Chapter 6: Suprasegmentals / Supersegmental features

* Segment → usually something that stands for a single sound
* supra → above / beyond
→ when we talk about suprasegmentals → we talk about thing beyond the segment.

segmental features → are used to distinguish between sounds

suprasegmentals → don't actually replace one sound with another sound

1) Pitch variations
2) Amplitude → means how loud the sound is
3) Length* → depending on the language (can be suprasegmental)

→ qualities which don't replace one segment with another segment.

so length can be supersegmental and it can be a phonetic feature depending on the language

Ex: In Arabic length is a supersegmental feature.

pitch + Amplitude → Suprasegmentals.

but length may or may not be supersegmental

→ Syllable: a level of sounds where we create word → we put sound together into syllables and then we put syllables together into words

* Note: every syllable contain 1 and only one vowel.

→ Syllable : it's a unit, bisser than sound but may contain just a single sound.

ex: Eye /I/

/aɪ/ → one vowel which means ∴ (monosyllabic word).

→ every contraction of the muscles of the lungs is going to create some kind of unit of speech → creates a single syllable

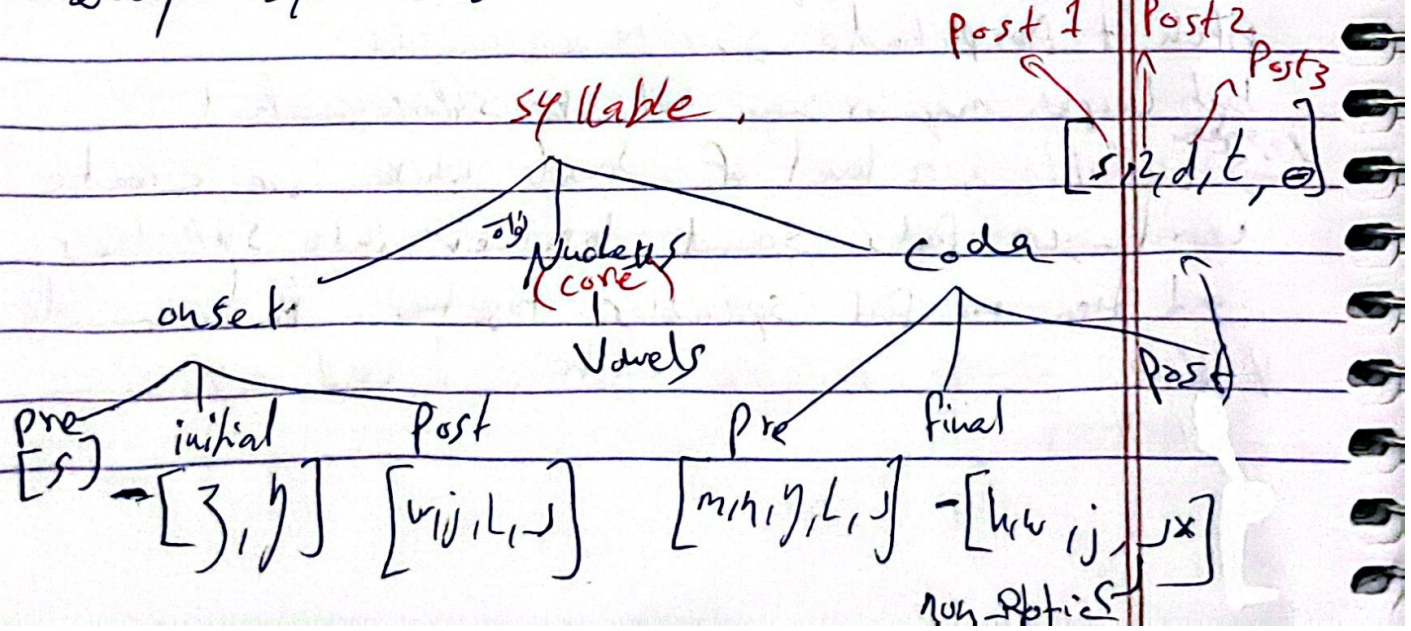
Ex: student.

