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الصوتيات والنظام الصوتي

تبسيط لمقرر (الصوتيات والنظام الصوتي)

- تبسيط المحتوى من حيث تنظيم المعلومات كلاً حسب نوعه -

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ملاحظات:

- هذا التبسيط يشمل ٩٩% من المحتوى، بحيث نظمت المعلومات كلاً حسب نوعه من ناحية وضع التعاريف بجدول واحد، والمعلومات التي تحتمل وجود اسئلة فراغات فيها لوحدها، بالإضافة إلى تبسيط المعلومات الآخرى بجداول أو خرائط ذهنية ليسهل حفظها أو فهمها.
- يسهل **عملية المراجعة** لتثبيت المعلومة، لذا فهو لا يغني عن المحتوى أو المحاضرات كفهم.

►Definitions:

No.		
01.	**Muscles**	• All the sounds we make when we speak are the result of **muscles** contracting. • The **muscles** in the chest that we use for breathing produce the flow of air that is needed for almost all speech sound.
02.	**Larynx**	Produce many different modifications in the flow of air from the **chest** to the **mouth**.
03.	**Articulators**	The different part of the vocal tract.
04.	**Articulatory phonetics**	The study of human speech sound.

05.	**Pharynx**	• is a **tube** which begins just above the **larynx**
		• 7cm long in **women** and about 8cm in **men**.
		• At **its top** end it is divided into two:
		  ○ Being the **back** of the **mouth**
		  ○ Being the **beginning** of the way through the **nasal cavity**

06.	**Velum (soft palate)**	• is seen in any diagram in a position that **allows** air to pass through the nose and through the **mouth**. • the soft part at the **back** of the roof of the mouth.
07.	**Hard palate**	• the roof of the **mouth**. • feel its **smooth** curved surface with your tongue.
08.	**Alveolar ridge**	• is between the **top front** teeth and the hard palate. • feel its **shape** with your tongue. • Sounds made with the tongue touching here (such as **t** and **d**) are called **alveolar**. • bony ridge **behind** the teeth.
09.	**Palate-alveolar (post-alveolar)**	the area in between the **alveolar ridge** and the **hard palate**.
10.	**Tongue**	a very important articulator and it can be moved into different places and different shapes.
11.	**Dental**	Sounds made with the tongue touching the **front teeth**
12.	**Lips**	are important in speech.
13.	**voiceless sounds**	Sounds which are made when the focal folds are open
14.	**Vocal folds vibration**	When the air comes from the lungs, the build up of air pressure underneath this closure is sufficient to **force** that closure **open**, but the air pressure then drops, and the muscular pressure causes the folds to **close** again. The **sequence** is then repeated very **rapidly** and the results in what is called **vocal folds vibration**
15.	**IPA**	**I**nternational **P**honetic **A**lphabet.
16.	**Place of Articulation**	the points at which the flow of air can be **modified**.
17.	**Glottis**	the space between the **vocal cords**.
18.	**Close approximation**	Sounds which are produces with this kind of constriction entail a bringing together of the two articulators to the point where the airflow is **not quite fully blocked**.
19.	**Approximants (Open approximation)**	the **least degree** of constriction occurs when articulators come **fairly** close together, but not sufficiently close together to create **friction**.
20.	**Affricates**	Sounds produced with a constriction of **complete closure** followed by a release phase in which friction occurs.

21.	**Aspiration**	That stronger puff of air phenomenon is **aspiration**.
22.	**Oral cavity**	the air from the lungs is escaping **only** through the **mouth**.
23.	**Nasal stops**	with air escaping through the **nasal cavity** alone
24.	**Assimilation**	When **two sound** segments occur in sequence and some aspect of one segment is **taken or copies** by the other, the process is known as **assimilation**.
25.	**monophthong**	the vowel quality remains more or less constant. That kind of vowel is a **monophthong**
26.	**diphthong**	• is a vowel whose quality changes within a syllable • is **not** simply a sequence of two vowels
27.	**RP**	• **R**eceived **P**ronunciation • is the accent often referred to as the prestige accent in British society and associated with the speech of the graduates of the English public schools. • It is thus defined largely in terms of the social class of its speakers.

28.	**GA**	• **G**eneral **A**merican
		• is an idealized over a group of accents whose speakers inhibit a vast proportion of the United States
		• It excludes
		  ○ **eastern** accents such as the New York City accent
		  ○ **southern** accents (such as spoken in Texas).

