

WANCHO PHONOLOGY AND WORD LIST

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INTRODUCTION

This article is intended as a companion to the preceding article by Burling and Phom on the Phom language.¹ Like Phom, Wancho is one of the so-called "Northern Naga" languages. It is spoken in the extreme southeastern tip of the Indian state of Arunachal Pradesh, just across the state border that divides Arunachal from Nagaland. Phom and Wancho are closely related languages but they are by no means mutually intelligible. They are separated geographically by Konyak, the best known of the northern Naga languages and the one with the largest number of speakers. Speakers of Phom and Wancho rarely have any reason to learn each other's languages, but both find it reasonably easy to learn to speak Konyak and they sometimes do so. One of the authors of this article, Wangsu, is a native speaker of the Wancho language and, like L. Among Phom, he is interested in standardizing the orthography of his language in order to achieve effective bible translation. We have worked together to understand the phonology of the language and to assemble a list of core vocabulary. This paper is the product of that collaboration.

Like Phom, Wancho is a tone language and, as with Phom, it is convenient to describe the phonology in terms of its syllables and their parts: 1. Initial consonants, 2. Vowels, 3. Final consonants, 4. Tones. Assimilation across syllable boundaries is a bit more complex and active process in Wancho than in Phom, and tones sometimes change when syllables are used together in compounds. Before dealing with these topics, however, the phonology of individual syllables needs to be considered.

¹ Burling would like to thank the Fulbright Foundation for the generous support that allowed him to return to work in northeastern India after a gap of no less than forty years.

SYLLABLE INITIAL CONSONANTS.

The consonants that can occur as syllable initials are shown in Table 1 and a few syllables lack an initial consonant entirely. Wancho differs from Phom in having three series of stops rather than just two: voiceless aspirated, voiceless unaspirated, and voiced. Each of these, occurs in the three familiar articulatory positions, bilabial, apical and velar, as do the unremarkable nasals. Most of the nine stops are found in a large number of words but, strangely, /g/ is exceedingly rare. Indeed, Wangsu has been able to think of only a single word that he pronounces with /g/: /aççgaçç/ 'five'. There can be no doubt that this word has a voiced velar stop, however, so it must be included in the inventory of consonants. Some Wancho speakers use /g/ in a few other words.

pæ	tæ			kæ
p	t	ts	«c	k
		s	Δ	
b	d	z	Ô	g
m	n			≥
∏	l			h

Table 1. Syllable Initial Consonants

/ts/ and /«c/ are voiceless affricates, alveolar and palatal respectively. They are unaspirated (/«c/ is considerably less aspirated than English /«c/) and, as shown in Table 1, Wancho lacks aspirated affricates. The voiceless sibilants, /s/ and /Δ/, are articulated in much the same positions as /ts/ and /«c/ and they sound very much like English /s/ and /Δ/. /z/ and /Ô/ are also articulated in roughly the same positions. They are both voiced, but /Ô/ has somewhat less friction than English /Ô/, though more than English /y/. /Ô/ and the onglide that initiates several diphthongs (symbolized here as /y/) are articulated in much the same position, but they differ in their degree of friction. The consonant, /Ô/, has considerable friction, while the onglide, /y/,

does not. Wancho / \hat{O} / does not have the marked rhotic quality of the / \hat{O} / of Phom.

/ Π / is a voiced fricative. It is more bilabial than English /v/ but has considerably more friction than English /w/. Its acoustic impression is intermediate between English /w/ and /v/. Wancho / Π / is clearly distinct from the onglide that is symbolized here as /w/ and that is a component of several diphthongs (see below). Just as consonantal / \hat{O} / has more friction than the onglide /y/, so / Π / has considerably more friction than /w/. /l/ is a voiced lateral and /h/ is a glottal fricative. Both are very much like the corresponding consonants of English.

The initial consonants can be illustrated by the following examples.

pæ	pæaçç	'tick' (insect)
tæ	tæawçç	'papaya'
kæ	kæa \geq ∞ TM	'head'
p	pu \geq ∞ TM	'granary'
t	ti ∞ TM	'water'
ts	t ∞ TM	'twenty'
«c	«co \geq çç	'worm'
k	kyaçç	'white'
s	sa÷çç	'cooked rice'
Δ	Δ açç	'rot'
b	b \emptyset n ∞ TM	'ten'
d	da ∞ TM	'untie'
z	za \geq jj	'field'
\hat{O}	\hat{O} an ∞ TM	'iron'
g	aççgaçç	'five'
m	ma ∞ TM	'spider'
n	nokçç	'village'
\geq	\geq oçç	'banana'
Π	Π \emptyset nçç	'fire'
l	le ∞ TM	'tongue'
h	hamjj	'walk'

VOWELS

Wancho can be described as having six simple vowels and nine distinctive diphthongs and, by comparison with Phom, its vowels are relatively transparent. Three of the diphthongs are rising, having either /y/ or /w/ offglides. The other six are falling, three with /y/ onglides, and three with /w/ onglides. We have searched, but failed to find, other combinations of glides with vowels. Readers who have examined the previous article on Phom, will have noticed that our analysis of Wancho, unlike Burling and Phom's analysis of Phom does not include initial /~n/. Phonetic [~n] can be found in syllable initial position in Wancho, but only when followed by one of a limited set of vowels. [y] can follow most, perhaps all, of the initial consonants, however, so we find it more parsimonious to interpret the [y]'s as onglides, the first part of three diphthongs, rather than as the second part of a large number of initial clusters.

i		u	ay	Øy	aw
	Ø				
e		o	yi	ye	ya
	a				
			wi	wa	wo

Table 2. Vowels and Diphthongs

/i/. High front unrounded. This vowel is lower in closed than in open syllables. /hiçç/ 'dog'.

/Ø/. Mid central unrounded vowel. This vowel is not unlike the vowel of English 'but', (although it is closer to the American than to the British version of this vowel). It is not really a schwa, though it does have some schwa-like features. In particular, it is sometimes very short, and syllables with /Ø/ are much more likely than others to pick up a final consonant by assimilation to the initial of the following syllable than are syllables with other vowels (see the discussion of assimilation below). It can be more tense and more stressed than a proper schwa, however. /mØn_ij/ 'name'.

/u/. High back rounded. Like /i/, this vowel is usually slightly lower in closed syllables than in open ones, but the difference is not great. /bu[∞]TM/ 'itch'.

/e/. Mid front unrounded. /le[∞]TM/ 'tongue'. This vowel is considerably less common than the other five simple vowels.

/a/. Low central unrounded vowel. This is just slightly to the front of most pronunciations of the English "a" in 'father'. /ha^{çç}/ 'firewood'. Wangsu has a nasal /~a/ in the word /a[∞]TMp~a^{çç}/ 'listen'. This is the only word in the language that he pronounces with a nasal, although there are other dialects of Wancho in which nasals are found in other words as well. This may be an example of dialect borrowing.

/o/. Most often this vowel is lower mid, back, and rounded. Before syllable final /m/ and /p/, however, it is centralized, and articulated higher, further front, and with less rounded lips than otherwise. As a result, it approaches the pronunciation of /Ø/. /Ø/ and /o/ contrast in most positions, but they do not contrast before /m/ and /p/. On strictly distributional grounds, therefore, this allophone could be grouped either with /Ø/ or with /o/. Wangsu's strong intuition is that it should be grouped with /o/ rather than /Ø/, so that is the way we transcribe it. Except when occurring before /m/ or /p/, /o/ sounds much like the vowel in English 'long'. Before /m/ or /p/ it is intermediate between the vowels of English 'cup' and 'long', or even a bit closer to 'cup'. /ho^{çç}/ 'kick', /a^{çç}zom[∞]TM/ 'three'.

