SYLLABIC STRUCTURE AND STRESS IN CAIRENE ARABIC: A DIDACTIC APPROACH
La estructura silábica y la intensidad en el árabe de El Cairo: una aproximación didáctica

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Abstract: The linguistic variety spoken in Cairo follows phonetic rules that depend primarily on the syllabic structure of the phonological word and the new syllabic structure of the phonological phrase. This paper develops these rules systematically describing the Cairene Arabic phonotactic that deals with syllabic structure, shift of stress in discourse and their effect on vowels or rhymes. It shows the way the syllabic structure determines the placement of stress in the phonological word whatever its grammatical category is and the effect of this stress within the phonological phrase in which the word is involved while being uttered.

Resumen: La variedad lingüística coloquial en el Cairo sigue normas fonéticas que dependen primeramente de la estructura silábica de la palabra fonética y de la nueva estructura silábica de la oración fonológica. Esta investigación se centra en estas normas; describe la estructura fonética del árabe coloquial de El Cairo relacionada con la estructura silábica, el cambio de la intensidad durante el discurso y sus efectos sobre las vocales. La investigación muestra también cómo la estructura silábica determina el emplazamiento del acento en la frase fonológica cualquiera que sea su categoría gramatical así como el efecto de esta intensidad acentual dentro de la oración fonológica que se va formando a medida que se produce el discurso oral.

Key words: Phonology. Cairene Arabic. Syllable. Stress. Suffixation. Rhymes.


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1. INTRODUCCIÓN

When a native Arab speaks, he/she produces long vowels and tonic accents in his/her speech which might appear obscure to non-natives, used to read and listen to Classical Arabic linguistic variety with its special phonology. In his/her act of speech, the native Arab follows instinctively many phonetic rules that depend

primarily on the syllabic structure of the phonological word and on the new string of syllables in the phonological phrase formed by adding suffixes or clitic group. All colloquial linguistic varieties are spoken within grammatical constraints of the language normalised in Classical Arabic variety.

This paper examines the Cairene colloquial linguistic variety to show how the syllabic structure determines the place of stress in the phonological word whatever its grammatical category is, and the reaction of this stress within the phonological phrase in which the word is involved while being spoken. Because the Cairene variety is stable in its phonetic performance, these rules are regularly followed by the speaker in his/her speech and are easily spotted as will be shown in this paper.

2. SYLLABLES AND THE SYLLABIC TYPOLOGY OF CAIRENE ARABIC

The syllable has been traditionally considered the basic unit of phonological analysis in Arabic language as an “onset syllable” whether of the Classical Arabic

2. The terminology used in this paper is the one established by Nespor and Vogel given that it is the most adequate phonological theory expressing the taxonomy of the colloquial variety discussed in this paper, Marina Nespor and Irene Vogel. Prosodic Phonology. Dordrecht-Holland/Riverton-USA: Foris Publications, 1986.


4. As a general observation and without any statistic data, it seems that Cairene variety is the most renowned dialect among phonologists not specialized in Arabic Linguistics. This is probably due to the plethora of research already done by Arabist on the topic, Manfred Woidich. “Cairo Arabic”. Encyclopedia of Arabic Language and Linguistics (EALL). K. Versteegh et alii (Eds.). Leiden: Brill, 2006, pp. 323-333.

variety or the colloquial varieties. Consequently, the syllable is the basic unit in this paper and the syllable’s rhyme is described by its phonological length or quantity, long or short.

There are five types of syllables in Cairene Arabic:

8. Minuscule “k” and “u” are used here to represent the onset and the rhyme and not the usual capital “C” for Consonant and “V” for Vowel to enable writing the tonic accent on the vowel “u”, using the Spanish enabled computer.
1. Open syllable with short vowel /ku/, like the first syllable in *katab* (kataba)\(^{11}\);
2. Open syllable with long vowel /kû/, like the first syllable in *kâteb* (kātibun);
3. Closed syllable with short vowel /kuk/, like the first and the second syllable in *maktab* (maktabun);
4. Closed syllable with long vowel /kûk/, like the second syllable in *ketâb* (kitābun);
5. Double closed syllable with short vowel /kukk/, like the second syllable in *katabt* (katabtu; katabta).

In these examples three of the five words are stressed with intensive prominence in one of the syllables: the short and open syllable /ku/ of *kātab*, the short and closed syllable /kuk-/ in the first syllable of *māktab* and the vowel of the double closed syllable /-kukk/ in *katâbt*.

