

Speech Science

WiSe 2023

Exercise 3: Phonation

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The Click Song



<https://www.youtube.com/watch?v=rjo8h5qLpU0>

Transcription Practice 1

Which English words are transcribed here?

01) ['daɪnə]

02) [spu:n]

03) ['pɑ:səbəl]

04) [spɛl]

05) ['læŋgwədʒ]

06) [dɪ'zɜ:t]

07) [wɜ:k]

08) ['ædʒəs]

09) ['kwɛstʃən]

10) ['dɛzət]

11) ['hju:mən]

12) [bɔ:n]

13) ['θɜ:sti]

14) ['fɔ:ɪən]

15)

['prɔʊgræm]

16) ['fæmli]

Which English words are transcribed here?

01) diner ['daɪnə]

02) spoon [spu:n]

03) possible ['pɒ:səbəl]

04) spell [spɛl]

05) language ['læŋgwɪdʒ]

06) dessert [dɪ'zɜ:t]

07) work [wɜ:k]

08) address ['ædrɪs]

09) question ['kwɛstʃən]

10) desert ['dɛzət]

11) human ['hju:mən]

12) born [bɔ:n]

13) thirsty ['θɜ:sti]

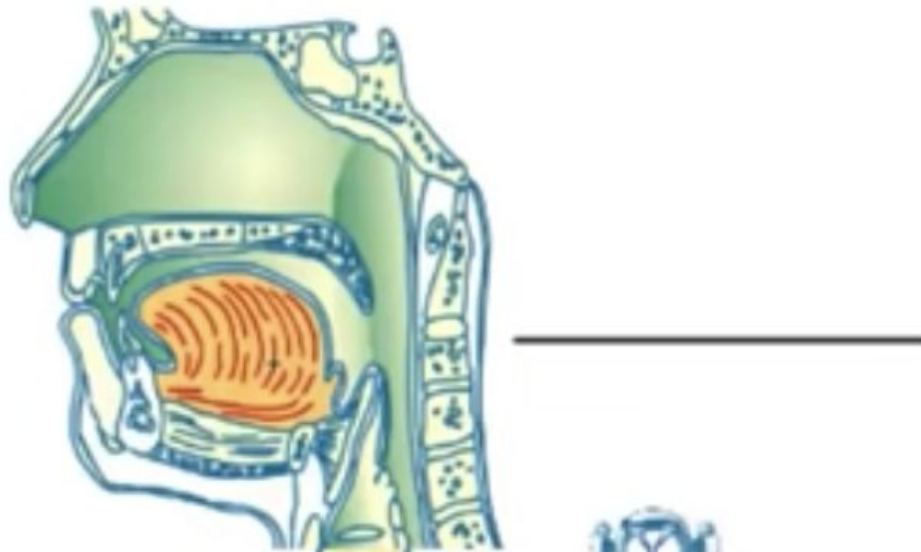
14) foreign ['fɔ:ɪən]

15) program

['prɒɡræm]

16) family ['fæmli]

