

PHONOLOGY OF UMA

Michael Martens

1. SEGMENTAL PHONEMES

1.1 Chart

The following is a chart of the segmental phonemes of Uma,¹ along with some notes and observations.

LINGUAL			LABIAL	LARYNGEAL		
Alv.	Pal.	Vel.				
n _t	n _c	ŋk	m _p		nas	
t		k	p	'	vl	-CONT
d	j	g	b		vd	
r						
n	ñ	ŋ	m		nas	
s				h	vl	+CONT
l			ɸ		vd	-SYLLABIC
	i	u			high	+CONT
	e	o				
	a				low	+SYLLABIC

The prenasalised series of stops is problematic. These phonemes primarily occur: a) in initial position, where they are the result of a verbal prefix /N-/ (e.g. /ŋkoni'/ to eat, from /N-/ + /koni'/ to eat; and /n_ccarumaka/ to hope, from /N-/ + /sarumaka/ hope); b) as the result of morphophonemic processes, such as that between a numeral and classifier (e.g. /ro^mpepa'/ two sheets of, from /ro-/ two + /pepa'/ to be wide). There are, however, unambiguous occurrences of these prenasalised stops, i.e. ones that cannot be reanalysed: /daⁿci/ bird, /oⁿti'/ ant, /la^ŋko/ to be tall, /lo^mpe'/ good.

Papers in Western Austronesian linguistics No.4, 153-165.
Pacific Linguistics, A-79, 1988.

© Michael Martens

Note that the phoneme /r/ is a separate line on the chart. While it would be 'neater' to place /r/ in alveolar position with the +CONT (and move /l/ to palatal position), yet in matters of phonetic and morphophonemic rules, the /r/ acts like a non-continuant. Thus the irregularity of the chart.

The phoneme /h/ functions like a nasal in some respects. It is nasalised and causes the nasalisation of following non-front vowels (cf. 5.1).

The phoneme /l/ is retroflexed contiguous to non-front vowels. This retroflexed quality is dropping out of the speech of younger speakers.

1.2 Examples

In the list below, each phoneme is described, and two examples are given, one showing the phoneme in initial position, one showing it medially.

- /p/ voiceless bilabial stop
/puna'/ to put in
/napa/ what
- /t/ voiceless alveolar stop
/tilua'/ to vomit
/batu/ rock
- /k/ voiceless velar stop
/kana/ must
/buku/ bone
- /'/ glottal stop
*neutralised word-initially
/tu'a/ to be old
- /b/ voiced bilabial stop
/batua/ slave
/ibo'/ monkey
- /d/ voiced alveolar stop
/doo/ companion
/ladi'/ knife
- /g/ voiced velar stop
/gasi/ to be fast
/rege'/ mud
- ^mp/ prenasalised bilabial stop
^mpuga/ sago leaves
/lo^mpe'/ to be good
- ⁿt/ prenasalised alveolar stop
ⁿtaloku/ sweet potato
/oⁿti'/ ant
- ^ŋk/ prenasalised velar stop
^ŋkojo/ vegetables
/la^ŋka'/ sleeping platform
- /j/ voiced alveopalatal affricate
/jara'/ horse
/aje/ chin

