



A Comparative Study of English and Arabic Phonology

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Abstract

The aim of this study is to present a firsthand impression of the comparative status of English and Arabic phonemes along with their allophonic occurrences. Using document analysis, the study reveals the phonemic contrasts that occur between both the languages.

1. Introduction

The Arabic script (alphabet) is written and read from right to left and horizontally. There are 28 letters in Arabic which can be divided into two types: those known as connectors (i.e. other letters can be attached to it), and non-connectors (those that cannot be attached to other letters). Also, Arabic letters may change according to the positions they occupy in the word (initial, medial or final).

For non-native speakers, some Arabic letters such as glottal fricatives and uvular stops are a little strange and can be challenging to pronounce. Therefore, every Arabic word or phrase is spelt out in the roman alphabet using a conventional transliterating system based largely on the International Phonetic Association symbols.

Pronunciation table

A S	I P A A	P	I	M	F	Ex pla nat io n	A E	TP	Meani ng
ا	/ ə /	A li f H a	أ	إ	ف	Glottal-stops	أ ب ح خ	/ab/ /bæ b/ /mər <u>h</u>	Father door hello

ح	/H /	H a a	ح . ا	ح . ا . ا	ح	Phar ynge	ح . ا . ا ح . ا . ا . ا ح . ا . ا . ا . ا	/hub/ /bah ^h r/ /mil ^h	Love sea
ج	/d ʒ /	ji : m	ج . ا	ج . ا . ا	ج	Pa lat al- aff ric et	ج . ا . ا ج . ا . ا . ا ج . ا . ا . ا . ا	/jama l/ /ajuu z/ /thalj/	Camel old person ice
ث	/θ /	T h a a	ث . ا	ث . ا . ا	ث	De nta l- fri cat iv	ث . ا . ا ث . ا . ا . ا ث . ا . ا . ا . ا	/thari y/ /mith aal/ /yabu th/	Rich examp le broadc ast
ط	/t /	T a a	ط . ا	ط . ا . ا	ط	Al ve ola r- sto ps	ط . ا . ا ط . ا . ا . ا ط . ا . ا . ا . ا	/tab/ /yoak tub/ /bayt/	Fatigu e write house
ب	/b /	B a a	ب . ا	ب . ا . ا	ب	Bil abi al- sto ps	ب . ا . ا ب . ا . ا . ا ب . ا . ا . ا . ا	/basal / /yabii / /yash ab/	Onion sell pull

		y				fri cat - vd	ز ن ز ا ل م ع ر	al/ /maai z/	uake goat
س	/s /	s i: n	س .	س .	س	Al ve ola - fri c- vl	س پ ا ر ة ن ع س ر ر س م س	/sayy aarah / /khas ira/ /sha ms/	Car Lose Sun
ش	/ʃ /	S h i: n	ش .	ش .	ش	Pa lat al- fri c- vl	ش ا ی ش ت ا ت ا ف م ا ش	/ʃaay/ /yaʃta aq/ /mud -haʃ/	Tea miss amazi ng
ص	/S /	S a a d	ص .	ص .	ص	Al ve ola - fri c	ص ب ا ح م ص ر ر ف ص ص	/saba ah/ /mas dar/ /qafa s/	Morni ng source cage
ض	/d /	D a a d	ض .	ض .	ض	Al ve ola - sto ps	ض ب ا ع ض و ر م ر ي	/daba ab/ /udw/ /mari id/	Fog memb er sick

