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Contents

This volume is warmly dedicated to the memory of

GASPAR A. MAKIL

and

ELWOOD L. JACOBSEN

Our colleagues in the Summer Institute of Linguistics, killed by guerrillas at Địnhquán, Longkhánh, Vietnam, March 4, 1963.

Gaspar Makil and Elwood Jacobsen loved Viet Nam. They loved the Vietnamese people and they loved the Vietnamese language.

They also loved the mountain people and the mountain languages. It was their intention, after completing their study of the Vietnamese language to study the mountain languages. But before they could do so, they were killed — they and Gaspar's baby girl, Janie, who was only four months old.

This is a book of scientific studies of the mountain languages of Viet Nam. Not many of the montagnards will read it, but scientists will study it in order to help the mountain people read and write their own languages. Then books in those languages will help them to learn Vietnamese.

Gaspar and Elwood and Janie would not want revenge on those who killed them. They would want the Vietnamese people and the montagnards, however, to know why they came and why they died. It was because of the Person who loved them, and gave Himself for them.

Richard Pittman
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Director for the Pacific area
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Introduction

This volume, like its predecessor **Mon-Khmer Studies I**, *is a collection of studies on various aspects of specific Mon-Khmer languages of Vietnam. It is hoped that studies from other language groups in Vietnam will follow soon. The purpose of these studies is two-fold : first, to start putting documentation regarding these languages on public record, and second, to show in detail some of the structures in these languages which appear to be fairly typical of many of the languages in this area. We trust that longer monographs on these languages will eventually make their appearance, but we felt it best not to delay publication of the data at hand in view of future uncertainties.*

Intonation is a subject which all too frequently does not get the detailed study it deserves, so ' Chrau Intonation ' is a welcome contribution in this field.

Mon-Khmer affixes are becoming better known, particularly from J.M. Jacob's recent study, and the Pacŏh and Katu data in this volume, with the Bahnar data in the first volume, will help to broaden the empirical base of Mon-Khmer affix studies.

In phonemics, an interesting point in Jeh is the clear complementary allophonic status of [h] and high tone. This adds support to some of Haudricourt's theories on the history of Vietnamese, providing an attested parallel. Halang and Jeh are very closely related languages, so it is not surprising that their phoneme systems show a good deal of similarity.

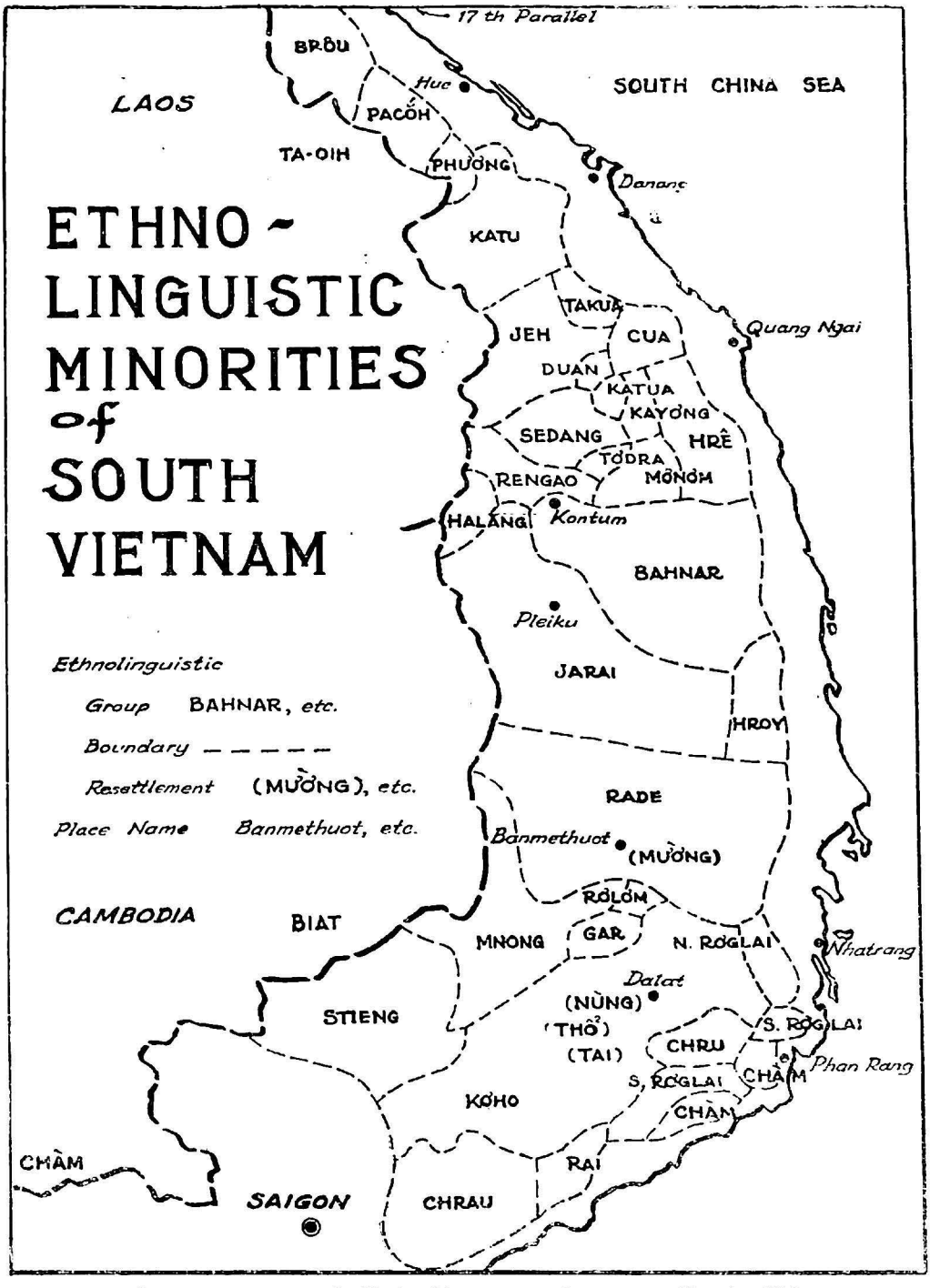
The pronouns of Katu are quite symmetrical and yield some interesting matrix components. The Katu pronouns, however, cannot be said to be typical of the Mon-Khmer languages in Vietnam, as there is frequently very little similarity from language to language. mai *'2 sg.' is the only Katu pronoun for which I can identify a Chrau cognate. Possibly the spreading Southeast Asian characteristic of using kinship terms for pronouns has upset the original Mon-Khmer pronoun systems, as kinship term pronouns have come into fairly wide use in some of the southern Mon-Khmer languages particularly. The Mnong Rơlơm pronoun system is fairly typical of the southern Mon-Khmer languages.*

An earlier prepublication edition of this volume, containing 6 of the present articles, was mimeographed for the occasion of the inauguration of of the Linguistic Research Center in Kontum, January 16, 1965. There have been slight changes in some of those articles before going to press in this volume.

This volume has been published with the cooperation of the journal Văn-Hóa Nguyệt-San, *Prof. Nguyễn Đình Hòa editor, in whose pages these articles originally appeared and are reprinted here directly from the set type. We express our appreciation to the Directorate of Cultural Affairs (Nha Văn-hóa) of the Ministry of Education for this courtesy, which greatly reduced the expenses of the volume.*

Editorial responsibility for this volume was: D. Thomas — collection and initial editing of articles, N. D. Hòa — seeing them through the press in Văn-Hóa Nguyệt-San, *D. Blood — overseeing the final form of the volume. An attempt has been made to have this volume be in every way a companion volume to* **Mon-Khmer Studies I**, *but the different circumstances of publication precluded keeping the same page size. So we apologize to those whose neat bookshelves are put in disarray by the change in size.*

D.D.T.



Revised by Summer Institute of Linguistics, Saigon March 1966

Pronunciation Guide

for Chrau, Halăng, Jeh, Katu, Pacŏh

(where different from international phonetics)

Consonants :

q = ʔ (Ch, Kt, Pc)

nh = n̆ (Ch, Je, Kt, Pc)

ch = c̆ (Ch, Je, Kt, Pc)

j = ɟ̆ (Ch, Hl, Je, Kt, Pc)

c = k (Ch, Pc), c̆ (Hl)

ng = ŋ (Ch, Je, Kt, Pc)

đ = ʔd (Ch, Kt)

ƀ = ʔb (Kt)

Vowels :

˘ = shortness (Ch, Hl), tenseness (Pc)

ˊ = shortness (Pc)

vv = length (Kt)

ˋ = breathiness (Hl), deepness (Je)

â = short mid-low central vowel (Ch, Kt, Pc)

ê = mid (lax) front vowel (Ch, Kt, Pc)

o = mid-low back vowel (Ch, Hl, Je, Kt, Pc)

ô = mid (lax) back vowel (Ch, Kt, Pc)

ó = low central-back vowel (Kt)

ơ = mid (lax) central vowel (Ch, Kt, Pc)

ư = high central vowel (Ch, Kt, Pc)

Chrau Intonation [1]

DOROTHY THOMAS

1. Introduction. Chrau, a Mon-Khmer language spoken by about 15,000 people living E.N.E. of Saigon, has resisted the trend to lexical one in Southeast Asia, but does have significant sentence intonation. Kơho, a neighboring Mon-Khmer language to the north,[2] has a complex of length plus tone; and Cham, a Malayo-Polynesian language to the northeast, has one phonemic tone contrast.[3] Although there has been some work done on sentence intonation in tonal languages of Southeast Asia,[4] little investigation on non-tonal languages has been done, apart from merely stating that intonation is phonemic.[5]

1 I am indebted to Richard Watson and Jean Donaldson for many helpful suggestions during the writing of this paper, and to my informant Thỏ Sắng for his patience in repeating sentences over many times. The dialect studied here is that of the Xuân Lộc area, which seems to be fairly central both geographically and in prestige. Other dialects have different intonation patterns.

2 For Kơho tones see W.A. Smalley, 'Sre Phonemes and Syllables', *JAOS* 74: 217-222 (1955), and also Helen Evans and Peggy Bowen, *Kơho Language Course*, Dalat, 1963, mim.

3 'Phonological Units in Cham', a thesis submitted for a master's degree to the Graduate School of the University of Indiana by David L. Blood, 1963.

4 See E.J.A. Henderson, 'Prosodies in Siamese', *Asia Major* 1: 204-212 (1949). Also R.B. Jones and Hùynh Sanh Thông, *Introduction to Spoken Vietnamese*, pp. 5-7; Washington, 1957.

5 See W.A. Smalley, *Outline of Khmu ʔ Structure*, p. 2; New Haven, 1961. He recognizes four intonational pitch levels in Khmu ʔ, a Mon-Khmer language of Laos.

Many of the Chrau people are bilingual, speaking both Vietnamese and Chrau, and many Vietnamese words have been borrowed into Chrau. But fully assimi'ated Vietnamese words lose their lexical tone and fit into the intonational patterns of the Chrau sentence.

The Chrau word *bănh* ' bread ' is a good example of a Vietnamese word in the process of assimilation. The following variations have been heard on *bănh* in one Chrau conversation :

ănh sa bănh — ' I eat bread ' ' I'm eating bread. '

păch bănh măi sa — ' what bread you eat ' ' What kind of bread are you eating ?'

ănh sa bănh mi — 'I eat bread wheat' 'I'm eating wheat bread.'

In the first example, *bănh* begins on a high pitch and falls to the lowest pitch in the sentence, the normal sentence-final intonation. In the second example, it is on low mid pitch, the normal sentence level for mid-sentence. In the third example, however, *bănh* is on a high pitch and *mi*, a Vietnamese word, follows with a low tone. Only the last example could be interpreted as carrying the Vietnamese lexical tone (the Vietnamese word has a high rising tone) ; in this instance *bănh* follows Vietnamese presumably because the following morpheme is also Vietnamese.

In this paper, only sentences of the first two types, where it is obvious that the Vietnamese tone is not operative, have been used to analyze Chrau intonation.[6]

2. Basic Patterns.

2. 1 Neutral Intonation. The neutral, or basic, intonation pattern in Chrau is composed of a sustained low-mid level tone over most of the sentence, followed by a sligh trie sor a rise plus down-glide on the last syllable,

6 My informant, who is adept at carrying on two-way conversations with himself, taped a number of such conversations on various topics. After I had transcribed them, he read them over quite patiently for me so that I could compare his reading intonation with his natural speech. He varied very little in his overall intonational patterns in these repeated productions. The variations did give me important clues to non-obligatory categories. Some data necessarily was caught in ordinary conversation with him and could not be taped after the situation had passed, especially in the case of elliptical sentences.

as determined by the structure of the syllable. (⌐‾‾‾‾‾‾‾ or ⌐‾‾‾‾‾‾‾‾) This neutral pattern occurs with simple declarative sentences.

If the last syllable has both a short vowel and a voiceless final consonant (p, t, ch, c, q, h), the pitch remains high (cf. sec. 4). This intonation pattern is relatively infrequent, though the simplest to describe.

măi gŭt	'you know'	'You know.'
něh sŏq	'it dirty'	'It's dirty.'
tamun chĭt	'person dead'	'A person is dead.'
ănh saq sĭq	'I go return'	'I'm going home.'
cô ndŏh sĭq	'grandfather not-yet return'	'Grandfather hasn't returned yet.'
măi hôm gŭq u nŏq	'you still stay at there.'	'You still live there.'
vu nŏq nhai chwŏp	'person there speak much'	'He talks a lot.'
cŏp iĕt	'wait now'	'Wait!'

All other syllables, i.e. all long vowels, open syllables, or voicedf inal consonants, glide down after the rise.[7] The syllable is slightly stressed and is lengthened (if the vowel is short, the consonant is lengthened). The following examples are all glided. The first two have final nasals, the third has an open syllable, the fourth has a long vowel, and the last has a voiced final consonant.

7 The consonants of Chrau, as represented in this paper, are voiceless stops *p, t, ch* (alveopalatal), *c/k* (velar) ; lenis voiced stops *v* [b-v], *d,j,g* ; preglottalized voiced stops *b* [ʔ *b*], *d* [ʔd] ; nasals *m, n, nh* [n̈], *ng* [ŋ] ; others *r, l, w, y, s,h,q* (glottal stop). The vowels are high, mid and low : front *i, ê, e* ; central *ư, ơ, a,* ; back *u, ô, o*. The sequence *n'h* [nh], is in contrast with *nh* [n̈]. For a fuller discussion of the phonemes, see David Thomas, 'Remarques sur la phonologie du Chrau' *B. S. L. P.* 57 : 175-197 (1962). In this paper, all phonetically short vowels are marked ˘.

ănh sa bănh	'I eat bread' 'I'm eating bread.'
ănh saq lêng	'I go play' 'I'm going for a walk.'
anh saq ôp canji	'I go do weed' 'I'm going to weed.'
chĕq ănh vĭq u heq	'Let me sleep at here' 'Let me sleep here.'
lơp nĕh tŏh tŏr	'thunder it makes thunder' 'It's thundering'.

These basic patterns show up in counting. Each of the numbers up to ten has a neutral contour, those with short vowels and voiceless final consonants being on a higher pitch than the others.

muôi var pe puôn prăm prău pŏh pham sŭn mŏt

This could be summarized by saying that syllables with only one mora of voicing in the coda (vowel plus final) do not glide down; syllables with more than one mora of voicing in the coda do glide down.[8] (Note that semivocalic onglides, as in *chwŏp*, function in the onset, not in the coda.)

These are the normal intonation patterns when not modified by other factors.

2.2 General Modifications. Other discourse styles, emphasis, or de-emphasis all alter the basic pattern by shifting the high point of the intonation contour to other positions in the sentence or by adding an additional contour. They also break up the contour into distinct levels.

If there is a high pitch on any non-final syllable, there is no final rise, but there is a gradual drop to low across the length of the sentence.

ănh gŭt lŭh sĭn gŭt măi dôh 'I know why not know you you'
'Of course I know, why wouldn't I?'

Finals which do not have an upglide but have more than one mora of voicing usually trail off in a non-distinctive down-glide.

8 Defining a mora as being the length of a short vowel.

As the example above shows, there can be four distinct levels in a sentence, but there are never more levels than there are words. The second level from the bottom, or low-mid, is the normal neutral level, as in English. On which ever level they occur, usually the subject and verb are on the same level, and usually a noun and its modifier are on the same level.

păch n'hya măi ôp nar heq 'thing what you do day this'
'What are you doing today ?'

păch n'hya măi ôp 'thing what you do'
'What are you doing ?'

This should not be taken to mean that there are four contrastive levels in Chrau. There is an emic peak (sec. 2, 4) emic drop (sec. 5), and emic final rise (sec. 3). But there are never more than four general etic levels in a single contour.

3. **Discourse Modifications.** Content questions, elliptical yes-or-no questions, terms of address, and commands have typical patterns of their own.

3. 1 **Content Questions.** The highest pitch in a content question occurs on the question word, [9] with the exception of *lŏy* 'who, which ?', which fills a different slot in the sentence than the other content question words. There is usually no other high pitch in the sentence, with the exception of a negative which begins another clause, or an intensifier.

lŭh măi panh êq nhim 'why you say *not* cry'
'Why do you say, 'Don't cry ' ?'

lŭh măi gŭq ngai qua ơr 'why you live far *very* very'
'Why do you live so very far away ?'

Content question words which occur with high pitch are *lŭh* 'why ?', *vi* 'where ?', *gŏq*, *vagŏq* ' how much ? ' *mŏq* ' how, why ?,' *vu*

9 Richard Phillips notes this same feature in Central Mnong, a Mon-Khmer language to the northwest, in his *Mnong Language Course* ; Dalat, 1963, typed.

'who ?,' *tơm* 'why ?' and *păch n'hya* 'what ?'. *păch n'hya* acts as one word morphologically, but is two words phonologically. Occasionally *păch* occurs alone as a question word with the same meaning. The high pitch occurs on *păch*, not on *n'hya*.

lŭh măi nôp măi dóh 'why you no you you'
'Why don't you want to ?'

vi măi saq 'where you go' 'Where are you going ?'

vagŏq jên ndĕh 'how-much money car' 'What's the fare ?'

mŏq ôp 'how do' 'what's to be done ?'

vu ji 'who sick' 'who's sick ?

(Contrast this example with a neutral statement :
vu ji 'who sick' 'Whoever is sick.')

tơm uĭnh măi lo 'why fire your thus'
'What's wrong with your light ?'

păch n'hya saq gon 'thing what go hunting'
'Go hunting for what ?'

3. 2 Elliptical [10] Yes-or-No Questions. In elliptical style, a final glide to high pitch indicates a yes-or-no question. This style occurs frequently in conversations, but is not usually recognized out of context. In more formal speech, yes-or-no questions have a final question particle, which takes a de-emphasis contour (sec. 5.2).

măi gŭt ôp be 'you know do lumber ?'
'Do you know how to lumber ?'

In the following example, a word which normally would have the de-emphasis low level pitch has an additional question glide added.

ôp yang va vôh 'do spirit rice (friendly particle) ?'
'Are you doing the rice ceremony ?'

In contrast, the normal contour for these words is :

10 cf. Richard Gunter, 'Elliptical Sentences in English', *Lingua* 12 : 137-150 (1963).

ôn yang va vôh ' Do the rice ceremony ! '

The final particle *hŏng* can optionally have either a yes—or—no lide or de-emphasis intonation. This is because *hŏng* already marks a sentence as a yes-or-no question.

măi gŭt ôp be hŏng ' you know do lumber huh?.'
' Do you know how to lumber? '

When a hearer has not understood a word, he repeats it with a question glide. The glide apparently adds the meaning ' Did you say... ?' or ' How's that again? '

3.3 Terms of Address. Terms of address, whether pronouns or names, usually have an up-glide, although they can optionally occur on a low level pitch with no apparent difference in meaning. There may be a slightly questioning attitude reflected in the glide, as ' O.K. ? ' or ' Are you with me ? ' Terms of address usually occur after the sentence, but occasionally precede the sentence.

păch n'hya con a vôq tĭq măi ' thing what animal at ahead there you '
'What animal is that ahead there ?'

If there are two different terms of address, they each have a glide from low to high.

vi măi saq nŏq măi pôp ' where you go there you brother '
' Where are you going there, Brother ? '

(The reverse sequence, *pôp măi*, does not have address intonation at all, but fits into the sentence contour. The reason for this has not been ascertained.)

A repetition of the same term of address has an up-glide on the first occurrence, a down-glide on the second.

saq gon tu nggô tĭq măi măi 'go hunting to forest there you you'
'Go hunting in the forest.'

Vơn, a term which includes the speaker, does not act as other

terms of address. It takes the sentence-final de-emphasis intonation (sec. 5.2) rather than the post-sentence address intonation.

ôp pam vơn mai	'make fish-trap self you' 'Let's make a fish trap.'
ơ măi saq nggô vơn	'oh you go forest self' 'Let's go to the forest.'

If there is a compound term of address, the first part is on a low level pitch, the second part is on an up-glide.

măi gŭt ôp be pôp pe	'you know do lumber ? Brother Pe' 'Do you know how to lumber,Brother Pe?'

3.4 **Commands** After the sentence contour there may be an additional fall. This fall occurs with the imperative particle *ơ* and it goes from high to low. (The response is *ơ*, with either a glide from mid to low or with a slight rise from mid.)

command: reply:

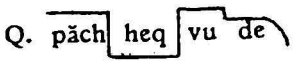
gaprăm gŭq u nhi saq păh glau prăm ơ ơ (or) ơ

'Pram stay at home go cut bamboo Pram (imper.)' 'O.K.'
'Pram, you stay at home and go cut the bamboo !' 'O.K.'

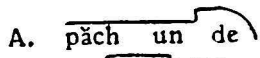
măi gŭq mŏq a lưr ơ

'you stay quietly at behind (imperative)'
'You stay back there quietly !'

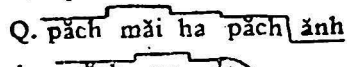
4. **Emphasis Modifications.** Certain types of words in a Chrau sentence frequently have a higher pitch than the rest of the sentence, for emphasis. The emphasized word is stressed, and unless it has both a short vowel and a voiceless final consonant, it is lengthened (cf. sec. 2.1). If a two-syllable word is emphasized, only the main (final) syllable is on the higher pitch. The following answers to questions illustrate the use of this category :



'thing this who belong-to'
'Whose thing is this ?'



'thing you (grandmother)' 'Your thing.'



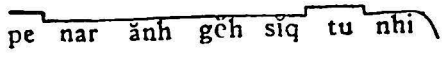
'thing you or thing my'
'Your thing or mine ?'
'thing *you* (*grandmother*) belong.to'
'*Your* thing.'

The first answer had the normal, neutral intonation. The second, because a choice was required, emphasized the person to whom the thing belonged.

Categories which are frequently emphasized are contrast (as illustrated above), directional words, negatives, numbers, and intensifiers. Directional words and negatives are usually de-emphasized when not emphasized (cf. sec. 5.1).

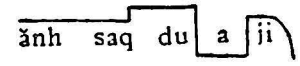
4.1 **Directional Words,** *tu* 'to', *a* 'from, at', and *u* 'in, at' are usually emphasized. The alternative is de-emphasis, as they are only on the neutral level in reading or didactic style. In the following examples, the directional words are emphasized in the first three sentences, de-emphasized in the last one.

'soap *in* house fire'
'The soap is *in* the kitchen.'



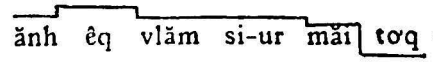
'three days I have return *to* home'
'In three days I' ll go home'.

'I live *away-at* field *away-at* field there'
,I live away there at the fields.'

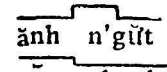


,I went ran-off from sickness'
'I ran away from sickness'.

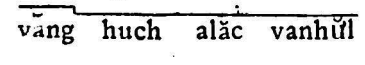
4.2 **Negatives.** The negatives *êq, sĭn,* and *n-* 'not' and vŏng 'don't' are frequently emphasized. The final example shows a de-emphasized negative.



'I *not* meet wife your there'
'I'll not meet your wife there.'



'I *not* know' 'I don't know.'



'don't drink wine drunk Pe'
'Don't get drunk, Pe.'

yăh hŏng ănh n' huch a lac nhŭn măi măi 'good no.

I *not* drink wine drunk you you'
'Oh no, I wouldn't get drunk.'

It is also possible to negativize a verb by using a high pitch and extra heavy stress on the verb. This is an elliptical form not used in precise speech. The word *cơnh* 'want' is the word most frequently used in this way.

cơnh uĭnh silăng khăi ,*not*-want fire. light moon'
,I don't want a light, there's moonlight.'

4.3 **Numbers.** Numbers are usually emphasized, but sometimes are not if a preceding word in the sentence has already been emphasized.

pham nđĕh va vŏh 'eight carts rice indeed'
'eight carts of rice'

lĕq năc năng en dơn 'gone *half* night already'
'It's midnight already.'

saq êq gĕh du lăm gơng chhwŏy 'go *not* have one piece meat (exclamation).'
'Went and didn't get a single piece of meat.'

In the last example, the negative and post final particle are emphasized, not the number.

4.4 **Intensifiers.** Intensifiers *qua* and *lŭng* ' very' and *trôq* 'sky' are almost invariably emphasized. It might be argued that *qua* is a Vietnamese word still, as the word *quá* in Vietnamese also has a high tone, but the Chrau word can have a down-glide when it occurs sentence finally.

ji qua 'sore very' 'very sore'

qua joq lŭng gơi 'very long-time very very' 'a very long time.

takat qua trôq 'cold very sky' ' extremely cold'

huch alăc qua trôq qua ntĕh 'drink wine very sky very earth'
'Drink exceedingly.'

In the expression *qua troq qua ntĕh* 'very sky very earth', usually only the first word is emphasized.

5. **De-emphasis Modifications.** Occasionally some words can occur on a slightly lower than low-mid pitch in mid-sentence, or on low pitch finally. They are de-stressed and the vowel quality tends to be indistinct. Function words usually fit into this category, especially sentence finally. Pronouns in the possessive slot are also usually de-emphasized

5.1 **Mid-sentence De-emphasis.** Function words and pronouns in the possessive slot are usually de-emphasized, but may be emphasized or be on a neutral pitch.

ănh gŏm daq di khlŭh	'I boil water *to* bubble'
	,I,l bring the water to a rolling boil.'
valăi vap măi u nŏq	leave father *your at* there'
	lForget about your father.'
saq ôp be băi vap ănh du mva	go do lumber with father *my* one years
	I went to lumber with my father for one year.'

