

1 **11. Word accent systems in the Middle East**

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4 *Harry van der Hulst and Sam Hellmuth*

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1. Introduction¹

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10 This chapter deals with accentual systems in the languages spoken in the
11 Middle East and includes a discussion of a number of isolate ancient lan-
12 guages and some Afro-Asiatic languages, notably Egyptian and Semitic
13 languages. The notion ‘Middle East’ is not well-defined linguistically, and
14 some languages that could have been included here are dealt with in other
15 chapters. All Altaic languages, Indo-Iranian languages (such as Kurdish
16 and Avestan) are discussed in Schiering and van der Hulst (this volume).
17 All Caucasian languages as well as Indo-European languages such as
18 Hittite (and related Anatolian languages) and Armenian are treated
19 in van der Hulst (this volume). Afro-asiatic languages spoken in North
20 Africa can be found in Downing (this volume). This survey, incomplete
21 as it is, was included because the relevant area was not included in the
22 areas covered in the other chapters of this volume.

23 The organization of each section (or subsection) with accentual data is
24 as follows:

- 25 a. ***Genetic structure of the (sub)family***; these are based on sources such as
26 Ruhlen (1991), Comrie et al (2003), the Ethnologue (15th edition) and
27 several others of the many sources that offer classifications. We have
28 tried to strike a compromise in cases of conflicting groupings and no
29 claim is made here that the resulting groupings are superior to those
30 offered in other sources. In each case (sub)family names are presented
31 in capitals. We have not included information of the *numbers* of lan-
32 guages per (sub)family and in most cases list only a (sometimes rather
33 arbitrary) subset of the languages in each (sub)family. Languages that
34 are included in StressTyp (see section 3) are indicated in bold. Lan-
35 guages that are not in StressTyp about which this chapter provides
36 information are underlined.

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39 1. We wish to acknowledge the help of various people who gave feedback on
40 parts of this chapter: Bob Hoberman, Janet Watson and Alan Kaye.

40

- 1 b. *Extracts from StressTyp entries* (language name followed by StressTyp
2 Code, and examples). More complete extracts (including references)
3 are offered in Part II of this volume and, of course, in StressTyp itself.
4 We included the Stress information *unchanged*, i.e. as it is in the data-
5 base and Part II, despite the fact that in some cases this information
6 has been questioned by specialists. (Future work on StressTyp must, of
7 course, aim at removing or changing such information.)
8
9 c. *Additional accent information*: This might involve additional informa-
10 tion on languages already in StressTyp, or information on languages
11 that are not in StressTyp. (In some larger families that are treated in
12 one section we have presented the StressTyp extracts and additional
13 information per subfamily.)
14
15 d. *Generalizations*: We have tried to make general statements about the
16 accentual patterns in the relevant (sub)family, in some cases accom-
17 panied by remarks about diachronic developments.
18
19 If (b) is absent, (c) will be labeled ‘accent information’. Sometimes (c) and
20 (d) are conflated into a single section.

21 **2. A note on the information on which this chapter is based**

22
23 The first source for the accentual data presented here is StressTyp (see
24 chapter 1, 2, 11 and Part II of this book for information on this database).
25 Secondly, we consulted books that offer surveys of language families or
26 languages in a specific geographical area. Thirdly, we have consulted
27 grammars of individual languages and, fourthly, we have sent email queries
28 to colleagues; where we rely on information that they directly have given
29 to us (via email or in personal communication) we note this in the text.

30 In line with previous work on word accentual systems (van der Hulst
31 1999, 2002, 2005), we use the term ‘word accent’ where many others
32 would use the term ‘word stress’ (as in done in StressTyp). We refer to
33 chapter 1 of this volume for a justification and clarification of this termi-
34 nological choice.

35 36 37 **3. Isolate ancient languages**

38
39 There are many now extinct languages from this area. Here we provide
40 some information about four languages. Others that are not dealt with
include: Median, Ancient Macedonian, Had(r)ani, Minaean, Old Nubian,

1 Sabaeen, many of which are known too fragmentedly to provide researchers
2 with information on word accent.

3 †*Sumerian*. This language isolate (once suspected to be an artificial, secret
4 language), spoken in Southern Mesopotamia, is known first from clay
5 tablets found in Uruk from around 3200 BCE. It was superseded by the
6 unrelated Semitic language Akkadian (cf. below) in the beginning of the
7 2nd millenium, but remained in limited use for 3000 years. Michalowski
8 (2004) dismisses the suggestion that Sumerian, an agglutinative language,
9 might have been a tonal language which has been suggested because the
10 language otherwise has an unusually high number of homophones. He does
11 not provide further information about word prosodic properties. Hayes
12 (1997: 1013) agrees that very little is known about word accent in Sumerian.
13 Vowel deletions suggest a strong stress accent: *amar-utu-(k)* ‘bull of the
14 Sun’ > Akkadian: *marduk* suggests a second syllable accent: *amárutuk*.
15 Not enough such examples are known to suggest whether stress was lexi-
16 cally marked or predictable by rule. A recent grammar is Edzard (2003).
17

18 †*Elamite* (also known as *Scythian, Median, Susian, Anzanite*), the official
19 language of the Persian empire from the 6th to the 4th century BCE. A
20 genetic link to the Dravidan family has been suggested. Stolper (2004: 73)
21 thinks that accent could have been non-final, perhaps initial.
22

23 †*Hurrian* and †*Urartian* (*Vannian, Chaldean*). These languages are related
24 to each other, with no known genetic connection to any other language
25 family, although links to Northeast Caucasian (notably Georgian) have
26 been proposed. Wilhelm (2004a: 100) says that Hurrian had a penulti-
27 mate accent on words (including suffixed words), but excluding enclitics.
28 Wilhelm (2004b: 123) suggest the same pattern for Urartian.
29
30

31 4. Afro-Asiatic: Egyptian and Semitic

32 *Genetic information*

33 The Afro-Asiatic family contains:

34 *EGYPTIAN*

35 *SEMITIC*

36 *BERBER*

37 *CHADIC*

38 *CUSHITIC*

39 *OMOTIC*

1 Omotic is sometimes regarded as a sister to the rest forming a group, while
 2 Semitic and Berber are usually seen as a subgroup. This family extends
 3 over North Africa, the Middle East and Asia Minor. In this section we
 4 will deal with the Afro-Asiatic languages that are spoken *outside Africa*,
 5 roughly in the Middle East. This means that we will deal with the Egyp-
 6 tian branch and the Semitic branch (excluding Ethiopian Semitic and
 7 Western Arabic languages). Egyptian, Semitic and Berber do not have
 8 tonal languages, whereas the other three subfamilies do. We refer to Down-
 9 ing (this volume) for some brief remarks about Afro-Asiatic languages
 10 spoken outside Africa and more elaborate discussion of Afro-Asiatic
 11 languages in Africa.

12 StressTyp contains information about one Cushitic language outside
 13 Africa, *Beja* (spoken in parts of Egypt, Sudan and Eritrea):²

14 **Beja; Bedawi; Bischari [A/P]**

- 15 • Stress falls on heavy penultimate syllables.
- 16 • If the penult is light, stress falls on the antepenultimate syllable.
- 17 • In bisyllabic words stress is penultimate unless the penult is light and the
 18 final is not.

