Chapter 1 :_ Articulation and Acoustics

Phonetics : is the study of the production, transmission, and perception of speech sounds.

* Examples of production :_
1_ The production of Bilebials Sounds → the Two lips come togather.
2_ In the production of alvelolor sounds → we have stop and fricatives alvelor sowds and in the stop Sounds → the Toe of the tongue have content with the alvelor ridge.
3_ The velum in the soft palat is up.
4_ In the production of Nasal sounds there is a construction on the mouth but the nasal cavity is ope

* Transmission : is process whereby a language is passed on from one generation to the next in a community generally regarded as one of the key characteristics distinguishing human language from animal communcatio

Another defention of transmission → The passing on of Langaage features such as words between People.

So when we usualy Produce Sounds, the sounds travelling the air and as they travelling the air the sounds hit the eardrum → the air drum sends massages to the brain and the brain interpret those waves int sounds.

what happens when we talk about transmission?
↳ when the sound waves hit the eardrum, the eardrum send massage to the brain and the brain understand what is being said.

* Articulation and Acoustics:-

Articulation: The shaping of airflow to generate Particular sound types → How we produce/articulate sounds, articulate means → speak and there are certain words we suppose to know.
And Articulatory phonetics refers to the aspects of phonetics which looks at how the sounds of speech are made with organs of the vocal tract

Acoustics: The study of physical properties of speech and aims to analyse sound wave signals that occur with in speech through varying frequencies, amplitudes and durations.

* every sound waves has certain frequency so if all sounds have the same frequency → all sounds become in one sound and that frequency doesn't change because if sounds frequency change → when I say Sara for example → my student is male.

Frequency: alternation between high and low air pressure.
* All languages of the world must have so
→ the vowel that have the highest frequency
but the consonant → the vocid have the next frellquency
the voiceless → lower (shorter waves).

Sounds → Vowels (free air passage)
→ Consonant (air constriction).

* The vocal tract consists of 2 major tracts :-

1- oral tract (cavity) → consists of 2 Parts → upper part, lower part.
2- Nasal tract (cavity).

* The oral cavity : is the first part of the digestive tract. that contain structures necessary for mastication and speech ; teeth, tongue and salivary glands.
* The Nasal cavity :- is an essential passage of the upper respiratory tract.

Alveolar ridge, hard and soft palate → roof of the moth and the uvula separates the oral cavity from the nasal cavity
→ Pharyngeal wall : The back wall of the swallowing passage.
note : when the uvula goes up → it closes the nasal cavity and when it is down the nasal cavity is open.
And when the uvula going up → makes velic closure
velic Closure : the closure that results from the uvula going up.

The soft Palate (velum) ties up with uvula all the time (The uvula doesn't work itself).

lower part consist of lower lip and lower teeth.

tongue.

The tongue is massale
↳ consist the tongue tip.
↳ (blade.)

phryanx → is the farthest part of the mouth.
↳ we have 2 major functions for the phryanx
1- it gives every body of us his sound identity.
2- gives sounds clarity.
and under phryanx → we have laryanx.
larynx : connects the throat to the wind pipe, without it we would hardly be able to sing or speak.
The importance of the larynx is because it has the vocal folds/cords in it. The vocal folds inside the larynx.
The vocal folds : have an opening inside of them. and this opening called (glottis). → the glottis is part of the vocal cords.

The importance of vocal folds/cords (they have major functions)
1- They produced voiced or voiceless Sounds (State of the vocal cords. v, s, f) (The Production of sounds)
2- chop up air -
There is vibration when producing voiced sounds.
→ when we produced words → the vocal cords divide sounds into pieces.

Example : teIbal → the vocal fold gives 5 pieces

→ every sound is giving one piece, and every sound has a certain amount of air.
The lungs → provides air for language.

* there are 4 major processes in the production of speech sounds:-
1- airstream process / mechanism : refers to the process by which the vocal tract creates airflow. There is no production of sound in the absence of airstream mechanics, and provider air because without air we have no language.
2- phonation process / mechanism :- it is the process in which they produced voiced or voiceless sounds. so phonation begins when sound is produced by pushing air through the glottis which is the opening between the vocal folds in the larynx.
3- oro-nasal process / mechanism : The three main type of sounds that are produced by the oro-nasal process are oral sounds, nasal consonants, nasal vowels.
4- Articulartory process : is a combination of sound waves produced by the articulatory muscles.

Note:- when we talk about sound waves → the highest frequency (wave) is for vowels, and the lowest is for voiced consonant

* I can't assume all voiced sounds have the same frequency or all voiceless sounds have the same frequency.

