


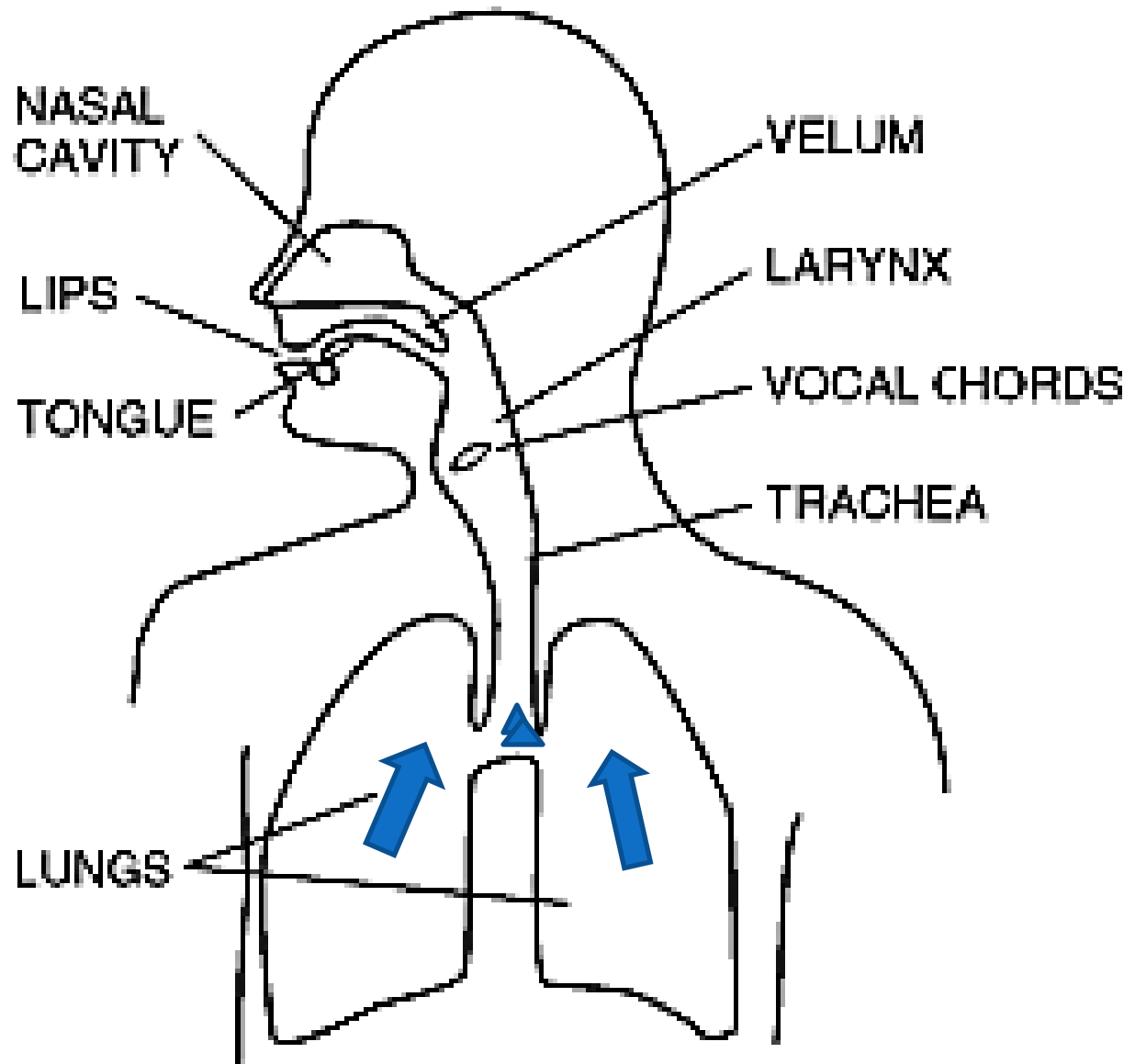
# THE PRODUCTION OF SPEECH SOUNDS


by Marcelo Andrade


Taken from:

**Heinz J. Giegerich. English Phonology . An Introduction. (2005)  
Cambridge University Press. U.K.**

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- Most speech is produced by an air stream that originates in the lungs and is pushed up through the trachea and the oral and nasal cavities.



