Classification and Phonological Overview of African Languages

Larry M. Hyman

University of California, Berkeley

Workshop on African Languages and Cultures for the IC
June 9, 2011

University of Maryland Center for Advanced Study of Language
College Park, Maryland
(1) Questions

• How are African languages the same vs. different from each other?
• How are African languages the same vs. different from other languages?

In other words: How does one recognize an African language when one sees/hears one?
(2) Number of languages in Africa

The above questions are a tall order with over 2000 languages spoken in Africa (cf. Childs 2003:23)

<table>
<thead>
<tr>
<th>“Macro Group”</th>
<th>Approx. # Languages</th>
<th>Approx. population (from Ethnologue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niger-Congo</td>
<td>1,500-1,600</td>
<td>382,257,169</td>
</tr>
<tr>
<td>Afroasiatic</td>
<td>200-300 (in Africa)</td>
<td>359,495,289 (includes Arabic outside of Africa)</td>
</tr>
<tr>
<td>Nilo-Saharan</td>
<td>100-200</td>
<td>38,257,502</td>
</tr>
<tr>
<td>Khoisan</td>
<td>30 (originally 100+)</td>
<td>502,409</td>
</tr>
</tbody>
</table>
(3) Major “macro groups” of Africa

The four major linguistic “macro-groups” of Africa according to Greenberg (1963), some of which is questioned today, e.g. Khoisan; Mande within Niger-Congo; Songhay within Nilo-Saharan + isolates.
(4) Salient typological features

a. word structure, e.g., whether words are long or short, have prefixes or suffixes, etc.
b. syllable structure, e.g., whether simple or complex (open vs. closed etc.)
c. sound inventories, e.g., any skewing / preponderance of certain consonants, vowels or “prosodic” features (tone, stress, intonation).
(5) Other factors: Genetic affiliation

Genetic affiliation: the linguistic family that the language(s) belong(s) to

Example: Unlike most African languages, Berber and Ethiopian Semitic lack tone because the parent language, Proto-Afro-Asiatic, did not have tone (vs. the other proto languages of Africa)
(6) Other factors: Geography

Linguistic geography: the linguistic area in which the language(s) is/are spoken

Example: The southern Bantu languages Xhosa and Zulu have acquired clicks as a result of contact with the Khoisan languages, which are unique in having clicks in their proto language

Six phonological zones in Africa
(Clements & Rialland 2008:37)
(7) Other factors: Idiosyncrasies

Most African languages have a relatively simple syllable structure (often CVCV) as in most Bantu:

a. **bá-ka-bón-a Káto** ‘they saw Kato’ (Haya; Tanzania)

In Moroccan Tamazight (Berber) we find CCC (Penchoen 1973:95)—an *embarras de consonnes*:

b. \(/t + sy + d/ \rightarrow θesγeð \rightarrow [θsyɛð]\) ‘you sg. buy’ (cf. English *twelfths*)

Gokana (Ogoni, Nigeria) has long sequences of vowels)—an *embarras de voyelles*:

c. **mēe ě kō mǐm kēe-ĕ-ĕ-ĕ-ĕ** ‘who₁ said I woke him₁ up?’
(8) Nasalized vowels

Nasalized vowels are common in West Africa, e.g. in Gokana (Ogoni [Kegboid], Cross River; Nigeria)

<table>
<thead>
<tr>
<th>Oral vowels</th>
<th>Nasalized vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td>di ‘pig’</td>
<td>dí ‘grease, dirty’</td>
</tr>
<tr>
<td>dée ‘climb’</td>
<td>dēē ‘all, whole’</td>
</tr>
<tr>
<td>dú ‘come’</td>
<td>dú ‘tail’</td>
</tr>
<tr>
<td>dọ ‘fall’</td>
<td>dọō ‘divide’</td>
</tr>
<tr>
<td>dá ‘lick’</td>
<td>dá ‘hear’</td>
</tr>
</tbody>
</table>

(Clements & Rialland 2008:46)
(9) Ejective consonants

Ejective consonants in Amharic
(examples provided by S. Rose, personal communication)