/ay/. A diphthong that begins with a low central unrounded vowel and then moves toward high front. It is very similar to the vowel in English 'pie'. Like several of the diphthongs, /ay/ does not occur in closed syllables. /pay^{çç}/ 'cotton'.

/Øy/. A diphthong that begins with a mid central vowel and moves toward high front. Phonetically this is very close to the Phom vowel that, in the previous paper, was also transcribed as /Øy/. /mØy^{çç}/ 'meat'.

/aw/. A diphthong that begins with a low central vowel and moves toward high back. It is very similar to the English vowel in 'now'. /baw[∞]TM/ 'evil spirit'.

/yi/. A diphthong that begins with a palatal approximate and moves toward a high front unrounded vowel. /nyi^{çç}/ 'laugh'.

/ye/. A diphthong that begins with a palatal approximate and moves toward a mid front unrounded vowel. /syep[∞]TM/ 'narrow'.

/ya/. A diphthong that begins with a palatal approximate and moves toward a low central unrounded vowel. /mya[∞]TM/ 'cat'.

/wi/. A diphthong that begins with a bilabial approximant and then moves toward a high front unrounded vowel. Phonetically, the two parts of this diphthong are quite distinct and it might seem tempting to interpret it as a sequence of two vowels, /u-i/, rather than as the diphthong /wi/. Sequences of two full vowels are otherwise virtually nonexistent in Wancho, however (see the section "Limitations on Phonological Cooccurrence", below), and this, together with the occurrence of /wi/ under a single tone, argue in favor of a diphthongal interpretation. /lwi;jj/ 'many'.

/wa/. A diphthong that begins in the high back rounded position and then moves toward a low central unrounded vowel. As with /wi/ the two parts of this diphthong are quite distinct. /kæwa[∞]TM/ 'boat'.

/wo/. A diphthong that begins with a bilabial approximate and moves toward a low back rounded vowel. It is much less tempting to interpret /wo/ as a sequence of two vowels than to interpret /wa/ or /wi/ in this way. The initial glide of /wo/, in fact, is quite subtle, and it is much less distinct from the following vowel than is the first part of /wa/ and /wi/. Nevertheless, /wo/ clearly contrasts with /o/ and with all other vowels and diphthongs. /Δwonϕϕ/ 'dance'.

SYLLABLE FINAL CONSONANTS.

Only seven consonants are found at the end of syllables, the same as those in Phom.:

p	t	k	÷
m	n	≥	

Table 3. Syllable Final Consonants

Final /p, t, k/ are similar to initial /p, t, k/, but the finals are usually unreleased and they end the syllable very abruptly. The glottal stop occurs only as syllable final, never initially. Final /m, n/ and /ŋ/ are pronounced very much as they are at the beginning of a syllable. Vowels are shortened in syllables with final nasals and this means that sequences of VNV (vowel--nasal consonant--vowel) must be distinguished according to the position of the syllable boundary. The first vowel of a V-NV sequence is pronounced longer than the first vowel of VN-V. Vowels before final /p, t, k/ are even shorter than those before nasals, and this means that VS-V sequences are clearly distinct from V-SV sequences. Vowels in syllables closed with /÷/ are the shortest of all.

p	kæap [∞] ™	'tongs'
t	dØtçç	'fall'
k	«cak [∞] ™	'hand'
÷	mi÷ççmo÷çç	'short' (of people)
m	tsomjj	'tame'
n	mun [∞] ™	'body hair'
≥	na≥çç	'you' (sg.)

As with Phom a wide range of consonant sequences can be found medially in a Wancho word, but all of these can be readily interpreted as sequences formed from the final consonant of one syllable and the initial of the next. We know of no limits on which final consonant and which initial consonant can occur side by side. Assimilation across syllable boundaries does complicate this picture somewhat, however, (see below).

TONES

Tones are, by a wide margin, the most difficult aspect of Wancho phonology. Not only does a listener who has not acquired the Wancho language as a birthright occasionally find it difficult to distinguish tones, even in monosyllables, but in longer words the tones interact with one another in rather complex ways. It is easiest to start the description of tones with monosyllables where the contrasts are clearest.

Unstoppable monosyllables (i.e. open syllables and syllables closed with /m, n/ or /ŋ/) can have one of three contrasting tones; Monosyllables ending in /p, t/ or /k/ can take either of two tones; Syllables ending in /÷/ show no tonal

contrasts at all. Although the tones of stopped and unstopped syllables are a bit different phonetically, it seems clear that the two tones of syllables that are stopped with /p, t/ or /k/ should be identified with the first two unstopped tones that are described just below. No phonetic reality is seriously violated, and some simplicity is achieved, if syllables ending in /÷/ are regarded as having tone /çç/. This means that the following six combinations of tones and final consonants are possible, where "S" stands for /p, t/ or /k/: unstoppedçç, unstopped∞TM, unstopped_ii, Sçç, S∞TM, ÷çç.

/çç/. High level tone. This tone is level, quite resonant, and fairly high pitched. To call this tone "quite resonant" means that it has something of a "sung" quality, at least when a syllable is pronounced in isolation. It can be pulled just a bit lower in pitch when it follows the low tone /_ii/, and it can be pulled slightly higher when it follows the falling tone /∞TM/. This is much the most common tone in the language and it can be regarded as the unmarked tone. As will be pointed out below, syllables that have tones /∞TM/ or /_ii/ when they occur as separate words sometimes change to tone /çç/ when they become a part of a compound, rather as if they "lose" their more marked tone and have their tone "reduced" to /çç/.

Syllables stopped with /p, t, k/ are considerably shorter than open syllables or syllables that end with /m, n/ or /≥/, and this can make stopped tones harder to discriminate at least for a non-Wancho speaker. Perhaps this is why only two tones are found on stopped syllables rather than the three of open and nasal syllables. Nevertheless, on stopped syllables as well as on open and nasal syllables, /çç/ is more level and a bit more resonant than /∞TM/. Syllables closed with /÷/ are so short that they hardly have time for any resonance, but neither do they have time to fall (as tone /∞TM/ ordinarily does). Simplicity is achieved by grouping these syllables with tone /çç/. /«co≥çç/ 'worm'; /nokçç/ 'village'; /sa÷çç/ 'eat'.

/∞TM/. Falling tone. On open and nasal syllables, this tone usually starts a bit higher than /çç/ and it can sometimes be perceived as higher. However its pitch then falls decisively and it often ends lower than /çç/. The fall that characterizes this tone gives its syllables a considerably less resonant quality than those with tone /çç/ or /_ii/. In isolation /∞TM/ sounds less "sung", more "spoken", than the other tones. On stopped as well as unstopped syllables /∞TM/ may fall somewhat and it is a bit less resonant than /çç/, but the brevity of stopped syllables makes the difference in resonance between

$/\phi\phi/$ and $/\infty^{\text{TM}}/$ considerably less salient than on unstopped syllables. This is the second most common tone in Wancho. $/k\text{æ}\infty^{\text{TM}}/$ 'hair of head'; $/l\text{om}\infty^{\text{TM}}/$ 'road'; $/n\text{ak}\infty^{\text{TM}}/$ 'black'; $/l\text{wak}\infty^{\text{TM}}/$ 'elephant'.

