

Stress, Lemma 8,33, Phonetic/phonological notions
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[4050 words]

All modern Arabic dialects have word stress: one syllable in a word is prominent as compared to other syllables. The position of the strong stress is usually limited to the last three syllables of the word, and depends on the overall pattern of short and long syllables. Compare Cairene colloquial: *kitáab* ‘book’, *katábt* ‘I wrote’, *katábna* ‘we wrote’, *kátabu* ‘they wrote’, *katabítu* ‘she wrote it’. Word stress is not distinctive in Arabic, that is, it does not serve to distinguish meanings, although the morphological structure of words often affects stress, compare Cairene *ramítu* /ram-it#u/ ‘she threw it’ versus *kátabu* /katab-u/ ‘they wrote’.

Arabic stress patterns display properties which are universally observed by stress languages: each word has at least one prominent syllable (the *cumulative* property) located near the word end word (the *demarcative* property). Arabic stress has two further properties which are cross-linguistically common: sensitivity to long and short syllables (‘quantity-sensitivity’), and alternating patterns of strong and weak syllables, at least in some dialects. The phonetic realization of stress in Arabic is also common: stressed syllables have higher pitch levels, longer duration and greater loudness than unstressed syllables (Al-Ani 1992a,b).

From a linguistic viewpoint, the main interest of Arabic stress resides in the patterns of variation between the dialects, which show unity in diversity. Dialects share a number of basic patterns such as stressing superheavy syllables (CVCC or CVVC) in ultimate position (*kitáab* ‘book’, *katábt* ‘I wrote’), and stressing heavy syllables (CVC or CVV) in penultimate position (*katábna* ‘we wrote’, *kitáabi* ‘my book’). However, dialects differ in their stressing of certain word types. For example, words with a heavy antepenult followed by two light syllables are stressed on the penult (*madrása* ‘school’, Cairo) or the antepenult (*mádrase* ‘school’, Damascus). Another cross-dialectal example resides in words starting with CVCVC, which have initial stress (*kátab* ‘he wrote’, Cairo), or final stress (*kitáb* ‘he wrote, Bedouin dialect of the Cyrenaican Jebel).

Stress differences between Arabic dialects have been thoroughly studied in recent decades because of their relevance for metrical theory (Kenstowicz 1983; Halle and Vergnaud 1987; Hayes 1995). Cross-dialectal differences have been analyzed in terms of a small set of options in metrical theory which are known as ‘parameters’. Parametric differences involve the type of metrical foot (feet are rhythm units whose initial or final syllable is strong), the direction of metrification (starting at the word beginning or word end), and stressability of the final syllable. Yet another reason for which phonologists have studied Arabic dialects resides in the complex interactions of stress assignment, syllabification, and processes of syncope and epenthesis, often resulting in opaque stress patterns (e.g. Brame 1974, Broselow 1982, Kenstowicz 198X, Al-Mozainy et al. 1985; Kiparsky 2002).

Below we will discuss the stress patterns of the major dialects in some detail, with .

The pattern of **Cairene colloquial** includes the dialects spoken north of Cairo (Mitchell 1956:110-1, Mitchell 1975:81; Harrell 1957). The following generalizations hold for stress placement:

(1) a. A final superheavy syllable (CVVC, CVCC) or heavy (CVV) syllable is stressed

maf.húum 'understood'
 fa.na.gíin 'cups'
 ḍa.rábt 'I/you hit'
 řif.ta.řált 'I/you worked'
 mas.káa 'holding (f.sg.)'
 ḍa.ra.búu 'they hit him'

b. Otherwise, a prefinal heavy syllable (CVC, CVC) is stressed

dáa.wa 'he treated'
 řih.múu.ha 'they understood her'
 mu.řál.lim 'teacher'
 řa.mál.ti 'you (f.sg.) did'

c. Stress falls on the antepenult in words of the types LLL and HLLL

ḍá.ra.bit 'she hit'
 ká.ta.bu 'they wrote / he wrote it'
 řin.ká.sa.rit 'it was broken'
 mux.tá.li.fa 'different (f.sg.)'