29.	**ə (the schwa)**	• is typically shorter than the short vowels (I, e, æ, …etc)
		• it differs from those in that it may **never** occur in a **stressed syllable**
		  ○ in about, it occurs in the unstressed **first** syllable
		  ○ in elephant, it occurs in the unstressed **second** syllable
		  ○ in Belinda, it occurs in the unstressed **initial** and **final** syllables

30.	**lexical sets (adopted by wells)**	These are the key words selected by **wells** to bring out the **similarities** and differences between **RP** and **GA**.
31.	**Phonology**	• is the study of certain sorts of mental organization • is essentially the description of the systems and patterns of speech sounds in a language
32.	**distribution**	The range of places within a word which a given sound may occur in
33.	**complementary distribution**	the distribution of unaspirated and aspirated **stops** is **mutually exclusive**: where you get **one kind of stops**, you never get the other
34.	**phoneme**	• each one of these meaning-distinguishing sounds in a language is described as a **phoneme** • If we **change a phoneme** and we replace it in **the same place**, this leads to **change the meaning**. For example, car. If we replace the /r/ by /t/ we will have a new word, cat, which has a different meaning
35.	**allophones**	• Realizations of a **phoneme** which are entirely predictable from the context are called its allophones ○ So we say that the aspirated /p^h/ and the unaspirtaed /p/ are allophones of the /p/ phoneme
36.	**parallel distribution**	In other languages, such as **Korean**, the **distribution** of aspirated and unaspirated voiceless **stops** is overlapping: there is **at least one place** in which either type of sound may occur. This kind of distribution is referred to as **parallel distribution**.
37.	**minimal pairs**	• **Pairs** of words which differ with respect to **only** one sound ○ sit and sat are minimal par
38.	**Minimal set**	• if there are **more** than two words ○ sit, sat, set are minimal set

39.	**elision**	• the process of not pronouncing a sound segment that might be presented in the **deliberately careful pronunciation** of a word in isolation ○ For example, there is typically no [d] sound included in the everyday pronunciation of a word like friendship [frɛnʃɪp].
40.	**Morphemes**	• are a kind of **mental representation** which have **three properties**: a syntactic category, a meaning and a phonological form ○ cats has two morphemes: a root morpheme and a plural morpheme ▪ **Syntax** (it is a noun-cat) ▪ **semantics** (it means cat) ▪ **phonology**, which takes the form /kæt/
41.	**onset**	is defined as **any** and **all** consonants occurring **before** the vowel
42.	**rhyme**	may be further subdivided into the constituents **nucleus** and **coda**

►Fill in the Blank Questions:

1. After passing through the **larynx**, the air goes through what we call **the vocal tract**, which ends at the **mouth and nostrils**.
2. We have a large and complex set of muscles that can produce **changes** in the **shape** of the **vocal tract**.
3. Sounds in which the **lips** are:
   - Contact with each other are called **bilabial**
   - lip-to-teeth contact are called **labiodentals**
4. But we **cannot** describe the **nose** and the **nasal cavity** as articulators in the same sense.
5. The **first point** at which the flow of air can be modified, as it passes from the lungs, is the **larynx** (you can feel the front of this, the Adam's apple, protruding slightly at the front of your throat),, in which are located the **vocal folds (or focal cords)**.
6. **All** approximants are **voiced sounds**.
7. That friction occurs during the **release** phase of the closure.
8. The **bilabial stop** in pit differs **phonetically** from the **bilabial stop** in spit.
9. **Assimilation:**
   - the word dean. the **ea** became **nasalized** as it is followed by a nasal sound, which is in this case the /**n**/.
   - the vowel /ee/ in the word seen, becomes **nasalized** as a result of its being followed by the nasal sound /n/
10. **all** vowels are **voiced** and articulated with a constriction of **open approximation**.
11. **all** vowels are **oral sounds**
12. **The range of positions** which the tongue can occupy within the **oral cavity** while remaining in a constriction of open approximation is quite large.
13. **Wells** uses three key words for the [ɔ:]. These are: thought, force and north.
    He also uses three key words for /ɑ:/. Start, and Balm
14. This kind of vowel sound, called a diphthong, entails some kind of **change of position** of the articulators during its production
15. For speakers of **RP** and **GA**, the vowels in peep (a **long** vowel) and pip (a **short** vowel) differ in several respects.
16. The vowel in pip is transcribed as [I]. so the word is transcribed as [pIp]. [I] is high front unrounded vowel, it is **less** high and **less** front than the vowel in peep.
17. the **native** speaker of English gains access to a **kind of unconscious knowledge** which constitutes 'the phonology of English'
    - **[bl^g]**, is an English sequence
    - [tl^g] is not