$/i\dot{i}/$. Low tone. Level, resonant and very low. This tone is decisively lower than either $/\phi\phi/$ or $/\infty^{\text{TM}}/$, but it is as level and resonant as $/\phi\phi/$. We find no examples of stopped syllables to which it is necessary to assign tone $/i\dot{i}/$, and even with open and nasal syllables, $/i\dot{i}/$ is considerably less common than either of the other two tones. In spite of its relative rarity, Burling found it much easier to distinguish $/i\dot{i}/$ from the other two tones than to distinguish $/\phi\phi/$ and $/\infty^{\text{TM}}/$ from each other. $/k\text{æ}\infty^{\text{TM}}i\dot{i}/$ 'spade'; $/m\text{Ø}n\dot{i}i/$ 'name'.

The tonal patterns become more complex and considerably more difficult to establish in two syllable words. The most important fact about the tone sequences of two syllable words is that no more than one syllable can have either tone $/\infty^{\text{TM}}/$ or tone $/i\dot{i}/$. In other words, at least one syllable must have tone $/\phi\phi/$, and many two syllable words have $/\phi\phi/$ on both syllables. This means that the tone sequences of two syllable words are limited to $/\phi\phi^{-}\phi\phi/$, $\phi\phi^{-}\infty^{\text{TM}}$, $\phi\phi^{-}i\dot{i}$, $\infty^{\text{TM}}\phi\phi/$, and $/i\dot{i}^{-}\phi\phi/$. Words never need to be assigned tone sequences $/\infty^{\text{TM}}\infty^{\text{TM}}/$, $i\dot{i}i\dot{i}$, $\infty^{\text{TM}}i\dot{i}/$, or $/i\dot{i}^{-}\infty^{\text{TM}}/$. (This limitation has an interesting and useful implication for a practical writing system. Tone $/\phi\phi/$ can be indicated simply by the absence of any tone mark at all. A two syllable word will then never need more than a single tone mark. Sometimes the tone mark will appear on the first syllable and sometimes on the second, but tone marks will never be needed for both. Many two syllable words will need no explicit tone mark at all.)

In addition to this limitation on the tones that can occur together, enough phonetic interaction takes place between the tones of two syllable words to make the assignment of tones already recognized for monosyllables less than immediately transparent. Each of the five two syllable tone sequences needs to be separately described.

$/\phi\phi^{-}\phi\phi/$. High level tone followed by high level tone. Large numbers of bisyllabic words have this tone sequence, and it is the most common tone sequence in our sample of bisyllables. Words with this tone sequence are quite level and quite resonant throughout, but the second syllable may be pronounced just slightly higher than the first.

aççliçç	'four'
aççzomçç	'soak'
ha÷ççtæoçç	'dig'
zoççkyaçç'	'wake up'
nakççkyaçç	'stamp the foot'
aççhu÷çç	'close (a container)'
aççnØtçç	'mix'

/çç^{-∞}TM/. High level tone followed by high falling tone. The jump in pitch between the first syllable and start of the second is quite marked here, and it can give the impression that the second syllable is higher. In fact, the second syllable falls quite sharply and ends lower than the first, but its lower resonance makes its pitch less salient than is the pitch of the first syllable. This tone sequence gives an impression quite similar to ordinary English bisyllables that are stressed on the second syllable. This is, by a good margin, the second most common two syllable tone sequence in our sample. A substantial majority of bisyllabic words have either /çç^{-çç}/ or /çç^{-∞}TM/ as their tone sequence.

aççli∞ TM	'elder brother'
aççzom∞ TM	'three'
hoççmØn∞ TM	'price'
aççnØt∞ TM	'seven'
hi≥ççza≥∞ TM	'grass'
aççpo≥∞ TM	'meet'

/çç^{-ij}/. High level tone followed by low level tone. Tone /ij/ is the least common tone on monosyllables, and /çç^{-ij}/ is very much less common than either /çç^{-çç}/ or /çç^{-∞}TM/. It is clearly distinctive, however, with the second syllable unambiguously lower than the first, a rather unusual pattern in Wancho. Most tone sequences, even /çç^{-çç}/ give the impression of a rise, sometimes more, sometimes less, on the second syllable.

oççtiij	'chicken soup'
mo≥ççmaij	'unhappy'
komççleij	'whole, entire'
«cuççyaij	'that'
aççpaiij	'give me!'

$/\infty^{\text{TM}}\text{-}\phi\phi/$. High falling tone followed by high level tone. This is the most difficult of the two syllable sequences to distinguish and the most difficult to describe. There appears to be a tendency for the contrast between $/\infty^{\text{TM}}\text{-}\phi\phi/$ and $/\phi\phi\text{-}\phi\phi/$ to be minimized, and it may even be that in rapid speech the difference is entirely neutralized, with $/\infty^{\text{TM}}\text{-}\phi\phi/$ coming to sound like ordinary $/\phi\phi\text{-}\phi\phi/$. With careful articulation, however, $/\infty^{\text{TM}}\text{-}\phi\phi/$ and $/\phi\phi\text{-}\phi\phi/$ can be distinguished, and the fact that it is, indeed, tone $/\infty^{\text{TM}}/$ that is being heard on the first syllable of these words is confirmed by the frequent derivation of these syllables from monosyllabic words that have tone $/\infty^{\text{TM}}/$. For example, when verbs are cited in isolation they often have the suffix $/\text{-kya}\phi\phi/$. It is also possible to use verbs without $/\text{-kya}\phi\phi/$, however, and monosyllabic verb bases without $/\text{-kya}\phi\phi/$ are quite easily divided into two groups, one with tone $/\phi\phi/$, the other with tone $/\infty^{\text{TM}}/$. (Verb bases with tone $/i\dot{i}/$ occur as well, but they are so clearly distinct from the others that they pose no problem.) When the $/\text{-kya}\phi\phi/$ suffix is added, the verbs can still be sorted into the same two groups, $/\phi\phi\text{-}\phi\phi/$ and $/\infty^{\text{TM}}\text{-}\phi\phi/$, at least under careful articulation, but the phonetic difference is less clear than with monosyllables.

Two phonetic clues distinguish $/\infty^{\text{TM}}\text{-}\phi\phi/$ from $/\phi\phi\text{-}\phi\phi/$. First, when carefully articulated, the first syllable has something of the fall that is found with tone $/\infty^{\text{TM}}/$ monosyllables, although the fall is less salient in $/\infty^{\text{TM}}\text{-}\phi\phi/$ sequences. In addition, the second syllable of these words is often pushed slightly higher than is otherwise characteristic of tone $/\phi\phi/$. It is as if the need to emphasize the rise from the end of the falling tone on the first syllable, necessitates an especially high pitch for the second.