19
 20 ga'naj 'gazelle' 'enton 'here'
 21 'an/alan 'I cursed' sa'no:ku 'your brother'

22 We refer to Downing (this volume) for a discussion of this and other
 23 Cushitic languages.

24
 25 *4.1. Egyptian (< Afro-Asiatic)*

26 **Genetic information**

27 ANCIENT EGYPTIAN

28 †Ancient Egyptian, †Coptic

29
 30
 31 There is a written record from around 3200 to 400 BCE. A distinction is
 32 made (with further divisions) between early Egyptian (3200–1300 BCE)
 33 and late(r) Egyptian (1300 BCE–5th century AD), the last phase being
 34 called Demotic Egyptian. *Coptic*, as known since the 4th century AD, the
 35 latest phase of this language, went extinct in the late 17th. (The language
 36 name “*Modern Egyptian*” refers to a form of Arabic; cf. below.). See
 37 Loprieno (1995) for a general overview.

38
 39
 40

2. This language is sometimes seen as a separate branch of Afro-Asiatic.

1 ***Accent information***

2 Loprieno (1997, 2004) provides the following information about ‘earlier’
 3 or ‘historical’ Egyptian. The accent was on the ultimate or penultimate
 4 syllable:

- 5 (1) wabaáχ ‘to become white’ jafdaáw ‘four’
 6 saát paw ‘is chosen’ saá:tap ‘to choose’
 7

8 CVC and CV syllables occur in all positions in the word, but accented
 9 penultimate vowels in open syllables are always long. Word-finally, an
 10 extra C could be present, thus allowing CVCC. Perhaps there was an
 11 earlier APU accent location which became integrated in the above pattern
 12 by loss of the PU vowel:

- 13 (2) χúpiraw > χúpraw ‘transformation’
 14

15 Indeed, in later periods unaccented vowels would reduce and delete which
 16 leads to complex consonant clusters, as can be noted in Coptic.

17 4.2. *Semitic (< Afro-Asiatic)*18 ***Genetic information***19 **SEMITIC**

20 EAST: †Akkadian, †Eblaite

21 WEST: †Amorite, †Ugaritic

22 **ARAMAIC:**

23 Western: †Nabataean

24 Western Middle Aramaic languages

25 Samaritan Aramaic, †Jewish Palestian Ar.

26 Western Neo-Aramaic: Ma’aloula

27 Eastern: †Biblical A., Syriac, Turoyo, †Mlahso, Mandaic,

28 Judaeo-Aramaic

29 CANAANITE: †Edomite, †Moabite, †Ammonite

30 Hebrew: *Biblical (Tiberian) Hebrew, Mod. Hebrew*

31 †Phoenician/Punic

32 ARABIC: *See below*

33 **SOUTH**

34 *Western*

35 ANCIENT SOUTH ARABIAN: *Sabean, Qatabanian,*

36 *Hadhramautic, Minean*

37 ETHIOPIAN:

38 North: †Ge’ez, *Tigrinya, Tigré, Dahlik*

39 South: *Amharic, Harari, Gurage*

40 *Eastern: Mehri, Harsusi, Bathari, Hobyot, Jibbali, Soqotri*

1 Here Arabic is seen as a separate branch of Central Semitic. Woodard
 2 (2004) has a distinction between Ancient South Arabian and Ancient
 3 North Arabian. However, the latter group concerns older forms of Arabic,
 4 which is here placed in Central Semitic. See also Bergsträsser (1983),
 5 Hetzron (1997) and Faber (1997).

6 The living languages that are spoken outside Africa are Neo-Aramaic
 7 languages, Hebrew, Eastern South Semitic and varieties of Arabic.

8

9 *Accent information*

10 East Semitic

11

12 †Akkadian (which splits into Babylonian and Assyrian), known from
 13 the later half of the 3rd millennium, replaced Sumerian (see above) in
 14 the beginning of the 2nd millennium BC and was then itself replaced by
 15 Aramaic during the first half of the first millennium (although surviving
 16 until 100 AD) (G. Gordon 1997). Buccellati (1997) subscribes to the view
 17 that accent falls on the rightmost long vowel (excluding the final morphe-
 18 mic vowel). According to an alternative view accent is initial, but it might
 19 be the case that this perhaps obtains in the absence of long vowels. This
 20 would indicate that Akkadian had an unbounded last/first system. This is
 21 confirmed by Huehnergard and Woods (2004: 234) who say that accent
 22 falls on the ultimate syllable if closed and has a long vowel (superheavy),
 23 or when containing a circumflex vowel (a vowel resulting from contrac-
 24 tion, perhaps counting as two syllables). Otherwise the accent falls on the
 25 rightmost nonfinal syllable which is either closed or contains a long vowel.
 26 If there are no heavy syllables at all, accent is initial:

27

28 (3) idū́k ‘s/he killed’ ibnû ‘they built’
 29 ipárras ‘s/he will cut’ mārūm ‘son’
 30 nādīn ‘is given’ ílu ‘gods’

31

32 Knudsen (1980) also presents an analysis of Akkadian accent. He notes
 33 that there is no evidence for secondary accents. Primary accent falls on
 34 the final or penultimate syllable. If the final syllable was short and the
 35 penultimate had a long vowel, accent was penultimate. A final closed
 36 syllable with a long vowel would have primary accent. This would also
 37 be the case if the final syllable contained a circumflex vowel. He also notes
 38 that accent would be penultimate if the last two syllables were light, even
 39 if the antepenultimate vowel were long. In case words only have light

40

1 syllable, he notes, that there is no evidence for accent. These observa-
 2 tions are not incompatible with those made by Huehnergard and Woods
 3 (cf. above), except that their unbounded account would suggest that
 4 in the last mentioned case (heavy–light–light) accent would be ante-
 5 penultimate. Knudsen’s observations suggest a bounded rather than an
 6 unbounded system.

7 No information on accent could be found for 𐤀 *Eblaite* and 𐤀 *Amorite*
 8 (only known through proper names in Akkadian texts); cf. Gordon
 9 (1997a,b,c).

10 West Semitic: Central

11 ***StressTyp extracts***

12 **Aramaic [P]**

13 *Afro-Asiatic, Semitic, Central, Aramaic.* East Kurdistan, Israel. Palmyra,
 14 Sinai.

- 15 • Stress falls on the penultimate syllable.
- 16 • Epenthetic vowels do not count for stress assignment.

17 'ʔarba 'four' čay'xana 'teashop' da'qiqa 'fine'

18 We did not find information on 𐤀 *Ammonite*, 𐤀 *Ugaritic* (Gordon 1997a,b;
 19 Dennis 1997, 2004).

20 Turning to Aramaic, Creason (2004: 400) says that in Proto-Aramaic a
 21 final closed syllable was accented, otherwise accent was on the penult
 22 (even if the final vowel was long). Then final short vowels would be
 23 deleted, or lengthened. In case of deletion, the penultimate open syllable
 24 now would become a final closed syllable, with accent. This basic pattern
 25 (final if closed) remains constant throughout the history of Aramaic, but
 26 in some late Aramaic dialects, final accent shifted to the penult in some
 27 or all words. In line with this Kaufman (1997: 121) states that *Classical*
 28 *Aramaic* is said to have final accent (where he apparently ignored the
 29 penultimate location when the final syllable is open), while the modern
 30 languages have penultimate stress.
 31
 32
 33

34 Western Aramaic:

35 In his discussion of *Neo-Aramaic languages* (E.g. *Ma'aloula*) Jastrow
 36 (1997: 336) says that in Western Neo-Aramaic word accent is usually on
 37 the penultimate. The last syllable is accented if it has a long vowel or
 38 ends in two or more consonants.
 39
 40

1 Eastern Aramaic:

2 Daniels (1997: 137) discussing *Syriac* accent refers to the view that accent
3 is penult among the ‘Nestorians’, but on final closed syllables and other-
4 wise on the penult for ‘Maronites’. The latter pattern is the norm today
5 among ‘Chaldeans’ (these terms referring to different Christian traditions
6 or groups).

