

Project Overview

Welcome to [Unlocking Phonetics and Phonology: Investigative Approaches to Easing Learning Challenges for EFL Students] where the captivating world of phonetics and phonology unfolds before your eyes.

This magazine aims to unlock the world of phonetics and phonology for the students of English studies, that face challenges with these branches of linguistics.

According to a survey questionnaire that was done in the Academic year 2023\2024. In order to explore students' preferences, challenges, and needs regarding educational content, with a particular focus on phonetics and phonology. This study employs a mixed-methods research methodology, combining quantitative and qualitative techniques to provide a comprehensive analysis of student experiences and expectations.

The study involved over 50 participants from the English Department at Cadi Ayyad University, all of whom are pursuing a license degree. These participants were selected to provide insights into the unique challenges and experiences encountered while learning phonetics and phonology, as these subjects are integral to their curriculum

The choice of participants aimed to ensure that the data collected was highly relevant to the research questions regarding educational needs and obstacles in these linguistic fields. The survey they completed included both closed-ended and open-ended questions, allowing for a comprehensive collection of quantitative data and qualitative feedback on their learning experiences. The information for this study was gathered throughout the academic year 2023/2024, enabling a detailed longitudinal analysis of student experiences and educational outcomes

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39.3% of the participants have rated the difficulty of phonetics and phonology to be hard, 26.8% rated it to be very hard, and only 1.8% rated it to be very easy. Based on these statistics we conclude that the majority of the students find challenges with these branches. Therefore, it is important to try to create a simplifying tool for these students to enhance their understanding of phonetics and phonology.

Within this magazine you will find exercises, linked websites for pronunciation, and test pages. These supplementary materials were chosen based on the answers provided by the participants on the questionnaire. Since 55.5% of the participants find difficulty in applying concepts to practical examples, 41.1% of them find difficulty in memorizing terms, 35%.7% don't understand theoretical concepts, and 30.4% find problems with pronunciation practice. This interactive content is rated on a scale from 1 to 5 by 37.5% a 5, 32.1% a 3, and 19.6% a 4. Therefore, we conclude the importance of active learning for the students.

In this magazine we will be using simple language to explain complex concepts. 82.1% voted for it in contrast to complex language. Also, you will find a Glossary that will provide you with definitions if they're needed.

What is linguistics?

For our study purposes, we need first of all to know what is linguistics ?

PAROLE VS. LANGUE AND PERFORMANCE VS. COMPETENCE

From ancient times until the present, language purists have believed that the task of the grammarian is to/prescribe (rather than describe) correct usage that all educated people should use in speaking and writing. Prescriptive language scholars have laid down rules that are often based on Latin and Greek, on a classical canon of literary works, on the origin of particular words, on logic, or simply on their personal likes and dislikes. Prescriptivists have been criticized for not taking sufficient account of ongoing language change and stylistic variation. By contrast, the aim of linguistics is to describe language objectively and systematically. Descriptive linguists observe and analyze language as it is used naturally in any given speech community , and they attempt to discover the rules and regularities of the underlying language system, or code. Parole vs. langue and performance vs. competence In order to separate the two meanings of the word language illustrated in the last sentence of the previous paragraph, the Swiss linguist Ferdinand de Saussure (1857-1913) proposed the French terms parole to refer to actual language use (i.e. to concrete utterances) and langue for a speech community's shared knowledge of a language (i.e. for the language system). A similar dichotomy was put forward by the American linguist Noam Chomsky (b. 1928), who used the terms performance and competence to refer to largely the same concepts. Chomsky, however, put more emphasis on the individual nature of language. Performance, then, is the actual language use of an individual speaker, and competence is that individual speaker's knowledge of the language. Chomsky later replaced these terms with E(xternalised)-language and I(nternalised)-language, but the new terms are rarely used.

THE FOUR CORE AREAS OF LINGUISTICS

The system or structure of a language (langue or competence) can be described at four different levels, which form the core areas of linguistics, sometimes called microlinguistics: (1) Phonetics and phonology deal with pronunciation, or, more precisely, with speech sounds and the sound system. (2) Morphology covers the structure of words. (3) Syntax explains sentence patterns. (Morphology and syntax, often combined into morphosyntax, have traditionally been referred to as grammar.) (4) Lexicology and semantics describe the vocabulary, or lexicon, and explore different aspects of meaning. Skandera and Burleigh (2005).

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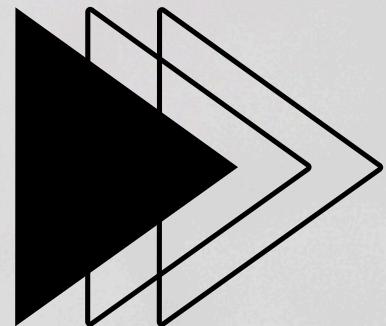
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PHONETICS

Phonetics first of all divides, or segments, concrete utterances into individual speech sounds. It is therefore exclusively concerned with parole or performance. Phonetics can then be divided into three distinct phases: (1) articulatory phonetics, (2) acoustic phonetics, and (3) auditory phonetics. (1) Articulatory phonetics describes in detail how the speech organs, also called vocal organs or articulators, in the vocal tract are used in order to produce, or articulate, speech sounds. (2) Acoustic phonetics studies the physical properties of speech sounds, i.e. the way in which the air vibrates as sounds pass from speaker to listener. A spectrograph is a machine that measures the sound waves and depicts them as images, called spectrograms or sonograms, showing the duration, frequency, intensity, and quality of the sounds. (3) Auditory phonetics investigates the perception of speech sounds by the listener, i.e. how the sounds are transmitted from the ear to the brain, and how they are processed (Skandera and Burleigh (2005).

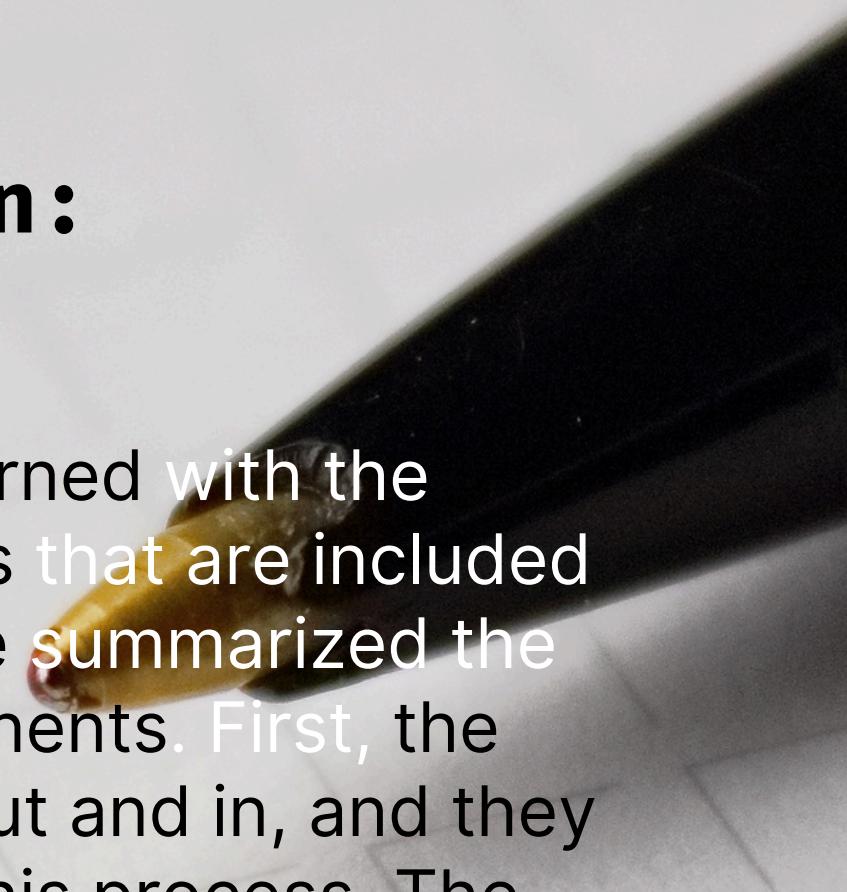
ARTICULATORY PHONETICS



Organs of Speech Production:

As we have stated, Articulatory phonetics is concerned with the production of sounds. It is important to know the organs that are included in this production. Ladefoges and Johnson (2015) have summarized the speech production mechanism into four main components. First, the airstream process includes all the ways of pushing air out and in, and they have considered the lungs to be the prime mover in this process. The phonation process is the name given to the actions of the vocal folds.

There are two main possibilities: voiced sounds in which the vocal folds are vibrating and voiceless sounds in which they are apart. The possibility of the airstream going out through the mouth, as in [v] or [z], or the nose, as in [m] and [n], is determined by the oro-nasal process. The movements of the tongue and lips interacting with the roof of the mouth and the pharynx are part of the articulatory process. In other words, the organs that take part in the articulation of sounds are lungs, larynx, oral cavity, nasal cavity, and articulators (tongue, lips, teeth, alveolar ridge, and soft palatal or velum). We can see these organs in figure 1.1.



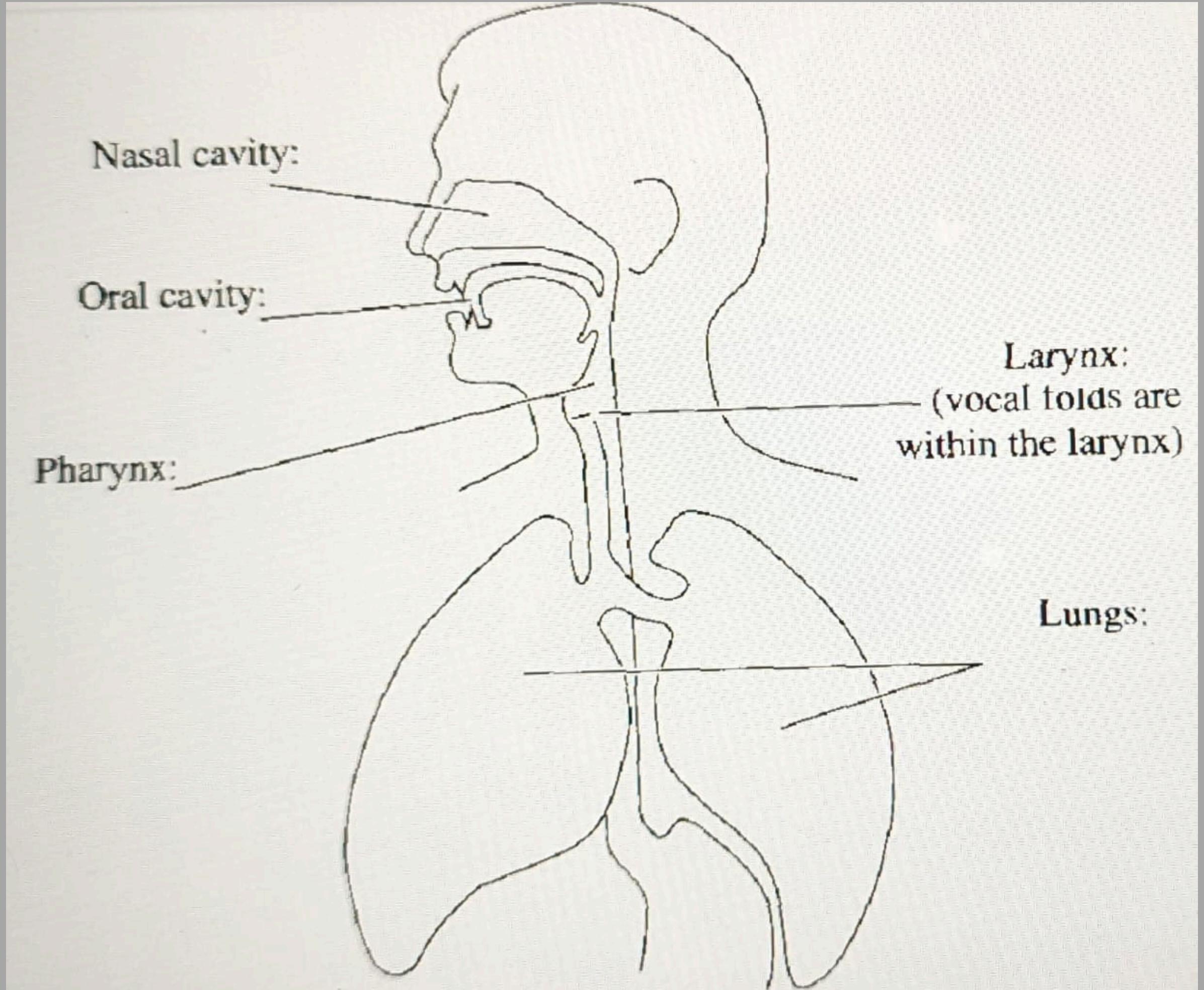


Figure 1



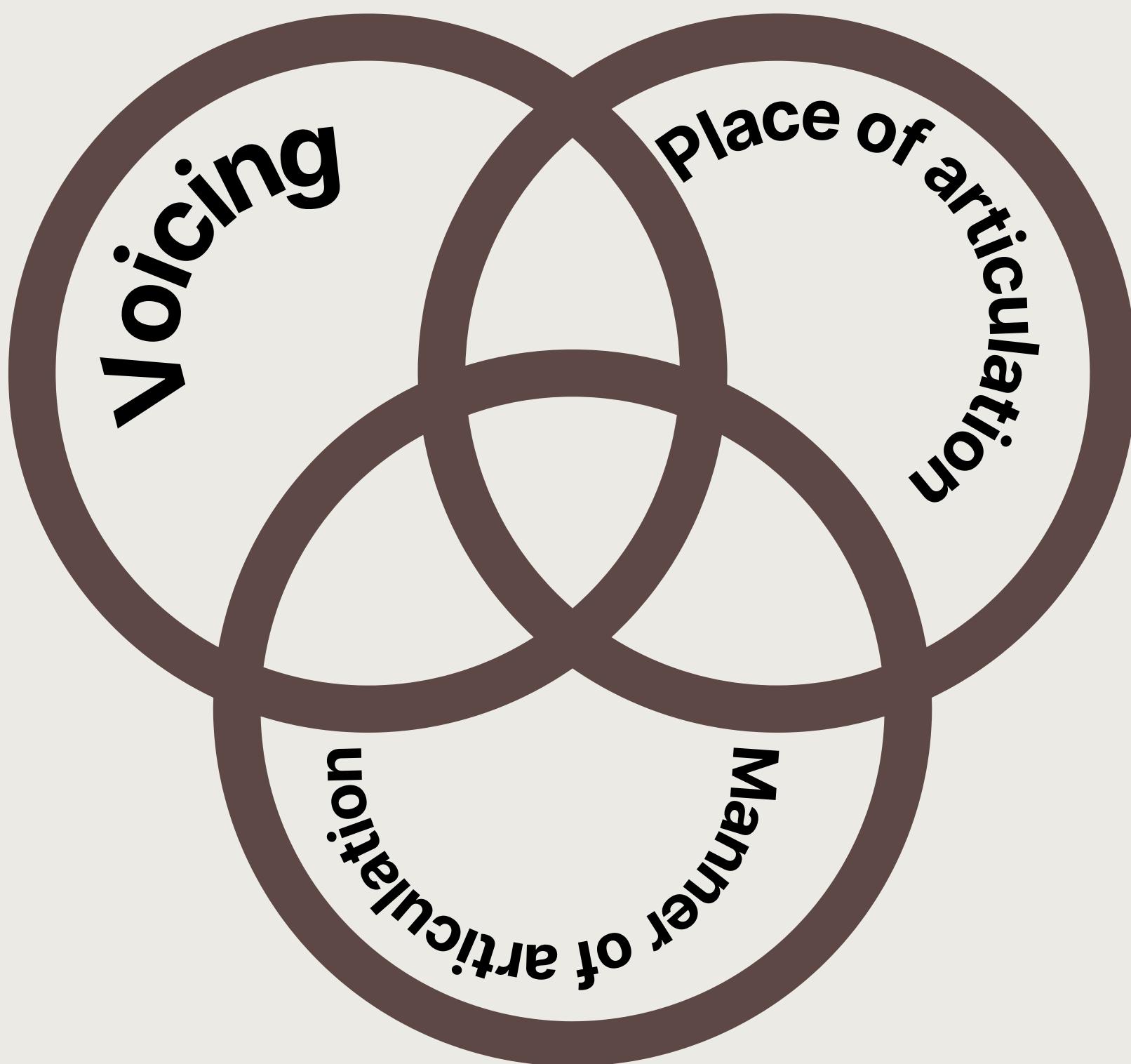
- This is a general overview of the speech organs but later on, we will delve more deep and specific into them at each time we encounter them in our explanation of consonants .