The boosting effect that an initial tone $/\infty^{\text{TM}}/$ has on the pitch of the following syllable is especially evident when the second syllable is closed with a glottal stop. Ordinarily, syllables ending in $/\div/$ show no tone differences at all, but the second syllable of $/a\infty^{\text{TM}}\text{hu}\div\phi\phi/$ 'steal, move silently', for example, is distinctly higher than the second syllable of $/a\phi\phi\text{hu}\div\phi\phi/$ 'close (a container)'. Indeed the pitch difference of the final syllables may be more salient than any difference between the initial syllables. The first syllables of words with the tone pattern of $/a\infty^{\text{TM}}\text{hu}\div\phi\phi/$ often have tone $/\infty^{\text{TM}}/$ when used as monosyllables. The first syllables of words with the tone pattern of $/a\phi\phi\text{hu}\phi\phi/$ generally have tone $/\phi\phi/$ when used as monosyllables. Thus there can be no doubt that these should be interpreted as having $/\infty^{\text{TM}}/$ and $/\phi\phi/$,

respectively, in bisyllables as well. By distinguishing bisyllables in this way, moreover, we avoid having to recognize tone differences in syllables ending in /÷/, something that is otherwise entirely unnecessary. The different pitches found in syllables ending in /÷/ are simply the result of the underlying tones in the syllables that come before. We are confident, therefore, that these words should be interpreted as having a / $\infty^{\text{TM}}\text{-}\phi\phi$ / tone sequence.

mo $\geq\infty^{\text{TM}}$ ma $\phi\phi$	'in the heart'
a ∞^{TM} nu $\phi\phi$	'mother'
na ∞^{TM} kyā $\phi\phi$	'black'
a ∞^{TM} hu÷ $\phi\phi$	'steal, go silently'
a ∞^{TM} yi $\phi\phi$	'blood'
a ∞^{TM} po $\geq\phi\phi$	'wife's brother'

/i:~ $\phi\phi$ /. Low tone followed by high level tone. This sequence has the most pronounced rise between syllables of any of the five two syllable tone sequences. Both syllables are quite level and resonant but the second syllable is abruptly higher than the first even though the low tone of the first syllable may pull the high tone of the second just slightly lower than its more usual pitch. Since low tones are relatively rare, they tend to stand out rather sharply.

tæo:i:le $\phi\phi$	'able';
\geq a:i:le $\phi\phi$	'climb'
zo:i:kya $\phi\phi$	'drill hole'
mØy:i:kæi $\phi\phi$	'barking deer'
pom:i:sa $\phi\phi$	'sleeping place for boys'

Before considering the tone patterns of longer words, a comment is needed about the source of the tones of two syllable words. Since many two syllable words are compounds, it will have occurred to the reader that some sort of tone change may be needed when a compound is formed from two monosyllabic words, neither of which has tone / $\phi\phi$ /. This is correct. We can give examples, but we have discovered no consistent or predictable patterns to the changes. It is probably somewhat more common for the first syllable to have its tone changed than the second but changes do, sometimes, affect second syllables instead or as well. A syllable that has its tone changed in one compound may retain its monosyllabic tone in another compound. A syllable, moreover, sometimes undergoes a tone change even when this would not be

forced by the tone of the syllable to which it is joined. Some tones are "reduced" to /çç/ even when entering a compound with another syllable that has tone /çç/. There is also a certain amount of variation, so that some words have two alternate pronunciations, though this appears to be a rather random matter, and we have not been able to find generalizations that would let us predict what tones alternate under what conditions. As the examples suggest, vowels can also vary and, once again, we have discovered no pattern in this variation. The following examples are typical:

tsomççtiçç 'milk' < tsomçç 'breast'; ti∞TM 'water'
 tiççlo∞TM, tØççlo∞TM 'sea' < ti∞TM 'water'
 na÷ççti∞TM 'honey' < na÷çç 'bee'; ti∞TM 'water'
 mo≥ççtsik∞TM 'angry' < mo≥∞TM 'heart'
 ceççku÷çç 'knee' < cyaçç 'leg'
 ciççpæaçç 'sole of foot' < cyaçç 'leg'
 mØççthomçç 'preserved bamboo shoots'
 < meçç 'newly picked bamboo shoots'
 kæa≥ççpo≥çç 'forehead' < kæa≥∞TM 'head'

It should be pointed out, that in spite of a fair number of tone changes, far more syllables maintain their underlying tones in compounds than change them. It appears that something over half of all monosyllables have tone /çç/. On a purely statistical basis, therefore, it might be expected that more than three quarters of bisyllabic compounds would include at least one syllable that is derived from an underlying tone /çç/. In such a case the other syllable could retain its underlying tone even if it does not originate as /çç/, and in many cases, this is what happens. A good many bisyllables, moreover, are not compounds at all, at least as used in the synchronic language, and in this case there can be no question of identifying tone changes. In other bisyllables only one of the syllables has a clear derivation from a monosyllable, and if the other syllable has /çç/ there is no need for any change. In the word list included with this article we give the tones that are actually used in each syllable of each word. As a result, some syllables that are certainly etymologically related appear with varied tones in different words.

We are now ready return to three syllable words. It is natural to expect that these will have an even wider range of tone patterns than two syllable words. As might also be expected, we have fewer examples of three syllable words than of shorter words. Their fewer numbers, along with the larger

number of possible tone sequences, combine to give us considerably less confidence in our understanding of tone patterns of three syllable words than those of one and two syllable words. Our assignment of tones to three syllable words must, therefore, be regarded as no more than provisional. Nevertheless, some tentative generalizations appear to be reasonable.

It seems probable that, as with two syllable words, only one syllable of a three syllable word can have a tone other than / $\phi\phi$ /. A considerable fraction of our three syllable words, in fact, appear to have the tone sequence / $\phi\phi$ - $\phi\phi$ - $\phi\phi$ /, the result of considerable leveling of the tones that appear on the same syllables when used in shorter words. We feel relatively confident about the tones of three syllable words that we have marked as / $\phi\phi$ - $\phi\phi$ - $\phi\phi$ /. From their beginning to their end, these are very level in pitch.

We also feel reasonably confident about a number of three syllable words that we mark as having tones / $\phi\phi$ - ∞^{TM} - $\phi\phi$ / or / $\phi\phi$ - $\phi\phi$ - ∞^{TM} /. The first of these sequences results in words in which the second syllable starts markedly higher than the first but then falls sharply. The third syllable is then particularly high and level, as would be expected when tone / $\phi\phi$ / follows tone / ∞^{TM} /. / $\phi\phi$ - $\phi\phi$ - ∞^{TM} / is characterized by a distinct fall on the third syllable and it gives an impression (to an English speaker) that is reminiscent of a three syllable English word, such as 'understand', that is stressed on its final syllable.

We have less confidence in the tones of about twenty remaining three syllable words that do not fit easily into any of these three patterns. Some of these twenty may have one low syllable. We give our best judgement in the word lists, but in order to indicate our lack of confidence in the tones we place an asterisk after these words.

We have even less confidence in the tones of the ten four syllable words in our list. All of these are compounds, some of them compounds of compounds. It is relatively easy to determine the tones of the constituents of these compounds, and to some extent their underlying tones are carried into the larger compounds. This may bring a wider variety of tone patterns to long words than to short words, but there is certainly some leveling toward tone / $\phi\phi$ /. We give our best guess about the tones of these long words, but, we also mark them with a warning asterisk.

