Answer Key/Notes on Week 2 Reading Quiz

Q1: Vibrating vocal folds

In the production of many speech sounds, the vocal folds are brought close together, such that they vibrate against each other regularly and rapidly as air passes between them. Sounds with this characteristic are called **voiced**.

(The other, **incorrect** answer choices here were: **glottal**, **laryngeal**, **voiceless**, **vowel**.)

NOTES:

If you answered **"vowels"** here, you are not completely off the mark. It is true that vowel sounds are (almost always) produced with vocal fold vibration. However, the same is also true of a great many **consonant** sounds as well, including such English sounds as [m], [z], [l] or [v]. Also, it is perfectly possible to produce a **voiceless** vowel – e.g. when whispering – and in many languages, vowels may get **devoiced** (i.e. pronounced as voiceless) in certain contexts, such as between two voiceless consonants.

Q2: Subsystems of the vocal tract

For each of the following anatomical structures, label it as belonging to either the **sublaryngeal** system, the **supralaryngeal** system or the **laryngeal** system (i.e. the larynx itself).

a. vocalis muscle	**laryngeal**
b. nasal cavity	**supra-laryngeal**
c. pharynx	**supra-laryngeal**
d. thyroid cartilage	**laryngeal**
e. diaphragm	**sub-laryngeal**
f. uvula	**supra-laryngeal**
g. trachea	**sub-laryngeal**
h. arytenoid cartilages	**laryngeal**
i. epiglottis	**supra-laryngeal**
j. lungs	**sub-laryngeal**

NOTES:

The **trachea** (a.k.a. “windpipe”) is **below** the larynx, connecting the larynx to the lungs – that is, the larynx sits **on top of** the trachea – and so counts as being part of the **sublaryngeal** system. That.

The **pharynx** (a.k.a. “pharyngeal cavity”), on the other hand, is the space just **above** the larynx – that is, it’s the portion of the oral cavity that is closest to the larynx – and so counts as being part of the **supralaryngeal** system.

The same goes for the **epiglottis**, which protrudes from the "root" of the tongue into the pharynx/pharyngeal cavity; it is **above** the larynx – not a component of the larynx itself – and so counts as being part of the **supralaryngeal** system.

Q3: Airstream mechanism

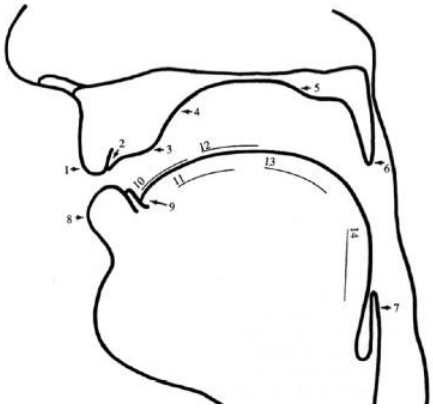
There are various mechanisms available for getting air moving through the vocal tract. The method that is by far the most common in the production of speech sounds in the world's languages is to push air out from the lungs. The technical term for this airstream mechanism is **pulmonic egressive**.

NOTES:

For this question, there was a glitch in the automatic grading, such that some people who did write "pulmonic egressive" had this marked as wrong. We have gone through the quiz submissions manually and assigned full marks for everyone who was affected by this, but there is a chance that one or two got overlooked. If you wrote "pulmonic egressive" but got 0 points, please email Gunnar or one of the TAs and this will be corrected.

Also, several people wrote something like **"pulmonic airstream"** (or **"pulmonic mechanism"** or some such). This got automatically marked as wrong (0 points), but again we have gone through all the submissions and manually assigned **half** marks (0.1/0.2) for that answer – since in that case, you did get the "pulmonic" half of the correct answer but not the "egressive" half. Again, it is possible that one or two people's submissions got overlooked in this process, so if you think that applies to you, email Gunnar or any one of the TAs to get it corrected.

Q4: Identifying parts of the vocal tract



a. epiglottis: **7**
b. soft palate (velum): **5**
c. alveolar ridge: **3**
d. tongue root: **14**
e. tongue blade: **10**
f. upper front teeth: **2**

NOTES:

The **soft palate** (a.k.a. the **velum**) is the part labelled **5** in the figure, not 6; the latter is the **uvula**, not the velum as such.

The **tongue blade** is meant to be represented by item 10 in the figure, while item 11 was intended to refer to the whole **tongue front**. While it could be argued that it isn't 100% obvious what exactly item 11 in the diagram is meant to stand for, it should nevertheless be clear that item 10 is a much better fit for the target term of "**tongue blade**": it is the area immediately

behind the **tongue tip** (= 9). Therefore we stuck with only counting 10 as correct for part (e), not 11 as well.

Q5: Organs of speech: True or false?

While most of the body parts that are used for speech production also have some other primary biological function, there are some whose sole function is to serve as "organs of speech". **FALSE**

NOTES:

Every component of the vocal tract has some **other** primary function and is only secondarily adapted for speech production.

Q6: Controlling pitch

Controlling the pitch of the voice is a primary linguistic function of one of these components of the vocal tract. Which one?

the larynx
the epiglottis
the diaphragm

Q7: The velar port: True or false?

Speech sounds like [m] and [n], in which air flows freely out through the nasal tract, are produced with the velum raised. **FALSE**

NOTES:

In order for the velar port to be **open**, allowing airflow into the nasal tract, the velum (soft palate) has to be **lowered**, not raised.

Q8: Active vs. passive articulators

For each of the following components of the oral tract, label it as eitheran *active articulator* or a *passive articulator*:

a. hard palate **passive articulator**
b. tongue root **active articulator**
c. upper lip **passive articulator**
d. velum **passive articulator**
e. lower lip **active articulator**

NOTES:

Some people expressed confusion here as to why the **upper lip** gets classified as a "passive articulator" (unlike the **lower lip**, which is an "active articulator"). There is a little bit of discussion of this in section 1.2.3 of Zsiga's Chapter 1. When introducing the notions of **active** vs. **passive** articulators, Zsiga first says:

> "It is useful to divide the structures of the mouth into the *active articulators* and *passive articulators*. The **active articulators move toward the passive articulators** in order to constrict and shape the airstream." (emphasis added)

When she then focuses first on the active articulators, she says:

> "The active articulators are the lips and tongue. The movement of the lips, being visible, is obvious. In speech, the lips may be closed or open, pursed or spread. Both lips move to some degree, but **the lower lip moves more, so it receives the active label.**" (emphasis added)

A couple paragraphs later, after again listing the **lower lip** as one of the four **active** articulators (along with the tongue front, tongue body and tongue root), she then moves on to list the **passive** articulators, where she starts off by saying

> "The easily visible passive articulators are the **upper lip** and upper teeth. […]"

again making it clear that, by convention, the (more mobile) lower lip gets counted as one of the active articulators, while the (less mobile) upper lip gets treated as a passive articulator.

Similarly, some people wondered how come the **velum** doesn't get labelled as "active" articulator, since it can move up and down – after all, this is how the velar port is closed vs. opened. The point to realize here, though, is that the labelling of various parts of the vocal tract as "articulators" (passive or active) is entirely in reference to the creation of a **constriction** somewhere in the oral cavity. In this process, the velum/soft palate is entirely passive. Even in sounds that have a **velar** place of articulation (like [k], say), it is the **tongue body** that does all the work, moving up against the velum to form a complete closure; the velum does not move down to meet it.

In sum, "active articulator" isn't simply another way of saying "movable part"!