TIFAL PHONOLOGY SHOWING VOWEL AND TONE NEUTRALIZATION

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1. Introduction

This paper describes the phonemes of Tifal[1] and their distribution within the syllable and word. Twelve consonants, five vowels and two tone levels compose the phoneme system. Four of the vowels have lengthened counterparts which makes a total of nine contrastive syllable nuclei.

Of particular interest in Tifal is the neutralization of vowel quality and tone contrast in word initial short syllables.

2. Chart of Phonemes

2.1 Consonants:

	Bilabial	Alveo Dental	Velar
Voiced Stop	b	d	
Voiceless Stop		t	k
Fricative	f	s	
Nasal	m	n	ŋ
Lateral		l	
Resonant	w	y	

2.2 Vowels:

	Front	Mid	Back
High	i		u
Low	e	a	o

3. Consonant Phonemes

The consonants of Tifal are /b/, /d/, /t/, /k/, /f/, /s/, /m/, /n/, /ŋ/, /l/, /w/, /y/.

3.1 Contrast between consonants can be shown in word initial position for all excpet /ŋ/:

/bàŋ/	'splinter'	/bokoòm/	'bird sp.'
/dàŋ/	'substance causing itch'	/dokoòm/	'leech'
/tàŋ/	'limb'	/tokól/	'tree sp.'
/kàŋ/	'pig	/koloóm/	'pandanas sp.'

/fàn/	'true'	/foloòm/	'tree sp.'
/sáŋ/	'story'	/sokoòm/	'pandanas sp.'
/màn/	'child'	/mokòl/	'wild cane'
/nàŋ/	'diminutive'	/nokòl/	'we'
/láŋ/	'garden'	/lokoòb/	'new shoot of tree stump'
/wàŋ/	'sweet potato stem'	/wokoòm/	'bird sp.'
/yáŋ/	'over there'	/yokoòn/	'fire brand'

Contrast between /ŋ/ and other related consonants can be shown in word final position:

/koòŋ/	'spear'
/toòn/	'wild nut husk'
/koòm/	'flat surface'
/soòk/	'cord'

3.2 Variants

Consonants /b/, /k/, /s/, /l/ are manifested by allophones which occur in mutually exclusive distribution as indicated by the following sets of examples:

/b/ (p) (b)

(p) occurs word finally and as a first member of a consonant cluster when followed by a voiceless stop or nasal. Allophone (b) occurs elsewhere.

/bokoòb/	(bɔ̀ɣɔ̀ː p)	'tree sp.'
/ibnaàl/	(ìpnaːl̀)	'skin'
/yaábkàn/	(yáː pkʰʌ̀n)	'many'

/k/ (ɣ) (k^h)

Allophone (ɣ) occurs only intervocalically. Allophone (k^h) occurs elsewhere. Aspiration is more pronounced with some speakers than others. At normal speech rate aspiration is omitted when this allophone occurs in syllable final position followed by another consonant.

/múk/	($múk^h$)	'earth mound'
/kakál/	($k^hʌ́ɣʌ́l$)	'pandanas sp.'
/mukbeèb/	(mukbɛːp)	'bird sp.'

/s/ (s) (s)

Allophone (s) which has slight retroflection occurs only preceding a lengthened high back vowel. Allophone (s) occurs elsewhere.

/suùm/ (su:ˋm) 'banana'

/siseèmàˋ/ (sˌsɛ:ˋmà) 'sweet potato sp.'

/l/ (l) (l̲)

Allophone (l) occurs contiguous to a back vowel. The allophone (l̲) which is an alveodental lateral occurs elsewhere.

/kaluùn/ (k^{h}ʌˋlu:ˋn) 'widow'

/bokól/ (bɔ́ɡɔ́l) 'bird sp.'

/faleèlaàl/ (fʌˋlɛ:ˋa:ˋl̲) 'sweet potato sp.'

Allophone (ř) fluctuates with (l) and (l̲) intervocalically.

Phoneme /t/ is aspirated in all occurrences except when it occurs in syllable final position followed by another consonant.