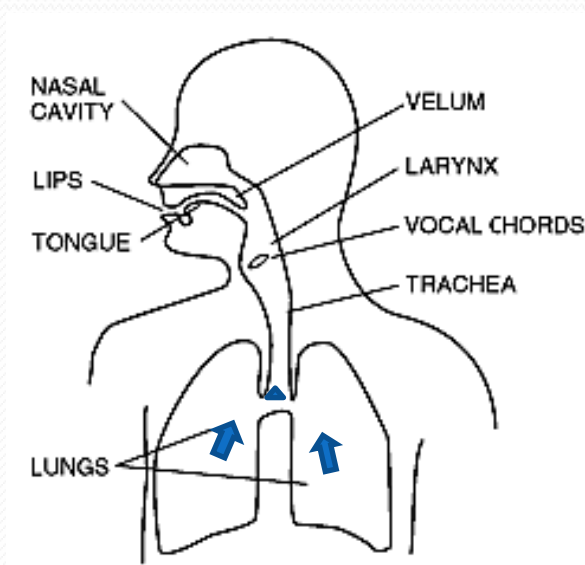
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- During its passage, the air stream is modified by the various organs of speech. Each such modification has different acoustic effects, which are used for the differentiation of sounds.
  - The production of speech sounds may be divided into four separate but interrelated processes:

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1. Initiation process
  2. Phonation process
  3. Oro-nasal process
  4. Articulation

# 1 The initiation process

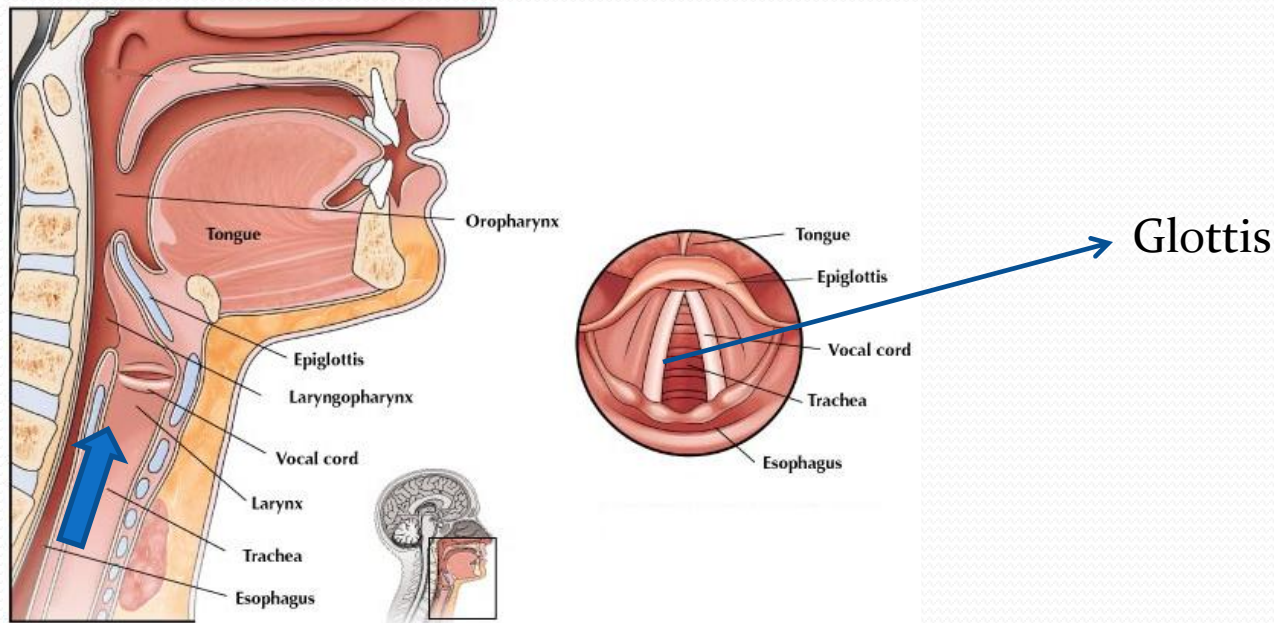
- In English (and most other languages), all speech sounds require a pulmonic (lung) air stream for their production. The airstream used for speech is always moving out of the lungs and up to the trachea