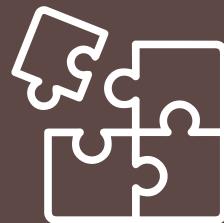
Description of Sounds



Consonants :

Alright, picture the consonants as the quirky building blocks of spoken language. They're like the eccentric characters at a cocktail party – each with their own unique style and flair. So, what do they do? They're like the bouncers of speech, narrowing down the options, and only letting certain sounds through. And just like gossip at a party, we can categorize these linguistic gatekeepers based on three main factors :

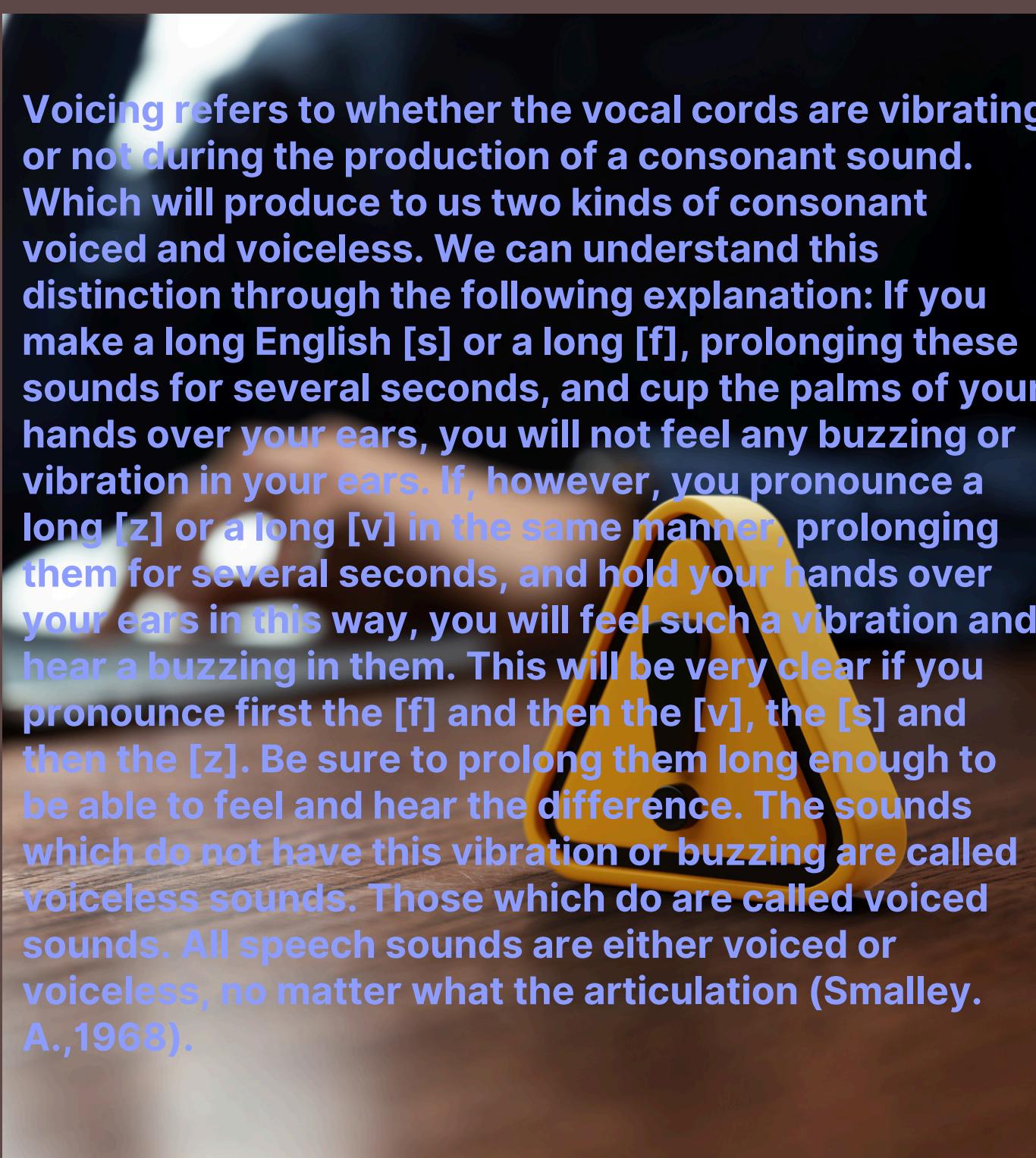




Voicing

What is Voicing ?

In the wild world of speech production, air takes the stage as the ultimate performer, but it doesn't just show up on its own – oh no! It's the lungs that kick it off, grooving to the beat set by the ribs. As the air boogies its way out, it carves a path known as 'the airstream.' But here's where the party really gets started: when the air meets the vocal cords. That's where the magic happens, folks! It's like a vocal cords' concert where the operation of **Voicing** takes center stage and sets the tone for the linguistic symphony ahead .



Voicing refers to whether the vocal cords are vibrating or not during the production of a consonant sound.
Which will produce to us two kinds of consonant voiced and voiceless. We can understand this distinction through the following explanation: If you make a long English [s] or a long [f], prolonging these sounds for several seconds, and cup the palms of your hands over your ears, you will not feel any buzzing or vibration in your ears. If, however, you pronounce a long [z] or a long [v] in the same manner, prolonging them for several seconds, and hold your hands over your ears in this way, you will feel such a vibration and hear a buzzing in them. This will be very clear if you pronounce first the [f] and then the [v], the [s] and then the [z]. Be sure to prolong them long enough to be able to feel and hear the difference. The sounds which do not have this vibration or buzzing are called voiceless sounds. Those which do are called voiced sounds. All speech sounds are either voiced or voiceless, no matter what the articulation (Smalley. A., 1968).

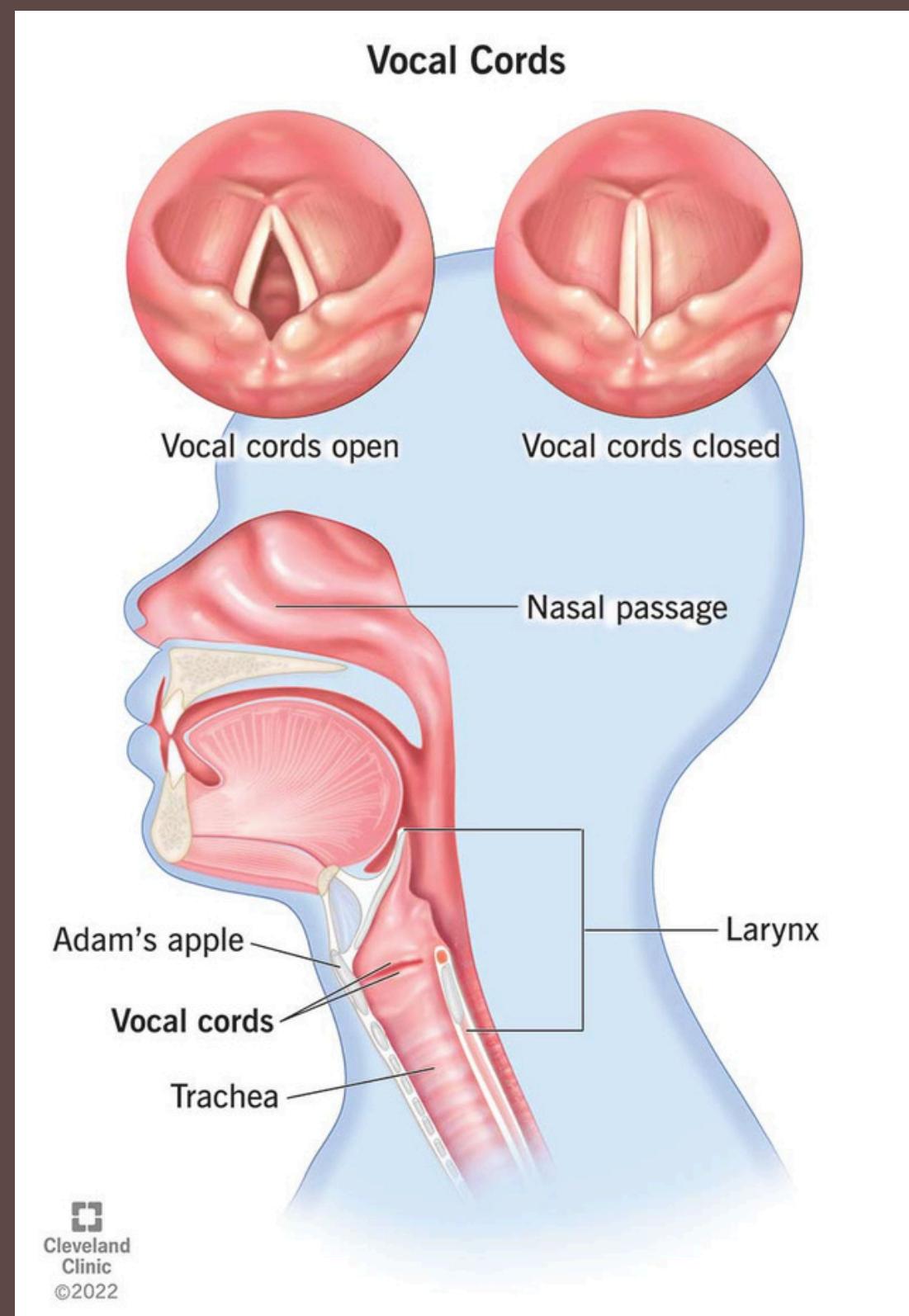
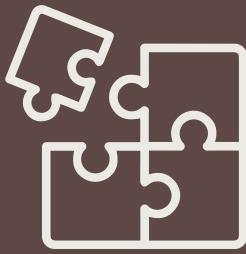


Figure 1.1



The vocal cords are vibrating means refers to the rapid oscillation or movement of the vocal cords .



Place of Articulation:

Place of articulation or the Place of Obstruction tells where the primary modification of the airstream happens in the vocal track. In the classification system for consonants, “place” denotes the location or place of obstruction and the active organ of speech involved in the articulation stage of the production of the consonants Clark and Yallop (1992: 79).

The parts of the vocal tract that can be used to form sounds are called articulators. The articulators that form the lower surface of the vocal tract are highly mobile. They make the gestures required for speech by moving toward the articulators that form the upper surface. Try saying the word - capital-and note the major movements of your tongue and lips. You will find that the back of the tongue moves up to make contact with the roof of the mouth for the first sound and then comes down for the following vowel. The lips come together in the formation of p and then, come apart again in the vowel. The tongue tip comes up for the t and again, for most people, for the final l. The names of the principal parts of the upper surface of the vocal tract are given in Figure 1.2. The upper lip and the upper teeth (notably the frontal incisors) are familiar enough structures. Just behind the upper teeth is a small protuberance that you can feel with the tip of the tongue. This is called the alveolar ridge

You can also feel that the front part of the roof of the mouth is formed by a bony structure. This is the hard palate. You will probably have to use a fingertip to feel farther back. Most people cannot curl the tongue up far enough to touch the soft palate, or velum, at the back of the mouth. The soft palate is a muscular flap that can be raised to press against the back wall of the pharynx and shut off the nasal tract, preventing air from going out through the nose. In this case, there is said to be a **velic closure**. This action separates the nasal tract from the oral tract so that the air can go out only through the mouth. At the lower end of the soft palate is a small appendage hanging down that is known as the uvula. The part of the vocal tract between the uvula and the larynx is the pharynx. The back wall of the pharynx may be considered one of the articulators on the upper surface of the vocal tract (Ladefoged&jonhson,2015). As shown in figure 1.2.

Figure1.2

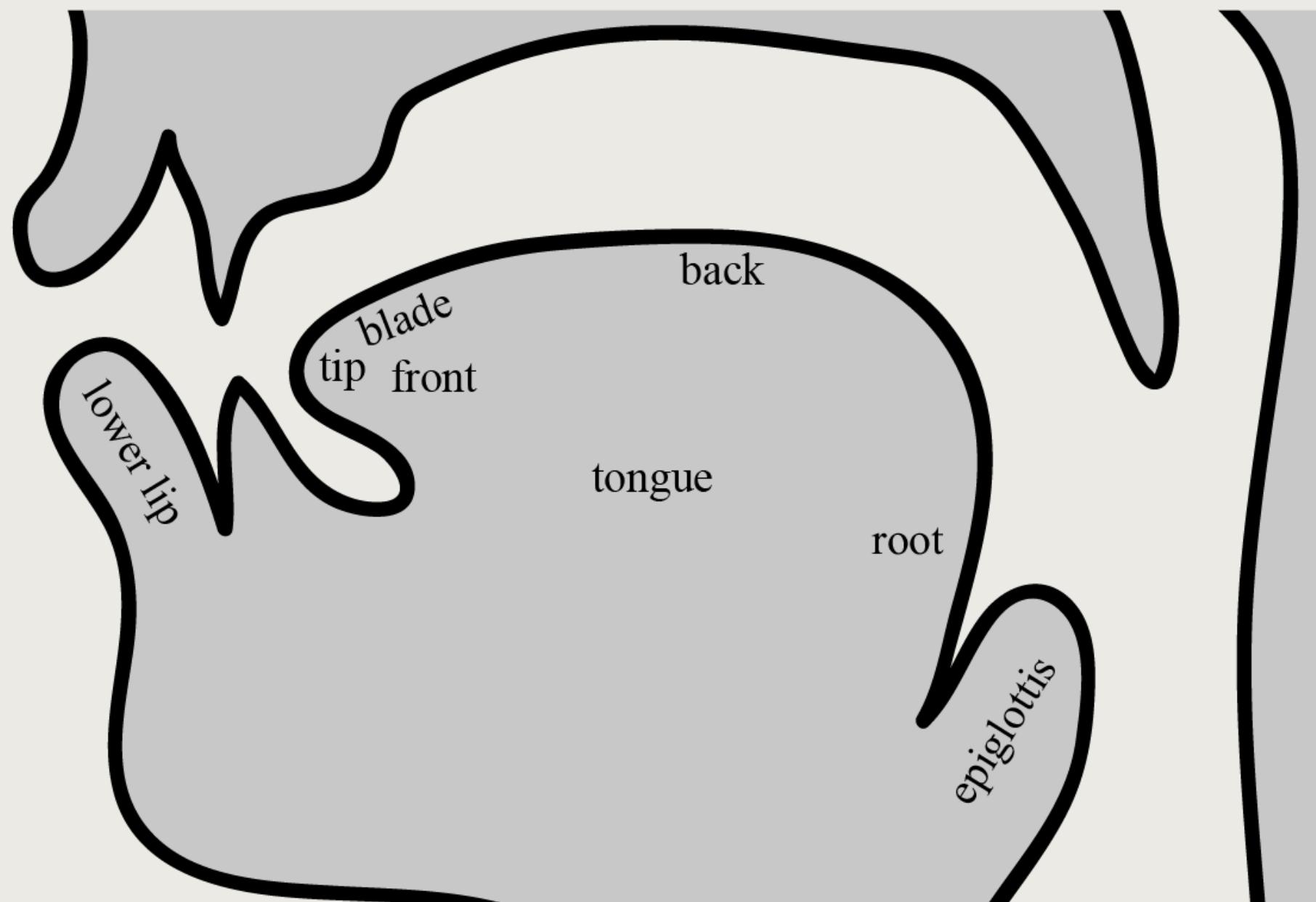
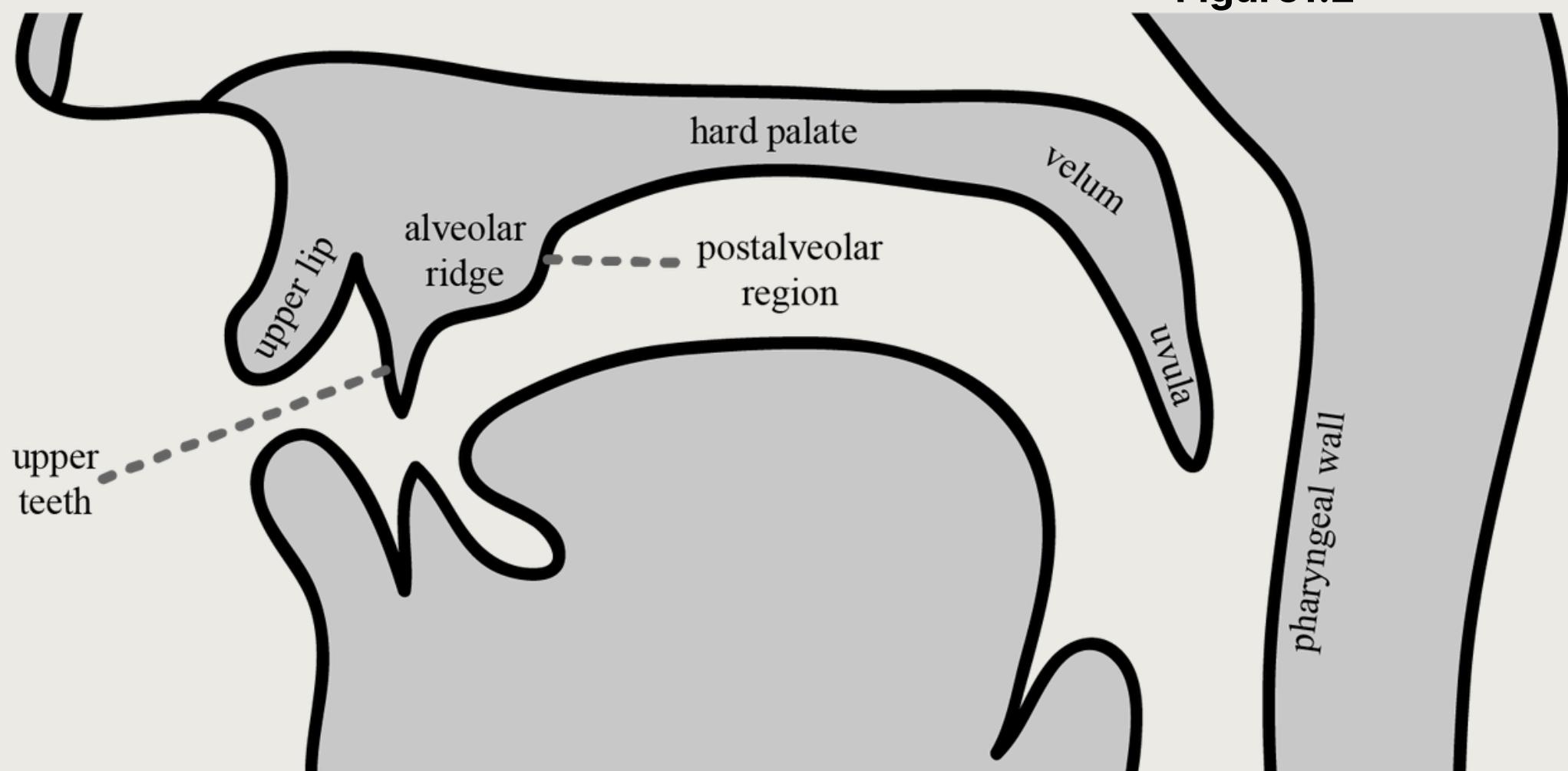