/titkát/ (t^{h}ɪ́tk^{h}ʌ́t^{h}) 'little finger'

All other phonemes have a single manifestation, the phonetic norm:

/dán/ (dʌ́n) 'sap of tree'

/fàn/ (fʌˋn) 'true'

/mám/ (mʌ́m) 'breath'

/nàm/ (nʌˋm) 'yam sp.'

/wàŋ/ (wʌˋŋ) 'sweet potato stem'

/yáŋ/ (yʌ́ŋ) 'over there'

4. Vowel Phonemes

The vowels of Tifal are /i/, /u/, /e/, /ą/, /o/.

4.1 Contrast between vowels can be shown by the following examples.

/dìl/ 'bird sp.'

/dùl/ 'tree sp.'

/deèl/ 'throat'

/dàl/ 'vine sp.'

/kòl/ 'frog'

Further contrast can be shown between the lengthened forms of the vowels.

/kiim/ 'blood'
/kuùm/ 'tree sp.'
/keèm/ 'open area'
/taàm/ 'tree sp.'
/koòm/ 'flat surface'

4.2 Variants

Vowel /o/ has allophones (o) and (ɔ) in both long and short forms. Allophones (o) and (o:) occur in vowel positions when followed by consonants /b/ or /m/ or when preceded by /y/. Allophones (ɔ) and (ɔ:) occur elsewhere.

/kumsòb/ (k^humsòp) 'cassowary' /bokoòb/ (bɔgo:ˋp) 'tree sp.'
/sòm/ (sòm) 'bird sp.' /toòm/ (t^ho:ˋm) 'gall bladder'
/mayoòk/ (mʌ̀yo:ˋk^h) 'snake sp.'
/mokòl/ (mɔ̀gɔ̀l) 'wild cane sp.' /booktoòk/ (bɔ:ˋt^hɔ:ˋk^h) 'possum sp.'

Vowels /i/, /a/ and /u/ have allophones (i), (ɪ), (a), (ʌ), and (u) (ʊ) respectively. The forms (i), (a), and (u) occur in word initial syllables when not preceded by a consonant and in word final syllables when not followed by a consonant. The forms (ɪ), (ʌ), and (ʊ) occur elsewhere.

/ibín/ (ibɪ́n) 'cloud' /dimì/ (dɪ̀mì) 'bamboo sp.'
/fikín/ (fɪ́gɪ́n) 'stomach'
/amán/ (ámʌ́n) 'mushroom sp.' /imá/ (ímá) 'taro'
/kamàn/ (k^hʌ̀mʌ̀n) 'snake sp.'
/unúk/ (únúk^h) 'bow' /fukùbù/ (fʊ̀gʊ̀bu) 'she is holding'

4.3 Vowel Length

Vowel phonemes /i/, /u/, /a/, and /o/ contrast with corresponding lengthened forms. No contrast between length and non-length has been found for the vowel /e/. Vowels of this quality have been interpreted as long because they correspond in length to the lengthened forms of the other vowels, except when neutralized as discussed in section 4.4., where they are interpreted as short. The lengthened form of the vowel /o/ occurs far more frequently than its non-lengthened form. Only a small number of contrastive pairs have been found. The lengthened and non-lengthened forms of the vowels /i/, /a/, and /u/ occur frequently in contrast.

/dìl/	'bird sp.'	/dìil/[2]	'cold'
/mít/	'bridge of nose'	/miít/	'source'
/kùm/	'side of neck'	/kuùm/	'tree sp.'
/múk/	'ground mound'	/muúk/	'breast'
/wán/	'arrow'	/waán/	'sweet potato'
/akàm/	'couple'	/talaàm/	'reed flute'
/kòl/	'frog'	/toòl/	'straight'
/bokól/	'bird'	/bokoòl/	'testicles'

4.4 Vowel Neutralization

In many of the words which begin with a consonant and have a short vowel in the initial syllable this short vowel is manifested by alternate forms, conditioned by the vowel of the following syllable.

