Adam Mickiewicz University – Poznań 1993
Papers and Studies in Contrastive Linguistics vol. XXVII

THE CONSONANTS OF ARABIC AND ENGLISH

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The present study is pedagogical in character, which determines our theoretical choices. One of them is the choice of the format; we strongly believe that the best-suited one for such an analysis is functional phonology. The other is the directionality of the analysis; ours is unidirectional from the point of view of an Arab student learning English. However, we try to provide more information on the Arabic system because we assume that a lot of our readers will be less familiar with Arabic than English.

The varieties of Arabic and English that are the basis of our comparison are Modern Standard Arabic (MSA) and Southern Standard (British) English.

MSA is the variety that has evolved from Classical Arabic and is used throughout the Arab world from the Atlantic Ocean to the Persian Gulf by educated Arabs not only in religious rites but also in science, education, and mass media. It is, then, a standardized overall system serving as a lingua franca for communication among educated Arabs.

Obviously, there exist various regional varieties of pronunciation. We shall take note of some of these varieties. We shall especially take note of what we shall call Contemporary Algerian Arabic (CAA) as it is spoken in Eastern Algeria, particularly its major city Constantine, where the present study has been developed.[1]

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[1] Considering the linguistic situation Algeria, one should also include French as a potential influence in the pronunciation of Algerians. French is still widely used as a lingua franca and can be considered as a second language for the older and mid-age generations although, due to arabization in schools, it is becoming a true foreign language for the younger generation.

The comparison is made,
- at the phonemic level, where we discuss the phonemic inventories and their interrelationships;
- at the subphonemic level, where we consider allophonic problems.

The inventories of Arabic and English consonants are to be found on this page.[2] Below, we shall proceed discussing each series at a time.

Place / Manner	bila-bial	labio-dent.	inter-dent.	den-tal	alveo-lar	post-alv.	alv.-pal	pala-tal	vel-ar	uvu-lar	phar-yng-eal	glot-tal
STOPS	p b ⓑ			ⓣ ⓓ Ⓣ Ⓓ	t d				k g ⓚ	ⓠ		ⓟ
AFFRI-CATES						tr dr	tʃ dʒ					
FRICA-TIVES		f v ⓕ	θ ð ⓣ ⓓ ⓓ	ⓢ ⓩ Ⓢ	s z		ʃ ʒ Ⓙ	ⓩ		χ ʁ	ħ ʕ	h ⓗ
NASALS	m ⓜ			ⓝ	n				ɳ			
LATER-ALS				ⓛ Ⓛ	l							
FLAP				ⓡ								
SEMI-VOWELS	w ⓦ				r				j ⓙ			

Arabic consonants are encircled

Stops

Phonemic problems

English has three pairs of stops in the bilabial, dento-alveolar and velar areas.

As opposed to the English system, which is perfectly symmetrical, the Arabic system is skewed: there is no voiceless counterpart of /b/ and no voiced counterpart of /k/. The consequence of this situation can be such that an Arabic-speaking student of English will underdifferentiate the English system, substituting the Arabic (A) /b/ for the English (E) /p/ and the A /k/ for the

[2] For greater clarity of reference we list the consonants of MSA, their distinctive features with examples and corresponding graphemes, at the end of our article.

E /g/. He is faced by a divergent learning structure, which can be presented thus,

As we know from literature, this type of difficulty is one of the most persistent ones and can have serious consequences. The tendency to make these substitutions is countered by several factors. For one thing, we have to do with the so-called empty cases, i.e., holes in the pattern into which the missing phonemes can be easily inserted. Moreover, these sounds can be found in the Arabic system due to phonotactic arrangements and regional variation. Namely, /b/ can be fully devoiced before voiceless consonants and before a pause, as in /darb/ ⇒ [darƀ]~[darp] "way"; and /k/ can be voiced before a voiced consonant, as in /ʔakbar/ ⇒ [ʔagbar] "greatest". Also, in the dialect of Constantine /g/ is frequently used in place of /q/, as in /gilb/ "heart" in place of /qilb/ or /rig/ "saliva" in place of /riq/.

On the other hand, the Arabic system of stops has a greater range of place and manner of articulation; there are uvular and glottal stops, which are distinctive, and a pair of emphatic stops /T D/[3] This results in a convergent learning structure for the Arabic-speaking student, especially in the dento-alveolar area, thus,

Theoretically speaking, the Arab student may overdifferentiate the English system by occasionally using the emphatic stops in place of the E /t d/. The

[3] Emphasis in Arabic is a complex phonetic configuration (cf. Jakobson 1957, Cantineau 1970, Obrecht 1968), which can be summarized as consisting of
- laryngo-pharyngeal constriction,
- raising of the larynx,
- raising of the back of the tongue,
- concomitant lowering of the front of the tongue.