							ط			
	/t /	T a a	ط	ط . ط . ط . ط . ط . ط	ط	Al ve ola r- sto ps- vl	ط . ط . ط . ط . ط . ط . ط . ط	/tabii b/ /baṭa aṭa/ /baṭ/ ط . ط . ط . ط . ط . ط . ط . ط	Doctor potato es duck	
	/z /	Z a a	ظ	ظ . ظ . ظ . ظ . ظ . ظ	ظ	De nta l- fri c	ظ . ظ . ظ . ظ . ظ . ظ . ظ . ظ	/zuhr/ /yanz ur/ /ghali iz/ ظ . ظ . ظ . ظ . ظ . ظ . ظ . ظ	Noon look at thick	
	/g /	G a i n	ع	ع . ع . ع . ع . ع . ع	ع	Ph ar yn ge d- fr	ع . ع . ع . ع . ع . ع . ع . ع	/Aam il/ /shar/ /yasa m/ ع . ع . ع . ع . ع . ع . ع . ع	Worke r hair hear	
	/g h /	G h a i n	غ	غ . غ . غ . غ . غ . غ	غ	Ve lar - fri c	غ . غ . غ . غ . غ . غ . غ . غ	/Ghar b/ /bagh daad/ /balig h/ غ . غ . غ . غ . غ . غ . غ . غ	West baghd aad mature	
	/f /	F a a	ف	ف . ف . ف . ف . ف . ف	ف	De nta l-	ف . ف . ف . ف . ف . ف . ف . ف	/fann aan/ /yufa ف . ف . ف . ف . ف . ف . ف . ف	Artist think	

						fri c	ي ف ك ر س ي ف	kkir/ /sayf/	sward
ق	/gg/ /	Q a a f	ق . ق .	ق	Ph ar yn gl- stp		ق د ر ف ي ر م ش ق	/Qaa dir/ /faqii r/ /dima shq/	Sapabl e poor Damas cus
ك	/k/ /	K a a f	ك . ك .	ك	Uv ula r- sto p		ك ن ش ك ر س م ك	/kitaa b/ /shak ara/ /sama k/	Book thank fish
ل	/l/ /	l a a m	ل . ل .	ل	Al ve ola - lat ral		ل ب ل ل س س	/Lu'b ah/ /jalab a/ /asal/	Game bring honeu
م	/m/ /	m i: m	م . م .	م	La bia l- na sal s		م ن م س و ع م	/makt ab/ /'ama l/ /wasi im/	Office work handsome

ن	/n/	N u : n	ن	ن	ن	dentals	نا ر م ع ن ي د ين	/naar/ /ma'naa/ /diin/	Fire mean ing religio n
ه	/h/	H a a	ه	ه	ه	Glottal	ه دا نه ا ية ك ر يه	/haad haa/ /niha ayat/ /kariih/	This end unplea sant
و	/w/	w a a w	و	و	و	Bilabial	و ر دة ي تو ج ع ع دو	/ward ah/ /yata wajja' / /ady w/	Rose achi enemy
ي	/j/	Y a a	ي	ي	ي	Palatal	ي ك ل ج ب ين غ ل ي	/Ya'kul/ /Jabii n/ /Ghalii/	Eat forehe ad expens ive

2.3 Classification of Vowel Sounds

There are three vowels in Arabic called **أَلْحَرَكَاتُ** 'al- harakatu. They can be both short and long. Therefore, we can say that there are three basic short vowels in Arabic and three long ones as shown in the following table.

<u>Arabic Sounds</u>	Examples	Eng lish
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FatHa	رَ	رَجُل	Man	/rajul/	a
Madda	أَ	حَصَان	Horse	/HiSAn/	A
Hamm za		أنا	I	/ /?ana	?
Damm a	وُ	هُوَ	He	/h <u>u</u> a/	u
Tanww an	وَو	ثوم	Garlic	/ /th <u>U</u> m	U
kasra	إِ	بارِد	Cold	/b@ri <u>d</u> /	I
Hamm za	ءَ	أنا	I	/ /?ana/	?
Long /i:/	ي	سَرِير	Bed	/sari: <u>r</u> /	I:
Diphthong	يَ -	بَيْنَمَا	While	/bainam@/	Ai
Diphthong	وَ - أَ - وَ	تَسَوَّق	Shopping	/tata~sawwa <u>g</u> /	Aw

Short vowels and sukuun (al-Harakaat wa l-sukuun الحركات والسكون)

The set of three short vowels consists of the sounds /a./, /i/ and /u/. They are not considered part of the Arabic alphabet and are not as a rule visible in written Arabic. The short vowels are referred to in Arabic not as letters (Huruuf) but as "movements" (Harakaat). That is, they are seen as a way of moving the voice from one consonant to another.

