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The phonetic and phonological status of the *r*-phones in Tunisian Arabic

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Some aspects of the participation of the *r*-phones in the phonetic and phonological systems of Tunisian Arabic are discussed against the background of a brief acquaintance with the situation obtaining in Standard Arabic and Classical Arabic. In contemporary Tunisian Arabic six *r*-phones occur and the relations of free variation, complementary distribution and phonological opposition between them are examined. The assimilation of the [r] to [l] is touched upon. The situation of *r*-phones in other Arabic dialects is addressed.

Keywords: Tunisian Arabic, the phonetic and phonological systems of Tunisian Arabic, Tunisian dialects

1. Introductory remarks

The purpose of this article is to outline the phonetic and phonological status of the *r*-phones in Tunisian Arabic (henceforth *TA*). This dialect is one of the communication means used in the ARABIC COMMUNICATIVE COMMUNITY (*ACC*). Following Ludwik Zabrocki, the communicative community is understood here as a group of people capable of exchanging messages (information) irrespective of the communication means being used (cf. Zabrocki 1970; 1972). The lingual (glossic) situation within the *ACC* is extremely complex and presenting it transparently is rather challenging. It can even be said that an adequate image of this situation can hardly be projected with exactitude. The *ACC* is diversified both lingually and lectally, and within it various language subcommunities can be distinguished including the following:

- (i) General Arabic language community (*GALC*), and
- (ii) National Arabic language communities (*NALC*), that is Arabic language subcommunities limited mainly to particular countries, such as: Egyptian, Iraqi, Tunisian, Moroccan, and others.

The *GALC* is served allegedly by General Arabic (*GA*), called Modern Standard Arabic (*MSA*). However, the status of this language is not clear, so it seems advisable to distinguish two varieties of it, that is:

- (i) Pan-Arabic (*PA*), and
- (ii) National Pan-Arabic language varieties (*NPA*) used in particular Arab countries.

Among these latter there can be distinguished, respectively, such quasi-vernacular or rather nationwide varieties as: egyptified, iraqified, tunisified, moroccified, etc.

In addition to these national varieties of *NPA*, there also developed in Arabic countries, on the basis of local dialects, supradialectal varieties. The unificative politico-sociolinguistic processes brought thus about that in the Tunisian communicative community there operate the following three language varieties, that is:

- (i) Pan-Arabic (*PA*),
- (ii) Tunisified Pan-Arabic (*TPA*), and
- (iii) Pan-Tunisian Arabic (*PTA*).

A similar triglossic diversity is characteristic of all Arab countries.

An idea believed by many Arabs is that the Pan-Arabic language serves the whole *ACC*, and it is relatively uniform continuing the *CLASSICAL ARABIC* in a certain sense. However, it does not seem that a variety of Arabic, exhibiting those properties enjoys a real existence. Putting it differently, there is of yet no fully fledged Arab language community using such a uniform Arabic language. Consequently, for the time being, Pan-Arabic can be treated, at best, as a language in highly restricted use, that is, not commonly utilized in practice. Namely, it cannot be denied that there happen to be speakers of Arabic which have mastered Pan-Arabic to a nearly ideal degree. It can be heard in some religious programs (for example in Quran recitations) or in radio or television broadcasting.

The term *LITERARY ARABIC (LA)* can, in turn, be referred both to

- (i) the actually used *PAN-ARABIC* and
- (ii) the varieties of *NATIONAL PAN-ARABIC*

Before proceeding to the discussion proper intended by this article, that is, to the status of *r*-phones in *TA* some terms necessary for the understanding of the course of subsequent argumentation should be explained.

The term *r*-PHONES, will be in fact restricted to the set of all *r*-like phones occurring in *TA*. The phone (speech sound) as phonetic object, may be understood in various ways. In order to avoid misunderstandings it is advisable to characterize the present approach to the ontological status of this object and the objects primarily related with it, that is to say, sound and phoneme.