7 Malone (1997: 156) proposes that accent in *Classical Mandaic* falls on
8 the last vowel of the word. In *Modern Mandaic*, according to Malone
9 (1997: 149), accent falls on the rightmost, non-final full vowel. This sug-
10 gests an unbounded system, but no default clause is mentioned in case no
11 full vowel is present.

12 As for the Eastern *Neo-Aramaic* (ENA) languages Jastrow (1997: 353)
13 reports that in Mlahso and in the North-Eastern (NENA) languages
14 nouns are accented on the last syllable, but in the majority of ENA lan-
15 guages accent has shifted to the penult. Accent moves to the (new) penult
16 when suffixes are added, although in verbal forms accent will stay on the
17 original penult when further suffixes are added. This penult location is, for
18 example, found in Turoyo:

19
20 (4) Turoyo: ʰozéno ‘I (m.) see’ ʰozénole ‘I (m.) see him’

21 He also says that perhaps in these varieties accent has become phonemic
22 in the sense that across verb classes different patterns may obtain:

23
24 (5) Turoyo: málim ‘he collects’ malím ‘collect!’

25 Whereas Jastrow says that in NENA languages accent is final in nouns,
26 Hoberman (1997: 330 ff.) reports that accent in the NENA dialects spoken
27 in northwestern Iraq, except in verbs, uniformly falls on the *penult*. In
28 verbs, where penult is still the default, accent placement is governed by
29 the morphology. Consider the following ‘minimal’ pair (representative of
30 Modern Aramaic NENA dialects):

31
32 (6) má:liple ‘teach him (imp. sing.)’ ma:líp̄le ‘that he teach him’

33 He adds the following generalizations:

- 34
35 (7) a. In the imperative form accent is initial
36 b. Accent is APU when a surface penult /i:/ or /u:/ is derived from
37 an underlying non-syllabic semi-vowel.
38 c. Certain verbal suffixes cannot be accented, such as the past tense
39 suffix /wa:/. When such suffixes occur accent occurs earlier in
40 the word.

1 Two word combinations in which the second word cliticizes to the first
2 show a reduction of the accent on the second word.

3
4 Canaanite

5 ***StressTyp extracts***

6 **Hebrew, Modern [U;P]**

7 *Afro-Asiatic, Semitic, Central, South, Canaanite.* Israel.

- 8
9 • Primary stress is mostly final, but sometimes phonemically on the
10 penult.
11 • Secondary stress on alternate syllables to the left of the main stress.

12 ḡa'dol 'big' ta'am 'tasted'

13 me,yuga'rim 'adults' 'taam 'taste'

15 **Hebrew, Tiberian (dialect of Hebrew; Ivrit) [U/P]**

16 *Afro-Asiatic, Semitic, Central, South, Canaanite.* Lake Tiberia (Israel).

- 17
18 • Main stress is assigned to the final syllable if it is closed.
19 • Otherwise stress is penultimate (but may shift again to the final syllable).
20 • Secondary stress two syllables to the left of the main stress and long
21 vowels before that.

22 'qa:mu: 'arise third.pl.' ktab'tem 'write scnd pl masc'

24 ***Additional information***

25 †*Punic* is a late dialect of †*Phoenician* through which we get most
26 information about earlier phases of Phoenician (Hackett 2004; Segert
27 1997a,b). This language disappears in the eastern Mediterranean area
28 during the first century BCE and in North Africa in the fifth century AD.
29 Segert (1997: 63) suggests that the position of word accent can be deter-
30 mined on the last syllable in most cases.

31 We have no information on †*Moabite*, †*Edomite* and †*Ammonite*.

32 Turning to Hebrew, Steiner (1997: 149) says that in *Biblical (Tiberian)*
33 *Hebrew* primary stress is on the ultimate or penultimate syllable, with
34 an increased tendency toward the ultimate; see also Khan (1997) and
35 Rendsburg (1997).

36 In *Modern Hebrew* (Bat-El 1993, Bolozky 1997, Berman 1997, Coffin
37 and Bolozky 2005) word accent follows the 'Sephard' tradition. It is final,
38 with (sometimes systematic) exceptions:³

40
3. We thank Shmuel Bolozky for supplying us with additional information.

- 1 (9) a. In general, penultimate accent may result when suffixes remain
 2 'neutral' such that the accent remains on the final syllable of the
 3 base. This happens in the verbal system where (except in the
 4 present participle) accent lies on the *stem*-final vowel:
 5 katávti 'I wrote' dibárta 'you spoke'
 6 nimcénu 'we were found' ipíla 'she dropped (trans.)'
 7
- 8 b. Also in nouns that are acronyms or frequently used, accent can
 9 be 'stable' under suffixation:
 10 mankál 'general manager' mankálím (plural)
 11 rasár 'first sergeant major' rasárim (plural)
 12 tút 'water melon' tútím (plural)
 13 cxók 'laughter' cxókím 'joyous moment'
 14
- 15 c. Stable accent is also found in names for residents:
 16 telavív 'Tel Aviv' telavívi 'resident of ...'
 17 xolón 'Holon' xolóni 'resident of ...'
 18
- 19 d. Certain derived ('segolate') nouns like *méser* 'messenger'; here,
 20 historically a vowel broke up a final 'impermissible' cluster.
 21
- 22 e. Insertion of /a/ causes penultimate stress in another group of
 23 words:
 24 gavóa 'tall (m.sg.)' potéax 'open (m.sg.)'
 25
- 26 f. Penultimate accent occurs in names of children's games: *Shíra*
 27 (name) and *klátím* (children's game); compare:
 28 kláfím 'cards' kláfím 'gard game'
 29 monópól 'monopoly' monópol 'Monopoly (game)'
 30
- 31 g. Due to the influence of Yiddish accent, we find a penultimate
 32 location in colloquial style of proper names:
 33 Yaél ~ Yáel
 34 xaím 'life' Xáím 'proper name'
 35 In general it would seem that in informal speech, penultimate
 36 accent may take over from the 'more formal' final accent.
- 37 h. In nonverbal forms there are sporadic exceptions to the final
 38 accent pattern:
 39 láma 'where' (h)éna 'here'
 40
- i. Loan words (like *akadémiya*, *instalátor*) can be exceptional,

1 In words that have exceptional accent (when no suffixes are involved)
2 accent appears to be stable under suffixation

3 (10) *tíras tíras – im* ‘corn – plural’
4

5 This especially applies to borrowings which keep their original accent loca-
6 tion even if non-final and this position is also maintained under suffixation.

7 Bat-El (1993) analyses the accent system of Modern Hebrew nouns,
8 which involves lexical marking of stems and suffixes. It would seem that
9 primary accent location follows a LAST/LAST pattern: it falls on the
10 last lexically accented syllable, or, if no lexical accents are present, on the
11 last syllable.