d. Stress falls on the penult in words of the types LL, LLLL, HLL, LHLL

ḍá.rab 'he hit'
 ká.tab 'he wrote'
 ḍa.ra.bí.tu 'she hit him'
 ka.ta.bí.tu 'she wrote it (m.)'
 mad.rá.sa 'school'
 řit.wá.gad 'it was found'
 ma.hiy.yí.ti 'my pay'
 mu.dar.ří.sit 'teacher'

A light syllable is an open syllable that contains a short vowel (CV). A heavy syllable is one that contains a long vowel (CVV) or a short vowel and a consonant (CVC). We adopt a standard mora-based representation to represent syllable weight (McCarthy & Prince 1991; Hayes 1995).

(2)	a.	σ	b.	σ	c.	σ
				/ \		/ \
		μ		$\mu \mu$		$\mu \mu$
						\ /
		t a		t a n		t a :

Forms such as *ḍárab* show that CVC syllables count as light in word-final position, while forms such as *řamálti* show that CVC is heavy in non-final position. In Cairene, as in most other dialects, the word-final consonant does not contribute to syllable weight. That is, final CVC syllables are counted as light, while superheavy syllables, containing a long vowel plus a consonant (CVVC) or a short vowel plus two consonants (CVCC), are heavy. Invisibility ('extrametricality') of the final consonant is represented by angled brackets <...>.

- (3) a. σ
 |
 μ
 |
 t a <n>
- b. σ
 / \
 $\mu \mu$
 | |
 t a n <t>
- c. σ
 / \
 $\mu \mu$
 \ \
 t a : <n>

Detailed analyses of syllable structure in Arabic dialects, in relation with syncope and epenthesis, are offered by Broselow (1980, 1982, 1992), Kenstowicz (1986), and Kiparsky (2002).

As McCarthy (1979b) points out, the Cairene pattern is raises interest because the stressing of light syllables (penult or antepenult) depends on the presence or absence of heavy syllable to their left. Especially the penult stress of words ending in the sequence heavy-light-light presents a paradox. Cross-linguistically, heavy syllables tend to attract stress (Prince 1983). Cairene, however, stresses a light penult rather than the heavy antepenult in words such as *madrása*, while it stresses a light antepenult in words composed of three light syllables, such as *kátabu*.

The metrical analysis of the Cairene colloquial pattern by Hayes (1995) incorporates the idea that a heavy syllable is quantitatively and metrically equivalent to two light syllables (Allen 1973; Halle and Vergnaud 1978; McCarthy 1979ab; Prince 1983).

- (4) a. Foot assignment: parse the word from left to right into moraic trochees.
 Moraic trochee: (* .) (*)
 L L H
 two light syllables or a single heavy syllable
- b. Word layer construction: group feet into a right-headed word constituent.

This analysis assigns the following metrical structures to example words. Feet are represented by pairs of parentheses. Their head (strong element) is indicated by an asterisk ‘*’, and their non-head (weak element) by a dot ‘.’. The metrical layer above the feet indicates the placement of the main stress.

- (5) a. (. *) b. (. *)
 (* .) (*) (*) (*) .
 L L H H H L
 fa.na.gíi<n> fih.múu.ha
- c. (*) d. (*) e. (. *)
 (* .) (* .) . (* .) (* .)
 L L L L L L L L L
 dá.ra dá.ra.bi<t> da.ra.bí.tu
- e. (. *) f. (. *)
 (*) (* .) (*) (* .) .
 H L L H L L L
 mad.rá.sa ?in.ká.sa.ri<t>

Note that a foot cannot consist entirely of a single light syllable – hence the lack of final stress in (5b,d, f). This ban on ‘degenerate’ feet matches the fact that the minimal word in Arabic is a heavy syllable (McCarthy and Prince 1990). An alternative analysis (see Halle and Vergnaud 1987; Halle 1991) allows degenerate feet, and marks the final mora as extrametrical before foot assignment.