For the purpose of defining the phone, the *SOUND* conceived of here as a minimal lingual unit will be availed of. Every sound is a concrete individual articulatory-acoustic-auditive object. Being a one-time object, the sound itself irrecoverably disappears in

the past, after it was produced. Having recorded a sound, only its acoustic or articulatory images are fixed. But the sound and its images are different things.

Having the sound to hand, it is possible to define the *PHONE* as the set of all sounds, homophonous with a given sound. Consequently, sounds are elements of the corresponding phones. In relation to the sounds, which are concrete individual objects, the phone as a set of sounds is already an abstract object. For transcribing the phones the symbols devised by the IPA will be applied.

Having established the inventory of phones for a given language, the concept of the phoneme can be introduced. In the approach, the *PHONEME* is defined as a set of phones being in the relation of free variation or complementary distribution and sufficiently similar phonetically but not bound by phonological opposition. Of course, this definition is not completely precise, although satisfactory for the present purposes. The phoneme as a set of phones is already more abstract than the phone.

The above remarks should at least to a decent extent level the ground for bringing the *r*-phones of Arabic and Tunisian Arabic up for discussion.

2. *r*-phones in Literary Arabic

Traditional Arabic grammar has long directed considerable attention towards the phonetics of the Arabic language, and this was due to the following objectives:

- (i) the ascertainment of the correct pronunciation of words for the purposes of the recitations of Quran;
- (ii) the determination of the function of phonetics in syntax, morphology, and semantics (cf. Bogusławski 2016: vol. I, 130-135, 347-350, 387-388);
- (iii) the identification of phonetic differences in dialects;
- (iv) the thorough examination of the functioning of the speech organs for the articulatory description of phones.

What is amazing is that these articulatory descriptions have long been very precise, and in fact do not differ from those of today.

Sibawayhi characterized the *r*-phone as vibrant (*ḥarf mukarrar* ‘repetitious sound’) and occlusive (*šadīd*). The former term was also later used with the same meaning. Other grammarians also used such terms as: *taḍ’īf*, *tarḡī’*, *irti’ād*. All these terms describe a quick vibrating movement of the tip of the tongue touching the upper gum. Contemporary Arab grammarians in principle do not differ from the old ones, treating, however, the *r*-phone not as occlusive (*šadīd*) but as a liquid.

Based on contemporary experimental studies in Arabic phonetics (cf. Jameel et al. 2009) the phone [r], in isolation, is described as: trill (vibrant), apical, alveolar and voiced. It is thus produced with vibration of the tip of the tongue against the upper gum, about 6 times. Simultaneously, the back part of the tongue (postdorsum) moves somewhat back in the direction of the back wall of the pharynx and up towards the soft palate (velum). It is articulated with spread lips, that is, the aperture between the lips is extended laterally. The predorsal part of the tongue is slightly caved in. The

duration time of the articulation of this phone is circa 15-22 msc. The geminate [rr] is twice as long as single [r].

In addition to the trill variant [r̄] also the tap variant [ɾ] should be distinguished, articulated with the shortest contact possible between articulators while the apex strikes only once the upper gum. In contrast to [r̄], the postdorsum is slightly lowered and slightly shifted forward. All other features of [ɾ] do not differ from those of [r̄]. The tap [ɾ] is restricted to certain positions and some speakers. It occurs before [i], [a] and [u] (cf. Jameel et al. 2009: 927ff).

For the sake of summarizing this section let us say that the status of *r*-phones within Arabic phonetic and phonological systems is not completely clear, whence it has been a subject of a rather unending dispute. The inquiry into the phonetic properties of these phones as regards the dimension Plainness (Nonemphaticity)/Emphaticity and the dimension of the degree of Emphaticity (Emphasis) reveals considerable diversity of opinions. In consequence the identification of the distinctions in the set of *r*-phones as: primary emphatic vs secondary emphatic vs emphaticized is controversial. Thus, for example, some scholars classified *r*-phones into *mufahhama* (emphatic) and *muraqqaqa* (? nonemphatic), although this latter term is rather ambiguous (cf. Cantineau 1941/1960: 48ff; Younes 1994: 216ff). Also the classification of emphatic consonants into primary and secondary by various linguists may differ and it also affects the classification of *r*-phones. In consequence, such and similar problems make the establishment of the set of *r*-phones in Arabic far from easy and it leads to various solutions (cf. Maamouri 1967/1984: 38ff; Oueslati 2015: 257ff).