When we study consonant we should take care of 3 major things:-

1- state of the vocal fold/cords. (if the sound voiced or voicle-
2- placer of articulation (where sounds is produced).
3- manner of articulation (The way).

* Places of articulation:- (The speech organs).

1- Bilabials: a sound is produced by using both lips (lower and upper) pressed together.
So bilabial consonants occur when you block/constrict airflow out of the mouth by bringing two lips together. There are 4 bilabials sounds: bilabial plosives /p/ /b/, bilabial nasal /m/ and voiced labial velar approximant /w/.

Note: when the sound is oral sound → the soft palate (velum) is up because the air is escape from nasal cavity.
/p/: voiceless, /B/: voiced → this is major difference.
/m/: voiced., /w/: voiced
the difference between /B/ and /m/ → /B/ is an oral sound. but /m/ is a nasal sound.
↳ when we close nostril the sound dies and disappe
So In the production of /p/, /B/ → we have 2 closures but in the production of /m/ → we have one closure
/w/ → don't have a complete closure, we have an approximation). So we called it → approximant sound.
↳ coming close but not complete touch.
/w/: oral sound (voiced) → so the velum is up.
/p/ → air is trapped inside the mouth then goes out

Note: every time we close the nostrils and the sound is not affected then it is oral sound so the velum (soft palate) is up.

2- Labiodental: is produced by placing the upper teeth on the lower lip.
and there are two labiodental sounds: /f/: voiceless, /v/: voiced
* target position → is the position for the sounds.
/f/ and /v/ → oral sounds so the velum is up.

3- Dental / Interdental: (between the teeth) → is produced by placing the blade / tip of the tongue on the back side of the upper teeth.
and there are two Dental sounds: /θ/: voiceless, /ð/: voiced
/θ/, /ð/: oral sound and because they are oral the velum is up.

4- Alveolars: are produced by placing the tongue tip on or just in front of the alveolar ridge (the bumb behind the upper teeth).
There are several sounds that are alveolar sounds:
/t, d, l, n, s, z/.
/t/: voiceless, /d/: voiced
/s/: voiceless, /z/: voiced. → there are (vibration) in voiced sounds.
/n/: voiced, /l/: voiced.

* The tip of the tongue is only on alveolar ridg and in the same time the tongue side are in contact in the upper teeth.

/t, d/ → an oral sound so the velum is up.
/l/ in the production of /l/ → the sides of the tongue are down so air escapes from the sides.
this is the major difference between /l/ and /t,d/.
and we called it in english (lateral sound) → /l/.
Latreral means sides, and it called this because air escapes from two sides and the sides aren't closed.
and in /l/ → the velum is up.
In /t,d/ → completly clousre.

/d, n/ : the velum is down → the air escapes from nose because the sound is die.
/v/ : voiced.
In /s, z/ we have not a complete clousre because the air escapes and goes out, and there is a very narrow passage and as air tries to escape → air produces some kind of (friction) between the air and sides
/s, z/ → oral sounds → the velum is up (fricative sounds).
/s/ : voicless, /z/ : voiced.

5_ Retroflex: /ɹ/ → (rounded) this sound is round
In /ɹ/ → the tongue tip is closed to but not actually touching the alveolar ridge.
so retroflex produced with the tip of the tongue curled back toward the hard palate
/ɹ/ : oral sound → the velum is up. and it is voice

6- Post-alveolar / Palato-alveolar: (hard Palate and alveolar ridge) tongue blade and hard Palate. These sounds are also called (alveopalatal).
A Palato alveolar sound is produced by placing the tongue blade close to the hard palate behind the alveolar ridge.

note: ʒ → this sound doesn't occur at the beginning of any english word
Example: George → this sound occurs at the middle and the end. but never at the beginning
ʃ: never occur at the beginning of any word.

ʃ ʒ tʃ dʒ

The difference between /ʃ/ and /ʒ/ is → /ʃ/ : voiceless but /ʒ/ : voiced.

In /tʃ/ and /dʒ/ → we have 2 gesture/movement and we have narrow passage and the air escapes from this narrow passage, as air escapes it produces friction

/ʃ, ʒ, tʃ, dʒ/ → the velum is up.

* some linguistics authors consider the /ʃ/ and /ʒ/ Palato not Palatoalveolar.

7- Palatal :- is produced by bringing the tongue body up close to the hard palate.
and english has one palatal sound /j/ : voiced → oral sound
Example: you ear year
So velum is up. east yeast.

8- Velars :- (velum or soft palate) → is produced by the back of the tongue up to close to or in contact with the soft palate / velum.
There are 3 velar sounds :- /k, g, ŋ/
/k/ : voiceless / g : voiced.
/ŋ/ : voiced (sing, listening, studying).