Certain tone alternations reflect Wancho syntax. As in Phom, causative-noncausative (or transitive-intransitive) pairs are sometimes distinguished by tone.

aççcyen [∞] ™	'shake' (intrans.)	aççcyençç	'bounce (a baby)'
aççpØy [∞] ™	'come'	aççpØyçç	'bring'

In one case the nominative and accusative forms of a pronoun are distinguished by tone, but other pronouns do not have alternate forms of this kind:

kwomçç	'we'	kwomjɿ	'us'
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We have had no chance to examine changes of this sort systematically, but simply offer these as examples of processes that we expect to be widespread in the language.

ASSIMILATION ACROSS SYLLABLE BOUNDARIES

In addition to the impact of adjacent syllables on tones, some consonantal assimilation takes place across syllable boundaries. This happens most often when a syllable that ends in a vowel picks up a consonant from the initial of the following syllable. A final /p, t/ or /k/ may be added to one syllable in anticipation of the initial consonant that follows. A syllable final nasal may also be added that anticipates an initial nasal of the next syllable. In most such cases the vowel of the first syllable (the one to which a consonant is added) is /Ø/, though this vowel may, itself be derived from another vowel, as shown in the examples. This "reduction" to /Ø/ suggests that /Ø/ has a somewhat schwa-like quality, but its role is much less extensive than that of the English schwa. Wancho /Ø/ occurs in the same range of circumstances as other vowels. It can take the same tones, and it occurs with the same degree of stress. It does not, for example, typically serve as the vowel of the kind of phonologically reduced initial "prefix" syllables that are found in some Tibeto-Burman languages. Nevertheless, /Ø/ can be very short, and its affinity for assimilating final consonants does set it apart from the other vowels.

Assimilation to a following syllable initial consonant is idiosyncratic rather than automatic. Words can be found in Wancho that never assimilate.

yuççnuçç 'rice liquor'
 []iççkæaçç 'mouth'

In other examples there are alternative pronunciations, the assimilated forms being more likely to occur in fast speech than under careful articulation. The fact that assimilation takes place is shown clearly by the shortening of the vowel in the first syllable. In several cases there is also a change of a vowel to /Ø/.

ciççpæaçç 'sole of the foot'	>	cØpççpæaçç
ciççdwaçç 'heel'	>	cØtççdwaçç
sØççkæaçç 'gibbon'	>	sØkççkæaçç
sheççko [∞] TM 'female'	>	shØkççko [∞] TM
lØççka [∞] TM 'male'	>	lØkççka [∞] TM
sØççnuçç 'wife'	>	sØnççnuçç

Still other words have homorganic consonants in adjacent syllables and these look as though they could have resulted from assimilation. Since these words never vary, they provide no evidence, by themselves, for assimilation. Nevertheless, /oçç/ appears as the initial syllable of many names for birds, so /okççkunçç/ presumably developed originally by assimilation that has now become fixed.

okççkunçç 'vulture'
 homççmo^{≥∞}TM 'inside'

As will be pointed out below, syllables that lack any initial consonant, and thus start with a vowel, are not common in Wancho but they do occur and it can happen that a noninitial syllable starts with a vowel. In such cases the syllable is likely to begin with a very slight glottal stop, thus isolating it decisively from any final consonant of the preceding syllable and making it quite impossible to confuse with a syllable that starts with a consonant. This glottal stop is much less strong than the more common syllable final glottal stop and cannot be confused with it.

"PREFIXES"

While Wancho does not have phonologically reduced first syllables of the sort that characterize some Tibeto-Burman languages, a number of syllables do occur so frequently as the initial syllables of longer words that they act rather like prefixes. Some of these have obvious meanings and might be better regarded as the initial part of a compound.

/oçç/ is used as the first syllable of a large number of names of bird species, as well as for the parts and products of birds: */oççlaçç/* 'hawk'; */oççkæaçç/* 'crow'; */oççpwa[∞]TM/* 'peacock'; */oççzaçç/* 'wing'; */oççmØyçç/* 'nest'; */oççtiçç/* 'egg'.

A number of words concerning the sky or the weather begin with the syllable */zaçç/*: */zaççhan[∞]TM/* 'sun'; */zaççvatçç/* 'rain'; */zaççvinçç/* 'wind'; */zaççkæo[∞]TM/* 'sky'.

The majority of kinship terms, at least in their most common citation form, begin with */a[∞]TM/*: */a[∞]TMpuçç/* 'grandfather'; */a[∞]TMnuçç/* 'mother'; */a[∞]TMpæe÷çç/* 'younger sister';

In addition to these semantically transparent syllables, Wancho has two initial syllables that have very high frequency, but no consistent meaning. Hints of meanings can be extracted from a list of examples but not all examples fit easily into any clear set of meanings.

/açç/ is found as the first syllable of numbers (*/aççnyičç/* 'two'), of a good many temporal words (*/aççtha÷çç/* 'now'), some words with adjectival meanings (*/aççne[∞]TM/* 'blunt, dull'), and a considerable number of verbs (*/aççnuçç/* 'dislike, hate').

/hoçç/ is used with a large number of words that have core adjectival meanings: */hoççkæik[∞]TM/* 'red', */hoççkoçççç/* 'cold', */hoççzaçççç/* 'old', but it is also used in many words whose meanings defy simple classification: */hoççti[∞]TM/* 'juice', */hoççkæØt[∞]TM/* 'pocket', */hoççmØn[∞]TM/* 'price'. */hoçç/* is used much less often in verbs than is */açç/*. In a few cases */hoçç/* and */açç/* can both be used with the same second syllable with no obvious change of meaning.

LIMITATIONS ON PHONOLOGICAL COOCCURRENCE

Like Phom, Wancho has some striking but apparently rather random limitations on which vowels can occur with which final consonants. In other words, there are far fewer possible rhymes (sequences of a vowel plus a final consonant) than would be predicted from simply multiplying the number of vowels and diphthongs in the language by the number of syllable final consonants. Table 4 shows the number of syllables in our sample of Wancho words that exhibit each rhyme. We have done our best to cut out duplicate examples in which homophonous and synonymous syllables occur in more than one word, i.e. we have tried to count each morpheme just once, rather than every time it appears, although in some cases it is difficult to know how many morphemes are involved. Where a single morpheme has phonological variants, however, all the forms are included in the tabulation. Of course, additional rhymes must occur than those that have shown up in our limited sample, but the uneven distribution of the rhymes would be unlikely to disappear even in a much larger sample of words.

It is tempting to try to reduce the number of vowels by recognizing that some of them are in complimentary distribution or almost so. /wo/, for example is in complimentary distribution with both /wa/ and /wi/. These are so different phonetically, however, that we would hesitate to group any of them together as the same phoneme. /Ø/ and /e/ seem close to being in complimentary distribution, but both occur too often in open syllables for there to be any easy way to assign them to a single phoneme. Until a good deal more is known about the details of the language, it seems best to cling to phonetic reality and to regard all of these vowels as different.

Wancho exhibits one other odd distributional limitation. It has surprisingly few syllables that lack an initial consonant. Moreover, syllables without an initial consonant almost always lack a final consonant as well. Indeed, we find only three syllables in our entire word list that have final consonants but no initial consonants: /wɔn[∞]TM/ 'winnowing basket' (where the w is an onglide of a diphthong, not an initial consonant); /Ønççto÷leçç/ 'and'; and /okççkunçç/ 'vulture'. This last word may look like an error, since the names of many birds have /oçç-/ as their first syllable. /okççkunçç/ probably resulted from assimilation, but whatever its origins, /okççkunçç/ now contrasts consistently and clearly with /oççkunçç/ 'bird coop'. The final /-k/ of the first syllable of 'vulture' cannot be doubted. In addition to the rarity of their final consonants, most syllables that lack an initial consonant have

either /a/ or /o/ as their vowel. Only a handful of such syllables are found with other vowels.