These are precisely the words that contain no long vowels. In the other two cases, the long vowels are situated on the first long and open syllable /kû/ in *kâteb* and on the final long and closed syllable /kûk/ of *ketâb\(^{12}\)* with no stress on the phonological word. Any phonological word, regardless its grammatical category, whether it is a verb, noun, adjective or adverb, is stressed according to this basic syllabic structure as will be shown.

3. **BASIC STRESS PATTERNS AT THE PHONOLOGICAL WORD LEVEL**

The syllable on which a Cairene speaker naturally places his stress is variable although there are three fixed positions. Those are the following ones:

a. At the end of phonological word when ending with a double closed syllable /–kukk/ as in *šáms* (šamsun), *ḍarábt* (ḍarabtu; ḍarabta), *‘ınšaḡált* (*inšaḡaltu; in-šaḡalta),

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11. The classical equivalent to the dialectal word is provided between brackets. When talking about verbs, their normalized equivalent is provided too. Besides person, gender and number are specified in case of ambiguity; nouns are given in nominative, generally with *tanwin* of no definiteness. The transcription of each variety is different. In Classical variety the traditional central-European transliteration system is used (Federico Corriente, “Acerca de la trascripción o transliteración del código grafémico árabe al latino, particularmente en su variante castellana”, *Miscéllanea de Estudios Árabes y Hebraicos. Sección Árabe-Islam*, 51 (2002), pp. 361-368. In dialectal variety the transcription used is the one established by Fischer and Jastrow and followed in Abboud-Haggar, 2010. Dialectal transcription is presented in cursive type and a circumflex accent as long vowel. Stress or accent is represented on the stressed vowel with a tonic accent, (W. Fischer and O. Jastrow. *Handbuch der arabischen Dialekte*. Wiesbaden: Harrassowitz Verlag, 1980.

b. On the first syllable when the phonological word is composed by 2 or 3 /-ku-/ short open syllables as in háwa (“hawā‘un”), bá‘ara (baqaratun), or kánaba (from French canapé, couch)\textsuperscript{13}.

c. The absence of stress is another fixed position. It occurs when there is a long vowel in a final long and closed /-kû/ syllable. The long vowel prevents stress whether it occurs in a mono-syllabic word like séf (ṣayf), a bi-syllabic word like mandîl (mandîlun), or a tri-syllabic word like baragît (barâgitun).

Besides these three fixed cases, stress is placed in variable positions depending on the syllabic structure, as shown in the following cases\textsuperscript{14}.

1. In a bi-syllabic phonological word with a syllabic structure composed by an open short and a closed short syllable /kuk/, accent is placed on the first syllable /kúk/: E.g. lâban (labanun), dáxal (dâjalā).

2. In a bi-syllabic word with a structure composed of two closed short syllables /kukkuk/ or a closed short and an open short syllable /kukku/, stress is placed on the first syllable /kúkkuk/ and /kúkku/: E.g. kâssar (kassara); màktab (maktabun); góm’a (ğumu’atun), mànsi (mansiyun).

3. In a tri-syllabic phonological word with a structure composed of open short, open short and closed short syllables /kuukuk/, stress is placed on the first syllable /kúkukuk/: E.g. hâzamet (hazamat), xâraget (ḫarağat).

4. In a tri-syllabic word with a structure composed of a closed short, open short and open short syllable /kukkuk/, stress is placed on the second syllable /kukkúk/: E.g. maktâba (maktabatun), madrâsa (madrasatun).

5. In a tri-syllabic word with a structure composed of open short, closed short, and open short syllables /kukkuk/, or closed short, closed short, and open short syllables /kukkukku/, stress is placed on the second syllable /kukûkku/ and /kukkúkku/.

\textsuperscript{13} Tomiche. \textit{Le parler arabe}, pp. 78-93 and Woidich. “Cairo Arabic”, p. 326. Nevertheless, there are a few cases of plurals that do not follow this general rule like bunûka (plural of bank, from English ‘bank’), sibîta (plural of sabat from Persian ‘basket’) and subîta (plural of sabt, ‘Saturday’), Woidich. \textit{ibidem}, p. 325.

\textsuperscript{14} The examples given in this section are mainly phonological words, without clitic word. Nevertheless, in tetra-syllabic words, in which the placement of stress still depends on the syllabic structure, the examples given are phonological words with clitic word. Longer syllable strings are not considered here because the placement of stress is decided in the last three syllables, Angoujard. “Accentuation”, p. 63; Mitchell. \textit{Pronouncing}, p. 115.
E.g. Ḍárábna (ṣarabnā); šagálna (ṣagalnā); maṣgálna (maṣagalnā), maktábna (maktabnā).