When the following word is emphasized, the function word often occurs on the neutral pitch, but otherwise would normally be on the neutral pitch only in a didactic style.

huch di tŏt daq ca nŏq	'drink *to* arrive water like that'
	'Drink till you turn into water.'

The pre-syllable of a two syllable word is very frequently on low pitch. As this syllable is inherently de-stressed, there is no change in the amount of stress.

ănh n'huch alăc va nhŭl	' I not drink wine drunk '
ănh n' huch a lăc va nhŭl măi măi	' I not drink wine drunk you you '

In the first example, the negative *n* of *n'huch* is emphasized, the *a* of *alăc* is neither emphasized nor de-emphasized, and the *va* of *vanhŭl* is de-emphasized. In the second example, all three pre-syllables are de-emphasized.

5.2 **Final De-emphasis.** Certain function words or closely knit noun phrases occur in a low pitch sentence finally instead of with the basic sentence down-glide. The preceding word carries the sentence rise if no

other word in the sentence has been on a high pitch.

saq sĭq | vơn ' go return *self* ' ' Let's go home. '

When one of these de-emphasis words occurs penultimately in the sentence, both it and the last word are low, whether the final word is a de-emphasis type word or not. The sentence rise is then on the antepenultimate word.

saq păh glau sĭq | en nŏq ' go cut bamboo return *already that* '

măi padau | hŏng vôh ' you teach (*question particle*) (*polite particle*) '

Function words which occur with this sentence-final de-emphasis are *en* ' already ', *nĕh* ' ? ', *vơn* ' self ', *hŏng* and *dăng* '(question particles)' *vôh*, ' (a polite particle) ', *ŏm* ' (an emphasis particle), *vŏh* ' indeed ' *lo* ' so ', and *tơq* ' there '. With the exception of *en*, these words have not been heard emphasized. *en*, *nĕh*, *vơn*, and the question particles have also been heard in the penultimate de-emphasis position :

ănh vanhŭt qua | en dơn ' I drunk very *already* already '
' I 'm already very drunk . '

saq saq | nĕh vôh ' go go *that* (particle) '
' Go ahead and go . '

huch sĕh măng heq | vôn de ' drink wine night this *self of* '
' Drink my wine tonight. '

saq | vơn ' go *self* ' ' Let ' s go . '

măi padau | hŏng vôh ' you teach *question* polite '
' Will you teach please ? '

va yăh săq | hŏng ' rice good full-headed *question* '
' Is your rice good and full ? '

' you go question' ' Are you going ? '

măi saq | đăng

The words *vôh; ŏm, vŏh, lo,* and *tơq* have not been heard in the

penultimate low position, but they do occur consistently in the final low position.

nhŭp su au pĭh vôh ‘ take cloth clothes launder *polite* ’
‘ Take the clothes and wash them. ’

gĕh ŏm ‘ have *emphatic* ’ ‘ Sure I have . ’

pham ndĕh va vŏh ‘ eight carts rice *indeed* ’
‘ There were eight carts of rice. ’

gĭt lo ‘ know *so* ’ ‘ I don ’t know. ’

ănh êq vlăm si-ur măi tơq I not meet wife your there ’
‘ I won ’ t meet your wife there’.

In certain closely knit noun phrases at the end of a sentence frequently both elements of the phrase take the de-emphasis low pitch. These phrases may be composed of two commonly co-occurring nouns, or a noun and its normal adjective, or two pronominal elements.

păch n’hya măi ôp nar heq ‘thing what you do *day this*’
‘What are you doing today ?’

var riyĕng prău jŏt ndŏh ‘two hundred six *ten papers*’
‘260 piastres’

vagŏq jên ndĕh ‘how-much *money car*’
‘What is the fare ?’

simbŏng u nhi năq ‘soap at house fire’
‘The soap is in the kitchen.’

ănh gĭt lŭh sĭn gĭt măi dôh ‘I know why not know you you’
‘Of course I know, why wouldn’t I ?’

Verbal affixation in Pacŏh

SAUNDRA K. WATSON

O. Introduction

Affixation is of particular interest in Pacŏh[1] because of its widespread use in the language. Affixes occur on verbs, nouns, pronouns, modifiers, numbers, kinship terms and others. Affixation in Pacŏh consists of prefixes and infixes.

1 Pacŏh is a member of the Mon-Khmer language family and is spoken by approximately eight to ten thousand people in Thừa-Thiên Province of Viêtnam. It may be mutually intelligible with some dialects of Ta-Oi in Laos.

I am indebted to our language informant, Cubuat, for providing the data used in this analysis. His ability to write text material illustrating the use of the different morphemes has greatly facilitated my analysis.

I wish to express my appreciation to David D. Thomas, also of the Summer Institute of Linguistics, for his suggestions and help in the organization and presentation of this paper.

A noteworthy feature of Pacŏh affixation is the contrastiveness of vowel which occur in open-syllable prefixes (e. g. *a, i, u*). This type of vowel contrast in prefixes has not been reported before in a Mon-Khmer language, to my knowledge. Prefixes in Mon-Khmer languages are primarily consonantal[2] with a neutral vowel. Pacŏh has a similar vowel neutralization, but only in closed-syllable prefixes. This neutralized vowel [ə] in written *a*.[3]

The phonological word in Pacŏh can be summarized as : $\pm$ presyllable ($C_1V \pm C_2$) + main syllable. The morphological division of monosyllabic root plus prefix corresponds to the phonological division of main syllable plus presyllable. Morphologically complex words (i. e. monosyllabic or disyllabic roots with affixes) are bound by the same phonological limits as morphologically simple words.

Among Pacŏh verbs, disyllabic roots are a definite minority. It is supposed that many of the roots which are now considered to be disyllabic may prove to be root plus affix upon further investigation. For example, the verb *padâm* 'to oppress' may be said to consist of *pa-*'causative' prefix plus the root *dâm* although *dâm* does not occur in the data as a free form.

This paper presents the affixes which occur with verb roots and the verbalizing affixes which occur on non-verb roots. The affixes discussed in this paper are derivational. Pacŏh has two prefixes which can occur with all monosyllabic verbs and may be considered inflectional. These prefixes, *u-* 'third person singular pronoun' and *i-* 'indefinite person pronoun' are discussed in an article on pronouns [4] and in an article on clause structure.[5]

In text material, approximately one out of every two sentences will contain an affixed word with affixed verbs making up the greatest part of this number. The Pacŏh dictionary currently contains 685

2 Judith M. Jacob, "Prefixation and Infixation in Old Mon, Old Khmer, and Modern, Khmer", in *Linguistic Comparison in South East Asia and Pacific*, ed. by H. L. Shorto School of Oriental and African Studies, University of London (1963).

3 Richard L. Watson "Pacŏh Phonemes", *Mon-Khmer Studies* I, by Banker, Miller. Watson and Thomas, Linguistic Circle of Saigon and Summer Institute of Linguistics (1964)

4 Saundra K. Watson, "Personal Pronouns in Pacŏh" *Mon-Khmer Studies* I, Saigon, (1964)

Richard L. Watson "Pacoh Clause Structure" (to be published).

monosyllabic verbs and 430 disyllabic verbs from which this study was made. The number of occurrences is stated in parenthesis after the affix and its allomorphs.

1. ⟨Pa-⟩ Causative prefix.

The causative prefix ⟨pa-⟩means 'to cause, allow or be responsible for an action taking place.' ⟨Pa-⟩ has allomorphs *pa-* (206), *ta* -(62), *a* - (14), *ca* - (3), *pi* - (9), and *ti* - (5). *Pa* - can also occur with twenty-eight of the verbs that *ta* - does and with seven of the verbs that *a* - does. *Pa* - and *ta* - can both occur with two of the verbs that *ti* - does. It is not possible to predict which verbs will be able to take the causative. Neither is it possible to predict, entirely, which allomorphs of the causative prefix will occur with which verbs. Although the allomorphs of the causative prefix are not strictly conditioned there are some phonological trends which can be recognized. A verb root beginning with *b* or *p* is more likely to take the *ta* - allomorph while a verb root beginning with *t* will take the *pa* - allomorph.

Some examples of words which take the causative prefix are :

cláq 'to prop'	*pacláq* 'to cause to prop'
clâu 'to answer riddle'	*paclâu* 'to ask riddle'
dêr 'to shatter'	*padêr* 'to cause to shatter'
héar 'to scream'	*pahear* 'to cause to scream'
hoc 'to study, learn'	*pahoc* 'to teach'
kéo 'to hug'	*pakéo* 'to cause to hug'
ôi 'to reply'	*pa-ôi* 'to cause to reply'
bíq 'to lie down'	*pabíq* 'to cause to lie down'
cuam 'to wrap in blanket'	*pa—/tacuam* 'to cause to wrap in blanket'
hŏm 'to bathe (oneself)'	*tahŏm* 'to bathe (another)'
mŏt 'to go in'	*pa—/amŏt* 'to take in'
xâr 'to go up'	*axâr* 'to raise up'
yŏr 'to stand'	*ayŏr* 'to cause to stand'
púng 'to cover'	*capúng* 'to cause to cover'
hao 'to spend'	*pihao* 'to cause to spend'
tŏq 'to pour'	*pitŏq* 'to cause to pour'

cŏt ' to bend double '	*ticŏt* ' to cause to bend double '
deng ' to heat '	*tideng* ' to cause to heat '

Causative prefixes occur primarily with monosyllabic verb roots. However, the allomorph *pa* — does occur with some (20) disyllabic verb roots replacing the presyllables.

adu ' to get under shade '	*padu* ' to put under shade '
ahét ' to smell '	*pahét* ' to cause to smell '
angô ' to rest '	*pangô* ' to cause to rest '
anhơi ' to play '	*panhơi* ' to cause to play '
aruam ' to land on spike '	*paruam* ' to cause to land on spike '
ayưn ' to dance '	*payưn* ' to cause to dance '
rngâyh ' to think '	*pangâyh* ' to cause to think '
rngĭh ' to think '	*pangĭh* ' to cause to think '

When a causative verb is used in a clause the object slot can be filled, in its fullest form, by a clause. The components which make up this clause filling the object slot differ according to whether the verb is a transitive causative verb or an intransitive causative verb. Transitive causative verbs are formed from transitive verb roots and intransitive causative verbs are formed from intransitive verb roots.

(1) Transitive causative verbs. The clause filling the object slot following a transitive causative verb is composed of: Actor - Verb root - Goal.

Acâp ngâh pa-ac **a-em ac achiu** 'Don' t you allow-play **child play knife**' 'Don't you let the child play with the knife'.

The object slot in a clause containing a transitive causative verb may be filled by a clause or by a part of a clause as seen in the examples below:

a. Actor only

Acâp ngâh pa-ac **a-em** 'Don't you allow-play **child**'

b. Actor + Goal (occurring contiguously)

Acâp ngâh pa-ac a-em achiu 'Don't you allow play **child knife**'

c. Goal

Acâp ngâh pa-ac **achiu** 'Don't you allow-play **knife**' (here the actor is understood).

When the object slot is filled by a single noun, the situation seems to

indicate whether it is the actor or the goal.

Transitive causative verbs can be further subdivided by the requirement of some verbs to repeat the verb root in the clause which fills the object slot. It is not possible to predict which verbs will occur in each subdivision.

(a) With some transitive causative verbs it is necessary to repeat the verb root when both the actor and goal occur in the clause which fills the object slot. For example :

Pacha a-em cha dŏi 'Cause-eat child eat rice'

Some verbs in this category are :

pacha 'to cause to eat'
pacui 'to cause to carry on back'
padai 'to cause to wear (loincloth)'
padoal 'to cause to carry on shoulder'

(b) With some transitive causative verbs the repetition of the verb root with actor and goal is optional.

Acâp ngâh pa-ac a-em achiu 'Don't you cause-play child knife' or :

Acâp ngâh pa-ac a-em ac achiu 'Don't you allow-play *child play knife*'

Some verbs in this category are :

pa—ac 'to cause to play with'
pacáp 'to cause to bite'
pacóng 'to cause to wear on wrist'
pacrang 'to cause to carry between two people'

Below is a listing of some of the transitive causative verbs :

pa—ac 'to cause to play with'
pa—âq 'to cause to do without'
pacleau 'to cause to carry at waist'
paclín 'to cause to stare'
pabwam 'to cause to chew'
pacuam 'to cause to roll up (in blanket)'
pa—ep 'to allow to demand'
pakho 'to cause to roast (fish)'
tacóng 'to cause to wear on wrist'

taheng ' to cause to warm by fire '
tangoiq ' to cause to drink '
taxíp ' to cause to wear '

(2) Intransitive causative verbs. The clause filling the object slot following an intransitive causative verb is composed of : Actor ± Verb root *Ngâh paclŏn* a-em clŏn ' You cause-play child play ' or *Ngâh paclŏn* a -em ' You cause-play child ' (In this second example the verb root is understood) .

However, when an inanimate or inactive animate item fills the object slot the verb root cannot occur (e.g. *May paxâr* acŏ́q cư *tŏ́q dúng* 'You take up my bushknife to house' but not : *May paxâr* acŏ́q cư xâr *tŏ́q dúng* 'You take up my bushknife go up to house').

Below is a listing of some of the intransitive causative verbs :

pa-át 'to cause to be at'
paclŏn 'to cause to play'
paclua 'to cause to slip down'
pacŏ́p 'to cause to bow'
pacŏ́y 'to cause to lie down (animal)'
paxâr 'to cause to go up (take up)'
payŏ́r 'to cause to stand up'

2. ⟨Tar⟩ Reciprocal affix.

The meaning of the reciprocal affix is 'to do something to each other'. It sometimes carries the idea of antagonism. (Tar-) has two allomorphs : the prefix *tar-* which occurs with monosyllabic verb roots, and the infix *-r-* (phonemically /-ər-/) which occurs with disyllabic verb roots. The verb root can optionally be repeated after a reciprocal verb (e.g. *tông* 'to talk *tartông* (*tông*) 'to talk to each other' ; *cacháng* 'to laugh' *carcháng* (*cháng*) 'to laugh at each other').

The reciprocal is one of the most common affixes in the language occurring with 467 monosyllabic verb roots and with 151 disyllabic verb roots.

Some of the verbs which can take this affix are :

chao ' to threaten '	*tarchao* ' to threaten each other'
chât ' to stab '	*tarchât* ' to stab each other '
bôn ' to have '	*tarbôn* ' to have each other ' (marriage)

tiq ' to obey '	*tartiq* ' to obey each other '
tông ' to talk '	*tartông* ' to talk to each other '
xua ' to look for '	*tarxua* ' to look for each other '
cáp ' to bite '	*tarcáp* ' to bite each other '
acuan ' to hit '	*rcuan* ' to hit each other '
achưng 'to instruct'	*rchưng* ' to instruct each other '
ahét ' to smell '	*rhét* ' to smell each other '
cachảng ' to laugh '	*carchảng* ' to laugh at each other '
cuhong ' to glare '	*carhong* ' to glare at each other '
culet to stick out tongue '	*carlet* ' to stick out tongue at each other '
kidủh ' to bump '	*cardủh* ' to bump each other '
kidyổl ' to cling to '	*cardyổl* ' to cling to each other '

A phonemic note should be added here to explain why the *r-* in *rcuan, rchưng, rhét,* etc. is considered an infix rather than a prefix. The presyllable in Pacöh, according to the predominant C and V pattern, consists of C1V ± C2. Therefore, words written as vowel-initial have been interpreted phonemically as /? V/ (*acuan* /?akuan/). Words written with a single nasal or liquid in the presyllable have been interpreted phonemically as /? a C/ (*rcuan* /?arkuan/). Thus the affixed *r-* above can be seen as infixed into the presyllable.

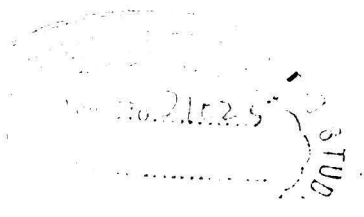
3. ⟨Par-⟩ Causative-reciprocal prefix.

The meaning of this causative-reciprocal prefix is 'to cause each other to act'. The prefix ⟨par-⟩ with its allomorphs *par-* (38) and *car-* (*f*) is a combination of two affixes — the causative prefix ⟨*pa-*⟩ with two of its allomorphs *pa-* and *ca-* and the reciprocal infix *-r-* which is an allomorph of ⟨tar-.⟩ This is the only known case of two affixes occurring simultaneously on a verb root in Pacöh.

The causative-reciprocal verb can be optionally followed by the verb root, as can the reciprocal verb (e.g. *parclâu clâu* ' to cause each other to answer ').

Some examples of causative-reciprocal verbs are given below.

chom ' to know ' *parchom* ' to cause each other to know '



cha 'to eat'	*parcha* 'to cause each other to eat'
châu 'to argue'	*car-/parchâu* 'to cause each other to argue'
dŏc 'to be angry'	*pardŏc* 'to cause each other to be angry'
heng 'to warm by fire'	*parheng* 'to cause each other to warm by fire'
hŏm 'to bathe'	*parhŏm* 'to cause each other to bathe'

4. ⟨Ti-⟩ Resultant - state prefix.[6]

⟨Ti-⟩ occurs on some monosyllabic verbs; the word formed by adding the prefix expresses a resultant state. The prefixed verb fills the predicate slot in a 'resultant-state' clause. This prefixed verb can take an object but not a subject.

Examples of sentences containing a resultant-state clause:
xeang táq **ngéq ticut abúng** 'Wind made **all broken bamboo**'
Along catinh do **cŏh tidàyh pilau** 'Tree hit him **so broken leg**'

⟨Ti-⟩ has two allomorphs, *ti-*(12) and *tu-*(2). Verbs which have been found to occur with the 'resultant-state' prefix are listed below:

áh 'to divide'	*ti - áh* 'to be divided, split'
caq 'to straighten'	*ticaq* 'to be straightened'
clo'q 'to push'	*ticlo'q* 'to be pushed'
dâyh 'to break'	*tidâyh* 'to be broken'
heq 'to tear'	*tiheq* 'to be torn'
cut 'to break down'	*ticut* 'to be broken down'
lai 'to cast, unroll'	*tilai* 'to be unrolled'
ngŏp 'to duck head'	*tingŏp* 'to be lowered (head)'
óh 'to snap (break)'	*ti - óh* 'to be snapped
viaq 'to wring, twist'	*tiviaq* 'to be twisted'
xŏn 'to push, crowd'	*tixŏn* 'to be mussed up, wrinkled'
yot 'to stretch'	*tiyot* 'to be stretched'
pil 'to pull out hair or feathers'	*tupil* 'to be pulled out'
pŏh 'to open (door)'	*tupŏh* 'to be opened'

6 This resembles the affixes called 'attributive' by Jacob and 'passive' by Banker (*Mon-Khmer Studies* I, by Banker, Miller, Watson and Thomas, Linguistic Circle of Saigon and Summer Institute of Linguistics, 1964).

5. ⟨Ta-⟩ Involuntary prefix.

⟨Ta-⟩ has the meaning 'involuntary or accidental action'. It can occur with many (346) monosyllabic verbs but is not found on disyllabic verb roots.

cha 'to eat'	*tacha* 'to eat accidentally'
chŏh 'to plant'	*tachŏh* 'to plant accidentally'
chóng 'to burn'	*tachŏng* 'to burn accidentally'
dyeal 'to take'	*tadyeal* 'to take accidentally'
lúq 'to pull'	*talúq* 'to pull accidentally'
nhŏng 'to look at'	*tanhóng* 'to look at accidentally'
pĕnh 'to shoot'	*tapĕnh* 'to shoot accidentally'

Whenever the *ta-* prefix is used the function word *cray* is obligatory to the construction. *Cray* can also be used alone with unaffixed verbs to mean 'involuntary or accidental action.'

Cray cư cha *dŏi amiang* '(Accidentally) I ate rice brother's'

Cư cray tacha *dŏi amiang* 'I accidentally ate rice brother's'

The 'involuntary' verb in its affixed form can be optionally preceded by a reduplicative particle which is formed by putting the first consonant of the verb with *-áh* (e.g. cháh tacha, láh talúq, páh tapĕnh).

Cư cray cháh *tacha dŏi amiang* 'I accidentally ate rice brother's'

6. ⟨Par-⟩ Nominalized-action prefix.

This prefix nominalizes the action of the verb and has the meaning 'the doing of something.' (Par-) occurs with almost all monosyllabic verb roots and with some disyllabic verbs. The allomorphs of (par-) are: (a) those which occur with monosyllabic verbs-- *par-* (523), *pa-* (82--all of which can also occur with *par-*), *ta-* (1) and *-an-* (3); (b) those which occur with disyllabic verbs — *par-* (15 — occur on disyllabic verbs with *a-* presyllable) and *-r-* (22). This *-r-* allomorph is infixed like the *-r-* allomorph of (tar-) (see 1.2).

Examples of nominalized-action prefix with monosyllabic verbs:

a 'to say'	*par-a* 'the saying'
âng 'to roast'	*par-âng* 'the roasting'
bíq 'to lie down'	*parbíq* 'the lying-down'

bŏy 'to salt'	*parbŏy* 'the salting'
cat 'to burn (food)'	*parcat* 'the burning'
hŏm 'to bathe'	*parhŏm* 'the bathing'
keat 'to cut around'	*pa-/parkeat* 'the cutting around'
piq 'to dig'	*parpiq* 'the digging'
boan 'to pile up'	*ta-/pa-/parboan* 'the piling up'
clŏn 'to play'	*callŏn* 'the playing' (=parclŏn)
coiq 'to sharpen'	*canoiq* 'the sharpening' (=parcoiq)
pôc 'to go'	*panôc* 'the going' (=parpôc)

Examples of nominalized-action prefix with disyllabic verbs:

achâng ' to measure '	*rchâng* ' the measuring '
achwng ' to instruct '	*rchwng* ' the instructing '
angô ' to rest '	*parngô* ' the resting '
arao ' to broadcast '	*parrao* ' the broadcasting '
calêc ' to tickle '	*carlêc* ' the tickling '
cavat ' to scratch '	*carvat* ' the scratching '
pahoc ' to teach '	*parhoc* ' the teaching '

7. ⟨-an-⟩ Nominalizer infix.[7]

(-an-) occurs with a verb root and forms a noun which is the result of the action, the instrument used in doing the action, or the location of the action. These meanings may be determined by placing one of the following words between the verb root and the noun formed : *cŏh* ' so, then ' shows that the noun is the result; *dáng* ' by, with ' shows that the noun is the instrument ; and *na* ' direction, place ' shows that the noun is the location. For example :

— *clanh cŏh callanh* ' braid so braided-thing '
— *cláq dáng calláq* 'prop with a prop'
— *pear na panear* ' go-along-edge place path-along-edge '

(A few exceptions have been found which will not take the three words above. *Cha* ' to eat ' *tanna* ' food ' ; *clâm* ' to put whole piece of food in mouth at once ' *callâm* ' the whole piece ').

(-an-) occurs with both monosyllabic (106) and disyllabic (42) verb roots.

7 The result nouns are similar to Jacob's 'object made', instrument nouns are Jacob's 'utensil'.

The infix (-an-) has allomorphs *-an-* (32), *-ann-* (4), *-al-* (27), *-ar-* (16), *-arn-* (17), *-n-* (4) which occur with monosyllabic verb roots. The morphophonemic rules governing the occurrences of the allomorphs of (-an-) with monosyllabic verb are as follows :

(1) Verbs with initial *cl* take the *-al-* infix between the first and second consonant.

clang ' to pipe (water) '	*callang* ' a bamboo pipe '
clanh ' to braid '	*callanh* ' something braided '
cláq ' to prop '	*calláq* ' a prop '
cleang ' to bar door '	*calleang* ' a door bar '
clot ' to line something '	*callot* ' a lining '

(2) Verbs with initial *cr* and *tr* take *-ar-* between the first and second consonant.

crang ' to carry between two '	*carrang* ' a carrying pole '
crong ' to surround '	*carrong* ' something surrounded '
crúp ' to cover over '	*carrúp* ' a cover '
treang ' to bar door '	*tarreang* ' a door bar '

(3) Verbs with initial *r* take *-n-* or *-r-*

rôq ' to pile brush '	*rnôq* ' the cleared field '
rúc ' to stir food inside bamboo section '	*rnúc* ' stick used for stirring food inside bamboo '
rŏq ' to cook soup '	*rrŏq* ' soup '

(4) Verbs with initial *t* take *-arn-*.

tayh 'to hammer'	*tarnayh* ' a hammer'
táp 'to push or point into'	*tarnáp* 'something used to push or point into'
táq 'to work'	*tarnáq* 'the work'
tean 'to tie string around'	*tarneàn* 'that used to tie'
tem 'to prepare betel quid'	*tarnem* 'betel quid'
tŏng 'to tie to'	*tarnŏng* 'that used to tie'

(5) Verbs with initial *c, k, kh,* and *p* take *-an-* or *-ann-*. There is no way of predicting which of the two allomorphs will occur.

cáng 'to put across'	*canáng* 'that which is put across'
cang 'to collar (pig)'	*cannang* 'collar for pig'

cay 'to plow'	*canay* 'plowed ground'
câl 'to chop large trees'	*cannâl* 'that which is chopped'
cóh 'to chop'	*canóh* 'chopping block'
keat 'to cut around'	*caneat* 'pieces cut'
khiar 'to sweep yard'	*caniar* 'yard broom'
pong 'to bridge'	*panong* 'a bridge'
pŏh 'to divide'	*pannŏh* 'pieces'

(6)Initial *ch* becomes *t* when an allomorph of (-an-) is added to a verb. (*Ch* never occurs presyllable initial in Pacŏh except in reduplication).

cha 'to eat'	*tanna* 'food'
chúh 'to blacken teeth'	*tinúh* 'that which is used to blacken teeth'

(7) Other forms

páng ' to cast net '	*pináng* ' fish net '
xât ' to tie in bundle '	*nnât* ' a bundle '
dyuat ' to wipe '	*nnuat* ' something used for wiping '

The allomorphs of -an- which occur with disyllabic (42) verbs are : *-r-* (31), *-n-* (3), *-l-* (2), and *-m-* (2).