Speech production organs



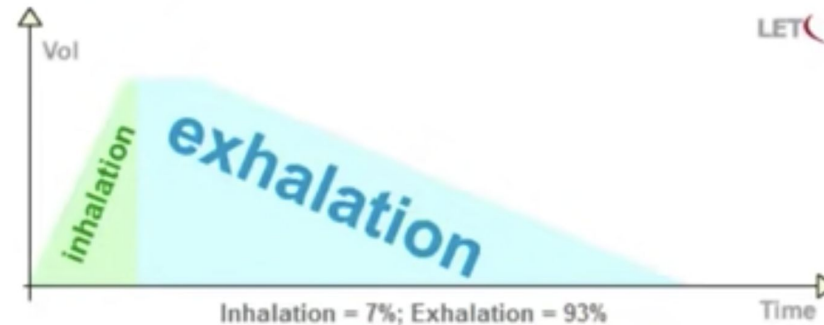
- **Articulation**



- **Phonation**



- **Respiration**

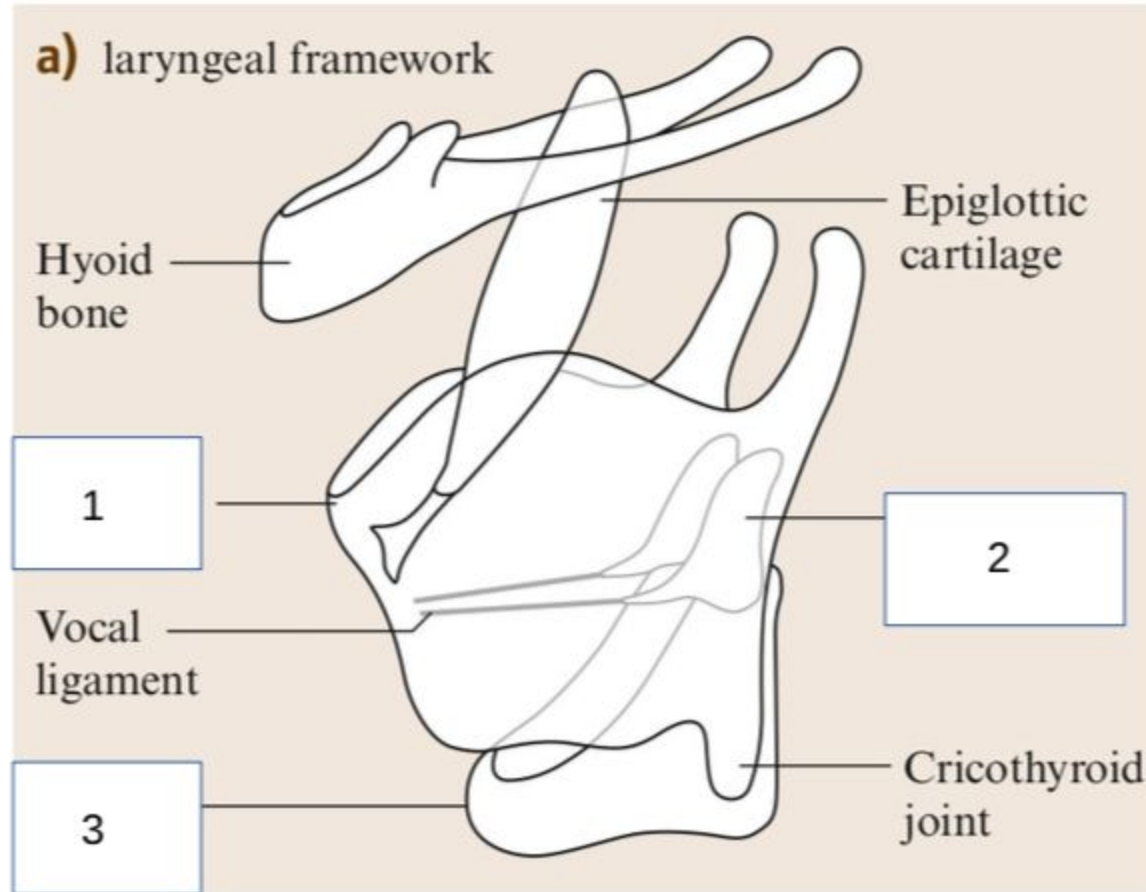


Basic anatomy of the larynx

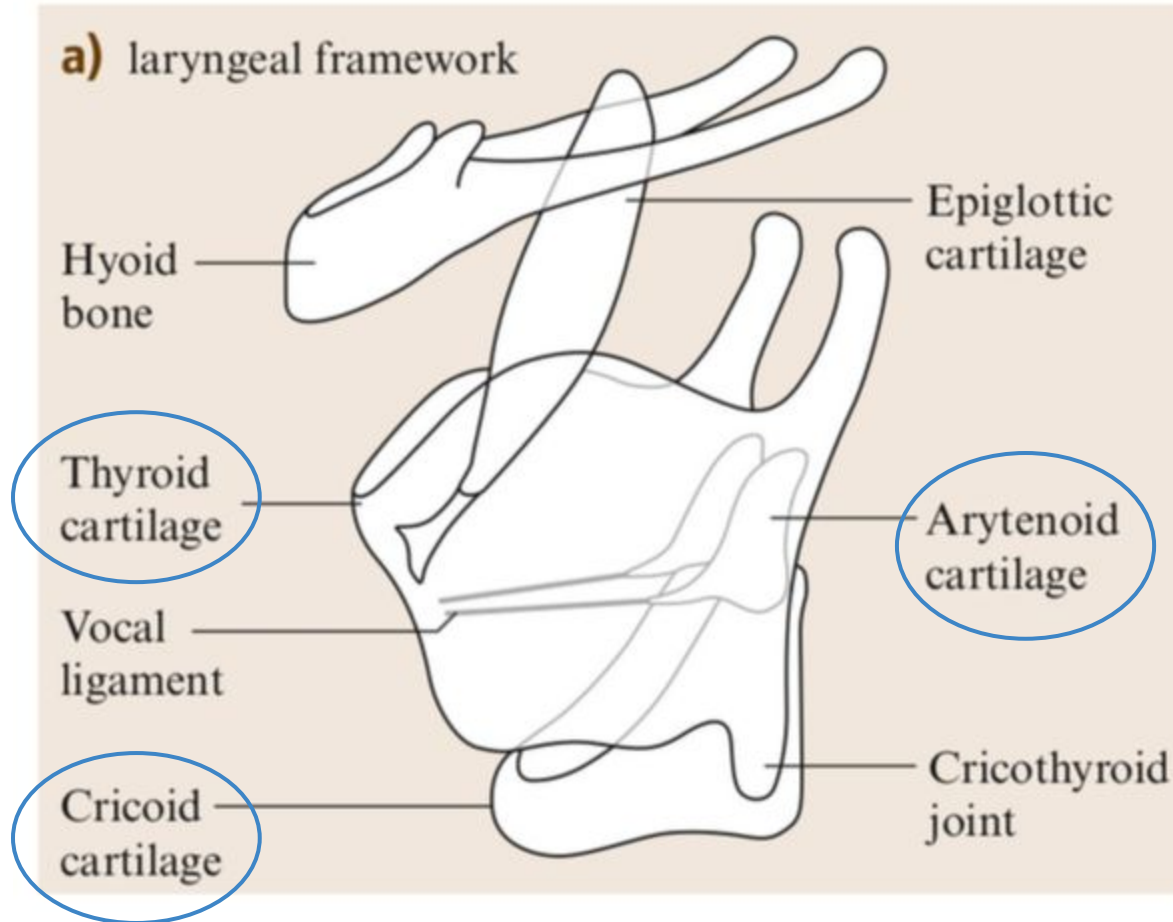


<https://www.youtube.com/watch?v=JF8rlKuSoFM>

Exercise 1



Exercise 1 - Answer

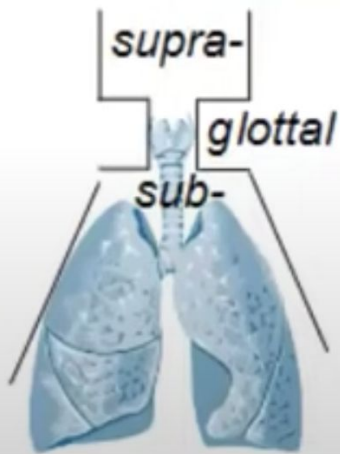


Function of the vocal folds