↳ we forced to create 2 muscules Contractions

so it's difficult to Pronounce words that have more syllables than to Pronounce words with fewer syllables.

* Suprasegmentals in some cases influnce single sound but in most cases they influence syllables

→ what kinds of sounds can we have in every syllable ?



every vowel has to be located in the Nucleus.
vowels are called syllabic because (centre).
they are the centre of a syllable
→ some languages don't have coda → Ex: most Japanese accents don't contain codas.
but in English maybe we have empty coda or maybe contain 1, 2, 3 or even 4 consonants.
so in English the coda is optional.

have coda — don't have coda (empty coda)

Ex: [s t eɪ] → we can have an empty coda

s t → onset
eɪ → Nucleus
[ϕ] Co

[aɪ] → we don't have anything in the onset and we don't have anything in the coda.

ϕ on — ϕ Co

optional → applies to the onset + coda. but it doesn't apply into Nucleus.
In Japanese, the coda cannot be occupy by either consonants or vowels. → (there's no coda)
In Arabic, we have onset (optional).
In Japanese, the smallest syllable is going to be
an onset with one consonant and a coda with a vowel.
→ every letter is a consonant followed by a vowel.

In Japanese → the onset and the nucleus are إلزامي mandatory. ①

→ Nucleus always mandatory.

② then onset → (some language must have an onset) (so it's more important than coda)

③ coda. ↓ Optinal in every language

* why a vowel is always the centre of the nucleus?

↳ concept of sonority. (bisser passage clay).

more sonority → more audiable ↓ higher sonority

quality → means ... sonority ...

higher sonority يصبح أسهل تمييزه

↳ usually means higher frequency (the number of vibration)

↳ acaustic phonetic

* In a syllable → the highest sonority is always locked in nucleus (vowel).

→ highest sonority to the lowest sonority:

↳ 1) Low vowels
2) High vowels
3) Glides / semi vowels.
4) Nasals
5) Liquids
6) voiced fricatives
7) Voiceless fricatives
8) voiced Affricates
9) voiceless Affricates
10) voiced plossives
11) Voiceless Plossives

Rule: less obstruction → more sonority
more obstruction → less sonority.

Ex: truly [tɹu.li]

sonority يزيد   onset   N

→ the highest level of sonority is in nucleus

الشكل الهرمي الطبيعي syllable

→ at the end of the coda is going to drop
at the beginning of the onset is going to drop and in the middle is high / above

└ we have expectations / pattern conformity   لما نتوقع
↓ certain sounds that can appear in certain shapes

ex: strengths [stɹɛŋθs] → [stɹɛ] s
(expectations)   pre initial post

* In onset we can have 3 positions < pre / initial / post

so in English we can have an initial with any consonants except for [ʒ, ŋ]
↓ A word cannot begin with [ʒ, ŋ].

→ pre initial position that is located before the initial position and the only sound that allow [s]

Ex: stay [steɪ]
pre initial N

pre initial   Initial   w/s

* Rule: onset < initial / post   pre + Initial
Initial + post

Initial + Pre, (w/s → initial ممكن تكون) / Pre + Initial + Post.

Rhotic [+ɹ]

non Rhotic [-ɹ].

Ex: [ʃuɹ] → Rhotic accent or [ʃuə] → Non Rhotic.

(ʃ → initial, u → N, ɹ → final)

* If we have 2 consonants in the coda

↳ we have either pre + final or final + post.

(pre + final → Nasals + [l, ɹ]; final + post → [s, z, d, t, θ])

ex: [gɹeɪ]

(g → initial, eɪ → N)

Ex: strengths [stɹɛŋgθs]

(s → pre, t → initial, ɹ → post, ɛ → N, ŋ → pre, g → final, θ → post 1, s → post 2)

* Syllable Typology:-

Some segment combinations are language specific

ex: Mandatory onset (at least one consonant) in Fijian

1) Nucleus : mandatory in all languages.
2) onset : No language prohibits it.
3) coda : No language requires it.