3. The phonetic relations binding the *r*-phones in *TA*

The set of *r*-phones in *TA* is comprised of the following five elements:

- (i) plain [r];
- (ii) emphatic [r̄];
- (iii) long [rː];
- (iv) palatalized [rʲ];
- (v) tap [ɾ], and
- (vi) uvular [R].

In this section the discussion will concern some interphone relations based on the corresponding properties, that is:

- (i) articulatory, and
- (ii) distributional.

The former properties are derived from the production of phones, and the latter from their occurrence in longer lingual units such as syllables, morphs, words.

3.1. Articulatory characteristics

In regard to their articulation the first five *TA* phones enumerated above do not diverge much from the respective phones in Arabic, as far as voicedness, vibration, place of articulation, and articulator are concerned. The palatalized [rʲ] is characterized by the elevation of the antedorsum towards the hard palate (palatum). And this movement of the tongue is similar to that of the vowel [i].

The emphatic [r̥] of *TA* diverges in some respects from the emphatic [r̥] of Arabic, in that the *TA* phone is somewhat weaker with regard to the degree of emphasis. But similarly to Arabic also in *TA* the two variants, showing different degrees of emphasis, can be distinguished: a weaker (lenis) and a stronger (fortis). These variants also depend on their phonetic neighborhood. Thus, for example, emphatic fortis occurs mainly in the environment of emphatic consonants or back vowels. However, in order to create a more adequate image of [r̥] there should be distinguished within it two subphones, that is, a primary and secondary emphatic. The former is emphatic irrespective of the emphatic consonant environment and occurs only in the following words: [baʁri·] ‘my land’, [mʁa·] ‘woman’, [ʁa:ʒɪ] ‘man’. On the contrary, the latter is conditioned by the emphatic consonants and back vowels: [ðʁa:jɪr] ‘co-wives pl’, [toʁoq] ‘ways, methods’, [ʃʁaf] ‘he spend money’.

The phone [r:] is usually interpreted morphologically as geminate [rr]. Its occurrence is restricted to intervocalic and final position. However in this latter position it is semi-long. And may be exemplified as follows:

(3.1)

[mur:a:ra] ‘gall bladder’; [bɛr:ɛ:d] ‘teapot’; [hɔr:a:s] ‘police officers’
[ħar·] ‘heat’; [gær·] ‘to own up’; [ʃar·] ‘malignity; hunger’

The [R] occurs solely in words borrowed from the French language. Over the years, *TA* absorbed a considerable number of French loanwords. In some of these words the uvular [R] appears. This phone may be treated in *TA* in a twofold way, that is:

- (i) it is preserved as uvular or most frequently
- (ii) it is replaced by the apico-alveolar [r].

These two cases may be exemplified as follows:

(3.2)

<i>robe</i> [Rɔb] ‘dress’		[Rɔb] [rob] [ru:bɛ]		[rwɔb] ‘dresses’
<i>fourchette</i> [fuRʃɛt] ‘fork’		[fuRʃɛt] [fuʁʃɛt] [fuʁʃi:ta]		[fra:ʃiʔ] ‘forks’

The articulation of [R] is characterized by the approximation with the back of the tongue to the uvula, which results in French either in uvular trill or uvular fricative. These two variants of [R] may also be encountered in Tunisian speakers.

However it should be borne in mind that not all *r*-phones distinguished articulatorily are easily distinguished auditorily. In particular the palatalized [rʲ] and tap [ɾ] may not be perceived as distinct from the plain [r].