- *protective function*



- *respiratory function*



- ... in speech



Phonation types and voice qualities



<https://www.youtube.com/watch?v=edYLoMRgaFw&t=86s>

Phonation types

PHONATION



- No Voice
- Normal Voice
- Whisper
- Breathy Voice
- Creaky Voice
- Falsetto



Phonetics - Speech Anatomy, Jürgen Handke, 2013

Copyright: The Mutual Liberation Group, www.fonetics-online.com

Video: <https://www.youtube.com/watch?v=-m-gudHhLxc>

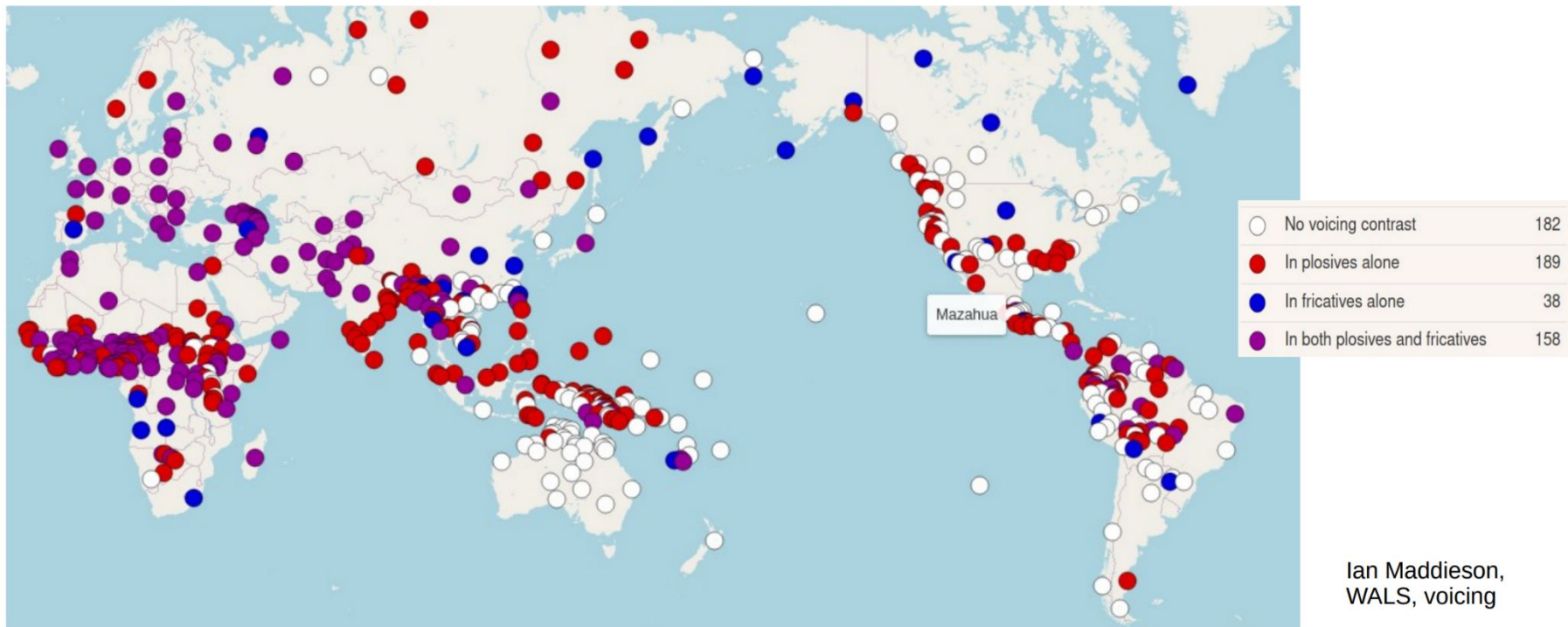
Audio examples:

<https://www.ims.uni-stuttgart.de/institut/arbeitsgruppen/ehemalig/ep-dogil/EGG/page10.htm>

- **Paralinguistics:** in English, creaky voice is used as a social markers.
- **Linguistics:** in some languages, phonation types make a meaning differences.