18. **The discipline of phonology**, differs from that of phonetics, since it is the study, ~~not of speech sounds per se~~, but of mental abilities and largely unconscious mental states
19. The **aspirated** and the unaspirtaed **/t/** are phonetically similar:
    both are **stops**, both are **voiceless**, both are **alveolar**.
    - while they are phonetically distinct, they are phonologically equivalent
    - the two types of stops correspond to, are interpreted as belonging to, say a single mental category.
      We will refer to such a category as a **phoneme**.
20. So whether the **/p/** is **aspirated** or unaspirated, it is **one** phoneme
21. The relation between phonemes and their associated phonetic segments is one of realization
    - so that the phoneme **/p/**, for instance, is **realized**
        - as **[p]** after a voiceless alveolar fricative (example: spurt),
        - and as aspirated **[p]** elsewhere (example: pool)
22. The distinction between aspirated and unaspirated voiceless stops is
    - **phonemic** in **Korean**
    - allophonic in **English**.
23. Just as **phonemes** are mental objects, so the **phonological form** of this morpheme is a mental object:
    - /kæt/; is a mental representation in the mind of a speaker,
    - whereas the sequence [kæt] is a **phonetic sequence**.
24. The **phonological form** of a morpheme may, **clearly consist of more than one phoneme**.
25. The **phonological form** of a morpheme is present in the speaker's mentally constituted grammar, and that this phonological form consists in either a single phonological segment or a sequence of such segments
26. The **phonological units** or categories we have called phonemes **are part of phonological knowledge**
27. The two main constituents within a syllable are the **onset** and the **rhyme**
28. While a syllable **must** have a **nucleus**, it is possible to have a well-formed syllable which does not contain any element other than a **nucleus**.
29. The segment occupying the nucleus of the syllable is **normally a vowel**
    - an example of a word in English consisting of **only one syllable**,
      which in turn contains **only** a **nucleus**, is eye: /aI/.
30. but the **nucleus** in English may be **preceded** or **followed** by other segments,
    as we have seen, and those segments are **typically consonants**.
31. In English **onsets** may contain **two segments** (as in bring, trap, clip, etc.); we will refer to these as **branching onsets**
32. just as onset may be branching, so **codas** may **branch**, as in the word hunt

►1, 2, 3, …:

- **The vocal tract parts:**
    01. The pharynx
    02. The velum or soft palate
    03. The hard palate
    04. The alveolar ridge
    05. The tongue
        - tip
        - blade
        - front
        - back
        - root

06. The teeth (upper and lower)
07. The lips

- **The four different areas of the upper part of the mouth:**
  01. Alveolar ridge
  02. Hard palate
  03. Palate-alveolar (or post-alveolar) region
  04. Velum (soft palate)
- **The three descriptive parameters:**
  01. voiceless (-V), voiced (+V)
  02. Place of Articulations
  03. Manner of Articulations
- **Degree of constriction:**
  01. Complete closure
  02. Close approximation
  03. Open approximation
- **Categories of consonant:**
  01. Stops (Plosives)
  02. Fricatives
  03. Approximants (least degree)
- **The vowel space is represented along two (we can add a third parameter) dimensions:**
  01. **High/low:** high vowel, or low, or high-mid, or low-mid
  02. **Front/back**: front, back, or central
  03. **lip position:** rounded or unrounded
- **The phonemic principle**
  01. Two or more sounds are **realizations of the same phoneme** if:
      - they are in complementary distribution
      - and they are phonetically similar
  02. Two or more sounds are **realizations of different phonemes** if:
      - they are in parallel (overlapping) distribution
      - and they serve to signal a semantic contrast.