- /ⁿc/ prenasalised alveopalatal affricate
 /ⁿcimonou'/ *evening*
 /daⁿci/ *bird*
- /b/ voiced bilabial fricative
 /boo'/ *head*
 /tubu'/ *to live*
- /s/ voiceless alveolar sibilant
 /sio/ *nine*
 /gasi/ *to be fast*
- /h/ voiceless laryngeal fricative
 /haŋa'/ *name*
 /mo'ahu/ *to hunt*
- /m/ voiced bilabial nasal
 /mata/ *eye*
 /kama/ *to be big*
- /n/ voiced alveolar nasal
 /nahu/ *pandanus leaf*
 /kana/ *to have to*
- /ñ/ voiced palatal nasal
 /ñañoa/ *in front of*
 /hiñai'/ *carelessly*
- /ŋ/ voiced velar nasal
 /ŋone/ *earlier*
 /ŋaŋa/ *mouth*
- /r/ voiced alveolar flap
 /ria/ *to be*
 /taraa/ *toad*
- /l/ voiced alveolar lateral
 /lio/ *face*
 /molala/ *spicy* (mo|a|a)
- /a/ low central unrounded vocoid
 /abe'/ *sarong*
 /haba'/ *command*
- /e/ mid front unrounded vocoid
 /ema'/ *friend*
 /berebe/ *lawn*
- /i/ high front unrounded vocoid
 /ila'/ *floor*
 /tini'/ *to circumcise*
- /o/ mid back rounded vocoid
 /oli/ *to buy*
 /lolo/ *on top of*
- /u/ high back rounded vocoid
 /ule/ *snake, worm*
 /tuku'/ *to follow*

1.3 Contrast

The following examples show the contrast of phonemes that are phonetically similar.

- /p/ vs. /b/ vs. /^mp/ : /ipa'/ *cockroach*
 /ibo'/ *monkey*
 /i^mpo'/ *untorn, intact*
- /b/ vs. /^hb/ : /^hɛŋi/ *to be dark*
 /ɛŋi/ *yesterday*
- /t/ vs. /d/ vs. /ⁿt/ : /tali/ *headband*
 /dali/ *earring*
 /ⁿtali/ *relationship*
- /k/ vs. /g/ vs. /^ŋk/ : /^hoko/ *pair*
 /bago/ *to work*
 /^ho^ŋko/ *uphill*
- /k/ vs. /'/ : /^hoko/ *pair*
 /^ho'o/ *also*
- /'/ vs. its absence : /tetuai/ *to be poured out*
 /tu'ai/ *younger sibling*
 /ha'a/ *bark-pounding table*
 /haa'/ *fork in stream*
- /ⁿc/ vs. /j/ : /^ŋkali'aⁿce/ *to lean against*
 /aje/ *chin*
- /n/ vs. /^hn/ vs. /ŋ/ : /manu'/ *chicken*
 /moma^hnu/ *to pound in a mortar*
 /monaŋu/ *to swim*
- /l/ vs. /r/ : /lia/ *very much*
 /ria/ *to be*
- vowels: /ili'/ *to turn and look*
 /eli/ *to be adorable*
 /oli/ *to buy*
 /ali'/ *mat*
 /uli'/ *to say*

1.4 Distribution

Segmental phonemes occur freely within the syllable and word patterns of Uma. The only exception is glottal stop, which exhibits the following peculiarities:

- (a) Glottal stop is not contrastive word initially, that is, there is loss of contrast between glottal stop and its absence word initial (cf. 3.2).
- (b) The sequence #V' and 'V' do not occur. This includes the final glottal of glottalised words. Thus /ki'ou'/ *pine tree* is an acceptable word type, but */ki'o'/, */ki'o'u'/ and */i'ou/ are not.
- (c) Glottal stop may occur word final. cf. 3.3 for discussion.

2. SYLLABLE

2.1 Description

There are two types of syllables: V and CV. Since there are no closed syllables, there are no consonant clusters and no final consonants. Affricates and pre-nasalised stops are interpreted here as single segments, i.e. /^mp/, /ⁿt/, /ŋk/, /ⁿc/, and /j/, not /mp/, /nt/, etc.

In keeping with the syllable pattern stated above, phonetically long vowels are interpreted as sequences of two or more syllables of the same vowel, e.g. /mosii'/ *to be wet* is three syllables (CV.CV.V). Vowel glides are here interpreted as sequences of two or more syllables: /rei/ *here*, not */reⁱ/. This interpretation is consistent with the rule of penultimate stress on the word base (cf. 3.1.1).

Note the stress placement in the following examples. From here on, stress will be marked in the examples.

