NOTES ON AKHA SEGMENTAL PHONEMES AND TONES

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Akha is one of the languages of what is referred to usually as the Burmic or Burman group within the large Sino-Tibetan family. Its speakers live in China, Burma, Laos and Thailand and may number as many as 100,000 people. They have only just penetrated into Thailand, and live almost exclusively north of a line drawn laterally through Chiengrai city. Their numbers in Chiengrai province in Thailand have been estimated at 6312 in fifty-five villages. [1]

This article is based on material gathered during an initial field trip to Thailand in early 1966. A second, longer, field trip in 1967 may offer reason to change some of the interpretations in this paper. My work was carried out in Saencay, an Akha village approximately forty kilometers northwest of Chiengrai. My informant was Aphi Saejui. The material was gathered using Central Thai as a contact language, beginning with a word list of 437 single items plus short sentences and phrases, then gathering extemporaneous conversations and such additional vocabulary as came my way.

The division of the phonemic system into vowels and consonants was based on the determination of syllable peaks - those phonemes functioning as peaks being vowels and the others being consonants. Syllable peaks were determined intuitively and aurally, and the conclusions show the Akha syllabic structure is very simply represented by the canonical forms CV and V. All syllables are phonemically open, though they are sometimes phonetically closed, either by a glottal stop or a nasal quality (see below under discussion of vowel phonemes). Word[2] initial V syllables are

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[1] *Bennington-Cornell Thailand Hilltribe Survey, 1963-1964,* Cornell Thailand Project, Cornell University, N.Y., 1964.

[2] "Word" is defined (only loosely) here as being the minimum utterance that my informant thought made sense.

quite common, but medially they are considerably less common - [chàə̀·] arrow; [yà?u?] egg; [yɔˆ?ɔ́?] low; [láò?] door; [yɔˆ?à] wet; [lè?u?] testicles, probably being the majority of the examples recorded.

Akha is a polysyllabic language, roughly 80% of its lexicon having two or more syllables. Many of the polysyllabic words feature reduplication, e.g. [?ùpɛ̀pɛ] to vomit; [?ùthə̈thə̈] to cough; [bàšašа] to have a beard; [gɔnanà] to rest; [gòyòyò] to stand up; [khàjèjè] to shake (something). Of these, some are meaningful even without the feature of reduplication, others apparently are not. The functions of reduplication have not been determined. Other polysyllabic words contain bound morphemes, e.g. {u} head, up (?) as in [?ùchï] headdress; [?ùdu] head; [?ukɔ́?] hat; {u} a time element, as in [?ù·byɑ?] day; [?ùci?] night; [?ùšɔ̀] morning; {la} pertaining to the arm, as in [làbɇ̀] costume ring; [làdu?] lower arm; [làlɔ̃?] hand; [làmɑ?] thumb. Some polysyllabic words seem not to be divisible into smaller morphemic units, e.g. [jɑlɇ́] wind; [cɪsɇ́] betel; [hòzʌ] pole; [ŋɔ̀xe] to break; [?àpási] cabbage; [yojóna] often.

There are thirty consonant phonemes (see Chart 1). This compares with the twenty-five postulated by Lewis[3] in his alphabet devised for Bible translation purposes; the twenty-two suggested by Smalley[4], and the nineteen described by Thomas[5].

The contrast between aspirated and unaspirated voiceless stops is one of the most difficult situations to verify. It has been suggested by Lewis, Thomas and Smalley (in the above cited reports) that there is no phonemic contrast on the basis of aspiration, that aspirated stops occur before oral vowels and unaspirated before laryngealised (Lewis' "glottalised") vowels. There does seem to be a correlation, but none of the reports describe the distribution of the correlation. Unfortunately, in the whole corpus I gathered - about 900 single lexical items - not a single minimum pair was found based exclusively on segmental phonemes; all pairs

[3] Paul Lewis, a description furnished to William Smalley in typewritten copy, date unknown.

[4] William A. Smalley, *Notes on Some Phonological Problems in Akha as Spoken in the Chiengrai (Thailand) Area*, Chiengmai, 1964 (unpublished).

[5] David D. Thomas, *Notes on the Pang Khi Heh Dialect of Akha*, Chiengmai (?), 1965 (unpublished).