Short vowels can be written into a text, but ordinarily they are not. Two exceptions to this are the Quran and children's schoolbooks. In the Quran the short vowels are made explicit so that readers and reciters can be absolutely certain of the correct pronunciation of the sacred text. In schoolbooks, they are inserted so that children can study and master word structure and spelling as they learn how to read MSA. As reading skill progresses, the use of short vowels in pedagogical texts is phased out. This is done because the patterning of short vowels is largely predictable and therefore marking them is considered redundant.

For learners of Arabic as a foreign language, the absence of short vowels requires extra attention to word structure and morphological patterning, and memorization of the exact sound of the word as well as its spelling. Just because the vowels are invisible doesn't mean they don't exist.

2.4 Classification of Consonants and Allophones

Phoneme /ʔ/ {أ} [alif]

PLACE OF ARTICULATION	Glottal
MANNER OF ARTICULATION	Stop
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that /ʔ/ sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. أَبْ	2. بَابْ	3. مَرْحَبًا
Ab Father	Baab Door	Morhoban hello

Phoneme /b/ {ب} [bæ]

PLACE OF ARTICULATION	Bilabial
MANNER OF ARTICULATION	Stop
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that /b/ sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. بَصَلْ	2. يَبِيعُ	3. يَسْحَبُ
Basal onion	Yabii Sell	yashab pull

Allophone of /b/

It occurs in complementary distribution with [p], the former occurring only before voiceless consonants.

Allophones	Description	Examples
[p]	Voiceless Bilabial Stops	/pæpsun/ prison
[b]	Voiced Bilabial Stops	/bææb/ boor

/p^h/ as in the first sound of a word which starts with /p/ as in *Paper, Pen, Passport*, etc.

Cluster Sounds:

Phoneme /t/ {ت} [tæ]

/t/ is produced by the tip of the tongue against teeth ridge and the air comes out through the mouth making an explosive sound without vibration in the vocal cords

PLACE OF ARTICULATION	Dental
MANNER OF ARTICULATION	Stops
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that /t/ sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. تَعَبٌ	2. يَكْتُبُ	3. بَيْتٌ
Tab fatigue (n.)	Yaktub Write (v.)	bait House (n.)

Allophone of /t/

It occurs in complementary distribution with [t^h], the latter appearing only in the beginning of stressed syllables and released in word final positions.

Allophones	Description	Examples
[t]	Voiceless Unaspirated Dental	/ʃɪtæəʔun/ winter
[t ^h]	Voiceless aspirated dental	/t ^h uu t ^h / blackberries

Phoneme /θ/ {ث} [thaa]

/θ/ is produced by tip of tongue against upper teeth and the air is released with friction without vibration in the vocal cords.

PLACE OF ARTICULATION	Inter-dental
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that /θ/ sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. ثَرِيٌّ	2. مِثَالٌ	3. بَيْتٌ
Thariy Rich	Mithaal Example	yabuth broadcast (v.)

Allophone of / θ /

It occurs in all positions.

Allophones	Description	Examples
[θ]	Voiceless inter-dental fricative	/mæθæɪ/ example

Phoneme / Ĵ / {ج} [jim]

PLACE OF ARTICULATION	Alveo-palatal
MANNER OF ARTICULATION	Fricativas
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / Ĵ / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. جَمَلٌ	2. عَجُوزٌ	3. ثَلْجٌ
Jamal Comel	Ajuuz old person	Thalj ice (n)

Allophone of / ž /

It occurs in all positions.

Allophones	Description	Examples
[ž]	Voiced Alveo-palatal fricative	/mæəæ/ example

Phoneme / ḥ / {ح} [haa]

/h/ is produced in the glottis and the air is released with friction with vibration in the vocal cords

PLACE OF ARTICULATION	Pharyngeal
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / ḥ / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. حَبٌّ	2. بَحْرٌ	3. مِلْحٌ
Hub love (v.)	Bahr Sea	milh salt

Allophone of / h /

It occurs in all positions.