6. In a tetra-syllabic phonological word with a structure composed of a closed short, open short, open short and closed short syllables /kukkukukuk/, the second syllable /kukkúkukuk/ is stressed:
E.g. ʾenḥázamaṭ (ʾinḥazamat), ʾelṭázamaṭ (ʾiltazamat).

7. In a tetra-syllabic word with a structure composed of open short, open short, open short and closed short syllables /kukukukuk/, the third syllable /kukukúkuk/ is stressed:
E.g. šataméṭaka (ṣatamatukā), ḏarabéṭaka (darabatukā).

8. In a tetra-syllabic word with a structure composed by closed short, open short, closed short and open short syllables /kukkukukkuk/ or open short, open short, closed short and open short /kukukkukkuk/, the third syllable is stressed:
/kukkukúkuk/ and /kukukúkku/.
E.g. markeběṭhom (markabatuhum); moloxéyya (mülüḫiyyatun); ṗamarétna (qamaratunā).

Any phonological word, regardless its grammatical category, whether it is a verb, noun, adjective or adverb, is stressed according to these basic syllabic structures.

4. FEATURES OF CAIRENE STRESS

Based on these observations on syllabic structures, four basic features of stress in Cairene must be highlighted.

1. Stress is automatic and predictable

a. A short closed syllable /kuk/, standing in penultimate position in whatever syllabic structure, whether formed by 2, 3, 4, 5, 6 or even 7 syllables –without a double closed syllable or closed long syllable at the end of structure– always attracts the accent. The following are examples of closed short syllables found in penultimate position in frequently used syllabic structures:

- Bi-syllabic: áḥmad (Aḥmadu), bāḥga (bāḥgu);
- Tri-syllabic: ʾamáləna (ʾamalnā), ṛaʾđna (raqdnā);
- Tetra-syllabic: ʾamaléyya (ʾamalīyyatun); maṣḥubéyya (maṣḥūbiyyatun); šagalétna (ṣagaltnā); ḏaraběṭhom (darabathum).

The prominence of the intensity of the short and closed syllable /kuk/- falling in the penultimate position of the phonological word or phonological phrase, even in a long syllabic string is one of the main features of Cairene rhythm15.

b. Only one long vowel is tolerated, either at the end of the phonological word or at the end of the phonological phrase. This is why in words that in fuṣḥa bear a double long vowels like “sābūn”, “qānūn”, or in words whose plural is formed by two long vowels like “manādīl” or “fawānīs”, only one long vowel, the last one on the last syllable, is pronounced by natives: sabūn, ’ānīn, manadīl, and fawānīs;

c. No long vowel at the end of the phonological word or the phonological phrase in an open syllable is tolerated. This shortening occurs in the final long [ū] of the third person plural in verbs which become a short [o], like in shérbo (šaribū) and fēhma (fahimū), and in the clitics of verbal suffixes like -hā, -nā, -nī or -ī as in sāfha (ra’āhā), sāfna (ra’ānā), šāfīnī (ra’ānī) or ’āndī (‘indī).

2. Stress shifts

Stress in Cairene Arabic is also considered mobile because it shifts its position depending on the readjusted new syllabic structure formed when uttered. Mobility of stress will be examined in four situations: with a suffixed clitic group, whether entire syllables or ill syllable as determined by grammatical constraints; when the junction in speech with other phonological words takes place, generally not obeying to any grammatical constraint; when a consonant cluster occurs because of grammatical causes or phonetic ones; and finally when the constructive state of iḍāfa changes the syllabic structure.

1. Stress shifts with clitic suffixation, usually pronouns. These can be a complete syllable or part of it:

• ’átal (qatala), ’atálha (qatalahā), ’atalétkom (qatalatkum), ’atalnāha (qatalnāhā);

• fātah (fatahā), fātāh (fattahā), fattābha (fattahahā), fattahnālhom (fattānhā lahum), fattahnahālhom (fattānī īyyāhā lahum), fattahnahomlōhom (fattānī īyyāhum lahum).

• bālah (baluḥun), bālāha (baluḥān), balāhsto (baluḥathu), balāhēna (baluḥatunā).

Accenting motivates a re-syllabification of the syllabic string on the phonological phrase level and affects it following the dialect’s phonetic rules.