(*1*) *-r-* is the most common allomorph occurring with disyllabic verbs in varied environments.

cacháng ' to laugh '	*carcháng* ' laughter '
cahóq ' to cough '	*carhóq* ' a cough '
caxang ' to make a sound '	*carxang* ' *a sound* '
tahau ' to give medicine '	*tarhau* ' medicine '
tangŭh ' to breathe '	*tarngŭh* ' breath '
tapông ' to contain '	*tarpông* ' container '
ticu ' to sit '	*tarcu* ' chair '
culâl ' to turn eyes up '	*carlâl* ' protruding eyes'

Exceptions to the above occur with the following allomorphs :

(2) *-n-* occurs before main-syllable *t* and sometimes *ch*

cachic ' to comb hair '	*canchic* ' a comb '
catŭp 'to cover over '	*cantŭp* ' a lid '
atár ' to put on basket straps '	*ntár* ' basket straps '

(3) *-l-* occurs before main-syllable *l*.

palai 'to give remedy'	*pallai* 'medicinal remedy'
palô 'to kindle flame'	*pallô* 'a flame'

(4) *-m-* occurs before main-syllable *p*.

apuang 'to roof ; put on hat'	*mpuang* 'roof or hat'
apưng 'to roof ; put on hat'	*mpưng* 'roof or hat'

(5) Other forms which occur with disyllabic verbs.

rngâyh 'to think'	*parngâyh* 'thought'
rngih 'to think'	*parngih* 'thought'
tidol 'to cross log bridge'	*pardol* 'log bridge'
ti-ôq 'to vomit'	*tang-ôq* 'that which is vomited'

8. Continuative reduplicated prefix.

Some (203) monosyllabic verbs with initial consonants can take the continuative reduplicated prefix. A reduplicated verb is general in meaning and cannot take an object (e.g. *cư chicha* 'I eat'). A simple verb is specific and can take an object (e. g. *Cư cha dŏi* I eat rice). A reduplicated verb can occur alone in the predicate slot or as a second verb (e.g. *cư chicha* 'I eat' ; *cư pôc chicha* 'I go eat').

The reduplicated prefix is formed by a reduplication of the first consonant and either *a* or *i*. There is no apparent phonological basis for the use of either *a* or *i* before certain verbs. Sometimes both would be acceptable.

Some examples of reduplication :

bal 'to illuminate'	*bibal*
cha 'to eat'	*chicha*
câl 'to clear field'	*kicâl*
crong 'to surround'	*cacrong*
doq 'to place'	*dadoq*
pôc 'to go'	*papôc*
pi 'to talk'	*papi*

8 This resembles Jacob's 'frequentative',

9. (ca-) Completive prefix. [9]

(Ca-) (15) has the meaning of completing an action or of doing something thoroughly. At first glance, one might suspect this prefix to be the same as the reduplicative prefix (8.) because the *ca-* prefix occurs almost entirely on verbs which begin with *c*, *k*, or *kh*. However, the completive prefix *ca-* differs from the continuative reduplicative prefix in the following ways :

(1) Reduplicative prefixed verbs cannot take objects. Completive prefixed verbs can take objects.

(2) There is an overlap with some of the verbs in that both completive and reduplicative can occur and the informant says that the two are different.

It is interesting to note that this completive prefix *ca-* also occurs in the number system of Pacóh (e.g. *bar* 'two', *cabar* 'both' ; *pe* 'three' *cape* 'all three', *poan* 'four', *capoan* 'all four'.)

The verbs which have been found to occur with *ca-* 'completive prefix are :

clăt 'to break up (dirt)'	*caclăt* 'to thoroughly break up'
cluah 'to break out bamboo section'	*cacluah* 'to completely break out bamboo section'
coaih 'to shave wood'	*cacoaih* 'to completely shave wood'
coanh 'to braid'	*cacoanh* 'to braid completely
coah 'to shave wood'	*cacoah* 'to shave wood completely'
coar 'to grate'	*cacoar* 'to grate completely
cŏt 'to bend double'	*cacăt* 'to bend completely double'
cwa 'to saw'	*cacwa* 'to saw completely'
keac 'to chop head of chicken'	*cakeac* 'to completely chop off head of chicken'
keat 'to cut around'	*cakeat* 'to cut completely around'
kŏnh 'to break with teeth'	*cakŏnh* 'to break completely'
kho 'to roast fish'	*cakho* 'to roast completely'
lúm 'to cover completely'	*calúm* 'to cover completely'

9 This resembles Jacob's 'intensifier',

10. (N-) Pretence prefix.

This is a nasal prefix having conditioned allomorphs which assimilate to the point of articulation of the initial consonant of the main syllable. This prefix means 'to pretend or appear to do something'. (N-) can occur only on monosyllabic verb roots. The prefixed verb cannot stand alone in the verb slot but must be preceded by the verb *táq* 'to do, make, work'. The prefixed verb must be followed by the unaffixed verb root in a reduplicative manner.

bid ' to lie down & sleep '	*táq mbíq bíq* ' to pretend to sleep '
táq ' to do, work '	*táq ntáq táq* ' to pretend to work '
chom ' to know '	*táq nchom chom* ' to pretend to know '

Although the ' pretence prefix ' does not occur with disyllabic verbs the same idea may be expressed in the following way :

a- ay ' to be sick '	*táq a- ay ay* 'to pretend to be sick '
cachấng ' to laugh '	*táq cachấng chấng* ' to pretend to laugh '

Here the verb is unchanged but there is a reduplication of the main syllable.

11. (Pi-) Causative prefix occurring with non-verb roots.

(Pi-) 'causative' prefix occurs with modifiers[10] and a few nouns to form causative verbs. (Pi-) has unconditioned allomorphs *pi-* (60), *pa* (8), *ta-* (5) and *a-* (1). (*Pi-* can occur with three of the same vebs that *pa-* does and with two of the verbs that *ta-* does).

(Pi-) has only been found with monosyllabic roots. It is not possible to predict which modifiers and nouns can occur with the causative prefix.

Only three nouns have been found to occur with the causative prefix :

nŏh ' a name '	*a-/panŏh* ' to name '
put ' stack of brush '	*piput* ' to stack brush '
pĕt ' wax '	*pipĕt* ' to fill cracks with wax '

10 The distinction between modifiers and verbs in Pacŏh is still not clear at this stage of analysis. If these modifiers do fall into the category of verbs, they must, at least be considered as one class of verbs which take the (pi) prefix to form the causative.

Some of the modifiers which can occur with causative prefix are

ayh 'swollen'	*pi-ayh* 'to make swollen'
cŭp 'enough'	*picŭp* 'to make enough'
kear 'tight'	*pikear* 'to tighten'
nat 'tramped down'	*pinat* 'to tramp down'
ŏh 'fermented'	*pi-ŏh* 'to ferment'
pát 'extinguished'	*pipát* 'to extinguish'
pê 'defeated'	*pipê* 'to cause defeat'
roanh 'usable'	*piroanh* 'to make usable'
prŭc 'uprooted'	*piprŭc* 'to uproot'
ngot 'hungry'	*pingot* 'to cause to be hungry'
chĕn 'clean'	*pichĕn* 'to clean'
ngéq 'all, completely'	*pi-/pangéq* 'to finish'
dyeam 'delicious'	*pi-/padyeam* 'to make delicious'
liq 'flooded'	*taliq* 'to flood'
pânh 'full'	*ta-/pipânh* 'to fill'

Presyllables and reduplication in Jeh

PATRICK. D. COHEN

0. Introduction.

The Jeh language of the Mon-Khmer family is spoken by approximately 9000 people in a narrow stretch of land next to the Laos border in northern Kontum province, Vietnam. This paper presents the southern Dak Wak dialect spoken in the Dak Sut area.[1]

A common feature of the languages in this aera is the occurrence of a presyllable before the main syllable of a word. The most common presyllables in Jeh are : *pa-, ta-, ka-, al-, ma-, ja-, si-,* and *ʔa-*. The general structure of the presyllable is described by Dwight Gradin in another paper.[2] The following paper is a detailed description of the occurrence of these and other less common presyllables.

1. Non-reduplicating Presyllables.

Non-reduplicating presyllables are more common in Jeh than reduplicating presyllables.

1.1 Before Bilabial Stops

Presylables can occur before *b* and *p* and before the combinations *bl, br, pl,* and *pr.*

1 The analysis here described is the result of one year of study on the Jeh language under the auspices of the Summer Institute of Linguistics. I am indebted to Dwight Gradin, whose 'Consonantal Tone in Jeh Phoemics' served as a guide to this paper. David D. Thomas has also given much needed advice in the analysis and write-up of this paper. Special thanks is here given to Sak and Yun of Dak Trap village and Nhor of Dak Rajeel village who have been the main informants for this paper.

2 See section 6.1 of 'Consonantal Tone in Jeh Phonemics' by Dwight Gradin, in this same volume.

b has been found with the following presyllables :

ta-. *taba* 'branch' ; *tabeet* 'kinked'.

ka-. *kabaw* 'all of the time' ; *kabeh* 'edible wing of a bird' ;

al- :[3] *albaat* 'tender' ; *albìi* ?[4] 'soft' ; *alboh* 'a room'.

si- : *siban* 'upper arm' ; sibuw 'the distance between the thumb and index finger when extended' ; *sibi* 'wild radish'.

The presyllable *si-* ~ *?i-* and *m-* (before *b*) and *n-* (before *d*). *Siban* freely varies with *?iban* and *mban*. *Sida* (see 1.2) freely varies with *?ida* and *nda*. *?i-* in the locative words *?ihaw* 'there' and *?imuw* 'here' does not fluctuate nor does *si-* in loan words such as *simang* 'bandage' and *simong* 'cement'.

bl has been found only with ta-.

ta- : *tablah* 'to fight' ; *tabloo?* 'to translate' ; *tablung* 'to remember' ; *tablùng* 'to break down something'.

br has been found only with *ta-*.

ta- : tabreew 'commotion'.

p- has been found with the following presyllables :

ta- : *tapal* 'to fly' ; *tapàl* 'to flutter in the breeze' ; *tapaay?* 'damaged' ; *tapèh* 'seven' ; *tapeeng* 'shoulder'.

ka- : *kapìw* 'water buffalo' ; *kapuw* 'to rely on' ; *kapuung* 'cucumber' ; *kapù?* 'a rice head'.

al- : *alpah* 'to pay' ; *alpiat* 'tongue'.

?a- : *?apal* 'mortar' ; *?apat* 'to go out' *?apuy* 'a bundle'.

pl has been found only with the presyllable *ta-*.

ta- : *taplòh* 'to clear one's throat'.

pr has been found with the following presyllables :

ta- : *tapraang* 'to span'.

al- : *alproop* 'a small beetle'.

1.2 With Alveolar Stops

Presyllables have been found before *d* and *t* and with *dr* and *tr*.

d has been found with the following presyllables :

3 The presyllable al-is a flap lateral [l] with a slight [a] on-glide. This I am interpreting as phonemically /al-/. (For a different interpretation, see Gradin, op.cit.). All other vowel-initial words have a distinct [ʔ] onset so are interpreted as /ʔv-/.

4 Grave accent / ˋ / indicates 'deep' vowel. See Gradin, sec. 5.1. Other symbols also follow the same orthography as Gradin's paper.

pa- : *padam* 'five' ; *padàng* 'to set on end' ; *padàt* 'to bother' ; *padày* 'to rest' ; *padùk* 'stomach'.

ka- : *kadèt* 'to pin down' ; *kadiat* 'to pinch' ; *kadook* 'a thief' ; *kadong* 'a crossbow rat trap' ; *kaduh* 'skin'.

al- : *alda* 'broad' ; *aldey* 'short sectioned bamboo'.

?i- : *?ida* 'thumb to middle finger measurement'. (In some idiolects this presyllable fluctuates with *si-, sida,* or *n-, nda.*)

dr has been found with the following presyllable :

pa- : *padraan* 'strong' ; *padreeng* 'fat' ; *padruung* 'rich'.

ta- : *tadraw* 'six' ; *tadroong* 'something'.

ka- : *kadraap* 'rat' ; *kadrak* 'type of wood used in crossbow' ; *kadràm* 'many' ; *kadrèp* 'jiffy' ; *kadriam* 'onion' ; *kadroon* 'a fence' ; *kadroot* 'honey bee' ; *kadrùh* 'to jump down'.

ma- : *madra* 'trellis'.

?i- : ~si- ~n- : *?idrah* 'to be' split in half'; *?idruw* 'to mark' ; *?idrum* '29th lunar night'.

?a- : *?adrah* 'to scare' ; *?adray* 'pestle' ; *?adrih* 'green'.

has been found with the following presyllable :

pa- : *patuw* 'to teach' ; *patua?* 'to jest' ; *patuh* 'to explode'.

ka- : *kataal* 'end' ; *kataang* 'flat-sided' ; *kataaw* 'sugar cane' ; *katang* 'a section of bamboo' ; *katap* 'egg' ; *katayh* 'hip' ; *katùl* 'to smother'.

?i- : *?ital* 'a back basket strap' ; *?itong* 'a type of string' ; *?itùk* 'to boil'.

?a- : *?atang* 'a stool' ; *?atùal* 'rafter wood' ; *?atùk* 'a tribal shirt'.

tr has been found with the following presyllables :

ta- : *tatrat?* '11th lunar night'.

ka- : *katraw* 'a type of bird' ; *katrey* 'long green squash'.

1.3 With Alveo-palatal Stops

Presyllables can occur before *j* and *ch.*

j has been found with the following presyllables :

pa- : *pajòh* 'to brag' ; *pajèeng* 'to make'.

ja- : *jajooy* 'the rising tone in Jeh' ; *jaju* 'for the time being'; *jajua?* 'a spring pole trap for birds'.

ka- : *kajak* 'to sway' ; *kajap* 'durable' ; *kajeh* 'a fork' ; *kajèe?* 'wet' ; *kajip* 'a centipede'.

al- : *aljèel* 'a small type of bamboo'.

ch has been found with the following presyllables :

pa- : *pachoong* 'to test ability'.

ta- : *tachèn* 'nine'.

cha- : *chacheng* 'to keep in mind'.

ka- : *kachaap* 'fish scales' ; *kachah* 'charcoal' ; *kachàl* 'fish fins' ; *kachìat* 'to die' ; *kachiing* 'the dirt weight on a forge' ; *kachuh* 'to spit'.

?a- : *?acheh* 'to twist a rope' ; *?achool* 'bowl of a smoking pipe'.

1.4 With Velar Stops

Presyllables have been found with the following voiced and voiceless velar stops : *g, gl, k,* and *kl.*

g has been found with the following presyllables :

pa- : *pagaang* 'medicine'; *pagan* 'to span'; *pagung* 'to flex the fingers'.

ta- : *tagàyh* 'to break'; *taguat* 'to tie'.

al- : *algaap* 'soul'; *algày* 'skilled' ; *algèem* 'deer' ; *algeeng* 'stiff and sore' ; *algèm* 'a type of shrub'.

si- ~ ?i- : *sigu* 'classifier for plant stalks or trees' ; *sigù* 'to doze'.

gl has been found with the following presyllables :

pa- : paglaang 'cross, crucifix'.

ta- : *taglàm* 'to bump together lightly'.

al- : *alglàm* 'to collide with force'.

k has been found with the following presyllables :

pa- : *pakaal* 'a fence' ; *pakip* 'to close the fingers together.

ta- : *takat* 'medicine' ; *takùy* 'horns of an animal'.

ka- : *kakaay* ? 'to scratch' ; *kakùat* 'angry'.

si- ~ ?i- : *?ikaap* 'a sign post' ; *?ika?* 'back basket' ; *?ikìang* 'the principal rafters in a roof' ; *?ikook* 'tall wide-bladed grass'.

kl has been found only with *ta-*.

ta- *taklep* 'to fasten together' ; *taklih* 'to fall' ; *takloh* 'clean'.

1.6 With Pereglottalized Consonants

Presyllables have been found before *?b, ?d, ?l ?r, ?m,* and *?n.*

?b has been found with the presyllable *ka-* in loan words.

ka- : *ka?bang* 'table' from Vietnamese *cái bàn* 'table'.

ka?bèn 'shovel' from Vietnamese *cái bèn* 'shovel'.

?d has been found with the presyllable *ka-* in loan words.

ka- : *ka?deeng* 'lamp' from Vietnamese *cái dèn* 'lamp'.

?l has been found with the following presyllables :

ta- : *ta?lèe?* 'easy'.

ka- : *ka?lay* 'quite a while ago'.

si- : *si?laang* 'a honey-making insect' ; *si?leeng* 'a type of wood'.

?r has been found with the following presyllables :

pa- : *pa?reeng* 'to wander around looking for something'.

ka- : *ka?rìap* 'to march in a large group' ; *ka?ròp* 'to hop'.

?m has been found with the following presyllables :

ta- : *ta?mot* 'to splice'.

ka- : *ka?moon* 'to tell a legend'.

?n has been found with the following presyllables :

ka- : *ka?nooy* 'finger' ; *ka?nuh* 'to do your best'; *ka?num* 'to urinate'.

ma- : *ma?nuat* 'half'.

si- ~ ?i- : *si?na* 'animal tracks' ; *si?nàn* 'to sit down' ; *si?neng* 'tooth'.

1.7 With Liquids and Nasals

Presyllables have been found with the liquids *l, ll,* and *r,* and with the nasals *m, mr, n, nr* and *ng.*

l has been found with the following presyllables :

pa- : *paleel* 'careless' ; *pleh* 'to speak humbly' ; *palek* 'to roll something along the ground' ; *palih* 'to change money'.

ta- : *talaang* 'to crack an egg' ; *talam* 'inside' ; *tali?* 'name' ; *taliw?* 'to sprain' ; *talòoy* 'to swim'.

ma- : *malam* 'haphazardly' ; malat 'to treat' ; *malo?* '30th lunar night'.

mi- : *milong* 'nylon' (from Vietnamese *ni-long* 'nylon').

?a- : *?alah* 'lazy' ; *?alook* 'in spite of' ; *?ale?* 'baby boy'.

sa- : *salaang* 'to set on its back'.

ji- : *jilat* 'a type of radish'.

ll has been found only with an *?a-* presyllable.

?a- : *?allày* 'instead' ; *?alley* 'okey'. In certain idiolects these are pronounced *?illày* and *?illey* respectively.

r has been found with the following presyllables :

ta- : *tarok* 'skies' ; *tarùt* 'to flinch'.

ka- : *kari* 'by themselves'.

al- : *alruan* 'to hate'.

ma- : *maraaw* 'bachelor house'.

?a- : *?arùm* 'pig weed'.

m has been found with the following presyllables:

pa- : *pamut* 'ankle'.

ta- : *tama* 'to flee' ; *tamaal* 'two fingers' width' ; *tamek* 'mosquito' ; *tamoong* 'to see in general'.

ka- : *kamaayh* 'bashful' ; *kamàt* 'gall bladder' ; *kamày* 'even though'

al- : *almel* 'stubborn' ; *almù?* 'tangled'.

si- : *simang* 'bandage' ; *simong* 'cement'.

?i- : *?imuw* 'here'. (See 1.1 presyllable *si-*.)

mr has been found only with the presyllable *ka-*.

ka- : *kamrin* 'numb'.

n has been found with the following presyllables :

ta- : *tanaang* 'betel nut' ; *taneen* 'good natured' ; *taneh* strap' ; *tanoh* 'to converse' ; *tanok* 'beach' ; *tanuw* 'bull' ; *tanu* 'lots'.

ka- : *kanal* 'to recognize' ; *kanam* 'corpse' ; *kanuul* 'not smart'.

al- : *alnaaw* 'straw' ; *alnoot* 'a wood plane'.

ma- : *manaayk* 'same' ; *manah* 'boy's love for a girl' ; *maneng* 'crossbow' ; *manih* 'a snap trap'.

?a- : *?anoom* 'a type of back basket'.

nh has been found with the following presyllables :

ka- : *kanhaam* 'to rouse from sleep'.

al- : *alnhok* 'to jostle' ; *alnhu* 'shade'.

ma- : *manha* 'to deceive' ; *manhuk* 'to scare'.

ng has been found with the following presyllables :

ta- : *tangeh* 'to chop with the back of the knife blade' ; *tangi* 'to sing a tribal song'.

al- : *alnga* 'sesame seeds' ; *alngèep* 'cool' ; *alngeh,* stiff and sore' ; *alngoop* 'a sheath' ; *alngòop* 'shady' ; *alngoot* 'to long for' ; *alnguut* 'to fold in half'.

ma- : *mangtay* 'people' ; *mangeh* 'a poisonous vine'.

1.8 With Fricatives

Preyllables have been found before initial *s* and *sr*.

s has been found with the following presyllables :

ka- : *kasak* 'sack' (from French *sac* 'sack, bag'); *kasàm* 'a thorny vegetable' : *kasàp* 'notebook'; *kasèt* 'honey bee'; *kasey* 'a string'; *kasiàng* 'bone'; *kasoong* 'night monkey'; *kasù* 'rubber' (from French *caoutchouc* 'rubber'); *kasu?* 'perspiration'.

al- : *alseh* 'to shave'; *alsiil* 'to blind with light'; *alsool* 'the spring of a trap'; *alsoong* 'while you're at it'.

ʔa- : *ʔaseh* 'horse'; *ʔasuang* 'to dance'.

sa- : sasuang 'to dart and dash'.

sr has been found with the following presyllables :

pa- : *pasrùng* 'angry'.

ka- : *kasreeng* 'to aim'.

ma- : *masro?* 'tomorrow'.

1.9 With Semi-vowels

Presyllables have been found with the semi-vowels *w* and *y*.

w has been found with the following presyllables :

ta- : *tawàt* 'to throw away'; *tawèl* 'round'; *tawe?* 'to turn over'; *tawìayh* 'strange'.

al- : *alwia?* 'a saw-toothed sickle'; *alwìil* 'blurred'.

y has been found with the following presyllables :

pa- : *payo?* 'to play'.

ka- : *kaya* 'ginger'; *kayaak* 'old age'; *kayaal* 'wind'; *kayaw* 'to refuse'.

al- : *alyool* 'bamboo fish net floats'; *alyuw* 'courtship'; *alyuk* 'to stagger'.

ʔa- : *ʔayoh* 'tribal shirt'; *ʔayoo?* 'to imitate'.

2. Restrictions on Non-reduplicative Presyllables

Before some consonant clusters, presyllables do not seem to occur. The following is an analysis of these clusters.

2.1 With Doubled Initial Voiced Consonants

bb, dd, jj, gg, nn have not been found with a presyllable.
bb as in *bbàng* 'a tie beam in a house'; *bbah* 'out-side of'.
dd as in *ddong* 'a winnowing basket'; *ddok* 'to sag'.
gg as in *ggah* 'to split in half'.
jj as in *jjua?* 'a spring pole trap for birds'.
nn as in *nnah* 'rice wine'; *nnàl* 'the wall of a house'.

2.2 With Clusters of Three Consonants

Presyllables have not been found with clusters of three consonants.
mbr as in *mbràam* 'a derogatory remark'.
ʔbr as in *ʔbruuyh* 'brush'.
ddr as in *ddraay* 'a spring pole snare for birds'; *ddrep* 'lizard'.
ndr as in *ndrah* 'one half'; *ndruh* 'falsetto'.
hmr as in *hmra* 'day after tomorrow'; *hmruan* 'four days from now'.

2.3 With Certain Consonants Preceded or Followed by h

Presyllables have not been found with *ph, th, kh, hl, hm, hn, hw, hy* except in certain loan words which take the *ka-* from the Vietnamese *cái*.
ph as in *pha* 'difficult'; *phaak* 'to punish'; *phey* 'husked rice'.
th as in *thoong* 'brass' (from Chinese *thông* 'brass').
kh as in *kha* 'expensive'; *khàn* 'friend'; *khèel* 'a shield'.
hl as in *hlak* 'to sleep soundly'; *hlùng* 'a man's knife'.
hm as in *hmàn* 'pants'; *hmeew* 'to be healthy'; *hmoot* 'silence'.
hn as in *hnam* 'year'; *hnèep hnal* 'happy'.
hw as in *hwaay* 'besides'; *hwil* 'to forget'.
hy as in *hyil* 'sad'; *hyuw* 'to imagine'.
Presyllables have been found with *hl, hm* and *th* in some loan words.
puhlang 'French'
puhmon 'bandage or a bolt of cloth'
kathuung 'box' (from Vietnamese *cái thùng* 'box');
kathaang 'ladder' (from Vietnamese *cái thang* 'ladder').

2.4 With the Clusters mb and nd

Presyllables have not been found with *mb* or *nd*.
mb as in *mbì* 'wild radish'; *mbu* 'distance between thumb and

index finger'.

nd as in *nda* 'distance between thumb and middle finger' ; *ndaay* 'together' ; *ndok* 'to bounce'.

In all the above examples *si-* may freely alternate with *m* or *n* Thus *mbì* ~ *sibì*, *mbu* ~ *sibu*, *nda* ~ *sida*, *ndaay* ~ *sidaay*, *ndok* ~ *sidok*.

3. Reduplicating Presyllables.

The reduplicating presyllables in Jeh consist of the C_1 V_1 of the main syllable of the word except when the main vowel is *i*[-]. So far I have only a few examples of reduplicating presyllable in my data. Examples:

dudùut 'to blow a horn (toot toot)' ; *hohoh* 'buffalo' ; *jajayh* 'frisky' ; *ɟeleh* 'shorter' ; *luluk* 'noisy' ; *ʔnaʔnaam* 'of a kettle to sing' ; *ʔwi ʔwiaʔ* 'a little'.

When the vowel of the main syllable is *i*, the reduplicating presyllable vowel is *u*. Examples:

chuchih 'to erase' ; *juji?* 'to scrub' ; *lulit* 'a large biting fly' ; *susi* 'tendon'.

4. Word Reduplication in Jeh.

For some words in Jeh, reduplication is obligatory for meaning. Color terms are usually reduplicated, though occasionally they can be used without reduplication.

4.1 Symmetrical Reduplication

There are two types of word reduplication. One type is symmetrical reduplication consisting of two identical words in either closed or open syllables.

The following are examples of closed syllable symmetrical reduplication.

bung bung 'to fall' ; *chang chang* 'the side of a person' ; *chun chun* 'the haunches' ; *dam dam* 'young man' ; *dèk dèk* 'truly' ; *di? di?* 'different' ; *dra? dra?* 'old person' ; *druk druk* 'gray' ; *kul kul* 'wrist' ; *lik lik* 'dirt particles' ; *mang mang* 'at night' ; *nul nul* 'deaf' ; *ngay ngay* 'during the day, ; *sèe? sèe?* 'during the afternoon' ; *yam yam* 'violet'.