3.2. Phonotactics

Before proceeding to the phonological relations in which *r*-phones are involved, it would be advisable to inspect all phone environments in which these phones occur. However, subsequently attention will be limited to certain selected problems. Thus, only the environments of the plain [r] will be exemplified in detail, whereas the environments of the other *r*-phones will be only generally touched upon.

The environment of [r] will be presented in terms of the immediately preceding and the immediately succeeding vowels and consonants.

3.2.1. The immediately preceding vowels

Table 3.2.1

Phone in IPA	Examples
[a]	farsa ‘mare’
[ɑ]	tɑrtu:r ‘non respected, weak (man), henpecked husband’
[ɛ]	bɛrd’æ ‘donkey saddle bag’
[æ]	hærdɛ:n ‘finishing (of a grave site)’
[u]	furgæ ‘keeping one’s distance, separation’
[o]	xoroʒ ‘hoop earrings’
[a:]	fa:ra ‘mouse (female)’
[ɑ:]	xɑ:r ‘bet’
[ɛ:]	bɛ:rdɛ ‘cold (feminine)’
[u:]	fu:r ‘oven’
[o:]	’o:ra ‘women with lazy eye’

3.2.2 The immediately succeeding vowels

Table 3.2.2

Phone in IPA	Examples
[a]	brad ‘hail’
[ɛ]	mɛʒ ‘stress, pressure, tension’
[u]	ɦru:f ‘letters (of alphabet)’
[o]	xoroʒ ‘saddle bags’
[a:]	xra:fɛ:t ‘folktales; myths; gossips’
[ɛ:]	mɛ:ʒ ‘mirror’
[u:]	ɦru:rijjæ ‘hot, spicy’
[o:]	ro:h ‘soul’

3.2.3. The immediately preceding consonants

Table 3.2.3

Phone in IPA	Examples
[b]	brɛ:ri:d 'tea kettles'
[m]	ħomra 'red spot'
[w]	wraq 'paper; leaves'
[f]	fru:ħa:t 'occasions for celebration'
[θ]	θra 'richness (for example, of land)'
[ð]	ðrɛ:ri 'children, kids'
[ð̣]	ħaðra 'occasion of (Sufi) religious observance'
[t]	mɛtru:s 'hobbled'
[d]	dru:s 'lessons'
[n]	nrod 'I vomit'
[ṭ]	maɾu:d 'expelled (masculine)'
[s]	mosra:na 'intestine'
[z]	zɾɪd 'petitioning (to a Saint) plural'
[r]	'orra 'a rude, a savage (woman)'
[ʂ]	ħaʂra 'being locked up, closed in'
[ʃ]	fra:b 'alcohol'
[ʒ]	ʒra:n 'frogs'
[j]	ħæ:jre 'lazy (feminine)'
[k]	kram 'fig tree'
[g]	gru:n 'horns'
[q]	qra:ja 'attendance (at a school), reading'
[x]	baxra 'woman with bad breath'
[ʎ]	ya:m 'hobbyist, addict (metaphoric)'
[ħ]	ħrɛ:m 'item of traditional clothing (of women)'
[ʻ]	fa'ra 'a hair'
[h]	mohra 'filly'