2. Stress shifts in a consonant cluster: A definitive element in suffixation, directly related to the accent and rhythm of speech in Cairene Arabic, is the intolerance of a three-consonant cluster anywhere in the phonological word. This cluster motivates the insertion of a vowel of disjunction, which generally is a schwa.
that is inserted between the second and the third consonant. The epenthetic vowel can also be [a] or [o] for vocalic harmony purposes. This additional vowel can be stressed or maintained unstressed in the new phonological phrase, depending on the syllabic structure and on the rules of accent that govern speech. Some examples are given in the following paragraph:

a. In a mono-syllabic word formed by one double closed syllable, any suffixation will open the double consonant cluster, affect the original stressed vowel of the syllable, and make it change.
   — bāxt → bāxt-na → baxt-ē-na
   — bāxt → bāxt-hom → baxt-ō-hom

b. The junction of two words easily results in a three-consonant cluster which then requires separation with a disjunction vowel and a “re-syllabification” of the phonological phrase.
   — mādd réglo(h) → madd-e-réglo(h) → madderéglo(h)
   — šāms belâdi → šams-e-b(e)lâdi → šamséblâdi
   — 'el-kálb da → 'ekkálb-e-da → 'ekkalbéda

3. Stress shifts in genitive cases

Another fundamental aspect of phonology, related directly to Cairene Arabic’s accent and rhythm of speech is the formation of the “Construct State” (idāfa form) in feminine nouns. As normalized in Arabic fusha, these nouns ended with a tāʾ marbūta, that were elided phonetically in dialectal speech and replaced by an open final short rhyme [-a], as a feminine marker. The suffixation of the second phonological word of the idāfa to the first phonological one implies the insertion of a /schwa + -t-/ syllable. The insertion of this ill-formed syllable gives way to a “re-syllabification” of the newly formed phonological phrase following stress patterns already shown above.

The following are examples of the stress in these cases:
   — 'arûsa → 'arusétha

17. The syllabic structure becomes short closed, short open, and short open syllables /kukkuku/, with stress on the second syllable /kukkuku/.
18. The syllabic structure becomes short closed, short open, and short closed syllables /kukkukuk/, with stress on the second syllable /kukkukuk/.
19. The word is formed by short closed, short open, short closed and short closed syllables, /kukkukukkuk/ with the short and closed syllable in penultimate position stressed: /kukkukuk/.
20. The new phonological word is a succession of /kukkukukku/, with one long vowel in an open syllable in penultimate position.
21. The new phonological word is a succession of /kukkukukku/ with stress on the open syllable with short rhyme in penultimate position /kukkukukku/.

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It should be observed that the [-et] (/schwa + -t-) discussed here, which is the phonetic result of the *iḍāfa* should be differentiated from the [-et] of the verbal suffix of the third person feminine singular; the latter is never elided because of grammatical constraint:

-  *šatamet* → *šamateto(h)* (*šatamat; šatamathu*).
-  *‘amulet* → *‘amaleto(h)* (*‘amalat; ‘amalathu*).

5. **EFFECT OF STRESS ON VOWELS AT A PHONOLOGICAL PHRASE LEVEL**

Stress acts on long and short vowels in a very particular way giving the Cairene Arabic dialect its internal harmony and rhythm as observed in the following cases.

1. **Effects of stress on long vowels**

Stress affects long vowels by shortening their quantity and increasing their intensity.

1. Stress shortens the long rhyme of a closed syllable /–kûk/, positioned necessarily at the end of the enclitic phonological word or phonological phrase, and the long rhyme of an open syllable /–kû-/ positioned necessarily in the middle of the word.

   a. Shortening of the long rhyme of a closed syllable /-kûk/ at the end of word takes place when the syllable becomes a short double closed /-kukk/ syllable because of suffixation, as with the following verbs:
      -  *texâf* → *mat(e)xáfš* → *matxáfš* (*taḫāfu; lā taḥāfu*)
      -  *tenshâl* → *matenšálš* (*tuḥmal; lā tuḥmal*).

   b. It also occurs if the long closed syllable /-kûk/ becomes a closed syllable /-kuk-/ in the penultimate position because of suffixation:
      -  *manadîl* → *manadîlhom* (*manādīlun; manādīlhum*).
      -  *muwaẓẓafīn* → *muwaẓẓafīnna* (*muwaẓẓafūn; muwaẓẓafūnā*).

   c. Shortening of the long vowel also occurs in the long closed syllable /-kûk/ at the end of the word when it is followed by another syllable with a long vowel.
      -  *bêt* → *betên* (*baytun; baytānì*).