There are two well-known classes of exceptions to these stress rules (Mitchell 1956:111; 1975:81-82). Both involve words consisting of three light syllables, whose penult is exceptionally stressed:

- (6) a. Verbs in which a vowel-initial suffix is attached to 3sg.f. perfect of weak verbs (type *ráma*)
- | | | |
|------------|----------------|-------------------------------|
| ra.mí.t+u | ‘she threw it’ | (cf. ká.ta.b+u ‘he wrote it’) |
| sa.fí.t+ak | ‘she saw you’ | |
- b. Plurals containing two identical high vowels (i-i or u-u) in their first two syllables
- | | | |
|----------|----------|-----------------------------|
| du.bú.ʕa | ‘hyenas’ | (cf. kú.tu.b+u ‘his books’) |
| yi.rí.ba | ‘crows’ | |

The exceptional patterns can be straightforwardly accommodated into the moraic trochee analysis by a morphologically triggered reversal of the direction of foot assignment, which becomes right-to-left in these cases (Watson 2002:97-98).

Mitchell (1960/1975) discovered important evidence for the colloquial Cairene stress pattern by studying the way in which teachers of Classical Arabic (‘*ʕuluma*’) place stress when reciting the Qur’aan. The patterns discovered by Mitchell cover both colloquial and classical pronunciations. The generalizations given in (7) were stated by generative analysts (Langendoen 1968, Halle and Vergnaud 1978, McCarthy 1979ab).

- (7) a. Stress a superheavy ultima
- | | | |
|--------|----------------|---------|
| L S | ða.rábt | ‘I hit’ |
| H S | ʔaʕ.máal | ‘XXX’ |
| L H S | yu.ʕal.lúun | ‘XXX’ |
| H L S | yur.si.láan | ‘XXX’ |
| H H S | muf.taa.qáat | ‘XXX’ |
| LL H S | ya.ta.ʕad.dáwn | ‘XXX’ |
- b. Otherwise, stress a heavy penult
- | | | |
|--------|---------------------|-------|
| LHL | mu.qáa.til | ‘XXX’ |
| HHL | mus.táʕ.faa | ‘XXX’ |
| HHLHL | muf.taʕ.qa.táa.ni | ‘XXX’ |
| LLHLHL | ya.ta.qaa.ta.lúu.na | ‘XXX’ |
- c. Otherwise, stress the penult or antepenult, whichever is separated by an even number of syllables from the rightmost nonfinal heavy syllable or, if there is no heavy syllable, from the left boundary of the word.
- | | | |
|-----------|---------------------|---------------------|
| LL L | ká.ta.ba | ‘he wrote’ |
| LL LL | ʕa.ʕa.ra.tun | ‘tree’ |
| LL LL L | ʕa.ʕa.ra.tu.hu | ‘his tree’ |
| LL LL LL | ʕa.ʕa.ra.tu.hú.maa | ‘their (du.) tree’ |
| H LL | kaa.tá.ba | ‘he corresponded’ |
| H LL L | ʔin.ká.sa.ra | ‘it got broken’ |
| H LL LL | ʔad.wi.ya.tú.hu | ‘his drugs’ |
| H LL LL L | ʔad.wi.ya.tú.hu.maa | ‘their (du.) drugs’ |
| L H LL | mu.ʕal.lí.mun | ‘teachers’ |

L H LL L mu.qaa.tí.la.tun ‘XXX’
 LL H LL L mu.ta.jan.ní.ba.tun ‘XXX’

The classical forms are predictable by the same small set of metrical rules (Hayes 1995), with the addition of a rule that marks the last mora of a final syllable as extrametrical:

- (8) a. (. *)
 (* .)(* .) .
 L L L L L
 fa.ja.rá.tu.hu
- b. (. . *)
 (* .)(* .)(* .)
 L L L L L L
 fa.ja.ra.tu.hú.ma<a>
- c. (. . *)
 (*) (* .)(* .)
 H L L L L
 ʔad.wi.ya.tú.hu
- d. (. . *)
 (*) (* .)(* .) .
 H L L L L L
 ʔad.wi.ya.tú.hu.ma<a>

This analysis predicts secondary stresses on every foot head which is not main-stressed. Evidence for secondary stress is rather unclear. Mitchell (1975) does not mention it, whereas Weldon (1980) reports a secondary stress pattern deviating from the analysis above.