Allophones	Description	Examples
[ḥ]	Voiceless pharyngeal fricative	/huut/ whale

Phoneme / x / {خ} [khaa]

PLACE OF ARTICULATION	Velar
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / x / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. خَبِيرٌ	2. شَخْصٌ	3. تَارِيخٌ

<u>Khabiir</u> expert	<u>Shakhs</u> Person	<u>taariikh</u> history
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Allophone of / x /

It occurs in all positions.

Allophones	Description	Examples
[x]	Voiceless velar fricative	/xæwx/ plums

Phoneme / d / {د} [daal]

/d/ is produced by the tip of the tongue against teeth ridge and the air comes out through the mouth making an explosive sound with vibration in the vocal cords.

PLACE OF ARTICULATION	Dental
MANNER OF ARTICULATION	Stop
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / d / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. دَجَاجَةٌ	2. هَدِيَّةٌ	3. عِيدٌ مِيلَادٌ
Dajaajah chicken	Hadiyyah gift (n.)	iid miilaad birthday

Allophone of / d /

It occurs in all positions.

Allophones	Description	Examples
[d]	Voiced dental stop	/duud/ worms

Phoneme / ð / {ذ} [dhaal]

/ð/ is produced by tip of tongue against upper teeth and the air is released with friction with vibration in the vocal cords.

PLACE OF ARTICULATION	Inter-dental
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / ð / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. ذَهَبٌ	2. مُذْنِبٌ	3. أَخَذَ
Dhahab gold	Mudhnib Guilty	O ^h khadh ^a took

Allophone of / ð /

It occurs in all positions.

Allophones	Description	Examples
[ð]	Voiced inter-dental fricative	/mæðæ/ what

Phoneme / r / {ر} [raa]

/r/ is produced by raising the tip of the tongue towards the back of the teeth ridge, and the air comes out through the mouth with no friction but with vibration in the vocal cords.

PLACE OF ARTICULATION	Alveolar
MANNER OF ARTICULATION	Flap
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / r / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. رَجُلٌ	2. شَرَابٌ	3. عُمْرٌ
Rajul man	Sharaab drink (n.)	'umr Age (n.)

Allophone of / r /

It occurs in all positions.

Allophones	Description	Examples
[r]	Voiced Alveolar Flap	/daar/ hall

Phoneme / z / {ز} [zein]

/z/ is produced by tip of the tongue against teeth ridge and the air is released with friction with vibration in the vocal cords.

PLACE OF ARTICULATION	Alveolar
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / z / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. زَهْرَةٌ	2. زِلْزَالٌ	3. مَاعِزٌ
Zahrah rose (n.)	Zilzaal Earthquake	maa'is goat

Allophone of / z /

It occurs in all positions.

Allophones	Description	Examples
[z]	Voiced alveolar fricative	/mæwz/ bananas

Phoneme / s / {س} [siin]

/s/ is produced by tip of the tongue against teeth ridge and the air is released with friction without vibration in the vocal cords.

PLACE OF ARTICULATION	Velarized
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / s / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. سَيَّارَةٌ	2. خَسِيرٌ	3. شَمْسٌ
sayyaarah car	Khasira lose (v.)	Shams sun

Allophone of / s /

It occurs in all positions.

Allophones	Description	Examples
[s]	Voiceless alveolar fricative	/mæsææ/ evening

Phoneme / Š / {ش} [shiin]

PLACE OF ARTICULATION	Alveo-palatal
MANNER OF ARTICULATION	Fricatives
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / Š / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. شاي	2. يَسْتَأق	3. مُدْهِش
Shay tea	Yashtaaq miss(someone)	mud-hish amazing

Allophone of / Š /

It occurs in all positions.