23. The elision of the vowel observed in this example and the following ones will be addressed in the next section.
2. Shortening occurs in a long open syllable /-kû-/ when it falls in the middle of a word as shown in the following cases of suffixation:

a. If the clitic is a syllable with long vowel, the first long vowel is shortened:
   — sā'ā → sā'-a-t-ên → sa'tên (sā'atun; sā'atâni);
   — sā'â → sa'ât (sā'atun; sā'âtun);
   — fâhem → fah-e-min → fahmin (fâhimun; fâhimâna; fâhimât).

b. If in the re-syllabified string the clitic forms a syllabic string with a short closed syllable /–kuk-/ in penultimate position the long vowel loses its quantity and is stressed:
   — wâled → wáldî 24 (wâlidun; wâlîdî);
   — wâxed → wáxda (âhidun; âhidâtun);
   — mâher → mâhra (mâhirun; mâhiratun).

2. Effects of stress on short vowels

Stress affects short vowels by their elision or their lengthening:

1. Rhyme elision: Although short rhymes in Cairene Arabic tend to be maintained in open and closed syllables25, there are, nevertheless, some cases in which they are elided after suffixation because of the syllabic structure of the new phonological phrase in a stray erasure process26:

   a. Within the enclitic phonological word or phonological phrase as in the following examples:
      — mâleḥ → mál(e)jâ → mâlhu (mâlihun; mâlihatun);
      — râbaţo → râbaţî+l+o+hom → râbaţû+lîhom → râbaţûlîhom (râbaţû; râbaţû la-hum).

   b. When two phonological words come together in speech, as in the following examples:
      — ‘âna fehêmt → ‘anaf(e)hemt → ‘anafhémt (‘ânâ fahîmtu).
      — yâ Selîm → yas(e)lim → yaslîm (yâ Salîm)

2. Lengthening of short rhymes: Re-syllabification affects the short rhyme in phonological word ending with an open syllable (/–ku/) by lengthening that rhyme that was a long vowel in Classical Arabic that had been shortened according to rules of speech. The following examples are taken from daily speech:

24. This shortening affects all of the “Ismu l-fī’il” present participles of the verbs in their Form I.
a. The /o/ of the 3rd person plural becomes /û/ with the suffixation of whatever grammatical element is added, forming a new syllabic structure as in the following examples:
   — ḏ̣ārabọ → ḏ̣arabû(h) (ḏārabû; ḏ̣arabûhu);
   — ḷâ’bo → la’bû(h) (lâ’abû; lâ’abûhu).

b. The first person pronoun /i/ becomes /î/:
   — šāfni → mašafnîš (râ’ānī; mā ra’ānī);
   — samēnī → masameēnîš (sâmâhâni, mā sâmâhânî).

   This lengthening occurs with the originally long /û/ of the defective roots as in the following examples:
   — muḥāmî → muḥamîna (muḥāmī, muḥāmînā).
   — râmî → ramihom (rūmī, rūmîhum).

c. The originally shortened final hamza in /a/ word becomes /â/ as in:
   — ḥâwa → ḥawâna (ḥawā’, ḥawā’unā);
   — ḥâna → ḥanâki (ḥanā’, ḥanā’uki).

   It is also applied to distinguish the feminine in words which end with /a/ as in:
   — ḥawâgâ → ḥawâgâya (ḥawâgā)
   — mànga → mangâya 27 (mangi; māngâtu).

6. CONCLUSIONS

   The paper aimed at describing the basic rules that regulate stress in Cairene Arabic in order to explain the reasons that make Cairene speech sounds as it sounds to natives and to foreigner listeners. It also aimed at showing the vowel on which a foreigner reader has to put the stress while reading or speaking that dialect. The examples given were accompanied by their classical equivalent to help establishing the relation between the dialectal phonology and Classical variety 28.

   It also aimed at showing that dialectal phonetics and grammar are closely related. The first cannot be completely understood without taking into consideration the grammatical constraints of the language described in grammar books. Much more has to be studied about this fundamental relation to understand speaking process in Arabic dialectal varieties.

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28. The description of the phonotactic of Cairene variety compared to Classical Arabic can be extended to any other Arabic dialect. It would allow a solid comparative platform between the uncountable Arabic dialectal varieties. K. Brustad. *The syntax*, pp. 1-3.
The importance of syllabic structure and stress in Arabic colloquial varieties is increasing. Not only that they have become valid criteria to distinguish between the uncountable dialectal varieties but it is also an accurate isogloss between those varieties. They are the way to assist introducing all dialectal varieties of Arabic in modern universal phonological and phonetic theories.