3.2.4. The immediately succeeding consonants

Table 3.2.4

Phone in IPA	Examples
[b]	rbu:x ‘compelling (to dance) rhythm’
[m]	marma ‘goal area’
[w]	marwid ‘wooden tool for separating, for example oil and water’
[f]	rfu:f ‘shelves’
[θ]	ħarθa ‘turning the soil’
[ð]	morða ‘sick (plural)’
[t]	rtɛ:ħ ‘he rested’
[d]	zɛrdɛ ‘petitioning (to a Saint)’
[n]	ħarna ‘stubbornness (of an animal)’
[t]	rɪal ‘pound’
[s]	rse:le ‘letter’
[z]	xærzɛ ‘bead’
[r]	ʃorra/sorra ‘package; navel, belly button’
[s]	‘arʃa ‘pole, pillar’
[ʃ]	ħarʃa ‘coarse, rough’
[ʒ]	darʒa ‘step’
[j]	mɛrju:l ‘sweater’
[k]	rka:k ‘unpleasant children, brats’
[g]	marga ‘type of goulash; sauce’
[q]	’arqa:m ‘numerals, numbers’
[x]	fɛrxæ ‘pullet’
[ʏ]	fɛ:ryæ ‘empty (feminine)’
[ħ]	marħu:l ‘expedition’
[ʔ]	rʔad ‘thunder’
[ʔ]	marʔu:s ‘under (a person in a hierarchy)’
[h]	rhan ‘deposit (as on a bottle)’

The Table 3.2.3 and 3.2.4 give the information on the *consonant clusters of the types C + r and r + C*, respectively, occurring in *TA*. In order to draw attention to the abundance of the clusters of these types some of them will be enumerated and exemplified.

3.2.5. Consonant cluster type C + r

Table. 3.2.5

Type consonant cluster with phone <i>r</i>	Examples
br	brom 'clay pots'
mr	ħamra 'red'
wr	wrag 'leaves'
fr	frɛ:di 'bracelets'
θr	'aθra 'stumbling'
ðr	ðrɛ:ri 'children, kids'
ðr	ðrab 'he beat (someone)'
tr	'ætrɛ 'short (of skirt)'
dr	dru:r 'unseen paths'
nr	nru:h 'I go'
ʈr	ma:ʈra 'rainy'
sr	srad 'very cold (weather)'
zr	xazra 'look, glance; diarrhea'
rr	sɛrrɛ:j 'early bird'
ʃr	yaʃra 'being startled'
ʃr	maʃru:b 'drink'
ʒr	ʒra:d 'locust'
jr	ʒɛ:jrɛ 'jealous(feminine)'
kr	kra' 'leg, foot'
gr	grɛ:d 'ticks'
qr	faqra 'paragraph'
xr	foxra 'bragging'
ʎr	ʎra:m 'hobbyist, addict (metaphoric)'
ħr	sɛ:ħrɛ 'witch'
'r	'rɛ:'nakedness, being in the open'
hr	sahra 'nighttime party'

3.2.6. Consonant cluster type *r* + *C*

Table 3.2.6

Type consonant cluster with phone <i>r</i>	Examples
rb	rbo' 'a fourth'
rm	garma 'a large piece of fire wood'
rw	rwɛ:ri' 'lungs'
rf	ħɪrfɛ 'craft, trade'
rθ	ħarθa 'turning the soil'
rð	rðɑ' 'he accepted'
rt	rtɛ:h 'he rested'
rd	zɛrdɛ 'petitioning (to a Saint)'
rn	ħarna 'stubbornness (of an animal)'
rʈ	rʈɑl 'pound'
rs	rse:lɛ 'a letter'
rz	rzɪm 'load, especially wrapped or in bag'
rr	girre 'long lasting rain; war'
rʂ	garʂa 'pinching'
rʃ	barʃa 'much, many'
rʒ	'arʒa' 'having a limp (feminine)'
rj	rju:g 'saliva'
rk	'arka 'fighting'
rg	farga 'parting (hair)'
rq	firqa 'group of people'
rx	rxɑ:m 'marble'
ry	ryæ' 'loud crying'
rħ	rħɑ:m 'vulva and birth canal'
rʻ	marʻɑ' 'pasture'
rʼ	marʼu:s 'under (a person in a hierarchy)'
rh	marham 'pomade'

All the above tables show a rather high susceptibility of the plain phone [r] to combine with other phones whereby its least restrictive distribution, in comparison to emphatic [r] and [rʃ], becomes evident.

4. The *r*-phones in the phonological system of *TA*

The phonological system may be conceived of as an object consisting of:

- (i) the set of phones of a given language or dialect and at least
- (ii) three relations defined on this set, that is, phonological opposition, free variation, and complementary distribution.