►Shortcuts:

- **The vocal folds:**
  - **Open** = the airstream passes through them **unimpeded**. = **without** vibration = **voiceless** sounds = /s/
  - **close = no air** = **with** vibration = **voiced** sounds = **/z/**

►Place of Articulations:

No.	Sound	constriction between	Examples
01.	Bilabial	lower **lip** and upper **lip**	**p**it, **b**ite
02.	Labio-dental	lower **lip** and upper **teeth**	**f**it, **v**ery
03.	Dental	**tip** of the **tongue** and the upper **teeth**	**th**in
04.	Alveolar	**front** of the **tongue** on the **alveolar ridge**	
05.	Palate-alveolar	**blade** of the **tongue** and the **palate-alveolar** (or post-alveolar)	**sh**ip
06.	Palatal	**front** of the **tongue** and the **hard palate**	**y**es
07.	Velar	**back** of the tongue and the velum	**c**ool, **g**o
08.	Glottal	the sounds produced in the space between the **vocal cords**	

►Manner of Articulations:

No.	Categories	Degree of constriction	Examples
01.	Stops (Plosives)	Complete closure	**p**it
02.	Fricatives	Close approximation	**f**in
03.	Approximants (least degree)	Open approximation	**y**es

			Place of Articulation															
			Bilabial		**Labiodental**		**Dental**		**Alveolar**		**Palate-Alveolar**		**Palatal**		**Velar**		**Glottal**	
Manner of Articulation			-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V
Stops			p	b					t	d					k	g	ʔ	
Fricatives					f	v	θ	ð	s	z	ʃ	ʒ					h	
Affricates											tʃ	dʒ						
Nasals				m						n						ŋ		
Liquids	**Lateral**	**Approximants**								l								
	Retroflex									r								
Glides				w										j		w		

توضيح بسيط عن سبب وضع /w/ بعمودي Bilabial وَ Velar. هذان اقتباسان من موقعين مختلفين (**خارجي لغرض التوضيح**):

" As labio-velar consonants do not easily fit into consonant charts with only labial and velar columns, **[w] may be put in either the velar column, (bi)labial column, or both**, though the latter is rare outside of the official IPA chart; the placement may have more to do with phonological criteria than phonetic ones. "

" The /w/ has been put in two places on the consonant chart. It is placed with the velar consonants because it involves constriction in the velar region of the mouth. It is also placed with the bilabial consonants because it has a bilabial component."

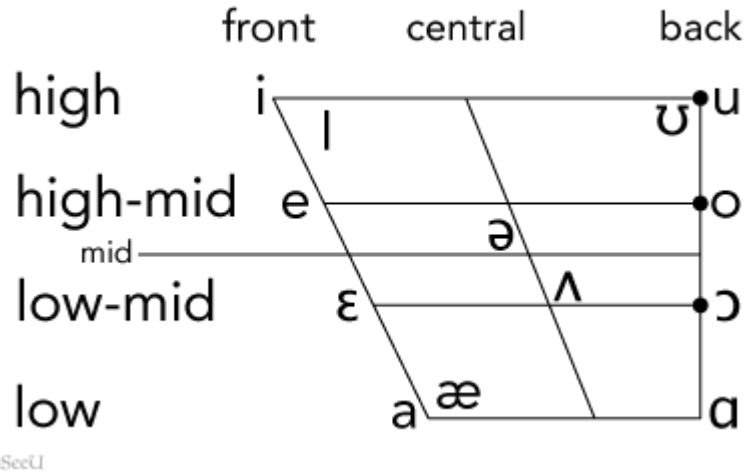
سبب بحثي عن هذي المعلومة؛ لأن بالمحتوى مكتوب أن /w/ labio-velar approximant

مع أن مكانه بالجدول تحت عمود Bilabial وليس Velar، فالآن وضحت الصورة ☺، ...انتهى التوضيح.[1]

Fricatives	**th**igh, **th**in	/θ/	
	then, **th**at	/ð/	
	shy, **sh**ip, lea**sh**	/ʃ/	
	mea**s**ure	/ʒ/	
Affricate	**ch**ip, **ch**ew, **ch**it, ri**ch**	/tʃ/	voiceless palate-alveolar **affricate**
	joy, gin, ridge	/dʒ/	voiced palate-alveolar **affricate**
Nasal stop		/m/	bilabial **nasal stop**
	si**ng**, ri**ng**	/ŋ/	velar **nasal stop**
	not	/n/	alveolar **nasal stop**
Approximant	**y**es, **y**ear	/j/	voiced palatal **approximant**
	rip	/r/	alveolar **approximant**
	wet	/w/	**labio**-velar **approximant**
	lift	/l/	alveolar **lateral approximant**
Aspiration	pit		**aspirated** voiceless stop
	pool	/p/	**aspirated**
	top	/t/	
	killing	/k/	
	spit		**unaspirated**
	spurt	/p/	
	s**t**op	/t/	
	s**c**old	/k/	