Figure1.3

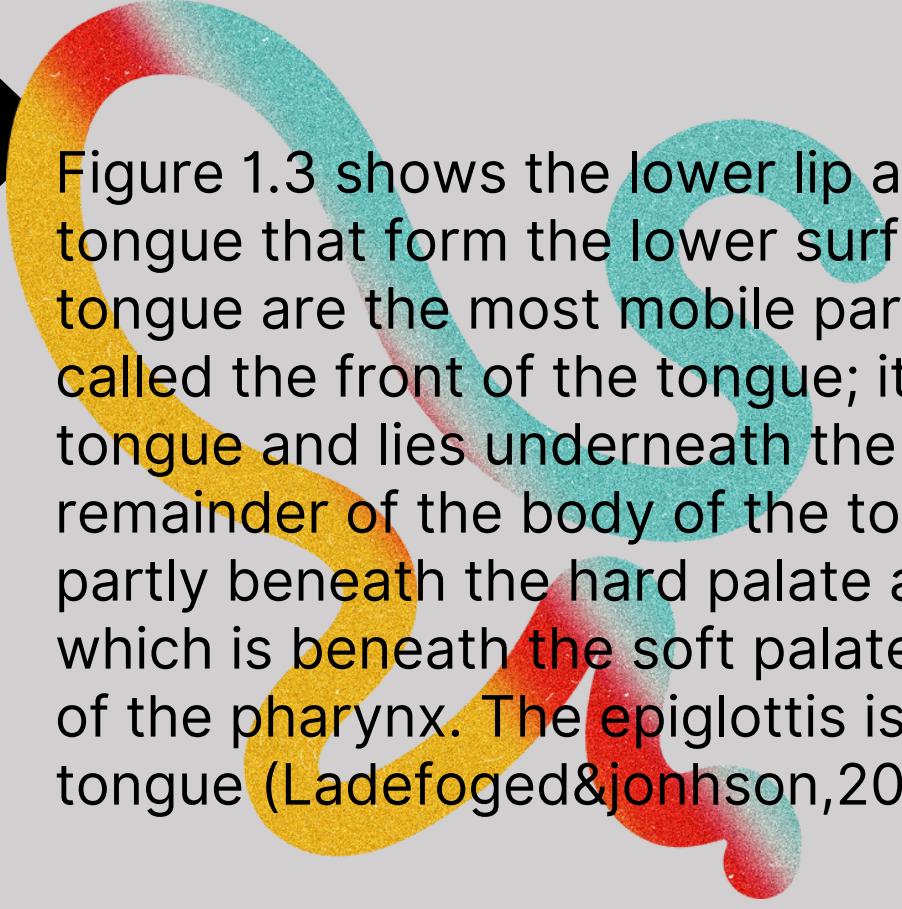
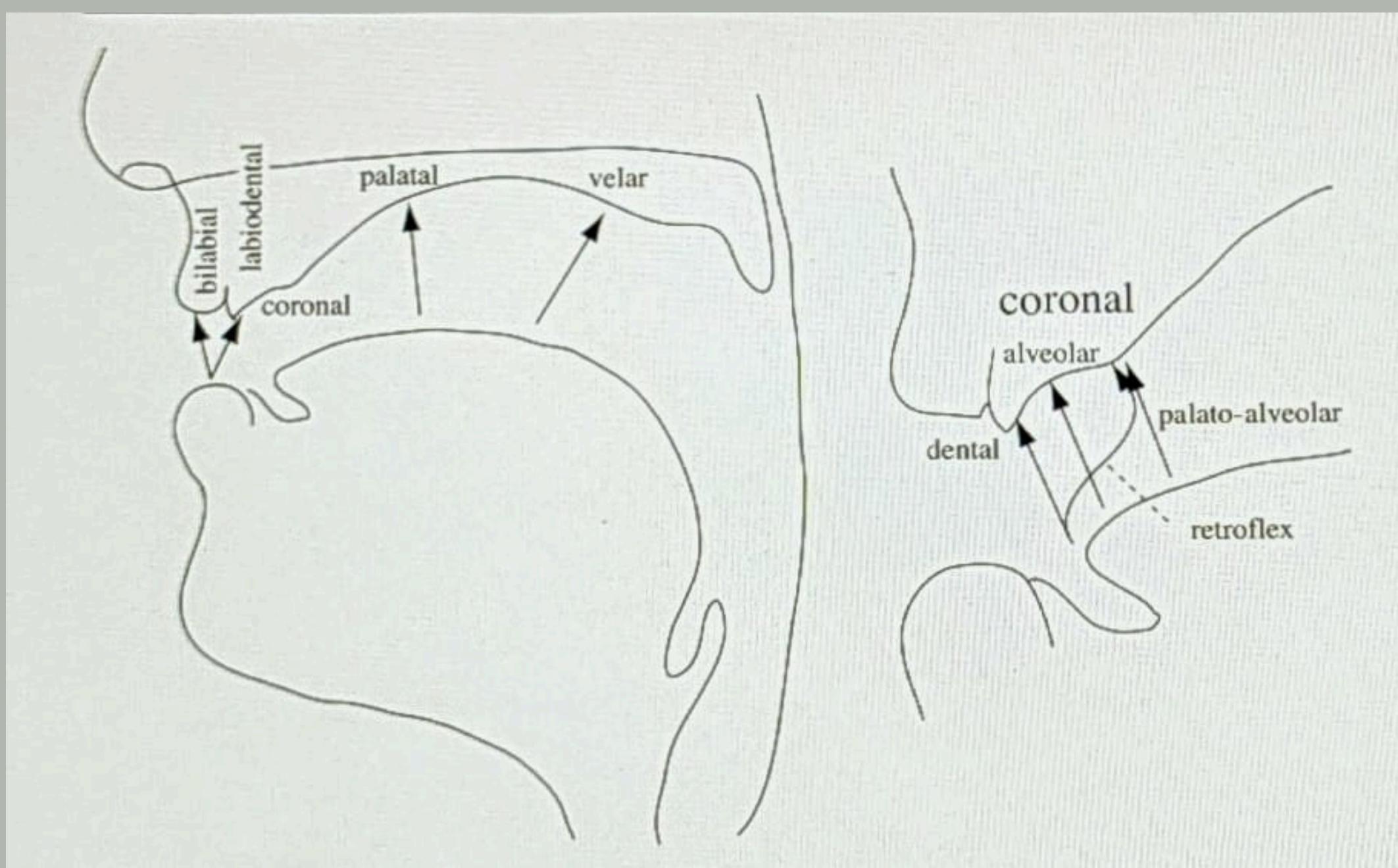


Figure 1.3 shows the lower lip and the specific names for the parts of the tongue that form the lower surface of the vocal tract. The tip and blade of the tongue are the most mobile parts. Behind the blade is what is technically called the front of the tongue; it is actually the forward part of the body of the tongue and lies underneath the hard palate when the tongue is at rest. The remainder of the body of the tongue may be divided into the center, which is partly beneath the hard palate and partly beneath the soft palate; the back, which is beneath the soft palate; and the root, which is opposite the back wall of the pharynx. The epiglottis is attached to the lower part of the root of the tongue (Ladefoged & Johnson, 2015).

- Now that we have introduced all the articulators that are important to our classification of consonants according to place of articulation. The primary articulators that can cause an obstruction in most languages are the lips, the tongue tip and blade, and the back of the tongue. Speech gestures using the lips are called **labial articulations**; those using the tip or blade of the tongue are called **coronal articulations**; and those using the back of the tongue are called **dorsal articulations**.



These terms, however, do not specify articulatory gestures in sufficient detail for many phonetic purposes. We need to know more than which articulator is making the gesture, which is what the terms labial, coronal, and dorsal tell us. We also need to know what part of the upper vocal tract is involved. More specific places of articulation are indicated by the arrows going from one of the lower articulators to one of the upper articulators in Figure 1.4. Because there are so many possibilities in the coronal region, this area is shown in more detail at the right of the figure. The principal terms for the particular types of obstruction required in the description of English are as follows.



The description of English consonants according to place of articulation



Bilabial
(Made with the two lips.) Say words such as pie, buy, my and note how the lips come together for the first sound in each of these words.



Labiodental
The lower lip and upper front teeth.) Most people, when saying words such as fie and vie, raise the lower lip until it nearly touches the upper front teeth.



Dental (Tongue tip or blade and upper front teeth.) Say the words thigh and thy. Some people (most speakers of American English as spoken in the Midwest and on the West Coast) have the tip of the tongue protruding between the upper and lower front teeth; others (most speakers of British English) have it close behind the upper front teeth. Both sounds are normal in English, and both may be called dental. If a distinction is needed, sounds in which the tongue protrudes between the teeth may be called interdental.



Retroflex (Tongue tip and the back of the alveolar ridge.) Many speakers of English do not use retroflex sounds at all. But some speakers begin words such as rye, row, ray with retroflex sounds. Note the position of the tip of your tongue in these words. Speakers who pronounce r at the ends of words may also have retroflex sounds with the tip of the tongue raised in words such as ire, hour, and air.



Alveolar (Tongue tip or blade and the alveolar ridge.) Again, there are two possibilities in English, and you should find out which you use. You may pronounce words such as tie, die, nigh, sigh, zeal, lie using the tip of the tongue or the blade of the tongue. You may use the tip of the tongue for some of these words and the blade for others. For example, some people pronounce [s] with the tongue tip tucked behind the lower teeth, producing the constriction at the alveolar ridge with the blade of the tongue; others have the tongue tip up for [s]. Feel how you normally make the alveolar consonants in each of these words, and then try to make them in the other way. A good way to appreciate the difference between dental and alveolar sounds is to say ten and tenth (or n and nth). Which n is farther back? (Most people make the one in ten on the alveolar ridge and the one in tenth as a dental sound with the tongue touching the upper front teeth.)



Post-Alveolar (Tongue blade and the back of the alveolar ridge.) Say words such as shy, she, and show. During the consonants, the tip of your tongue may be down behind the lower front teeth or up near the alveolar ridge, but the blade of the tongue is always close to the back part of the alveolar ridge. Because these sounds are made at the boundary between the alveolar ridge and the hard palate, they can also be called palato-alveolar. It is possible to pronounce them with either the tip or blade of the tongue. Try saying shipshape with your tongue tip up on one occasion and down on another. Note that the blade of the tongue will always be raised. You may be able to feel the place of articulation more distinctly if you hold the position while taking in a breath through the mouth. The incoming air cools the region where there is greatest narrowing, the blade of the tongue and the back part of the alveolar ridge.

Palatal (Front of the tongue and hard palate.) Say the word (YOU) very slowly so that you can isolate the consonant at the beginning. If you say this consonant by itself, you should be able to feel that it begins with the front of the tongue raised toward the hard palate. Try to hold the beginning consonant position and breathe in through the mouth. You will probably be able to feel the rush of cold air between the front of the tongue and the hard palate.