Phonation modes: distinctive use

Voicing in plosives and fricatives



Ian Maddieson,
WALS, voicing

Voicing contrast: <https://wals.info/feature>

Phonation modes: distinctive use

Breathy vs. modal



Breathy vs. modal distinction in:
Hindi, Maithili, Telugu, Newar

Ladefoged and Maddieson (1996)

Phonation modes: distinctive use

Creaky vs. modal



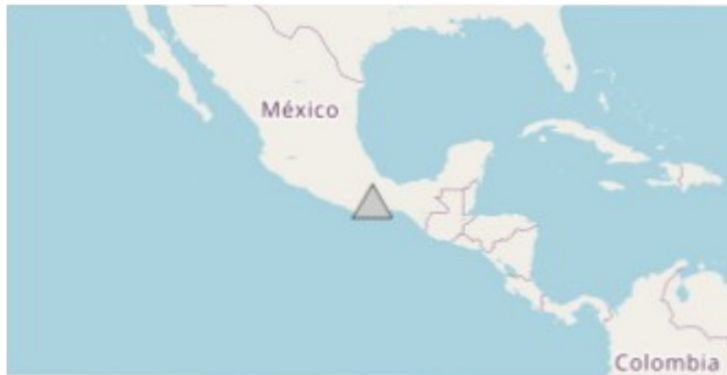
Northwest American Indian languages:

Kwakw'ala, Montana Salish, Hupa,
Kashaya Pomo,

Boas (1947)

Phonation modes: distinctive use

Breathy / modal / creaky



Three-way contrast between **modal** voiced, **breathy** voiced, and **creaky** voiced vowels in Jalapa Mazatec

/t^ha/ link: <https://tinyurl.com/59xu9xdu>

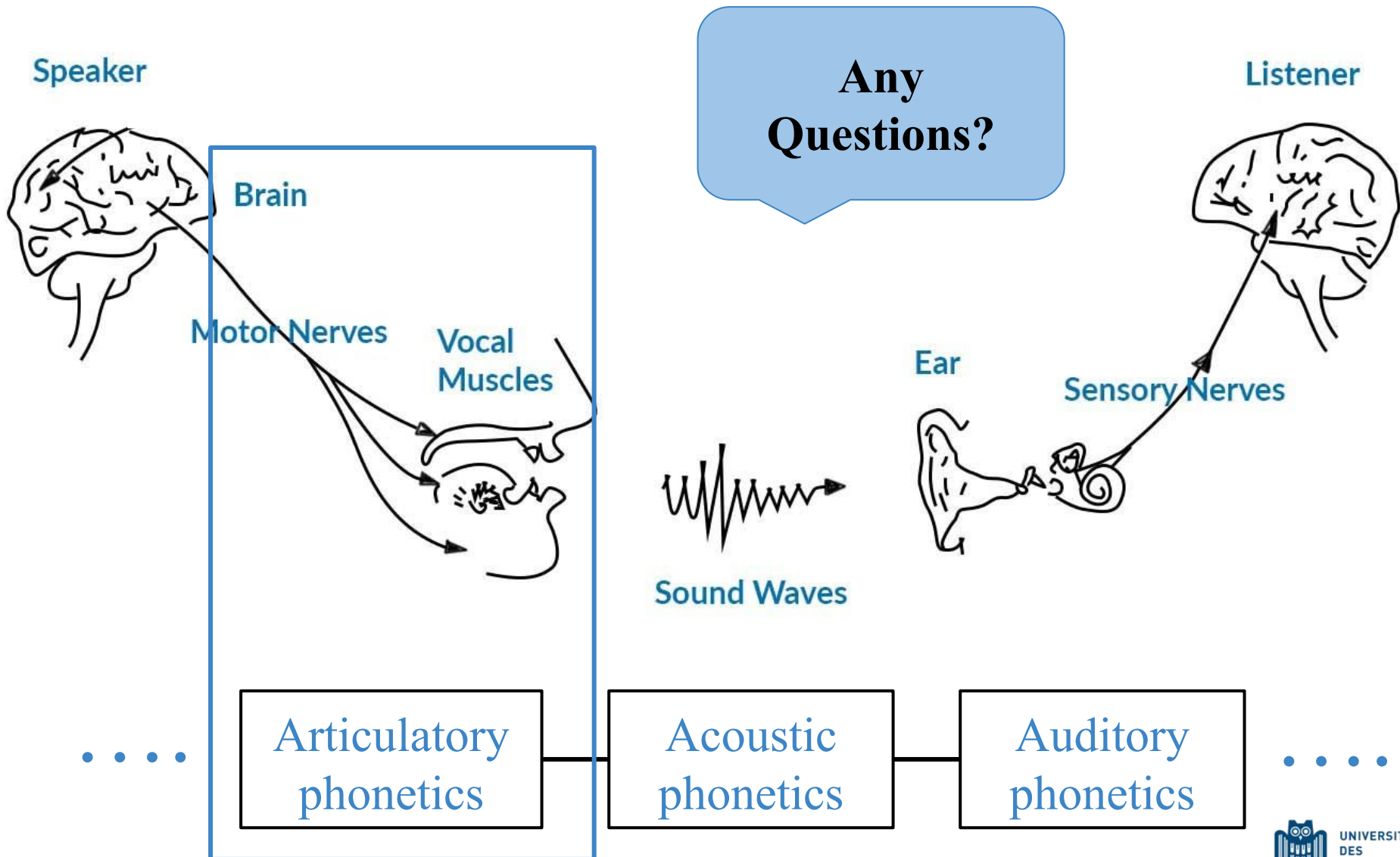
/ndæ/ link: <https://tinyurl.com/mr37xt8u>