Vowel	Final Consonant							
	-p	-t	-k	-ð	-m	-n	-ŋ	-#
i	5	1	15	12	-	2	14	41
e	3	-	-	6	2	1	-	27
Ø	-	17	-	-	-	37	-	12
a	7	6	31	22	17	23	38	116
u	-	7	8	9	5	14	8	43
o	15	-	13	10	34	1	26	48
aw	-	-	-	-	-	-	-	17
ay	-	-	-	-	-	-	-	24
Øy	-	-	-	-	-	-	-	54
wa	-	-	10	-	-	-	-	32
wi	-	-	-	-	-	-	-	15
wo	3	5	-	-	10	10	-	-
ya	-	-	-	1	4	-	-	14
ye	1	5	-	-	7	-	-	-
yi	-	-	-	1	-	-	-	3

Table 4. Rhymes

In marked contrast to the restrictions on the cooccurrence of vowels and final consonants, we find no limitations on the cooccurrence of initial consonants and vowels. As far as we are able to tell, any initial consonant can occur with any vowel or diphthong. To be sure some conceivable combinations of initial consonants and vowels do not occur in our sample, but the large number of possible combinations (21 different initial consonants times 15 vowels and diphthongs yields 315 possibilities) means that we should not expect to find all of them in a word list as brief as ours. Nor do we

find limitations on the types of syllables that can succeed each other in the same word, except for the restrictions on tone sequences that we have already described. Even the assimilation that occurs across syllable boundaries does not put limits on the kinds of syllables that can occur side by side, since assimilation is not an automatic process.

The remainder of this paper consists of a list of core vocabulary items from Wancho. An asterisk indicates that the assignment of tones for this word should be regarded as tentative.

WORD LIST

NATURE

Sky and Weather

blow (wind) (vb.),

za≥∞TM∏*in*çç*le*çç*

cloud, *za*≥çç*pæwom*çç

dew, *nyen*çç*ti*∞TM

earthquake, *b*∅çç*ti*÷çç*si*çç

fog, mist,

za≥çç*pæwom*∞TM*a*çç*tyen*çç

*

ice, snow, hail, *Ôun*∞TM

lightning,

Ôan∞TM*tsa*≥çççç*Ôep*çç*

moon, *lyet*çç*nu*çç

rain (n.), *za*≥çççç∏*at*çç

rain (vb.), *za*≥çççç∏*at*çç*le*çç

shade, shadow, *za*≥çççç*kæu*≥ççç

sky, *di*≥ççç, *za*≥çççç*kæo*∞TM

star, *lyet*ççç*tsi*çç

sun, *za*≥ççç*han*∞TM

thunder, *za*≥çççç*du*≥ççç

wind (air) (n.), *za*≥çççç∏*in*ççç

Land and Water

dust, *la*ççç*bu*∞TM, *la*ççç*bu*ççç

earth, *ha*÷ççç∏*an*∞TM

lake, *tæom*ççç*nu*ççç

mountain, *ha*÷ççç*hwa*∞TM

mud, *ha*÷çççç*tæam*∞TM

river, *Δwa*ççç

sand, *sak*∞TM

sea, ocean, *t*∅ççç*lo*∞TM,

*ti*ççç*lo*∞TM

stone, *lo*≥ççç

valley, *ha*÷çççç*may*∞TM

ANIMALS

Domestic Mammals

animal, meat, *m*∅*y*ççç

cat, *mya*∞TM

cow/ox, *may*ççç*hu*ççç,

*may*ççç*hu*∞TM

dog, *hi*ççç

goat, *zwon*∞TM

horse, *man*ççç

mithun, *nya*ççç

pig, ∏*ak*∞TM

water buffalo, *lwi*∞TM

Wild Mammals

bat (animal), *pak[∞]peçç*
 bat, large kind, *oççpak[∞]*TM
 bear, «*cep[∞]*TM
 deer, *mØyijkæiçç*
 deer, big horned, «*cok[∞]*TM
 elephant, *lwak[∞]*TM
 gibbon, *sØççkæaçç*
 jackal, *hiççÔançç*
 macaque, *mØyççnakçç*
 mongoose, *Ôu÷ççzan[∞]*TM
 monkey (long tailed, langur),
mØyççÔoçç
 mountain goat, *mØyççÔa÷çç*
 otter, *zaççzom[∞]*TM
 rabbit,
*Ôu÷ççho≥ççnaççloçç**
(zu÷ççho≥çç 'large rat',
naçç 'ear', loçç 'long')
 rat, *Ôu÷çç*
 squirrel, *zuççzutçç*
 tiger, «*ca÷çç*

Birds

bird, chick, *oççsaçç* (*saçç*
 'suffix for small things')
 bird, domestic fowl, *oçç*
 crow, *oççkæaçç*
 dove, *oççsuçç*
 duck, *oççpakçç*
 goose, *hanççoçç*
 hawk, kite, *oççlaçç*
 jungle fowl, *oççhØnçç*
 myna bird, *oçç«cwa[∞]*TM
 owl, *oççkæu÷çç*
 peacock, *oççpwa[∞]*TM
 stork,
*o[∞]*TM*loçç* \square *a÷çç* \square *homçç**

vulture, *okççkunçç*
 woodpecker, *zopççtan[∞]*TM

Reptiles, Fish,**Miscellaneous**

eel, *nya÷ççpuçç* (*nya÷çç*
 'fish', *puçç* 'snake')
 fish, *nya÷çç*
 frog, *luk[∞]*TM
 house lizard,
manççpØççlokçç,
*manççpuççlwakççsaçç**
 lizard, big or small (not house
 lizard), *pæwotçç*
 shell (big, of turtle), *tæwakçç*
 shrimp, freshwater,
*hukççzaçç, hukççza[∞]*TM
 snail, *kæop[∞]*TM*twaçç*
 snake, *puçç*
 turtle shell, small,
*kæop[∞]*TM*twaçç*
 turtle, tortoise,
*tæunççkæwa[∞]*TM

Insects and Worms

ant, *saççkæiçç*
 ant, red, *tsikççbwak[∞]*TM
(tsikçç 'sting')
 ant, white, *sa÷ççpæoçç*
 bed bug, *lyaççsa[∞]*TM,
*lyaççsya[∞]*TM
 bee, *na÷çç*
 butterfly, *piççΔwakçç*
 centipede, *pujisiçç*
 cockroach, *lip[∞]*TM*açç*
 curling centipede, *bØtççti÷çç*
 dragon fly, *naççkay[∞]*TM
 dung beetle, *di÷ççtæuçç*
(di÷çç 'dung')

firefly, *tæa≥ççsaçç*
 fly (insect), *hwotçç*
 grasshopper, *kuk∞TM*
 insect, bug,
kuk∞TMsaçç *¶ay∞TMsaçç*
 leech (land), *¶Øtçç*
 leech (water), *¶ayçç*
 louse, *kæa≥ççtsØyçç*
 mosquito, *munççtswaçç*
 spider, *mak∞TM*
 spider web, *mak∞TMziçç*
 sting, *tsik∞TM*
 tick (insect), *pæaçç*
 worm, *«co≥çç*