Each of these relations, as a binary, will bind the corresponding phones, and thus it can be treated as a set of the corresponding pairs of phones.

4.1. Phonological opposition *r* vs *C*

Each element of this relation is thus a pair of phones, one member of which is [r] and the other a consonant different from [r]. Such a pair is based in turn upon minimal pairs consisting of two words with distinct meanings. Below, some of the pairs belonging to the phonological opposition *r* vs *C* will be enumerated and exemplified accordingly.

(4.1)

- | | |
|--------------|---|
| ([r], [b]): | ([ru:h] 'soul', [bu:h] 'admit it!') |
| ([r], [m]): | ([ru:s] 'heads', [mu:s] 'knife; razor') |
| ([r], [w]): | ([dɛ:rɛ:] 'he covered it up', [dɛ:wɛ:] 'he treated a patient or illness') |
| ([r], [f]): | ([ru:h] 'soul', [fu:h] 'smell good (imp)') |
| ([r], [θ]): | ([rni:jæ] 'feckless', [θni:jæ] 'road to a place') |
| ([r], [ð]): | ([jru:b] 'it ferments', [jðu:b] 'it melts') |
| ([r], [t]): | ([ru:mi:] 'non-Arab', [tu:mi:] 'twins') |
| ([r], [d]): | ([ro:h] 'soul', [do:h] 'crib') |
| ([r], [n]): | ([ru:m] 'accept it!', [nu:m] 'sleeping') |
| ([r], [t]): | ([ra:f] 'he had compassion for', [tɑ:f] 'he rode with the Kaaba, he wandered around') |
| ([r], [s]): | ([ru:m] 'accept it!', [su:m] 'price') |
| ([r], [z]): | ([ru:z] 'rice', [zu:z] 'twice') |
| ([r], [r:]): | ([ħa:ra] 'four', [ħa:r:a] 'hot, spicy (taste)') |
| ([r], [l]): | ([ru:h] 'soul', [lu:h] 'wood') |
| ([r], [s]): | ([rad:] 'he vomited; repeated', [ʃad:] 'he didn't allow it') |
| ([r], [ʃ]): | ([mrɛ:] 'keeping up with the Joneses', [mʃɛ:] 'he went away') |
| ([r], [ʒ]): | ([ru:f] 'be good (to a person)!', [zu:f] 'stomach') |
| ([r], [j]): | ([ru:mi:] 'non-Arab', [ju:mi:] 'my day') |
| ([r], [k]): | ([ru:s] 'heads', [ku:s] 'triangle') |
| ([r], [g]): | ([fu:r] 'oven', [fu:g] 'over, above') |
| ([r], [q]): | ([ra:m] 'he accepted', [qa:m] 'he stood') |
| ([r], [x]): | ([ru:f] 'be good (to a person)!', [xu:f] 'fear') |
| ([r], [y]): | ([rsɛ:lɛ] 'a letter', [ysɛ:lɛ] 'dishwater; water after laundry') |
| ([r], [h]): | ([ru:m] 'accept it!', [hu:m] 'wander!') |
| ([r], [ʔ]): | ([rbɛ:jæ] 'raising (a child)', [bɛ:jæ] 'being loaded') |

([r], [h]):	([r̥mmɛ] ‘unpleasant (of a person)’, [h̥mmɛ] ‘pleasant (of a person)’)
([r], [ð]):	([ram·] ‘he shook it’, [ðam·] ‘he embraced’)
([r], [t]):	([ru:ba] ‘dress’, [tu:ba] ‘piece of parched earth’)

In addition to phonological opposition important also is the so-called phonological co-opposition which is based on quasi-minimal pairs, exemplified below:

([r], [r̥]):	([ra:h] ‘he was lost’, [r̥a:h] ‘he went away’)
([r], [l]):	([ra:m] ‘he accepted’, [le:m] ‘he had a grudge against someone’)
([r], [ʒ]):	([ra:b] ‘it fermented’, [ʒɛ:b] ‘he brought it’)
([r], [ʔ]):	([ra:m] ‘he accepted’, [ʔæ:m] ‘he swam; he bathed’)

In the context of phonological opposition a concept of range operates. Thus, the range of phonological opposition of the phone [r] is the set of all phones with which [r] is in this relation. As can be inferred from the above tables, this range in *TA* is rather considerable.