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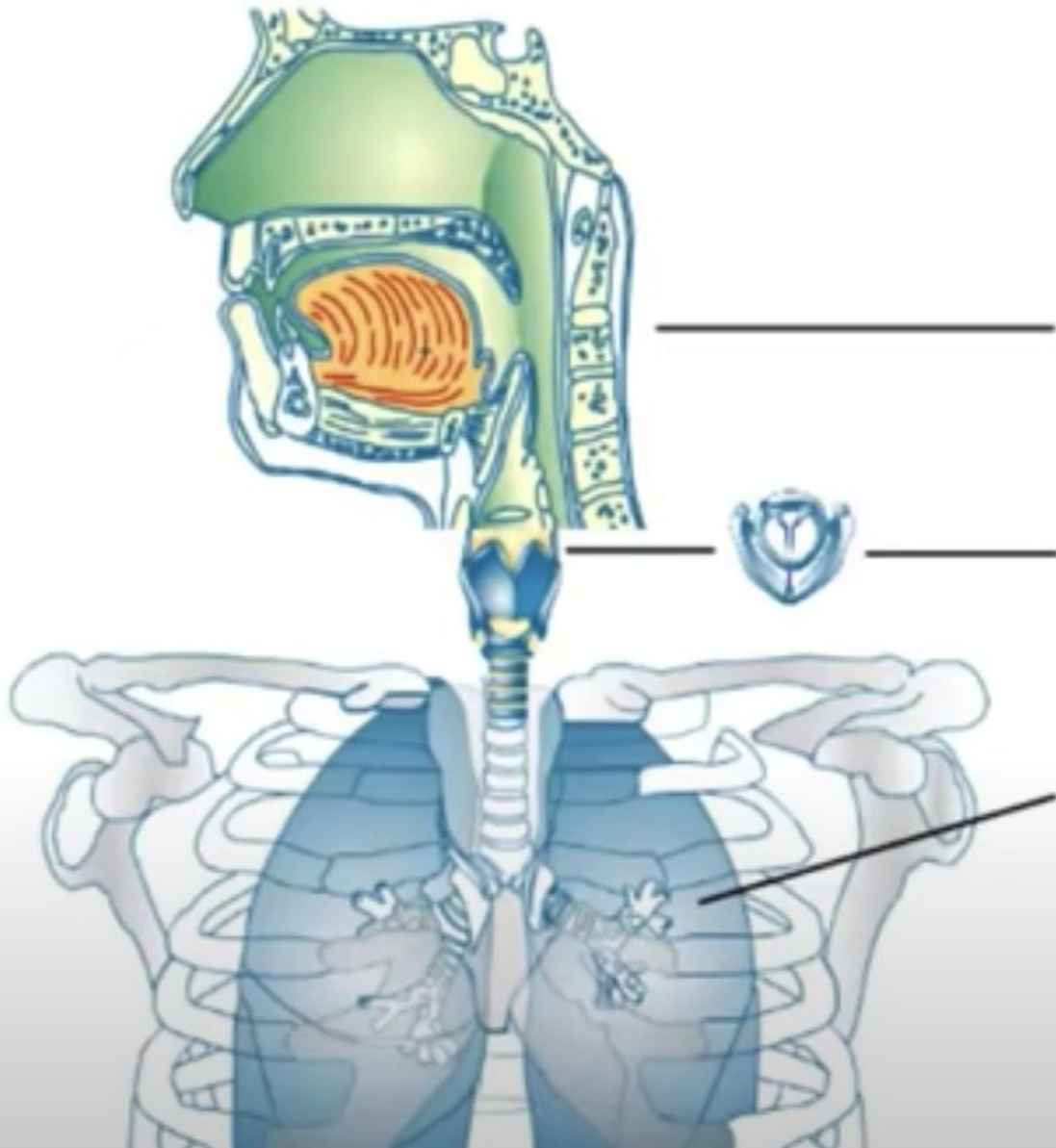