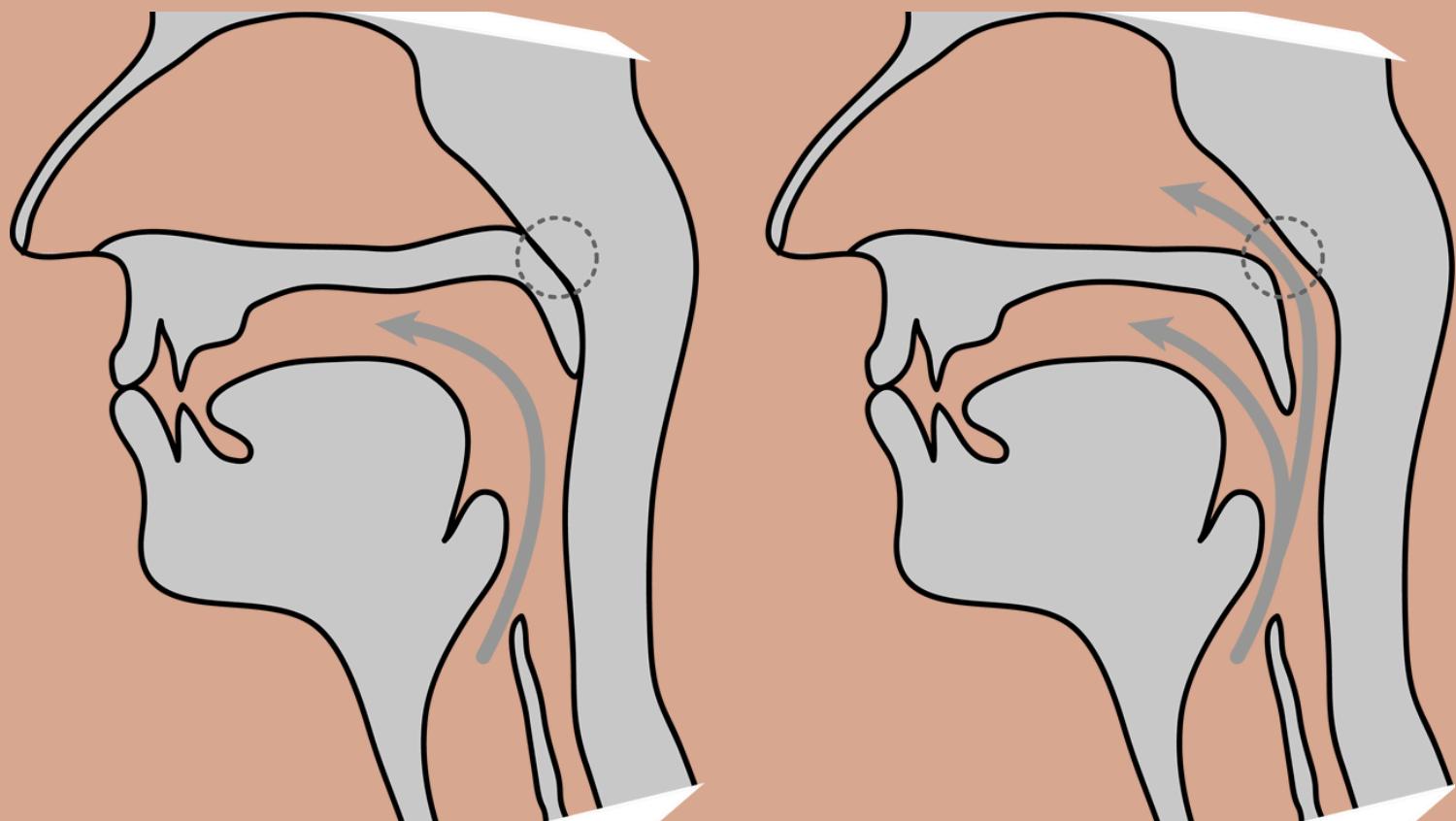


Velar (Back of the tongue and soft palate.) The consonants that have the place of articulation farthest back in English are those that occur at the end of words such as hack, hag, and hang. In all these sounds, the back of the tongue is raised so that it touches the velum.

Now we will examine another classification.

- Consider the final consonants in the words "rang," "ran," and "ram." When pronounced individually, notice that air flows through the nose. As these sounds are produced sequentially, the point of articulation moves forward, transitioning from velar in "rang," to alveolar in "ran," and finally to bilabial in "ram." Despite the closure in the mouth preventing air from escaping through it, the lowered soft palate allows air to exit through the nose. Typically, the soft palate is raised during speech, resulting in **velic closure** (figure 1.5). However, when it is lowered and there's a blockage in the mouth, **nasal consonants** are formed. The movement of the velum controls the balance between oral and nasal sounds in speech(figure 1.6).

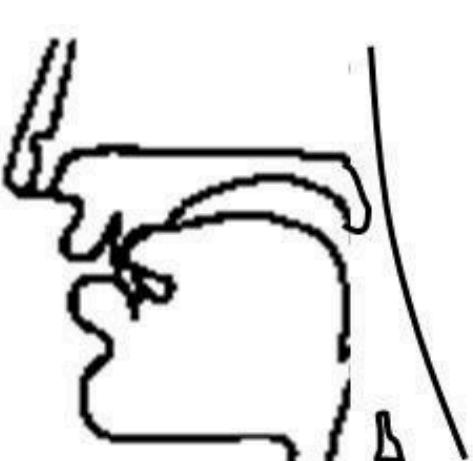
Figure 1.5



Nasals



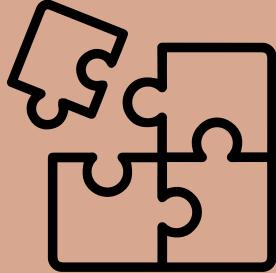
Bilabial: m



Alveolar: n



Velar: ñ



Manner of Articulation

- As we have seen so far two factors of classifying the sounds of consonants, now we will consider the last factor "Manners of Articulation ". Manners of articulation play a key role in the process of understanding how speech sounds are formed. Therefore, it is important to understand and observe this in detail each manner individually.

According to Collins and Mees, M. (2013) Manner of articulation tells us how the sound is produced. All articulations involve a stricture, i.e. a narrowing of the vocal tract which affects the airstream . And he states that generally there are three possible types of stricture, we will list them as follows:



Nature of stricture	Effect of stricture
Complete Closure	Forms an obstruction which blocks airstream
Close approximation	Forms narrowing giving rise to friction
Open approximation	Forms no obstruction but changes shape of vocal tract, thus altering nature of resonance

Another definition of Manner of articulation by Ladefoged and Johnson (2015) expresses that at most places of articulation, there are several basic ways in which articulatory gestures can be accomplished. The articulators may close off the oral tract for an instant or a relatively long period; they may narrow the space considerably; or they may simply modify the shape of the tract by approaching each other .

- This constriction or modification by the articulators results in various manners of articulation.

1. Complete Closure:

- **Stops**

Stop consonants have a stricture of complete closure in the vocal tract which blocks (i.e. stops) the airstream, hence the term stop. The soft palate is raised so that there's no escape of air through the nose. The compressed air can then be released in one of two ways:

-Plosives: The articulators separate quickly, releasing air explosively. Examples include English sounds like /p/, /t/, /k/, /b/, /d/, and /g/.

-Affricates: The articulators open more slowly, creating friction at the same point of articulation. This results in sounds such as the /tʃ/ in "church" or the /dʒ/ in "judge."

- **Nasals**

Like stops, nasals have a stricture of complete closure in the oral cavity, but the soft palate is lowered allowing the airstream to escape through the nose, e.g. English /m, n, ñ, ñl/.

2. Close approximation

- **Fricatives**

The articulators are close to each other but don't make a complete closure. The airstream passes through a narrowing, producing audible hiss-like friction, as in English /f/, /v/, /θ/, /ð/, /s/, /z/, /t/, /n/, /h/.

- **Open approximation**

(Central) Approximants have a stricture of open approximation. The space between the articulators is wide enough to allow the airstream through with no audible friction, as in English /w, j, r/. Note that English /j/ and /w/ are like very short vowels – similar to brief versions of /i:/ and /u:/ (we will cover vowels later on) an old term for these sounds was in fact 'semi-vowels'.

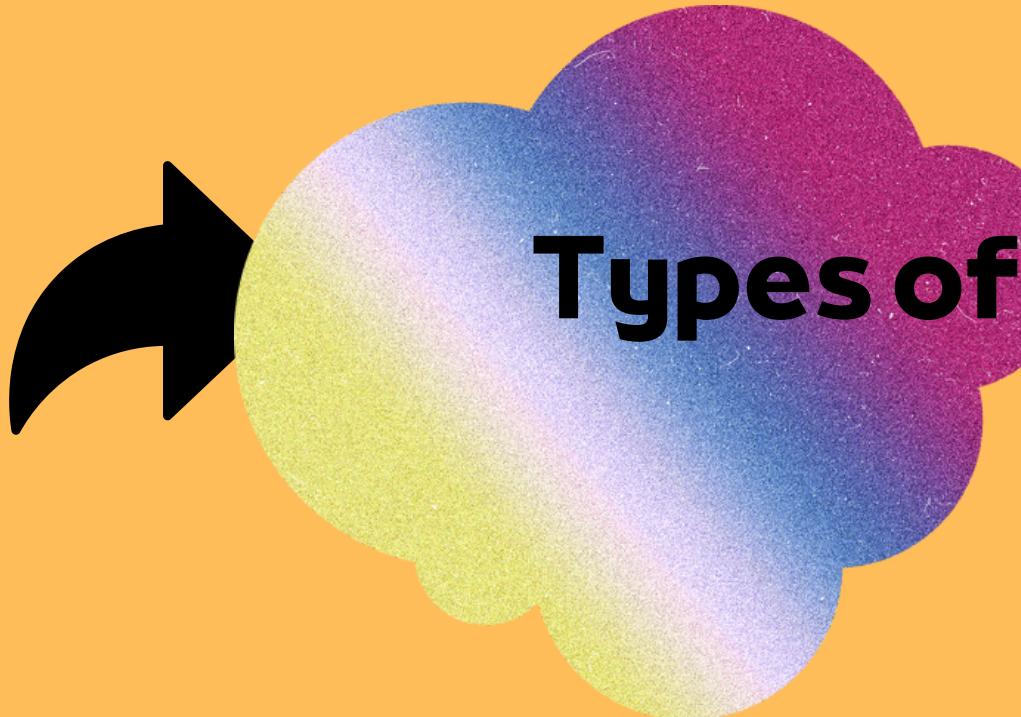
Lateral (approximant)

Lateral consonants are made with the center of the tongue forming a closure with the roof of the mouth, but the sides lowered. Typically, the airstream escapes without friction and consequently this sound is termed a lateral approximant. This is true for most allophones of English /l/, and indeed for [l] as it occurs in most languages. Consequently, the 'approximant' part of the label is usually omitted, and just 'lateral' is used. However, if there's a narrowing between the lowered sides of the tongue and the roof of the mouth

and the air escapes with friction, the result is a lateral fricative.



A useful term to cover both stops and fricatives is obstruents. All other consonant sounds, and also vowels, are classed as sonorants.



Types of Articulators

Since that in our discussion of manners of articulation we have dealt with articulators. It is important to distinguish between two types of articulators:

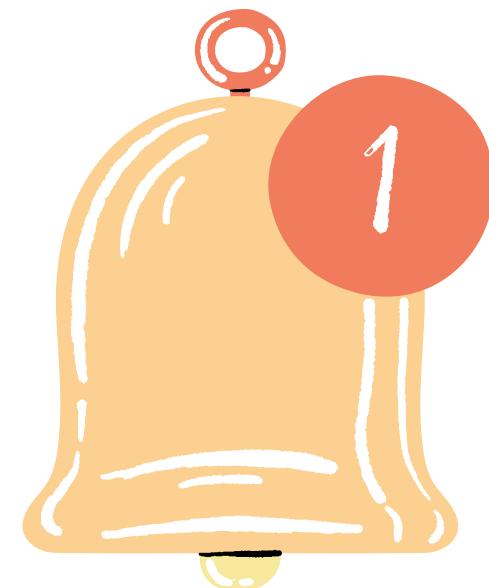
1. **Active Articulator:** This is a part of the vocal tract that moves to create different speech sounds. The active articulator might be the tongue, lips, or any part that can change position or shape to manipulate airflow.
 2. **Passive Articulator:** This refers to the part of the vocal tract that remains relatively stationary during speech production. It serves as the "target" or point towards which the active articulator moves. Common passive articulators include the teeth, the alveolar ridge, the hard palate, and the back of the throat.
- To effectively summarize our exploration of consonants, let's conclude with a comprehensive chart that encapsulates all key points. Additionally, provide examples of words that include each consonant sound.



	Bilabial	Labio-dental	Dental	Alveolar	Palato-alveolar (Post-alveolar)	Palatal	Vocal	Glossal
Unvoiced (-V) Voiced (+V)	-V +V	-V +V	-V +V	-V +V	-V +V	-V +V	-V +V	-V +V
Stops (Plosives)	p b			t d			k g ?	
Fricatives	f v θ ð s z	f v θ ð	s z	ʃ ʒ			h	
Affricates				tʃ dʒ				
Nasals	m			n			ŋ	
Lateral (approximant)				l				
Approximant	w			r		j	w	

The consonant system of English.

p	pie, spot, tapped	r	rye, barrel, fur
b	buy, lab, bribe	l	lie, sell, slap
m	my, smart, lamb	ʃ	shy, nation, machine
f	fie, awful, laugh	ʒ	azure, vision
v	vie, even, of	tʃ	chide, watch, church
θ	thigh, with	dʒ	judge, gin, lodging
ð	thy, other, that	j	your, beautiful, cute
t	tie, mat, stop	k	kind, think, school
d	die, lad, mobbed	g	guy, lag, eggs
n	nigh, sunny, man	ŋ	bring, going, angle
s	sigh, pass, rice	h	high, happy, who
z	zap, lose, beds	w	why, wish, award



You can listen to all consonant sounds and practice them through the following link :
<https://linguacomics.com/site/quiz/>

Practice

- Identify the consonant sounds that exist in each word , and give the description of it by means of the three factors of classification we have explained before (Voicing, Place of articulation , and Manner of articulation.



Please note that we're dealing with spoken sounds, not written letters. Some letters may be the same but they are representing different sounds.

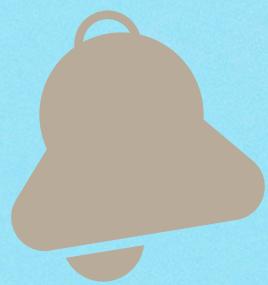
- Cats
 - Park
 - Silence
 - Mother
 - Boys
 - Country
 - Hate
 - Vivid
 - Jury



Make sure to write each consonant between slashes : /.../

- Fill in the empty cells with the write consonant ,following the provided clues

- **1.b** : unvoiced velar stop (plosive)
 - **1.d** :unvoiced alveolar fricative
 - **1.e** :unvoiced alveolar stop(plosive)
 - **1.g** : voiced bilabial nasal stop
 - **2.b** : voiced alveolar approximant
 - **2.g** :voiced palatal approximant (semi-vowel)
 - **3.f** : voiced bilabial stop
 - **4.b** : unvoiced alveolar fricative
 - **5.b** : unvoiced alveolar fricative
 - **5.f** : unvoiced labiodental fricative
 - **6.b** : voiced labial-velar (semi vowel)
 - **6.f** : voiced alveolar fricative
 - **7.f** : unvoiced labiodental fricative
 - **8.a** : unvoiced velar stop
 - **8.b** : voiced alveolar approximant
 - **9.b** : unvoiced alveolar stop

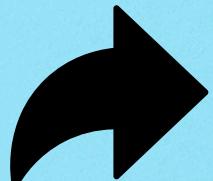


VOWELS

Moving on from consonants, we now turn our attention to vowels, the vocal pillars of language. Vowels are essential for speech, providing sonority and clarity to the sounds of words. In This section we will overview a detailed description about vowels and how they differ from each other.

Ladefoged and Jonhson (2015) in their description of vowels they have made three distinctions between vowels in general.

- The height of the body of the tongue
- The front-back position of the tongue
- The degree of lip rounding.



Based on this overview, it's evident that two key articulators, the tongue and lips, are instrumental in vowel production. A forthcoming diagram will further illustrate the vowel space for enhanced comprehension (Figure 2.1).