* The difference between /n, ŋ/ :-
n: the tip of the tongue is only in alveolar ridge
ŋ: the back of the tongue, and In ŋ → the velum is down (nasal sound) because air escapes from the nose

9- Glottal: is produced when the air is trapped / constricted then suddenly the glottis opens and the air rushes out ↳ (restriction of the airflow at the glottis).
So the glottal produced by a place of articulation located in a part of the throat / larynx called glottis.

Note :- Glottis : the part of the larynx that contains the vocal cords and the opening between the cords.
* The Glottal sounds are: /h/ , [ʔ].

* manners of Articulation :-

1- stop Sounds / Plosives :- In production of the stop sounds we have a complete air constriction (air is completly stops), there is no way out. A plossive consonant is made by blocking a part of the mouth so that no air can pass through.

we have 2 categoreis of stop sounds ↔ oral stop sounds / nasal stop sounds

The oral stop sounds: / p, b, t, d, k, g /, [ʔ]
Bilabial, alveolar, velar.
↳ the air tries to escape but the glottis is clos

The Nasal Sounds :- / m, n, ŋ /
Bilabial nasal, alveolar nasal, velar nasal.

→ The production of /n/ as /t, d/ but the velum is down.

2- fricatives :- a fricative is a consonant sound that is created by constricting the vocal tract, causing friction as the air passes through it. so the fricative Sound are any sounds that have friction and fricatives are capable of being formed continuously with no complete blockage of the vocal tract (unlike stops and affricates).

→ Expect for (h/, fricatives occur in voiced / voiceless pair.

The fricatives sounds : / f, v, θ, ð, s, z, ʃ, ʒ, h /.

3- Affricates : / tʃ, dʒ / → there is two gestures (movement) by a consonant sound that begins as stop (sound with complete obstruction of breath stream) and concludes with a fricative (sound with incomplete closure and a sound of friction.

note: Affricate also called (semiplosive).

4_ Approximant :_ sounds are made by bringing two articulators close together without them touching as sound leaves the body (not in complete touch).
we have 3 approximant phonemes
1_ Liquids : / L, ɹ /
2_ Glides : / w, j /
3_ glottal : /h/

note: All of approximant sounds are voiced, the vocal cords vibrate as the sound is produced
Approximant include semivowel such as the y sound in "yes" or the w sound in "war"
so glides → refers to (semivowels) /w, j/.
→ no friction.

*why called semivowels?
because vowels need a free air passage and the approximant relatively have free air passage.

5_ Lateral : / l / → Consonant sounds are made by releasing air past the sides of the tongue whilst making a block in the middle.
or another defention : consonant whose articulation involves a central occlusion with an opening on one or both sides of the tongue that is not close enough to produce friction

6_ flaps : [ɾ, ɽ]

7_ glottal stop [ʔ] → is made by the rapid closure of the vocal cords, almost like when you hold your breath. and is produced by closing the space between the vocal cords and usually (voiceless).

So these 3 sounds [ɾ, ɽ], [ʔ] represent the /t/ sound.
/t/ → [ɾ], [ɽ], [ʔ]
, Example: that → [ðæ ɽ]; [ðæ ɾ], [ðæ ʔ]
↳ So the 3 of them are representations of /t/ that we used square brackets.

*Describe the sounds:-

1- /s/ : voicless, alveolar, central, oral, fricative.
2- /y/: voiced, alveolar, central, nasal, stop.
3- /l/: voiced, alveolar, lateral, oral, approximant (liquid)

→ All sounds in the English language are central, the only lateral is /l/ and all sound is oral.

Articulation of vowels:-

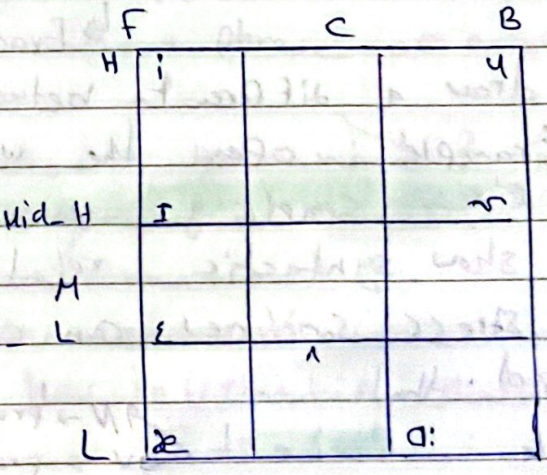
when we study vowels, we take into consideration 3
1- tongue hegint. (How height the tongue is),
2- tongue position (front, centre, back).
3- lips shape.

