

The Lomon live in the Limon Hills, north of Jebel Kindirma, and north of the road between Kadugli and Talodi in Southern Kordofan. Their language is in the Talodi sub-family of Niger-Kordofanian. Nothing is known about dialectic variation. These notes are based on a phonetic wordlist of 178 words; nouns, adjectives and pronouns ('List 1', Orthography Development Workshop) with some reference to the same wordlist written psycholinguistically by a speaker. There is scope for further checking. It is intended that a more extensive set of contrasts can be provided by workshop participants. The phonology presented is related to issues of orthography development where appropriate.

A. Segments

1. Sonorants

m, m:	n, n:	ɲ, ɲ:	ŋ, ŋ:	ŋ ^w
	l, l̥, d̥ɬ			
		(j)	w	

The first four nasals: bilabial, alveolar, palatal and velar, occur word initially and intervocalically. Their lengthened counterparts also occur between vowels. [n] and [ŋ] both occur word finally. The palatal nasal has a distributed articulation with the tongue in contact with the roof of the mouth from the palate to the teeth. The labialised velar nasal is recorded twice word initially, eg

(1) [ŋ^wi] 'water'

[l] occurs word initially and intervocalically, and its allophone, a devoicing lateral affricate [d̥ɬ~l̥ɬ] occurs word finally,

(2) [pud̥ɬ] 'person'

[w] is common word initially but is recorded only once intervocalically. [j] is rare, but is recorded word initially, intervocalically, before [ʃ], and word finally. It appears to occur predictably in another environment:

(i) V → V^j / _ɾi

eg (3) [kaɾi] 'claw'

2. Obstruents and Flaps

For these there are seven places of articulation: bilabial, interdental, alveolar, retroflex, palatal, velar, labialised velar. Free variation, in aspiration and spirantisation, is prominent:

word initially	p~p ^h	t̥~t ^h	t~t ^h	c~c ^h ~ɕ	k~k ^h	k ^w ~k ^{hw}	
intervocalically	b~β	ɖ~ɓ	r	ɾ	ʃ	g~ɣ	g ^w ~ɣ ^w
	p:	t̥:	t:		c:	k:	
word finally			t̥~t ^h , r			k ^h ~k ^h	

The contrast between [r] and [ɾ] is seen in

(4) [kara] 'louse'

(5) [kaɾa] 'pebble'

The contrast between [k] and [k^w] is seen in:

(6) [kanaŋ] 'spirit'

(7) [k^wanɔk] 'moon'

The retroflex flap has no counterparts in other environments, but in other places complementary distribution exists in the voicing of plosives: word initial and final plosives are voiceless, medially they are voiced - both intervocalically and in clusters (see 3.). Long, voiceless plosives also occur word medially.

As with Dagik psycholinguistic writing, more graphemes are used than phonemically necessary, with some resulting inconsistencies:

- (8) {chothot} for [cɔðɔt], 'star'
- (9) {tothiṛod} for [toðiṛɔt], 'sky'

Word initial plosives become voiced if morphologically they are placed in an intervocalic environment:

- (ii) ~~PC~~ [-voice] → [+voice] / V+_V
- (10) [pira] 'tree'
- (11) [kunu ko-bira] 'leaf' ('ear of tree')

[d] is not attested. In the alveolar position, [t] becomes [r] in the voicing process:

- (12) [tabaŋga] 'waves'
- (13) [tɔk ɪ-rabaŋga] 'sea' ('lake of waves')

[t] and [r] are in 'near-complementary' distribution, but both occur word finally:

- (14) [tamɔr] 'sand'
- (15) [tabɔt] 'liver'

So, while analysis yields one short plosive phoneme at other places of articulation, at the alveolar position, there are two short phonemes. The morphophonemic alternation is between phonemes here, between allophones elsewhere.

