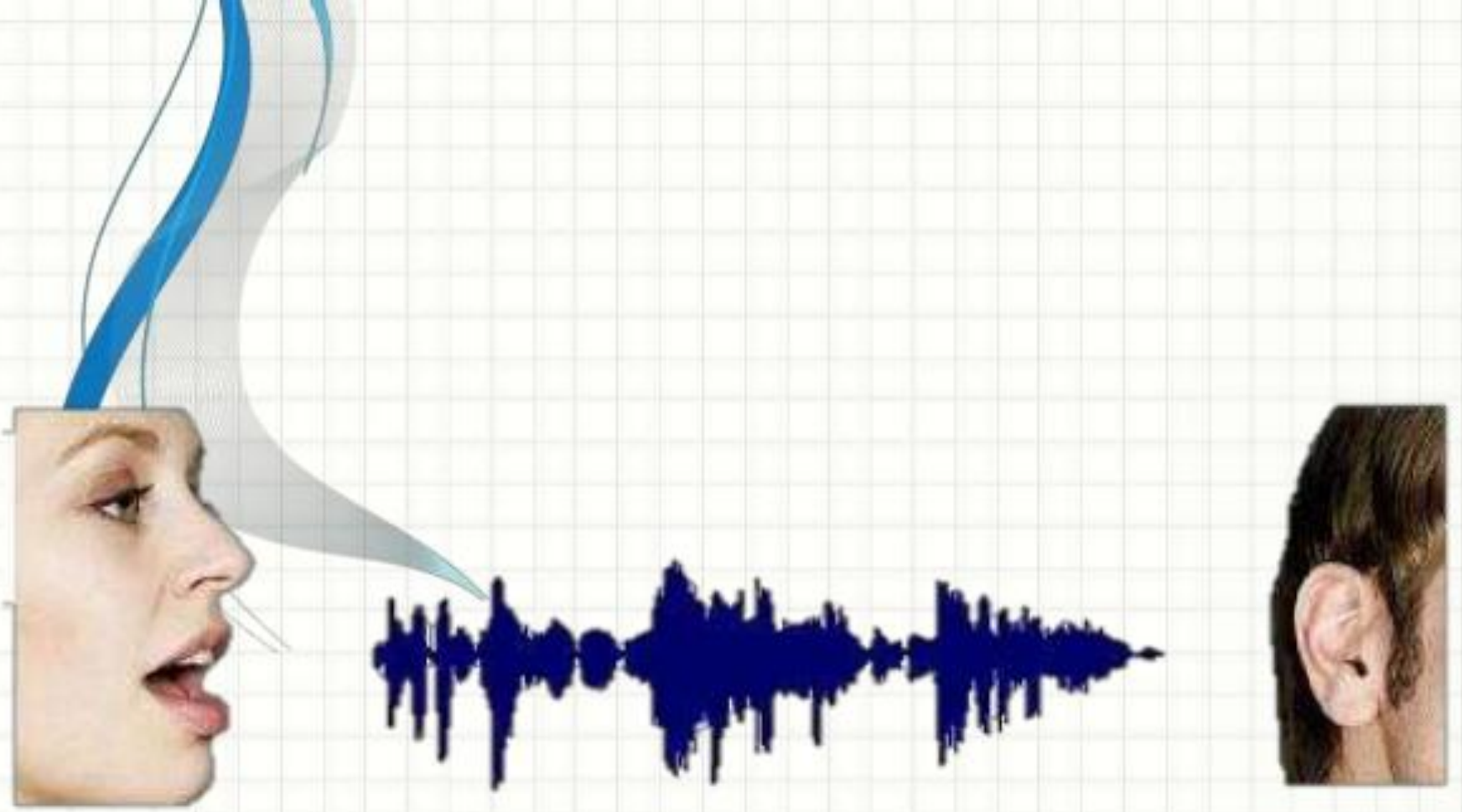
Phonetic Transcription

- The best-known system:
  - **The International Phonetic Alphabet (IPA)**
- IPA has been developing since 1888.
- The system represents each speech sound with a single symbol called a **transcript.**

Phonetic transcription

- The transcript is enclosed in brackets [ ].
- Most of IPA symbols are the same as the **familiar alphabetic** ones, in addition to symbols from **Latin** and **Greek** [σ], [θ] , [γ], [β], [ʊ], [ɻ], [ħ]and other signs (~ˈˈ°).

BRANCHES OF PHONETICS



Production/
Articulatory

Transmission/
Acoustics

Perception/
Auditory

- **Articulatory Phonetics:**
  - Physiological mechanism involved in speech **production**.

- **Acoustic Phonetics:**
  - The **transmission** of speech sounds (analysis and measurement of sound waves).

- **Auditory Phonetics:**
  - **Perception** of the sounds by the ear & the brain.

Articulatory Phonetics

Articulatory Phonetics

- Deals with:
  - the **speech production mechanism;**
  - the **antomy** or **physiology** of **speech organs;**
  - the **identification** and **classificaton** of individual speech sounds.