→ The major difference between consonant and vowels:-

1- vowels are always voiced.
2- vowels have a free air passage.
3- All vowels are oral.

*Cardinal vowels:-

1- /i/ : dead, seat, been.
2- /ɪ/ : did, bin, sit.
3- /ɛ/: dead, set, said.
4- /æ/: dad, sat, fat.
5- /ɑ:/: father, heart, car.
6- /ʊ/: book, could, put
7- /u/: room, shoes, who



* if vowels have free air passage, then How come we have different sounds when we have free air passage?
↳ the air when producing /i/ so the air that goes up from lungs so the air resonate and co resonate with the shape of oral cavity.

when we talk about vowels, we have 2 major things.

1. formants: is the feature that only for vowels → gives different vowels.
   ↳ reflect the resonation of the air inside the oral cavity in the way that co respond with the shape of the oral cavity → so this resonation gives different sounds

*we have different sounds → because the formants.
first formant → distingushable in creaty voice.
second formant → heard when whispering.

2. superasegmental features:- They include mostly stress and Intonation → (gives information how the speaker feel)
   ↳ the function of superasegmeral is refers the mood of the speaker, the emotion, attidue of the speake
so the meaning is the same, don't change (stress, intonation

1- stress: used to 1) emphasis a certain word
   ↳ Example: I lost my cellPhone
2) to draw a difference between different words
   ↳ Example: open the window not the door.
   (stress something against something else)
3) to show syntactic relationships. (syntactic categories)
   ↳ stress sometimes can change the category of the word.

Examples:- Project < N → 'pro.ject / V → pro'ject } → can function as nouns a verb

insult < N → 'in.sult / V → in.'sult

object < N → 'ob.ject / V → o'bject

so in the english language sometimes we have words that consist of 2 syllables.

* if the word is a noun, then usually stressed on the first
→ Example : 'pro.ject .
if the word is a verb, then stressed on the second
↳ Example : pro.'ject

* Diacrtic symbols :-

['] → means stress (at the begining of the syllable mostly)

[.] → means syllable division.

2- Intonation : we have 4 basic intonational patterns :-
1) falling intonatial pattern. ↘
2) rising intonatial pattern. ↗
3) falling - rising ↘↗ (mixed intonation)
4) Rising - falling. ↗↘ (mixed intonation)

1) falling intonation : describes how the voice falls on the final stressed syllable of a phrase or a group of words.
1- wh-question → Example : what's your name ↘ ?
2- Statements → Example : my name is wael ↘.
↳ (intended to give new information)
(wael) → should all the time be stressed.
note : any words that gives new information should be stressed.
2) Rising intonation : describes how the voice rises at the end of a sentence.
Yes/No question → Do you pay ↗ ? / Do you work after school ↗
Are you coming ↗ ?

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C.

	1 Voiced or voiceless	2 place of Articulation	3 Central or lateral	4 oral or nasal	5 Artic ulatory Action.
s	voiceless	alveolar	(central)	(oral)	fricative
k	voiceless	velar	central	oral	stop
n	voiced	alveolar	central	nasal	stop.
f	voiceless	labiodental	central	oral	fricative
l	voiced	alveolar	lateral	oral	approximant (liquid)
t	voiceless	alveolar	central	oral	stop

F. Define the consonant sounds in the middle of each of the following words.

	voiced or voiceless	Place of articulation	manner of articulation.
adder	voiced	alveolar	stop
Father	voiced	dental/interdental	Fricative
singing	voiced	velar	nasal stop
etching	voiceless	Palato alveolar	Affricates
ether	voiceless	interdental	Fricative
pleasure	voiceless	alveolar.	fricative
hopper	voiceless	bilabial	stop
selling	voiced	alveolar	lateral (approximant)
sunny	voiced	alveolar	nasal
Lodger	voiced	palato alveolar.	Affricates.
robber	voiced	Bilabial	stop.

Chapter 2 : phonology and phonetic Transcription

phonology : 1) The study of systems and patterns of speech sounds.

↳ Example : /t/ can be [d] [ɾ] [ʔ]

that → /ðæt/ → this called (citation form).

and sometimes we have different accents

↳ for Example : that → [ðæd], [ðæɾ], [ðæʔ]

So we have different patterns (form).

these are not a citation form and we made changes so we need to have them between brackets [ ].

[d], [ɾ], [ʔ] → these reflect to the different shapes of /t/

/t/ → is a phoneme.

phoneme : is a minimal constrastive unit in the phonological system of a language (the smallest unit).

2) The organization of speech sounds (How we organize sound

↳ the sounds /ŋ, h, ʒ/ → these exist in the english language, and the sounds /ɔɪ, i, ɝ/ also exist. even though these sounds exist in the english language but it is impossible to find any english word that begins with ŋ.