- (1)a. /hílo/ *to see* (CV.CV)
 b. /hilóu/ *to go* (CV.CV.V)
- (2)a. /ⁿcíbu'/ *to sprinkle* (CV.CV)
 b. /ŋkatibúu/ *dragonfly* (CV.CV.CV.V)

In example (1), the vowel /i/ is stressed in /hílo/, since this is the penultimate syllable. But in the word /hilóu/, the vowel /o/ is the stressed one, because the /u/ is a separate syllable. Likewise in example (2), the long /uu/ of /ŋkatibúu/ is two syllables, and so the stress falls in the first /u/.

2.2 Distribution

Within a word base, the two syllable types may freely occur with the following exceptions:

- (a) A sequence of three or more V syllables never occurs, except in the case of loanwords or grammatically derived stems.
- (b) Word bases of four or more syllables (which, for the most part, are either loanwords or derived stems) never begin with a V syllable.²

3. WORD BASE AND PHONOLOGICAL PHRASE

3.1 Penultimate stress on word base

3.1.1 A word base is defined as a phonological/lexical unit of two or more syllables, either simple or derived. Word bases include both content words (nouns, verbs and adverbs) and grammatical function words (prefix clusters, multisyllabic enclitics). In a word base, stress is always penultimate.

SIMPLE NOUNS

- (3)a. /uda/ *rain*
 b. /goa'/ *corn*
 c. /ue/ *water*
 d. /tuaka/ *older sibling*

DERIVED NOUNS

- (4)a. /po-niu-a'/ *bathing place* (from root /niu'/ to bathe)
 b. /p-in-oŋo/ *betelnut* (from root /poŋo/ to chew)

SIMPLE VERBS (INCLUDING ADJECTIVES)

- (5)a. /hilo/ *to see*
 b. /tuluŋi/ *to help*
 c. /tu'a/ *to be old*

DERIVED VERBS

- (6)a. /hilo/ *to look at* (from root /hilo/ to see)
 b. /udaa/ *to rain* (from root /uda/ rain)

ADVERBS, DEMONSTRATIVES, ETC.

- (7)a. /retu/ *there (near you)*
 b. /^mpu'u/ *very*
 c. /-dua/ classifier for humans

PREFIXES

- (8)a. /^mpoka-/ causative change of state
 b. /mome-/ intransitive reciprocal

ENCLITICS

- (9)a. /-pidi/ *still, continuing to present time*
 b. /-badi/ *just, merely*
 c. /-tabo/ *sudden realisation*

3.1.2 There are also grammatical particles in Uma of one syllable in length, which have no autonomous stress. For example:

- (10)a. /-a/ 1sg. absolute
 b. /-i/ 3sg. absolute
 c. /-ku/ 1sg. possessive
 d. /-mi/ completive aspect
 e. /mo-/ intransitive verb-adjective prefix
 f. /to-/ relative pronoun
 g. /hi-/ *in, to, at*

3.1.3 In a noun phrase or verb phrase, the word bases and particles combine to form a unit with the following phonological characteristics:

- (a) The word base that forms the nucleus of the phrase receives primary stress. This is of course the main content word. The stresses of all other word bases preceding it are reduced slightly. The stresses of all word bases following it are reduced greatly.
- (b) If the phrase ends in a two-syllable enclitic or in two or more particles, the final syllable receives a minor stress.

- (11) /hi-lòlo bātu/ *on top of the rock*

- (12) /hi-lóló-na/ *on top of it*
 (13) /mòmè-pòka-'áhi'/ *to love each other*
 (14) /ha-dúa badi/ *just one person*
 (15) /ra-tudúi'-mi-ta-kà/ *it was taught to us*

Notice in examples (11)-(15) the nucleus of the phrase (underlined) receives the main stress (´), while those to the left receive a minor stress (˘). In (15), the final syllable of the phrase also receives a minor stress, according to rule (b) above. Note that in (11) and (12) the root /lolo/ can be either marginal or nuclear, depending on the context.