<table>
<thead>
<tr>
<th>a.</th>
<th><strong>plain</strong></th>
<th>b.</th>
<th><strong>ejective</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>pakko</td>
<td>‘box (of cigars)’</td>
<td>p’app’as</td>
<td>‘pope’</td>
</tr>
<tr>
<td>təffa</td>
<td>‘he spit’</td>
<td>t’effa</td>
<td>‘he got lost’</td>
</tr>
<tr>
<td>kəbbərə</td>
<td>‘he was honored, respected’</td>
<td>k’əbbərə</td>
<td>‘he buried’</td>
</tr>
<tr>
<td>k’wərrərə</td>
<td>‘he has blisters’</td>
<td>k’w’ərrərə</td>
<td>‘he tore off (bread)’</td>
</tr>
<tr>
<td>tʃəffərə</td>
<td>‘he threw food into his mouth’</td>
<td>tʃ’əffərə</td>
<td>‘he danced and sang’</td>
</tr>
<tr>
<td>sənnənə</td>
<td>‘he became thin’</td>
<td>s’ənnənə</td>
<td>‘he leaned’</td>
</tr>
</tbody>
</table>
(9) Ejective & emphatic consonants

Emphatic and ejective consonants
(Clements & Rialland 2008:62)
(10)-(11) Labiovelar consonants

Labiovelars in Dan (Mande) (Vydrine 2008)

<table>
<thead>
<tr>
<th></th>
<th>labial</th>
<th>velar</th>
<th>labiovelar</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>voiceless</td>
<td>pá ‘to touch’</td>
<td>kā ‘crab’</td>
</tr>
<tr>
<td>b.</td>
<td>voiced</td>
<td>bà ‘become fat’</td>
<td>gà ‘look at’</td>
</tr>
</tbody>
</table>

Labiovelar /kp, gb, ṭm/ consonants in Africa
(Güldemann 2008:158)
(12)-(13) Vowel harmony

(12) Degema vowel systems (2 sets of 5 vowels, [+ATR] and [-ATR])

i  u  i  u  i  u  i  u  i  u
e  o  e  o  e  o  e  o  e  o
a  a  a  a

(Kari 2008, “dotted vowels”)

(13) Degema CV verbs with all 10 vowels + ATR harmony on iterative suffix -vIrIy ‘many times, habitually’

a. [+ATR] verbs
   bi ‘push (aside)’ → bi-viriy
   gbe ‘go (finally)’ → gbe-viriy
   mu ‘beat sth./s.o.’ → mu-viriy
   do ‘steal’ → do-viriy
   za ‘be’ → za-viriy

b. [-ATR] verbs
   bi ‘guard, watch’ → bi-viriy
   gbë ‘grind’ → gbë-viriy
   mű ‘shine (sun)’ → mű-viriy
   dọ ‘be small’ → dọ-viriy
   sà ‘kick, sh oot’ → sà-viriy
(14) ATR vowel contrasts, harmony

ATR (Advanced Tongue Root) vowel contrasts, harmony (Güldemann 2008:160)
(15) Distribution of tone in the world

(Maddieson 2008)

http://wals.info/feature/13?v1=cfff&v2=cf6f&v3=cd00&s=20&z1=2998&z2=2999&z3=3000&tg_format=map&lat=5.5&lng=152.58&z=2&t=m
### (16)-(17) Tone

#### (16) African languages with two, three and four tone heights (H = high, L = low, M = mid, L˚ = level low)

<table>
<thead>
<tr>
<th>Igbo [Nigeria]</th>
<th>Nupe [Nigeria]</th>
<th>Bamileke-Fe’fe [Cameroon]</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-H ákwá [−−]</td>
<td>‘crying’</td>
<td>H bá [−] ‘be bitter’</td>
</tr>
<tr>
<td>L-L ákwá [−−]</td>
<td>‘bed’</td>
<td>M bā [−] ‘cut’</td>
</tr>
<tr>
<td>H-L ákwá [−−]</td>
<td>‘cloth’</td>
<td>L bà [−] ‘count’</td>
</tr>
<tr>
<td>L-H ákwá [−−]</td>
<td>‘egg’</td>
<td>L˚ pu˚̀ [−] ‘bend over’</td>
</tr>
</tbody>
</table>

#### (17) Up to five level tones, e.g. Benchnon (Omotic; Ethiopia) 5, 4, 3, 2, 1; 23 = rising (Rapold 2006:120)

| 5 kār | ‘clear’ | 2 kār | ‘wasp’ |
| 4 kār | ‘inset or banana leaf’ | 1 kār | ‘loincloth’ |
| 3 kār | ‘to circle’ | 23 kār | ‘type of game with stones’ |
(18) Tone

Multi-height tone systems are located in the Sudanic zone and in Khoisan (Clement & Rialland:73)
(19)-(20) Other prosodic features

(19) Word-stress is sporadically attested in Africa, but is much less salient than tone: cf. English (stressless vowel reduction) *convert* (noun) [ˈkən.vərt] vs. *convert* (verb) [kən.ˈvərt]