Allophones	Description	Examples
[Š]	Voiceless alveopalatal fricative	/Šæms/ sun

Phoneme / S / {ص} [saad]

/s/ is produced with the tongue flattened and grooved from the mid back at a point contiguous to the velum and the air is released with friction without vibration in the vocal cords.

PLACE OF ARTICULATION	Velarized
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / S / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. صَبَاح	2. مَصْدَر	3. قَفَص
Sabaah morning	Maṣdar source (n.)	qafaṣ cage

Allophone of / S /

It occurs in all positions.

Allophones	Description	Examples
[S]	Voiceless velarized fricative	/siin/ china

Phoneme / D / {ض} [daad]

/D/ is produced with the tongue flattened and grooved from the mid back at a point contiguous to the velum and the air comes out through the mouth making an explosive sound with vibration in the vocal cords.

PLACE OF ARTICULATION	Velarized
MANNER OF ARTICULATION	Stops
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / D / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. ضَبَابٌ	2. عُضْوٌ	3. مَرِيضٌ
Dabaab fog	'udw Member	Mariid sick

Allophone of / D /

It occurs in all positions.

Allophones	Description	Examples
[D]	Voiced dental Velarized stop	/DaaD / letter

Phoneme / T / { ط } [taa']

/t/ is produced with the tongue flattened and grooved from the mid back at a point contiguous to the velum and the air is released with friction without vibration in the vocal cords.

PLACE OF ARTICULATION	Velarized
MANNER OF ARTICULATION	Stops
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / t / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. طَبِيبٌ	2. بَطَاطَا	3. بَطٌ
Tabiib doctor	Paṭaṭa Potatoes	Baṭ duck

Allophone of / T /

It occurs in all positions.

Allophones	Description	Examples
[T]	Voiceless dental Velarized stop	/haaʔiT/ wall

Phoneme / Ḍ / { ظ } [Daa']

/ Ḍ / is produced with the tongue flattened and grooved from the mid back at a point contiguous to the velum and the air comes out through the mouth making an explosive sound with vibration in the vocal cords.

PLACE OF ARTICULATION	Velarized
MANNER OF ARTICULATION	Fricative

VOCAL CORDS' VIBRATION	Voiced
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It is also noteworthy that / ð / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. ظَهَرَ	2. يَنْظُرُ	3. غَلِظَ
Zuhr noon	Yanzur look at	ghaliiz thick

Allophone of / ð /

It occurs in all positions.

Allophones	Description	Examples
[ð]	Voiced Velarized inter- dental Fricative	/mɔ̄h ðuuð/ lucky

Phoneme / ɣ / { ع } ['ein]

/g/ is produced by the back of the tongue against the soft palate and the air comes out through the mouth making an explosive sound with vibration in the vocal cords.

PLACE OF ARTICULATION	Pharyngeal
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / g / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. عَامِلٌ	2. شَعْرٌ	3. يَسْمَعُ
'aamil worker	sha'r hair	yasma' hear(v.)

Allophone of / ɣ /

It occurs in all positions.

Allophones	Description	Examples
[ɣ]	Voiced pharyngeal fricative	/ɣælə/ on

Phoneme / ɣ / { غ } [ghein]

PLACE OF ARTICULATION	Velar
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / ǧ / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. غَرْبٌ	2. بَغْدَادٌ	3. بَالِغٌ
Gharb west	Baghdaad Boghdad	baligh mature(adj)

Allophone of / ǧ /

It occurs in all pasitions.

Allophones	Description	Examples
[ǧ]	Voiced velar fricative	/mæʃǧuul/ busy

Phoneme / f / { ف } [faa]

/f/ is produced by lower lip against upper teeth and the air is released with friction without vibration in the vocal cords.

PLACE OF ARTICULATION	Labio-dental
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / f / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. فَنَّانٌ	2. يُفَكِّرُ	3. سَيْفٌ
Fannaan artist	Yufakkir think(v.)	Sayf sword

Allophone of / f /

It occurs in all pasitions.