3. Consonant Clusters

Word medially, the following clusters are attested:

- [d̥^og~ðg~ðɣ]
- [mb] [nɟ] [ŋg]
- [br] [gr]
- [mbr] [ndr]
- [mbɾ] [n^oɾ]
- [ɾb]
- [rm] [rn]

Word initially, the following are attested:

- [pɾ] [kr] [k^wr]
- [pɾ] [kɾ]

4. Vowels

There are ten vowels forming a tongue root system: those with retracted tongue root are accompanied by breathiness and may be regarded as the 'heavy', marked set. The symbols used do not necessarily represent here the cardinal vowels they are sometimes used to represent.

- | | | | |
|--------|---|--------|---|
| [-RTR] | | [+RTR] | |
| i | u | ɪ | ʊ |
| e | o | ɛ | ə |
| a | | ɔ | |

Some [RTR] contrasts are:

- (16) [kunu] 'ear'
- (17) [kunu] 'scorpion'
- (20) [tɔk] 'lake'
- (21) [tɔk] 'dog'
- (18) [cɪk] 'snow'
- (19) [cɪt] 'eye'

In another item,

(43) [caɾiɛɾɿ, maɾiɛm:i] 'day, days'

the stem may be identified as

/-aɾiɛN- -i/

The noun classifier c- or m- is added word initially and medially after N, where N is a nasal homorganic to the following classifier. Following the voicing conditioning on plosives, the singular class is voiced in its word medial position.

D. Articulation of Vowel and Flap Sequences

This issue deserves discussion in the light of noun morphology.

In syllables which contain a flap and a vowel after the onset, there is some variation possible in the articulation. The simplest form elicited is PRV(C), where P is a plosive, R is a flap and the transition between P and R is close:

(44a) [kɾoc:ɯ] 'feather'

However, a transition may also be open, and if it is, the quality may be neutral [ɸ] but far more usually assimilates to the quality of the vowel V following R.

(44b) [k^ɸɾoc:ɯ]

(44c) [k^oɾoc:ɯ]

But further, a fuller length as well as the quality of the vowel in the syllable may all be realised *before* the flap.

(44d) [ko^ɸc:ɯ]

The assimilation in quality of the open transition to the following vowel is psycholinguistically relevant according to the evidence of the written wordlist:

(44e) {ko^ɸshow} for (44), 'feather'

(45) {porje} for [proɾje], 'fog'

However, some differentiation will be required between words with one syllable and words with two:

(46) [pre] 'crocodile'

(47) [pere] 'chest'

In fact, the words now being discussed fall largely in the p-/Ø- and k-/Ø- genders. In the plural a short vocoid assimilating to the quality of the following vowel was *always* elicited before the flap:

(46a) [ɸre] 'crocodiles'

Because of this, flaps never occur utterance initially. Since the quality of the utterance initial vocoid is determined, one analysis might be to place the flap at the initial position of the phonological word, adding the preceding, predictable, vocoid at the phonetic level.

However, because the flaps do not occur utterance initially, they do not contrast with other segments in the word initial position. It is therefore suggested that such an analysis is weak. However, the situation may be resolved by importing morphological information. A noun word consists of word initial prefix and stem. In such a plural as (46a), the word initial position may be said to be occupied by the zero [Ø-].

(46b) [Ø-^ɸre]

Let us stipulate that each morpheme has a phonological representation. It is already the case that we have a zero *morpheme*, the plural prefix. Now, minimal pairs are available with [p] and [k], eg

(47) [k^ɸrɛt] 'piece of clothing'

(47a) [Ø^ɸrɛt] 'pieces of clothing'

to set up a zero *phoneme* /Ø/, which occurs in a word initial environment where it is realised as a zero, [Ø]. Then the zero morpheme has a phonological representation.