Pulmonic egressive  
air stream



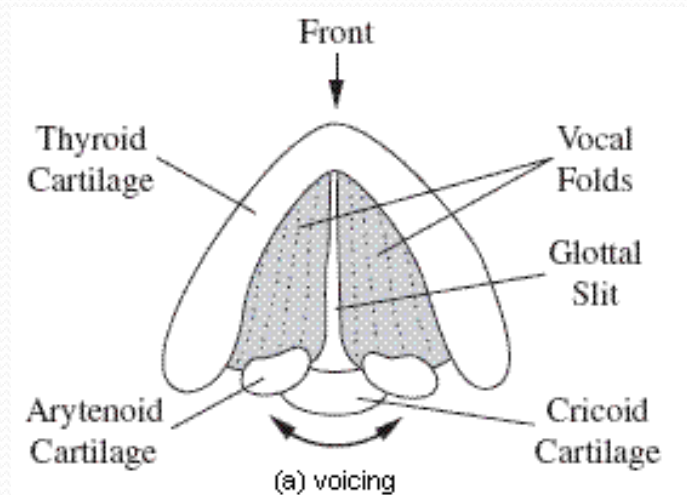
# 2 The phonation process

- At the upper end of the trachea, the air passes through the larynx. The larynx contains the vocal folds. The space between the vocal folds is called **glottis**. This is where the process of phonation occurs.



# 2 The phonation process

- The vocal folds can be manipulated by the speaker and brought into different positions:
- **Narrow glottis.** When the vocal folds are brought together in such a way that only a narrow space is left for the air to pass through, the passage of air makes them vibrate. The resulting sound waves characterise **voiced sounds**.





## 2 The phonation process

- **Open glottis.** This is the state of the glottis in normal breathing, as well as in the production of **voiceless sounds**.



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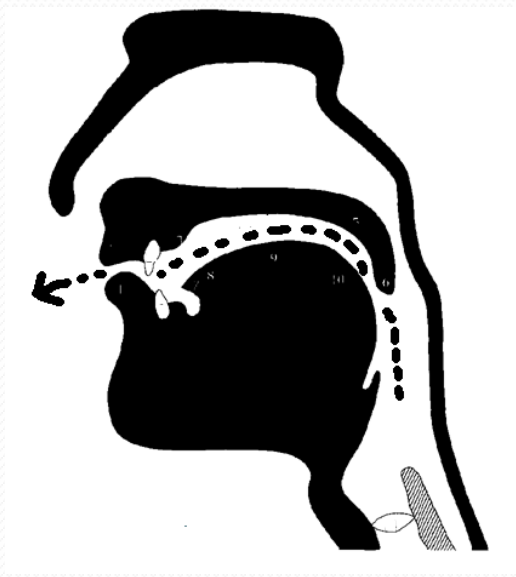
- **Closed glottis:** The vocal folds are brought together so that no air can pass between them. The resulting sound is called **glottal stop**. In some accents of English, the glottal stop can replace the sound /t/ in words like football, bottle, bit, etc.



Click [here](#) to watch a video about the production of a glottal stop

# 3 The oro-nasal process

After the air passes through the larynx, it can go either into the oral cavity or into the nasal cavity.



# 4 The articulation process

After the air goes into either of these cavities, the different articulators modify the air stream to produce the different English consonants.

For example, when producing the sound /p/, the lips come together and the air is released with a puff of air. When producing the /m/ the air is released through the nasal cavity. In the same way we use the different articulators to produce different sounds.