Speech production

- Speech production is one of the most impressive human motor skills.
- Speech is described as ***modified breathing.***
- The parts of the vocal tract that can be used to produce sounds, such as the tongue and the lips are called **articulators.**

The speech production mechanism

- The speech production mechanism is divided into four different, but related processes:

1. *The airstream process*
2. *Phonation process*
3. *Oro-nasal process*
4. *Articulatory process*

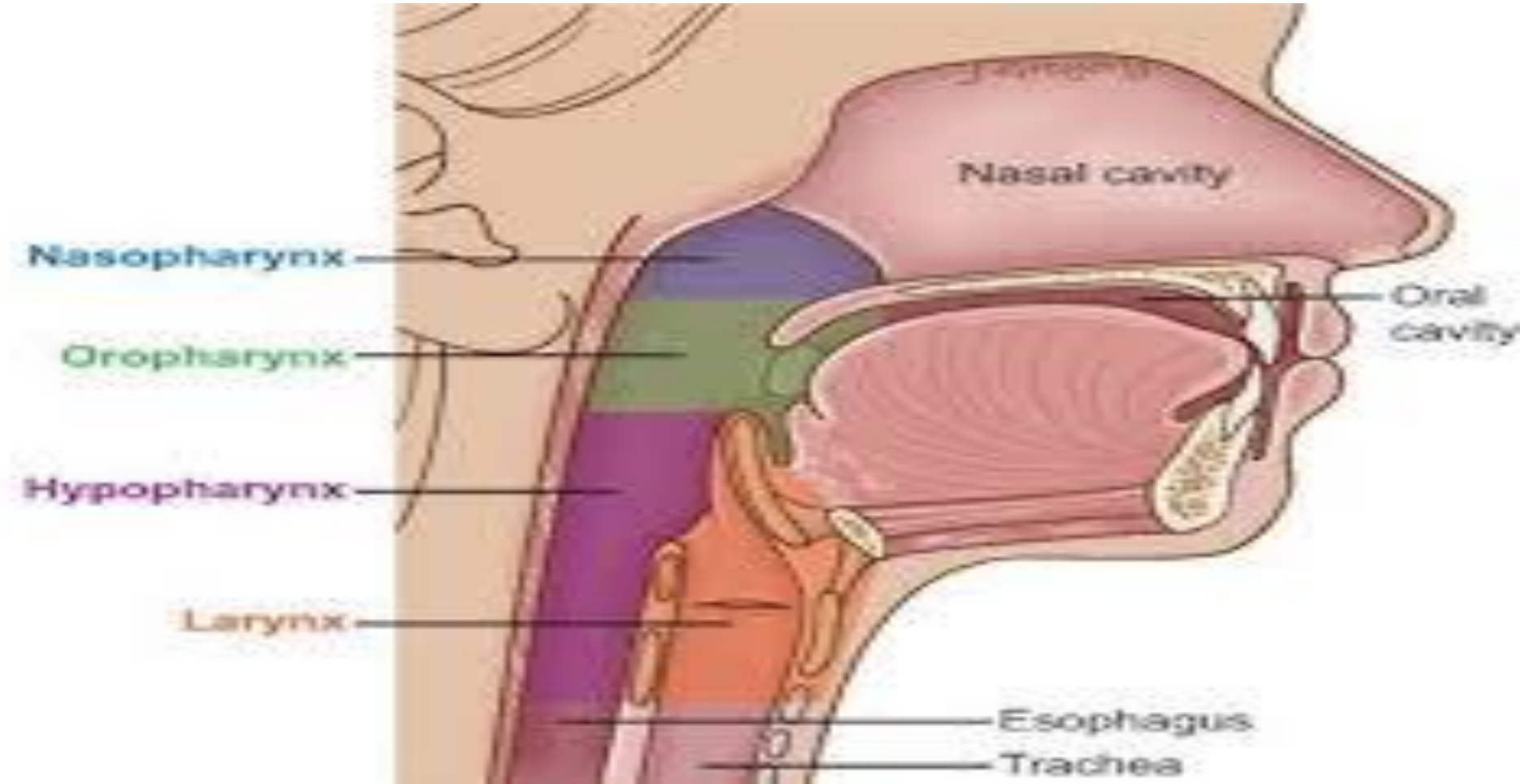
The Airstream process

- **The movement of air in the respiratory and expiratory phases** is important in the production of speech.
  - Speech begins with **air** inside the speaker's chest escaping from the lungs, through the throat and the mouth.
  - To speak, **we use our articulators to modify the flow of air.**

Articulators????

The Phonation process

- **Phonation (or vocalization)** happens in the **larynx.**
  - Air from the lungs courses through the trachea.
  - The principle organ of phonation is the larynx.



The Phonation process

- Phonation is the name given to the **actions of the vocal cords (vocal folds).**
- There are two possibilities:
  - When the vocal cords are ***drawn wide apart*** **voicelss consonants** are produced [p].
  - If the ***vocal cords are held tigth-close***, the pressure of the air makes them **vibrate**; that is, they open and close regularly many times a second . Sounds produced in this way are **voiced** [b].