* Stress → more muscular effort → louder, longer and involves more pitch variation.

Nucleus + coda → Rhyme.

Prank → transcribe / Sonority representation.

[ŋ] ⟨ ng / nk. (draw the sonority level ← [p ɹ æ ŋ k]

p → lowest sonority ; k → final ; → initial.

Onset Maximisation principle → An onset is mandatory in some languages, but a coda isn't / onsets are Prefered by languages.

↳ means: if we have a consonant stuck between an empty onset

→ we only think of pre and Post final if we have more than one consonant in the coda

→ when we draw the sonority level of the word → we have to invistigate whether we have one syllable or more → then draw

Ex: Star [s t ʌ ɹ]
ʌ → N ; ɹ → coda

* stress → is an important aspect of suprasegmental

suprasegmental → syllable / stress / intonation

Stress → Emphatic stress → Part of pragmatics

Stress → Delimiting / Grammatical stress.

We can stress a whole word and we can stress a one syllable

* stress is apply on syllables
→ Intonation : the patterns of emphasis / suprasegmental in the sentence
In turkish they always stress the last / final syllable in the word.

* If stress is placed based on the boundries of the word at the beging or at the end
↳ called Delimiting stress
(drawing limits between words (syllables)).
Ex: In·sult → we can stress the first or the last syllable based on either it's noun or verb.
↳ 2 syllables
'Insult → verb
In'sult → noun.
→ we place stress in words depending if they are nouns or verbs, adjectives.
* so places stress depending on grammatical category = grammatical stress
↳ it marks only applies on lexical words (nouns, verbs, adjectives or adverbs) grammatical category but it doesn't apply on grammatical words.
Ex: and, or
[end] → don't have grammatical stress
* any word can be emplasize.
* English is grammatical stress placement Language.

chair Person (noun) → last/final syllable
Antipenultimate (before) → penultimate

* stress position
① Antepenultimate ② Penultimate ③ Final

* Rule: stress follows length → means the longer is syllables stresses more like when they located within short syllables.
→ Syllable can be → strong → long vowel [+Tense] / vowel + coda -[ð]
→ weak → [ð] / short vowel without coda [Lax -[də]]
so the longer syllable → stronger
long vowel → [Tense + [də]].

* The onset doesn't contribute to the weight of the syllable → Ex: [stʌk]
st → don't contribute to the weight of syllable, ʌ → N, k → coda.

* How we measure the weight of the syllable?
→ the length of coda + Nucleus → weights of syllable.

Nucleus + coda are grouped together to indicate rhyming in words.

Ex: broker [bɹ ɔ k ɚ] ðɹ → short vowel → weak syllable

bleak [b l i: k] → coda; i: → Long → strong

weight = Length
onset = extrametrical

/ə/ → can never be long vowel.

Extrametrical = No weight.

* Grammatical stress cannot be located beyond the Antipenultimate syllable

* grammatical stress ← final Penultimate, Antipenultimate

→ Extrametrical element:
(↓ means it has no weight or syllable and it's always onset.

* All syllables have Extrametrical onsets

→ In (Nouns) the final syllable → have another Extrametrical element → coda

* Nouns have Extrametrical → onset and coda.

* In a noun the final syllable is always extrametrical (↓ doesn't carry weight)

Rule: English Nouns don't have final stress because the final syllable is Extrametrical (No weight).

↓ means weak syllable

* A strong syllables attracts stress, but a weak syllable rejects stress.

→ The longer syllable = more weight it has.

* stress placements in Nouns and verbs.

1) In Nouns → Extrametrical element is the (coda)

Nouns = Extrametrical (final syllable)

Syllables
- Light ↓
  1) short vowel with No coda
  2) schwa /ə/
- Heavy ↓
  1) Long vowel
  2) short vowel + coda.