4.2. Free variation and complementary distribution

The situation of *r*-phones in light of these two relations is rather difficult to describe since these relations do not apply here *sensu stricto*, in particular this concerns [r] and [r̥] which, to some extent may be in both free variation and complementary distribution (cf. Oueslati 2015).

4.2.1. Free variation

This relation binds phones which are mutually replaceable in some words when such replacements do not cause a change of meaning. Hence a pair of phones belonging to free variation does not belong to phonological opposition.

The free variation is rather rare in *TA*. And it may concern:

- (i) plain [r] and emphatic [r̥] as well as
- (ii) plain [r] and uvular [R].

4.2.2. Complementary distribution

This relation binds those phones which occur in mutually exclusive environments, that is, if one phone appears in a certain environment the other one cannot appear in this environment. Clearly, phones bound by complementary distribution cannot be in phonological opposition. In *TA* the following pairs of *r*-phones belong to the complementary distribution:

- (i) ([r], [rʲ]), that is, plain [r] and palatalized [rʲ], and
- (ii) ([r], [r̥]), that is, plain [r] and emphatic [r̥].

Thus, for example, the palatalized [rʲ] can occur only before long [i:], and in this position no other *r*-phone can appear. The emphatic [r̥], in turn, requires an emphatic environment, that is, either an emphatic consonant or a back vowel.

5. Towards a phonemization solution

With the information on the involvement of the *r*-phones in the phonological system, as shown in their participation in the three phonological relations being above considered, the phonemic status of these phones in *TA* may be approximated. The present phonemization proposals may be formulated in terms of the following hypotheses:

- Hy 5.1 The phones [r] and [rʲ] belong to the same phoneme, that is to say, they can be treated as allophones or variants of the same phoneme.
- Hy 5.2 The phones [r] and [r:] belong to different phonemes, that is to say, they are heterophonemic, since there are corresponding minimal pairs (cf. for example, [ħa:r:a] ‘hot (taste)’ ~ [ħa:ra] ‘four’).
- Hy 5.3 The relationship of the emphatic [r̥] to all other *r*-phones is rather unclear. And heterophonemicity or at least quasi heterophonemicity can be considered in this case in view of the phonological co-opposition binding [r̥] and [r] (cf. for example, [ra:h] ‘he was lost’ ~ [r̥a:h] ‘he went away’; [bar:i:] ‘land’ ~ [bar̥:i:] ‘my country’).

Obviously, the above hypotheses may turn out as not completely adequate, a point the author is well aware of. More importantly, they reflect only a possible phonemization solution.

6. A glance at other dialects

In comparing *r*-phones in Arabic dialects only a few selected problems concerning the phonetic and phonological properties of these phones will be touched upon.

The phones [r] and [r̥], that is a non-emphatic and an emphatic, occurring in contemporary Arabic dialects do not display significant articulatory differences in comparison to the corresponding phones of the Literary Arabic. It is noticeable however that in the speech of some inhabitants of towns, as for example the Christian minority of Baghdad and many people of the town of Fez in Morocco there may appear a back-tongue velar spirant [ɣ] (cf. Cantineau 1960: 49f; Mitchell 1993: 23f). Mentioned should also be uvular [R] turning up in some French loan words not only in Tunisian, but also in Algerian Arabic and Moroccan Arabic. The uvular [R] is often replaced by [r].