Front Central Back

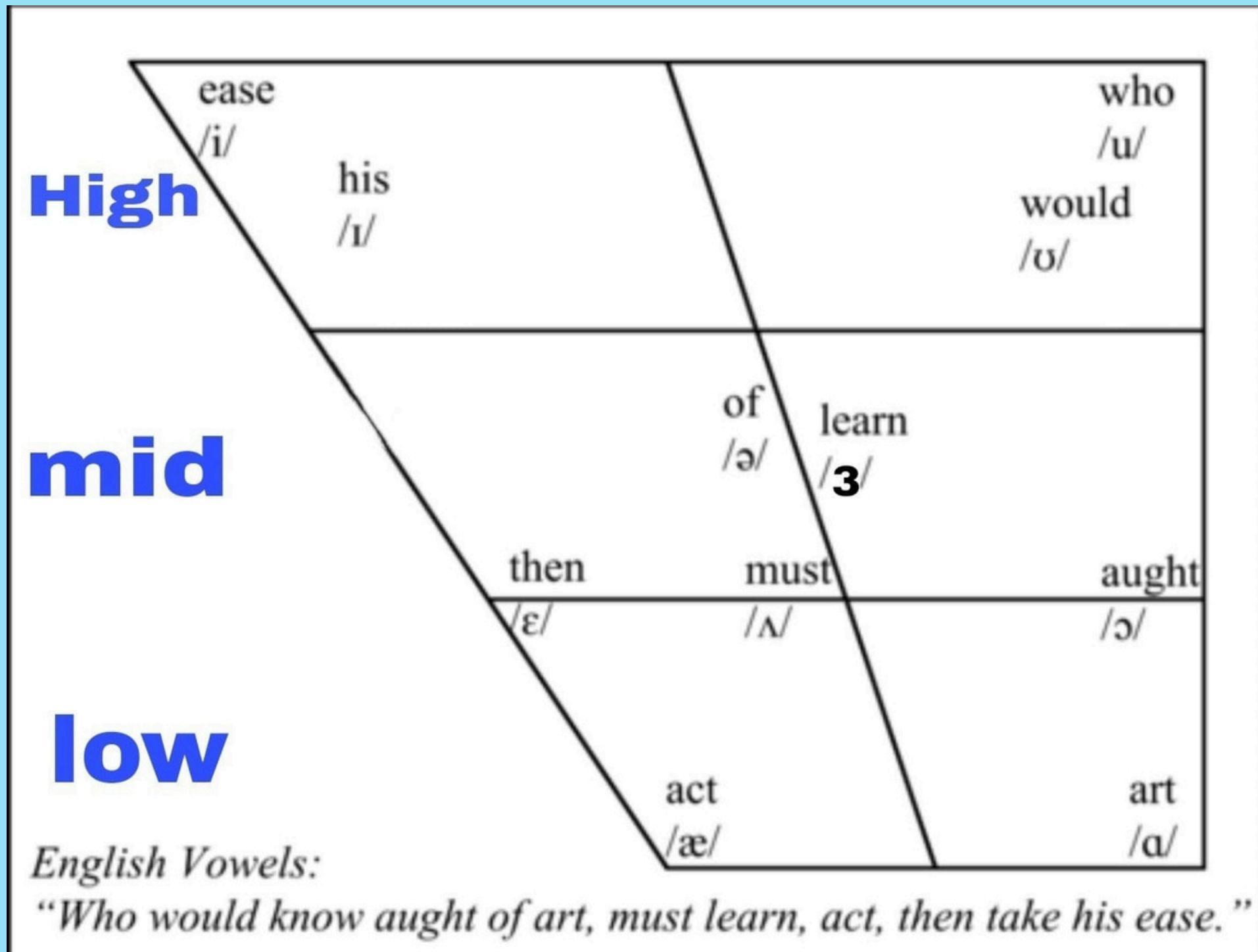


Figure 2.1

- In this diagram we illustrate the position of the tongue inside the mouth in the production of each vowel

Pronouncing the words "seat," "sit," "set," and "sat," (you can listen to the pronunciation of them through this link : <https://linguacomics.com/site/quiz/>) one can observe that the tongue starts at a high front position and moves progressively lower. In contrast, when articulating words like "you" or "who," the tongue shifts entirely to a high back position. Similarly, in words such as "room," "book," "daughter," and "father," the commonality lies in the tongue being positioned towards the back of the mouth, descending from a higher to a lower placement. As for central vowels, found in words where the tongue rests at the central part of the mouth, a natural and relaxed state is achieved. For example (around, always, cup). It's important to note that all vowel sounds are voiced, although certain contexts may lead to devoicing, a concept further explored in our phonological discussion.



These vowels involve the tongue maintaining a single position during articulation. However, there are also vowels where the tongue moves from one position to another within the same syllable, effectively blending two vowel sounds into a single articulation. These vowels are known as diphthongs.



DIPHTHONGS

Hudson (2008) defines diphthongs as:

- ◆ A diphthong is a long vowel that moves from one mouth position to another (a compound sound).
- ◆ The first position in a diphthong is stronger than the second



In the figure 2.2 we can see the eight diphthongs of English and how that each diphthong consists of two vowels . It start in one position and end in another one

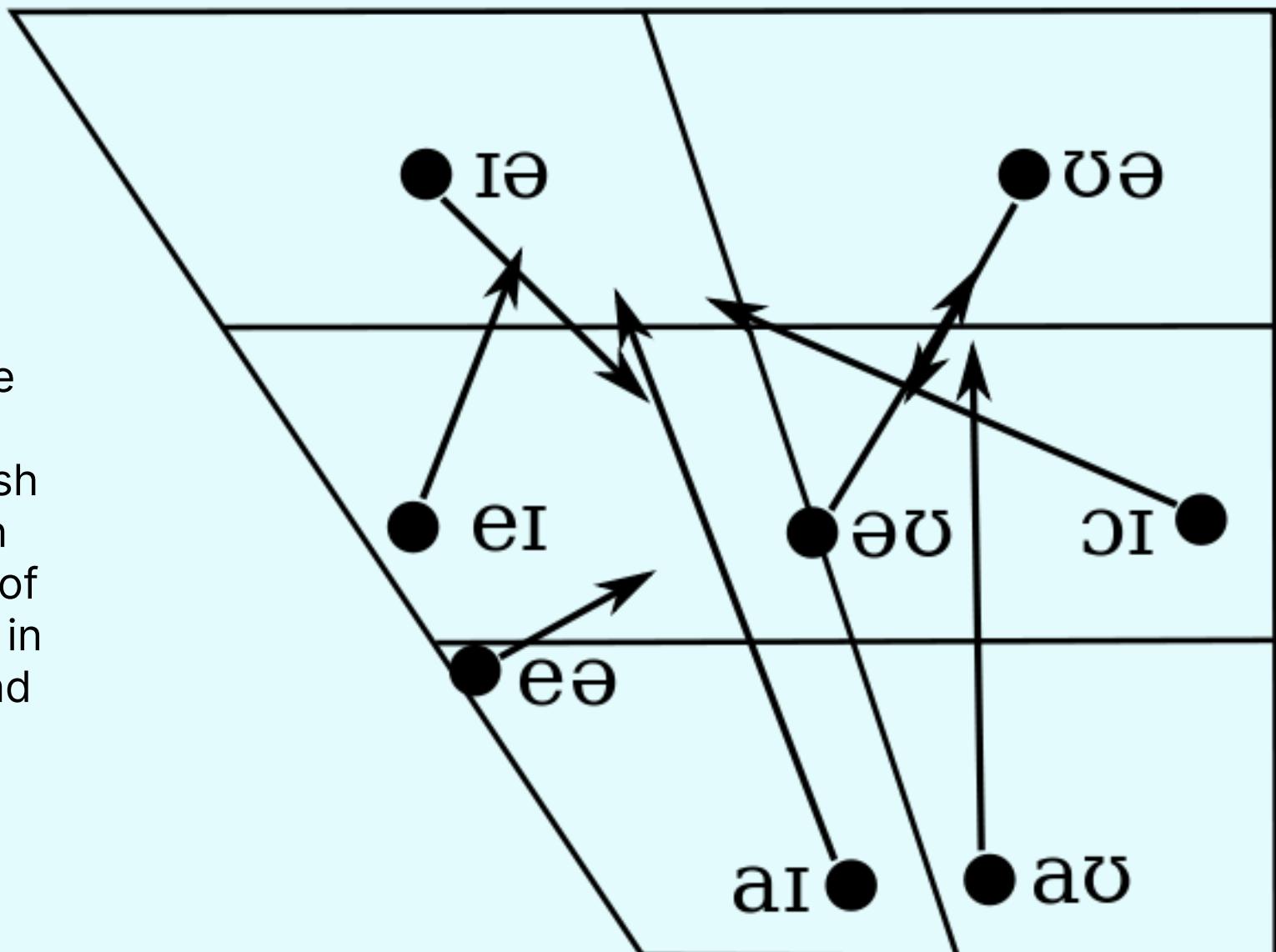


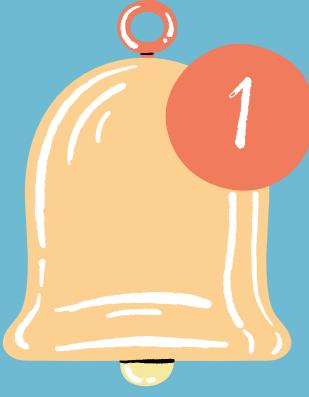
Figure 2.2

In the following chart by Hudson we can see diagrams that illustrates how each diphthongs is made and examples of them. try to practice them , and listen to the sound of diphthongs through the following link : <https://linguacomics.com/site/quiz/>



However Hudson in his book has identified seven diphthongs .But many phonemic charts list eight, including the diphthong /eə/, as noted by Nordquist and Richard (2023). This additional diphthong is somewhat contentious, as some linguists, including Hudson, whose perspective we have just considered, classify /eə/ as a long monophthong vowel /ɛ:/ . This classification implies that it is a single, sustained vowel sound without a noticeable glide, akin to the way "hair" is pronounced in dialects that do not treat it as a diphthong.

Sound	Spellings	Examples	Position 1	Position 2
ei	ay, ea, a_e, ai	pay, break, grade, fail, stay, wait, change	tongue jaw front mid 	tongue jaw front close
ɔɪ	oi, oy	boy, toy, avoid, folk, enjoy, annoy, coin	back mid 	front close
aɪ	ie, i_e, i, y	pie, crime, climb, spy, shine, fly, high	back open 	front close
əʊ	o, o_e, oa, ow	post, tone, soap, show, so, lonely, soda	centre mid 	back close
aʊ	ou, ow	couch, house, allow, brown, voucher, noun, how	front open 	back close
ɪə	eer, ear	peer, gear, steer, fear, beer, rear, cheer, spear	front close 	centre mid
eə	are, ere, ea, ai	spare, where, pair, care, there, aware dare	front mid 	centre mid



**Practicing the sounds is a key element to achieve an accurate pronunciation .
So don't dismiss practicing your pronunciation**



Now that our explanation of articulatory phonetics have come to an end we will examine our understanding through different exercises such as phonetic transcription of words and sentences . identifying the vowel/diphthong sound ...

Practice

1. Provide five words, that each one of them contains two different vowels .

2. Provide five words that each one of them contains a different diphthong .

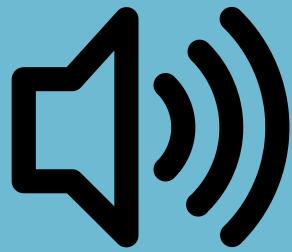


Make sure to answer these questions , so that you activate your memory about vowels and diphthongs

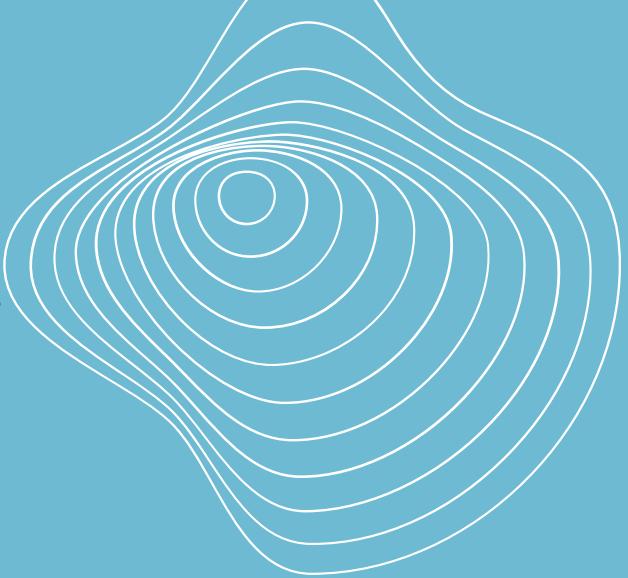
Phonetic transcription :

Phonetic transcription is the process of representing spoken language with a written system, typically using symbols from the International Phonetic Alphabet (IPA). It captures the precise sounds of speech, including consonants, vowels, and suprasegmental features like stress and intonation. Phonetic transcription allows linguists, language learners, and speech professionals to accurately describe and analyze the sounds of spoken language, regardless of the writing system used for the language.

- Now we will do some spoken practice



Try to pronounce the following tongue twisters



1. "She sells seashells by the seashore."
2. "Peter Piper picked a peck of pickled peppers."
3. "How much wood would a woodchuck chuck if a woodchuck could chuck wood?"
4. "Fuzzy Wuzzy was a bear. Fuzzy Wuzzy had no hair. Fuzzy Wuzzy wasn't very fuzzy, was he?"
5. "Betty Botter bought some butter, but she said the butter's bitter. If I put it in my batter, it will make my batter bitter. But a bit of better butter will make my batter better. So she bought a bit of butter, better than her bitter butter, and she put it in her batter, and the batter was not bitter. So it was better Betty Botter bought a bit of better butter."

- Now let's do some transcription of words

Transcribe the following list of words: Cat ,Boat , Fish , Dance , Tree ,Mouth ,Bird , Dry , Love , Bear .

Transcribe the following sentences :

The cat sat on the mat.
I love to dance in the sun.

- Identify the common consonant/vowel/ or diphthong that is common between each pair of the following words :

1. **Cat and Bat.**
2. **Dog and Fog.**
3. **Sail and Mai**
4. **Tree and Free.**
5. **Sing and Ring.**

1. **Choir and Fire.**
2. **Thorn and Storm.**
3. **Space and Grace.**
4. **Flood and Brood.**
5. **Flame and Frame.**

The answers of all the provided in the section of articulatory phonetics questions, and also the pronunciation of the tongue twisters are available through the following link :

<https://linguacomics.com/site/tonguetwister/>

PHONOLOGY

Phonology is a subfield of linguistics concerned with the study of the systems and patterns of sounds in languages. While phonetics focuses on the physical production and perception of sounds, phonology delves into how sounds function within a particular language or across languages.

Phonology examines the rules that govern the sound structure of languages, including how sounds are organized into syllables, how they interact with each other, and how they convey meaning in speech. For instance, phonologists study phenomena like stress, tone, and intonation, and how these elements affect linguistic communication.

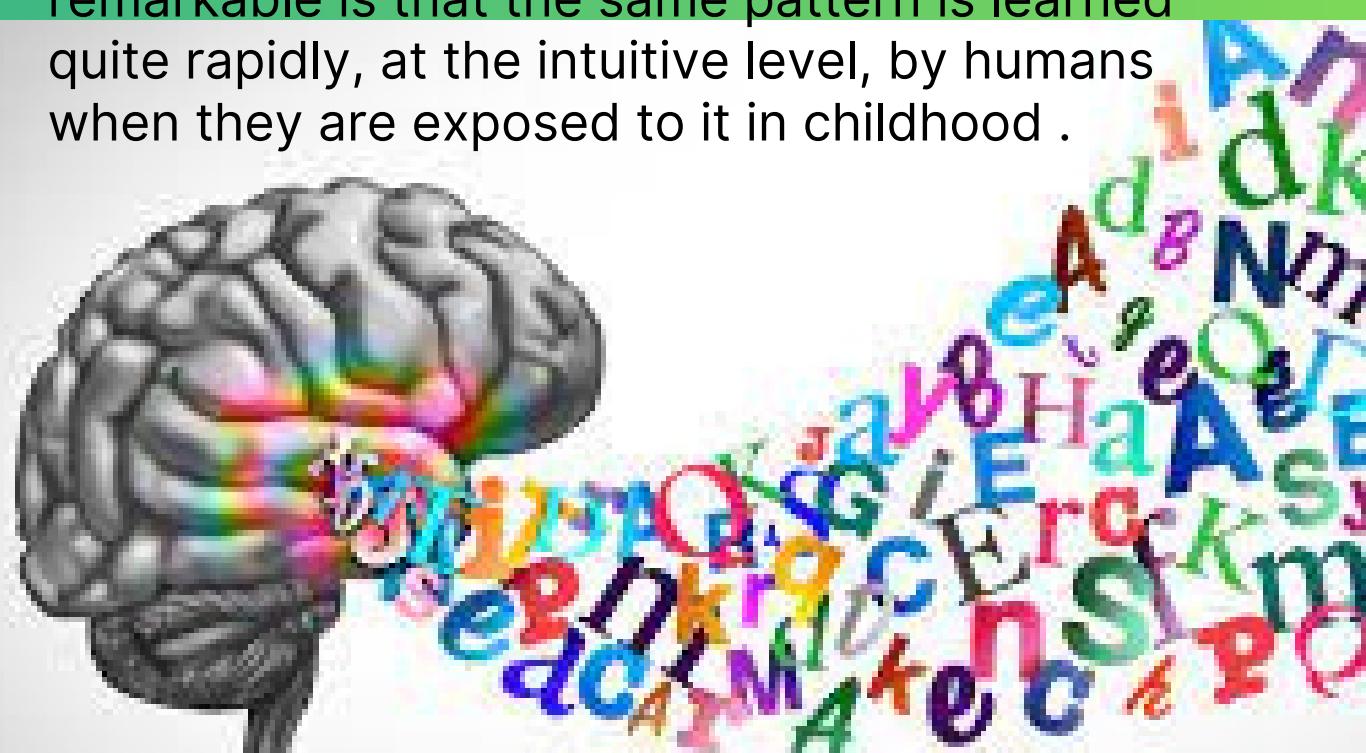
Additionally, phonology explores the concept of phonemes, the smallest units of sound that can distinguish meaning between words in a language. For example, the difference in sound between the words "bat" and "pat" represents a difference in phonemes. Phonologists aim to understand how these phonemes are categorized and how they vary across different dialects and languages.