This coarticulation in the Arabic /T D S L/ is by some phoneticians also called velarization or pharyngealization.

same can be said of /q/, which could be used in place of /g/; or /ʔ/, which could be used before vowels, after a pause or between vowels – as it is used in Arabic.

Subphonemic problems

Both in Arabic and English voiceless stops are aspirated before stressed vowels and before a pause. This can be noted as a cause of positive transfer.

In most contexts the English /t d/ are alveolar while Arabic are dental. We might expect the Arab learner to replace the E [T D] by the [ṯ ḏ].

The E /k/ is fronted before front vowels and retracted before back vowels, as in *key, cool.* This should not cause greater difficulties because there is a similar tendency in Arabic.

The English stops are frequently lateralized and nasalized, as in *play, black, flatly, open, button,* etc. These features can be missed because they do not occur consistently in Arabic.

Affricates

There are four affricates in English /tr dr tʃ dʒ/. MSA is said not to have affricates at all. Only regional varieties have this type of phoneme.

Thus, speakers of the Constantine dialect produce /ts/ instead of /t/ and one can occasionally hear /dʒ/ in place of /ʒ/.[4] This dialect has also the phoneme /tʃ/, as in /'tʃi:na/ "oranges", but its functional load is so low that it can only be considered as a marginal phoneme. Otherwise, in MSA, stops /t d/ and fricatives /ʃ ʒ/ are used as separate phonemes.

The consequences of this situation are as follows.

- the E /tr dr/ can be interpreted as sequences /t/+/r/ and /d/+/r/:
- the E /tʃ/ and /dʒ/ can be simplified to /ʃ/ and /ʒ/.
  In Algeria this tendency is reinforced by the influence of French;
- speakers in Constantine should be able to readily produce /tʃ dʒ/.

[4] The pronunciation of /ʒ/ is regionally diversified:
- in many parts of Egypt it is pronounced as /g/,
- in other areas of Egypt it is /d/,
- in the Maghreb countries and Syria it is /ʒ/,
- in Kuwait one can hear /j/.

In Eastern Algeria the pronunciation varies between /ʒ/ and /dʒ/ – thus /'ʒamja/ or /'dʒamja/ "university"– with the former predominating, it seems. A dialectal investigation of the incidence of these two sounds would certainly make a very interesting study.

Fricatives

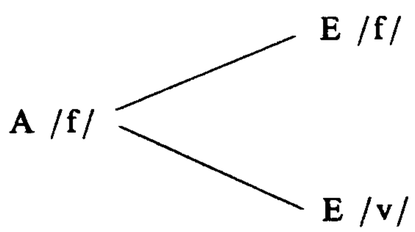
Phonemic problems

English has nine fricatives in the labio-dental interdental, dento-alveolar and glottal areas. Arabic is especially rich in this series: it has fourteen fricatives ranging from the labiodental to the glottal areas. In addition to labio-dental, interdental, dento-alveolar and palatal fricatives, frequently found in other languages, it has pairs of uvular and pharyngeal fricatives as well as two emphatic ones. The richness in the uvulo-pharyngeal area and the emphatic fricatives are some of the most characteristic features of the Arabic sound system.

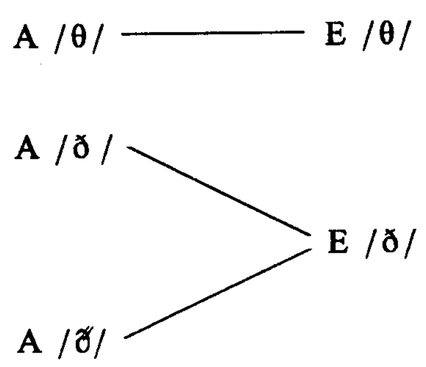
However, as elsewhere in Arabic, there are "holes in the pattern": there is no voiced counterpart of /f/, no voiceless counterpart of the emphatic /ðˁ/ , and no voiced counterpart of the emphatic /S/. Especially the /f/:/v/ asymmetry may have consequences in the Arabic-English contact since it is a case of underdifferentiation of the Arabic system. Fortunately, here again, we encounter a phenomenon of an empty case, a situation facilitated by structural factors (and, in Algeria, the knowledge of French).

At the phonemic level the situation is. then, as follows.