5 See Gradin, sec. 6.2.

The following are examples of open syllable symmetrical reduplication :

chaw chaw 'locust' ; *dri dri* 'girl' ; *luw luw* 'boy' ; *looy looy* 'longer'; *sri sri* 'to fool around' ; *yaw yaw* 'a little bit'.

4.2 Non-symmetrical Reduplication

The second type of reduplication is non-symmetrical though the two words are similar. Each fulfills the C_1 V_1 C_2 requirement for a main closed syllable word.

alma? alma 'hardship' ; *?ayaw ?ayeh* 'to pity' ; *búk bòok* 'brown color' ; *gung ging* 'curved (road)' ; *hung hiang,* 'a small whet stone' ; *juk jul* 'elbow' ; *luk lek* 'to be crooked, deceitful' ; *nhuk nhek* 'to shake' ; *ngiat ngìah* 'light green' ; *samu? sama?* 'untidy' ; *suk seh* 'to shake a winnowing basket' ; *truk trul* 'to jump.

Consonantal tone in Jeh phonemics [1]

DWIGHT GRADIN

0. Introduction.

The Jeh language of the Mon-Khmer family is spoken by approximately 9000 people in a narrow stretch of land next to the Laos border in northern Kontum province, Viet Nam. This paper presents the southern Dak Wàk dialect spoken in the Dak Sut area. Southern and northern Jeh are mutually intelligible, but the northwestern, Dak Bùng dialect and other dialects near the Laos border appear to be barely intelligible with the northern and southern dialects, though maintaining Jeh as their language name.

A distinctive phenomenon in Jeh is the limited high tone, which is interpreted as a consonant (cf. sec. 1). Deep vowel quality (cf. sec. 5. 1), which parallels the laryngealization of Sedang and the breathiness of

1 The analysis here described is the result of one year of study on the Jeh language, 1963-1964, under the auspices of the Summer Institute of Linguistics.

I am indebted to Richard Watson, whose 'Pacoh Phonemes' in *Mon-Khmer Studies I*, pp. 135-148, served as a guide to this paper. David D. Thomas has given much appreciated advice in this analysis. Patrick Cohen assisted with suggestions and an analysis of presyllables. Richard S. Pittman also gave valuable suggestions as to the organization of this paper. A special word of gratitude is here given to Sak of Dak Tràp and Nhor of Dak Rajèel, who served as main informants during this time.

Halang,[2] nearby languages, is another characteristic of southern Jeh. Jeh also has limited phonemic nasalization.

1. Consonantal Tone.

Mon-Khmer languages, for the most part, are not tonal, but in Jeh phonemic high tone has been discovered[3]. Though distribution of this high tone is limited to phonetically open syllables, phonemically it is very peculiar, occurring in complementary distribution to word final consonants.

The high tone is actualized as a level tone followed by a sharp rise (e.g. [tɛ́] 'to scythe'). The main vowel remains level for the duration of a regular short vowel, and there is never any friction or occlusion succeeding the sharp rise in pitch. When high tone occurs with vowel glides, the syllable peak remains level, and the sharp rise coincides with the off-glide (e.g. [tìə́] 'down there'). (Grave [ˋ] accent represents deep vowel. cf. sec. 5.1)

Final rising tone in adjacent languages and some northern dialects of Jeh is manifested as a glottal fricative [h], which does not exist in word final position in southern Jeh (e.g. [tɛ́h], [tìəh]). So high tone in southern Jeh, patterning as a consonant, is interpreted as an allophone of *h* in word final position (e.g. *teh* [tɛ́]' to scythe' ; *tìah* [tìə́] 'down there').

The sharp rise in pitch can cause the vowel to be broken up by a non-constrative glottal stop, like Vietnamese 'ngã' [ŋaʔá] tone. This becomes an interesting commentary on Haudricourt's postulation of Vietnamese 'hỏi' and 'ngã' tones as having come from an original *h* or *s*[4]. Jeh is an example of where this process appears to be actualy going on.

High tone in Jeh can also occur on word final consonant *y*, thus becoming [ý] as in [daý] 'loud'. However, in some northern dialects

2 Research on Sedang, a language in central Kontum, Vietnam; is being carried on by Kenneth and Marilyn Smith.

Research on Halang; a language in western Kontum, Vietnam, is being carried on by James and Nancy Cooper.

3 See Smalley, William A., 'Sre Phonemes and Syllables', *JAOS* 92.218.222, for a Mon-Khmer language which he describes as having the feature of 'tone-length'.

4 Haudricourt, A-G. 'De l'origine des tons en Vietnamien', *Journal Asiatique*, Vol. 242, No. 1 (1954), pp. 69-82.

this phone is manifested as *y* plus the fricative *h* (e.g. [dayh] 'loud'). So high tone, though coinciding with final *y* in southern Jeh, can still be interpreted as an allophone of *h dayh* S [daý], N [dayh] 'loud'). Distributionally, [ý] is interpreted as a close-knit sequence of two phonemes (*y* and *h*) that patterns as a unit consonant (cf. sec. 3.2)

FIG. 1 CHART OF CONSONANT PHONEMES

	bilabial	*alveolar*	*alveopalatal*	*velar*	*glottal*
vl. stops	p	t	ch	k	?
vd. stops	b	d	j	g	
nasals	m	n	nh	ng	
liquids	w	l/r	y		
fricative-tonal		s			h

FIG. 2 CHART OF VOWEL PHONEMES

	front	*central*	*back*
high glide	ia		ua
high	i		u
low	e	a	o

Suprasegmental : Length (aa)
Deepness (à)
Nasalization (ą)

In one local northern dialect (Dak Trap), high tone has a wider distribution. Word final voiceless stops do not exist in this dialect. Such phones do retain the same point of articulation as voiceless stops in the southern dialect but are manifested rather as nasal consonants with rising tone (e. g. [traḿ] *trap* 'muddy'; [wań] *wak* 'boy's name'). Thus in the Dak Trap dialect, final nasal consonants with high tone are interpreted as word final allophones of initial voiceless stops.

2. Phonemes.

See Figures 1 and 2.

3. Consonant Interpretation.

3.1 Consonant Clusters.

In Jeh there is a strong two-consonant cluster pattern, stop plus

liquid (e. g. *pr, kl*). Aspirated stops (e. g. *ph*) are interpreted as clusters, patterning after the non-suspect stop plus liquid pattern. [5]

3.2 Suspect Sequences

Phonemes /ʔ/ and /h/ differ distributionally from all other phonemes in Jeh, occurring in sequences [wʔ], [yʔ], and [ýʔ] in word final position. These sequences, however, are not posited as clusters on the grounds that no non-suspect clusters occur in word final position. Rather, a suggestion from Pike appears to be the preferred interpretation for such phonemes (/ʔ/,/h/). He suggests that 'two separate, legitimate phonemes may be joined together in a special type of close-knit sequence which as a unit acts in further distribution like a single phoneme'. [6] Thus, [wʔ], [yʔ] and [ýʔ] are interpreted as close-knit sequences of two separate phonemes which act as unit consonants in distribution. Particularly the sequence [ýʔ] demonstrates the validity of such an interpretation because the two phonemes [y] and high tone [ˊ] occur not merely in a close-knit sequence but simultaneously. Examples :

chàwʔ 'nonsense' : *chàw chàw* 'grasshopper'

taayʔ 'correct' : *taay* 'slowly'

chooyh [tsɔ̆ý] 'sand' : *chooy* 'to plant rice'

puayh [puəý] 'calf of leg' : *pùah* [pùə́] 'flexible'

This interpretation is also applied to the following suspect sequences: preglottalized and pre-aspirated nasals and liquids (*hng* has not been found), preglottalized stops *ʔb* and *ʔd*, pre-nasalized stops *mb, nd,* and *ngg* and lengthened consonants. That two consonants occur in a sequence is not sufficient argument that they should fit the non-suspect stop plus liquid pattern. The peak of these suspect sequences is the final consonant; whereas it is the initial consonant in the strong pattern. So when the peak of the sequence occurs finally, it is interpre ted as a close- knit sequence of two phonemes acting distributionally as a unit phoneme. Examples :

5 That the aspirated stops can be contrastively broken up, as in sec. 6, shows further thay they follow the stop plus liquid pattern. However, presyllables do not occur before aspirated stops except in loan words (e.g. *kathaang* 'ladder').

6 Pike, Kenneth L., *Phonemics : A Technique for Reducing Languages to Writing* (University of Michigan), pp. 147, 148.

hnam 'year' *nggàl* 'large drum' *?le?* 'short'

3.3 Rising tone

Rising tone in the southern Jeh dialect is interpreted as an allophone of /h/ in word final position because (1) it occurs only on open syllables in complementary distribution with final consonant phonemes and (2) it corresponds to the final /h/ phoneme of some northern dialects which have free variation between rising tone and word final fricative [h] (cf. sec. 7.1).

3.4 sr- cluster

The sequence *sr* is manifested phonetically as a retroflexed alveopalatal fricative [s̻] alternating freely with a retroflexed affricate [ʦ̻]. Phonetically it appears to be a unit phone, but phonemically it is interpreted as a cluster *sr*. It rarely occurs and varies to cluster *kh* in the Plày Talaat dialect. Examples:

sriam [ʦ̻iəm] 'brittle', *chiam* 'to feed' *kriam* 'crossbow string'

kasreeng [katsɛ̻.ŋ] 'to aim' *kheeng* 'coals'.

4. Vowel Interpretation.

4.1 Basic system

Except for /e/, which has maintained a four-way contrast of short, long, deep, and long deep, vowels in Jeh have a three-way contrast of short, long, and deep. The deep form tends to be short in the high vowel *i, u* and central vowel *a* and long in the low vowel *o*. Central vowel *a* has a fourth contrast of long deep only for derogatory words. High back vowel *u* has a four-way contrast only when followed by liquids *l, y*. However, *u* in the Plày Talaat dialect has only a three-way contrast.

4.2 Distribution of vowels

Not all vowel contrasts occur in every environment. Short vowels can occur neither on open syllables nor before rising tone /h/.

5. Suprasegmental Features.

5.1 Deep vowel [7]

The deep vowel quality is produced by relaxing the faucal pillars, lowering the larynx, and giving increased pressure from the diaphragm. The result is a deep, somewhat gruff, voice quality. Pitch is usually lower than that of the clear form. Deepness, when occuring with short vowels, changes the vowel height, forcing it up in most instances. This accounts for the peculiar similarity of the /i/ and /è/, which have nearly identical vowel heights but which are completely different phonemes (cf. sec. 7. 2 for examples).

5.2 Length

Length can occur with all five vowels but not with glides. The vowel heights of /e/ and /è/ are lowered by length (cf. sec. 7. 2 for examples).

5.3 Nasalization

Nasalization is rare, though presumably can occur with any vowel. It occurs in a very limited environment — only in closed syllables and only after /h/ and /ʔ/. It does not affect vowel height. Examples :

hạy 'enough', *hạy* 'we (incl)' *họol* 'happy'
hool 'to tow' *ʔùul* 'to groan' *ʔuul* 'to seep'
ʔòoʔ 'to suppress',*ʔ òoʔ* 'pumpkin'.

6. Distribution of Phonemes.

The word in Jeh can be defined as having one main syllable, which may be preceded by an unstressed, but occasionally morphologically significant, presyllable. The existence of a presyllable in Jeh is established by the fact that a consonant cluster (e. g. *tr*) of the main syllable can be contrastively broken up, the first consonant (*t*) occurring in the presyllable and the second consonant (*r*) occurring in the main syllable. [8]

7 Deep vowel in Jeh parallels very closely the description of the 'second register' of the pitch range of Cambodian by E. J. A. Henderson in 'The Main Features of Cambodian Pronunciation', *Bulletin of the School of Oriental and African Studies* (University of London), Vol. XIV, Part I, pp. 151ff. The grave accent (ˋ) is used as the phonetic symbolization for deep vowel in this paper.

8 If such a contrast were non-existent, Jeh could be interpreted as an agglutinative monosyllabic language, The *a* would serve only as an open transition between the C in the presyllable and the C in the main syllable. The contrast is proportionately rare in Jeh, having been found only with five C_3C_4 clusters : *pl, tr, th, kl, kh*. For a detailed analysis of Jeh presyllables from a different standpoint, see Patrick D. Cohen, 'Presyllables and Reduplication in Jeh', in this same volume.

Examples :

trah 'to chop out' *tarah* '(of chicken) to squawk'
khey 'month' kahey' moon'

6.1 Presyllables pattern : $C_1 V_1$

Presyllables occur before single consonants, strong consonant clusters, and preglottalized consonants (but before no other close-knit sequences).

6.1.1 V_1 has one filler : *a*. There is complete neutralization of the vowel in the presyllable except after *?*. Following *j* and *s*, which are in complementary distribution in the presyllable (cf. sec. 6.1.2), this vowel becomes *i*. Glottal stop *?* maintains a distinction between *a* and *i*, possibly due partly to the fact that men's names are preceded by *a* and women's names by *i*. Examples :

?idrah 'one-half year' *?adrah* 'to scare'
taba 'branch' *pakaal* 'fence'

6.1.2 C_1 can be filled by voicleess stops *p, t, k, ?* by nasal *m,* and by alveolars *s, l* (e.g. *palek* 'to roll'). Voiced stops occur in C_1 only as alternating with voiceless stops or *m* (e.g. *bangaay* ~ *mangaay* 'person'). *j* is in complementary distribution to *s* in C_1, occuring only before *k, ?, h, m* of the main syllable (e.g., *jihoom* 'lungs'). *s* precedes other consonants (e g. *silaang* 'face up'). *l*, though phonemically interpreted as a filler of C_1, occurs phonetically inverted after V_1. It occurs before every consonant except *ch* (e.g. *lapiat* [alpiət] 'tongue').

6.1.3 Reduplicative words

In a reduplicative word, presumably any consonant or consonant cluster, which occurs initially in the main syllable, can occur in the presyllable. Presumably any vowel can fill V_1 of a reduplicative word And a syllable-final C can also occur. Examples :

dodo? 'to be in line' *drudruan* 'to fight'
pingpiang 'spider' *?na?nam* '(of kettle) to sing'
truktrool 'to jump up and down'

6.2 Main syllable pattern : CV ± C_5 or $C_3C_4V \pm C_5$

V (main vowel) can be filled by any vowels in the chart. Short vowels cannot occur without C_5.

C (main consonant) has two classes of fillers : C_2 and cC.

Class C_2 fillers are composed of a single consonant, which may be any consonant in the chart.

Class cC fillers [9] are composed of all close-knit sequences except *yh, w?* and *y?* (cf. sec. 3.2). See Fig. 3 for complete distribution of cC.

C_3 (main consonant of cluster) can be filled by *m, s,* and by all stops except *j*.

C_4 (second consonant of cluster) can be filled by *r, l, h*. See Fig. 3 for complete distribution of consonant clusters.

C_5 (final consonant) can be filled by close-knit sequences *yh, w?, y?* and by any single consonant except voiced stops *b, d, j, g,* the palatals *nh, ch,* fricative *s,* and *r*.

6.3 Summary of word pattern in Jeh

The word can be summarized as follows:

± presyllable (C_1V_1) + main syl. ($C_2V \pm C_5$) or ($C_3C_4 \pm C_5$) or ($cCV \pm C_5$).

7. Description of Phonemes.

7.1 Consonants

/p/ simple voiceless bilabial stops : [p].

pat 'to be extinguished' *bat* 'to remember'

mat 'eye' *phat* 'to be plugged' *waat'* to pull back.

/t/ simple voiceless alveolar stops : [t].

tiam 'to temper iron' *kadiam* 'onion' *chiam* 'to feed' *toong* 'cl. for tools' *thoong* 'brass'

/ch/ simple voiceless alveopalatal affricate : [t͡s].

cheh 'to twist rope' *jeh* 'Jeh people' *teh* [to scythe] *keh* 'cupboard' *cheeng* 'to carry with'

9 There is also a rare occurrence of close-knit sequence preceding a member of C_4, but usually only as alternate pronunciations (e.g. *hmra* ~ *tamra* 'day after tomorrow' *ndruung* ~ *druung* 'cocoon').

Fig. 3 CONSONANT CLUSTERS AND WORD INITIAL CLOSE-KNIT SEQUENCES

Consonant clusters				class cC			
C_2 \ C_3	r		h	nasal	dbl. C	? h	c / C
p	pr	p	ph	mb	bb	?b	b
t	tr		th	nd	dd	?d	d
k	kr	kl	kh		jj		j
b	br	bl		ngg	gg[10]		g
d	dr					?m hm	m
g	gr	gl			nn	?n hn	n
m	mr	ml				?hn hnh	nh
s	sr					?ng	ng
					//	?l hl	l
						?r hr	r
						?w hw	w
						?y hy	y

Fig. 4 EXAMPLES OF WORD PATTERNS [11]

	Main Syllable					
	$+C_2$		$+C_3C_4$		+cC	
	$-C_5$	$+C_5$	$-C_5$	$+C_5$	$-C_5$	$+C_5$
PRESYLLABLE none	ma	pah	pra	praan	?ya	ndok
C_1V_1	ta.ma	ta.pah	ma.dra	ta.praang		

strap over shoulder' *kheeng* 'burning coals'

/k/ simple voiceless velar stop : [k].

kooy 'to carry on head' *gooy tuh* 'breast nipple'

10 Lengthened *g* occurs only in the Plày Talaat dialect.

11 *ma* 'aunt' ; *tama* 'flea' ; *pah* 'to split' ; *tapah* 'to be split' ; *pra* 'to spread out, crisscross'; *madra* 'arbor' *praan* 'strong' ; *tapraang* 'to span' ; *ʔya* 'tobacco' ; *ndok* 'to bounce'.

khooy 'to be used to' *ʔakuw* 'joint of bamboo' *ʔi̯ʔuw* 'common rafter'

/ʔ/ [12] glottal stop : [b].

taʔùa 'to bellow' *hùa hoʔ* 'airplane' *ʔakuw* 'joint' *ʔi̯ʔuw* 'rafter' *kong doʔ* 'land snail' *dok* 'monkey'

/b/ simple voiced bilabial stop : [ʔ].

bok 'to dig' *pok* 'to open' *mok* 'site' *tabaang* 'third night of Jeh month' *kaʔbaang* 'table' *b̄bàng* 'tie beam'

/d/ simple voiced alveolar stop : [d].

dam 'young man' *tam* 'with' *kanam* 'corpse'

/j/ lenis voiced alveopalatal affricate : [d̆z]. In rapid speech, it varies freely to a voiced alveopalatal vocoid [y].

jaal 'round fish net' *yaal* 'fourth night of Jeh month' *joh* 'to peck' *goh* 'clean' *choh* 'to cut out' *ʔayoh* 'tribal shirt'

/g/ simple voiced velar stop : [g].

gook 'smoking pipe' *kook* 'goiter'

/m/ simple voiced bilabial nasal : [m]. In word final position it can vary to a syllabic nasal [bm].

tama 'flea' *taba* 'points on antler' *ʔimuw* 'here' *kakuw* 'to rely on' *mùt* 'to go in' *ʔmùt* 'to take in'

/n/ simple voiced alveolar nasal : [n]. In word final position it can vary to a syllabic nasal [dn].

12 In this paper symbols follow Vietnamese orthography where possible. Exceptions are :
[iə] and [uə] are written *ia* and *ua* :
double vowels indicate length.
The current orthography of Jeh is the same as the phonemic symbols except in the following cases ;
Word initial *ʔw* and *ʔy* are written as *u* and *i*.
Word final *wʔ* and *yʔ* are written as *ŭ* and *ĭ*.
Word final *yhʔ* is written *yh* after short vowels and *ih* after long vowels.
Word final *w* and *y* are written as *u* and *y* after short vowels and as *o* and *i* after long vowels *i* is used after *e* (e.g. *dei* 'not') because there is no length contrast after *e*.
Word final *uu* is written as *ou*.
Glottal stop *ʔ* is written, word initial, ‿ word medial, and ‿ word final. It is left unwritten before word initial vowels.
The phonemic sign *//* is used only for clarity or when in contrast to the phonetic sign [ ]. Elsewhere the phonemes are italicized.

nuat 'tumor' *duat* 'to pull out' *naam* 'a shed' *nhaam* 'to weep' *lana* 'sheet' *langa* 'sesame seeds', *ka niap* 'small fish' *lup liap* 'thirteenth night of Jeh month' *nah* 'side' *?nah* 'some' *nnah* 'wine'

/nh/ simple voiced alveopalatal nasal : [n̈]. It is the only nasal that does not occur in word final position.

lanhok 'to jostle' *tanok* 'beach' *ngok* 'mountain' *jong jok* 'rainbow'

/ng/ simple voiced velar nasal : [ŋ]. In word final position it can vary to a syllabic nasal [gŋ].

ngòh 'ridge of a notch' *gòh* 'to ignite'. See /nh/, /n/.

/l/ voiced alveolar lateral: [l]. In word final position it becomes a neutralization of /l/ and /r/ and can vary to a syllabic liquid [dl].

loh 'to go out' *roh* 'thin' *taal* 'stock of crossbow' *taan* 'to weave' *bal* 'species' *ban* 'to raise'.

/r/ voiced alveolar flap : [r̆].

rok 'cow' *lok* 'white colored wasp'.

/w/ voiced bilabial rounded vocoid : [w]. It alternates freely to a slightly fricative allophone [b] in syllable-initial position.

wal 'to go back' *bal* 'species' *?waal* 'to drill' *ka* 'fish' *kaw* 'to call'.

/y/ voiced alveopalatal vocoid : [y].

kaya 'ginger' *?ya* 'tobacco' *yaang* 'spirit' *jaang* 'work' *yaal* 'fourth night of Jeh month' *nhaal* 'bronze colored mineral' *ha* 'hip' *hay* 'we'.

/s/ alveolar fricative : [s]. In initial position it alternates freely with voiceless alveolar affricate [ts].

saang 'to finish' *haang* 'hot' *?aang* 'rabbet joint' *kathaang* 'ladder'.

/h/ voiceless glottal fricative : [h]. In initial position in isolation and following voiceless stops it is a glottal fricative.

hèe? 'slow' *sèe?* 'afternoon' *?èe?* 'yes'

[M, N, N̈ L, R, W, Y] In initial position in sequences it has allophones of voiceless nasals and liquids before their voiced counterparts.

hmàn [Mmàn] 'pants' *?màn* 'forbid'

hnho? [N̊no ɔ] 'sad' *dey nho?* 'not much'

hraay hrày [Rra. y Rrày] 'to misplace' *raay* '(of rain) to stop'

hwaay [Wwa·y] 'besides' *waay* 'to redeem'

[ˊ] In final position /h/ is manifested as a rising tone. (cf. sec. 3.3)

tìh [tì:] 'big' *tì* 'hand'

puàh [pùə] 'flexible' *sùa* 'to believe'

tìah [tìə] 'down there' *sìa* 'to miss'

7.2 Vowels

/i/ /ii/ /ì/ is a high open front unrounded vocoid : [ɪ].

/ii/ is phonetically similar but longer.
hwil 'to forget temporarily' *?wiil* 'to coil'

/ì/ is a high close front unrounded vocoid : [i].
('deep' vowel. cf. sec. 5.1).
hiw 'to flow' *chìw* 'to go' *chim* 'bird' *sìm* 'species of duck'

/ia/ /ìa/ /ia/ is a glide from /i/ to a neutral central vowel (schwa)
/ìa/ is phonetically similar but deep.
tiang 'to fasten' *tìang* 'to sunbathe' *kachiat driang* 'to be killed instantly, *driing* 'yellow'

/e/ is a mid front unrounded voicoid : [e].
pet 'duck' *pit* 'to plant' *jep* 'sandal' *jeep* 'shoulder basket' *jèp* 'to sew' *hnèep* 'happy' *kajip* 'centipede'

/ee/ is a low front unrounded long vocoid : [ɛ·].
?reeng 'to look for' *?riing* 'spring pole snare' *?rèeng* 'to look at' *reeng* 'hundred' *reng* 'close together'

/è/ is a high open front unrounded deep vocoid : [ɪ].
tèng nèng 'guitar' *tìng dra* 'one-half full'. See /e/.

/èe/ is a mid front unrounded long deep vocoid : [è·].
pèeng 'upper' *pìing* 'snap trap'. See /e/.

/a/ /aa/ /a/ is a low open central unrounded vocoid :
[a]. /aa/ is phonetically similar but longer.
wal 'to return' *wàl* 'wall plate pole' *waal* 'to tell'.

/à/ is a low close central unrounded deep vocoid : [ə̀].

ddàng 'equal to' *ddong* 'to help'. See /a/.

/u/ /uu/ /u/ is normally a mid close back rounded vocoid : [o]. It can vary freely to a high back rounded vocoid [u]. /uu/ is phonetically similar but longer.

sal puk 'field in fallow (first year)' *puuk* '(of stomach) to growl' *kung* 'horizontal' *kong* 'forearm' *juuy* 'deer' *jùuy* 'after'.

/ù/ is a mid close back rounded deep voicoid : [ò].

chùk 'to irrigate' *chuk* 'to slug' *kaduy* 'small of back' *dùy* 'to pull'

/ua/ /ùa/ /ua/ is a glide from /u/ to a neutral central vowel (schwa). /ùa/ is phonetically similar but deep.

yuan 'seed for wine' *yùan* 'we (excl.)' *jua?* 'to step on' *jùa?* 'sour' *sasuang* 'to dart and dash' *suung* 'to scald'

/o/ /oo/ /o/ is normally a low back rounded vocoid : [ɔ]. It can vary freely to mid back position [o]. /oo/ is phonetically similar but longer.

bong 'to fall' *boong* 'to restore' *tabang* 'bamboo shoots' *chong* 'to eat rice' *pachoong* 'to test'

/òo/ is normally a low back rounded long deep vocoid : [ɔ̀·]. It alternates freely with a low close central vowel [ə̀·].

pachoong 'to test' *chòong* 'to file' *chàng dramang* 'midnight'

/./ indicates nasalization. It is contrastive only after /h/ and /?/. (See examples in discussion of nasalization sec. 5.3)

Katu Personal Pronouns

JUDITH M. WALLACE

0. Introduction.

The purpose of this paper is to present the personal pronoun system of Katu[1]. There are eleven regular pronouns in Katu, as shown on chart 1, divided by number (singular, dual, and plural) and person (first, first-second, second, and third). The first-second person (first person inclusive) occurs only in dual and plural.

Of particular interest is the way that the dual and plural pronouns can be broken down into meaningful components (see sec. 1). Also noteworthy is the use of affixed locational words as personal pronouns (sec. 4).