C. Morphology

Lomon displays a noun class system similar to other Kordofanian languages. There are two class genders where number - singular or plural - is determined by a consonant prefix or zero prefix to the stem. Some single-class genders are also attested. Examples are given with sample glosses:

t-/l-	mouth, tongue, horn, sheep, chin
ŋ-/ɲ-	chicken, drum, fat, water
ŋ ^w -/ɲ-	bull
c-/m-	bone, egg, dove, star, mountain
c-/k-	belly, breast, eye, neck, tooth
∅-/k-	elephant
p-/k-	tree
p-/∅-	person, chest, bird, fish, lyre
k-/∅-	ear, nose, wing, name
k ^w /∅-	skin, back, moon
k ^w /w-	hair
k-/w-	tail
t-/n-	foot, lake
p-	fog
k-	smoke, wind
m-	sesame, ash
n-	dung
ŋ-	porridge
ŋ ^w -	milk

Kinship terms generally appear to form their plural with a -Vn suffix:

(34) [obari, obari-on] 'wife, wives'

There is a change in the nasal preceding -Vn in one example:

(35) [obaŋɣi-n, obaŋɣi-ŋ-ŋ̄n] 'sibling, siblings'

Syllabic nasals are found again, suggesting that the rule (35) is reducing a -Vn suffix:

(36) [oŋap:a, oŋap:a-ŋ] 'father, father and uncles'

But there also appears to be a further reduction:

(iv) ŋ ~ n

(37) [oŋaja, oŋaja-n] 'mother, mother and aunts'

In the plural of 'husband', reduction appears to affect the stem-final vowel, which becomes lax, (sounding closer to a *cardinal* [ɛ]):

(38) [ole, ole-ŋ] 'husband, husbands'

Other nouns show some deviation from the usual system of stem and prefix. For some, singular and plural have completely distinct stems:

(39) [∅-imit, l-iɟək] 'goat, goats'

In others, the stem initial vowel may reduce in the plural:

(40) [c-ɪgit, m-əgit] 'heart, hearts'

(41) [c-arək, k-rək] 'belly, bellies'

No general reduction rules are apparent. For example, a proposed rule which ^{deleted} reduced [a] in an environment such as #k_r would be violated by (^{to be} ~~to be~~).

In some, a more limited set of segments is held in common while other segments change:

(42) [og-un, ɲa-un] 'hand, hands'

(/-un/ held in common)

(29a) [m-a-ŋ, kə-m-ən] 'house, houses'

(/-m- -ən/ held in common, cf rule (iii))

This is identical to the system taken as a basis for the orthography of Asharon, Lomon's geographical neighbour (see Gilley 1994). However, these analyses are different not only from the author's analysis of Masakin Dagik (see accompanying article), but also from previous work in the Talodi group by Schadeburg(1981) and Stevenson(1956). In all these 7 or 8 (with schwa) vowels have been analysed in the phonology of Talodi languages. However, this appears to be the first time that Asharon and Lomon themselves have been analysed.

Some instances of [ə] are recorded as free variants of other vowels:

(22) [ŋɪɾi~ŋəɾi] 'water'

The phonemic status of (rare) open-mid central vocoids [ɜ] is not clear. The status of some instances of [ɛ] is not clear when recorded in variation with central vocoids:

(23) [ɛp:ik~ɜp:ik] 'all'

Length was occasionally recorded on vowels but is not believed to be a significant feature:

(24) [o:ba~oba] 'meat'

Nasalisation was occasionally recorded on vowels adjacent to nasals and may be attributed to lax operation (late closing - or early opening) of the velum:

(25) [mũɟu] 'foreheads'

5. Vowel Sequences

The singular personal pronouns appear to display vowel sequences:

(26) [oun] 1st person singular

(27) [oɔŋ] 2nd " "

(28) [oɔk] 3rd " "

Elsewhere, other vowel sequences were recorded: [ɪa],[iə],[iɛ], [ei], [u:a],[au].

6. Syllabic Consonants

Syllabic forms of the alveolar nasal and alveolar trill have been elicited in a few words:

(29) [mɤŋ̥] 'house'

(26a) [oun~oən~oŋ̥] 1st person singular personal pronoun

(30) [kaɔ̥f̥] 'path'

(31) [pɔ̥ɾɔk~pɔ̥ɾɔk] 'stool'

It seems likely that [ŋ̥,ɾ̥] arise from an underlying vowel, at least sometimes from one of two vowels in sequence. For the nasal, the rule

(iii) ən ~ ŋ̥ / V__#

is apparent.