* Can nouns have final stress? false because it extrametrical → doesn't have weight, so it can't hold stress.

→ There are English words are borrowed from other languages → Ex: cro'codile → borrowed from the French word, not English., so it's means it follows the stress in french وداخذ بالفرنسي
→ irregular nouns that have final stress → stress on final syllable

* In English Nouns → we cheak the penultimate syllable قبل الاخيرة
→ if we have 2 syllables words Ex: 'founding X extrametrical
penultimate

Ex: E.le.phant → extrametrical (final syllable)
[Lə] → penultimate
Antepenultimate, light syllable/vowel.

Ante → means: before.

* verbs: the Extrametrical element in the verb is the final consonant → in the coda of the final syllable.

Ex: in.tend
[tɛn d̸]
coda, coda (extrametrical).

con'sider → penultimate stress.
[də r̸]
extrametrical.

* If we have Nucleus without a coda → we look into vowel.
short vowel /ə/ + consonant → makes syllable heavy.

why ? (onset Maximazation) → onset more important than coda

represent

[ɹɪ ˈz ɛ n t]

short vowel + coda = heavy syllable → extrametrical.

/z/ → stuck between an empty coda + empty onset, so it occupies the onset.

Ex: de'cry

['k ɹ aɪ] → we don't have coda.

N → Tense vowel (long) even it's without coda it's still heavy syllable.

Ex: A.'ppeal → there's onset maximazation principle.

[pi l]

→ Extrametrical.

/i/ → long tense vowel which makes it → heavy → so we have final stress, not penultimate stress.

Rule;

Nouns → we check (penultimate syllable) → heavy = penultimate / light = Antepenultimate

verbs → we check final syllable without final consonant in the coda.

① heavy → we have final stress

② light → we have penultimate stress

→ how we know if it's heavy or not? we check the nucleus (long vowel / short vowel)

Ex: Po'tato → onset maximization
↳ extrametrical (the whole final syllable)
[teɪ]
↳ diphthong → Long tense vowel → heavy syllab
so it's penultimate stress because
the penultimate syllable is heavy.

Ex. com'put er → (noun) → Penultimate stress.
↳ extrametrical. because it's noun
[pju]
↳ heavy (diphthong)

com'pute (verb).
[pjut]
↳ heavy → final stress because it's verb
(Long vowel)

when we only have 2 syllables, we can't have antepenultimate
it's either penultimate or final
but if it's a noun with 2 syllables → we can't
stress final syllable in the noun. → Penultimate stress
* Q: grammatical stress can influence prepositions?
↳ false because prepositions is a grammatical word.

Nature of Penultimate Syllable → stress Placement in Nouns :

→ 2 syllable words : stress on first syllable.

→ 3 or more Syllable word : stress depends on nature penultimate syllable :

1. A heavy Penultimate syllable is stressed
2. A light penultimate syllable : left syllable is stressed (Antepenultimate
3. Exceptions : kangroo, chimpanzee, ballon.

note: weight attracts stress in English → Quantity sensetive.

Ex: hy.e.na
↓ antepenultimate
e → Long vowel
na → extrametrical always light.

→ In nouns we removed the final syllable, then cheak the penultimate syllable → if it's heavy we stress it, but if it not stressed (light) we moved backwords to Antepenultimate and stress it even if the antepenultimate isn't heavy.

ko la la
↓ [ɑː] → long → heavy.

* Nouns : final syllable is ignored when measuring stress (extrametrical element).

* verbs : coda in final syllable is ignored when measuring stress (extrametrical element).

Nature of Penultimate syllable, stress placement in Adjectives:

→ Adjectives and adverbs can behavie as nouns and can behaive like verbs,
so when they behaiver like nouns → we removed the final syllable as extrametrical, and when they behave like verbs we removed only the last consonant in the final syllable in the coda.