*some sounds that cannot come in certain positions in the word so the /ŋ/ doesn't come at the begining of any english word.

In english it is impossible to have sound /h/ in the end of any english word.

/h/ → doesn't come as a sound, it's comes as a letter

note : In the english language it is impossible to find diphthongs before ŋ → Example : gɔɝɪŋ

note :- /ɔI/ → this sound doesn't occur at the beginning of any english word and /ŋ/ for example → can't be the first sound in a word.

3) The mental knowledge of the speech system of language. → it means if we hear somebody saying live in the city → my mind takes me automatically to /t/ so all human being has the mental knowledge of speech, and the little child and we as adults → we can analyze what is meant by a certain word

Example of phoneme : cat : /kæt/ → we have 3 phonemes.
so phoneme is a minimal contrastive unit.
contrastive → means it changes the meaning change.
↳ if we change the sound /k/ in cat to /ʃæt/, /mæt/
so the meaning is different.
when we change a phoneme, we change the meaning.

* Allophones : are different pronunciations of the same phoneme. and Allophones are not contrastive.
↳
Example: 1) that → /ðæt/ can be /ðæd/ /ðæɾ/ /ðæʔ/ → these are different pronunciations for the /t/ sound.

2) water → /wɑ:tɚ/ → this is a (citation form) /wɑ:dɚ/ /wɑ:ɾɚ/ /wɑ:ʔɚ/ → allophones.

*Phone : is an unanalyzed sound that can be a phoneme or an allophone.
↳ Example : dry → it can be an actual sound.
or it can be a phoneme sound like /sɪdi/.

note : citation : dictionary form, does not change sound

minimal Pair : is two words that are identical in all aspects / sounds, but different in one aspect / sound.
↳ Example: rat, fat.
horse, force.
back, bag.
/bæk/ ↔ /bæg/.
Prag, bray.

note: Phonology reflect variation or change in sounds.
IPA: international phonetic Assocation

minimal set: more than two words that are identical in all aspects but different in one aspect / sound.
↳ Example: Cat, hat, fat, vat, mat, rat.

note: in the past IPA use write ʃ → in this way ʃ
also ʒ → write in this way → ʒ
and in the past IPA used j → in this way : y
Example: tʃ but in the past written → tš

* vowels we have 2 types of vowels:-
1- monophthongs : mono means → one, so we have one tongue height, one tongue position, one lips shape.
2- Diphthongs : Di means → two, so we have two tongue height, two tongue position, two lips shape.

1- /i/ → is produced the same (In American and british)
↳ Example: Americanes say heed and british people say heed → /hid/ → (weight front vowel).
another Example: he, she, speak. (monophthong).
2- /I/ : is produsd in both (American and british).
↳ Example: did, inside, yet. and it is monophthong

3- /eɪ/ ; is a diphthong → and it is Produced in the same way in American and england.
↳ so both of them say : day , Play , ate
ate : /eɪt/

4- /ɛ/ : is a monophthong , Examples: - dead, head.

5- /æ/ : it is produced in both (American and british english)
↳ Example : bag , had, man , back.

6- /ɑː/ → this means length (the sound is long).

Example ; father, hard , are , bard.
father → /fɑːðɚ/ → longer but /ɑ/ → dog : /dɑg/ → shorter
ɑ, ɑː → both of them takes same tongue height , tongue position / lips shape but /ɑ/ is shorter.

7- /ɔ/ : is produced in both in the same way (monophthong).
↳ Example: for , door, hawed.

8- /ʊ/ : is produced in both (monophthog).
↳ Example; book, could, would , look
book → /bʊk/.

8- in the production of this sound , there is a difference between britich and american.
/oʊ/ → American (two movements).
/əʊ/ → britoch.
Example : go , snow , code , stone
go : /goʊ/ and /gəʊ/

9_ /u/ : is a monophthong and it is Produced in both.
Examples : who, fruit, shoes, shoot.
shoes → /ʃuz/ , fruit → /fɹut/.

10_ /ɜ/ → usually in american english this sound is a combained with /ɹ/ sound.
Example : her.
but in british english there is no /ɹ/ with it.
↳ like bird → /ɜ/

11_ /ʌ/ : is produced in both, and it is monophthong
↳ Example: blood, up, cut, tongue.
up → /ʌp/

12_ /ə/ : very short vowel, Examples : banana, about.
about → /əbaʊt/ , banana → /bənænə/
and this sound often used when we have : er, or, ar at the end of words.
↳ Example : teacher → /tiʧəɹ/ , salior → /seɪlə/

Diphthongs :-

1_ /aɪ/ → Examples : high, bide, and american and brit produced in the same way.