12 Modern Hebrew has regular alternating secondary accents going left-
13 ward away from the primary accent.

14
15 South Semitic:

16 For the Eastern South Semitic (the modern Subarabic or south Arabian)
17 languages, Lonnet and Simeone-Senelle (1997: 354) describe the location
18 of accent as follows: accent falls on the final CVC(C) or CV: (C) syllable
19 and if there is no such syllable on the first CVC syllable. This suggests an
20 unbounded Last/First pattern, although no mention is made of the loca-
21 tion in words that also lack CVC; some examples suggest that accent
22 is initial in that case. Simeone-Senelle (1997: 386) states that in Mehri,
23 Hobyōt, Baḥari and Ḥarsūsi accent is on the *last* strong syllable, or on
24 the first syllable if all vowels are short. This confirms the Last/First pat-
25 tern, though Janet Watson (p.c.) points out that in at least some dialects
26 of Mehri the Last/First pattern only holds of stems (not inflected words)
27 and that in any case strings of short syllables are rare and thus initial stress
28 is itself rare. In contrast, Simeone-Senelle (1997: 386) notes that in Jibbāli
29 a word can have several accents, whereas in Soqoṭ there is a general trend
30 to have initial accent.
31

32 As for the Old/Ancient South Arabian languages belonging to the
33 Western South Semitic, Graag (1997) and Nebes and Stein (2004) provide
34 no information on accent.

35 4.3. *Arabic languages (< Semitic < Afro-Asiatic)*

36 ***Genetic information***

37 A standardized version of Arabic, the language of the Quran and early
38 Islamic literature arose in the 8th century. This version came to be known
39 as *Classical Arabic* (Fischer 1997; Owens 2006) which develops in the 19th
40

1 and 20th century into *Modern Standard Arabic* which is used in most
 2 sectors of public life. Meanwhile, many more conservative Bedouin
 3 (rural) and sedentary (urban) varieties of Arabic develop which are usually
 4 grouped into a Western and the Middle Eastern group. The Western
 5 group (the Maghrebi or North African dialects) covers Libya, Tunisia,
 6 Algeria, Morocco, Mauritania, and the outlying Maltese variety (Borg
 7 and Azzopardi-Alexander (1997) (as well as now extinct Andalusian
 8 Arabic and Siculo Arabic). The Middle Eastern group covers the Arabian
 9 Peninsula, Iraq, Iran, Sudan, Syria-Lebanon-Palestine, Jordan, Egypt and
 10 areas in Afghanistan and Uzbekistan, as well as an outlying variety in
 11 Cyprus (Alexander (1997). Most entries in *StressTyp* (nearly all of which
 12 are analyzed in Hayes 1995) come from the Middle Eastern group which
 13 can be geographically subdivided into a southern group (Arabian Penin-
 14 sula), a northern group (Levant and Mesopotamia) and a central group
 15 (including Egypt and Sudan).

16 Linguistic studies on Arabic have a rich tradition (cf. Owens 2006;
 17 Versteegh et al. 2009) and in more recent times the variety of accentual
 18 systems has attracted wide attention (cf. Watson, to appear for an over-
 19 view of different approaches and some case studies). Kaye (1997) and
 20 Kaye and Rosenhouse (1997) provide general discussions of the phonology.
 21 Studies of specific accentual systems can be found in Birkeland (1954),
 22 Janssens (1972), Angoujard (1990), Hayes (1995) and Kager (2009).

24 *StressTyp extracts*

25 **Arabic, Classical [L/F]**

- 26 • Stress the rightmost non-final syllable that has a long vowel or closing
- 27 consonant.
- 28 • If there are no such syllables, stress the first.

29 ki'taabun 'book' 'mamlakatun 'kingdom'

30 'balaḥatun 'date' ta'mamtumaa 'you both completed'

33 Middle East, Southern

34 **Arabic, Bedouin Hijazi (dialect of Arabic) [U-P/A]**

- 35 • Superheavy (long vowel + coda, or double coda) final syllables carry
- 36 stress.
- 37 • In other cases, stress falls on the penult if it is heavy, otherwise on the
- 38 antepenult.

39
40

1	mak'tu:b	'written'	ð ^s a'rabt	'I hit'
2	'ma:lana	'our property'	mak'tu:fah	'tied f.s.'
3	ga:'bilna	'meet us m.s.'	'kitab	'he wrote'
4	'bgarah	'cow'	'yaza	'he raided'

6 Arabic, Gulf [U/P]

- 7 • If the vowel of the final syllable is long, it bears stress.
- 8 • In all other cases stress is on the penult.

9	ha'jaattin	'their life'	jʃuu'fuun	'they see'
10	'beettum	'their house'	mus'taʃfa	'hospital'
11	'qa bitʃ	'your heart'		
12	mithaaw'ʃiin	'having quarrelled with each other'		

15 Middle East, Northern:

16 Arabic, Beirut/Lebanese (dialect of Arabic, North Levantine) [U-P/A]⁴

- 17 • Superheavy (long vowel + coda, or double coda) final syllables carry
- 18 stress.
- 19 • In other cases, stress falls on heavy penults, otherwise on the antepenult.

20	'd ^s arab	'hit'	d ^s a'rabna	'he hit'
21	ʃa'zaratun	'tree' (Classical)	'd ^s arabu	'they hit'
22	ʃal'lam na	'we teach'	'ʃallamu	'they teach'

25 Arabic, Damascene (dialect of Arabic, North Levantine) [U-P/A]

- 26 • Superheavy (long vowel + coda, or double coda) final syllables carry
- 27 stress.
- 28 • In other cases, stress falls on the penult if it is heavy, otherwise on the
- 29 antepenult.

30	ma'dares	'schools'	dar'rast	'I/you m.s. taught'
31	mut'taħide	'united'	ʃal'lamna	'teach pl.'

34 Arabic, South Levantine; Palestinian Arabic [L (CNT)]

- 35 • Superheavy (long vowel + coda, or double coda) final syllables carry
- 36 stress.

37 _____
 38 4. StressTyp has two different entries for Beirut and Lebanese Arabic which we
 39 have here collapsed because they represent the same dialect.
 40

- 1 • Otherwise, stress penultimate syllables if heavy, and in bisyllabic words.
 2 • Heavy antepenults followed by two light syllables carry stress.
 3 • Four syllable (Classical) words with only light syllables have initial
 4 stress.
 5 • All other words ending in three light syllables have antepenultimate
 6 stress.

7	da'rast	'I studied'	'maktab	'office'
8	'katab	'he wrote'	'ba:rako	'he blessed him'
9	'šajaratun	'a tree' (Classical)	šaja'ratuhu	'his tree' (Classical)

11 **Arabic, Negev Bedouin [L (CNT)]**

- 12 • Stress the last syllable with a long vowel or vowel cluster (VVC or
 13 VCC).
 14 • Otherwise stress the second syllable.
 15 • There is some variation in four syllable words.

16	jana'ma:t	'sheep (several)'	ya'nam	'sheep'
17	fa'rasah	'his horse'	an'kitalaw	'he was killed'

19 **Arabic, Bani Hassan [U-P/A/P]⁵**

- 20 • Stress a final superheavy syllable.
 21 • Stress the penultimate light syllable if not preceded by a heavy syllable.
 22 • Stress penultimate or antepenultimate heavy.

23	ʃi'ba:b	'youth'	ʃal'lamt	'I taught'
24	mak'tabti	'my library'	mi'ka:tib	'offices'
25	'walad	'boy'	'smikah	'a fish'
26	ʃalla'matuh	'she taught him'	ba:ra'katuh	'she blessed him'

31
 32 _____
 33 5. This system is coded in StressTyp as [L/F] but no examples are given and we
 34 find the following verbal description:

- 35 • Stress the rightmost syllable with a long vowel or coda, otherwise the first.
 36 • Long vowels preceding the main stress have secondary stress.

37 The generalisation above is based on the data in Irshied & Kenstowicz (1984).
 38 Hayes (1995) sees Bani Hassan Arabic as similar to Palestinian Arabic with
 39 the difference that in a final HLL] sequence the accent is on the H rather, as
 40 in Palestinian Arabic, on the penultimate light. He also says that accent is
 penultimate in HLLL]. We discuss an analysis below.