(20) However, even in African languages, syllables are not all equal—a particular syllable can be targeted for “prominence”, e.g. lengthening of the vowel of the penultimate syllable in Shekgalagari (*aa* etc. = long)

a. χu-baal-a ‘to count’

b. χu-bal-ɛɛl-a ‘to count for’

c. χu-bar-iis-a ‘to cause to count’

d. χu-bar-is-ɛɛl-a ‘to cause to count for’
(21)-(22) Other prosodic features

(21) What’s striking about African languages is that they often care more about phrase-level prominence than word-level. Thus, only the phrase-penultimate vowel lengthens in Shekgalagari

a. a-bal-a ‘he is counting’ → a-bal-a ri-nári ‘he is counting buffalos’
b. a-bal-æl-a ‘he is counting for’ → a-bal-æl-a mu-limi ‘he is counting for the farmer’

(22) No lengthening in the corresponding questions and imperatives (Hyman & Monaka 2011)

a. a-bal-a ‘is he counting?’ → a-bal-a ri-nárí ‘is he counting buffalos’
b. bal-á ‘count!’ → bal-á ri-nárí ‘count the buffalos!’
(23) Tone at the phrase level

Tone frequently operates at the phrase level, e.g. H tone shifts to lengthened penultimate vowel in Giryama (Volk 2011:1)

‘I want ...’ (all L tone)  ‘he/she wants ...’ (penult H tone)
ni-na-maal-a  a-na-maál-a
ni-na-mal-a ku-guul-a  a-na-mal-a ku-guíl-a  ‘... to buy’
ni-na-mal-a ku-gul-a ŋguwoo  a-na-mal-a ku-gul-a ŋguuíwo  ‘... to buy clothes’
H
(24) Stress at the phrase level

Stress may also be phrase-level in certain non-tonal languages of North and NE Africa, e.g. Shilha (Berber)

“It should be noted that the stress patterns referred to here apply only to utterances consisting of a single word. If the utterance contains more than one word, the stress is reduced slightly on all vowels except those in the final word. It can be said, therefore, that primary stress occurs only at the end of an utterance.”

(Applegate 1958:9n)
(25) Question intonation ("lax" tone)

(26) Question intonation ("breathy")

Dagbani question intonation: final L tone, lengthened vowel, breathiness instead of final glottal stop [ʔ]

a. ò jè sàná nò?  ‘he saw this stranger’
   L  L  H  H  H
   (lit. he saw stranger this)

b. ò jè sànà nòò  ‘did he see this stranger?’
   L  L  L  L  LL

(Hyman 1993:247)
(27) Identifying a tonal language

Question: Can one tell if an unfamiliar language is tonal just by listening to it?

“What may have been a tour de force in tonal analysis took place on a roadside perhaps fifty miles southeast of Bamenda, Cameroon, about mid-January, 1950. The language is unidentified. We had stopped for lunch out of sight of any habitation, and were standing around the tailgate-cum-lunch-table of our pickup truck, when a woman and a child of perhaps eight came past on foot. With understandable curiosity at this display of foreign culture, the child kept turning to look at us, and fell perhaps fifty feet behind his mother. His mother turned said something which consisted of four syllables. The first syllable had the lowest pitch; the second was higher; the third was higher than the first but lower than the second; the fourth was highest of all [i.e. 1-3-2-4].... I immediately said to my wife, “Behold a language with four tones!” I had reasoned that the circumstance and the child’s lack of verbal response made it highly unlikely that the utterance was a question; had it been, the possibility of a rising intonation would have to be considered. More likely the utterance was an imperative; possibly it was a statement. Intonational or allophonic conditioning to account for a pitch sequence of this type seems highly unlikely. It just shows—in all likelihood—how simple tonemic analysis can sometimes be.” (Welmers 1973:103)
(28) Pitch versus tone

Beware! “We hear pitches, not tones.” (Mark Donohue, pers. comm.) Compare Yoruba vs. Luganda:

a. máyòmì rà wè [máyòmì rà wè] ‘Mayomi bought books’

b. [HL H L H] (Laniran & Clements 2003: 207)

(each tone “spreads” onto the following syllable to create a HL or LH contour)

b. tè-yà-láb-à ki-kópò ki-nénè ‘he didn’t see a big cup’

NEG-he-PAST-see cup big (could be like Swahili penultimate stress)
(29) Tone and word length