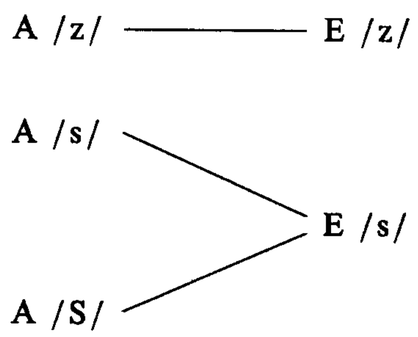
labio-dentals



interdentals

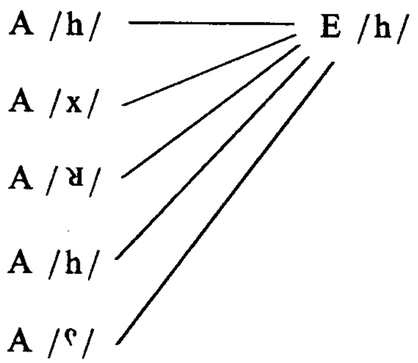


dento - alveolars



alveo - palatals

uvulars - pharyngeals - glottals



The consequences of this situation are such that
- the Arab student may miss the E /v/,
- he may impose his emphatic interdentals and dento - alveolars onto the English system,
- he may impose the uvulars and pharyngeals onto the English system.

Obviously, in the latter two cases, the most probable substitutions are the corresponding non - emphatics and glottals.

Concluding, one should say that in the fricative series there is a lot of correspondence between Arabic and English, Arabic - speaking students having the privilege of facilitation with the English interdentals /θ ð/, dentoalveolars /s z/, alveo - palatals /ʃ ʒ/ and the glottal /h/. All of these pose difficulties for students of English of very many other language backgrounds.

Subphonemic problems

Both English and Arabic /f/'s have a similar articulation; both of them have a bilabial variant, as in E [øʊI] and A ['ʔaøwan] "not at all".

Both English and Arabic have interdental /θ ð/. In Constantine, however, they are articulated as /t d/ or /ts d/. This, obviously, creates a tendency to substitute these sounds in place of the E /θ ð/ by the speakers of this dialect.

The E /s z/ are alveolar while the A /s z/ are dental. The problem for the Arab studying English is to rearrange these features.

The Arabic /ʃ ʒ/ are more palatalized than their English equivalents. A typical Arabic pronunciation of these English fricatives is softer, more palatalized.

As all the other voiced obstruents in English, the voiced fricatives /v ð z ʒ/ are partially devoiced in voiceless environments. Arabic has similar allophones among its obstruents and, therefore, an Arab student should not have greater difficulties, as in *valve, with pleasure, that zone, rouge.*

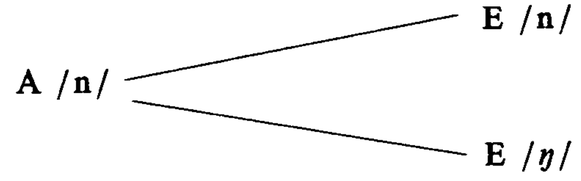
The English and Arabic glottal fricatives have similar articulations. They also have a similar voiced variant [ɦ] in similar contexts, as in /'maha/ "with" and *ahead.* Moreover, the Arabic and English /h/'s are strongly influenced by neighbouring sounds. All this should counteract the theoretically possible tendency of transferring the rich array of other Arabic fricatives from the uvular and pharyngeal areas into the English system.

Nasals

Phonemic problem

In the nasal series English has three phonemes /m n ŋ/ while Arabic only two /m n/.

Quite evidently the problem nasal in the Arabic - English contact is the E /ŋ/. In Arabic it is an allophone of /n/ before velar and uvular stops, as in /hank/ ⇒ [haŋk] "mandible", /'minqar/ ⇒ ['miŋqar] "beak". The Arabic - speaking student faces a divergent structure, thus



Consequently, an Arab student speaking English is strongly conditioned by the context in which the allophone [ŋ] occurs and will tend to insert the conditioning /k g/, thus

/'sɪŋɪŋ/ ⇒ */'sɪŋgɪŋg/

/θɪŋ/ ⇒ */sɪŋk/, etc.

The English spelling, the diagraph ⟨ng⟩, certainly reinforces these pronunciations.

Subphonemic problems

The English and Arabic /m/'s are very similar and should not pose major difficulties. Both languages have similar partially devoiced allophones in voiceless environments.

The English /n/ is alveolar in most contexts while the A /n/ is dental. One might expect a dental pronunciation of the E /n/, a source of slight accent.

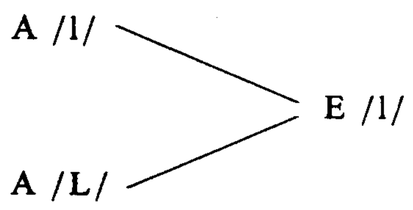
The E /m n/ have syllabic allophones [m̩ n̩], as in *help'em, button.* The Arab student will have a tendency to insert an epenthetic vowel in pronouncing them.