1 Middle East, Central

2 **Arabic, Egyptian Radio (dialect of Arabic, Egyptian Spoken) [L (CNT)]**

- 3 • Superheavy (long vowel + coda, or double coda) final syllables carry
4 stress.
- 5 • Otherwise, stress penultimate syllables if heavy, and always in bisyllabic
6 words.
- 7 • Three syllable words with only light syllables have antepenultimate
8 stress.
- 9 • Four syllable words with only light syllables have antepenultimate or
10 pre-antepenultimate stress in free variation.
- 11 • If the antepenult is heavy and the penult and final light, either it or the
12 penult is stressed.
- 13 • If the pre-antepenult is heavy, stress is always antepenultimate.
- 14 • Rhythm is assigned to non-final heavy syllables and odd light ones from
15 left to right.

16 sa'la:m	‘peace’	ˌkata'baħu or 'kata,baħu	‘he wrote it’
17 qad'damna	‘we presented’	'ʔabadan	‘never’
18 'malik	‘king’	ˌmux'talifa	‘different’

20
21 **Arabic, Egyptian; Cairene Arabic (classical⁶) [L (CNT)]**

- 22 • Superheavy (long vowel + coda, or double coda) final syllables carry
23 stress.
- 24 • Otherwise, stress penultimate syllables if heavy.
- 25 • In all other cases, stress the penult or antepenult, whichever is separated
26 from the last heavy syllable, or the left word edge, by an even number of
27 syllables (or zero).

28 'buxala	‘misers’	ʔa'malti	‘you f.s. did’
29 mux'talifa	‘different f.s.’	mar'taba	‘mattress’
30 saka'kiin	‘knives’		
31 ʃajarata'ħumaa	‘their (dual) tree nom.’ (Classical)		

33 Western group (Maghrebi)

34
35 **Arabic, Libyan; Cyrenaican Bedouin [L (CNT)]**

- 36 • Bisyllables of which the first syllable is open and the vowel is short have
37 final stress.

38
39 6. Note that this refers to Classical Arabic as pronounced by speakers of Cairene
40 Arabic; of the examples given only the last word is exclusively Classical.

- 1 • Superheavy (long vowel + coda, or double coda) final syllables carry
2 stress.
3 • Otherwise, stress heavy penults or heavy antepenults followed by two
4 light syllables.
5 • Otherwise, stress the penult or the antepenult, whichever is separated
6 from the closest preceding heavy syllable or the left word edge by an
7 odd number of syllables.

8 ti'rɑ:fiɡɑn 'they accompanied' 'maktab 'office'
9 ki'tɑb 'he wrote' ki'tɑbtɑn 'you wrote'
10 mɑʃri'kittɑ 'her quarrel' finɑ'ʒi:l 'cups'
11

12 **Maltese [U/P]**

- 13 • Stress falls on the final syllable if it has a long vowel or is closed by two
14 consonants.
15 • In all other cases stress is penultimate.

16 ber'qu:q 'apricot' ʎɑ'zaqt 'I have dug' 'tifla 'girl'
17
18

19 ***Additional information***

20 Middle East, Southern

21
22 *San'aani Arabic* is spoken in the Old City of the capital city of Yemen
23 (Watson 2002, to appear), and has a complex stress system, summarized
24 in the following algorithm from Watson (2002: 82): a) stress the rightmost
25 non-final CVV or CVG syllable ([ʰa:kɑðaha:] 'like this', [mit'ʔaxxira:t]
26 'late f.pl.'), otherwise, b) stress a final CVVC/CVCC syllable ([ba'na:t]
27 'girls'), otherwise c) stress the rightmost non-final CVC syllable up to the
28 antepenult ([ʰmadrasah] 'school), otherwise d) stress the leftmost CV sylla-
29 ble ([ʰragabatih] 'his neck'). However, as Watson (2002: 81) points out,
30 aside from the unusual fact that a CVV/CVG can attract stress away
31 from a final superheavy, the San'aani stress system is in other respects
32 similar to a Last/First pattern: a) stress a final superheavy CVCC or
33 CVVC syllable, otherwise b) stress the rightmost non-final heavy syllable
34 (up to the antepenult), otherwise c) stress the leftmost light syllable.
35 Watson (2002: 98–121) analyses the variable behaviour of CVG/CVV vs.
36 CVC syllables in San'aani by appeal to a two-layer metrical grid (Hayes
37 1995). She notes that there is considerable fluctuation in stress position in
38 connected speech, particularly in pre-pausal and post-pausal position, and
39 that secondary stress is observed in San'aani in words containing two or
40 more feet.

1 The dialect that McCarthy (1979: 461) refers to as *Yemen Plateau*
 2 *Arabic* is a cover term for a grouping of dialects spoken in the high
 3 plateau ('Hochebene') regions of northern Yemen, taking in the following
 4 geographical areas of Yemen (Diem 1973: 127): San'aa' and environs, the
 5 plateau areas to the north and south of the capital, the North East and
 6 al-Jawf, and the South East (Al-Bayda and Hari:b). Diem (1973: 11) gives
 7 the following basic algorithm for all Yemeni dialects: a) stress a final
 8 superheavy CVCC or CVVC syllable, otherwise b) stress the rightmost
 9 non-final heavy syllable, else c) stress the first syllable of the word. Diem
 10 (1973: 11) notes particularly that in the high plateau areas (only) stress is
 11 not confined to the last three syllables of the word but can occur further
 12 forward in the word, as in the example [ʰamalateh] 'she carried it'. This
 13 is the evidence which causes McCarthy (1979: 461) to cite Yemen Plateau
 14 Arabic as one of the few contemporary spoken dialects which still show
 15 the Classical Last/First stress assignment pattern (beyond the last three
 16 syllables of the word), but contemporary speakers in fact vary in their
 17 accentuation of words of this type between the initial and penult (Janet
 18 Watson p.c.).

19 Prochazka (1988) generalizes over all of the dialects of Saudi Arabia
 20 (including *North Arabian*, *Najdi* and *Hijazi*) and claims that all display a
 21 'rightmost heavy else antepenult' pattern, matching the pattern described
 22 above for Bedouin Hijazi Arabic.

23

24 Middle East, Northern

25

26 The stress patterns of *Baghdadi Arabic* are described in general terms
 27 in Erwin (1963: 40–42) and can be paraphrased as: a) stress a final super-
 28 heavy, else b) stress the rightmost heavy syllable, else b) stress the ante-
 29 penult (penult in disyllables). This would place Baghdadi in the U-P/A
 30 category. McCarthy & Raffouli (1964: 10–11) state that in words contain-
 31 ing only light syllables stress will fall on the initial syllable, but give no ex-
 32 amples of words which are longer than 3 syllables (e.g. they give [ʰkeleme]
 33 'word'). It is possible that the three syllable window does indeed apply,
 34 but that McCarthy & Raffouli's generalisation holds because, as in Pales-
 35 tinian Arabic (Kenstowicz 1983), any 4 syllable word containing only
 36 light syllables will undergo syncope and be reduced to 3 syllables.

37 De Jong's (2000) survey of *North Sinai Bedouin Arabic* dialects includes
 38 a number of distinctive stress patterns as potential dialectal markers.
 39 A small number of dialects in the survey are reported to have initial
 40 stress in words containing 4 light syllables (CáCaCaCv, without syncope/

1 resyllabification to e.g. CC[˘]CCv), which suggests that they retain the
 2 Classical Last/First pattern. Pickett's (2006) survey of *North Arabian*
 3 *Arabic* dialects spoken by present-day nomadic groups in Syria and
 4 Lebanon,⁷ are all reported to show the Classical pattern: a) stress a final
 5 superheavy (CCVVC, CVVC, CVCC) e.g. [tʃi'θi:r] 'many', else b) stress
 6 the rightmost heavy syllable (CCVV, CVC, CVV, CCVC) e.g. ['madrasa]
 7 'school', else c) stress the initial syllable e.g. ['wasat^s] 'medium (sized)'.