This field is crucial for understanding the underlying structures that guide language use.

Another definition of phonology by Hayes (2009).

There are two branches of linguistics that deal with speech sounds. Phonetics studies speech sounds in ways that are close to the speech stream, focusing on production, acoustics, and perception. Phonology tends to be more abstract, dealing not directly with the physical nature of speech sounds (though that is of course quite relevant), but rather with the largely unconscious rules for sound patterning that are found in the mind/brain of a person who speaks a particular language. It could be said that a phonologist is a kind of grammarian, and the area of

grammar that she studies is the sound pattern of a language. The rules studied by phonologists come in various kinds. First, phonetic study shows that sounds vary with their context, often in complex ways; and phonologists hypothesize rules to characterize this variation. Second, the sequencing and distribution of speech sounds is not arbitrary but follows patterns also describable with rules. Third, phonology is interfaced with other components of the grammar, particularly morphology and syntax, and there are rules that characterize the way in which sound patterning reflects information that arises within these components. The phonologies of many languages often show a level of complexity that make them a worthwhile intellectual challenge for the phonologist trying to understand them. It can take many years of careful research to fully explicate the sound pattern of a language. What is remarkable is that the same pattern is learned quite rapidly, at the intuitive level, by humans when they are exposed to it in childhood.



DISTINCTIVENESS AND CONTRAST.

Phonemes and Allophones: Understanding Sound and Meaning in Language



In phonology, the distinction between phonemes and allophones is crucial for comprehending how sounds contribute to meaning in language.

- **Phonemes**

Phonemes are the smallest units within a language's sound system that can distinguish one word from another, a concept central to the field often referred to as phonemics in the United States. Derived from the Greek word 'phonema,' meaning 'sound,' phonemes are abstract, theoretical units that are understood conceptually rather than pronounced in isolation. This is evident in how changing a single phoneme can alter the meaning of a word, as demonstrated by pairs like "cab" and "cap" (the final phonemes /b/ and /p/ respectively), "serve" and "surf", or "zeal" and "seal" (the initial phonemes /z/ and /s/). Phonemes are defined by their capacity to contrast meaningfully with other sounds based on phonologically relevant characteristics such as voicing, place, and manner of articulation, illustrated by terms like "voiced bilabial plosive." The identification of phonemes involves analyzing **minimal pairs**—words that differ by only one phonological element and have distinct meanings, such as "write" and "rhyme," or "week" and "weak." Each language, and even dialects within the same language, possesses a unique set of phonemes, demonstrating the diverse realization of sounds across linguistic communities (Skandera & Burleigh, 2005).



More examples of minimal pairs to understand how phonemes contrast meaning:

/p/

/i:/

/aɪ/

/n/

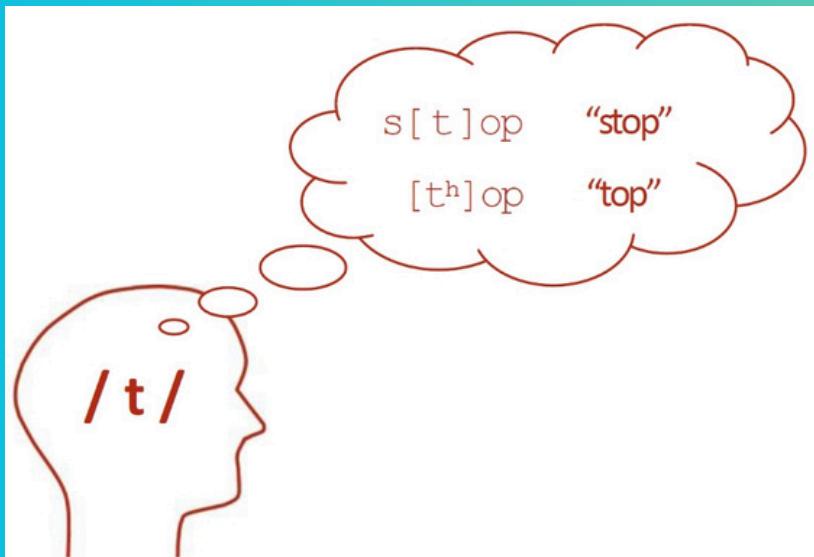
/v/

/ɪ/

Minimal Pairs	Sample Words
/t/ and /d/	Write, Ride
/r/ and /l/	Fry, Fly
/tʃ/ and /ʃ/	Catch, Cash
/ð/ and [θ]	Thick, This
/f/ and /v/	Safe, Save
/v/ and /w/	Vest, West
/s/ and /z/	Race, Raise

- **Allophones**

Allophones are specific realizations of a phoneme that vary depending on the **phonological environment** but do not change the inherent meaning of the phoneme. These variations typically appear in "**complementary distribution**," meaning that each allophone of a phoneme is manifested in a unique and predictable phonological context, and no two allophones of the same phoneme ever appear in the same environment. For example, the English phoneme /t/ is realized as an aspirated [tʰ] at the beginning of syllables, as in "top," and as an unaspirated [t] when it follows an /s/, as in "stop." This demonstrates that variations in allophone realization do not affect the meaning of the words they comprise (these two different realizations are the allophones of the phoneme \t\). While some allophones exhibit "**free variation**," appearing randomly and without a conditioned phonetic context, most allophonic variations are phonetically conditioned by the characteristics of surrounding sounds (Anderson, 2018).



The phonological environment significantly influences the realization of allophones. This influence is analyzed by examining the surrounding sounds that interact with a particular sound. These surrounding sounds are characterized using the same phonetic properties we've discussed in phonetics: voicing, place of articulation, and manner of articulation. By understanding these properties, we can predict how a sound will vary in different linguistic contexts (JTA Technology Consulting, 2010). For instance, the phoneme /l/ in English is realized as a 'clear l' [l] at the beginning of words and a 'dark l' [ɫ] in syllable-final positions, depending on the vocalic or consonantal subsequent sounds.

phoneme /s/:

- Allophone Voiceless dental fricative: [s] (as in "sip")
- Allophone :Voiceless alveolar fricative: [ʂ] (as in "sit")

/m/:

- Bilabial nasal: [m] (as in "man")
- Labiodental nasal: [ɱ] (as in some dialects of "jump")

Phonological processes

/p/ /t/ /k/



[pH] [tH] [kH]

[pI] [tI] [kI]

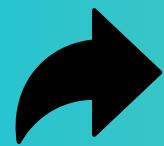
[p] [t] [k]

} Phonemes
Voiceless stops

} Allophones
and phones
and voiceless stops

Understanding the interplay between phonemes and allophones, and how they are influenced by the phonological environment, offers profound implications for fields ranging from speech pathology to cognitive linguistics. This understanding underscores the complex relationship between abstract linguistic units and their practical, audible realizations in spoken language, emphasizing the role of phonological environment in the broader linguistic sciences.

You can go for further explanation and listening examples to get to know some different allophones of different phonemes, through the related link to the magazine :



Now we will move to explaining **prosodic features** that can contrast meaning in languages, but we first need to understand the notion of syllables.

SYLLABLES.

Syllables are fundamental units of organization within spoken language, essential for structuring and segmenting speech. A syllable typically consists of a vowel sound, which may be preceded and/or followed by consonants, forming a basic building block of words. The structure of a syllable can generally be divided into three components:

- 1. Onset:** This is the initial consonant or cluster of consonants at the beginning of a syllable. Not all syllables have an onset. For example, in the word "apple," the onset of the first syllable is "app-."
- 2. Nucleus:** This is the core of the syllable, usually formed by a vowel. It is the essential part of any syllable and is where most of the syllabic sound is concentrated. For example, in the word "cat," the nucleus is the vowel sound "a."
- 3. Coda:** The coda consists of one or more consonants that follow the nucleus within the same syllable. A syllable does not necessarily have a coda. For instance, in the word "go," there is no coda, but in "bat," the "t" is the coda.

Types of syllables

- **Closed Syllables (VC):** Have a single vowel followed by a consonant, producing a short vowel sound (e.g., "bat", "hen").
- **Open Syllables (V):** End with a single vowel that has a long sound (e.g., "he", "go").
- **Magic "E" Syllables (VCE):** End in a consonant and a silent 'e', giving the vowel a long sound (e.g., "bake", "pine").
- **Vowel Teams Syllables (VV):** Contain two vowels making one sound (e.g., "boat", "seed").
- **Diphthong Syllables (VV):** Contain a complex vowel sound made from two quickly combined vowel sounds (e.g., "boil", "rain").
- **R-controlled Syllables (VR):** Contain a vowel followed by an 'r' that affects the vowel sound (e.g., "bird", "car").
- **Consonant-LE Syllables (CLE):** Consist of a final unaccented consonant + 'le' (e.g., "candle", "circle").

SYLLABLE
[SIL_uh_buhl]



Practice

- Identify the minimal pairs in the following words :

1. "Ship" vs. "Sheep"
2. "Seat" vs. "Sheet"
3. "Thin" vs. "Then"
4. "Path" vs. "Pith"
5. "Sick" vs. "Seek"
6. "light" vs. "white"
7. "Fan" vs. "Van"
8. "Cot" vs. "Cut"
9. "Pat" vs. "Bat"
10. "Sleet" vs. "Sweat"

Transcribe the words to answer effectively

- identify the target phoneme that is repeated in each set of words and write it down. and say in which position it occur (initial, central, final).

- set1 :pat, top, cap
- set2 : tap, bet, cat
- set3: cat, back, like
- set 4: sit, bus, mess
- set 5: zip, buzz, was
- set 6: mat, sum, jam
- set 7: not, ten, pan
- set8: think, both, math
- set9: this, bathe, breathe
- set 10: let, bell, will
- set 11: rat, run, car

- Listen to each sentence carefully. In each sentence (through the following link <https://linguacomics.com/site/tonguetwister/>), the target phoneme is pronounced differently. Identify the allophone of the target phoneme in each sentence.

- /p/: "The /p/arty was /p/acked with /p/eople."
- /t/: "The ca/t/ is in the /t/ent."
- /k/: "I'll /k/ick the /k/an."
- /s/: "She /s/aw six /s/nakes."
- /z/: "Buzzing /z/ippers are nois/y/."
- /m/: "The /m/an /m/ade a /m/ess."
- /n/: "The /n/ose is on the mo/n/itor."
- /θ/: "Three /θ/ings /θ/rown by the tree."
- /ð/: "The /ð/ick /ð/og /ð/rewn up."
- /l/: "The /l/ight /l/amp /l/eft a /l/ong shadow."
- /r/: "Red /r/oses /r/ustle in the /r/ain."



STRESS

Many languages make distinctions of stress; roughly, the degree of loudness or effort with which a syllable is pronounced. IPA provides the symbol ['] to indicate a strong stress, and [,] to indicate a relatively weak (secondary) stress. These marks are placed just before the syllable, not the vowel, thus ['ræbɪt] rabbit (Hayes,2009).



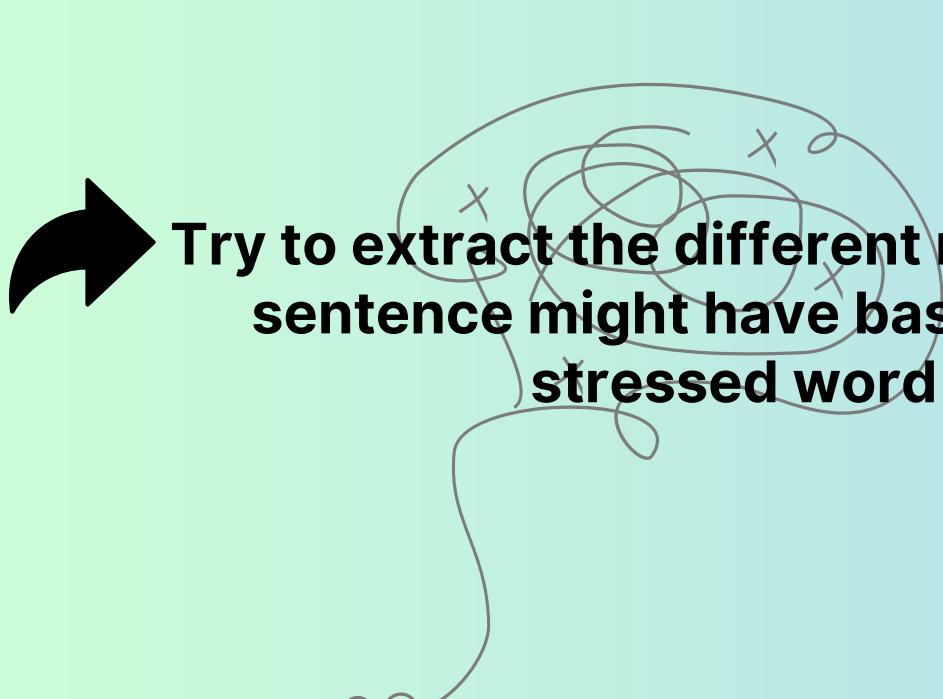
Stress is phonemic in English. For example, the words **desert** and **dessert** are distinguished by stress, as are the noun **a record** and the verb **to record**. Stressed syllables in English are louder than non-stressed syllables, as well as being longer and having a higher **pitch**. They also tend to have a fuller realization than unstressed syllables. Examples of stress in English words, using boldface to represent stressed syllables, are **holiday**, **alone**, **admiration**, **confidential**, **degree**, and **weaker**. Ordinarily, grammatical words (auxiliary verbs, prepositions, pronouns, and the like) do not receive stress, whereas lexical words (nouns, verbs, adjectives, etc.) must have at least one stressed syllable.

English is a stress-timed language. That is, stressed syllables appear at a roughly steady tempo, and non-stressed syllables are shortened to accommodate this (CLEMENTE,2012).



STRESS

Based on all these explanations we can state that stress in English is distinctive and can contrast words.



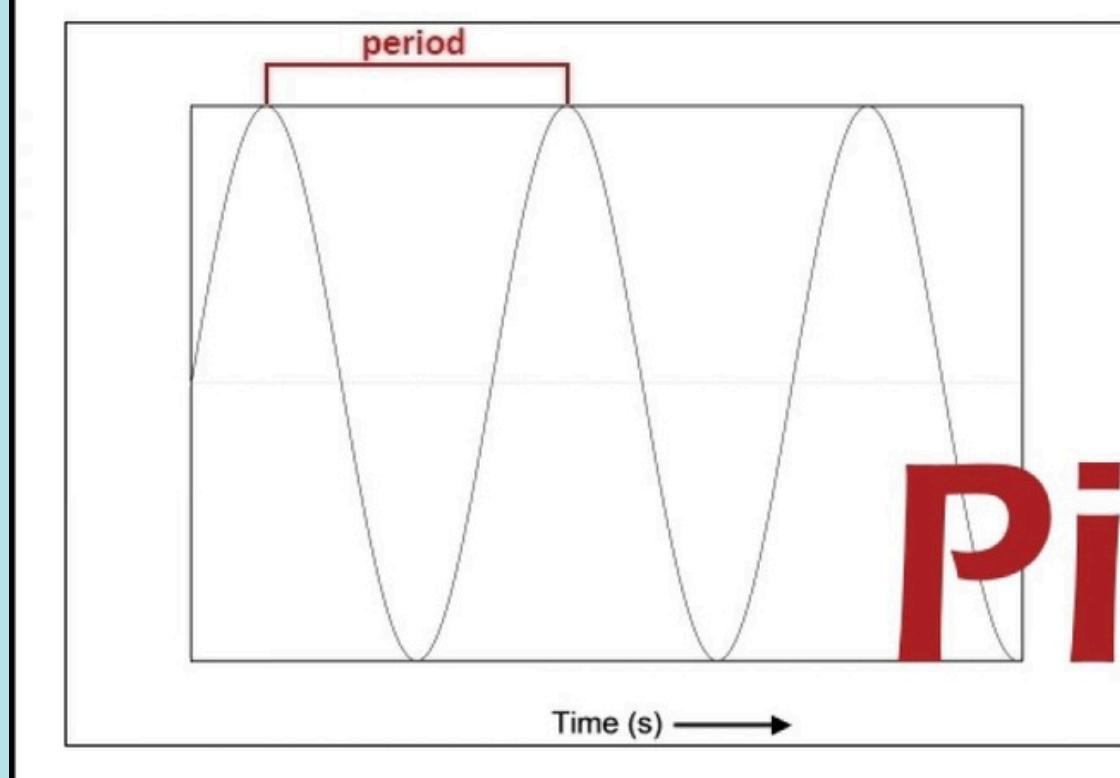
Try to extract the different meaning this sentence might have based on the stressed word

Did you know?

the sentence :
"I never said he ate your chocolate"
has 7 different meanings,
depending on the stressed word?