2_ /aʊ/ → is produced in both., Examples : how, bowed out, cowed, now

3_ /ɔɪ/ → is produced in both, Example : buy, joy, bo

* Rhotic vowels: they have /ɹ/ attached to them.

1- /ɪɹ/ : Example → here, beard.

2- /ɛɹ/ : Example → hair, cared.

3- /ɑɪɹ/ : Example → hire, hired.

so when we have a vowel that has /ɹ/ attached to it we called it (Rhotic vowels.)
↳ refers to /ɹ/

* phonology reflects variation in speech.
↳ Examples of variation include:-

1- Allophones of /t/
/t/ → Example: city /sɪti/
[d] → [sɪdi]
[ɾ] → [sɪɾi]
[ʔ] → [sɪʔi]

→ and when we using a static lines we called it phoneme but when we using a brackets we called it allophone

2- wh-[M] → Example: were → /wɛɹ/

weather → /wɛðɚ/ or whether [Mɛðɚ]

where [hwɛɹ] = [Mɛɹ]

3- Released/ploded vs unreleased/unploded stops

↳ Rap [ɹæpˀ] or [ɹæpʰ]

the sound is unploded → means keep

the sound is ploded (have plosiv

↳ means let go.

Rat [ɹætˀ] or [ɹætʰ]

↳ the two lips in content and this is not an aspiration because we have voiced gvoiceles

↳ the tongue is in content with alveolar.

Rob [ɹɑbˀ] or [ɹɑbʰ]

Read [ɹidˀ] or [ɹidʰ]

back [bækˀ] or [bækʰ]

bag [bægˀ] or [bægʰ]

4- /ʔ/ → /p, t, k/ so we produced /ʔ/ before /p, t, k/.

↳ Examples:- Rap [ɹæʔp]

Rat [ɹæʔt]

Rack [ɹæʔk]

↳ glottale stop.

5_ /p, t, k/ → /ʔ/ we produced glottal stop /t, p, k/ after /ʔ/.

↳ Examples: : Rap [ɹæ͡ʔ]

Rat [ɹæ͡ʔ]

Rack [ɹæ͡ʔ]

6_ /tʃ/ vs /t/ and /ʃ/

↳ Examples:_ Rich [ɹɪ͡tʃ] → one sound.

Right shoes [ɹaɪt ʃuz] → two sounds so we can't use diacritic symbols.

7_ some native speakers delete glottal stop completely.

↳ Rap [ɹæʔ]

Rat [ɹæʔ]

Rack [ɹæʔ]

8_ clear/light or velarized /dark/ [l]

clear/light /l/ → is the actual /l/

↳ A) at the beginning of words → Example: light /laɪt

B) or Between two front vowels → Example: feeling /filiŋ/

or feel it /fil ɪt/

2_ velarized / dark /l/ → the best example of it → the word all in arabic.

↳ A) At the end of words, Example: file [fˠaɪt]
feel [fiːt]

B) Before consonenouts, Example: field [fiːtd]
killed [kɪtd]

→ and the diacrtic symbol exist of middle of sound /l/.

9_ Vowel nasalization: when the vowel comes before nasal sound → the vowel itself became nasal.

Examples: Run /nʌ̃n/
room /nũːm/
Ring /nɪ̃ŋ/

and we use the same diacrtic symbol when we use the velarized /l/.

* what is the relationship between /nɪ̃ŋ/ and /ɪt/
↳ it is an allophones

/ɹʌ̃n/ and /ɹũːm/ and /fʊd/
allophones

/ɫʌ̃n/ and /ɫũːm/
allophones.

/fiːt/ and /liːr/.
allophones

10- Dental articulation:

↳ Example: ten, tenth. → in the production of /n/ in ten /n/ is an alveolar sound (the tip of the tongue is on the alveolar ridge), However in tenth → the tip of the tongue is between the upper and lower teeth (the /n/ is no longer alveolar, so the /n/ in tenth → become dental because it is followed by /ɪ, θ/.

the Alveolar sounds that are affected by the dental articulation → /t, d, n, l/.

well, wealth or wide, width → there are Allophones, and dental articulation does n't have to be within same word → Example: in the, at the.

so the /t, d, n, l/ become dental.

Diacratic symbol for dental articulated sounds: ◌̪

11- Approximant devoicing: when we have voiceless stop sounds /p, t, k/ coming before /l, ɹ, w, j/

/p, t, k/ → voiceless

/l, ɹ, w, j/ → voiced

so in the english langeuge when the voiceless stop come before the voiced approximant → the voiced approximant sound become (devoiced) or voiceless = the percentage of voicing become less.