The **Palestinian** pattern minimally differs from the Cairene pattern in stressing the antepenult, not the penult, in words of the type HLL (e.g. *mártaba*). This creates uniform antepenultimate stress in words of which the last two syllables are light. (Brame 1973:20, 1974:41; Johnson 1979:154; Abu-Salim 1980:1; Kenstowicz & Abdul-Karim 1980; Kenstowicz 1983:207; Younes 1995:160).

- (9) a. Stress a superheavy ultima
- | | | | |
|-----|-------------|----------------|----------|
| LS | ja.wáab | ‘answer’ | (Y. 160) |
| LS | ma.fíall | ‘place, store’ | (Y. 160) |
| HLS | ʔaa.la.méen | ‘two worlds’ | (Y. 163) |
- b. Otherwise, stress a heavy penult
- | | | | |
|------|---------------|-----------------|------------|
| HL | táa.jir | ‘merchant’ | (|
| LHL | ka.táb.na | ‘we wrote’ | (A-S 1) |
| HHL | mos.táf.fa | ‘hospital’ | (J. 154) |
| LLHL | ba.ka.rít.na | ‘our cow’ | (K&A-K 73) |
| HLHL | ʔal.la.mát.na | ‘she taught us’ | (K&A-K 73) |
- c. Otherwise, stress the antepenult
- | | | | |
|------|--------------|------------------|----------|
| LLL | dárabu | ‘they hit’ | (K. 207) |
| HLL | báa.ra.ku | ‘they blessed’ | (K. 207) |
| HLL | ʔál.la.mat | ‘she taught’ | (K. 207) |
| HLLL | ḥaa.rá.ba.to | ‘she fought him’ | (Y. 163) |
| HLLL | ʔal.lá.ma.tu | ‘she taught him’ | (K. 207) |
| LHLL | mo.náa.fá.se | ‘competition’ | (J. 154) |

This pattern, the ‘Eastern Arabic stress rule’, is identical to the Latin pattern except for clause (9a). The antepenult is reached by marking the final syllable extrametrical, and constructing a quantity-sensitive trochee at the right edge (Kenstowicz 1983).

- (10) a. Mark the final syllable as extrametrical.
 b. Foot assignment: assign a single quantity-sensitive trochee at the end of the word.
 QS trochee: (*.) or (*.) or (*)
 L L H L H
 c. Word layer construction: group feet into a right-headed word constituent.

This analysis produces the following example metrifications:

- (11) a. (*) b. (*) c. (*) d. (*)
 . (*) . (*) . (*) . (*)
 L H L H H L L L H L
 ja.wáa. ka.táb.<na> ʔal.lá.ma.<tu> mo.náa.fa.<se>

The binary (HL) foot, required in order to keep the main stress within the three-syllable window, is controversial in metrical theory. In the framework developed by Hayes (1995), quantity-sensitive trochees are strictly bimoraic (LL) or (H).

Hayes (1995:128) presents a reanalysis, based on a left-to-right metrification by moraic trochees (12; see also Halle and Kenstowicz 1991:485). Evidence comes from the stress pattern of words composed of four light syllables, which cannot be established directly due to processes of syncope and epenthesis familiar from the Levantine dialects, which render the stress pattern opaque. For example, /bákar-it#o/ ‘our cow’ is syncopated into [bákarto], with antepenultimate stress ‘across’ a closed penult. On the assumption that stress is assigned prior to syncope and epenthesis (Brame 1974, Kiparsky 2002), Hayes construes the stress pattern of LLLL forms to be initial:

- (9-ctd) d. Stress the pre-antepenult if words composed of four light syllables (Hayes 1995)
 LLLL dá.ra.ba.tu ‘she hit him’ (K. 207) (→ dárbatu)
 LLLL bá.ka.ri.to ‘his cow’ (K&AK) (→ bákarto)

Hayes’ analysis of Palestinian stress is almost identical to his analysis of Cairene (see above), with the single difference that a rule is added which marks the final foot as extrametrical.