Animal Parts, Products,

Calls

bark (dog), *hiççtwomçç*
 egg, *oççtiçç* (*oçç* 'bird', *ti∞TM*
 'water, juice')
 eggshell, *oççtiççkæwopçç*
 feather, *oççkwiçç*
 growl (dog), *tseji*
 honey, *na÷ççti∞TM*
 horn, *mØyççzo≥∞TM* (*zo≥çç*
 'point, corner')
 nest, *oççmØyççkwaçç*,
oççkwaçç (*mØyçç* 'tail')
 tail, *mØyççkwaçç* (cf.
kwaççdwonçç 'buttocks')
 trunk of elephant,
*lwak∞TMsa÷çç¶ayçç**
 tusk (elephant),
lwak∞TM¶açç,
lwak∞TMzo≥çç (*lwak∞TM*
 'elephant', *¶açç* 'tooth',
zo≥çç 'horn, point, corner')
 wing, *oççza≥çç*

PLANTS, FOODS

Forest, Trees, Fruit

forest, jungle, *pæawçç*
 group of trees, *hoççham∞TM*
 large tree, *pØn∞TMnuçç*
 small tree, *pØn∞TMsaçç*
 tree, *pØn∞TM*
 areca nut, *koçç¶ay∞TM*
 bamboo, *≥Øt∞TM*
 banana, *≥oçç*
 jackfruit, *pØnçç«co≥∞TM*
 leech, *saççzyakçç*
 lime (fruit), *tsaççnomçç*
 mango, *maççmumçç*
 orange (fruit), *«cawjipæaçç*,
sutççtiçç
 papaya, *tæawçç*
 pomelo, *nom∞TMpe÷çç*

Grain

maize, *soççzamçç*
 maize (popcorn),
¶amççpaçç
 millet, *hiççkæa∞TM*
 rice (cooked), *sa÷çç*
 rice (husked), *¶o≥∞TM*
 rice (sticky), *zamççloçç*
 rice (unhusked), paddy,
tsa÷ççØunçç
 rice liquor, *Øuççnuçç*
 rice plant, *tsa÷çç*

Tubers

arum, *twaçç*
 ginger, *tsya∞TM*
 manioc, tapioca,
pØnççkæØn∞TM
 sweet potato, *kæØnççtiçç*

tuber (general term),
kæŋn[∞]TM

Vegetables and

Miscellaneous

bamboo shoots (newly
picked), *meçç*
bamboo shoots (preserved),
mŋççtæamçç, mŋtççtæam
beans (long green),
pæyaççloçç (loçç 'long')
beans (small green),
pæyaççsaçç (saçç 'small')
cane, *ze[∞]TM*
cauliflower,
pæulççkæoççbiçç
chili pepper, *hiçççbu[∞]TM*
cotton, *payçç*
garlic, *te÷ççtæoçç*
grass, *hiçççzaçç[∞]TM*
mushroom, *pwaçç*
mustard, *swiççliçç*
onion, *oççte÷çç*
peas, *pæya[∞]TM*
sugar cane, *Πŋyççdwa[∞]TM*
vine (general term), *zuçç*
watermelon, *mayççkwakçç*

Foods

chicken soup, *oççtiji* (oçç
'bird', *ti[∞]TM* 'water')
curry, *swiçç*
dried fish, *nya÷ççzançç*
meat, animal, *mŋyçç*
milk, *tsomççtiçç* (*tsomçç*
'breast'; *ti[∞]TM* 'water')
oil, *mŋnçççæ[∞]TM*
salt, *humçç*

Plant Parts

bark (of tree),
pŋççkæwon[∞]TM
branch, *pŋççkaçççç*
flower, *mayççpwaçç*
fruit, *pŋçççzyakçç*
joint (bamboo etc.),
ççtççku÷çç (cf. 'neck')
juice, *hoççti[∞]TM*
leaf, *pŋnççççcak[∞]TM*
root, *pŋnçççtsiçç[∞]TM*
seed, *pŋnçççtsaçççç*
stick, *kayçççtwaçççç*
thorn, *hu÷çç*
trunk, stem, stalk, *poçççnuçççç*

BODY PARTS

Head

cheek, *naçççmya[∞]TM*
chin, *ka÷çççzaçççç*
ear, *naççç*
eye, *mik[∞]TM*
face, *tæŋn[∞]TM*
forehead, *kæaçççpoçççç*
gums, *Πaçççnyençççç*
head, *kæaççç[∞]TM*
lip, *tunçççpŋnçççç*
mouth, *Πiçççkæaçççç*
nose, *naçççkwaçççç*
tartar, dirt on teeth,
Πaçççdi÷çççç
tongue, *le[∞]TM*
tooth, *Πaçççç*

Torso

back (of body), *tok[∞]TM*
belly, *Πok[∞]TM*

body, *tomççpoçç*,
tsa≥ççtsa∞TM
 breast, *tsomçç*
 chest (body part),
kæa÷ççtokçç
 navel, *su≥çç*
 neck, *di≥ççku÷çç* (cf. 'joint of
 bamboo')
 nipple, *tsomççtunçç* (*tsomçç*
 'breast', *tunççpØnçç* 'lip')
 side (of body), *samçç*
 thin, *aççtsya∞TM*
 throat, *di≥ççdwaçç*
 (*di≥ççku÷çç* 'neck')
 waist, *kæyaççda÷çç*
 anus, *Øo÷çç*
 buttocks, rump,
kwaççdwonçç
 crotch (of body), *bak∞TM*
 penis, *kæo÷çç*
 testicle, *bwa∞TM*
 vulva, *tæu÷çç*

Arms

arm, *swak∞TM*
 armpit, *pæakççpæa≥∞TM*
 elbow, «*cak∞TMzo≥çç*
 (*zo≥çç* 'point, corner')
 finger, «*cak∞TMkæiçç*
 hand, «*cak∞TM*
 nail, finger, «*cak∞TMkæinçç*
 palm of hand, «*cak∞TMpæaçç*
 shoulder, *swak∞TMka≥çç*,
swak∞TMtoçç

Legs

foot, *sØtçç*
 heel of foot, «*ciççdwaçç*,
 «*ciççdwaçç*

knee, «*ceççku÷çç*
 leg, «*cyaçç*
 sole of foot, «*ciççpæaçç*,
 «*ciççpæaçç*
 thigh, *∏eççho∞TM*
 toe, «*ceççkæiçç*, «*ciççkæiçç*

Hair

bald, *kæa≥ççhwon∞TM*
 beard, *ka÷ççmayççmun∞TM*
 braid, *kæoççnØyçç*
 eyebrow, *mik∞TMzyençç*
 hair (body), *mun∞TM*
 hair (head), *kæo∞TM*
 mustache, *tunççmun∞TM*
 (*tunçç* 'lip')
 underarm hair,
pæakççpæa≥ççmun∞TM
 (cf. *pæakççpæa≥∞TM*
 'armpit')