Examples:- pray, play, try, twin, cute, clear, cream, quite.

* pray → the /p/ precede the /r/ so the /r/ become devoiced

/p/ → voiceless

/r/ → voiced

Diacratic symbol: ◌̥ → play [pleɪ]

Page 48 :- phonetic variation comes in 3 basic types :-

1- Contrastive (also called phonemic or distinctive distribution
↳ means when we change the sound → the meaning change
Example :- cat and bat
clean and clear } → the meaning is different.
man and moon.

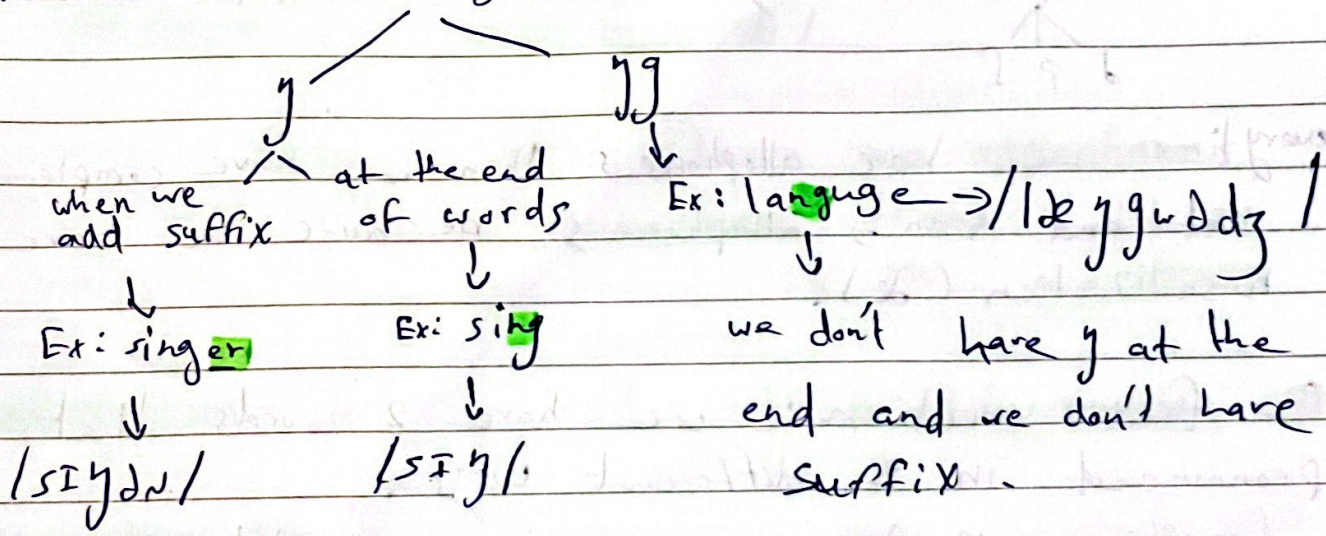
2- complementary distribution :- when we deal with alloph. of the same phoneme.
Example /t/ in city so we have allophones of /t/.
d ɾ ʔ

everytime we have allophones then we have complemetary distrib
rat and ran → allophones because we have vowel nasalization (ɛ̃).

3- free variation :- we have 2 words that are pronounced in 2 different ways.
Example :- in American english say dot.com → it doesn't mean the ɾ is allophone of d ɾ
go < goɾ / gdɾ } → ɾ is not allophone of dɾ and dɾ is n allophone of. ɾ
Example in Arabic → يَوْم و يَوْم
so we have 2 different phonemes one we change phoneme but the meaning doesn't change

Diacritic symbols: diacritics → gives more details information
when we talk about transcription, we have 2 types:-
1- broad impressionistic (we don't use any diacratic symbol)
2- narrow / systematic.
↳ we use diacritic symbol. like:-
r$\tilde{e}$n → vowel nasalization
cry → Approximant devoicing
ten$\underset{\cdot}{th}$ → dental articulation.

note:- when we have n + g letters.