Two or more of the one-syllable particles occurring in a row are treated as a word base in matters of stress:

- (16) /tò-hi-lódu/ *the people in Lođu*
 (17) /hì-to-hamíka'/ *on the one half*

In (16) the two particles /to-/ 'relative marker' and /hi-/ *in, at* combine to receive a penultimate stress on the /to-/. In example (17) the same two particles, occurring in reverse order, receive stress on the /hi-/. In both cases, this stress is a reduced one, since these particles are not and can never be the nucleus of the phrase.

3.1.4 At first, stress may seem unpredictable in Uma because of the abundance of enclitic suffixes. There are such minimal stress pairs as:

- (18)a. [kénia] *carry me!*
 b. [kenía] *baggage (carried things)*
 (19)a. [lúnana] *its (the axe's) handle hole*
 b. [lunána] *a type of tree*

However, on further analysis, these and other forms do have predictable penultimate stress on the word base. Derivational suffixes, such as the /-a/ noun-forming suffix in (18b), form a new grammatical stem. Thus a derivational suffix becomes part of the word base, and stress is placed accordingly.

In contrast to this, enclitic suffixes, inflectional or aspectual in function, are not part of the word base.³ In (18a), the enclitic /-a/ '1sg. absolutive' does not affect the penultimate stress on the word base /kéní/ *to carry*. Likewise in (19a), the /-na/ '3sg. possessive' is an enclitic and /luna/ *handle hole* is the word base. Thus:

- (20)a. /kéní a/ *carry me* (from (18a))
 b. /kení-a/ *baggage* (from (18b))
 (21)a. /lúna na/ *its handle hole* (from (19a))
 b. /lunána/ *a type of tree* (from (19b))
 (22)a. /na-hílo i/ *he sees him*
 b. /hiló-i/ *to take a look at*
 c. /na-pehiló-i a/ *he takes a look at me*

In (22a), the enclitic /-i/ '3sg. absolutive' does not affect the stress of the word base /hílo/ *to see*. But in (22b), the derivational suffix /-i/ 'locational' forms a new stem, /hilói/ *to take a look at*, and causes the stress to move to the right. This new stem is used in a sentence in (22c).

3.1.5 When two vowels occur in a row, the second of which is phonetically higher than the first, they act as a unit in stress placement.

(23) /páiba/ *feeding trough*

(24) /páe-a/ *there is rice* (/ -a/ is a verbalising suffix)

(25) /dáeo'/ *grave*

In (23)-(25), the stress is actually (phonetically) on the antepenultimate vowel, although astute native speakers will still select the penultimate syllable as the stressed one. This is an anomaly caused by the phonetic process of gliding to a higher vowel.

3.2 Vowel initial words

Esser (1964:4) states that all vowel-initial words in Uma are glottal-initial. In our analysis, it has seemed better to conclude that there is neutralisation of contrast between glottal and its absence word-initially. Whether or not there is really a glottal stop at the beginning is a moot point. Historical and morphophonemic evidence are not conclusive.⁴ In this paper, no word-initial glottal stops will be written.

When a vowel-initial word base occurs as the nucleus of a phrase, an initial glottal stop is added. This acts as a transitional sound between the nucleus and the preceding word. Note how a glottal is added to the words /ána'/ and /óno/ in (26) and (27).

(26)a. /ána'/ *child*

b. /mo'ána'/ *to give birth*

(27)a. /óno/ *six*

b. /ka'óno/ *the sixth*

In contrast, particles and words other than in nuclear position do not receive this transitional glottal. In (28) there is no glottal before the /-imi/ (/ -i/ '3sg. absolutive, / -mi/ 'completive aspect').