8 The Arabic dialect described in the literature as *Bani Hassan Arabic* is
 9 spoken by a Bedouin-origin community now settled in the north of Jordan
 10 (Kenstowicz 1983, Irshied & Kenstowicz 1984). The dialect displays trisyl-
 11 labic vowel deletion, a common marker of Bedouin-origin varieties (e.g.
 12 /samak-ah/ 'a fish' is realised as ['smikah], Irshied & Kenstowicz 1984:
 13 137). The accent system no longer retains the Classical pattern however,
 14 since stress is confined to the last three syllables of the word, with a non-
 15 initial accent appearing in words containing 4 syllables: e.g. [ʔalla'matuh]
 16 'she taught him'. Note that this pattern is not due to the special status of
 17 the 3f.s. suffix, as it would be in Egyptian Arabic and Lebanese Arabic in
 18 which the 3f.s. suffix always attracts stress, regardless of the syllabic struc-
 19 ture of the word; in BHA the suffix does not automatically attract stress:
 20 LA: [ʃa:'fitu] 'she saw him'/BHA [ʃa:fatuh] 'she saw him' (Irshied &
 21 Kenstowicz 1984: 129).

22 Middle East, Central

24 *Egyptian Sa'iidi Arabic* is spoken along the Nile Valley in Upper Egypt
 25 (south of Cairo as far as Aswan), and McCarthy (1979: 461) mentions it
 26 as a spoken dialect which retains the Classical Last/First stress assignment
 27 pattern. Khalafallah (1969) describes the stress patterns as follows: a) if
 28 there is a long vowel in the word it will bear stress (no words contain
 29 more than one long vowel) e.g. [xala'ga:tu] 'his clothes'/[xuz'na:] 'we
 30 kept it', else b) stress the rightmost closed syllable (non-final CVC or final
 31 CVCC) e.g. [ʔal'lamt] 'I taught', [ma'saktu] 'I caught him', else c) stress
 32 the first syllable ['katab] 'he wrote'. Crucially, c) holds in words contain-
 33 ing 4 light syllables such as ['katabatu] 'she wrote it', confirming that this
 34 is in essence a Last/First pattern (though a final CVV attracts stress).
 35

37
 38 7. Dialects of the Syro-Mesopotamian, 'Anazi, and Shammari groups in John-
 39 stone's (1967) classification.
 40

1 Nishio (1994) reports the same Classical style pattern in the dialect spoken
2 in the Nile Valley village of Qift (near Qena).

3 Hamid (1984: 37) also describes the stress patterns of *Sudanese Arabic*
4 in terms of a Classical style Last/First pattern, which reduces to: a) stress
5 the rightmost heavy syllable, else b) stress the initial syllable (cf. Kensto-
6 wicz 1984: 129). However, no sample words are given that contain
7 more than 3 light syllables, and there are a number of counterexamples
8 to the 'initial stress' rule, which Hamid explains by appeal to interac-
9 tion with segmental phenomena, which might be amenable to a L(CNT)
10 analysis.

11

12 Western group (Maghrebi)

13

14 Boudlal (2001: 107ff.) describes the stress patterns of the dialect of *Moroccan*
15 *Arabic* spoken in Casablanca, for words in isolation, as follows: a) stress the
16 final syllable if it is heavy e.g. [li'mun] 'oranges', otherwise, b) stress the
17 penult (regardless of weight) e.g. [rəmla] 'sand'. Only CVC syllables con-
18 taining full vowels are heavy; CəC is treated as light. For isolation forms
19 then, Moroccan Arabic displays a U/P system similar to that observed
20 in Maltese; in connected speech Boudlal found stress was invariably word-
21 final.

22 Guella (m.s.) describes the stress patterns of the dialect of *Algerian*
23 *Arabic* spoken near Tlemcen as follows, barring some morphologically con-
24 strained exceptions: a) stress the leftmost long vowel (e.g. [məʃ'du:di:n]
25 'tied up m.pl.'), otherwise b) stress the penultimate syllable (e.g. [təq'lebkum]
26 'she will overturn you pl.').

27 Talmoudi (1980) describes the stress patterns of the dialect of *Tunisian*
28 *Arabic* spoken in the Old City of Sousa as follows: a) stress the leftmost
29 syllable containing a long vowel, otherwise b) stress the initial syllable.
30 Closed syllables, both CVC and CəC, are treated as light. It is not clear
31 whether the patterns described hold for isolation forms or in connected
32 speech.

33 Abumdas (1985) gives an account of the dialects of *Libyan Arabic*
34 spoken in Tripoli, Ben Ghazi and Zliten (a Bedouin-origin variety). He
35 notes that there are stress minimal pairs (as also reported by Mitchell
36 (1960) for Cyrenaican Bedouin Arabic), e.g. ['xalaq] 'creating' ~ [xa'laq]
37 'he created', but states that stress is nonetheless predictable in many cases,
38 giving rules parallel to those put forward for Cyrenaican Bedouin Arabic
39 (=Eastern Libyan Arabic) by Mitchell (1960) and Owens (1984).

40

1 **Generalizations**

2 The following table summarizes the accentual types that we have men-
3 tioned in this chapter:
4

5 (11) An overview of accentual types in Arabic
6

7 Classical Arabic [L/F]			
8 Middle	Eastern	Central	Western group
9 Southern group	Northern Group	Central Group	
10 Gulf: [U/P]	Beirut/Lebanese: [U-P/A]	Radio Egyptian: [L(CNT)] ~ [U-P/A]	Cyrenaican Bedouin (East. Libyan): [L(CNT)]
11 San'aani: [L/F] and [U-P/A]	Damascene: [U-P/A]	Cairene: Trochaic [L(CNT)]	Libyan (Tripoli): [L(CNT)]
12 Yemen Plateau: [L/F]	South Levantine/Palestinian: Trochaic [L(CNT)] or [L/F] and [U-P/A]	Egyptian Sa'ïidi: [L/F]	Moroccan: [U/P]
13 Bedouin Hijazi: [U-P/A]	Negev Bedouin: Iambic [L(CNT)]	Sudanese: [L/F]	Nigerian: [U-P/A]
14 Saudi Arabic dialects: [U-P/A]	Bani Hassan: [U-P/A/P]		Chadic: [U-P/A]
15 Urban Hijazi Arabic: Trochaic [L(CNT)]	Baghdavi: [U-P/A]		Tunisian: [F/F]
16	North Sinai Bedouin: [L/F]		Algerian [F/P]
17	North Arabian dialects: [L/F]		Maltese: [U/P]

18 Because the Arabic languages show such an interesting variety of accen-
19 tual systems, their proper analysis has been the subject of both descriptive
20 and theoretical work. Here, following Hayes (1995), Kager (2009) and
21 Watson (to appear), who offer detailed analyses, we will briefly discuss
22 the variety of systems and their possible relations, using some ingredients
23 of the accentual theory proposed in van der Hulst (in prep.).
24
25
26
27
28
29
30
31
32
33