CHART 1

Place of articulation / *Manner of articulation*	Labial	Palatal labial	Dental	Palatal dental	Palatal	Velar	Glottal
Voiced stops	b	by	d	dy		g	
Voiceless unaspirated stops	p	py	t			k	
Voiceless aspirated stops	ph	phy	th			kh	
Voiced affricates			dz		j		
Voiceless unaspirated affricates			ts		c		
Voiceless aspirated affricates					ch		
Voiced fricatives					z	ǥ	
Voiceless fricatives			s		š	x	h
Nasals	m	my	n	ny		ŋ	
Laterals			l				

which differed only in one segmental phoneme also differed
tonally. But some basis for judging this aspiration feature
is present in the consistency with which my informant used a
particular form of a stop in any one word. I have recorded
no alternation between aspirated and unaspirated stops. If
further investigation substantiates this, it would seem to
verify the phonemic status of the *aspiration vs non-aspira-
tion* contrast.[6]

EXAMPLES:

/kh/-/k/ – [ʔakhá] Akha; [ʔàkhə̀] dog; [khòlɔ̃] neck; [yɔ^khɔ̃]
heavy; [khu] to call; [khìloʔ] bicycle; [koʔ]
six; [kí·ba] yonder; [kìmyɛʔ] goat; [bɔ̀kə] box;
[kò] to bite; [kaʔ] crossbow.

/ch/-/c/ – [ʔàchǐchu] be silent; [chàʔə̈] arrow; [yɔ^chɛ́]
sour; [chə̀·] fog; [chù] to raise animals; [chegò]
mosquito; [ʔu·cíʔ] night; [càhm̗] feather;
[cǽchə̀chə̀] to run; [cu] to suck; [pacɛ́] hat.

/ph/-/p/ – [ɸhuʔ] village; [sàpha] cloth; [dùphɔ̃] to bury;
[ŋàphə] wild bananas; [phasì] mattress; [phesí]
priest; [thàphòmaʔ] wooden statues; [tépù] a kind
of rice; [payò^] weighing scale; [pə̀] to burn;
[tsɔ̀pèdu] cultivating stick; [pɔ̃] be wrong;
[yupo] to turn.

/th/-/t/ – [pyathǽ] be proud; [thíduʔ] fire light; [thu] to
sit up; [thə] that; [mòthɔ̀] camera; [luthɔ̃] mos-
quito larvae; [nǽtho] call up the spirits; [ɸàtǽ]
kind of weed; [là·tiʔ] pants; [gótəʔ] pipe mouth-
piece; [motɔ̀] padlock; [tɔ̃dze] to fake; [tomaʔ]
phallic symbol.

Also in the case of the phones [y] and [z], it was more
normal for my informant to be consistent in using one only
for any one word, e.g. [yɔ^-] adjective prefix; [yu] to

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[6] At least, it is more usual in dealing with Southeast Asian languages
to regard *aspiration vs non-aspiration* as a contrastive device than
laryngeal vs non-laryngeal.

sleep; [zò] to fly; [ʔàyecha] to sing; [ʔayɛʔ] flower;
[hòzə] pole. But in some words, usually preceding [a], [y]
and [z] alternated freely with each other and with phones
intermediate between the two, e.g. [Zá]⁷ child; [ʔàZ̀aʔ] hog;
[dzamíZ̀a] woman; [bZ̀ə̀mmaʔ] it (?). And yet when I substi-
tuted the opposite phone in the words with which he had been
consistent, my informant accepted the words. There are also
the facts that other speakers used the opposite phones to my
informant, and that some speakers seem to utilise the whole
scale of these phones. It is for these reasons I consider
[y] and [z] as allophones of /z/. Lewis distinguishes be-
tween them in his alphabet, but neither Smalley nor Thomas
found a contrast. The problem of [z] ~ [y] as alternation
or contrast appears to be dialectal. A possible explanation
for my informant's case is that in his dialect or idiolect,
the difference was originally phonemic, but through contact
with other dialects where the difference was not phonemic,
not only has he come to accept free variation of these two
phones in others' speech, but it is even encroaching on his
own.