B. Tone and Stress

Pitch and stress were recorded. In a majority of cases, stress fell on the final syllable. Exceptions include non-final CVC syllables:

(32) ['kɯŋgo] 'knee'

(33) [paɔ̥^hgən:a] 'hippo'

and free variant alternatives:

(4a) ['kara~ka'ra] 'louse'

It is therefore expected that stress is not phonemic. Pitch appeared to follow an intonation pattern which reached high pitch, or sometimes falling pitch word finally, on the stressed syllable. So far then, it is expected that, as in Asharon, there is no lexical tone.

The utterance initial vocoid on the phonetic level is then transitional between the two phonemes. The fact that the transition *always* occurs after the zero, (whereas it might be omitted after [p] or [k],) serves to mark on the surface the presence of that (itself inaudible) zero.

Summary and Suggestions for Further Work

I expect the list of phonemes to be:

Consonants: /p p: t̥ t̥: t t: r r̥ c c: k k: k^w m m: n n: ŋ ŋ: ŋ^w l j w ø/

Vowels: /i e a o u ɪ ɛ ə ɔ u/

Further study could focus on the following:

- The status of instances of [ə,ɜ,ɛ~ɜ].
- Finding underlying forms associated with syllabic consonants, including plurals of kinship terms.
- Compilation of a list of noun genders and an investigation of their semantic make-up.
- Continued study of the phenomenon of the varying length and quality of transition between consonant and flap. Can it be said that the CRV(C) structure is underlying? Are there underlyingly *distinctive* CRV(C) and CVR(C) syllables, even if they neutralise sometimes on the surface? If not, can we explain word-final [r] in terms of this phenomenon, and hence avoid having [t] and [r] as distinct segments? (Doubtful, but worth a try.)
- Verb elicitation, eg 'List 2'.
- Any grammatical tone.

The phonemes listed above may form the basis of the alphabet, with doubling of letters for lengthened consonant phonemes. Additional to the Roman symbols which already match, letters for t̥, r̥, ŋ and 5 more vowel letters are needed (assuming /r/ will take {r}). The letters for these sounds in the Asharon alphabet could well be used.

With nouns for which vowel reduction was elicited, it could be investigated as to whether writing the same stem for singular and plural would be acceptable, in the interests of preserving word shape.

If /t/ and /r/ need to be distinguished, as it appears they do, a decision is needed on the writing of [r] when it occurs as an alternant of [t] as in 'sea' (13). If {r} was used here, the noun stem would still be preserved, but if {t} was used the whole word would be preserved.

Further spelling issues arise from the analysis. With syllabic consonants (including plurals of kinship terms), should an underlying vowel be written, or not? What will create most consistency in word shapes? What spellings will be easiest to learn?

The transition issue awaits a clearer analysis, but given the variation possible, a basic, underlying form is needed for writing.

A decision is needed on how to write plural nouns beginning /Ør.../. It would appear to be wise to mark the zero in some way, perhaps with a 'punctuation' symbol: as well as the morphophonological significance of the zero, it is also relevant that the vocoid preceding the (r) is relevant phonetically and psycholinguistically, so a word initial {r} in writing would not satisfy the levels of phonological representation and neither might it satisfy the writers. Consideration would then have to be given to the question of whether to write ALL zero prefixes.

Bibliography

- | | |
|------------------|--|
| Gilley, L. | <i>Orthography & other issues in Asharon Language</i> |
| Schadeburg, T.C. | <i>Phonology of Asharon</i> , KWP Scrapbook, Jan 1994 |
| Stevenson, R.C. | <i>A Survey of Kordofanian</i> , Vol.2 The Talodi Group, 1981 H.B.Verlag,Hamburg |
| | <i>A Survey of Nuba Mountain Languages</i> , 1956 |