1 The table in (12) summarizes the various accentual types:

2
3 (12) A summary of accentual types in Arabic

4 [L/F]	Classical; Yemen Plateau; North Sinai Bedouin; North Arabian Dialects; Egyptian Sa'idi; Sudanese
5 [F/F]	Tunesian
6 [F/P]	Algerian
7 [U-P/A]	Bedouin Hijazi; Saudi Arabic dialects; Beirut/Lebanese; Damascene; Baghdavi; Nigerian; Chadic
8 [U-P/A/P]	Bani Hassan
9 [L/F] and [U-P/A]	San'aani
10 [U/P]	Moroccan; Gulf; Maltese
11 [L(CNT) tr]	+EM(syll): Palestinian; +/-EM (syll): Radio Egyptian -EM(syll): Cairene (~[U/P]) -EM (syll): Urban Hijazi (no post-heavy strong light)
12 [L(CNT) ia]	Negev Bedouin; Cyrenaican Bedouin

21 *Extrametricality*

22
23 It seems that all Arabic languages treat final CVXC as heavy and final
24 CVC as light. The status of final CVV, which is rare or absent, is not
25 clear, but apparently not uniform across the dialects. Final C is always
26 'invisible', but on top of that we need syllable EM. In final position, if
27 CVV is either absent, or present and invisible (like CVC and CV), we can
28 simply say that syllable-EM applies. If final CVV is stressed, we have
29 to say that there is (a) final C-extrasyllabicity (to cover final CVC) and,
30 additionally, final LIGHT syllable EM (to cover final CV). Final CVC,
31 then, is (harmlessly) 'doubly invisible'. Extrasyllabicity of C makes it light
32 and as such extrametrical together with final CV.

33 However, Cairene does not have final syllable EM, while it does ignore
34 final C, because final CVC acts as light. In U/P languages we also do not
35 have final syllable EM, but still final C is invisible, except in Moroccan
36 where final CVC is heavy. In this language CəC is light together with
37 final CV.

38 To see a separate role for consonant-EM we can look at bisyllabic
39 words. In most languages, in bisyllabic words, one would suppose that
40

1 syllable-EM is suppressed to guarantee word-minimality. Most of these
 2 CVCVC (LH) words have initial accent, suggesting that the final C does
 3 not contribute to weight, but in Negev Bedouin such words have final
 4 accent, which suggest that there is no final C-EM. This may be connected
 5 to the rise of so-called iambic patterns.

6 Watson discusses the case of San'aani Arabic in which the rightmost
 7 non-final CVV or CVG (syllables closed by a geminate consonant) attract
 8 accent away from final superheavy syllables and CVV syllables (and of
 9 course CVC syllables). This language then treats CVXC and CVV as
 10 'monosyllabic' and as such they fall under syllable-EM.

11

12 *Bounded systems*

13 All Arabic languages agree in certain patterns:

14

- 15 (13) a. Accent is U if the U syllable is VXC
 16 b. Accent is P if the P syllable is heavy and the U syllable is light
 17 (A final CVC counts as light)

18 Systems start to differ once we look at final sequences of light syllables.
 19 Here we see a rich variety. The standard Latin like pattern adds the
 20 following third clause to the two clauses in (13)

21

- 22 (14) c. Accent is A if the two final syllables are light

23 This creates the [U-A/P] pattern of Damascene Arabic and many other
 24 varieties.

25

26 However Cairene Arabic has P accent if a word ends in two light sylla-
 27 bles preceded by a heavy syllable or two (or rather an even number of)
 28 other light syllables (counting from the word beginning or the rightmost
 29 heavy syllable):

- 30 (15) HLL] HLLL] XLLLL] (X = # or H)

31

32 This is a count system. In van der Hulst (in prep.) a count system is
 33 treated as having *two* bounded accentual domains, one on the left (which
 34 in this case is right-headed if the right hand syllable is heavy, otherwise
 35 left-headed) and one on the right that is not headed:

- 36 (16) x >>
 37 (σσ)σσσσ(σσ)*σ

38

39 An alternating *trochaic* pattern of rhythmic beats echoes rightward, away
 40 from the initial accent (shown in 17 as Perfect Gridding-trochaic (Left to
Right)) and 'invades' the right-hand domain as follows:

1 (17) Cairene Arabic

2 x x x ER(R)
 3 x x x x x x x PG-tr (LR)
 4 (HL)L] H(LL)L] XL(LL)L]

5
 6 Note that a rhythmic beat is assigned to a post-heavy light syllable (since
 7 rhythm in this language is moraic, as shown in Hayes 1996). In the first
 8 case the domain has two beats (one by weight and one by rhythm) and
 9 the rightmost wins, which is shown in (17) as End Rule (Right).

10 Palestinian Arabic is minimally different from Cairene:

11 (18) Palestinian Arabic

12 x x x ER(R)
 13 x x x x x x x PG-tr (LR)
 14 (HL)L] H(LL)L] XL(LL)L]

15
 16 The accent is further to the left, which Hayes (1996) in his metrical
 17 account handles by imposing foot extrametricality). We suggest an alterna-
 18 tive. To account for the HLL] pattern we need to assume that the rhythmic
 19 beat on the penultimate light syllable is deleted; in other words: within the
 20 accentual domain a heavy syllable prevails over a rhythmically strong light
 21 syllable.⁸ However, we also need to account for the pre-antepenultimate
 22 pattern in case a word ends in a string of four light syllables which is
 23 claimed to exist because speakers pronounce quadrisyllabic light-syllabled
 24 words with initial accent. To us, this looks like a ‘Classical’ application of
 25 the Classical Arabic unbounded stress rule (specifically its default clause
 26 which applies if all syllables are light). We therefore submit that Palestinian
 27 Arabic embodies a hybrid aspect: in case of a long final string of light
 28 syllables it applies the unbounded initial default that is characteristic of
 29 Classical Arabic; this is indicated in table 11 by specifying that the system
 30 is both [L/F] and [U-P/A].⁹

31 Urban Hijazi Arabic is like Palestinian Arabic, although it misses its
 32 hybrid character; it is simply [U-P/A]:

33 (19) Urban Hijazi

34 x x x ER(L)
 35 x x x x x x x PG-tr (LR)
 36 (HL)L] H(LL)L] XL(LL)L]

37
 38
 39 8. We cannot say that the ER is Left, because in case of (HH)L] stress is
 40 penultimate, in all Arabic dialects.

9. Radio Egypt Arabic vacillates between the Cairene and the Palestinian pattern.

1 There is further variation among the count systems. Negev Bedouin has
 2 iambic rhythm rather trochaic rhythm:

3 (20) Negev Bedouin
 4 x x x ER(L)
 5 x x x x PG-ia (LR)
 6 (HL)L] H(LL)L] XL(LL)L]

7 As in Cairene and Palestinian, the location of accent is not constant within
 8 a window that has two light syllables. This means that Negev is also
 9 a count system. However, the rhythmic pattern is iambic rather than
 10 trochaic.

11 Finally we look at two non-count patterns:

12
 13 (21) Bani-Hassan¹⁰
 14 x x x ER(R)
 15 x x x x Def (R)
 16 (HL)L] H(LL)L] XL(LL)L]

17 This system differs from Damascene Arabic in that a domain with two
 18 light syllables is right headed (indicated by Default (Right)), whereas the
 19 default is Left in Damascene:
 20

21 (22) Damascene
 22 x x x ER(R)
 23 x x x x Def (L)
 24 (HL)L] H(LL)L] XL(LL)L]

25 The differences between these various systems are small, but real, although
 26 the diagnostic sequences may not be so easy to obtain, because of the fact
 27 that (final) sequences of light syllables are rare. It is interesting to note that
 28 count systems come very close to being weight-sensitive right-edge systems
 29 which we realize when we compare the languages discussed above:
 30

31 (23)

	SH]	HL]	HLL]	HLLL]	XLLLL]
32 Damascene	U	P	A	A	A
33 Bani-Hassan Arabic	U	P	A	P	P
34 Negev	U	P	A	P	A
35 Cairene Arabic	U	P	P	A	P
36 Palestinian Arabic	U	P	A	A	I / PA
37 Urban Hijazi	U	P	A	A	P

38
 39 10. This pattern possibly also occurs in Riyadh Arabic as analyzed in Halle and
 40 Kenstowicz (1989).