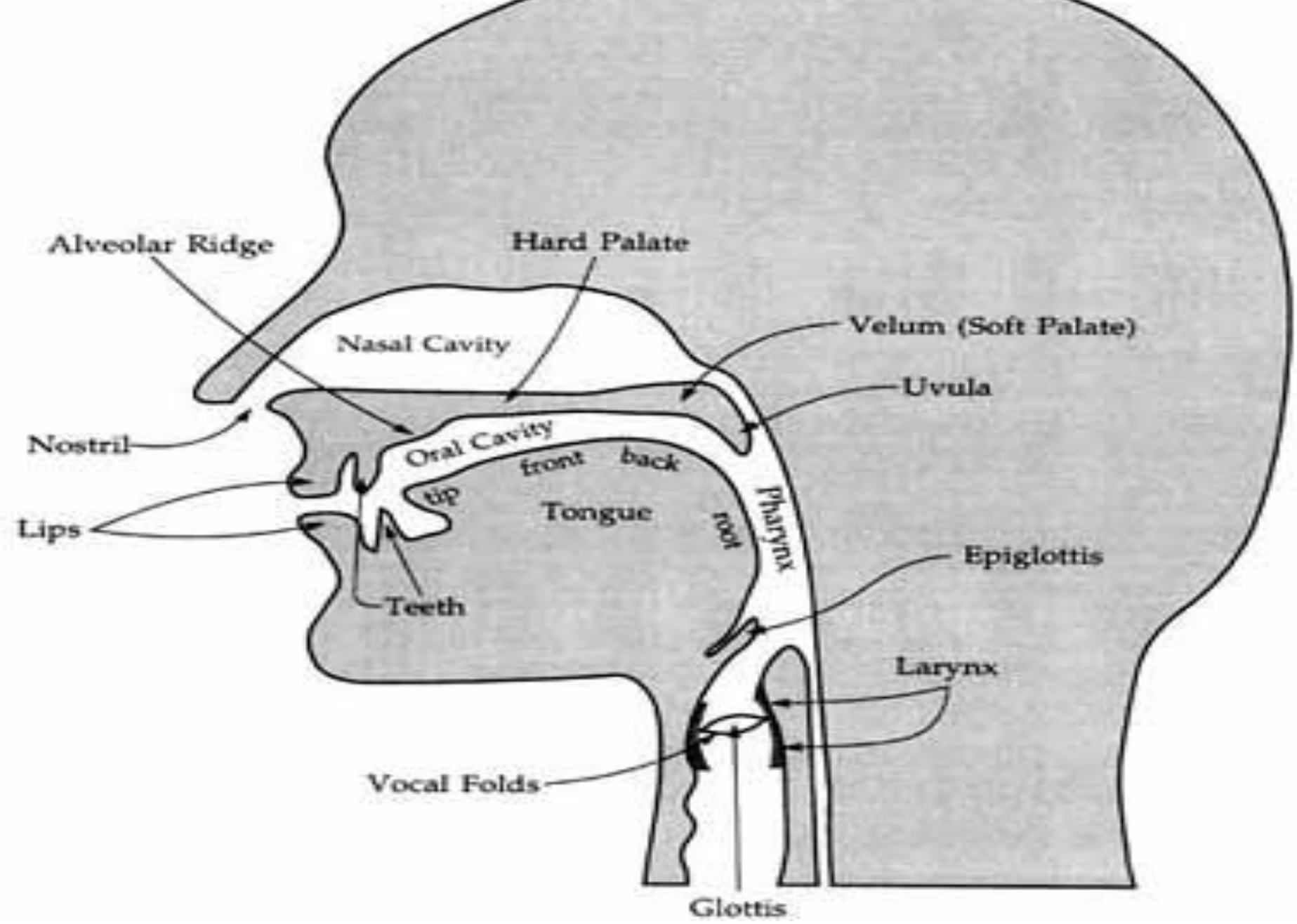
The Oro-nasal process

- The sound produced in phonation is weak, but it is **<u>amplified</u> when modified by one of the resonators** (***oral cavity, nasal cavity***).
  - The possibility for the airsteam to go out solely through the mouth , as in [s] and [b];
  - The possibility for the airsteam to escape through the nasal cavity as in [m] and [n].

The Articulatory process

- Articulation happens when the tone produced in the larynx is ***changed into a specific sound through the movements of the articulators.***
  - The ***movement of the tongue towards the roof of the mouth, for example,*** is part of the articulatory process.

The anatomy of the Vocal Tract


Alveolar Ridge
Hard Palate
Velum (Soft Palate)
Nasal Cavity
Uvula
Nostril
Oral Cavity
front
back
tip
Tongue
root
Pharynx
Lips
Epiglottis
Teeth
Larynx
Vocal Folds
Glottis