A personal pronoun in Katu is a word which can generally be used in place of a noun while retaining the meaning of the noun. It functions syntactically like a noun, with the following restrictions. A pronoun cannot

1 Katu [ktəu] is a member of the Mon-Khmer language family and is spoken by an estimated thirty thousand people in Quang-Nam province of Vietnam.

I am indebted to David Thomas and Richard Watson for their help in the analysis and writing of this paper. Dinh Voiq Kimêêt, my Katu language teacher, has been the source of nearly all the Katu language material in this paper.

be possessed. It cannot be modified by adjectives as nouns can. A pronoun cannot occur in the complement position of an equational expression.

1. Components of Pronouns.

As we examine the eight forms of the Katu dual and plural pronouns, it becomes apparent that they are composed from seven components as shown in chart 2.

	Singular	Dual	Plural
1st person	ku/dai	yưa	yi
1st-2nd person		nhang	he
2nd person	mai	nhưa	pe
3rd person	(dó)[2]	nhi (dó)	pi (dó)

Chart 1. Regular Animate Pronoun Forms

		Dual		Plural	
1st	y	ưa	y	i (e)	
1st-2nd	nh	ang	h	e	
2nd	nh	ưa	p	e	
3rd	nh	i	p	i	(e)

Chart 2. Pronoun Components

nh- marks dual and is present in all dual forms except first person.[3]

2 In this paper, symbolization generally follows Vietnamese orthography with these exceptions: *q* indicates a final glottal stop

ɓ and ɗ indicate preglottalized *b* and *d* respectively,

d indicates a simple voiced alveolar stop.

doubled vowels indicate length.

The vowel phonemes of Katu are (high to low): front i, ê, e; central ư, ơ, â, a; back u, ô, o, ó. All vowels can be long or short. (See J. M. Wallace, 'Katu Phonemes', to be published.)

3 Saundra K. Watson, 'Personal Pronouns of. Pacôh', in *Mon Khmer Studies I*, Saigon, 1964. *nh-* also marks dual and *-e* marks plural in the pronouns of Pacôh. This article was very helpful because of the many similarities between Pacoh and Katu.

-e marks plural and is present in all four plural forms. *-e* morphophonemically becomes *-i* in first person and third person (see *y-* and *-i* below).

y- marks first person in both dual and plural forms. This initial *y-* is apparently the conditioning factor causing the *e-* 'plural' in the expected *ye* 'first person plural' to become *-i*, forming *yi*.

-i marks third person in both dual and plural forms. The vowel *-i* in the plural form is apparently a portmanteau from the *-e* plural and *-i* third person components. The expected **pei* becomes *pi*.

p- marks non-first persons in the plural.

-ɯa marks in dual number the inclusion of a third person either with first or with second person, i e. 'he and I' or 'he and you'.

-ang, h- are unique components marking first-second person in dual and plural, respectively.

2. Description of Animate Pronouns.

The term 'animate' is used here to refer to humans and animals and to exclude plants and non-living objects. (cf. secs 3.4)

ku 'I' (first person singular). *ku chô* 'I return' *ku* has a less used allomorph *dai* which can occupy any place *ku* can. *dai chô* 'I returns'. The function of *dai* is not yet clear but may be to focus attention on the speaker. It is often but not always used in quotation.

mai 'you' (second person singular). *mai chô* 'you return'.

dó 'he, she, or it' (third person singular). *dó chô* 'He, she, or it returns'. Because *dó* functions somewhat differently from the other animate pronouns, it is charted in parentheses on chart 1. Besides functioning as a simple pronoun, *dó* also occurs, frequently in complex pronouns with *nhi* and *pi*, resulting in *nhi dó* 'those two' and *pi dó* 'they. (plural)'.

yɯa 'I and someone else' (first person dual) *yɯa chô* 'He and I return'.

nhang 'I and you' (first-second person dual). *nhang chô* 'You and I return'.

nhɯa 'you and someone else' (second person dual). *nhɯa chô* 'You and he return'.

nhi 'he (she or it) and someone else' (third person dual). *nhi dó chô*. Those

two return'. *nhi* is a bound pronoun and the limitations on its occurrence are discussed below.

yi 'I and others' (first person plural). *yi chô* 'We (I and others) return'.

he 'I, you, and one or more others' (first-second person plural). *he chô* 'We (I, you, and others) return'.

pe 'you and others' (second person plural). *pe chô* 'You and others return'.

pi 'he (she or it) and others' (third person plural). *pi dó chô* 'They return'. *pi* is a bound pronoun.

The two pronouns *nhi* 'third person dual' and *pi* 'third person plural' are bound to *dó*, the third person singular form, forming the complex pronouns *nhi dó* 'they two' and *pi dó* 'they plural'. When *nhi* or *pi* occurs in subject position, *dó* can be omitted, but it is not possible to focus on the pronoun or to extract it from the clause without restoring *dó*. *nhi* and *pi* cannot take normal pronoun expansions in their contracted (without *dó*) forms.

ɓoor 'two' can replace *dó* after *nhi* 'third person dual' and act the same as *dó*. *nhi dó, nhi ɓoor* 'they two'. This is the only occurrence of a number functioning in this way.

3. Inanimate Pronoun.

dó is the only one of the above pronouns which can be used in referring to plants or non-living objects and it can be used indiscriminately for both singular and plural number. *puan nlóóng yaal* 'four trees (are) tall' can be replaced by *dó yaal*. Although plural is not usually distinguished from singular in inanimate pronouns, it can be shown by the use of *nôq*, a general pluralizer. *nôq dó yaal* 'They (are) tall.'

4. Locational Pronouns.

Locational pronouns are locational words, such as *đi* 'here' and *đek* 'there (nearby)', which when affixed can function in the place of third person pronouns. To do this, they are prefixed by *a-*. If nothing further is added, the *a-* form is singular. *ađi* 'this one (here).' For dual or plural number, the singular *a-* prefixed form is further prefixed by *nh-* or *p-*, the dual and plural pronoun components, forming *nhađi* 'these two'

or *pađi* 'these (plural)'. Plural can also be shown by using *nôq* 'plural' (sec. 5) before the singular form, as *nôq ađi* 'these (plural).'

đi 'here.'
ađi chô 'he (she or it) (here) returns.'
nhađi chô 'These two (here) return.'
pađi chô 'They (here) return.'
nôq ađi chô 'They (here) return.'
đek 'there (nearby)'
ađek chô 'He (she or it) (there) returns.'
nhađek chô 'Those two (there) return.'
pađek chô 'They (there) return.'
nôq ađek chô 'They (there) return.'

The singular form of locational pronouns can be used for plural non-human referents. 'Non-human' includes animals, plants, and non-living objects. (This is different from the animate-inanimate distinction in regular pronouns which groups animals and humans in the same category (sec. 3).)

puan jong gamak 'Four back-baskets (are) large.'
ađi gamak 'These (are) large.'

Although number is not usually distinguished for non-human locational pronoun forms, it can be specified by a preceding numeral. This also contrasts with the inanimate regular pronoun which can show number only by the use of the pluralizer *nôq*.

puan ađi gamak 'These four (are) large'.

The locational words which function like *đi* and *đek* that have been found so far are:

đi, đik 'here'
đek 'there (nearby)'
tôôh, tôk 'there, level with the speaker'
têêh, chik 'there, upward from the speaker'
chooh, chok 'there, downward from the speaker'

5. Pronoun Expansions.

Possible expansions of the animate and locational pronouns are given

in the following maximum formula: (Inanimate and locational non-human pronouns can be expanded only as given in secs. 3,4.)

± number ± classifier ± focus ± pronoun ± specific referent

pe	*nak*	*a-*	*yi*	*adi*	*ano*
three	(person cl.)	(focus)	we	brothers	sisters

'we three, brothers and sisters'

(a) The *number* slot can be filled by numerals, *bo't* 'all', or ƀ *o'k* 'many'.

pe yi 'we three'

bo't yi 'all of us'

ƀ *o'k yi* 'many of use'

ƀ *o'k* 'many' may be expanded by intensifiers *long* or *kuaq*.

ƀ *o'k long yi* 'very many of us'

ƀ *o'k kuaq yi* 'very many of us'

(b) The *classifier* slot can be filled by *nak* 'person classifier' or *panong* 'animate classifier'. Classifiers are used only after numerals and ƀ *o'k* 'many', but not after *bo't* 'all'. They are not obligatory and do not alter the meaning.

pe nak yi 'we three'

ƀ *o'k nak yi* 'many of us'

pe panong pi dó 'three of them (animals)'

(c) The focus slot can be filled by *a-* 'focus marker' or *nôq* 'plural'. *a-* 'focus marker' can occur as a prefix on any pronoun in any syntactic usage and will mark that pronoun as the center of attention or focus of the sentence.

ayi 'we'

ayi chô 'we (emphasized) return'

anuq chô leq ayi 'the dog returned with us (emphasized)'

nôq 'pluralizer' can optionally precede plural pronoun forms, possibly indicating emphasis. It never precedes an *a-* prefixed pronoun form except an *a-* prefixed locational pronoun.

nôq yi 'we (emphasized plural)'

nôq dó 'they (emphasized plural for either animate or inanimate)'.

nôq adi 'they'

nôq can also be used before a person's name or *mai* 'second person singular' with the meaning of 'that person and his group (family, friends, or those with him)'.

nôq Kimêêt 'Kimêêt and his group'
nôq mai 'you and your group'

(d) *Specific referent* specifies more precisely the individuals being referred to by the pronoun. It can be filled by a noun or pronoun phrase or a *du* phrase and can occur after any pronoun. The *du* phrase can contain adjectives but these are referents, not modifiers.

yi, adi ano, chô 'we, brothers and sisters, return'

dó, du yaal, chô 'he, the tall one, returns'

dó, du plak yung, chô 'he, the one who broke his foot, returns'

With two pronouns, *nhưa* 'you and someone else' and *yưa* 'I and someone else', the specific referent can specify both the individuals included or only the 'someone else'.

nhưa, mai Kimêêt, chô 'you two, you and Kimêêt, return'
nhưa, Kimêêt, chô 'you two, (you and) Kimêêt, return'

6. Syntactic Functions of Pronouns.

(a) Pronouns can be the subject of the verb. *dó leng manuih* 'He killed the man'.

(b) Pronouns can be the object of the verb. *manuih leng dó* 'The man killed him'.

(c) Pronouns can be the object of a preposition, *manuih chô leq dó* 'The man returned with him'.

(d) Pronouns can be possessors. *manuih dó* 'his person' (his wife); *akoon mai* 'your child'.

(e) Pronouns can be the subject of a noun or modifier complement. *dó manuih* 'he (is) a man'; *dó yaal* 'he (is) tall'.

(f) Pronouns can replace the names in the following relationship idioms;

harau Krêp diq Kimêêt 'What is Krêp's relationship to Kimêêt?' (lit. what Krêp to Kimêêt).

harau dó diq mai 'What is her relationship to you?' (lit. what she to you).

Krêp, ama diq Kimêêt 'Kimêêt is Krêp's father.' (lit. Krêp father to Kimêêt).

dó, ama diq ku 'I am her father.' (lit. she, father to I).

(g) Prestatement of the pronoun subject, with a temporal or adverbial element between the two occurrences of the pronoun subject.

yi, ɓoor pe jaal yi chô 'We, two or three times we returned'.

dó, dâh dó gamak 'He, quickly he becomes big'.

7. Other Pronoun Forms

Three seldom used pronoun forms have been found: *ngeh* 'first person singular', *meh* 'second person singular or plural', and *peh* 'third person plural'. The informant considers these forms 'old' and is unable to make impromptu sentences using them.

Affixes in Katu

NANCY A. COSTELLO

0. Introduction.

In Katu[1] there are many affixes, occurring mainly on verb roots but also on adjective, adverb and noun roots, and on numerals and locatives. Combinations of prefixes can occur in Katu, which is fairly rare in Mon-Khmer languages. Each of the main prefixes — causative, reciprocal, adjectivizer and involuntary — is able to occur in combination with the causative prefix. The combination of prefixes occur most extensively on verb roots, but are also able to occur on adjective and noun roots.

A word in Katu has a maximum of four syllables, made possible when two prefixes are added to a two syllable root. It is expected that some unidentified presyllables will later be found to be prefixes, but until the root of a word is determined, these syllables will be treated as non-morphemic presyllables. Prefixes occur on one and two syllable roots.

nhơr 'to love' *tanhơr* 'to love each other'

daloong 'to call' *padaloong* 'to cause to call'

1 Katu is a language of the Mon-Khmer family spoken by about 15-30,000 people in Quảng Nam and Quảng Tín provinces west of Danang. Thanks is given to Kimêêt, from An Điềm, Quảng Nam, who served as language informant for most of this paper. I am indebted to David Thomas for help in the organization and writing of this paper.

The symbolization used in this paper is the same as that in J.M. Wallace, 'Katu Personal Pronouns', in this same volume.

saruum 'to fall'	*tapaṣaruum* 'to cause each other to fall'
pajuak 'to persuade'	*tapajuak* 'to persuade each other'
karuaq 'to hurt'	*pakaruaq* 'to cause to hurt'

1. Affixes on Verb Roots.

1.1 Nominalizer *-an-*

1.1.1 Function of *-an-*. The infix forms derived nouns from verb, noun or adjective roots. (See also 2.1, 4. 1). Sometimes the derived noun has the meaning of *result*, or that which is acted upon, the direct object of the root action.

ƀaƀóóch	'to sing'	*banóóch*	'song'
cha	'to eat'	*chana*	'food'
chiam	'to feed'	*chaniam*	'food given'
chóór	'to make groove on cross bow'	*chanóór*	'groove on cross bow'
chuul	'to make sound'	*chanuul*	'sound of animals, music
đah	'to eat meat'	*danah*	'meat for eating'
dóók	'to name'	*danóók*	'a name'
dɯɯk	'to wear headband'	*danɯɯk*	'headband'
gi	'to plan'	*gani*	'a plan'
jɯ	'to care for'	*janɯ*	'something cared for'
klâm	'to urinate'	*kalâm*	'urine'
kuuk	'to wear necklace'	*kanuuk*	'necklace'
maq	'to prechew food'	*manaq*	'prechewed food'
póh	'to sew red thread into cloth'	*panóh*	'red thread sewn into cloth'
praaq	'to speak'	*paraaq*	'words'
seei	'to judge'	*sancei*	'judgment'
seet	'to wear string around waist'	*saneet*	'string worn around waist'
sóón	'to wear earring'	*sanóón*	'earring'
tââp	'to begin'	*tanââp*	'beginning'

têêng	'to work'	*tanêêng*	'work'
tôôm	'to wrap'	*tanôôm*	'package'

Sometimes the derived noun has the meaning of *instrument*, that used to perform the action of the verb.

gap	'to cut with scissors'	*ganap*	'scissors'
glâk	'to carry (by two people)'	*galâk*	'pole for carrying'
juut	'to rub'	*januut*	'cloth for rubbing'
kliang	'to lock door'	*kaliang*	'wood to lock door'
kuaq	'to turn a key'	*kanuaq*	'key'
panh	'to shoot'	*pananh*	'crossbow'
piih	'to sweep'	*paniih*	'broom'
pruung	'to blow fire'	*paruung*	'pipe to blow fire'
ten	'to hammer'	*tanen*	'a hammer'

Sometimes the derived noun has the meaning of *location*, the place where the action is performed.

ɓêch	'to sleep'	*banêch*	'bed'
chô	'to return'	*chanô*	'road'
pleh	'to turn on road'	*paleh*	'crossroads'
tʊʊt	'to sit'	*tanʊʊt*	'stool'

1.1.2 Differentiation of meanings.

The *result, instrumental, locational*[2] meanings of the derived nouns can be differentiated structurally when the underived verb root and the derived noun are used together in a sentence.

The *result* type of derived noun can immediately follow the verb root, and no preposition ever occurs between them.

ku praaq paraaq 'I speak words'

2 A similar distinction between result, instrument, and location is noted in Bahnar by Elizabeth Banker, 'Bahnar Affixation', in *Mon-Khmer Studies I*. Jacob 's' object mode' appears similar to our 'result', and her 'utensil' to our 'instrument', in J.M Jacob, 'Prefixation and Infixation in Old Mon, Old Khmer, and Modern Khmer', in *Linguistic Comparison in South East Asia and the Pacific*, ed. H.L. Shorto. See also Saundra K.Watson, 'Verbal Affixation in Pacɔ̆h', in *Mon-Khmer Studies II*.

ku đah danah 'I eat meat'
ku kuuk kanuuk 'I wear necklace'

The *instrumental* type of derived noun may also immediately follow the verb root, but can be distinguished from the *result* type in that the preposition *lơq* 'by means of' can be inserted between the verb root and the derived noun.

ku ten (lơq) tanẽn 'I hammer with the hammer'
ku kuaq (lơq) kanuaq 'I turn lock with key'
ku pruung (lơq) paruung 'I blow with the blowing pipe'

The *locational* type of derived noun may also immediately follow the verb root but can be distinguished from both the *result* and *instrumental* types in that the preposition *diq* 'in, on', can be inserted between the, verb root and the derived noun.

ku tơơt (diq) tanơơt 'I sit on the stool'
ku chô (diq) chanô 'I return on the road'
ku ƀêch diq banêch 'I sleep on the bed'

All nominalized verbs fit one of these patterns. Only one form *ganiauq* has been found with more than one of these patterns.

ku giauq (diq) ganiauq 'I roast (meat) on roasting sticks'
ku giauq (lơq) ganiauq 'I roast (meat) with roasting sticks'

The infix is still active in Katu, as seen in such modern innovations as :

chanui 'eraser' from *chui* 'to erase'
ganap 'scissors' from *gap* 'to cut hair'

Infixes may be added to loanwords from Vietnamese such as *ganh* 'to carry'.

geng 'to carry with pole' *ganeng* 'carrying pole'
ganeng 'a load carried'
geng pe ganeng 'carry 3 loads'

This word is of interest because the derived noun can function either as result or instrument. Perhaps later the language may absorb this nominalizer into one of these categories and drop the other usage.

1.1.3 Allomorphs of -an-. *-an-* is the most common form of the nominalizer, but it also has the allomorphs *-a-* and *pa-*.*-an-* becomes *-rn-* in some dialects : *tanoʊ̈t, trnoʊ̈t* 'stool'. *-an-* reduces to *-a-* before *r* and *l* because *nl* and *nr* sequences do not occur in Katu.

pruung	'to blow fire'	*paruung*	'pipe for blowing fire'
praaq	'to speak'	*paraaq*	'words'
kliang	'to lock door'	*kaliang*	'wood to lock door'
klâng	'to put a prop under'	*kalâng*	'prop'

The allomorph *pa-* has been found with only two words, *đoʊ̈k* and *gan*. These fit the locational type of nominalizers since the preposition *diq* can occur between the root word and derived noun.

đoʊ̈k	'to go west'	*pađoʊ̈k*	'ground facing west'
gan	'to go on flat ground'	*pagan*	'flat ground'

When an infix is added to words beginning with *dy* or *n*, the initial consonant changes to *j*.

dyuru	'to carry in pig basket'	*januru*	'pig basket'
dyiik	'to clear ground'	*janiik*	'cleared ground'
niich	'to wear belt'	*janiich*	'belt'

When verb roots beginning with preglottalization occur with the nominalizing infix, the preglottalization is lost.

ɓêch	'to sleep'	*banêch*	'bed'
ɓaq	'to carry on back'	*banaq*	'cloth for carrying baby on back'

1.2 Causative Prefix

pa- occurs with verbs giving them a causative meaning. (See 2.2 for *pa-* with adjectives, 4.2 for *pa-* with nouns.) *pa-* may occur with almost any transitive or intransitive verb'.

1.2.1 With transitive verbs.

When the causative prefix occurs with a transitive verb, it is followed by an intermediate causer and an object. (cf. 1.9)

Mêêt ih ao	'Mêêt sews shirt'
Mêêt pa-ih Rim	'Mêêt makes Rim sew'
Mêêt pa-ih Rim ao	'Mêêt makes Rim sew shirt'

pa- occurs with transitive roots such as :

uach	'to dig hole'	*pa-uach*	'to cause to dig hole'
cha	'to eat'	*pacha*	'cause to eat'
glâk	'to carry'	*paglâk*	'cause to carry'
tech	'to chop tree'	*patech*	'cause to chop tree'
nhơr	'to love'	*panhơr*	'cause to love'
kơl	'to buy'	*pakơl*	'cause to buy'
hư	'to wreck'	*pahư*	'cause to wreck'
goot	'to cut hair'	*pagoot*	'cause to cut hair'
looq	'to peel'	*palooq*	'cause to peel'
chen	'to cook'	*pachen*	'cause to cook'
rôq	'to pull out weeds'	*parôq*	'cause to pull out weeds'
kapuat	'to sqeeze'	*pakapuat*	'cause to sqeeze'
iat	'to cut animate things'	*pa-iat*	'cause to cut animate things'
chiat	'to cut inanimate things'	*pachiat*	'cause to cut inanimate things'

1.2.2 With intransitive verbs

When the causative prefix occurs with an intransitive verb, it is followed by an intermediate causer (cf. 1.9)

ku mut 'I run'

ku pamut Rim 'I cause Rim to run'

pa- occurs with such intransitive roots as

val	'to return'	*paval*	'cause to return'
ruuh	'to fall'	*paruuh*	'cause to fall'
chô	'to return'	*pachô*	'cause to return'
mut	'to run'	*pamut*	'cause to run'
sooq	'to flee'	*pasooq*	'cause to flee'
duanh	'to go east'	*paduanh*	'cause to go east'
nhiim	'to cry'	*panhiim*	'cause to cry'
mót	'to enter'	*pamót*	'cause to enter'
ntôq	'to fall'	*pantôq*	'cause to fall'
rââm	'to hope'	*parââm*	'cause to hope'

nôôk	'to be foolish'	*panôôk*	'cause to be foolish'
ul	'to be hungry'	*pa-ul*	'cause to be hungry'

1.2.3 Minor allomorphs. *pa-* is the most frequent form of the causative prefix, but it has the allomorphs *ta-* and *ka-* which occur with a more limited number of verbs. Most of these same verbs can also occur non-contrastively with *pa-*.

ta-	*ku tagoot Rim sok*	'I cause Rim to cut hair'
	ku pagoot Rim sok	'I cause Rim to cut hair'
	ku tamót jong	'I put basket' (cause to enter)
	ku pamót jong	'I put basket' (cause to enter)

Only the following roots have been found with *ta-* causative. *ablââk* 'to awake', *aguun* 'to curl up', ꝑ *aq* 'to carry on back', ꝑ *êch* 'to sleep', ꝑ *lêi* 'to trade', *bral* 'to arrive', *chiat* 'to cut inanimate things', *chô* 'to return' *diar* 'to go backwards', *gaaq* 'to open door', *goot* 'to cut hair', *iat* 'to cut animate things', *looq* 'to peel', *lóng* 'to open', *lum* 'to meet', *mbiiq* 'to hit', *mót* 'to enter', *mut* 'to run', *panh* 'to shoot', *par* 'to fly', *peh* 'to play musical instrument', *plak* 'to break', *puah* 'to dry in sun', *prah* 'to wash hair'.

Of these, ꝑ *aq, chiat, chô, diar, goot, looq, lum, iat, mót, val* also occur with *pa-* causative.

ka- is also an allomorph of the causative prefix. It has only been found with the verb roots *chet* 'to die', *boq* 'to pile up', *suuh* 'to poke'. It is non-contrastive with *pa-*.

Rim pasuuh Mêêt mat	'Rim makes Mêêt poke eye'
Rim kasuuh Mêêt mat	'Rim makes Mêêt poke eye'
Rim pachet anuq	'Rim causes the dog to die'
Rim kachet anuq	'Rim causes the dog to die'

1.3 Causative Passive Prefix ha-

ha- occurs with a few verb roots giving them a meaning of causing an inert or inanimate subject to be in a certain state. Both transitive and intransitive verb roots have been found with *ha-*: *chen* 'to cook', *vrak* 'to scatter', *ôu* 'to put away', *looq* 'to peel', *yur* 'to rise', *ul* 'to hunger'. *ha-ul* seems to be the only one with a reflexive meaning.

ku hachen aviq	'I cause rice to be cooked'
ku hayur ɗơ'k	'I cause water to be raised.' 'I raise water'
ku hayur Rim	'I cause Rim to be raised' 'I lift up Rim'
(*ku payur Rim*)	'I cause Rim to get up'
ku ha-ul	'I am made hungry'

Verbs with *ha-* can occur both as main verbs and in adjectival constructions.

1.4 Reciprocal Prefix ta-

ta- occurs with verb roots giving them the reciprocal meaning 'I do it to you and you do it to me'. Almost all transitive verbs, but no intransitive verbs, can occur with the reciprocal prefix. When the reciprocal prefix occurs, it requires two actors or a plural actor. (cf. 1.9)

Mêêt lơq Rim tanal	'Mêêt and Rim know each other'
nhang tanal	'we know each other'

ta- occurs with such roots as:

kap	'to bite'	*takap*	'bite each other'
lêi	'to see'	*talêi*	'see each other'
tak	'to stab'	*tatak*	'stab each other'
kơl	'to buy'	*takơl*	'buy from each other'
nhơr	'to love'	*tanhơr*	'love each other'
nhan	'to want'	*tanhan*	'want each other'
leng	'to kill'	*taleng*	'kill each other'
pajuak	'to persuade'	*tapajuak*	'persuade each other'
ayô	'to pity'	*tayô*	'pity each other'

1.5 Adjectivizer Prefix ta- (cf 2.4, 4.3)

1.5.1 There is a *ta-* adjectivizer prefix which occurs in adjectival constructions.[3] With a few exceptions, all transitive verbs can occur with

3 The adjectivizer prefix resembles the affixes called 'attributive' by Jacob. 'passive' by Banker, '[illegible]' by Wat

this prefix, as well as a few intransitive verbs. See 1.9 for distinguishing this prefix from other homophonous affixes. *ta-* occurs with verbs such as:

ih ao	'sew shirt'	*ao ta-ih*	'the sewn shirt'
uach bóng	'dig hole'	*bóng ta-uach*	'the dug hole'
roh đong	'burn house'	*đong taroh*	'the burnt house'
palaang têi	'turn palm up'	*têi tapalaang*	'the turned up palm'
pajuk akóq	'bump head'	*akóp tapajuk*	'the bumped head'
leng anuq	'kill dog'	*anuq taleng*	'the killed dog'
lo'i chana	'put aside'	*chana talo'i*	'the put aside food'
looq priiq	'peel banana'	*priiq talooq*	'the peeled banana'
Rim chet	'Rim dies'	*Rim tachet*	'the dead Rim'
yung plak	'foot breaks'	*yung taplak*	'the broken foot'

1.5.2 This affix can be identified syntactically in that it always occurs in an adjectival construction. The adjectival function of the prefix is shown by the reversability of the noun and the verb, like that of nouns and adjectives. Predicative verbs cannot reverse positions with either their subject or their object.

ku lêi ao brông	'I see the red shirt'
ku lêi ao ta-ih	'I see the sewn shirt'
ku lêi ta-ih ao	'I see the sewn shirt'
ku ih ao	'I sew the shirt'

The adjectivizer prefix has the allomorph *ka-* which occurs with only a few roots. They are the same verb roots which occur with *ka-* causative prefix.

chet	'to die'	*anuq kachet*	'the dead dog'
suuh	'to poke'	*mat kasuuh*	'the poked eye'
boq	'to pile up'	*tho' kaboq*	'the piled up letters'

1.6 Involuntary Prefix *ta-* (cf. 4 2)

There is a *ta-* involuntary prefix which is homophonous with the *ta-* causative, *ta-* reciprocal and *ta-* adjectivizer prefixes. Most transitive verb roots can occur with the reciprocal and adjectivizer prefixes, but the number of verb roots which can occur with the involuntary prefix is

more limited. *ta-* involuntary gives to verbs the meaning 'I did it accidentally', or 'the situation forced me to act against my will'. Both transitive and intransitive verbs may occur with the involuntary prefix.