PITCH

"Pitch is how high or low your voice is."

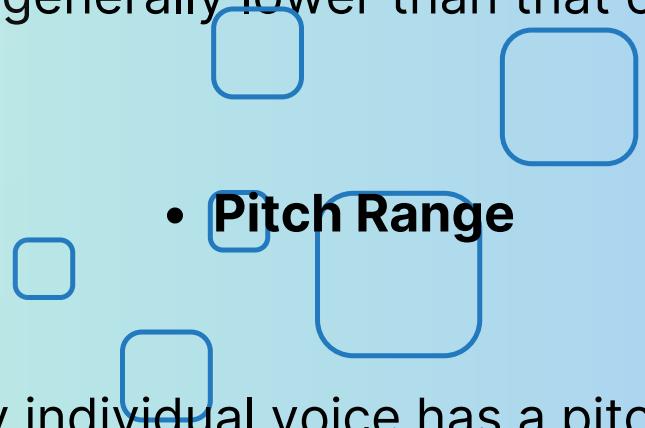


Pitch

Pitch is a vital part of speaking and listening in most world languages. English is one such language in which meaning changes with the tone and intonation of the speech. Pitch matters both at the level of individual words and at the level of longer statements.

Pitch is an important component of accentuation, or prominence, both at the level of individual words and at the level of longer utterances (Martha, 1996, P.148). The pitch of a voice is determined by the frequency with which the vocal cords vibrate. The frequency of vibration of the vocal cords is determined by their thickness, their length, and their tension.

As Martha (1996P.148) states, one's natural average pitch level depends on the size of the vocal cords. In general, men have thicker and longer vocal cords than women and children do. As a result, the modal pitch of a man's voice is generally lower than that of a woman or a child.



in addition to the modal pitch, every individual voice has a pitch range, which can be achieved by adjustments of the vocal cords. By tightening the vocal cords, a person can raise the pitch of the voice; by loosening them, one can lower vocal pitch. When the vocal cords are stretched, the pitch of the voice increases. Pitch variations in speech are realized by the alteration of the tension of vocal cords (Ladefoged, 1982, p.226). These adjustments allow speakers to use pitch changes to achieve certain meaningful effects in speech. The most important of all factors for the pitch of the voice is the vibration of the vocal cords. When the frequency of vibration increases, so does the pitch. Normally, a low pitch is not less than 70 Hz, while a high pitch is not more than 200 Hz. (Çelik, 2003:101).

- Pitch range can be divided into three parts: high, mid, and low.

Most importantly, the pitch range of utterance shows the speaker's attitude towards the information that s/he is conveying. As Brazil, Coulthard, and Johns (1980p.163) indicate, the neutral, unmarked, mid-pitch range – which is the speaker's modal pitch – is used to make a statement in a neutral manner.

In contrast, a **high pitch range** indicates an informational contrast, as shown in example (a). Because high pitch range implies a contrast even when one is not explicitly present in the discourse, it can be used to single out individual words for special attention, as in example (b).

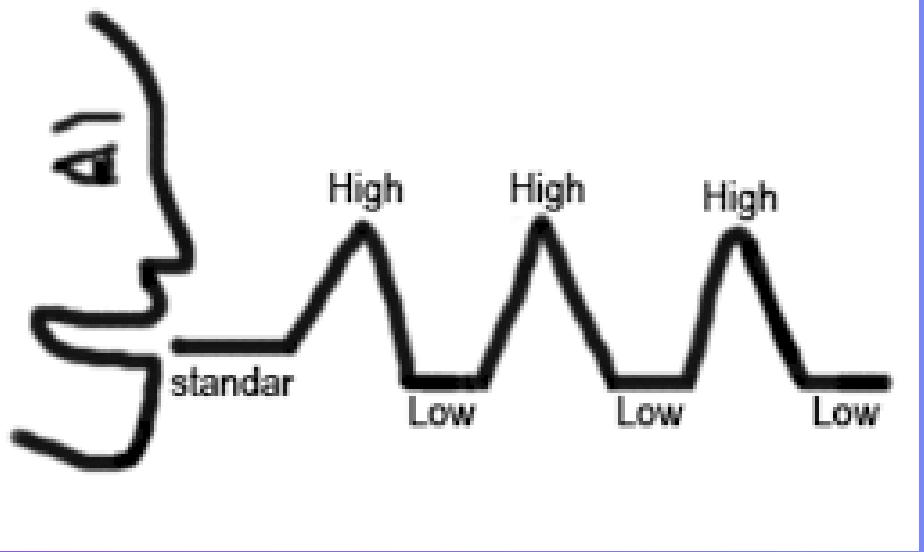
a) I'm going to **Harvard**, not **Yale**!

b) I'd **never** do **that**.

Low pitch range is used when the speaker wants to assert that two items in successive tone units are in some sense equivalent, as in example (c):

c) I **told** you already, *dummy*.

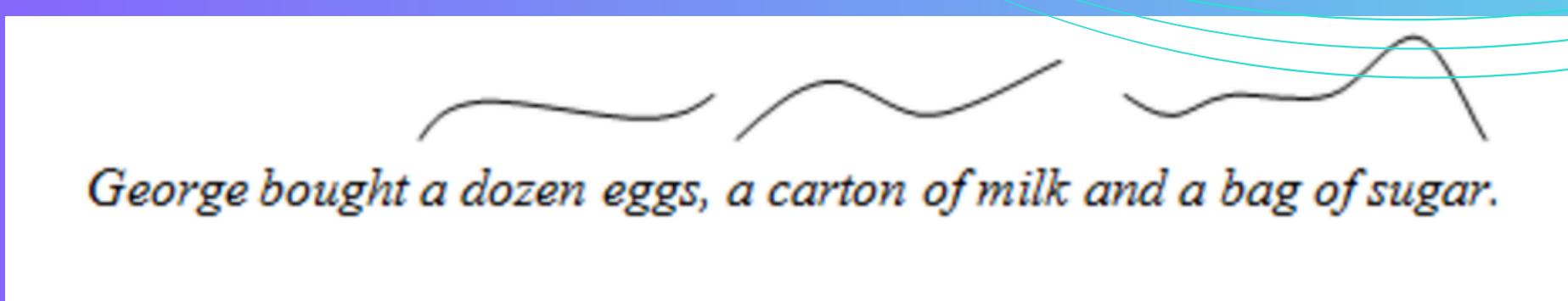
Here, the low pitch range on "dummy" signals that it is to be interpreted as connected with "you."



Functions of Pitch Range in Statements

Martha (1996p149) elucidates the role of pitch range in regulating conversational turns and conveying the completion of information. According to Martha, a falling pitch typically marks the end of a statement and indicates that the speaker has finished conveying all intended information and is signaling the end of their speaking turn. Conversely, a level or slightly rising pitch at the end of a phrase suggests that more information is forthcoming, signaling an ongoing interaction. This modulation of pitch is not only crucial for managing turns in conversation but also serves as a cue to the listener about the completeness or incompleteness of the speaker's intended message. Moreover, Martha notes that the degree of uncertainty or incompleteness in an utterance often correlates with the extent to which vocal pitch rises, with yes/no questions typically ending in a high rise due to their inherent uncertainty. In contrast, WH-questions, despite also seeking information, usually end with a high but falling pitch. Martha's analysis highlights how non-native speakers may mistakenly use rising intonations for WH-questions, similar to yes/no questions, and how different forms of questions and statements use pitch variations to convey specific meanings and interactional signals within conversation.

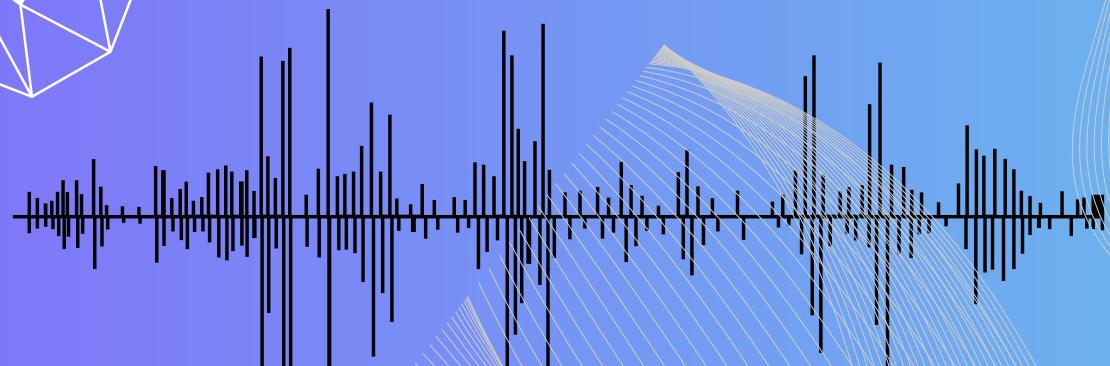
- Example:



Overall, the pitch of the voice is primarily determined by the tension and vibration of vocal cords, secondarily by the amount of air force coming from the lungs (Çelik, 2003:111). Every individual voice has a pitch range, which can be achieved by adjustments of the vocal cords.

Pitch is a very important part of speaking and listening. There are three parts of the pitch range: low, mid, and high pitch. The pitch movement changes depending on whether the sentence is completed or not or if it is a yes/no question, wh-question, or answer statement (Esen,2023).

TONE AND INTONATION:



Pitch is often intertwined with duration and intensity for stress systems in spoken languages, but it can also be manipulated separately as part of its own distinct system. Roughly speaking, if pitch is manipulated at the level of syllables or entire words to make completely different meanings, it is called **tone**, whereas if pitch is manipulated at combinations of words (phrases and sentences) to have different kinds of conversational functions (statements versus questions, for example), it is called **intonation**. A language with a tone system is often called a **tone language** or **tonal language**, while a language with an intonation system is called an **intonational language**. There are some interesting cases that are not easily classified in either category or seem to be a mixture of both, but tone and intonation are useful basic categories for describing the two main ways that spoken languages can manipulate pitch(Anderson,C., Bjorkman , B., Denis,D., Doner,J., Grant,M., Sanders,N.,& Taniguchi,A.,2022).

- Now that we have made a distinction between the two. And we know that there are some languages which are tonal and some which are not. And as far that our work is related to English, we will make no further explanation on tone because it is not a tonal language as **Pam** states English, is not a tonal language. English is an intonation language which expresses syntactic, discourse, grammatical and attitudinal functions. But there are other languages in which tone is a distinctive feature such as Mandarin Chinese (2013).

Practice



- **count the number of syllables in each word, and identify the stressed and unstressed syllables**

"banana," "elephant," "watermelon,"
"computer," "umbrella."

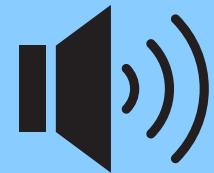
"Butterfly", "Adventure", "Telephone",
"Breakfast", "Elephant"

- **Classify the following categories to those which normally stressed and those which normally unstressed .**

articles, verbs, prepositions, conjunctions, adjectives ,adverbs, pronouns, auxiliary verbs, nouns,

- **identify the pitch pattern at the end of each question.**

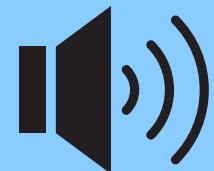
- Listen to the following questions: 'Are you coming?' and 'Where are you going?' Do they end with a rising or falling pitch?"



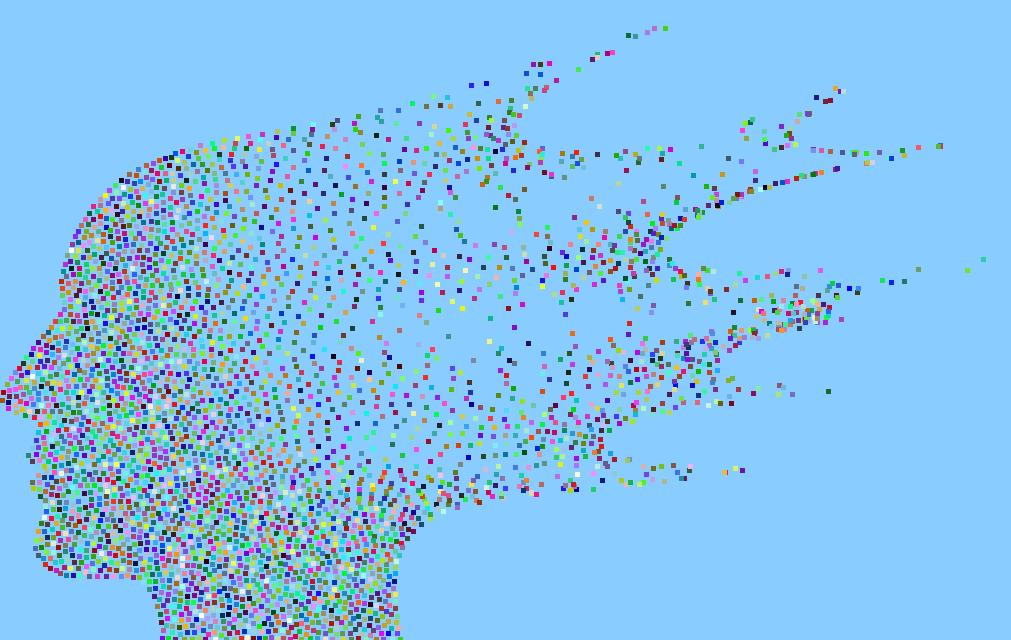
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- **The following sentences are pronounced with different pitch ranges , categorize the pitch range of each sentence.(high,mid,low)**

- Listen to the sentences and classify them based on their pitch range: 'I'm so excited!' 'What's your name?', 'I don't know.'"



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DISTINCTIVE FEATURES

Phonemes are bundles of *distinctive features*. For example, \p\ is \+bilabial\, \+stop\ and \-voiced\. Some features are predictable from others: nasality can be predicted from voice. Every phoneme should be characterized by at least one distinctive feature.

I can also be defined as to be a set of universal **phonetic properties** by reference to which the speech sounds of all languages can be described. We can also define it as following: Distinctive features are a set of universal **phonetic properties** by reference to which the speech sounds of all languages can be described. The features given below are based on the system developed by Chomsky and Halle (1968). Each feature is binary (i.e. has two values, positive (+) and negative (-)).

1. Consonantal: [+consonantal] sounds are produced either with contact between the articulators or with obstruction sufficient to create friction. Stops, fricatives, laterals, nasals and trills are [+cons]. Vowels and semi-vowels are [-cons].

2 Vocalic: [+Vocalic]: Typically, vowels, characterized by an open vocal tract (e.g., /i/, /e/, /a/, /o/, /u/). [-Vocalic]: Typically, consonants, not produced with an open vocal tract configuration (e.g., /s/, /t/, /k/, /p/).

3. Nasal: [+Nasal]: Airflow through the nose during production (e.g., /m/, /n/, /ŋ/). [-Nasal]: No nasal airflow (e.g., /t/, /s/, /k/).