Exercies page 52 :-

A) find the errors in the transcriptions of the consonant sounds

1- strength	/strɪŋgθ/	should be	[ŋ]
2- crime	/cɹɑɪm/		[k]
3- wishing	/wɪshɪŋ/		[ʃ]
4- wives	/wɑɪvs/		[z]
5- these	/θiz/		[ð]
6- hijacking	/hɑɪjækɪŋ/		[dʒ]
7- chipping	/tʃɪppɪŋ/		[-p]
8- yelling	/ɣɛlɪŋ/		[j]
9- sixteen	/sɪxtin/		[ks]
10- thesis	/ðɪsɪs/		[θ]

B) which the errors are all in the vowels :-

11- man-made	/manmeɪd/	should be	[æ]
12- football	/fʊtbol/		[ɔ]
13- tea chest	/titʃest/		[ɛ]
14- tomcat	/tɔmkæt/		[ɑ or ɒ]
15- tiptoe	/tɪptoʊ/		[ɪ]
16- avoid	/ævɔɪd/		[ə]
17- remain	/ɹəman/		[eɪ]
18- bedroom	/bɛdɹɔm/		[u]
19- umbrella	/umbɹɛlə/		[ʌ]
20- manage	/mænədʒ/		[ə]

c) make a correct transcription of the following words :-

21- magnify /mægnifaɪ/ should be [ɪ]
22- traffic /tɹæfɪc/ [k]
23- simplistic /ˈsɪmplɪstɪk/ [sɪmˈplɪstɪk] stress يكون على
24- irrigate /ɪɹɹɪgeɪt/ [ɹ]
25- improvement /ɪmˈpɹuːvment/ [u]
26- demonstrate /dɛmanˌstɹeɪt/ [ɛ]
27- human being /hʉmən biɪŋ/ [jʉ]
28- appreciate /əpɹiːʃieɪt/ [i]
29- joyful /dʒɔɣfʊl/ [ɔɪ]
30- wondrous /wɒndɹəs/ [ɒ,ɑ] ɒ→uk , ɑ→ʊs

D) Transcribe the words or phrases as they are pronounced :-

31- languages : /læŋgwɪdʒɪz/
32 Impossibility : /ɪmpɒsɪbɪlɪti/
33- boisterous : /bɔɪstərəs/
34- youngster : /jʌŋstəɹ/
35- another : /ənʌðɹ/ or /ənʌðə/
36- diabolical : /dəɪəbɒlɪkəl/
37- nearly over : /nɪəɹli oʊvəɹ/
38- red riding hood : /ɹɛd ɹəɪdɪŋ hʊd/
39- inexcusable : /ɪnɪkskjuːzəbəl/
40- Chocolate pudding : /ʧɒkələt pʊdɪŋ/ or /ʧɔkəlɪt pʊdɪŋ/

H) Transcribe the following phrases as they pronanced by either the British English or the American English speakers.

1- we can see three real trees.
wi kæn si θɹi ɹIel tɹiz
↳ /i/

2- He still lives in the big city.
Hi stɪl lɪvz ɪn ðə bɪg sɪti.
↳ /ɪ/

3- The waiter gave the lady stale cake.
ðə weɪtəɹ geɪv ðə leɪdi steɪl keɪk.
→ /eɪ/.

4- They sell ten red pens for a penny.
ðeɪ sɛl tɛn ɹɛd pɛnz fɔɹ ə pɛni
→ /ɛ/

5- His pal packed his bag with jackets.
HIz pæl pækt hIz bæg wIð dʒækIts.
→ /æ/

6- father calmly parked the car in the yard.
fɑ:ðəɹ kɑ:lmli pɑ:kt ðə kɑ:ɹ ɪn ðə jɑ:d.
→ /ɑ:/

7. The doll at the top costs lots.
ðə dɒl ət ðə tɒp kɒst lɒts.
→ /ɒ/

8. He was always calling for more laws.
Hi wʌz ɔlweɪz kɔlɪŋ fɔr mɔr lɔz.
→ /ɔ/

9. Don't stroll slowly on a lonely road.
dəʊnt / dɑːnt strəʊl sləʊli ɒn / ɔn ə ləʊnli rəʊd
→ /əʊ/ → us
or /ɑː → uk.

10. The good-looking cook pulled sugar.
ðə gʊd-lʊkɪŋ kʊk pʊld ʃʊgər.
→ /ʊ/

11. Sue threw the soup into the pool.
Su θru ðə sup ɪntu ðə pul.
→ /u/

12. He loved a dull, muddy-colored rug.
Hi lʌvd ə dʌl, mʌdi-kʌlərd rʌg.
→ /ʌ/

13. The girl with curls has furs and pearls.
ðə gɜːl wɪð kɜːlz hæz fɜːz ænd pɜːlz
or gɜːl fɜːl
→ /ɜ/ → uk
or /ɜː/ → us.

14_ I like miles of bright lights.
aɪ laɪk maɪlz ʌv /ɒv brɑɪt laɪts.
→ /aɪ/

15_ He howled out loud as the cow drowned.
Hi haʊld aʊt laʊd æz ðə kaʊ draʊnd.
→ /aʊ/

16_ The boy was annoyed by boiled oysters.
ðə bɔɪ wɒz ənɔɪd bɑɪ bɔɪld ɔɪstəz.
→ /ɔɪ/.