Laterals

Phonemic problems

English has one lateral /l/ while Arabic has two: non-emphatic /l/ and emphatic /L/, as in

/wa'LLah/ "by God!"
/wa'llah/ "he appointed him" (cf. Al-Ani 1970:48).
The Arab student faces a convergent structure, thus:



Subphonemic problems

The principal allophones of the E /l/ are the light [l] occuring prevocalically and the dark [ɫ] occurring before consonants and before a pause.

Arabic has no dark allophone of its /l/ in those contexts, but a similar sound is a marginal phoneme /L/, as in the word *Allah* or when contiguous to other emphatic consonants, as in /'TaLLa/ "he peeped". As a result one can expect to hear light [l]'s in the English words like *cold, call.*

The E /l/ has a dark syllabic [ɫ̩] after /t d s z n/, as in *battle, hustle,* etc. An Arabic speaker may produce a light [l] plus an epenthetic schwa in those contexts.

Flap

There is no flap in the phonemic system of English we are considering.

The Arabic flap may be a source of substitutions for the E /r/'s (see below).

Semivowels

Phonemic problems

English has three semivowels /w r j/. Arabic has two – /w j/. The only difficulty in this series is with the E /r/, which can be replaced by the closest sonorant, the flap /ɾ/. We believe that this substitution is caused by several factors: functional and/or phonotactic. Both the flap and the semivowel /r/ have a similar function in the syllable, which is that of a marginal element that occurs directly before the vocalic nucleus. In English and many other languages in clusters consisting of obstruents and sonorants the latter occur directly before the vocalic nucleus while the former are further removed from it, as in *sl–, spl–, pr–, spr–,* etc. As a true consonant the A /r/ is also a marginal element in a syllable.

Subphonemic problems

Following the reasoning from the previous paragraph, we can assume that prevocalic semivowels in *red, ride* will be replaced by flaps. The same is assumed concerning the partially devoiced allophones in price, cry, etc.

The closest to the Arabic flap /ɾ/ is the English tap [ɺ], as in carry, through, etc. Here, transfer from Arabic renders almost the same sounds.

THE CONSONANTS OF ARABIC

Phoneme	Distinctive features	Example	Grapheme
STOPS			
/b/	bilabial stop	/ba'ri:d/ "mail"	< >
/t/	vl non-emphatic dental stop	/ti:n/ "figs"	< >
/d/	vd non-emphatic dental stop	/dar/ "house"	< >
/T/	vl emphatic dental stop	/'maTar/ "rain"	< >
/D/	vd emphatic dental stop	/bajD/ "eggs"	< >
/k/	velar stop	/'kataba/ "write"	< >
/q/	uvular stop	/'qaraʔa/ "read"	< >
/ʔ/	glottal stop	/'ʔakala/ "eat"	< >

FRICATIVES

/f/	labio-dental fricative	/ʔalf/ "thousand"	<	>
/θ/	vl interdental fricative	/ʔa'θa:θ/ "furniture"	<	>
/ð̸/	vd non-emphatic interdental fricative	/ðajl/ "tail"	<	>
/ð/	vd emphatic interdental fricative	/'ðanna/ "think"	<	>
/s/	vl non-emphatic dental fricative	/su'ʔa:l/ "question"	<	>
/S/	vl emphatic dental fricative	/Sa'ba:h/ "morning"	<	>
/z/	vd dental fricative	/za'bi:b/ "raisin"	<	>
/ʃ/	vl palatal fricative	/ʃams/ "sun"	<	>
/ʒ/	vd palatal fricative	/ʒa'mi:l/ "beautiful"	<	>
/x/	vl uvular fricative	/'xaraʒa/ "to go out"	<	>
/ʁ/	vd uvular fricative	/'ʁadan/ "tomorrow"	<	>
/ħ/	vl pharyngeal fricative	/'ħaraka/ "movement"	<	>
/ʕ/	vd pharyngeal fricative	/ʕabd/ "slave"	<	>
/h/	glottal fricative	/'huwa/ "he"	<	>

NASALS

/m/	bilabial nasal	/ʔi'ma:m/ "priest"	<	>
/n/	dental nasal	/'na:ma/ "sleep"	<	>

LATERALS

/l/	non-emphatic lateral	/lahm/ "meat"	<	>
/L/	emphatic lateral	/ʔaLLah/ "God"	<	>

FLAP

/r/	(dental) flap	/ri:m/ "deer"	<	>

SEMIVOWELS

/w/	labio-velar semivowel	/'walad/ "child"	<	>
/j/	palatal semivowel	/ja'ʒi:ʔu/ "he comes"	<	>

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