What Is Vocal Fry? A Speech-Language Pathologist Explains

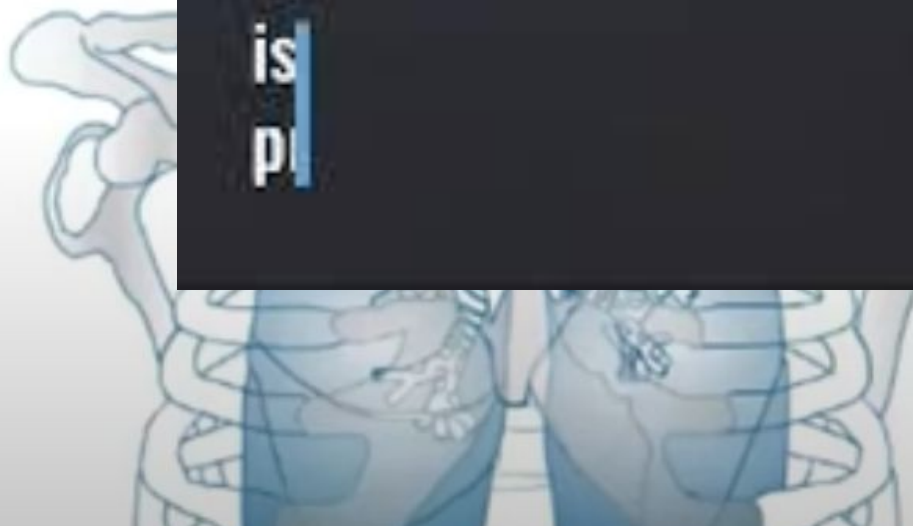
Speech chain







Source - filter Theory



- **Articulation**
Filter
- **Phonation**
Source



 Praat: doing phonetics by computer 		
Download Praat: <ul style="list-style-type: none">* Macintosh* Windows* Linux, FreeBSD* SGI, Solaris, HPUX* the source code	Information on Praat: <ul style="list-style-type: none">* Introductory tutorial: choose Intro from Praat's Help menus.* Extensive manuals and tutorials: in Praat's Help menus.* Beginner's manuals by others.* Paul Boersma's publications on algorithms and tutorials.	
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<https://www.fon.hum.uva.nl/praat/>