The above comparison shows that there is a wide range of morphological complexity and word size in African languages. Languages with shorter words often have more tones, e.g. H, M, L, HL, LH, ↓M in Yoruba (Stahlke 1970: 63, 85):

a. mō mú īwé wá fū ē ‘I brought you a book’
   I take book come give you

b. mō fī àdá gé īgī ‘I cut wood with a machete’
   I take machete cut wood
(30) Languages with longer words tend to have fewer and more sparse contrasting tones, e.g. /H/ vs. Ø in Bantu Kinande: Ngessimo Mutaka, cited by Nurse & Philippson 2003:0)

\[
\text{tu-né-mu-n\text{-}\text{ndi-syá\text{-}tá-sya-y\text{-}a-ba-k\text{-}\text{ing-\text{-}ul\text{-}ir\text{-}an\text{-}is-i\text{-}á}} \end{align*}
\text{=ky\text{-}ô}
\]

\[
\text{we-} \ TENSE/\text{ASPECT} \ \text{COMPLEX}\text{-}\text{them close-REVERS-APPL-RECIP-CAUS-CAUS-FV} \ \text{it}
\]

‘we will make it possible one more time for them to open it for each other’

(31) Some Northwest Bantu languages show a tendency towards monosyllabicity, e.g. Nzadi (Crane et al 2011)

\[
\text{mi a lîn otyén sâm baar kê zî íîkî}
\]

\[
\text{I \ PRES \ want \ to \ tell \ reason \ people \ ASP \ know \ which}
\]

\[
\text{mpil a sûm bo iyô kô waa e mî.}
\]

‘I want to tell the reason that people may know they do (literally, buy) the market in my village.’
(32) Phonological “Africanisms”

Modifying Heine & Leyew (2008:26-27), two kinds of phonological “Africanisms” (Meeussen 1975)

a. sound system properties that seem to be essentially restricted to Africa
   i. clicks: [ʘ, ǀ, ǂ, !, ‖], e.g. Ndebele ciina [ǀi:na] ‘end’, qiina [ǂi:na] ‘be hard’, xooxa [ǁo:ǁa] ‘converse’ (Galen Sibanda, personal communication)
   ii. labial flaps: [v], e.g. Mono [v̚a] ‘send’ (Olson & Hajek 2003:169)
   iii. ATR and vowel height harmony (or perhaps belong in (b) below)
   iv. labiovelar stops: [kp, gb, ŋm]
   v. case inflections expressed exclusively by tone

b. sound system properties that are distinctly more common in Africa than elsewhere
   i. implosives: [ɓ, d̚]
   ii. word-initial prenasalized stops: [mb, nd, ŋg] (+ syllabic nasals; both are found elsewhere)
(33) Tone and grammatical case

Nominative (subject) vs. accusative (object) case marking by tone in Maasai (Tucker & Ole Mpaayei 1955:177-184)

<table>
<thead>
<tr>
<th>Class</th>
<th>Nominative</th>
<th>Accusative</th>
<th>English Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>èlùkùnyá</td>
<td>èlùkùnyá</td>
<td>‘head’</td>
</tr>
<tr>
<td></td>
<td>èncùmátá</td>
<td>èncùmátá</td>
<td>‘horse’</td>
</tr>
<tr>
<td>II</td>
<td>èndèrònì</td>
<td>èndèrònì</td>
<td>‘rat’</td>
</tr>
<tr>
<td></td>
<td>ènkòlòpà</td>
<td>ènkòlòpà</td>
<td>‘centipede’</td>
</tr>
<tr>
<td>III</td>
<td>òlmèrègèsh</td>
<td>òlmèrègèsh</td>
<td>‘ram’</td>
</tr>
<tr>
<td></td>
<td>òlòsòwùàn</td>
<td>òlòsòwùàn</td>
<td>‘buffalo’</td>
</tr>
<tr>
<td>IV</td>
<td>òmòtònỳì</td>
<td>òmòtònỳì</td>
<td>‘bird’</td>
</tr>
<tr>
<td></td>
<td>òsínkìrrì</td>
<td>òsínkìrrì</td>
<td>‘fish’</td>
</tr>
</tbody>
</table>
(34) Conclusions

Some conclusions re what to expect in the phonology of African languages

a. if sub-Saharan, expect tone and some form of vowel harmony
b. don’t be surprised if the syllable structure is simple, e.g. V, CV
c. if in the Sudanic zone, expect labiovelar stops, perhaps also implosives
d. if in the North or African horn, expect “emphatic” or ejective consonants, esp. Afro-Asiatic
e. if in the west and if Niger-Congo, there is the best chance to find nasalized vowels
f. clicks are almost entirely limited to Southern Africa, originating in “Khoisan”, spreading to Bantu
References

References (cont.)


References (cont.)