/s/ ~ /š/ is another contrast that has an equivocal
aspect. It is taken to be contrastive, as it is in Burmese.
In Lahu, a closely related Burman language, there is no
contrast.⁸ Thus, it would not have been surprising if [s]
and [š] had not contrasted; in fact, at times they seem to
be in free variation, primarily before [a], e.g. [Sàphyàbæʔ]⁹
thigh; [Sàdyæʔ] mud; [Sají] animal. The variation has also
been noted in [khaSɨʔ] sand, where [ɪ] is laryngealised.
Lewis describes it as phonemic. Smalley found it to be non-
phonemic. Thomas said that his informant in careful speech
distinguished the two, but apparently did not in natural
speech. Both of these phonemes are articulated with the
tongue tip against the back of the front lower teeth.

Smalley has also found [ts] and [c], and [dz] and [j] to
be non-contrastive in his informant's speech. Both Lewis
and Thomas regard them all as phonemic as I did with my in-
formant, e.g. [tse] to bark; [cèce] to defecate; [jò] to in-
vite; [dzɔ] to study; [jáʔə̈] Jew's harp; [dza] to eat.

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⁷ [Z] = abbreviation for [y] and [z].

⁸ Conversation with James Matisoff, whose Ph.D. dissertation, Uni-
versity of California, Berkeley, was a description of Lahu.

⁹ [S] = abbreviation for [s] and [š].

[r] and [l] are in free variation as allophones of /l/, but [r] has been heard rarely and only in rapid speech, e.g. [yu·Là?] bring.[10]

There are thirteen simple vowel and three diphthong phonemes (see Chart 2). Lewis has sixteen vocalic symbols in his alphabet, representing the same pattern as above except for /ɔy/. His sixteenth symbol represents /am/. I recorded only one item on only one occasion with /am/ - [yam] time. Because of its rarity of occurrence I have excluded it from my phonemic analysis until I can check the accuracy of that item. Thomas found the same phonemic pattern as Lewis.

CHART 2

	Simple Vowels			Diphthongs	
i	ï	ɪ	u	ay	ɔy
e	ӫ	ə	o	aw	
æ	a	õ	ɔ		
	ʮ				

/a/ before /z/ sometimes becomes diphthongized, e.g. /šazӫ/ [šàyyӫ] bone; /dazo/ [dàyzo] grass.

/õ/ has the two allophones [õ] and [õŋ] which are in free variation, apparently. [õŋ] may be a conditioned variant, appearing only but optionally before a voiced sound. It is most common before vowels, especially the verb particle /ə/, but has been found before /l/, e.g. [déhõ̌ŋə?] to sing (+ verb particle); [õ̌ŋí] to go make; [jõ̌ŋə?] to make (+ verb particle); [dõ̌ŋla] there is (+ verb particle). However, its exact distribution has not been checked yet.

Syllabic /ʮ/ is represented by both [ʮ] and [əm], e.g. [nèmsi] sesame; [šə́m] iron; [sə́m] three; [nyəm] house; [xəm] a grammatical particle; [kə́mthɛ] Bangkok; [?ʮ̇] sky; [?ʮ̇də́m] cloud; [?ʮ̇·a?] guts; [càhʮ́] feather; [ma?ʮ̇] Burma; [hʮ̇]

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[10] [L] = abbreviation for [r] and [l].

grammatical classifier. [m̩] is taken as a vowel because it constitutes the syllable peak in many cases. Since it is in complementary distribution with [əm] the two are considered allophones of the same vowel phoneme (see the morphophonemic notes below). To have regarded [m̩] as /əm/ would have complicated the description. If /əm/ had been described as vowel + consonant, it would have complicated the description of canonical forms. The form CVC which it would have added would have had only this one filler for the final slots VC (with the possible addition of /am/ - see above). Thomas places both /əm/ and /õ/ with the diphthongs, but it seems to me more usual to find nasality as an additional dimension of the simple vowel pattern, rather than of diphthong patterns. /m̩/ together with the phoneme /õ/ add a third dimension of nasality to the vocalic pattern.

/ï/ and /ə̈/ are rounded central vowels.

Diphthongs occur in only a very few morphemes, e.g. [xɔ̀y] particle; [náw] Stop!; [àw] particle; [ʔamyày] how much; [bay] money; [lopháy] train; [sæcáy] Saenchay; [thày] Thai; [thəmyayʔ] only; [mày] particle.

There is no restriction on which consonants can occur with which vowels, though not all possible variations have been recorded - e.g. /byo, cə, co, ku, lə̈/ etc. have not been recorded - there is no significant patterning that would suggest complementary distribution.