[1] المصدران: [هنآ] وَ [هِنآ]

►Vowel Sounds:



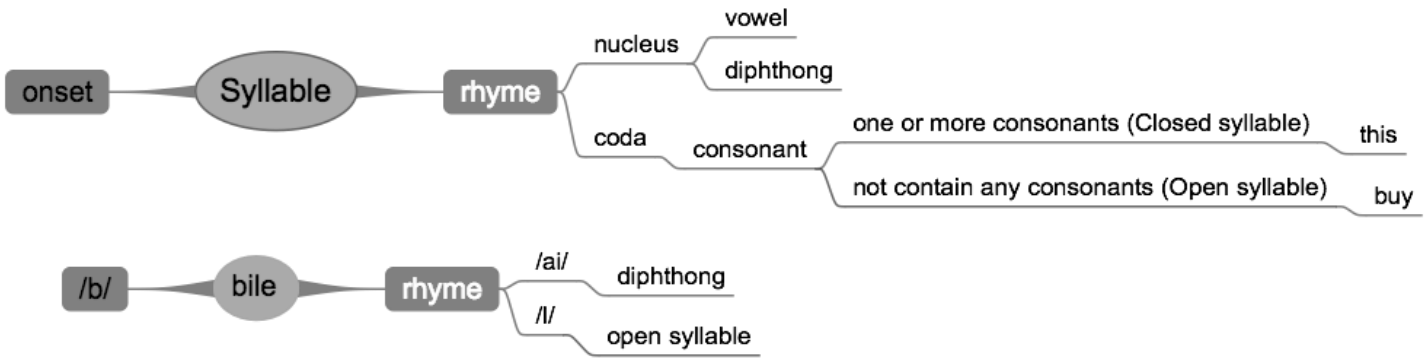
	Vowel Sound	Example	Wells
Short vowels	/ɪ/	pit [pɪt], fill, mid, pip [pɪp]	KIT
	/e/	pet [pet], led, sell [sel]	DRESS
	/æ/	ant, pat [pæt], ban	TRAP
	/ʌ/	putt [pʌt], hub, love	STRUT
	/ʊ/	put [pʊt], full, pull	FOOT
	/ɒ/	pot [pɒt], doll, song, cot	LOT
	/ə/, called schwa	about [əbaʊt], upper, again	
Long Vowels	/i/, i:	see, lead, seed, key [ki:], peep	
	/ɑ/, ɑ:	aunt [ɑ:nt], car [kɑ:], march [mɑ:tʃ], park	start, balm
	/ɔ/, ɔ:	core [kɔ:], saw [sɔ:], caught	thought, force, north
	/u/, u:	food, soon, loose, coo [ku:], pool	
	ɜ:	cur [kɜ:]	

►Diphthongs:

A diphthong is not simply a sequence of two vowels. For instance, in both the **RP** and the **GA** pronunciations of the word seeing **[si:ɪŋ]**, the vowel **[i:]** is followed by the vowel **[ɪ]**, but the resulting sequence **is not a diphthong**, because the **[i:]** and the **[ɪ]** are not in the same syllable: seeing **has two syllables**, the first of which ends in **[i:]** and the second of which begins with **[ɪ]**.

/aɪ/	**sigh, rye, bide, kite, site, bite, price**
/eɪ/	say, ray, bayed, face
/ɔɪ/	boy, soy, roy, buoyed, choice
/aʊ/	how, now, loud, cow, mouth
əʊ	Go, load, home, most, coat

►Syllable:



morphemes	
monosyllabic: contain **only** one syllable	**polysyllabic:** may contain **more** than one syllable
bile	rider, beetle, amount, desire

English syllable can be like:

- cvc (ham)
- v (I)
- cv (do)
- ccvc (green)
- vcc (eggs)
- vcc (and)
- vc (am)

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