- (12) a. Foot assignment: parse the word from left to right into moraic trochees.
 b. Mark a foot as extrametrical at the right edge of the word.
 c. Word layer construction: group feet into a right-headed word constituent.

- (13) a. (*) b. (*) c. (*) d. (. *)
 (*) (*) (*) (*) (*) (*) (*) (*)
 H L L L L L L H L L L L L L L
 ʔal.la.ma.<t> dá.ra.ba.tu ʔal.lá.ma.tu ʃa.ja.rá.tu.hu

To support the psychological reality of the rightward counting pattern, Hayes cites non-syncopated forms from the classical language as produced by Palestinian speakers, from unpublished work by Kenstowicz (1981): *ʃájaratun* ‘a tree’ and *ʃajarátuhu* ‘his tree’.

Damascene colloquial (Cowell 1964:180; McCarthy 1979b:459; 1980:79; Halle and Kenstowicz 1991:485) is apparently indistinguishable from Palestinian.

- (14) a. Stress a superheavy ultima
- | | | |
|----|----------|----------------------------|
| HS | da.rást | ‘I/you (m.sg.) studied’ |
| HS | zaa.rúuk | ‘they visited you (m.sg.)’ |
- b. Otherwise, stress a heavy penult
- | | | |
|-----|------------|---------------------|
| HL | káa.tab | ‘he wrote to’ |
| HL | ʕál.lam | ‘he taught’ |
| LHL | ka.táb.ti | ‘you (f.sg.) wrote’ |
| LHL | ma.dáa.res | ‘schools’ |
| HHL | ʕal.lám.na | ‘we taught’ |
- c. Otherwise, stress the antepenult
- | | | |
|------|--------------|--------------------------------|
| LLL | dá.ra.su | ‘they studied’ |
| HLL | mád.ra.se | ‘school’ |
| HLLL | mut.tá.ḥi.de | ‘she united’ (Literary Arabic) |

There are some subtle differences between Damascene and Palestinian in the enclitic stress system which will be partly reviewed below.

The **Lebanese** dialect (Haddad 1984:19-21) also displays the ‘Eastern Arabic stress rule’.

- (15) a. Stress a superheavy ultima
- | | | |
|-----|-------------|------------------|
| HS | naz.zált | ‘I brought down’ |
| HLS | mak.ta.báat | ‘libraries’ |
- b. Otherwise, stress a heavy penult
- | | | |
|-----|------------|--------------|
| LHL | ma.ʕaa.rik | ‘battles’ |
| HHL | mak.táb.ti | ‘my library’ |
- c. Otherwise, stress the antepenult
- | | | |
|------|----------------|----------------------------------|
| LLL | ʔá.ka.lit | ‘he ate’ |
| HLL | mák.ta.be | ‘library’ |
| LLLL | ḍa.rá.ba.na | ‘he hit us’ (Classical Arabic) |
| LLLL | ca.já.ra.tun | ‘a tree’ (Classical Arabic) |
| HLLL | Saw.má. ʕa.tun | ‘a hermitage’ (Classical Arabic) |

Haddad (1984:20-21) presents two sources stress of evidence for a three-syllable window. First, Lebanese speakers stress the antepenult of Classical Arabic words which contain long sequences of light syllables, such as (15c). Second, speakers mispronounce English words such as *necessary* and *participle* with antepenultimate stress. This gives evidence for right-to-left metrification along the lines of the analysis in (10).

In sum, the stress patterns of the eastern dialects are to some extent ambiguous between a right-to-left analysis with quantity-sensitive trochees and syllable extrametricality (see 10) and a left-to-right analysis with moraic trochees and foot extrametricality (see 12). The ambiguity can only be resolved using words with long sequences of light syllables, which these dialects strongly avoid by various constraints against open syllables, and which are only available from the pronunciation of words from the classical language.