Allophones	Description	Examples
[f]	Voiceless Labio-dental Fricative	/fæylæsuuf/ philosopher

Phoneme / q / { ق } [qaaf]

PLACE OF ARTICULATION	Uvular
MANNER OF ARTICULATION	Stops
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / q / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. قَادِرٌ	2. فَفِيرٌ	3. دِمَشْقٌ
Qaadir capable	Faqir Poor	dimashq Damascus

Allophone of / q /

It occurs in all positions.

Allophones	Description	Examples
[q]	Voiceless Unaspirated uvular Stop	/qæælə/ he said

Phoneme / k / { ك } [kaaf]

/k/ is produced by the back of the tongue against the soft palate and the air comes out through the mouth making an explosive sound without vibration in the vocal cords.

PLACE OF ARTICULATION	Velar
MANNER OF ARTICULATION	Stops
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / k / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. كِتَابٌ	2. شَكَرَ	3. سَمَكٌ
Kitaab book(n.)	Shakara thank(v.)	samak fish(n.)

Allophone of /k/

It occurs in complementary distribution with [k^h], the latter appearing only in the beginning of stressed syllables and released in word final positions.

Allophones	Description	Examples
[k]	Voiceless Unaspirated Velar stop	/ʃækæ/ he complained
[k ^h]	Voiceless aspirated	/sæmæ k ^h / fish

	Velar stop	
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Phoneme /l / { ل } [laam]

/l/ is produced by tip of the tongue against teeth ridge and the air is released through the sides of the tongue with vibration in the vocal cords.

PLACE OF ARTICULATION	Alveolar
MANNER OF ARTICULATION	Laterals
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / l / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. لَعِبَةٌ	2. جَلَبَ	3. عَسَلَ
lu'bah game	Jalaba bring (v.)	'asal honey

Allophone of /l /

It occurs in all positions except contiguous to /TDSðRL/ and in the word God.

Allophones	Description	Examples
[l]	Voiced alveolar lateral	/læyl/ night
[L]	Voiced velarrzad lateral	/ʔəllaah/ God

Phoneme / m / { م } [miim]

/m/ is produced by upper and lower lips and the compressed air from the lungs comes out through nose with vibration in the vocal cords

PLACE OF ARTICULATION	Bilabial
MANNER OF ARTICULATION	Nasal
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / m / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. مَكْتَبٌ	2. عَمَلٌ	3. وَاسِيمٌ
Maktab office	'amal work(n.)	wasiim handsome

Allophone of / m /

It occurs in all positions.

Allophones	Description	Examples
[m]	Voiced bilabial nasal	/sæmææ?/ sky

Phoneme / n / { ن } [nuun]

/n/ is produced by tip of the tongue against teeth ridge and the compressed air from the lungs comes out through nose with vibration in the vocal cords

PLACE OF ARTICULATION	Alveolar
MANNER OF ARTICULATION	Nasal
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / n / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. نَارٌ	2. مَعْنَى	3. دِينٌ
Naar fire(n.)	ma'naa meaning(n.)	Diin religion

Allophone of / n /

It occurs in all positions.

Allophones	Description	Examples
[n]	Voiced alveolar nasal	/ʔænæ/ I

Phoneme / h / { هـ } [haa]

/h/ is produced in the glottis and the air is released with friction with vibration in the vocal cords

PLACE OF ARTICULATION	Glottal
MANNER OF ARTICULATION	Fricative
VOCAL CORDS' VIBRATION	Voiceless

It is also noteworthy that / h / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
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1. هَذَا	2. نِهَائِيَّة	3. كَرِيهٌ
Haadhaa this(masc.)	Nihaayah end(n.)	kariih unpleasant

Allophone of / **h** /

It occurs in all positions.