Rim takluh ao 'Rim tore the shirt accidentally'
ku takabók 'I scratch accidentally (on splinter)'

Following is a list of verbs so far found with the involuntary prefix:

lɔ'i	'throw away'	*ku talɔ'i chana*	'I throw away food involuntarily'
ngguh	'bump'	*ku tangguh akóq*	'I accidentally bump head'
pajuk	'bump'	*ku tapajuk akóq*	'I accidentally bump head'
lum	'meet'	*ku talum Rim*	'I met Rim accidentally'
drâng	'starve'	*ku tadrâng*	'I am starving'
lɔ't	'make mistake'	*ku talɔ't*	'I make a mistake'
luak	'scald something'	*ku taluak*	'I accidentally scald (my hand)'
ngjiq	'crack something'	*ku tangjiq*	'I accidentally crack dish'
katuah	'scrape'	*ku takatuah*	'I accidentally scrape (on splinter)'
kóóp	'catch'	*ku takóóp kadóóng*	'I accidentally catch fish'
kabók	'scratch'	*ku takabók*	'I accidentally scratch (on splinter)
ntek	'tear'	*ku tantek ao*	'I accidentally tear shirt'
mbuah	'bump'	*ku tambuah*	'I bump myself'
kajarik	'scratch'	*ku takajarik*	'I accidentally scratch (on splinter)'

Usually the transitive roots have an object, but *talooq* and *talóng* do not.

priiq talooq 'banana peels itself'
palóng talóng 'door swings open'

See 1.9 for a discussion of the difference between the involuntary prefix and other homophonous affixes.

ta- has the minor allomorph *pa-* which has only been found in the following verbs :

ku pa-ɓêch 'I cannot stay awake so I go to sleep'
ku pampó 'I dream'
ku padôuq jêên 'I hide money so it will not be stolen.

1.7 Purpose Prefix ka- (cf. 4.5 for *ka-* with nouns)

There is a *ka-* prefix which has the meaning of 'doing an action with purpose, effort'. Sometimes there is also the meaning of continuing action with purpose. On some of these examples it has been difficult to get any firm distinction from the native informant.

ku sir mat 'I close eyes as in sleep'
ku kasir mat 'I close eyes momentarily (deliberately)'
ku sâng 'I hear'
ku kasâng 'I strain to hear'
ku têêng 'I work'
ku katêêng 'I work longer than I need to, don't want to stop'
ku gui 'I carry on back'
ku kagui 'I carry on back continually'
ku kɔ'l 'I buy'
ku kakɔ'l 'I buy many times'
ku geng 'I carry with pole'
ku kageng 'I carry with pole many times'

1.8 Combinations of Prefixes

(1) *Reciprocal Causative tapa-* in which *ta-* is reciprocal and *pa-* causative.

(2) *Involuntary Causative tapa-* in which *ta-* is involuntary and *pa-* causative ; *taka-*in which *ta-* is involuntary and *ka-* causative.

(3) *Adjectivized Causative tapa-* in which *ta-* is adjectivizer and *pa-* causative ; *taka-* in which *ta-* is adjectivizer and *ka-* causative.

(4) *Adjectivized Passive taha-* in which *ta-* is adjectivizer and *ha-* causative passive.

(5) *Double Causative paka-* in which *pa-* and *ka-* are both causative,

(6) *Causative Passive paha-* in which *pa-* is causative and *ha-* causative passive.

The criteria for distinguishing prefixes by the addition of extra slots, discussed under section 1.9.1, are confirmed by the constructions occurring with combinations of prefixes. When an extra causer slot needs to be added to the construction, an extra causative prefix is added to make it possible. In this way some of the combinations of prefixes are built up. Every verb root which occurs with *tapa-* and *taka-* also occurs with just the causative prefix.

Mêêt lơq Rim tapatêêng 'Mêêt and Rim make each other work'

Mêêt patêêng Rim 'Mêêt makes Rim work'

Not every root however which occurs with *pa-* causative can also occur with *tapa-* :

pa-uach 'cause to dig a hole' * *tapa-uach*

pandóh 'cause to wear' * *tapandóh*

1.8.1 **tapa- reciprocal causative** (cf 2.3, 4.2.2) This prefix may occur with both transitive and intransitive roots. Intransitive roots cannot occur with just *ta-* reciprocal because they do not have an object, but they can occur with *tapa-* because an extra slot is added to the construction.

Mêêt lơq Rim tapanal đong 'Mêêt and Rim make each other know the house'

Mêêt lơq Rim tapagluh 'Mêêt and Rim make each other go outside'

Following is a list of the verb roots which have been found with *tapa-* reciprocal causative : *ayô* 'to pity', *ƀaq* 'to carry on back', *chauq* 'to tie', *chen* 'to cook', *chiat* 'to cut inanimate things', *chô* 'to return', *chóóm* 'to be able', *chung* 'to share', *daluaq* 'to push', *đơk* 'to go west', *duanh* 'to go east', *glâk* 'to carry', *gluh* 'to go outside', *huinh* 'to smell', *huaq* 'to open mouth', *hư* 'to wreck', *kiang* 'to want', *kơl* 'to buy', *luk* 'to mix', *kapuat* 'to squeeze', *lóng* 'to open', *mbiiq* 'to hit', *mót* 'to enter', *nal* 'to know', *ngguh* ,to collide', *mpoh* 'to shoot', *mut* 'to run', *rôq* 'to pull out weeds', *saruum* ,to fall', *sâng* 'to hear', *sooq* 'to flee', *sruuk* 'to slip in mud', *suuh* 'to poke', *teng* 'to scold', *têêng* 'to work', *val* 'to return', *yưah* 'to cure', *yur* 'to rise '.

1.8.2 **tapa- involuntary causative.** This prefix is a combination of *ta-* involuntary and *pa-* causative prefixes. Only a few of the verb roots which

occur with *ta-* involuntary prefix can also occur with *tapa-* involuntary causative. They include transitive and intransitive verbs. Following is a list of these roots : *hur* 'to wreck', *rââm* 'to hope', *sruuk* 'to slip in mud', *duah* 'to be able'.

ku pahur mei chen 'I cause you to break dish'
ku tahur chen 'I break the dish accidentally'
ku tapahur mei chen 'I accidentally cause you to break the dish'

A few verb roots which cannot take *ta-* simple involuntary can occur with *tapa-* involuntary causative. They are intransitive verbs of motion which are also able to occur with *tapa-* reciprocal causative but not with *ta-* reciprocal. They have the involuntary meaning 'the situation forces me to go against my will'. These verbs are the only ones occurring with the causative which do not add an extra causer slot to the construction. Instead the causer seems to be understood, the situation which causes an action to take place. Following is a list of these verbs :

val 'to return', *chô* 'to return', *mut* 'to run', *sooq* 'to flee', *duanh* 'to go east', *đo'k* 'to go west', *saruum* 'to fall', *mót* 'to enter', *diar* 'to go backwards', *gluh* 'to go outside', *ku tapagluh* 'I go outside against my will'.

taka- involuntary causative. This prefix is a combination of *ta-* involuntary and *ka-* causative prefixes. This combination has only been found with *suuh* ' to poke ' and *boq* ' to pile up '. It has not yet been found with *chet* ' to die ', although it seems reasonable to assume that it can also occur with this verb.

ku takaboq mei tho' 'I accidentally cause you to pile up letters. '

1.8.3 **tapa- adjectivized causative** is a combination of *ta-* adjectivizer and *pa-* causative prefixes. (cf 2.4,4.2.2) Both transitive and intransitive roots can occur with *tapa-* adjectivized causative. Not all verbs which occur with the simple adjectivizer can occur with the adjectivizer causative. The following verbs have been found with this combination of prefixes : *yur* ' to rise ', *chet* ' to die ', *ayô* ' to pity ', *hur* ' to wreck ', *palaang* ' to turn up ', *ngguh* ' to collide ', *mbiiq* ' to hit ', *chen* ' to cook ', *rôq* ' to pull out weeds ', *huaq* ' to open mouth ', *glâk* ' to carry ', *luk* ' to mix ', *yuah* ' to cure'.

ku payur Rim	'I make Rim rise'
ku lêi tayur Rim	'I see the risen Rim'
ku lêi tapayur Rim	'I see the made-to-rise Rim'
ku payô Rim dó	'I made Rim pity her'
ku lêi tayô Rim	'I see the pitied Rim'
ku lêi tapayô Rim	'I see the made-to-be-pitied Rim'

taka- adjectivized causative is a combination of *ta-* adjectivizer and *ka-* causative prefixes. Only the verbs *boq* 'to pile up', *suuh* 'to poke', and *chet* 'to die' have been found with this combination of prefixes.

ku kachet anuq	'I cause the dog to die'
ku lêi tachet anuq	'I see the dead dog'
ku lêi takachet anuq	'I see the made-dead dog'

1.8.4 **Adjectivized Passive.** *taha-* is a combination of *ta-* adjectivizer and *ha-* causative passive prefixes. Only the verbs *chen* 'to cook', *yur* 'to rise' *ôu* 'to put away', *vuak* 'to scatter', *looq* 'to peel', have been found with this combination of prefixes.

ku hachen aviq	'I cause rice to be cooked'
ku lêi aviq tachen	'I see the cooked rice'
ku lêi aviq tahachen	'I see the made-to-be-cooked rice'

1.8.5 **Double Causative** *paka-* in which *pa-* and *ka-* are both causative. All the verbs which occur with *ka-* causative can occur with *paka-*. (cf 1.2) An intransitive verb occurring with the simple causative adds a causer slot to the construction. To provide another causer slot in this construction another causative prefix must be added.

ku pachet anuq	I cause die dog
	'I cause the dog to die'
ku kachet anuq	I cause die dog
	'I cause the dog to die'
ku pakachet mei anuq	I cause cause die you dog
	'I cause you to cause the dog to die'

A transitive verb occurring with the simple causative prefix adds a causer slot to the construction. If another causer is added to this construction, another causative prefix must be added.

ku pasuuh mei mat I cause poke you eye
'I cause you to poke the eye'
ku kasuuh mei mat I cause poke you eye
'I cause you to poke the eye'

ku pakasuuh mei ngguai mat I cause cause poke you stick eye 'I cause you to cause the stick to poke the eye'.

1.8.6 Causative Passive paha- in which *pa* is causative and *ha-* is causative passive.

ku hayur đo'o'k 'I cause water to be raised'
ku payur Rim 'I cause Rim to rise'
ku hayur Rim 'I lift Rim when he is inert'
ku pahayur Rim đo'o'k I cause cause to be raised water 'I cause Rim to raise water'
ku pahayur Rim dó I cause cause to be risen Rim him
'I cause Rim to lift him'

1.9 Differentiation and Distribution of the Prefixes.

1.9.1 Structural Differences between the Prefixes. The nominalizer, causative, causative passive, reciprocal, adjectivizer, involuntary and purpose prefixes can be distinguished from each other structurally in the following ways. Nominalizing affixes can be distinguished from other affixes in that they are found on verb roots in noun positions.

ku ten (lo'q) tanen 'I hammer (with) a hammer'

The causative can be recognized by the addition of a causer slot.

Rim goot sok 'Rim cut hair'
Rim tagoot dó sok Rim cause cut him hair
'Rim causes him to cut hair'
Rim val 'Rim returns'
Rim pavel dó Rim causes return him
'Rim causes him to return'

The object and causer slots are not always filled but are always potential. Occurrences of the causative construction without a causer may be transformed to a construction with a causer. Following are samplings

of constructions without an object and without a causer.

Rim paval Rim cause return 'Rim causes (someone) to return'
Rim tagoot dó Rim cause cut hair him 'Rim causes him to cut (hair)'

The causative passive can be recognized by the form of the prefix and by several features distinct to this prefix. Some verbs with *ha-* add an extra slot to the construction and others do not. These constructions sometimes have a second subject which is always inert or inanimate.

ku hachen aviq I cause to be cooked rice 'I cause rice to be cooked'
ku hayur đoʊk I cause to be raised water 'I cause water to be raised'

The reciprocal can be recognized by the concurrent obligatory addition of another subject slot.

ku nal Rim 'I know Rim'
ku loʊq Rim tanal I and Rim know each other 'Rim and I know each other'
nhang tanal 'We know each other'

The adjectivizer can be recognized by its occurrence only in adjectival constructions. Adjectival constructions can be distinguished from other similar-appearing constructions by the reversability of the noun and adjective positions.

ku lêi tagoot sok 'I saw the cut hair'
ku lêi sok tagoot 'I saw the cut hair'

In an *involuntary construction, Rim lêi dó tadrâng* 'Rim saw him starving' may occur. But an involuntary construction does not have free reversability of word order to **Rim lêi tadrâng dó*, showing that it is not an adjectivizer construction.

The *involuntary*. When this prefix is added to a verb stem, there is no change in the construction.

Rim loʊi chana 'Rim throws away food'
Rim taloʊi chana 'Rim throws away food involuntarily'

The *purpose prefix*. When this prefix is added to a verb stem, there

is no change in the construction. Constructions containing the purpose prefix can be distinguished from involuntary constructions by the difference in the form of the prefix, and by the verb roots occurring with it, which are mutually exclusive with the roots occurring with the involuntary prefix.

ku sâng 'I hear'
ku kasâng 'I strain to hear'

1.9.2 Distribution of the Prefixes. Some verb roots which occur with *ta-* causative also occur with *ta-* reciprocal prefix. Following is a sampling of these verbs.

looq	'to peel'	*talooq*	'cause to peel'
		talooq	'peel each other's (banana)'
lóng	'to open'	*talóng*	'cause to open'
		talóng	'open each other's (door)'
panh	'to shoot	*tapanh*	'cause to shoot'
		tapanh	'shoot each other'
prah	'to wash hair'	*taprah*	'cause to wash hair'
		taprah	'wash each other's hair'

Only two verbs have been found able to occur with *pa-* causative, *ta-* causative, and *ta-* reciprocal prefixes. They are *mbiiq* 'to hit' and *looq* 'to peel'.

ku pambiiq Rim anuq 'I make Rim hit the dog'
ku tambiiq Rim anuq 'I make Rim hit the dog'
ku loq Rim tambiiq 'Rim and I hit each other'

The following verbs take *ta-* causative, *ta-* involuntary, *ta-* adjectivizer and *ta-* reciprocal prefixes: *looq* 'to peel', *lóng* 'to open', *lum* 'to meet', *plak* 'to break', *panh* 'to shoot', *briaq* 'to sew string on drum'.

Just as the *ta-* reciprocal and *pa-* causative prefixes are the most frequent of the simple prefixes, so the *tapa-* reciprocal causative is the most frequent of the combinations of prefixes.

2. Affixes on Adjective Roots

2.1 Nominalizer *pa-*

There are a few examples of the nominalizer converting an adjective to a noun. *pa-* is the most common form of the nominalizer, with one

example of *an-* Following is a list of the adjectives so far found occurring with the nominalizer :

kâng	'thick'	*kanâng*	'thickness'
êêp	'short'	*pa-êêp*	'shortness'
dil	'smooth'	*padil*	'smoothness'
yaal	'long'	*payaal*	'length'
glâp	'right size'	*paglâp*	'rightness of size'
deng	'right size'	*padeng*	'rightness of size'
dyâp	'enough'	*padyâp*	'sufficiency'
ƀơk	'many'	*pa ƀơk*	'many'
bơt	'all'	*pabơt*	'all'
jaaq	'costly'	*janaaq*	'cost'

The root adjective and derived noun occur together in a question sentence. The order of derived noun and root word is reversible. This contrasts with the nominalized verbs described under sec. 1.1.

mơ kâng kanâng how much thick thickness 'how thick ?'

mơ kanâng kâng how much thickness thick 'how thick ?'

Answer *kâng* 'thick'

2.2 *pa-* Causative

pa- causative occurs with most adjectives. It functions as a verbalizer and adds an object slot to the construction. (cf 1.2) Following is a sampling of adjectives with this prefix :

liam	'good'	*ku paliam katiak*	I make good ground 'I make ground good'
môôp	'bad'	*ku pamôôp katiak*	I make bad ground 'I make ground bad'
rông	'wide'	*ku parông palóng*	I make wide doorway 'I make doorway wide'
ramaq	'fat'	*ku paramaq akóón*	I make fat child 'I fatten child'
ooch	'thin'	*ku pa-ooch akóón*	I make thin child 'I make child thin'
nhơơp	'dirty'	*ku panhơơp đong*	I make dirty house 'I dirty house'

khung	'rotten'	*ku pakhung aviq*	I make rotten rice 'I caused rice to rot'
nnaq	'rotten'	*ku pannaq aviq*	I make rotten rice 'I cause rice to rot'
chariat	'cold'	*ku pachariat aviq*	I make cold rice 'I make rice cold'
tam	'black'	*ku patam nli*	I make black skirt 'I make skirt black'

2.3 tapa- Reciprocal Causative with Adjectives (cf 1,8.1)

All the adjectives so far found occurring with *pa-* causative can also occur with *tapa-* reciprocal causative.

nhang tapanhơơp đong 'we make each other's house dirty'
nhang taparamaq akóón 'we make each other's children fat'
nhang tapachariat aviq 'we make each other's rice cold'

2.4 tapa- Adjectivized Causative with Adjectives (cf 1,8.3)

All the adjectives so far found with *pa-* causative can also occur with *tapa-* adjectivized causative.

ku lêi tapanhơơp đong 'I see the made dirty house'
ku lêi taparamaq akóón 'I see the made fat child'
ku lêi tapachariat aviq 'I see the made cold rice'

2.5 Adverbalized Adjective Roots pa-, tapa-, ta-

pa- and *tapa-* may occur with adjective roots and function as adverbs.

ku chô paliam	'I return well'	*liam*	'good'
ku praaq parông	'I speak loudly'	*rông*	'wide'
ku têêng pamôôp	'I work dirtily'	*môôp*	'bad'
ku têêng panhơơp	'I work dirtily'	*nhơơp*	'dirty'
ku têêng pantua	'I work differently'	*ntua*	'different'
ku têêng payaal	'I work make long' 'I pretend to be tall'	*yaal*	'long'
ku têêng pagamak	I work make big 'I do important work'	*gamak*	'big'

ku têêng pakatwiq I work make small *katwiq* 'small'
'I do unimportant work'

Only a few of the above adjective roots can occur with *tapa-* :

ku praaq taparông 'I speak loudly'

ku têêng tapayaal I make long 'I pretend to be tall'

tambreh tambrel (root is *breh brel*) 'figured', is an adjective which can also function as an adverb.

ku ve ao breh brel 'I have a figured shirt'

Causative

ku ve ao tambreh tambrel 'I have a made figured shirt'

Adverbial

ku saraq tambreh tambrel 'I did figured writing'

3. Affixes on Adverb Roots

pa- and *ta-* on adverb roots seem to have a meaning of purpose, or of continuing action with purpose, although it has been difficult to get any firm distinction from the native informant. (cf 1.7) These adverbs occur with verbs of working, speaking, or thinking.

ku praaq padian I speak asking 'I ask' *padian* 'asking'

ku praaq tapadian 'I keep on asking'

ku praaq pachei I speak want to speak well

ku praaq tapachei 'I want to speak well' *pachei* 'want well'

ku ahââm kasuung I breathe out of breath 'I am out of breath'

ku ahââm takasuung *kasuung* 'out of breath'

ku vôiq nsiin 'I go slowly' *nsiin* 'slow'

ku vôiq pansiin ~ *ku vôiq tansiin* 'I go slowly, deliberately'

ku têêng đah 'I work quickly' *đah* 'fast'

ku têêng pađah 'I work quickly'

ku têêng jih 'I work slowly' *jih* 'slow'

ku têêng pajih 'I work slowly'

ku ahââm panhwat 'I breathe quickly' *nhwat* 'fast'

nhang vôiq jarom 'we go together' *jarom* 'together'

nhang vôiq pajarom 'we go together'

4. Affixes on Noun Roots

4.1 Nominalizer -an-

This infix gives the derived noun the meaning of 'content', 'that which is inside'. Only five instances of this have been found.

che	'a vehicle'	*chane*	'load in a vehicle'
jo'ong	'a rice house'	*jano'ong*	'load of rice in rice house'
đong	'a house'	*danong*	'household'
tróm	'purple fruit'	*taróm*	'juice of purple fruit'
tââm	'a root'	*tanââm*	'branches of root'

When the root noun and the derived noun occur together in a sentence, the derived noun immediately precedes the root noun, with no preposition between them.

ku ve chane chẹ 'I have a load on the car'
ku ve jano'ong jo'ong 'I have a rice house full of rice'
ku ve danong đong 'I have a household in the house'

4.2. Verbalizer *pa-*. *pa-* and *ta-* causative occur with nouns, converting them to verbs. There is also one occurrence of *ha-* causative passive making a noun into a verb, and one occurreuce each of *ta-* involuntary and *ta-* adjectivizer.

nhwam	'pattern on skirt,	*panhwam*	'to make pattern on skirt'
ahaam	'blood'	*pahaam*	'to cause to bleed'
alung	'silver in skirt'	*palung*	'to make silver in skirt' or 'sew silver into skirt'
akoonh	'father'	*pakoonh*	'to father, beget'
akan	'mother'	*pakan*	'to mother'
akóq	'head'	*takóq akóq*	'to bump head'
nuut	'a button'	*panuut*	'to button'
ateet	'rust'	*pateet*	'to rust'

ha- causative passive prefix with a noun :

adiiq	'wind'	*hadiiq*	'to be fanned (make wind)'

ta- involuntary prefix :

brwang	'light'	*tabrwang*	'lightning flashes'

adjectivizer prefix :

akóq 'head' *ku lêi tạkóq akóq* 'I see the bumped head'

4.2.1 Combinations of prefixes on noun roots. *tapa-* reciprocal causative which combines *ta-* reciprocal and *pa-* causative verbalizer.

nhang tapanhưạm nli 'we make a pattern on each other's skirt'

nhang tapạhaạm 'we make each other bleed'

nhang tapạlung 'we sew silver into each other's skirts'

nhang tapạnuut ao 'we button each other's shirts'

There is one example of *tata-*, which combines *ta-* reciprocal and *ta-* causative prefixes.

nhạng tatakóq akóq 'we bump each other's heads'

taha- reciprocal causative passive combines *ta-* reciprocal and *ha-* causative passive prefixes.

nhạng tahadiiq 'we cause each other to be fanned'

tapa- adjectivized causative combines *ta-* adjectivizer and *pa-* causative prefixes.

ku lêi tapanhưam nli 'I see the made patterned skirt'

ku lêi tapahaam Rim 'I see the made to bleed Rim'

ku lêi tapalung nli 'I see the made silver skirt'

ku lêi tapakoonh Rim 'I see the fathered Rim'

taha- adjectivized causative passive combines *ta-* adjectivizer and *ha-* causative passive prefixes.

ku pahadiiq mei Rim I cause to be fanned you Rim
'I cause you to cause Rim to be fanned'

4.3 Adjectivizers ta-, tapa-

Prefixes occur with a few nouns, converting them to adjectives. It is expected that more examples of the adjectivizer will be found.

adi	'younger child'	*akóón tadi*	'younger child'
tu	'top'	*akóón tapatu*	'child of 2nd wife'
tââm	'bottom'	*akóón tapatôâm*	'child of 1st wife'
tọ́r	'end'	*đong tatór*	'the end house'

4.4 One ma-

ma- is a bound allomorph of *mui* 'one', and is the most frequent affix found on nouns. It can also occur on classifiers and adjectives.

maswang	'one arm's spread'	*aswang*	'armspread'
makasė	'one month'	*kase*	'month'
madiq	'one place'	*diq*	'place'
mabeq	'one classifier'	*abeq*	'classifier'
mabing	'one full'	*bing*	'full'
masââng	'one five'	*sââng*	'five'

4.5 Pluralizer ka-

ka- occurs with a few nouns and means 'many'.

gaak	'beam'	*kagaak*	'many beams'
swq	'home country'	*kaswq*	'home country emphasizing many villages'

5. Affixes on Numbers

Prefixes are not found extensively on numbers in Katu.