Morphological element → suffixes at the end

Ex: 'wonderful x — [dər] — suffix → Antepenultimate stress

'confident x — suffix → Antepenultimate

rule: if we have an adjective or adverb that's attached to a suffix → we treat it like a noun → the whole final syllable is extrametrical

Ex: En. thralling

x → extrametrical.

solid → doesn't have any suffixes attached to it so we dont remove the final syllable but we removed the final consonant in the final syllable in the coda → we treat it like verbs.

Ex. simple [Pd] x — insane [seɪn] → extrametrical.

* Primary stress doesn't travel beyond the Antepenultimate syllable.

so primary stress either → final, Penultimate, Antepenultimate
but nothing beyond them.

* Adjectives and adverbs with suffixes have Penultimate stress or Antepenultimate stress
however adj + adv without a suffixes have either final stress or Penultimate stress.

Ex. corrupt → have final stress because it's verb.
[ʌpt]
N — removed [t]
Coda → heavy syllable → coda + short vowel.

* we have exception when we have some suffixes called stress attracting / shifting suffixes.

Rule. stress shifting suffixes → attract stress to preceding syllable, or same syllable.

2) Stress Neutral suffixes → have no effect on stress placement.

Examples of stress shifting suffixes
-ic → photographic
↓ Attracts stress.
→ stress alway located on penultimate syllable when we have -ic
بتجذب stress لعندها

-ity → personality. -ation → personification

suffix

Penultimate to stress Penultimate stress

* irregular things about stress placements rules is: 1) borrowed words.
2) stress shifting suffixes.

Examples of stress neutral (normal) suffixes:-
1) al → personal
2) ly → personally
3) ness → equalidness

* normally suffixes are stress neutral / normal but be exceptions to have stress shifting suffix
→ shifting: moves stress from one point to a preceding point to the suffix.

* Eurhythmy → the rhythm of stress in actual sentences (stress patterns in languages).
* we have 2 kinds of patterns in languages:-
1) stressed syllable at the first then → unstressed
2) unstressed syllable at the first then → stressed
* any stretch of stress (one stressed syllable associated with unstressed syllable → called (foot)
→ the stressed syllable is the leader of foot.

stressed syllable of foot

because we can have 1 stressed only but we can have multiple unstressed syllables

Eurhythmy

foot

① left-headed foot or torchee

② right-headed foot or iamb

* So If the stressed syllable is to the right → means at the end and unstressed syllables to the left → we have a right headed foot = (Iambic foot). Ex; cro co'dile

* French is an Iambic language. ↓ multiple of unstressed syllable are followed by stressed syllable

unstressed syllables. last syllable is stressed (foot).

So we have 1 foot include stressed syllable and 2 unstressed syllables are to the left in the head

* English is left headed foot (torchee). ↓ torchee'ic language. ↓ means it has stressed syllable to the left and unstressed syllables to the right → stressed syllable is at the begining

* every language have own stress patterns. left-headed include stressed syllable to the Left then next to it unstressed syllable and the unstressed syllable follow foot.

* Mark stress degree on: -

1) Aligator: → ['æl ɪ ˌgeɪ tə ɹ] → we have 2 feets

foot foot

2) parliamentarian [ˌpɑːɹləmən'tɛəɹiən]

it's a word that contains 2 feets because it has 2 stressed syllables.

secondary stress → foot.

Primary stress (antepenultimate) → 1 foot.

* If we have multipule words in a sequence
↳ feet may extend to multipule words.

Eurhythmy → concerned with the sequence of stressed and unstressed syllables/ Patterns.

Foot → component of eurhythmy consisting of a stressed syllable (the head) plus any associated unstressed syllables.

Left-headed foot or trochee: A foot made up of a stressed syllable followed by one or more unstressed syllable.

Right-headed foot or iamb: A foot in which the unstressed syllable(s) precede(s) the stressed syllable as in french: crocodile.

Notes: we have stress in final syllable eventhough it's noun because (-eer) stress shifting suffixed that attracts stress to it like Enginieer.