DIFFERENCES IN DISTRIBUTION
BETWEEN ARABIC /l/, /r/ AND ENGLISH /l/, /r/

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Phonetic differences between lateral and trill articulations in "emphatic"[1] and "non-emphatic" contexts raises special problems for Arabic speakers of English, since differentiation depends on syntagmatic implications different from those relevant to English.[2]

I. In the main, two chief varieties of Arabic /l/ are distinguished:[3]

(i) "clear" l with resonance approximating to a front close vowel |i|. Contact is typically made between tongue tip and the alveolar ridge, allowing air to escape at one or both sides of the tongue. The front of the tongue is raised towards the hard palate as for a front close vowel |i|. The back of the tongue is depressed in relation to the roof of the mouth.

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[1] "Emphatic" consonants in Arabic may be defined in general terms as those consonants in the pronunciation of which the tongue is laterally expanded throughout its length and flattened in rear tip, as opposed to "non-emphatic" consonants in the pronunciation of which the tip and blade of tongue make contact with both dental and alveolar zones of the plate. The tongue is laterally contracted along its length.

[2] Reference is made to Standard Jordanian Arabic, a variety used by educated speakers. Comparisons are made between Standard Jordanian Arabic and relevant features of RP (Received Pronunciation).

[3] Brief reading conventions for the letters of Arabic words are as follows: —

d: Voiced denti-alveolar 'non-emphatic' plosive
D: Voiced denti-alveolar 'emphatic' plosive
t: Voiceless denti-alveolar 'non-emphatic' phosive
T: Voiceless denti-alveolar 'emphatic' plosive
S: Voiceless denti-alveolar fricative
X: Voiceless uvular fricative
G: Voiced uvular fricative

(ii) a "dark" |l| with resonance approximating to a back close vowel |u|, in the pronunciation of which the tip of the tongue is raised to make contact with the teeth-ridge as for 'clear' |l| but the back of the tongue is raised towards the soft palate as for a close rounded vowel |u|. When the closure is removed, the air escapes on one or both sides of the tongue. 'dark' *l* occurs in the following contexts:—

(A) *Before or after a unitary complex of back vowel and an "emphatic" consonant:—*

(i) *Before a back vowel and an "emphatic" consonant, e.g.*

/la Hath/ 'noticed'	/laa Ta x/ 'threw'
/la Tam/ 'slapped'	/laT af/ 'made gentle'
/la tham/ 'threaded'	/laS am/ filled up'

(ii) *After a unitary complex of back vowel and an "emphatic" consonant; e.g.*

in word-medial position	*in word-final position*
/Tala b/ 'request'	/baTal/ 'hero'
/XalaT/ 'mixed'	/baSal/ 'onion'
/Tala:q/ 'divorce'	/haTal/ 'rained'
/SalaTa/ 'salad'	/maSl/ 'vaccine'

(B) *After or before a uvular plosive or a uvular fricative|* e.g.

/Halq/ 'throat'	/baGl/ 'mule'
/xalq/ 'people'	/SuGl/ 'work'

'clear' |l|, on the other hand, appears in 'non-emphatic' context, i.e. before or after a unitary complex of vowel +a 'non-emphatic' consonant, e.g.

Word-initial	*Word-medial*	*Word-final*
/lamas/ 'touched'	/balaH/ 'dates'	/9asal/ 'honey'
/lasa9/ 'sting'	/balad/ 'country'	/kasal/ 'laziness'
/labis/ 'dressed'	/walad/ 'boy'	/mathal/ 'example'
/lama9/ 'sparkled'	/malal/ 'boredom'	/?ad3al/ 'time'

9: Voiceless pharyngeal fricative
H: Voiceless pharyngeal fricative
?: Glottal Stop
l: Voiced denti-alveolar "dark" lateral
l: Voiced denti-alveolar lateral
t: Voiced alveolar flap
th: Voiceless dental fricative
th: Voiced dental 'emphatic' fricative
s: Voiceless palato-alveolar fricative
d3: Voiced palato-alveolar affricate.
a: front open vowel
a: back open vowel

If the structure of the word is expressed in terms of Consonant (C), Vowel (V) and prosody[4], features of whole words are abstracted and allotted to *prosodies*.[5] On the basis of the phonic data, the following word prosodies relevant to 1:*l* categories are set up:

(a) *y prosody* characterizing words having front vowels+'non-emphatic' consonants and *w prosody* characterizing words having back vowels+"emphatic" consonants. A generalised statement of tri-syllabic word structure involving is as follows:—

$$Y/wc_1 \ vc_2 \ vc_3$$

Within the structure of the word, it is necessary to recognize that the occurrence of a given feature in any place of tri-consonantal root (i.e. at C_1, C_2, or C_3) would entail occurrence of compatible features (identical consonants) in either of the two adjoining places. Hence, the realization of "clear"/l/ is determined by a phonetic context in which compatible "non-emphatic" consonants regularly recur; occurrence of a "non-emphatic" lateral at C_1 would exclude the possibility of occurrence of an "emphatic" consonant at C_2 or C_3 positions. Conversely, the occurrence of 'dark' /l/ at C_1—C_2 would exclude the possibility of occurrence of non-emphatic' consonants in either of the two remaining places. The following combinatory possibilities of 'dark' laterals are attested:—

Sequence	*Attested Combinations*
(i) C_1—C_2	/l—T/
	/l—th/
	/l—x/
	/l—q/
(ii) C_1—C_3	/l—m/
	/l—th/
	/l—b/
	/l—f/
(iii) C_2—C_3	/l—b/
	/l—T/
	/l—S/

It can be seen that laterals are 'dark' in articulation when they precede "emphatic" or "uvular" consonants in any pattern and their potential admissible combinatory possibilities are restricted to "emphatics" and labials (cf. examples).

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[4] The structure of the word may be stated in terms of two generalized kinds of elements: Consonant (C) and Vowel (V). Thus, the structure of the word /munxul/ 'sieve' may be stated as (CVCCVC) (cf. Waterson 1956).

[5] Cf. Ribins (1966), *op. cit.* p. 3.

II. *Trill Articulations*:

The most common variety of Arabic /r/ is a voiced alveolar trill in the pronunciation of which the tip of the tongue makes a series of taps against the alveolar ridge. Distribution of Arabic trill consonants exhibits a similar pattern to that of "emphatic" consonants in that the quality of the open vowel in the environment is invariably back, cf.

Frontness	*Backness*
(i) /sama/ 'sky'	/rama/ 'threw'
/masa/ 'walked'	/rasa/ 'bribed'
/lawa/ 'folded'	/rawa/ 'said'
(ii) /falak/ 'heaven'	/farak/ 'thrashed'
/balad /'country'	/barad/ 'hail'
/hazad3/ 'ballads'	/harad3 'uproar'
(iii) /Had3al/ 'stalk'	/Had3ar/ 'stone'
/kasal/ 'laziness'	/kasar/ 'broke'

Differentiation between contrastive forms relating to consonant-vowel relations comprises the following features:—

(i) A trill consonantal articulation is always followed or preceded by a back open Vowel,

(ii) All other consonants (except uvular plosive and uvular fricatives) are preceded and/or followed by a front open Vowel.

III. *Comparison Between Arabic /l/, /r/ and English /l/, /r/*

A. *Laterals*:

Although two major resonance categories are recognised for RP English (Gimson 1965), viz. 'clear' and 'dark', the contextual distribution of either variety of /l/ is quite different from those described for Arabic. Features of *lateral* accompaniment in successive places or exclusion are of a different order from those relevant to RP. This is particularly noticeable in respect of "dark" lateral articulation which varies regularly in association with equally varying "emphatic" consonantal and "backer" vocalic features of the environment. Distribution of the three principal allophones of RP /l/ is as follows:— (cf. Gimson 1965).

(i) The 'clear' lateral allophone /l/ appears in word-initial and syllable-initial positions and between vowels

(ii) The 'dark' allophone /l/ appears in word-final and syllable-final positions, and between vowel and following consonant, e.g. *doll, poll, silver*.

(iii) A partially voiceless lateral /l/ after word-initial stops, e.g. *please*/pli:z/, *clay* /klei/.

The effect of differences in distribution of 'clear' and 'dark' varieties of /l/ on the Arab learner's response to English is clearly felt when English 'dark' is realised as "clear" in positions where it should appear "dark", i.e. after a vowel, e.g. *feel*.

B. *Trills*:

The most common variety of RP /r/ is a post-alveolar frictionless continuant (cf. Gimson 1965), which appears (i) initially before a vowel (e.g. *road*). (ii) following a lenis consonant except /d/ (e.g. *bribe*) and (iii) in syllable-initial cluster (e.g. *gross*).

In contrast to RP /r/. Arabic /r/ is a lingual roll. Greater tolerance is permitted to combine with other consonants and particularly in word-final positions. Pronunciation errors arise from defferences of phonetic features between Arabic /r/ and RP /r/ and from other associated features of syllabication peculiar to Arabic word structure. Hence, English sequences such as /r/+front half-open vowel are realised by Arab speakers as /r/+back open vowel, parallel to the Arabic unitary complex of /r/+back open vowel, cf. JE (Jordanian English *RP*

JE	*RP*	
/rapid/	/rapid/	*rapid*
/rabit/	/rabit/	*rabbet*
/karut/	/karat/	*carrot*
/radiš/	/radis/	*raddish*
/ratil/	/ratal/	*rattle*

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