5.1 Prefix ma-

ma- is prefixed to numbers, and is a bound allomorph of *mui* 'one'. Only five, ten, one hundred, which are units, can occur with *ma-*. It is the prefix most often found on numbers.

sââng	'five'	*masââng*	'one five'
jêt	'ten'	*majêt*	'one ten'
hariang	'hundred'	*mahariang*	'one hundred'

5.2 Prefix ta-

ta- can be prefixed to the numbers one. two, three, four, five, ten and a hundred. *ta-* has only been found with numbers occurring with the word 'hours', a borrowed word. The numbers seven *(tapól)*, eight *(takól)*, and nine *(takiah)*' have a *ta-* presyllable so they are not prefixed. Six *(sapat)* does not have a *ta-* presyllable and neither is it prefixed.

mui, tamui	'one'
ƀoor, ta ƀoor	'two'
pe, tape	'three'
puan, tapuan	'four'
sââng, tasââng	'five'
jêt, tajêt	'ten'
tajêt mui	'eleven'
tape jêt mui	'thirty one'
hariang, tahariang	'hundred'

When the double of a number is given or when two numbers are added together, both numbers are prefixed.

tamui tamui	'one one'	(two)
tasââng tasââng	'five five'	(ten)
tamui ta ƀoor	'one two'	(three)

5.3 Prefix ka-

ka- seems to have a meaning of 'many', emphasizing 'how many'.

kape manuih	'three people'
kapuan manuih	'four people'

Halăng Phonemes [1]

JAMES & NANCY COOPER

0. Introduction.

Halăng is a Mon-Khmer language which is spoken in Kontum Province of the Republic of Viet-Nam. Halăng people are also reported to be located north of Kontum Province and west of Kontum Province in Laos. Kơyong, a nearby dialect, is mutually intelligible with Halăng. The speakers of Kơyong live west of Daktô in Kontum Province. There are an estimated 10,000 Halăng people.

The language data for this paper was gathered over a period of one year, beginning in March 1963. Five months were spent living in the village of Plèi Khôk Hơnar, a 'new life' hamlet 15 kilometers west of Kontum City.

1. The Consonant Phonemes.

1.1 Problems of Interpretation.

1.1.1 Preglottalized Consonants and Voiceless Nasals.

The preglottalized consonants present a problem of unit/cluster interpretation. The voiced stops, nasals, and liquids (except *r*) can be preceded by glottals. The resultant preglottalized liquids (*ʔl, ʔw, ʔy*) could be interpreted as clusters following the existing well-established pattern of stop plus liquid. But the lack of an existing pattern of stop plus stop or stop plus nasal could weigh heavily toward an analysis of all preglottals

1 The assistance of David D. Thomas of the Summer Institute of Linguistics has been greatly appreciated in the preparation of this paper.

as complex unit phonemes.

The interpretation of voiceless nasals must be considered here, also. If preglottalized nasals were interpreted as units, then voiceless nasals (or *h* plus nasal) should also be considered as units. The liquids which are preceded by *h (hl, hw, hy, hr)* may be interpreted as clusters, following the pattern of consonant plus liquid. But, there is no non-suspect pattern of consonant plus nasal.

However, there are two important factors to consider. (1) A unit interpretation of preglottalized consonants and voiceless nasals would considerably enlarge the phoneme inventory. (2) *?* and *h* are a separate class of phonemes, functioning differently from all other consonant phonemes. (See Section 1.2, Description of consonants *?* and *h*.)

The question seems to be whether to interpret preglottalized consonants and voiceless nasals as units since there is no established pattern of consonant plus nasal or stop, or to postulate a new position for the *?/h* class of phonemes and thereby eliminate the eleven suspect phonemes from the chart. At this present time the latter choice seems to be the better one. The preglottalized suspect consonants (*?b, ?d, ?j, ?m, ?n, ?n̆, ?ŋ*) and voiceless nasals (*hm, hn, hn̆, hŋ*) are interpreted as clusters.

1.1.2 Aspirated Stops. Following the well-established pattern of stop plus liquid, the aspirated stops (*ph, th, kh*) could be interpreted as units, since liquids are found following aspirated stops. However by the new position postulated for *?* and *h* (see Section 1.1.1. Preglottalized Consonants and Voiceless Nasals), the aspirated stops could also be interpreted as clusters. The *h* follows the voiceless stops (*p, t, k*) but precedes the nasals and liquids.

	Bilabial	Alveolar	Alveopalatal	Velar	Glottal
Vl. Stops	p	t	c	k	
Vd. Stops	b	d	j	g	
Nasals	m	n	n̆	ŋ	
Liquids	w	l,r	y		
Post-Glottal	w?		y?		
Others		s			h,?

Chart 1. The Consonant Phonemes

A cluster interpretation better fits the language for the following reasons. First, the aspirated stops are not found in word-final position, just as no clusters are found in word-final position. Second, the stops (*p, t, k,*) and *h* are found in word-initial and word-final positions operating as independent phonemes. Third, a cluster interpretation would eliminate three more phonemes from the chart. So, the aspirated stops (*ph, th, kh*) are interpreted as clusters.

1.1.3 Consonants Followed by Glottals. *w?* and *y?* occur in word-final position. Since no clusters are found in this position, they must be treated as complex units or be considered as allophones of other phonemes.

There is the possibility of treating them as allophones of voiced stops *b* and *j*. They are phonetically similar in that they share the point of articulation and are voiced. The voiced stops never occur in word-final position and the phonemes *w?* and *y?* are found only in word-final position. This interpretation eliminates two phonemes from the chart, but it is faced with other problems. There are no counterparts for *d* and *g* in word-final position. The fact that it would symmetrize the distribution of voiced stops is offset by the fact that word-final position is not completely symmetrical. For example, *n̄* and *c*, alveopalatals, do not occur in word-final position.

In view of the foregoing, the phonemes *w?* and *y?* are being interpreted as units appearing only in word-final position.[2]

1.2 Description and Contrasts of Consonants.

(Capital letters stand for neutralization of long and short vowels before *?* and *h*).

/p/ is a voiceless bilabial stop.

p : ph *pee* 'three', *phee* 'hulled uncooked rice'

2 Since writing this paper a number of names of Halăng people have been found which have a final consonant *wh* as in *Diawh, Chiawh*. This added information indicates that the *th* which has been interpreted as an allophone of s should be listed as a complex final consonant *yh*, the complex final consonants being *w?*, *y?*, *wh*, and *yh*. This analysis is also supported by the fact that alveopalatals do not occur in word-final position.

p : b *pak* 'to break', *bak* 'to put on'
p : ?b *pee* 'three', *?bee* 'not'

/t/ is a voiceless alveolar stop.

t : th *tak* 'sound of shooting', *thak* 'to stub toe'
t : d *tak* ,, *dak* 'spear trap'
t : c *tak* ,, *cak* 'body'
t : ?d *tòoŋ* 'small house in rice field, *?dòoŋ* 'military camp'

/c/ is a voiceless alveopalatal stop.

c : t *cak* 'body', *tak* 'sound of shooting'
c : j *cak* 'body', *jak* 'to move'
c : s *cak* 'body', *sak* 'sack'
c : ?j *cAh* 'difficult to cut', *?jrAh* (*?jrÌh ?jrAh*) 'scattered'

/k/ is a voiceless velar stop.

k : kh *kaa* 'fish', *khaa* 'expensive'
k : g *kal* 'need', *gal* 'enough'
k : ? *kal* 'need', *?al* 'numerous'

/b/ is a voiced bilabial stop.

b : p *bak* 'to put on', *pak* 'to break'
b : ?b *bOh* 'salt', *?bOh* 'to dull a knife'

/d/ is a voiced alveolar stop.

d : t *dak* 'spear', *tak* 'sound of shooting'
d : ?d *dok* 'monkey', *?dok* 'read'
d : r *hàdoŋ* 'winnowing basket', *hàroŋ* (*hàrii hàroŋ*) 'lots of work'

/j/ is a voiced alveopalatal stop.

j : c *jak* 'to move', *cak* 'body'
j : ?j *jAh* 'have', *?jrAh* (*?jrIh ?jrAh*) 'scattered'
j : d *jaŋ* 'if', *daŋ* 'to look for'

/g/ is a voiced velar stop.

g : k *gal* 'enough', *kal* 'need'
g : ? *gal* 'enough', *?al* 'numerous'

/m/ is a voiced bilabial nasal

m : hm *mA?* 'don't', *hmA?* 'to be acquainted with'

m : ʔm *mA?* *ʔmA?* 'to rescue from water'

/n/ is a voiced alveolar nasal.

n : hn *noo* 'term for calling children', *hnoo* 'repeat'

n : ʔn *naaw* 'more', *ʔnaaw* 'new'

n : n̰ *hànuk* 'happy', *hàn̰uk* 'beads'

n : ŋ *hànuk* 'happy', *hàŋuk* 'pile of leaves'

/n̰/ is a voiced alveopalatal nasal.

n̰ : ʔn̰ *n̰aŋ* 'loudly', *ʔn̰aŋ* 'bitter'

n̰ : n *hàn̰uk* 'beads', *hànuk* 'happy'

n̰ : ŋ *hàn̰uk* 'beads', *hàŋuk* 'pile of leaves'

/ŋ/ is a voiced velar nasal.

ŋ : ŋʔ *ràŋoat* 'quiet', *màʔŋoat* 'hungry'

ŋ : n *hàŋuk* 'pile of leaves', *hànuk* 'happy'

ŋ : n̰ *hàŋuk* 'pile of leaves', *hàn̰uk* 'beads'

/w/ is a voiced bilabial rounded vocoid.

w : h *waa* 'third dual pronoun', *haa* 'to open mouth'

w : y *waa* 'third dual pronoun', *yaa* (*bEh yaa*) 'water snake'

w : p *wàk* 'mango', *pàk* 'to pierce'

/l/ is a voiced alveolar lateral.

l : ʔl *lEh* 'time', *ʔlEh* 'burned with fire'

l : r *lEh* 'time', *rEh* 'pluck a guitar'

/r/ [r̰] is a voiced alveolar trill. It occurs only as the initial or final consonant of a word.

[r̆] is a voiced alveolar flap. It occurs only between vowels or in consonant clusters.

r : l *rEh* 'to pluck a guitar', *lEh* 'time'

r : y *raa* (*ree raa*) 'terrified', *yaa* (*bEh yaa*) 'water snake'

r : w *raa* (*ree raa*) 'terrified', *waa* 'third dual pronoun'

r : d *hàroŋ* (*hàrii hàroŋ*) 'lots of work' *hàdoŋ* 'winnowing basket'

/y/ is a voiced palatal vocoid.

y : r *yaa* (*bEh yaa*) 'water snake', *raa* (*ree raa*) 'terrified'

y : ? y *yaw* 'insect', *?yaw* 'female animal'

y : y ? *braay* 'thread' *braay ?* 'tired'

/w?/ is a voiced bilabial rounded vocoid followed by a glottal. /w?/ occurs only in word-final position.

w ? : w *chaaw?* 'rice soup', *chaaw* 'burn'

/y?/ is a voiced palatal vocoid followed by a glottal. /y?/ occurs only in word-final position.

y ? : y *braay ?* 'tired', *braay* 'thread'

/s/ [s] is a voiceless alveolar fricative which occurs in word-initial and word-medial positions.

[yh] is a voiceless alveopalatal fricative which occurs only in word-final position.

s : c *see* 'vehicle', *cee* 'do'

s : t *see* 'vehicle', *tee* 'kind of trap'

yh : h *jayh* 'bamboo spear trap', *jAh* 'have'

yh : h *jayh* 'bamboo spear trap', *jay* 'happy sound'

/h/ is a voiceless glottal fricative.

h : ? *haak* 'vomit', *?aak* 'crow'; *lAh* 'to come', *lA?* 'a lean-to'

h : s *haa* 'open mouth', *saa (saa tàlùum)* 'name of wood'

h : yh *jAh* 'have', *jayh* 'bamboo spear trap'

/?/ is a voiceless glottal stop.

? : k *sA?* 'natural', *sak* 'sack'; *?al* 'numerous' *kal* 'need'

? : # *lA?* 'a lean-to', *laa* 'leaf'

? : h *?aak* 'crow', *haak* 'vomit'; *la?* 'a lean-to', *lAh* 'to come'

? and *h* form a separate class of phonemes, since they act differ-

ently from all other consonant phonemes. (1) Long and short vowels are neutralized before word-final *ʔ* and *h*. (2) Free alternation occurs between word-initial *ʔ* and *h* in a presyllable. *(hàtEh, ʔàtEh* 'speak') (3) Nasalization of vowels usually occurs in an environment of *ʔ* and *h*. (See Section 3.2 Description of Nasalization)

2. Consonant Patterns and Positions.

A word may consist of one or two syllables. There are two types of syllables: the 'main syllable' and the 'preliminary syllable'. The 'main syllable' receives the heavier stress and has a maximum pattern of GCLVC. (*G* stands for glottals, *ʔ* and *h*; and *L* stands for liquids *w, l, r, y.)* The 'preliminary syllable' receives the lighter stress and has a pattern of CV or CVC (sometimes GCLVC when there is reduplication) in which the vowel is usually a mid-central vocoid. The phonological word then may be defined as a unit consisting of only one main syllable with or without a preceding preliminary syllable.

The general maximum pattern of the word is:
$C_1\ V_1\ C_2.\ G\ C_3\ L\ V_2\ C_4.$

2.1 Preliminary Syllable.

The preliminary consonant position (C_1) is usually filled by a single consonant. All consonant phonemes are found in this position except *wʔ* and *yʔ*, which occur only in word-final position. But when consonant clusters and the single consonants *n*, *n̆*, ŋ, *l*, *w*, *y* occur, they are a reduplication of the initial consonants of the main syllable. Voiced stops occur only when voiced consonants or *ʔ* and *h* are found initially in the main syllable.

The second position of the preliminary syllable (C_2) is usually filled by ŋ. When reduplication occurs, the (C_2) position may be filled by t, ʔ, l, h, but most often by ŋ and *k*.

2.2 Main Syllable.

The main syllable begins with one, two or three consonants. The class of *ʔ* and *h* (G) appears in cluster with stops, nasals and liquids. The *ʔ* precedes the voiced stops (*b, d, j)*, the nasals *(m, n, n̆,* ŋ*)*, and the liquids (*l, y, w*). The *h* is found before nasals, before the liquids, and

following the voiceless stops (*p, t, k*).

The main consonant position (C_3) may be filled by voiceless stops, voiced stops, nasals and *s*. The liquids (L) occur singly, or as last members of clusters.

The consonants occuring at the beginning of the main syllable may be shown as follows :

(G)	(C_3)	(L)
ʔ, h	p, t, c, k	w, l, r, y
	b, d, j, g	
	m, n, n̄, ŋ	
	s	

c, g, and *s* are not found in cluster with the phonemes *ʔ* and *h*. The distribution of the liquids is not complete, but all are found following *h*.

The word-final position (C_4) may be filled by all consonants except *c* and *n̄*, and voiced stops. Peculiar to this position are the phonemes *wʔ* and *yʔ*.

Consonant clusters are not found in word-final position, but when *m, n, ŋ,* and *l* occuur in word-final position, each is preceded by a non-phonemic lenis voiced stop at the same point of articulation. When a nasal is found elsewhere in the word, the voiced stop is dropped before the final nasal ; but the voiced stop always precedes the *l*. Examples : *hàŋ* [hàgŋ], ' burning sensation ', *n̄àŋ* [n̄àŋ] ' hear ', *tuul* [tuudl] 'to fall down ', *nuul* [nuudl] ' not hear '.

3. The Vowel Phonemes.

3.1 Problems of Interpretation.

The vowels have five contrastive points of articulation — two front, two back and one central. Except for the central vowel, at each point of articulation there occurs a three-way contrast — short, long and breathy-long. With the central vowel (*a*), there is a four-way contrast — short, breathy-short, long and breathy-long. Glides also occur ; the front and back vowels glide to the central vowel. Contrastive breathiness occurs with the two high glides. This gives a total of twenty-two contrastive vowels. (See Chart 2).

Breathiness, which is peculiar to this language, may be treated as a suprasegmental feature since it does not significantly change the articulation of the vowels. This eliminates eight vowel contrasts from the total phoneme count. (See Chart 3).

Length is another characteristic of the vowels which can be treated as a suprasegmental feature. Length occurs with *i, e, a, u, o,* and this eliminates five more vowel contrasts from the basic phoneme count.

The chart is then left with vowels *i, e, a, u, o,* and the glides *ia, ea, ua,* and *oa*; length and breathiness are suprasegmental features.[3] (See Chart 4.)

	Front	Central	Back
High	i, ii, ìi, ia, ìa		u, uu, ùu, ua, ùa
Low	e, ee, èe, ea	a, à, aa, àa	o, oo, òo, oa

Chart 2. Twenty-two Vowel Analysis

	Front	Central	Back
High	i, ii, ia		u, uu ua
Low	e, ee, ea	a, aa	o, oo, oa

Suprasegmental: breathiness (ˋ)

Chart 3. Fourteen Vowel Analysis

	Front	Central	Back
High	i, ia		u, ua
Low	e, ea	a	o, oa

Suprasegmental: breathiness (ˋ)
length (double vowel)

Chart 4. Nine Vowel Analysis

3.1.1. Vowels before *ʔ* and *h*. Long and short vowels are neutralized before word-final *ʔ* and *h*.

3.1.2 Vowels in Open Syllables. In open main syllables, only long

3 The next step in this progression is a five-vowel analysis. The suprasegmental features would consist of breathiness, length and offglide. However, this analysis has not been chosen.

vowels and high glides occur. *à* is also found in open syllables but only in clitics.

3.2 Description and Contrasts of Vowel Phonemes. (See Chart 4.)

/i/ [i] is a voiced high-front close unrounded vocoid appearing when the vowel is long and when it is contrastively breathy. [i] also appears before word-final *?* and *h*.

[ɪ] is a voiced high-front open unrounded vocoid appearing when the vowel is short. Before consonants *p*, *t* and *k*, [ɪ] is slightly breathy.

i : ii : ìi *liŋ* 'think', *liiŋ* 'to cry out', *lìiŋ* (*luŋ lìiŋ*) 'flood.'

/e/ [e] is a voiced mid-front close unrounded vocoid appearing when the vowel is long. It also appears before word-final *h* when the vowel is non-breathy ; and before word-final *y*.

[ɛ] is a voiced mid-front open unrounded vocoid appearing when the vowel is short. It also appears before word-final *?*, and before word-final *h* when the vowel is breathy.

e : ee : èe *leŋ* 'strong', *leeŋ* 'to hate', *lèeŋ* 'name of woman'.

/a/ [ə] is a voiced mid-central unrounded vocoid, and appears only when the vowel is both short and breathy.

[a] is a voiced low-central unrounded vocoid, appearing elsewhere.

a : aa : àa *taŋ* 'side', *taaŋ* 'in place of', *tàaŋ* 'to beat a drum'.

a : à : aa *daŋ* 'look for', *dàŋ* 'finished speaking', *daaŋ* 'fruit'.

/u/ [u] is a voiced high-back rounded vocoid.

u : uu : ùu *puŋ* 'to fall', *puuŋ* 'to speak much', *pùuŋ* 'name of man'.

/o/ [o] is a voiced mid-back rounded vocoid appearing when the vowel is short, and when the vowel is long in open main syllables. It also appears before word-final *w*.

[ɔ] is a voiced low-back rounded vocoid appearing when the vowel is long, and when the vowel comes before word-final *?* and *h*.

([ɔ] appears in open main syllables in five words—two Vietnamese loan words, one name, and two seemingly Halăng words. Because of such a few occurrences in open main syllables, [ɔ] is not made a separate phoneme from [o].).

When breathiness accompanies the vowel *o*, the [o] has less roundness.

o : oo : ò*o* *sok* 'hair', *sook* 'name of woman', *sòok* 'happy'.

/ia/ [iə] is a voiced high-front close unrounded vocoid glided to a voiced mid-central unrounded vocoid.

ia : ìa *jian* 'friend', *jìan* 'to become'.

/ea/ [ea] is a voiced mid-front close unrounded vocoid glided to a voiced low-central unrounded vocoid.

/ua/ /uə] is a voiced high-back rounded vocoid glided to a voiced mid-central unrounded vocoid.

ua : ùa *jua?* 'a step', *jùa?* 'sour'

/oa/ [oa] is a voiced mid-back rounded vocoid glided to a low-central unrounded vocoid.

Further contrasts :

i : e : a : u : o	*din* 'bamboo pipe', *'den* 'near', *da*$_{\eta}$ 'to look for', *dun* 'a name', *don* 'to help'
ia : ea : ua oa	*tian* 'black wood', *tean* 'to oommand', *tuan* 'to inquire', *toan* spear'

/Breathiness/ A distinctive feature of the Halăng language is the breathiness which occurs with the vowel phonemes. The Halăng describe the vowel quality as *bròon* meaning 'having undertones' or 'dark sounding', as distinguished from *kliin* meaning 'shrill' or 'clear'. The words *bròon* and *kliin* are both used to describe the quality of talking, singing, and the sounding of musical instruments—gongs, flute and xylophone. This *bròon* vowel quality parallels the 'deep vowel' of the Jeh language and the laryngealization of the Sedang language, two neighboring languages.

Phonetically, there is less vibration in the vocal cords but with more oral resonance, and there is increased pressure from the diaphragm.

/Length/ Length occurs with vowels *i, e, a, u, o.*

/Nasalization/ Nasalization of vowels occurs very infrequently but it is

contrastive. When it occurs, it is usually in the environment of an *h* or a *ʔ*, and the *h* or *ʔ* may precede or follow the vowel. Most of the nasalized words are onomatopoeia describing sounds or the cries of animals.

Examples: *màhǫ̣al* 'spirit', *tǫ̣h hǫ̣h hǫ̣h* 'sound of coughing'.

4. Vowel Patterns and Positions.

The general maximum pattern for the word is:
$C_1V_1C_2$. G C_3 L V_2C_4.

4.1 Preliminary Syllable.

The first vowel position (V_1) is filled by one vowel — *à*. It is a total neutralization of all points of vowel articulation. When reduplication is present, any short vowel (*i, e, a, u, o)* may occur.

4.2 Main Syllable.

The second vowel position (V_2) may be filled by all vowel phonemes, but with the following limitations.

(1) *e* and the front glides *(ia, ea)* do not occur before word-final *s*.

(2) à does not occur before #, *ʔ, h, w, wʔ, y, yʔ*.

(3) *ea* does not occur before word-final *y*.

(4) *oa* does not occur before word-final *w*.

(5) *ua* and *ùa* do not occur before *w* and *wʔ*.

(6) *ea* and *oa* do not occur before #, *ʔ, h, wʔ, yʔ*.

Checking Vowel Contrasts by Rhyming

DAVID D. THOMAS

Complex vowel systems such as are frequently found in Vietnam require more refined methods than just simple hunting for minimal pairs in order to establish phoneme indentities and contrasts. Random minimal pairs are deceptive, as the whole system may change form in different environments. [1] My own work on Chrau phonology could have been shortened by a couple of months if I had used a rhyming method from the start, rather than relying on minimal pairs.

Rhyming methods were started independently by two or three investigators in Vietnam, but were refined into a useful tool especially by Richard Phillips in his work on Hrê, Sedang, and Brôu.[2]

The rhyming method is based on the principle that a total system must be seen in a single frame, as different frames may produce different systems. Ideally this would require that a full vowel set be found in every minimal environment. But this is an impossible requirement. To find a full set of 20-40 vowels (or vowel sequences) in just a single minimal environment seems nearly impossible, [3] much less can thay be found for every environment. In order to compensate for this lack of minimal sets, quantity of semi-contrastive material is substituted analytically for the quality of minimally-contrastive sets.

It has been observed that the final consonants in the monosyllabic or semi-monosyllabic languages of Vietnam usually have more effect on the vowel system than do the initial consonants.[4] Final consonants are

1 Cf. David Thomas, 'Remarques sur la phonologie du Chrau', *Bull. Soc. Linguistique* 57 : 175-91 (1962) ; also Dwight Gradin, 'Consonantal Tone in Jeh Phonemics', in this volume ; and Eva Burton, Nancy Costello, & Judy Wallace, 'Katu Phonemes', to be published. Note the five consonant systems given for Palaung in H.L. Shorto, 'Word and Syllable Patterns in Palaung'. *BSOAS* 23 : 552-53 (1960).

2 Unpublished. The principle is of course not new. James Cooper has called to my attention the Chinese rhyme book *Ts'ie yun* of 600 A.D. (cf. Karlgren, *The Chinese Language*, p.35.)

3 The contrastive set given by Watson for Pacăh is the nearest to a full min^{im}al s^{et} that has been reported yet. Richard Watson, 'Pacăh Phonemes', in *Mon-Khmer Studies I*, pp. 135-48 (1964).

4 The customary Chinese distinction between initials (initial consonants) and finals (vowels and final consonants) reflects this same close-knit dependency between vowels and final consonants.

usually fairly simple and unambiguous. So assuming that the initial consonants will have relatively little effect on the total vowel system, we identify and contrast vowels in sets in terms of the final consonants with which they occur. Vowel shiftings, neutralizations, and system changes can then be kept under control. Occasional cases where initial consonants affect the vowel analysis will usually show up fairly plainly. The simple general procedure is as follows :

Prepare a looseleaf notebook in which every presumed vowel phoneme is combined with every final consonant, one combination per page, then alphabetize these in terms of the final consonant : *a, e, ê,... ɯ, ah, eh, êh,... ɯh, ak, ek...* etc. (Tonal languages would have to take tones into account, though tones would be less apt to alter the vowel system.) Enter all words on these pages according to their presumed vowel and final consonant, then check with an informant. Have the informant repeat the words in pairs or groups, while the investigator listens carefully to make sure that the vowel is identical. Occasionally contrast them wih words from lists containing neighboring vowels, lest false distinctions be made. Be ready to discard or add pages as the rhymes indicate. When several words have been adjudged to have the same rhyme, have them repeated immediately after each other with as little interruption as possible. (The shorter the time between words, the easier it is to hear the contrasts.)

Most informants seem to get the hang of this procedure quite readily, so that after a couple of sessions of the linguist having to make the same/different decisions the informant can often start identifying sames and differents himself, or can pick out the one in a set of key words which it rhymes with. If on rechecking on different days the informant is consistent in his responses, and the linguist's ear corroborates those responses, it would give confidence that the informant has really caught on to what he is doing, and this can speed up the whole process considerably, with just occasional rechecking. Judgments of a native speaker are more reliable than judgments of a linguist. Rhyming should be rechecked frequently, as first judgments are often erroneous. Even the informant's first judgments are sometimes erroneous. But with frequent rechecking as new words are added, any questions should resolve themselves

It is best to stick with one final consonant, checking out its fult vowel set, before going on to another consonant. It is easiest to start with the consonant having the highest frequency of occurrence, as thel

larger the number of words available the surer final results. (We have observed in our languages here that velars often have both the highest frequency of occurrence and the largest set of vowel contrasts.)