4 Lateral: [+Lateral]: Airflow around the sides of the tongue (e.g., /l/).

5. Sonorant: In [+sonorant] sounds the air stream passes relatively unimpeded through either the oral or nasal cavity. Vowels, semi-vowels, nasals, and laterals are [+son]. Stops, fricatives and affricates are [-son].

6. Syllabic: [+syllabic] sounds can form the nucleus of a syllable, e.g. vowels.

7. High: [+high] sounds are produced with the tongue raised above its neutral position, as in close vowels, and palatal and velar consonants pronounced with the tongue lower than its neutral position, as in open vowels and pharyngeal consonants.

8. Rounded: [+rounded] sounds are produced with narrowing of the lips, e.g. [u], [w], labialized consonants.

9. Continuant: [+continuant] sounds are ones where there is no complete closure in the vocal tract, such that the passage of air is blocked. All sounds except stops, nasals, and affricates are [+cont].

10. Strident: [+strident] sounds are ones produced with greater acoustic noise. The fricatives [s, z, ſ, ʒ, tʃ, dʒ] and the affricates [tʃ, dʒ] are [+strident] in contrast to fricatives like [f, v, θ, ð] which are [-strident].

11. Voiced: [+voiced] sounds are those accompanied by vibration of the vocal cords.



Take a look back to the section of phonetics —consonants for a better understanding.

PHONOLOGICAL RULES & Processes

Goldsmith (1995) defines phonological rules as mappings between two different levels of sounds representation (P.2)—in this case, the abstract or underlying level and the surface level—and Hayes (2009) describes them as "generalizations" about the different ways a sound can be pronounced in different environments (p.26). That is to say, phonological rules describe how a speaker goes from the abstract representation stored in their brain, to the actual sound they articulate when they speak. In general, phonological rules start with the underlying representation of a sound (the phoneme that is stored in the speaker's mind) and yield the final surface form, or what the speaker actually pronounces (Idiardi & James, 2003). When an underlying form has multiple surface forms, this is often referred to as allophony. For example, the English plural written -s may be pronounced as [s] (in "cats"), [z] (in "cabs", "peas"), or as [əz] (in "buses"); these forms are all theorized to be stored mentally as the same -s, but the surface pronunciations are derived through a series of phonological rules (Idiardi & James, 2003).

Characteristics

Hayes (2009) lists the following characteristics that all phonological rules have in common (p.7-26):

- **Language specificity:** A phonological rule that is present in one language may not be present in other languages, or even in all dialects of a given language.
- **Productivity:** Phonological rules apply even to new words. For example, if an English speaker is asked to pronounce the plural of the nonsense word "wug" (i.e. "wugs"), they pronounce the final s as [z], not [s], even though they have never used the word before. (This kind of test is called the wug test.)
- **Untaught and unconscious:** Speakers apply these rules without being aware of it, and they acquire the rules early in life without any explicit teaching.
- **Intuitive:** The rules give speakers intuition about what words are "well-formed" or "acceptable"; if a speaker hears a word that does not conform to the language's phonological rules, the word will sound foreign or ill-formed.

One of the phonological rules is:

Allophonic rules: fill in qualities of pronunciation that are absent in the lexical forms of morphemes but are required by their circumstances in speech, like the aspiration of wordinitial /k/ in coats and the rounding of the word-initial /r/ of rules. English stop aspiration:

Rule 1: Voiceless stops are aspirated when in initial stressed syllables.

Rule 2: Nouns, main verbs, adjectives and adverbs have at least one stressed vowel.

Types of phonological processes



Assimilation:

is a phonological process where one sound becomes similar to or identical with a neighboring sound in terms of one or more of its phonetic features. This modification often involves the articulation of a sound being influenced by the sounds around it. Specifically, a speech organ may extend a distinctive feature of a preceding sound or adopt a feature from a following sound.

For example, we know that /n/ is an alveolar sound, i.e. its place of articulation is the bony ridge behind the upper teeth, and /p/ is a bilabial sound, i.e. its place of articulation is the lips. When producing the /n/ in a sequence like ten pigs, however, the lips which are not primarily involved in the production of /n/, often anticipate the place of articulation of the following /p/, thus changing the /n/ into a bilabial sound. The new place of articulation is identical with the place of articulation of /m/ (/m/ is also a bilabial), and since the intensity and manner of articulation of /n/ and /m/ are also identical (both are lenis nasals), the /n/ now sounds like /m/. The sequence ten pigs, then, is often pronounced [təm pɪgz] instead of [ten pɪgz]. (Note that the former transcription is enclosed in square brackets because, even though it only contains symbols representing phonemes, the assimilation suggests actual, concrete speech, rather than an idealized utterance.)

Assimilation is a common feature of spoken English, helping to facilitate smoother and faster speech. It occurs both within words and across word boundaries, significantly influenced by factors such as the speed of speech, the formality of the setting, and the speaker's social background (Skandera & Burleigh, 2005, p.89-90).

1.Types of Assimilation by Proximity:

- **Contiguous Assimilation (Contact Assimilation):** This occurs between adjacent sounds, as in "ten pigs" pronounced [tem pigz].
- **Non-Contiguous Assimilation (Distance Assimilation):** This is rarer and involves sounds that are not adjacent. An example could be in phrases like "turn up trumps," where non-contiguous influences might lead to less common assimilations or be mistaken for speech errors.

2.Types of Assimilation by Direction:

- **Progressive Assimilation:** A preceding sound influences a following sound, altering endings in regular grammatical forms or across phrases like "shut your mouth" pronounced [ʃʌt ʃə maʊθ].
- **Regressive Assimilation:** A following sound influences a preceding sound, more common and seen in phrases like "ten pigs" pronounced [tem pigz].
- **Coalescent Assimilation:** Two sounds influence each other to form a new sound, often an affricate, as in "don't you" pronounced [dountʃu].

3.Types of Assimilation by Phonetic Feature:

- **Assimilation of Intensity:** Involves changes in force or voicing of sounds, noticeable in rapid or informal speech.
- **Assimilation of Place:** Changes where in the vocal tract the sound is produced, affecting the articulatory position, as in "good boy" pronounced [gʊb boɪ].
- **Assimilation of Manner:** Involves changes in how a sound is made, often in rapid speech, leading to a new phonetic realization.

4.Degree of Assimilation:

- **Partial Assimilation:** The sounds involved become similar in some phonetic features but remain distinct in others.
- **Total Assimilation:** The sounds involved become completely identical, merging into one sound (Skandera & Burleigh, 2005, p.90-94).



Dissimilation:

(the opposite of assimilation) A process whereby, conversely, one sound becomes less like a neighboring sound or a sound in proximity is called dissimilation [from Latin dissimilatio, making something unrecognizable']. The purpose, here, of making two similar or identical sounds different from each other is, as before, to achieve greater ease of pronunciation, but also greater clarity. (Just think of the difficulty of pronouncing the accumulation of similar or identical consonants in tongue-twisters, like truly rural or She sells seashells on the seashore.) Dissimilation has played an important part in the historical development of English pronunciation but is largely irrelevant in present-day English (Skandera & Burleigh, 2005, p.94).



Elision:

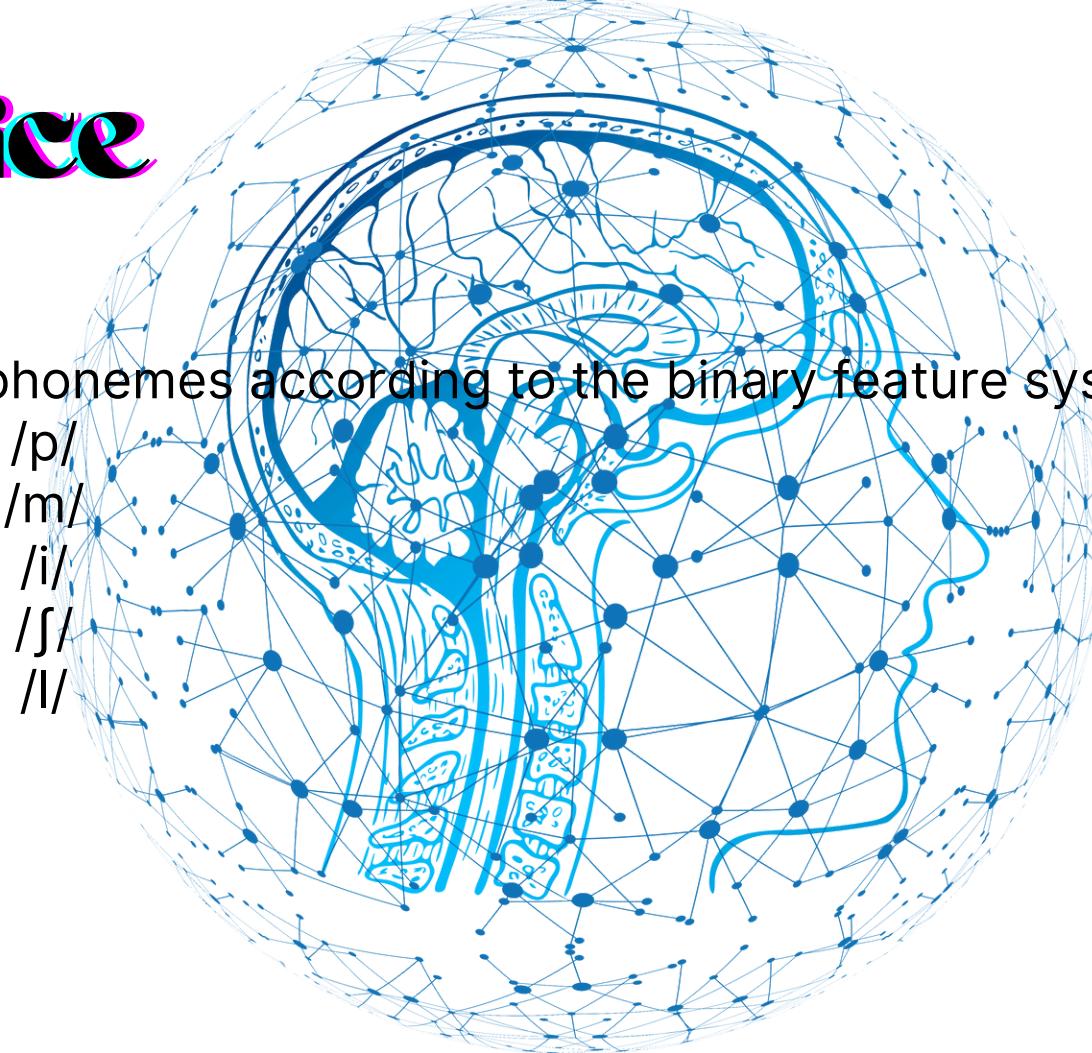
refers to the phonological process which omits one or more sounds (such as a vowel, a consonant or a whole syllable) in a word or phrase (Sheroz, 2013). Sometimes sounds are elided to make a word easier to pronounce. The elided segment may be a consonant (/la:s nait / 'last night') or a vowel (/pli;s / for 'police') or a sequence of both (/laibri / for 'library').



Metathesis:

Phonological metathesis occurs when two adjacent sounds switch places—gets reversed (e.g., pronouncing ‘cast’ as ‘cats’, in which the /t/ and the /s/ switch). Because many cases of metathesis are diachronic, or historical in nature, some cases of metathesis may appear to be arbitrary. Within the Metathesis in Language Database several languages are listed as having no clear motivation, either phonetic or phonological, and can be considered to be arbitrary ([Hume, 2016](#)).

Practice



Provide the distinctive features for the following phonemes according to the binary feature system:

- 1.
- 2.
- 3.
- 4.
- 5.

/p/
/m/
/i/
/ʃ/
/l/

Sort the following phonemes into groups based on the specified distinctive feature:

Feature: [+nasal]

- /m/, /t/, /n/, /k/, /ŋ/

Feature: [+voiced]

- /b/, /p/, /z/, /s/, /d/, /t/

Feature: [+continuant]

- /f/, /v/, /θ/, /m/, /s/, /z/

Change one feature of the given phoneme to form a new phoneme. Specify the feature changed and the new phoneme:

- 1.
- 2.
- 3.
- 4.
- 5.

/p/ → ?
/t/ → ?
/s/ → ?
/i/ → ?
/u/ → ?

Consider how each of the following might be pronounced in rapid, colloquial English . Transcribe them (there may be several different possible pronunciations) and explain any examples of assimilation dissimilation or elision

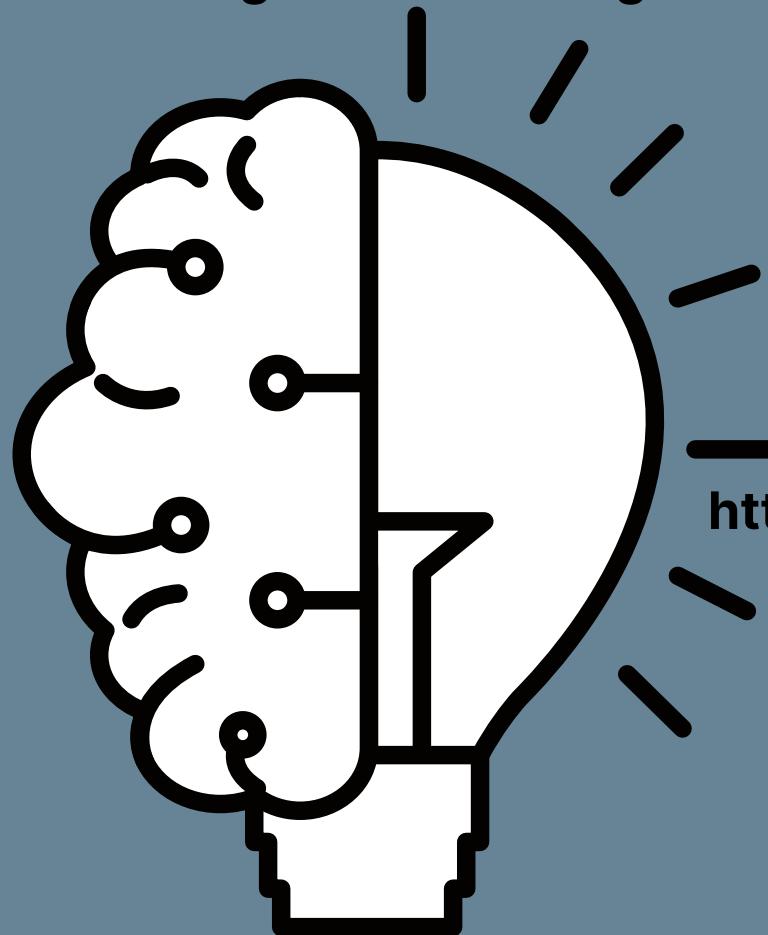
1. The best thing
2. Rainbow
3. Was she there ?
4. The right person
5. Suspicion
6. By and by
7. Postman
8. Those shoes
9. Seven kings
10. Steak and kidney pir

**As usual all the answers are avaible in our siteweb through the following link
<https://linguacomics.com/site/tonguetwister/>**

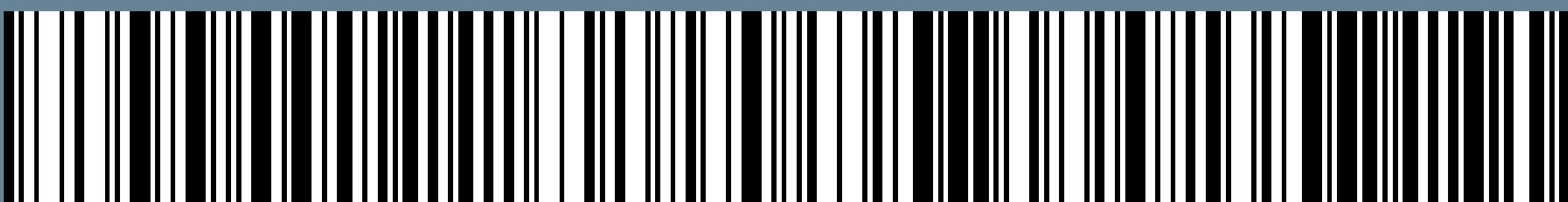


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