An alternative method of resolving the ambiguities between syllable-based and mora-based feet is based on studying patterns of enclitic stress, specifically the accentuation of third person feminine singular perfective verbs when followed by vowel-initial pronominal object suffixes. Examples in (16) are from Damascene (McCarthy 1980:84-85), but analogous cases have been reported for the dialects of Beirut (Abdul-Karim 1979) and Bani-Hassan Bedouin (Irshied and Kenstowicz 1984).

(16)	(*)	(*)	(. *)
	(* .)	(* .)	(* .) (*)
	H L	H L	H L L
	ʕál.la.<met>	ʕál.la.met # o	ʕál.la.má.<to>
	‘she taught’	‘she taught him’	

The pronominal object form has penultimate stress, whereas antepenultimate stress is expected if the form were non-enclitic (cf. *muttáhide* 14c). McCarthy (1980) and Halle and Kenstowicz (1991) attribute penultimate stress in the pronominal object form to the foot over the first two syllables of the base (ʕál.la)<met>, a disyllabic trochee of the shape heavy-light (HL). This foot is respected by the construction of a foot on the penultimate syllable in the pronominal object form. If the foot on ‘she taught’ were a bimoraic trochee instead (cf. Palestinian structure 13a), the incorrect prediction would be made of antepenultimate stress since the penult would be free to form a bimoraic trochee with the antepenult, as in (ʕál)(lá.mə)<to>.

The stress pattern of the **Classical Arabic** is reconstructed, due to a lack of native speakers, while the orthoepic tradition provides no explicit guidelines for accentuation. As shown earlier, current accentuations in use for reciting Qur’aan verses are influenced by native stress patterns of modern dialects. Methods of reconstructing classical accentuation therefore include diachronic comparison with other Semitic languages (Brockelmann 1982), and identification of constant patterns in cross-dialectal analysis (Janssens 1972). According to some authors (Wright 1859, Brockelmann 1982), the stress fell on the rightmost heavy (CVV or CVC) syllable, and otherwise on the initial syllable. McCarthy (1979) states this rule as follows:

(17)	a.	Stress a superheavy ultima (limited to pausal forms, before a major syntactic break)
		LS ya.qúul ‘XXX’
		LS ɖa.rábt ‘XXX’
		HS qaa.núun ‘XXX’
		HS tar.jámt ‘XXX’
	b.	Otherwise, stress the rightmost nonfinal heavy syllable
		LHH ki.táa.bun ‘book’
		LHL sa.míʕ.tu ‘I heard’
		LHHL ma.naa.díi.lu ‘kerchiefs’
		HLHH ʔaa.li.báa.tun ‘students’
		LHLHL mu.dar.ri.súu.na ‘teachers’
		LHLL yu.ʕáa.ri.ku ‘he participates’
		HHLL kas.sár.tu.hu ‘I smashed it’
		HHLH qaa.núu.nu.hum ‘XXX’
		HLLH mám.la.ka.tun ‘kingdom’
		HLLLL más.ʔa.la.tu.ha ‘her problem’

- (21) a. Stress a superheavy ultima
 LLLS ya.na.máat ‘(several individual) sheep’
- b. Otherwise, stress a heavy penult
 HH
 LHL ya.nám.na ‘our sheep’
- c. Otherwise, stress a heavy antepenult
 HLH ál.ya.nam ‘the sheep’
- d. Otherwise, stress the ultima of a two syllable word beginning a light syllable
 LL ki.tá ‘they wrote’
 LH ya.nám ‘sheep’
- e. Otherwise, stress the penult or antepenult, whichever is separated by an odd number of light syllables from the nearest preceding heavy syllable, or in the absence of such a syllable, from the beginning of the word
- LLL a.ʔá.ma ‘blind’
 LLH za.lá.mah ‘man’
 LLLH za.lá.ma.tak ‘your man’
- HLLH al.ya.ná.mah ‘the sheep (sg.)’
 HLLH an.ki.tá.law ‘they were killed’
 HLLH haa.ra.bá.tih ‘she fought him’

The analysis (Hayes 1995: 227) is the exact iambic counterpart of the Palestinian pattern.