1 As for the first three sequences, we only see a difference in the HLL case
 2 which seems to reflect a difference in extrametricality ('no' in Cairene).
 3 But if we add the fourth sequence (HLLL]), syllable-EM (no) can no
 4 longer be correct for Cairene, and this is where we have to resort to the
 5 count analysis. For Palestinian we do not have to do that yet. We can
 6 treat Bani-Hassan and Negev alike in that both treat a domain with two
 7 light syllables as right-headed, whereas the others have a left-headed
 8 choice. Only by adding the fourth sequence of syllables (four final light
 9 syllables) can we differentiate all the systems, fully enforcing a count
 10 analysis of Negev, Urban Hijazi and Palestinian. The point of this
 11 exercise is to demonstrate that the crucial evidence for deciding the precise
 12 nature of the system (especially whether the system is a count system or
 13 not) lies in sequences of light syllables that are not frequent in the data.

14
 15

16 *Unbounded systems*

17

18 There is a third type of system that occurs with some frequency in the
 19 Arabic languages and is exemplified by Classical Arabic which has an
 20 unbounded LAST/FIRST system with some form of extrametricality.
 21 In unbounded systems the domain of accent assignment comprises the
 22 whole word. If the word contains heavy syllables, one of these (in
 23 Classical Arabic the rightmost non-final one) attracts accent; if there is
 24 no (non-final) heavy syllable in the word, the default option is a light
 25 syllable at one of the edges (in Classical Arabic it is the first). This
 26 LAST/FIRST pattern is reconstructed for Classical Arabic and as such it
 27 is controversial. An alternative interpretation of the comparative evidence
 28 is that accent never falls further leftward than the antepenultimate syllable
 29 (cf. Angoujard 1990 and Kager 2009 for discussion).

30 However, as we have seen, Classical Arabic is not unique in having an
 31 unbounded system in the Arabic family. McCarthy (1979: 461) remarks
 32 that the Classical pattern is only preserved in a few modern dialects
 33 (*Egyptian Sa'iidi*, *Yemen Plateau*). Our survey here above suggests that it
 34 is also found in Bedouin-origin North Arabian dialects in Syria, Lebanon
 35 and Sinai, and possibly also in Sudanese Arabic.

36 Among the unbounded systems we also see cases that differ from
 37 Classical Arabic in the choice of the leftmost heavy syllable to bear accent.
 38 Algerian Arabic has a FIRST/FIRST system (with the default clause as in
 39 Classical Arabic, i.e. first), while Tunisian Arabic chooses the penultimate
 40 syllable as a default and hence has FIRST/PENULT [F/P]

1 **Historical change**

2 If the unbounded L/F pattern can indeed be attributed to Classical Arabic
 3 (or perhaps proto-Arabic), two kinds of systems have developed from this
 4 unbounded system. We find ‘count systems’ in which the primary accent is
 5 on the right side of the word, but computation starting on (i.e. ‘counting’
 6 from) the left side, and then we find right-edge systems of the ‘Latin type’
 7 with penultimate or antepenultimate accent.

8 McCarthy (1979) sees the count system type (of, for example, Cairene
 9 Arabic) as a later development than the Latin type (found in, for example,
 10 Damascene Arabic). In van der Hulst (1997), it has been suggested that
 11 the Cairene (count) system might be a transitional phase, forming the
 12 link between the initial (default) accent of the unbounded Classical Arabic
 13 and the bounded Latin-like accent rule of Damascene Arabic.

14 Interpreted within the accentual theory in van der Hulst (in prep.), the
 15 transitions that have taken place can be seen as follows:

- 17 (24) a. Unbounded domain (+ σ -extrametricality)
 18 [(.....)< σ >] L/F: ER(R), Def (L): Classical Arabic
 19 F/F: ER(L), Def (L): Tunesian
 20 F/P: ER(L), Def (R): Algerian
 21
- 22 b. Count system (+ σ -extrametricality, except in Cairene which
 23 means that final C-EM ‘emerges’)
 24 [($\sigma\sigma$) $\sigma\sigma\sigma$ ($\sigma\sigma$)*< σ >] L(CNT)-trochaic: Cairene, Palestinian
 25 L(CNT)-iambic: Negev Bedouin
 26
- 27 c. Right-edge bounded system (+ σ -extrametricality)
 28 [...(.....)($\sigma\sigma$)< σ >] U-A/P: ER(R), Def(L): Damascene
 29 Place accent on last heavy or first light
 30 in the rightmost bisyllabic domain
 31
- 32 d. Right-edge bounded system ($-\sigma$ -extrametricality, but +C-EM
 33 except in Moroccan.)
 34 [...(.....)($\sigma\sigma$)] U/P: ER(R), Def(L): Gulf
 35 Place accent on last heavy or first light
 36 in the rightmost bisyllabic domain
 37

38 Classical Arabic is unbounded. The count systems display a ‘fracturing’ of
 39 the unbounded domain into two polar bounded domains, with the right-
 40 most domain being the strongest. It would seem that count systems really

1 are intermediate systems in that on the one hand ‘the whole word domain’
 2 (at least both edges) is relevant, while, on the other hand, accent is con-
 3 fined to a two-syllable window on the right-edge. This provides for the
 4 re-interpretation in terms of a bounded right-edge system, one variety of
 5 which (namely the one that displays *antepenultimate* accent) maintains
 6 syllable-extrametricity, while the other does not (Gulf, Moroccan and
 7 Maltese Arabic).

8 Final accent in [LH] words in, for example, Negev Bedouin Arabic,
 9 points to a loss of consonant extrametricality in specific cases, which may
 10 be connected to the rise of so-called iambic patterns. Throughout, all sys-
 11 tems maintain weight-sensitivity.

12

13

14 4. Conclusions and Generalization

15

16 Very little, if anything can be said about the isolate extinct languages
 17 mentioned in section 3. The pattern for Egyptian suggests a weight-
 18 sensitive right-edge system which fits with the general pattern found in
 19 the Semitic languages where accent is either unbounded or confined to
 20 the right edge:

21

22 SEMITIC

23 EAST: **Last/First** († *Akkadian*)

24 WEST:

25 CENTRAL:

26 ARAMAIC: **Latin-type**

27 CANAANITE: **Final** (*Hebrew*), **Latin type** (*Tiberian Hebrew*)

28 ARABIC: **Last/First / L (count) / Latin type**

29 SOUTH

30 *Western (not discussed here)*

31 *Eastern: Last/First*

32

33 Knudsen (1980) in his analysis of Akkadian accent concludes (p. 15):
 34 “viewed in a historical perspective, most features in the Akkadian system
 35 of stress as outlined above are common to Akkadian, Hebrew, Aramaic,
 36 and Medieval Arabic.” It is tempting to see the Last/First system as
 37 fundamental with, as suggested earlier, count systems and Latin-type
 38 systems having derived from that. The loss of weight-sensitivity and
 39 extrametricality as exemplified by Modern Hebrew seems a final step in
 40 the direction of fixed right-edge accent.

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