(28)a. /ráta/ *to arrive*

b. /ráta imi/ *he arrived*

(29)a. /ómei'/ *to swallow*

b. /na-pò-i-'oméi'/ *he swallowed it along with (something else)*

Similarly in (29), the /i-/ 'concomitant prefix' is not separated from the preceding /po-/ 'transitive', but is separated from the main word base /oméi'/ *to swallow*.⁵

3.3 Word-final glottals

3.3.1 Esser (1964:2) was the first to note that Uma is not a "truly vocalic" language, by which he meant that not all words end in a vowel. A large percentage of content words end with a glottal stop.⁶ Note the following pairs of words:

- (30)a. /úma/ *no*
 b. /úma'/ *uncle*
- (31)a. /mo-tómo/ *to be heavy*
 b. /mo-tómo'/ *to be delicious*
- (32)a. /me-óⁿti/ *to be sweethearts*
 b. /óⁿti'/ *ant*
- (33)a. /áku/ *a line of weaving*
 b. /áku'/ *I, me*

This word-final glottal stop is an important phonological distinctive of Uma, and the minimal pairs above are just a small example of many.

Words with final glottal stop have the following properties:

- (a) Voiced and voiceless stops (but not prenasalised stops) medial in glottal final words tend to be preglottalised. This is more marked in speech of younger people (below about 12 years of age). Thus /hópo'/ *to slap* and /ládi'/ *knife* are often pronounced [hó'po'] and [lá'di'].
- (b) Derivational suffixes occur before this final glottal stop. Note the 'movement' of the final glottal in the following examples.
- (34)a. /ána'/ *child*
 b. /mo-'aná-i'/ *to have children*
- (35)a. /ra-túja'/ *planted* (said of seeds)
 b. /ra-tujá-i'/ *planted* (said of field)
- (36)a. /mo-níu'/ *to bathe*
 b. /po-níú-a'/ *bathing place*

When the /-i/ locative suffix is added to the roots /ána'/ and /túja'/ in (33) and (34), the final glottal stop of these roots occurs after the suffix. The same is true in (35) with the circumfix /po--a/ *the place of* (Note also in all three examples the stress shifts with the addition of these affixes, since they are derivational (cf. 3.1.4).)

This contrasts with the enclitic particles, which occur after this final glottal and do not affect the stress of the word base:

- (37) /mo-'ána' i/ *she gave birth* (cntr. (34b))
 (38) /mo-níu' a/ *I take a bath* (cntr. (36b))

The addition of the enclitics /-i/ and /-a/ (3sg. and 1sg.) does not affect the position of the final glottal of the word base in (37) and (38).


3.3.2 This final glottal phenomenon is open to at least two interpretations. It can be viewed as a true consonant, or as a prosodic feature on the word base.


The latter is the interpretation followed in this paper. To view word-final glottals as consonants would violate the otherwise consistent pattern of no closed syllables in Uma. It would also require the derivational suffixes mentioned above to be viewed as infixes. True, infixes are common in Philippine and Indonesian languages, but they are usually at the beginning of words, not at the end. The prosodic analysis does require the added complexity of positing two word types (glottalised and non-glottalised), but it explains the prosodic effect of this glottal on previous stops in the word (3.3.1(a)).⁷


4. INTONATION AND HIGHER PHONOLOGICAL LEVELS





4.1 General characteristics

In general, Uma exhibits the following characteristics in its intonation: stressed syllables tend to receive higher pitch, and pitch tends to drop at the end of an utterance.

In connected speech, one or more phonological phrases (cf. 3.1.3) group together to form a pause group, which is defined by the following features: the final phonological phrase of a pause group receives heavy stress (") on its nuclear word and a higher pitch that remains level till the end of the pause group (). It is followed by a short pause (/).

Pause groups in turn are grouped into a larger phonological unit, called here a phonological clause. A phonological clause is composed of one or two pause groups. There is a rising pitch following the major stress of the final phrase (), followed by a longer pause (//).