This same process will have to be repeated for each final consonant. It seems to be most normal that consonants at the same point of articulation take the same set of vowel phonemes. The environments (final consonants) with the largest number of differentiated vowels would be used as the basis for setting up the basic vowel phonemes, and the other environmental sets can usually be harmonized with this by appeal to neutralization and defective distribution. (cf. 'Pacŏh Phonemes' p.137, 'Remarques Chrau' pp. 178-83). A rhyming procedure *per se* does not give a total phonemic solution, but it brings the distributional data into sharp focus, on the basis of which the phonemic decisions can be made.

Investigators should be starting to line up rhyme sets by the time they have a 200-word vocabulary, but preliminary vowel phoneme identifications can't be made with any confidence with anything less than a 1000-word vocabulary (The larger the vocabulary the more also the minimal pairs forcing contrasts into attention.) Final phonemic decisions would probably not be safe with less than a 3-4,000 word vocabulary.

It is recommended that the looseleaf rhyme book be maintained as an exhaustive listing of vocabulary items and be occasionally rechecked until the investigator has at least 5-6,000 words and can correctly identify vowel phonemes on first careful hearing. Some members of the Summer Institute of Linguistics in Vietnam have put their full dictionary descriptions in rhyme book form as a reverse dictionary, making that their permanent record of glosses and definitions as well as of form.

This outlined procedure attempts to balance the roles of linguits and informant to give maximum reliability. The informant initially knows nothing of theoretical phonetics or phonemics, and the linguist's ear is initially not tuned to the special phonetics and phonemics of the language. Taking advantage of the abilities of both helps speed and reliability.

The rhyming method has been found essential to analysis in most

Vietnam languages, particularly those of the Mon-Khmer family with complex vowel systems. (Reported vowel systems in Vietnam Mon-Khmer languages range from 15 to 40 contrastive units [5]). For languges with simpler vowel systems the detailed rhyming would not be necessary.

5 E g. Brôu 41 vowels, Pacŏh 30, Katu 25, Jeh 20, Sedang 33, Halang 22, Bahnar 15, Koho 15, Chrau Jro 17, Mnong Bunor 14.

The pronoun system of Uon Njuñ Mnong Rolom

HENRY AND EVANGELINE BLOOD

1. Introduction.

Mnong Rolom is a dialect of Mnong, which in turn is a member of the Mon-Khmer language family.[1] It is spoken in Lac Thien district, Darlac Province, Vietnam. There are approximately four thousand speakers of the dialect. The 'Uon Njuñ'[2] sub-dialect is spoken by about a thousand people in the general vicinity of the district center.

2. The Pronouns and Pronoun Pluralizers.

2.1. Pronouns.

The pronoun system of Uon Njuñ Mnong Rolom is composed of

1 The material for this paper was obtained during our two years of residence in Lac Thien district, South Vietnam.

2 This name is given because it was the name of the village of the language teacher. It is not an official name.

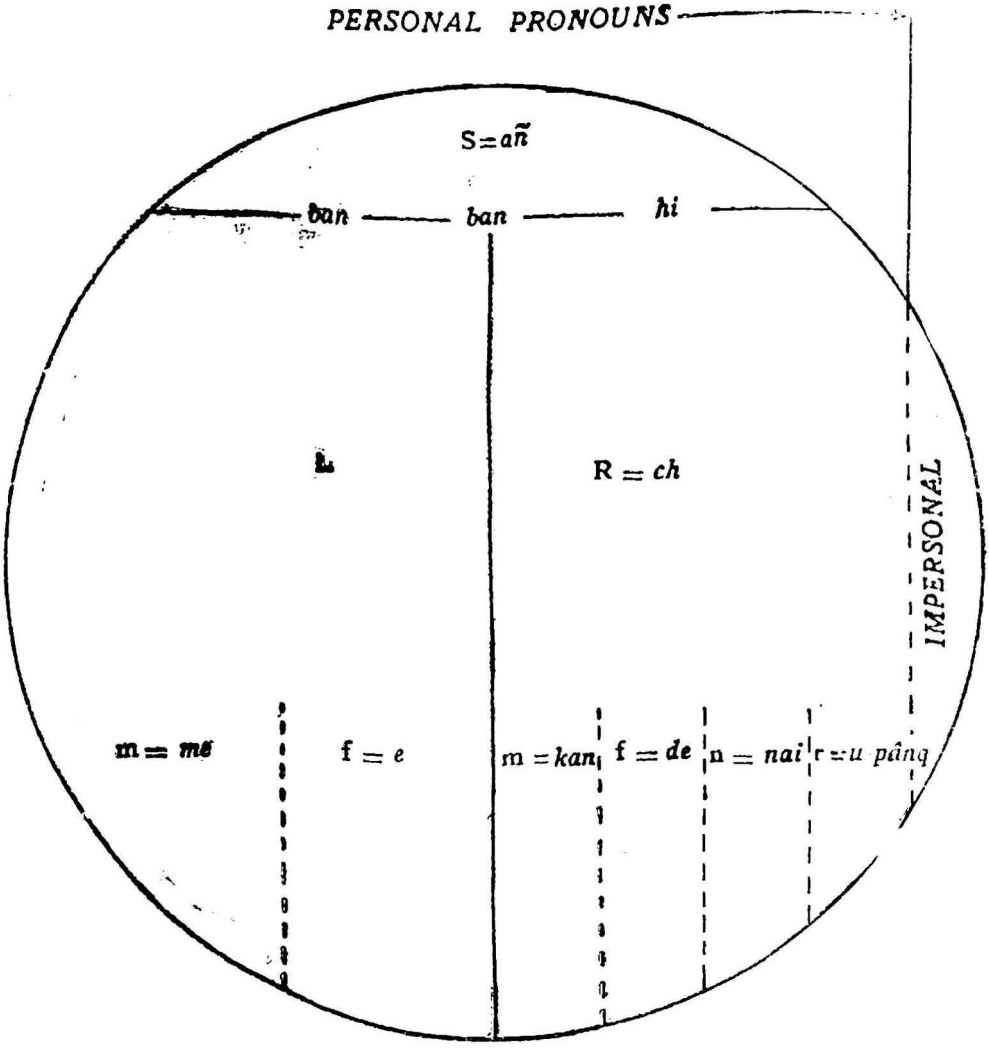
The consonants of Mnong Rolom, as represented in this paper, are: voiceless stops: p, t, c, k, glottal stop is indicated by breve/◡/ over a vowel; voiced stops: simple; b, d, j, g; prenasalized: mb, nd, nj, ngg; preglottalized: ɓ, ɗ, ɗj; nasals: m, n, ñ, ng; liquids: l, r; semivowels: w, y; fricatives: s, h. The vowels are (from high to low): front: i, ĭ, ie/iə (glided), ê, e; central: ɯ, ă, ơ, a and â (with ɯ, ă and a phonetically short and ơ and â phonetically long); and back: u, ŭ û, uo/ua (glided), ô, o.

ten pronouns and two pluralizers. The ten pronouns represent the three principal person components of *Speaker, Listener,* and *Referent.*

Listener is further sub-divided in to *masculine* and *feminine.*

The *Referent* component is represented by those pronouns which refer to someone or something other than the speaker or listener(s). The general *Referent* pronoun is *eh. Referent* is further subdivided into *masculine, feminine, special respect,* and *non-specific.*

The relationship of the Uon Njun̄ pronoun system to the semantic components it represents may be shown by the following diagram



S = Speaker L = Listener R = Referent m = masculine f = feminine r = special respect n = non-specific.

The solid lines on the chart divide the three principal person components. The dotted lines separate subdivisions of these components. Forms found on the line include the person components on both sides of that line.

The pronouns are as follows:

an̄— 'I', (S). Speaker

ban- 'we all' (inclusive), (S + L ± R). This word refers obligatorily to the speaker and listener(s), and optionally to referent(s) other than these but referred to as belonging in the same group.

hi— 'we' (exclusive)' (S+R). This word refers to the speaker and referent(s) (his companions or his group—not necessarily present). It will be noted that the only distinction between *hi* and *ban* is that *hi* excludes Listener.

me— 'you' (masculine), (Lm). Masculine Listener.

e— 'you' (feminine), (Lf). Feminine Listener. This pronoun is also used in addressing all non-human members of the animal kingdom, both male and female. This latter use occurs principally in myths and legends.

eh— 'he/she/it/they', (R). *Eh* is the general Referent. It is non-distinctive as to gender and number, personal or impersonal. However, since it is the only pronoun which may be used impersonally, its principal use is in reference to animals and things.

It is also sometimes used to refer to children, and, less frequently, to adults. A common instance of the latter use is by parents or grandparents in reference to their children or grandchildren. It may also be used personally for variety or simplicity where the referent is clearly known to the listener. (e.g. *An̄ sak bak eh hau.* I go with it here='I go with him/her.')

Bal Yuon tang mhŏ ndang eh tơm. Group Vietnam together do among themselves = 'The Vietnamese did it among themselves.'

kan— 'he', (Rm). Masculine Referent.

de— 'she', (Rf). Feminine Referent.

u-pâng ~ *pâng*^{3}— 'he/she/it', (Rr). Special respect Referent. This word carries a connotation of respect, pity, or endearment for the referent. (e.g., *u-pâng* was sometimes used in Bible translation in reference to the

apostles, sometimes, by implication, of the Lord, *Dan bĕ lai han u-pâng mra an ta bơ me.* Ask, command particle, and he shall give to you-all = 'Ask and it shall be given you.' *U-pâng kuon nai han jham ngan.* He child people there gravely-ill very = 'The child of those people is very gravely ill'. *U-pâng gơm.* 'He smiles.' (said of a baby.)

nai— '(other) person(s)'. Non-specific personal Referent. This word is not only non-distinctive as to gender number, but it is also non-specific in that the referent is frequently unknown to the listener. Sometimes *nai* is used primarily because this *non specific* aspect is in focus. For example *Nai lah,* 'They say' or *Ăn mhŏ brua nai,* 'I do work for somebody'. This use of *nai* is very common as it often avoids much involved explanation. Another Common use of *nai* in which its non-specific character is in focus, is as the subject of a verb in expressions equivalent to those employing the passive voice in other languages (e.g., *Nai troh ăn,* somebody send-out me = 'I was sent.')

Sometimes the *personal* character of *nai* is in focus. It is then used to indicate that which pertains to people in contrast to that which does not. For example, domestic birds and animals are frequently referred to as being owned by *nai. (yo nai,* 'domestic elephant' stands in contrast to *yo bri,* 'forest elephant'). *Hih nai* could be used to distinguish a 'people house' from a house used for storing rice or for other purposes.

Sometimes the fact that *nai* represents a *referent* other than the speaker or listener(s) or their group is what is in focus. With this connotation, *hih nai* would be used primarily to distinguish an 'other people house' from 'my/our house'. Some expressions such as *sai nai* 'other person's husband' or *uon nai* 'other people's village', would almost always be used with this connotation, as their personal reference is taken for granted. Most things owned by the Vietnamese or other 'foreigners' are referred to a being owned by *nai* (e.g, *Ăn hao deh nai.* I ride vehicle people = 'I ride other people's vehicle.' *ăn rout djŭ nai.* 'I buy other people's tobacco.')

2.2 Pronoun Pluralizers.

The general pluralizer is *bơ.* It is used with all pronouns which are distinctive as to gender, occurring before the pronoun which it pluralizes.

bơ me— 'you all' (masculine), (P Lm). Plural masculine Listener. This expression refers to two or more male listeners or a mixed group with the male listener(s) in focus.

bơ e— 'you all' (feminine), (P Lf). Plural feminine Listener. This expression refers to two or more female listeners or a mixed group with the female listener(s) in focus. It is also used for animals in a manner parallel to *e*.

bơ kan— 'they' (masculine), (P Rm). Plural masculine Referent. This expression represents two or more masculine referents or a mixed group with the masculine referent(s) in focus.

bơ de- 'they' (feminine), (P Rf). Plural feminine Referent. This expression represents two or more feminine referents or a mixed group with the feminine referent(s) in focus.

The special respect pluralizer is *hin*. It is used only following the special respect Referent pronoun *u-pâng*[3].

3. Relationship of bal to the Pronouns.

One word, which, while not a pronoun itself, is frequently closely associated with the pronouns, is *bal*, 'group'. Because of the similarity of meaning between such expressions as *bal kan*, which we have glossed as 'his group' and *bơ kan*, 'they' (masculine), *bal* might at first appear to be an alternate from of *bơ*. This appearance is heightened by the fact that, with one possible exception,[4] we have never yet discovered *bal* as

3 The forms *u-pâng* and *pâng* are in free variation. *U-pâng* is the more common. In the plural the common from is *pâng hin*.

4 The one possible exception which we have mentioned is not a clear-cut one. It occurs in the sentence : *Bal sak wơ-wang han dâng bơ Yuk Uon Ndham truh ta Yuk Uon Ndâng Krieng.* (group go hunting there from Uon Ndham mountain to Uon Ndâng Krieng mountain). 'They went hunting from Uon Ndham to Uon Ndâng Krieng.' *Bal sak wơ-wang han* would normally be taken to be the subject of the sentence since the expression ends in *han* (that/there) a word which frequently co-occurs with *bal* in noun expressions. However, with this interpretation the sense of the sentence would be 'that group who went hunting from U.N. to U.N.K.' lacking a predicate. The best interpretation of the sentence then would seem to be : 'The group went hunting there from U.N. mountain to U.N. K. mountain', with *han* there as a place expression expanded by the following *dâng bơ... truh ta...* expression. ('from... to...').

the only member in a subject or object expression. Furthermore informants insisted that *bal kan* and *bo' kan* were essentially the same, but admitted that *bal bo' kan* would generally be used in reference to a rather large group.

The form *bal bo' kan* shows that *bal* is not simply an alternate form of *bo'*. The fact that *bal*, unlike *bo'*, may precede all the pronouns substantiates this.

That *bal* is not simply a pronoun pluralizer is shown by the fact that, whereas *bo' kan* may refer to as few as two people with no individual in focus, *bal kan* refers to a minimum of three people with one person in focus.

Also *bal* may be used in many constructions other than pronoun expressions. *Bal han*, mentioned above, is an example of one such expression. Other examples are: *bal yuon*, group Vietnam = 'Vietnamese'. *bal lưt jâng ti* group missing leg arm = 'amputees', *bal yük cuor*, group mountain land = 'tribal people'.

Bal han is frequently used in place of *bo' kan* or *bo' de* when gender is not in focus. Some sub-dialects have a pronoun *hên* which is equivalent to the phrase *bal han*.

4. Usage.

All of the pronouns can be used as subject, object or possessor.

4.1 Subject Pronoun Position.

The position of the subject pronoun may be either before or after the verb expression.

A. *Subject Pronoun Before the Verb.*

When there is an action verb, the subject pronoun occurs before the verb, except in cases of emphasis or politeness.

Ieo e lang siem de Cindy. Now you (fem.) make eat her Cindy = 'Now you feed Cindy.' This sentence also illustrates the optional occurrence of the masculine or feminine Referent pronoun preceding the proper name.

B. *Subject Pronoun After the Verb.*

In certain polite expressions, the pronoun subject comes after the verb.

Luor me. Be-first you (masc.) = 'You go first.'

Plă e dĭ to. Return-home you (fem.) unanalyzed form, polite particle = 'Goodbye.'

C. *Subject Pronoun Either Before or After the Verb.*

Certain verbs occur always, or almost always, preceded by the pronoun *eh.* In such expressions, *eh* plus the verb act as a unit verbal expression. Verbs with *eh* and certain other stative verbs may have the subject pronoun either before or after the verb.

Eh so'-sŏ̂ an. It lost-way I = 'I lost my way.'

An eh so'-sŏ̂. I it lost-way = 'I lost my way.'

Ar ngan an. tired very I = 'I am very tired.'

An ar ngan. I tired very = 'I am very tired.'

In such expressions, the more common order is the subject pronoun to follow the verb.

D. *Subject Pronoun both Before and after the Verb.*

To give special emphasis to the fact that the subject is the actor, the subject pronoun is repeated after the verb. Usually the pronoun occurs both before and after the verb, but in rapid speech, the first pronoun is frequently unstressed or omitted altogether.

An peh an. '*I* pound.'

An ƀ *ah an, me* ƀ *ah me.* 'I row myself and you row yourself.'

3.2 Direct Object Pronoun Position.

All of the pronouns can be used as direct object of the verb. The position of the direct object pronoun is normally post-verb, but sometimes the object pronoun is placed before the subject if the object pronoun is more in focus than the action of the verb.

Sau kap kan. (dog bite him) 'The dog bit him.'

Kan sau kap. (him dog bite) 'He is the one that the dog bit.'

Post-verb subjects and post-verb objects can be distinguished only by context. They always occur singly, never together.

Jut an. 'Wipe me.'

An jut. 'I wipe.'

(*An*) *jut an.* '*I* will wipe.'

3.3 Position of Pronouns as Object of Preposition.

Pronouns as objects of the preposition come after the preposition.

Ãn khơn ta me. (I like to you) 'I like you.'

De sak bak kan. 'She goes with him.'

3.4 Possessive Pronoun Position.

All of the pronouns can be used as possessor. They occur after the possessed noun, either alone or in combination with possessive indicators and/or *tơm*, 'own/self.'

A. Alone.

Ãn sak mdrao kuon nai. (I go medicine child their) 'I go to give medicine to their child.'

B. In combination with *dî* or its allomorph *jî (jî* usually follows *ãn*, *dî* follows all other nouns and pronouns). *Dî* and *jî* are possessive indicators.

Hih kan dî 'His house.'

Hih ãn jî 'My house,'

Hih may bàp ãn dî. (House mother father I possessive indicator) 'My mother and father's house.'

(So far, no general rule has been discovered which will predict whether *jî* or *dî* will be used in a given environment following *ãn.*)

C. With *dî* or *jî* followed by *tơm*, self/own.'

pieng ãn jî tơm / pieng ãn dî tơm (rice I poss-indic. own) 'my own rice'.

Hau, e di tơm ya ? (this you (fem) poss.— indic, own question-particle) 'Is this yours?'

D. With *tơm* alone following the pronoun.

Yo ban tơm. (grandparent we own) 'Our own friend.'

5. Remarks.

No pronoun which includes the speaker may be pluralized. Rather than the pluralization of the Speaker (ãn), there are the forms *hi* and *ban* which add person components to the Speaker.

Eh and *nai* are the only pronouns which are non-distinctive as to number. They may not be pluralized.

Eh is also unique in that it precedes certain verbs as an integra part of the verbal expression (see section 4.C). Also, as the general Referent pronoun, it may optionally be used as a substitute, not only for a noun or noun expression, but also, in certain constructions, for particular Referent pronouns (*kan, de, u-pâng, nai*) in successive references to the same person or thing. (e. g., Bal yuon *tang mhŏ ndang* eh *tơm*. 'The Vietnamese did it among themselves.')

Nai, the non-specific Referent, is unique in that it is the only Referent pronoun which requires no antecedent or any type of context, visual or verbal. All other Referent pronouns demand some sort of context, explicit or implied. The unique non-specific character of *nai* may be shown by the fact that, while all the other Referent pronouns are frequently followed by *hau* or *han*, ('this or that'), (e. g., *kan han* 'that man'), *nai* has never been found followed by *hau/han*.

The pronoun systems of some of the other Mnong Rơlơm sub-dialects differ somewhat from that of Uon Njưn. In the Uon Njưn dialect, *hîn* may be easily analyzed as the special respect pluralizer. In the Uon Biep dialect, however, there are three added pronouns, all containing *-hên* (the Uon Biep equivalent of *hîn*). They are *mhên* and *hên* (apparently special respect equivalents of *bơ me* and *bơ e*) and *hên*, 'they.'

The fact that the form *hên* has two meanings would suggest that one form may have originally been different. It would appear that *mhên* and *hên* are contractions of *me hên* and *e hên*, just as *pong hên* is a contraction of *u-pong hên* (In Uon Njưn, the plural form is occasionally heard as *u-pâng hîn*.)

Apparently the basic meaning of *hîn/hên*, when used pronominally is 'people there'. Thus, *mhên* and *hên* would mean 'you people there', *hên* means 'people there' (i. e. 'they'), and *pong hên* means 'great/poor/dear people there'. In other sub-dialects *han*, 'that/there', becomes *hîn*.

Errata

Dorothy Thomas, 'Chrau Intonation'

page	*line*	*reads*	*should read*
1	3	one	tone
	fn. 5	Khmu ?	Khmu?
2	last	sligh trie sor	slight rise or
3	16-17	voicedf inal	voiced final
6	ex. 1	nôp	nôq
	ex. 5	vu ji	vu j^{1}
7	3	lide	glide
9	1	in tensifiers	intensifiers
	last	văng	vẳng
10	ex. 1	n' huch a lac	n' huch a lac
11	5	de-emphasized	de-emphasized.
	ex. 1	,I,l	'I'll
	ex. 2	lForget	'Forget
	ex. 3	years	year
	ex. 5	va nhŭ'l	vanhŭ'l
	ez. 6	n' huch a lac va nhŭ'l	n' huch a lac va nhŭ'l
12	ex. 4	vanhŭ't	vanhŭ'l
	ex. 8,9,10	question	(question)
13	ex. 7	jŏt	jŏ't

Saundra K. Watson, 'Verbal Affixation in Pacŏh'

16	1	vowel	vowels
	6	in	is
	fn last	Richard L. Watson	5 Richard L. Watson
29	Sec. 11		
	3	vebs	verbs

Dwight Gradin, 'Consonantal Tone in Jeh Phonemics'

page	section (*line*)	*reads*	*should read*
42	1. (2)	Jeh phonemic	Jeh, phonemic
42	1. (20)	non-constrative	non-contrastive
42	1. (23)	actualy	actually
44	ft.n. 6	(Universitt	(University
46	5.3 (4)	hạy 'enough', hạy 'we	hạy 'enough', hay 'we
47	6.1	Presyllables	Presyllable
47	6.1.3 (3)	V_1 of a reduplicative word	V_1 of a reduplicative word.
48	6.2 (1)	any vowels	any vowel
48	last	'to carry with	'to carry with strap over shoulder'
49	Fig.3 (10)	?hn	?nh
49	Fig.3 (12)	//	11
49	3rd from last	strap over shoulder'	omit phrase
50	line 2	[b]	[?]
50	line 5	[?]	[b]
50	line 18	kakuw	kapuw
50	Fn. 12 line 8	Word final yh? is	Word final yh is
50	Fn. 12 line 12	is written, word initial,	is written 'word initial,
52	line 1	hnho? [N̄n̄oɔ]	hnho? N̄n̄ɔ?
52	line 17	kachiat driang	kachìat driang
52	line 25	vocoid : [i]	vocoid : [ì]
53	line 8	voicoid :	vocoid :

Patrick D. Cohen, 'Presyllables and Reduplication in Jeh'

page	section (*line*)	*reads*	*should read*
31	1.1 (1)	Presylables	Presyllables
32	title	TRICK. D. COHEN	PATRICK D. COHEN
32	1.1 (15)	tabloo ?	tablòo ?
33	1.2 (20)	has been found	*t* has been found
33	1.3 (4.5)	ja-: jajooy...	Both lines should be crossed out.
34	1.6 (1)	?m, and ?n.	?m, ?n, and ?ng.
35	1.6		Add after last line : ?ng has been found only with ?i-~ si-. ?i- ~ si- : *?i?ngaay* 'far'; *?i?ngaam* 'cold'.
35	1.7 '4)	pleh	paleh
37	1.8 (12)	pasrùng	pasrùu ?
38	2.3 (3)	which take	which sometimes take
38	2.3 (10)	hyil	hyo?
39	3. (3)	presyllable	presyllables
39	4.1 (10)	yam yam	yàm yàm
40	4.2 (4)	alma? alma	alma? alman
40	4.2 (4)	?ayaw ?ayeh	?ayaw? ?ayeh
40	4.2 (4)	búk	bùk
34	Insert :		

1.5 With h and Glottal

Presyllables have been found with *h* and *?*.

h has been found with the following presyllables:

ta- : *tahaaw* 'copulate' ; *tahiiw* 'to whistle' ; *tahuung* 'to thirst'.

ka- : *kahey* 'month' ; *kahòoy* 'to escape'.

al- : *alhua?* 'to be clean' ; *alhuung* 'to remember'.

ja- : *jahòoy* 'spinach' ; *jahoom* 'lungs'.

ʔi- : *ʔihaw* 'over there'.

ʔ has been found with the following presyllables :

pa- : *paʔaak* 'to shout angrily' ; *paʔo* 'to boast' ; *paʔong* 'to boast' ; *paʔu* 'a species of bamboo with the longest sections' ; *paʔuh* 'fragrant'.

ta- : *taʔùa* 'to bellow like a cow'.

ka- : *kaʔaap* 'to yawn' ; *kaʔok* 'to cough" *kaʔèem* 'to embrace' ; *kaʔòon* 'to ask' ; *kaʔool* 'hoarse' ; *kaʔun* 'to bow'.

al- : *alʔeng* 'to detest' ; *alʔih* 'old (thing)' ; *alʔù* 'coconut'.

ʔi- : ~ si- : *ʔiʔuw* 'common rafter'.

ji- : *jiʔiak* 'to be dirty'.

Judith M. Wallace 'Katu Personal Pronouns'

page	*line*	*reads*	*should read*
55	fn. 1	[Ktəu]	[Kətu]
56	9	ku/dai	ku/dai[2]
	12	(dó)[2]	(dó)
57	19	'I returns'	'I return'
60	3	± pronoun	+ pronoun
	11	'many of use'	'many of us'

Nancy A. Costello 'Affixes in Katu'

5	33	yuah	yuʀah

James and Nancy Cooper, 'Halăng Phonemes'

page	*line*	*reads*	*should read*
87	9	Plèi	Plei
90	10	'to move'	'to move away'
	25	'to move'	'to move away'
	27	'if'	'wall'
91	1	mA?	mA? 'don't'
		?mA? 'to rescue from water'	'?mA? 'to perch'
92	17	position.	position. (see footnote 2)
94	18	occuur	occur
	23	'not hear'	'deaf'
96	8	[v]	[c]
	22	'fruit'	'to clear'
97	17	'to oomand'	'to command'
	18	'to inquire'	'to think'

David D. Thomas 'Checking Vowel Contrasts by Rhyming'

100	16	wih	with
100	35	fult	full
	37	thel	the
101	1	surer final	surer the final
	27	linguits	linguist
102	3	languges	languages

Henry and Evangeline Blood 'The Pronoun System of Uon Njun̄ Mnong Rolom'

page	*line*	*reads*	*should read*
104	3	in to	into
	chaft	R-ch	R-eh
111	11	wich	which