Allophones	Description	Examples
[h]	Voiceless Glottal Fricative	/hunæ/ here

Phoneme / w / { و } [waaw]

/w/ is produced by rounded upper and lower lips and the air is released with mild friction with vibration in the vocal cords

PLACE OF ARTICULATION	Bilabial
MANNER OF ARTICULATION	Approximant
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / w / sound compes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. وَرْدَةٌ	2. يَتَوَجَّعُ	3. عُلُوٌّ
Wardah rose(n.)	yatawajja' ache(v.)	'uluww altitude

Allophone of / w /

It occurs in all positions.

Allophones	Description	Examples
[w]	Bilabial Approximant Voiced Nonsyllabic	/læw/ if

Phoneme / j / { ي } [yaa']

/y/ is produced by the back of the tongue against the soft palate and the air comes out through the mouth without any friction but with vibration in the vocal cords.

PLACE OF ARTICULATION	Palatal
MANNER OF ARTICULATION	Approximant
VOCAL CORDS' VIBRATION	Voiced

It is also noteworthy that / y / sound comes in all three positions, i.e. Initial, Medial, and Final (as shown in the following table).

Initially	Medially	Finally
1. يَأْكُلُ	2. جَبِينُ	3. غَالِي
ya'kul eat(v.)	Jabiin Forehead	ghalii expensive

Allophone of / y /

It occurs in all positions.

Allophones	Description	Examples
[y]	Voiced Approximant nonsyllabic palatal	/bæyææ/ statement

Findings and Analysis:

1. The first difference one can find between English and Arabic sound systems is that English has 44 sounds whereas Arabic has 28 sounds.
2. The second remarkable difference one can find in the table above is the number of vowel sounds in English and Arabic are not the same. English has 20 vowels (8 Pure Vowels and 12 Glide Vowels or Diphthongs), whereas Arabic has mainly 3 vowels and 0 diphthongs.
3. If we look at consonant sounds, it is evident that some English consonant sounds like /p/ and /t/ are not found in Arabic. Similarly there are some sounds like /d̤/, /gh/, and /kh/ which are not found in English.
4. English may have initial, medial, and final consonant cluster sounds but Arabic has only medial and final cluster sounds.
5. English has more allophonic variants than Arabic.
6. Arabic uses glottalic sounds /h/ but English doesn't use glottalic sounds.

Transcription	Phonetic Description	Approximate in English
B	voiced labial stop	b
d	voiced alveolar stop	d
<u>d</u>	emphatic voiced alveolar stop	does not exist (similar Don)
f	voiceless labio-dental fricative	f
h	voiceless glottal fricative	h
h	voiceless pharyngeal fricative	does not exist
j	voiced palato-alveolar fricative	j (as in jelly)
k	voiceless velar stop	k
l	alveolar lateral	l
m	bilabial nasal	m
n	alveolar nasal	n
q	uvular stop	does not exist
r	alveolar trill	r

Transcription	Phonetic Description	Approximate in English
s	voiceless alveolar fricative	s
ṣ	emphatic voiceless alveolar fricative	does not exist (similar to Sahara)
t	voiceless dental fricative	t
t̤	emphatic voiceless alveolar stop	does not exist (similar to Tokyo)
z	voiced alveolar fricative	z
ẓ	emphatic voiced alveolar fricative	dh or z (depends on region) vocalic
ʔ	glottal stop	stop
ħ	voiced pharyngeal fricative	does not exist
sh	voiceless palato-alveolar fricative	sh (as in shoes)
th	voiceless dental fricative	th (as in there)
dh	voiced dental fricative	th (as in there)
kh	voiceless velar fricative	kh (does not exist)
gh	voiced velar fricative	gh (does not exist)
y	palatal glide	y (as in yellow)
w	bilabial approximant	w (as in wall)

Future work:

- Phonological study of contrastive minimal pairs in English and Arabic needs to be done.
- Phonological study of Cluster sounds is another area for future work.
- The study of Complementary Distribution in English and Arabic needs to be done in future.
- An indepth study of finding allophone is of great significance for future research.
- More detailed phonological analysis of diphthongs should be done as a part of future research.
- An extensive research is needed to understand the Arabic vowel sound system.

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