In the Arabic dialects the *r*-phones are in phonetic opposition with each other analogously to Literary Arabic, since they diverge articulatorily from each other. However, the phonological opposition can be observed sporadically in Moroccan and Tunisian. It does not occur however in the eastern dialects (Mašriq) (cf. Cantineau 1960: 49f; Oueslati 2015: 215ff).

The phonological opposition between [r] and [r̥] in Moroccan can be exemplified as follows:

- (6.1) *kb̄ar* ‘he grew bigger, older’ ~ *kb̄ar̥* ‘bigger, older’;
ḡar ‘sterility’ ~ *ḡar̥* ‘he hurt (s.o)’.

Generally speaking, the distribution of phones [r] and [r̥] in Arabic dialects operates analogously to Literary Arabic. Nevertheless, certain differences can be noticed particularly in Moroccan Arabic in which the situation is rather complicated. The phones [r] and [r̥] in this dialect can occur:

- (i) in some of the same environments;
(ii) in complementary distribution, that is, in mutually exclusive environments.
Point (i) has been already illustrated in (6.1). And, point (ii) can be exemplified by the following pairs of words:

- (6.2) *ʒra* ‘he ran’ ~ *ʒra* ‘it happened (eg. accident)’;
raab ‘it fell into ruins’ ~ *raab* ‘it curdled’;
ʃaar̄ab ‘lip’ ~ *ʃaar̄ab* ‘having drunk’.

Thus, (6.2) shows that [r] occurs in the neighborhood of front [a], while [r̥] occurs in the neighborhood of back [ɑ].

The relationship between [r] and [r̥] also offers some rather unexpected developments. Namely, word forms derived from one and the same root in which the original non-emphatic [r] occurs may differ in that some of these forms may have [r̥] instead of [r]. This is the case, for example, in Egyptian Arabic (*EA*):

- (6.3) *bard* ‘cold(ness)’ ~ *abrad* ‘colder’,
barrad / *yibar̄rad* ‘to cool sth’.

Observable as well is the tendency to substitute the vowel opposition [a] ~ [ɑ] or [aa] ~ [ɑɑ] for the consonantal opposition [r] ~ [r̥]. In consequence, the minimal pairs originally based on the latter opposition are now based on the former, whence the back vowel becomes only a reflex of the original emphatic [r̥], as is the case in *EA*:

- (6.4) *bard* ‘cold(ness)’ ~ *bard* ‘filling (smoothing with life)’

Similar alternation occurs in *EA* words creating quasiminimal pairs, e.g.:

- (6.5) *dars* ‘lesson’ ~ *darb* ‘path’;
warra ‘he showed’ ~ *barra* ‘outside’;
raagi ‘returning, having returned’ ~ *raagil* ‘man’.

Although emphatic [r̥] in *MA* may also occur in the environment of [e] and [i] as, for example:

- (6.6) *teer* ‘bird’, *friib* ‘drinking’.

Mitchell (1993: 23f) notices a tendency to limit the opposition between [r] and [r̥] to co-occurrence with the vowels [a (a)] / [ɑ(ɑ)] or [-ə-].

The *r*-phones in Arabic dialects assimilate to the immediately succeeding [l] from which [ll] results. E.g.:

- (6.7) In Algerian Arabic *ndir lek* ‘I will make it for you’ develops to *ndillek*; *dar lak* ‘he made it for him’ results in *dallah* (cf. Cantineau 1960: 50f).

7. By way of conclusion

This inquiry into the *r*-phones of *TA* is not exhaustive. Nevertheless, it is to be hoped that it has contributed at least some modest but relevant information on the phonological and phonemic status of these phones in *TA*. A future discussion may of course verify these statements. Even a study of a limited subset of phones cannot help concerning important phonological problems. However, the *r*-phones of *TA* make up only a small part of the phonological system operating in this language variety. And it is important to be aware of the mutual relationships obtaining between parts and the corresponding whole. Speaking more precisely, the status of a part is not understandable outside a whole, and conversely, the understanding of the whole at work presupposes the cooperative work of the particular parts.

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