The next-higher level of the phonological hierarchy is a sentence. The nucleus of the main predicate of the sentence receives a heavy stress and higher pitch; following this there is a progressive drop in pitch to the end of the sentence ().

- (39)  kíra k'ira/ ha^hkédi'-damò// nàpo-ráe'-mi/ tàpo-^mpuhá-i b'ò'o//
approx. just a little appropriate we make another marker
-  pái' ta-luná-i'/ tàpe-ⁿt'ò'o-i-mi/ tomóle-na t'ò'i//
and an edge we stop side this
-  t'ába-béhi b'ò'o-mi po-^mpüha-na/ h'ito-ha-m'ika'// pái' t'ába-béhi
we make also a marker on the (other)half and we make
-  b'ò'o-mi l'üna-na/ pái' ta-l'üp'l'-mi///
also an edge and we fold (it)

After a while, when it is appropriate to make another marker and edge, we stop this side and we make a marker on the other side and we make an edge and fold it.

This example above is one sentence, composed of five phonological clauses (each ending with a long pause symbol), in turn composed of 11 pause groups (each ending with a short or long pause symbol), in turn composed of 21 phonological phrases. (In this example, enclitics are all joined to their base word by hyphens, so that a word is defined by space.)

Note that after the main predicate (underlined) the downward drift of the sentence intonation 'overrides' and suppresses the normal high pitch of the following lower units, e.g. stress does not rise on /lúna-na/ or /ta-lupi'mí/ as one would expect if these words were in the beginning or middle of a sentence.

4.2 Variant sentence types

Besides the normal declarative type of sentence described above, there are several variant types. In calling to someone or answering at a distance or in urging, the accent is shifted from the penultimate syllable of the final word base to the ultimate syllable.

(40) /bèla) tuakà na/ *No, it was his older brother!*

(41) /bàle) kíta hilóu hi-tómí ku/ *Friends, let's go to my house!*

The normal stress on the underlined words above would be /tuáka na/ *his older brother* and /hi-tómi ku/ *to my house*. But the stress is shifted in these examples because of the nature of the utterance.

When correcting an inaccurate statement or when emphasising, the sentence ends in a sudden rise of pitch instead of the normal falling pitch. The enclitic /-di/ 'assertive', is often used in such cases. Note the following two examples.

(42) /túru idì/ *He's lying down, in fact (not sit as you suggested)*

(43) /Tína Lís) Tína Lín dihabò/ *Lis's mother. (No, I mean) Lin's mother.*

(44) /tòmi di-hàna-lè/ *It was really a house after all!!*

When stressing the importance of what is being talked about, the entire sentence takes on a more sonorous quality. Note this modification in the second part of (45) below.

(45) /màradíka i maradíka m'pü'u/ *He was a nobleman. A nobleman indeed!*
 [maradíkai mərədúko m'púú]

5. PHONOLOGICAL PROCESSES

In connected speech, the following processes modify the basic pronunciation.

5.1 Nasalisation

Within a word base functioning as the nucleus of a phrase, non-front vowels following the nasals /m/, /n/, /ñ/ and /ŋ/ and the phoneme /h/ are nasalised. This process continues until another consonant is encountered. Front vowels and vowels in word bases that are not nuclear do not become markedly nasal when in similar environments. Note the phonetic transcription of the following three examples.

- (46) /háŋa' na/ [hǎŋǎ'na] *his name*
 (47) /mo-'áhu/ [mo'ahy] *to hunt with a dog*
 (48) /mái ko/ [mǎi ko] *come here!*

5.2 Deletion of glottal

A glottal stop which is pronounced between two identical vowels in careful speech is dropped out or reduced to a laryngeal quality of the vowel in fast speech. Again note the phonetics of these examples:

- (49) /tú'u i-mi/ [túuimi] *put it!*
 (50) /líu b'ó'o i-mi/ [líu b'óoimi] *He went by again*

APPENDIX: PROPOSED ORTHOGRAPHY

The following orthographic symbols are suggested to represent the segmental phonemes of Uma. These are the symbols currently used by the few Uma speakers who attempt to write their own language.