When the basic allomorph of the word has /i/ as the first vowel, the alternation is between /i/, /a/ and a vowel harmonizing with the vowel of the second syllable:[3]

/bilìm/	/balìm/		'type arrow'
/filiìm/	/faliìm/		'tree sp.'
/kileèl/	/kaleèl/	/keleèl/	'wife'
/siseèmà/	/saseèma/	/seseèmà/	'sweet potato sp.'
/timán/	/taman/		'thunder'
/fiyaàm/	/fayaàm/		'green'
/tinoòm/	/tanoòm/	/tonoòm/	'insect sp.'
/sinoòk/	/sanoòk/	/sonoòk/	'rat'
/tituúk/	/tatuúk/	/tutuúk/	'insect sp.'
/tiyuúb/	/tayuúb/	/tuyuúb/	'tree sp.'

When the basic allomorph of the word has /u/ as the first vowel, the alternation is between /u/, /a/, and /o/ when the second syllable nucleus is /o/ or /oo/, and between /u/ and /a/ when the second syllable nucleus is /u/.[4] Otherwise, no alternation occurs.

/tuwól/	/tawól/	/towól/	'type shell'
/kuloòm/	/kaloòm/	/koloòm/	'pandanas sp.'
/dukúm/	/dakúm/		'large'[5]
/bulúŋ/	/balúŋ/		'fingernail'

/kutìm/	'morning'
/mukbeèb/	'bird sp.'
/kumàk/	'ginger'

When the basic allomorph of the word has /o/ as the first vowel, the alternation is between /o/ and /u/ when the second syllable nucleus is /aa/,[6] and does not fluctuate preceding second syllable nuclear /o/ or /oo/. It does not occur preceding /i/, /ee/ or /u/ in the second syllable.

/takaàs/	/tukaàs/	'taro sp.'
/bokól/		'bird sp.'
/dokoòm/		'leech'

When the basic allomorph of the word has /a/ as the first vowel, there is no fluctuation. Basic /e/ does not occur.

/k alím/	'fur'
/balìi/	'bird sp.'
/kaweèl/	'beak'
/takán/	'arm pit'
/kanaàt/	'pig arrow'
/dawòŋ/	'fire'
/kaloòk/	'tree sp.'
/kayuùm/	'bird sp.'

5. Distribution of Phonemes

5.1 Pattern of Distribution

The consonants (C) and vowels (V) occur in the following patterns of distribution within a syllable: V, VV, VC, VVC, CV, CVV, CVC, CVVC. (Lengthened vowels are indicated by VV.) Examples are represented by the underlined initial syllables.

/atán/	'sun'
/iibaàl/	'wasp sp.'
/aslàk/	'smoke'
/iismàn/	'mosquito'
/mafak/	'bad'

/b̲o̲ò̲tòok/ 'possum sp.'
/t̲a̲m̲bál/ 'good'
/d̲i̲í̲m̲kàn/ 'bird sp.'

Within a word of more than one syllable vowel clusters do not occur across syllable boundaries.

5.2 Specific Distribution

All consonants except /ŋ/ occur word initially. All consonants except /d/ have been found occurring intervocalically. All consonants except /d/, /f/, and the semi-vowels occur in word final position. There are some restrictions as to the combinations of consonant clusters which may occur across syllable boundaries. Seventy of the possible eighty-one[7] combinations have been found. Those which apparently do not occur include: /bw/, /td/, /tf/, /tl/, /sf/, /sw/, /sy/, /mw/, /nl/, /nw/, and /ŋn/.[8]

There are no restrictions in the distribution of vowels in relation to consonants within the syllable. The only restrictions in the distribution of vowels are those in word initial syllables as specified in section 4.4.

In some words there is dialectical variation between phonemes /l/ and /y/ in syllable initial position. Some speakers say /liŋlíŋ/ 'thorn' and /aslàk/ 'smoke', while others say /yiŋlíŋ/ 'thorn' and /asyàk/ 'smoke'. The occurrence or absence of /w/ preceding an initial /o/ or /oo/ also varies with speakers. /okó/ /wokó/ 'bird sp.', /òom/ /wòom/ 'rain'. The occurrence or absence of /w/ preceding an initial /u/ varies dialectically in certain words. When /w/ occurs the /u/ is replaced by /a/. Some speakers say /unáŋ/ 'woman', /utòom/ 'wallaby sp.' While others say /wanáŋ/ 'woman', /watòom/ 'wallaby sp.'.