- (23) a. Foot assignment: parse the word from left to right into iambs.
 Iamb: (. *) or (. *) or (*)
 L L L H H
- b. Mark a foot as extrametrical at the right edge of the word.
 c. Word layer construction: group feet into a right-headed word constituent.
- (24) a. (*) b. (*) c. (*) d. (. *)
 (. *) (*) (. *) (. *) (. *) (*) (. *) (*)
 L H H L H L L L H H L L H
 ya.nám ál.ya.nam za.lá.ma.tak al.ya.ná.mah

The Bedouin dialect of **Cyrenaican Jebel**, spoken in Eastern Libya (Owens 1984:32-35; Mitchell 1975:83-92) has rather complex interactions between stress assignment and processes of syncope and epenthesis, affecting syllabification. In the examples below, effects of syncope and epenthesis have been abstracted from.

- (25) a. Stress a superheavy ultima
- | | | | |
|-----|-------------|--------------------|--|
| LS | ha.ʃiiʃ | ‘grass’ | |
| LS | mu.gáSS | ‘shears, scissors’ | |
| LHS | fi.naa.jiil | ‘cups’ | |
- b. Otherwise, stress the ultima of a two syllable word beginning a light syllable
- | | | | |
|----|--------|------------|-----------|
| LH | si.máa | ‘shy’ | |
| LH | ka.táb | ‘he wrote’ | (→ kitáb) |
- c. Otherwise, stress a heavy penult
- | | | | |
|------|---------------|---------------------|----------------|
| HH | mák.tab | ‘office’ | |
| HHL | mak.táb.ha | ‘her office’ | |
| LHH | ka.táb.tan | ‘you (f.pl.) wrote’ | (→ kitábtan) |
| HLHL | maʕ.ra.kít.ha | ‘her quarrel’ | (→ maʕrikátta) |
- d. Otherwise, stress a heavy antepenult
- | | | | |
|------|---------------|-------------------------|----------------|
| HLH | mák.ta.bih | ‘his office’ | (→ máktibih) |
| LHLH | ta.ráa.fa.gan | ‘they (f.) accompanied’ | (→ tiráafagan) |
- e. Otherwise, stress the penult
- | | | | |
|------|--------------|------------------|---------------|
| LLH | ka.tá.bat | ‘she wrote’ | (→ iktíbat) |
| HLLH | in.ga.tá.lat | ‘she was killed’ | (→ inigtílat) |

Hayes (1995:228-239) analyses the stress pattern by an iambic (weak-strong) foot, as in the Negev Bedouin dialect.

- (26) a. (*)
(. *)
L H
ka.táb
- b. (*)
(. *) (. *)
L H L H
ta.ráa.fa.gan
- c. (*)
(*) (. *)
H L H
mák.ti.bih
- d. (. *)
(*) (. *) .
H L H L
maʕ.ra.kít.ha

The most interesting metrical property of the Cyrenaican Bedouin dialect is its interaction between stress assignment and syncope. Hayes (1995) argues that syncope of a stressed syllable (the head of an iambic foot) causes a retraction of stress to the unstressed syllable of the foot, shown in (21):

- (27) After footing After syncope After stress shift
- | | | | | |
|----|---------------------|----------------------|---------------------|-------------|
| a. | (ki.tí).(bih) | → (ki.t).(bih) | → (kít).(bih) | ‘his books’ |
| b. | (faa).(ki.hí).(tih) | → (faa).(ki.h).(tih) | → (faa).(kíh).(tih) | ‘his fruit’ |

Similar stress shifts under deletion of the stressed syllable have been reported for Hijazi Bedouin (Al-Mozainy et al. 1985) and Bani-Hassan Bedouin (Kenstowicz 1983; Irshied and Kenstowicz 1984).

Finally, the stress pattern of the **Maghrib** dialects, specifically Moroccan, have been documented less deeply than other dialects (Keegan 1986; Harrell 1962; Hoogland 19XX, Boudlal 2001). The following examples, all isolation forms, were taken from Boudlal (2001:122).

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