PHONEME	SPELLING	PHONEME	SPELLING
/p/	p	/s/	s
/t/	t	/h/	h
/k/	k	/m/	m
/ʼ/	'	/n/	n
/b/	b	/ñ/	ny
/d/	d	/ŋ/	ng
/g/	g	/l/	l
/mp/	mp	/r/	r
/nt/	nt	/a/	a
/ŋk/	ngk	/e/	e
/j/	j	/i/	i
/nc/	nc	/o/	o
/b/	w	/u/	u

This orthography is the same as that utilised by Esser (1964), except that for the phonemes /j/, /nc/, /ñ/ and /u/, Esser uses the symbols dj, ntj, nj and oe. Here these have been changed to conform to modern Indonesian spelling.

Stress is not written, since it is predictable on the penultimate syllable of the word base. True, the stress placement is sometimes obscured, because enclitic suffixes are connected to the words they modify. But a native speaker will instinctively read tomína as /tómi na/ *his house*, and not as the meaningless */tomína/.

NOTES

¹Uma (Pipikoro) is an Austronesian language, West Torajan Family, located in western Central Sulawesi, Indonesia. The author's fieldwork was done in the central dialect, the village of Kantewu 1°45' S 119°55'E).

Research for this paper was carried out under the auspices of the Cooperative Program between Hasanuddin University and the Summer Institute of Linguistics.

²If one takes the interpretation that all vowel-initial words are actually glottal-initial, then V syllables never occur word-initial. cf. 3.2 for discussion. Historically, V syllables in Uma have developed from consonant deletion: /pae/ *unhulled rice* (cf. Indonesian padi), /ki'ii/ *left side* (cf. Indonesian ke kiri).

³Historically these enclitic suffixes were probably independent words and are now in the process of being 'drawn in' to the word.

⁴In some cases, vowel-initial words result from the loss of an initial consonant, e.g. /áhi'/ *to love* (cf. Indonesian kasih) and /ána'/ *child* (cf. Indonesian kanak). In other cases, there is no known consonant lost, e.g. /ápu/ *fire* (Indonesian api).

In the matter of morphophonemics, 'vowel-initial' words behave the same as the class of nasals and liquids (i.e. truly vowel-initial), and not as the class of stops, flaps and spirants. On the other hand, the restricted sequences #V' and 'V' (discussed in 1.4b) are both manifestations of the same phenomenon if one holds that vowel-initial words are really glottal-initial.

⁵If one takes the interpretation that vowel-initial words are really glottal-initial, then there is no need to posit a transitional glottal. Particles, however, must be considered as vowel-initial in either analysis.

⁶In general, proto-forms with final /k/ or /h/ are realised in Uma with final glottals: /tána'/ *ground* (Ind. tanah), /ána'/ *child* (Ind. anak). PAN roots with final nasals are realised in Uma as non-glottal final: /tána/ *bury* (Ind. tanam), /úda/ *rain* (Ind. hujan).

⁷Esser (1964:2) says that this final glottal is "not really a consonant, but a certain way to end a vowel". He also notes that the related languages of Bada', Besoa and Rampi also have final glottals. In Uma, he notes that emphasised speech tends to receive final glottals (loanwords, independent pronouns, last word of exclamatory sentence).

The prosodic analysis is also supported by native reaction. Although Uma writers take care to write word-medial glottals, which are true consonants, they are quite forgetful when it comes to writing word-final glottals, which are a manifestation of laryngeal tension of the entire word.

BIBLIOGRAPHY

ESSER, S.J.

1964 *De Uma-Taal*. Deel 43, Verhandelingen van het Koninklijk Instituut (posthumous) voor Taal-, Land- en Volkenkunde. The Hague: Martinus Nijhoff.