6. Tonemes

Tifal has a two toneme system with contrast between high and low tones. High tone is marked with an acute accent and low tone with a grave accent. The pitch range between high and low is quite narrow. A particular pitch is relative to others in its environment so that a toneme of a mono-toneme cannot be distinguished in isolation.

Only one toneme occurs per syllable, whether the nucleus consists of a short or long vowel. Contrast can be shown on monosyllabic words as follows.

/tìb/	'top part'	/tíb/	'brown'
/dìib/	'edible green sp.'	/díib/	'cheek of pig'
/dàn/	'bird sp.'	/dán/	'sap of tree'
/daàŋ/	'edge'	/daáŋ/	'grass sp.'
/fùk/	'hiccough'	/búk/	'rack above fire'
/nuùk/	'animal'	/muúk/	'breast'

In words of two or more syllables in which the initial vowel is short the toneme of this vowel is neutralized and takes the tone of the succeeding vowel. While the neutralization of vowel quality is limited to words with initial consonants and having a high short vowel or a low back short vowel in the first syllable, the neutralization of tone is not so limited. Any word initial syllable with a short vowel nucleus has neutralized tone on that syllable. Thus in disyllabic words a four way contrast pattern can only be shown by words in which the initial vowel is long.

/kamàn/	'snake sp.'	/tamán/	'thunder'
/imòòl/	'my father-in-law'	/tuwóól/	'type shell'
/bòòtòòk/	'possum sp.'	/bóónkóón/	'whiskers'
/kìitóók/	'facial decoration'	/fíiŋfòòŋ/	'whistle'

7. Stress

Primary stress is predictable by the following rules:

Primary stress occurs on the first syllable with a lengthened vowel.

In non-inflected words of two or three syllables in which all vowels are short and in which the final syllable is closed by a consonant, primary stress occurs on the final syllable.

In non-inflected words of two or three syllables in which all vowels are short and in which the final syllable is open, primary stress occurs on the initial syllable.

The above rules apply to the stems of inflected words.

Non-inflected words of more than three syllables in which all vowels are short are extremely rare, and stress rules have not yet been posited for them.

Secondary stress occurs on the second syllable with a lengthened vowel.

In inflected words with more than three syllables in which all vowels are short, secondary stress occurs on the antepenult.

No secondary stress occurs in words of three or less syllables in which all vowels are short.

Footnotes

[1]Tifal is spoken by approximately 2500 people located west of Telefomin in the West Sepik District of the Territory of New Guinea. The language boundaries generally include the Papuan and West Irian borders to the south and west, the Sepik river to the north and the Telefomin valley to the east.

According to a survey made by Dr. Alan Healey, Tifal is a member of the Mountain-Ok sub-family of languages. Closely related languages include Telefol, Kauwol, Faiwol, Setaman, Bimin and Trans-Strickland. Data for the analysis of this paper were gathered during two and a half years intermittent residence at the village of Okbiilabib in the Ilam river valley. The main informants were Milok, Titelab, and Tibisak.

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[2]Geminate vowels occur with only one toneme which is marked above the second member of the cluster.

[3]In the stem of one word, /kìb-/ 'you pl', fluctuation does not occur. If it alternated to /kàb-/, it would be homophonous with /kàb-/ 'I'.

[4]No examples of basic /u/ with /uu/ in the second syllable nucleus have been found.

[5]One word, /tukùl/ 'fat', has not been observed to fluctuate.

[6]Only one example, the one given, has been found.

[7]These do not include geminate clusters. There appears to be some evidence that /kk/ and /tt/ occur. However, it has not been possible to establish this conclusively.

[8]The /kd/ combination is manifested by (g) in normal speech rate. /fokdeèk/ (fɔ̀gɛ̀ːkʰ) 'praying mantis', /kaáakdoòl/ (kʰaː gɔ̀ːl) 'insect sp.'.

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