In regard to morphophonemics, the following have been noted:

$$1. \quad /m̩/ \text{ in the V environments} \left\{ \begin{matrix} V \\ hV \end{matrix} \right\} \rightarrow [m̩]$$

$$2. \quad /m̩/ \rightarrow [əm]$$

$$1. \quad /æ/ \text{ in the environments} \left\{ \begin{matrix} chV \\ šV \\ jV \end{matrix} \right\} \rightarrow [ɛ]$$

$$2. \quad /æ/ \rightarrow [æ]$$

$$1. \quad /l/ \rightarrow \left\{ \begin{matrix} [r] \\ [l] \end{matrix} \right\}$$

$$1. \quad /õ/ \rightarrow \left\{ \begin{matrix} [õ] \\ [õŋ] \end{matrix} \right\}$$

1. /Cə/ + /ə/ verb particle → /Cə/ + [ʌ] [11]

2. /ə/ → [ə]

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[11] C = consonant.

The morphophonemics will be examined more extensively during the second field trip.

The tonemics are based on three pitch levels. There seems to be agreement among researchers that there are at least three level tones, one on each pitch level. Lewis posits a five tone system in his alphabet - two low tones, one with oral vowel and one with glottalised vowel; two mid tones with the same difference; and a high tone with oral vowel. Smalley and Thomas agree. I analyse my informant's speech as having four tones - a low, mid and high level tones, and a falling tone that falls from mid to low pitch.

$$\underline{\qquad}^{3}$$

$$^{2}\underline{\qquad}\qquad\qquad ^{4}\underline{\qquad}$$

$$_{1}\underline{\qquad}$$
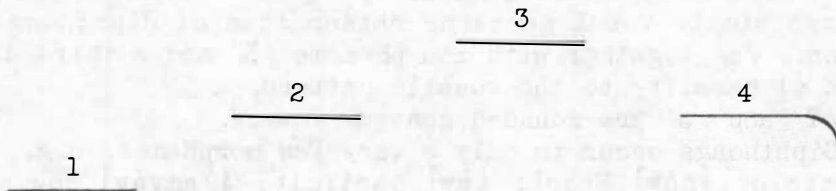
These are marked with the following diacritics over the vowels respectively: ` , unmarked, ´ , ' . There are no restrictions as to which consonant-vowel combinations the tones occur with, nor as to their sequence of occurrence, except that the fourth tone occurs only in utterance-final syllables.

Tone one: [ʔapà ʔ] leaf; [gɔ̀·jɔ́] mountain; [ʔù·ci ʔ] night; [bo̊kə] box; [catho̊ ʔ] navel.

Tone two: [duchǐ] root; [khà·lo ʔ] stone; [ʔáca ʔ] rope; [yɔˆthú] thick; [yupo ʔ] to turn.

Tone three: [yɔˆkhɔ̂] heavy; [ʔíˑcu] water; [khaló] basket; [khənə́] toe; [phyú] silver.

Tone four: [chə̇·] fog; [mæthɔ̇] chin; [ʔàkhə̇] dog; [myaphyɔ̇] face; [ŋàša̋·] fish.

As with the segmental phonemes, it was virtually impossible to obtain minimum pairs to establish tonemic contrasts. Perhaps half a dozen tonemically contrastive utterances were found in all.

The problem of intonation patterns, and their effect on the tonemes, has not been investigated thoroughly, nor the question of tone sandhi, though in eighty-two tone test frames constructed to investigate these questions, nothing

was noted suggesting there was sandhi. It appears that sentence intonation "neutralises" normal tone, i.e. replaces tonemes with non-phonemic (non-tonemic) tones whose shape is wholly conditioned by the overall sentence intonation. But the unnaturalness with which the tone test frames were treated by the informant makes the frames unreliable for any final conclusions. Vowel length has also been noted, but whether it is emically significant (at any level) has not been determined. These problems will be pursued in the second field trip.

The laryngealisation, or glottalisation, of the vowels has been noted in my informant's speech, but I consider it non-phonemic, possibly a prosodic feature. I have not yet been able to check with what consistency he laryngealises his words. As with the *aspiration vs non-aspiration* feature, consistency in its appearance or non-appearance with any particular words would be evidence of a phonemic contrast.

POSTSCRIPT:

/k, kh, g, h/ and probably /g̠, x/ have allophones determined by whether they preceed front, central or back vowels, but this distribution was not described as I am not sure what effect the rounded vowels have on the allophones.