Liquids and Miscellaneous

blood, *a∞TMØiçç*
 excrement, dung, *di÷çç*,
pæawçç
 fart, *di÷ççpukçç*
 pus, *açç«cutçç*
 skin, *kæwon∞TM*
 snot, nose dirt, *∏wiçç*
 spit, saliva, *tæwak∞TM*
 sweat, perspiration,
za≥ççmukçç,
za≥ççkæamççtiçç (*za≥çç*
 'hot', *tiçç* 'water')
 tears, *mik∞TMpæiçç* (*mik∞TM*
 'eye')
 urine, urinate, *hipçç*
 vomit, *pæatçç*

Inner Organs, Bones

bladder, *zuçç*
 brain, *kæØççziçç*
 fat, grease, *hoççzawçç*
 gall, *zujkæa÷çç*
 heart, *mo≥∞TM*,
mo≥∞TMtomçç (tom∞TM
 'classifier for round things)
 intestines, guts, «*ceçç*
 liver, *kæa÷çç*
 flesh, meat, animal, *mØyçç*
 placenta, after birth, *Øemçç*
 stomach, *∏ok∞TM*
 womb, uterus,
nawççpomççnwiçç (nawçç
 'baby', *pomççnwiçç* 'seat,
 'seat for the baby')
 backbone, *tok∞TMziççzaçç**
 bone, *zaçç*
 jaw bone, *ka÷çç*
 marrow (of bone), *ziççzawçç*
 rib, *samççlapççzaçç*
 skull, *kæa≥ççzaçç*

PEOPLE**Pronouns**

I, my, *kuçç*
 you (sg.), *na≥çç*
 he, «*ci÷çç*
 she, *Δeçç*
 we, *kwomçç*
 us (first person plural,
 accusative), *kwomji*
 you (pl.), *hØnççzom∞TM*
 they, *hwom∞TM*

**Age, Gender, Occupational
Categories**

adolescent boy,
nawççsØn∞TM
 adolescent girl,
nawçç«cya∞TM
 baby, *nawçç*
 boy, *lØççka∞TMnawççsaçç*
 child (young person),
nawççsomçç, nawççsaçç
 female, *Δeççko∞TM*
 girl, *Δeççko∞TMnawççsaçç*
 king, *∏a≥ççhom∞TM*
 male, *lØççka∞TM*
 man (male person),
mi÷ççsØnçç
 old man, *aççzuççpaçç,*
zuççpaçç (aççzuçç 'aged')
 old woman, *aççzuççnuçç,*
zuççnuçç (aççzuçç 'aged')
 person, *kæØççnak∞TM*
 widow, *zomççnuçç*
 widower, *zomççpaçç*
 woman, *mi÷çç«caçç*

Kinship Terms

grandfather, *ho∞TMpuçç,*
a∞TMpuçç
 grandmother, *a∞TMpiçç,*
ho∞TMpiçç
 father, *a∞TMpaçç*
 mother, *a∞TMnuçç,*
ho∞TMnuçç
 mother's brother (eldest),
aççhoçç«co≥çç,*
*aççhoççliçç**
 elder brother, *aççtØy∞TM*
 elder brother (not the eldest),
aççtØyççli∞TM
 elder sister, *a∞TMnaçç*
 husband, *sØççpaçç*

husband, *kaççkoççpaçç**
 (more formal than
sØççpaçç)
 wife, *seççnuçç*, *sØççnuçç*,
*ka∞™koççnuçç**
 wife's brother, *a∞™po≥çç*
 younger brother, *aççli∞™*
 youngest brother,
*aççli∞™sukçç**
 younger sister, *a∞™pæe÷çç*
 child (kin term), *kuççsaçç*
 daughter,
*kuççsaççΔeççkoçç**
 daughter-in-law,
a∞™pæe÷ççnamçç«ca∞™
 *
 son, *kuççsaççlØççkaçç**
 son-in-law, nephew,
*aççpo≥ççnamçç«ca∞™**
 grandchild, *kuççsuçç*

ARTIFACTS

Cooking and Eating

Equipment

cooking pot, *tik∞™*
 mortar (for rice), *tæomji*
 pestle, *mØn∞™*

Basketry, Cloth, Clothing

basket, *tso≥çç*
 basket for carryingbirds,
oççtswonçç
 basket, winnowing, *won∞™*
 carrying strap, *pak∞™*
 cloth, *nyiçç*
 fishing line, *Ôakççziçç*
 mat, *dom∞™*
 plastic string, *nØyççziçç*

pocket, *hoççkæØt∞™*
 rope, vine, *zuçç*
 string, thread, *ziçç*, *lu≥∞™*
 wire, *Ôanççziçç*

Tools and Weapons

arrow, *san∞™*
 axe, *[[aji*
 bow (with arrow), *hapççnuçç*

Buildings and their Parts, Furniture

bird coop, *oççkunçç*
 door, *pæØççlomçç*
 fireplace, *pæo≥ççkæaçç*,
ha?ççtopçç
 granary, *pu≥∞™*
 house, *hom∞™*
 roof, *homççtok∞™*,
lo÷ççtokçç (*tok∞™* 'back
 of body', *lo÷çç* 'thatch')
 sleeping place for boys,
pomjisaçç,
 stairs, ladder, *di÷ççtwaçç*
 thatch (n.), *lo÷çç*
 window, *tæa≥ççmik∞™*
 young men's dormitory, *paçç*

Village and Countryside, Fields

fence, *tsaçç[[atçç*
 field, *ha÷ççtokçç*, *za≥çç*
 (*ha÷çç* 'earth, soil', *tok∞™*
 'back')
 road, path, *lom∞™*
 village, *nokçç*, *ti≥çç*

Artifacts: Materials, Parts, Miscellaneous

boat, *kæwa*TM
 dao, large knife, «*ca*≥çç
 drum, *sam*çç
 flute, *tæwa*çç*put*çç
 iron, *Ôan*TM
 knife, *bit*TM
 needle, *mØt*TM*kwi*çç,
*mØt*çç*kwi*TM
 paper, *nam*TM
 silver, *kæop*TM
 spade, *kæo**j*
 tongs, *kæap*TM

NOUNS, ABSTRACT AND MISCELLANEOUS

ashes, *ΠØn*çç*di*÷çç,
*la*çç*bu*çç (*ΠØn*çç 'fire',
di÷çç 'dung', *la*çç*bu*çç
 'dust')
 corpse, dead body, *ma*≥TM
 court (of law), *kæwa**j*
 evil spirit, *baw*TM
 fire, *ΠØn*çç
 firewood, *ha*çç
 foot print, «*ca*çç*man*çç
 god, *za*≥TM
 hole (goes downward into
 ground), *tswom*TM
 hole (horizontal), *oççkæa*TM
 hole (round, as in cloth),
*Πoççkya*çç
 injury, *mak*çç*la*÷çç
 language, *ka*÷çç
 life, *tsØn*çç
 medicine, *hi*≥çç*hay*TM
 name (n.), *mØn**j*
 place, *nwi**j*
 point, corner, *zo*≥çç

poison, *zik*çç*hi*≥çç
 price, *hoççmØn*TM
 puddle, *tiççtu*≥TM
 smoke, *ΠØn*çç*kæut*çç
 (*ΠØn*çç 'fire')
 sore on body, *mak*çç
 soul, «*ca*çç*sa*çç
 spring (water), *tØççmik*TM
 strength, *zo*≥TM
 water, *ti*TM
 waterfall, *Δap*TM
 well (for water), *tØççkØy*çç

TIME

after, *pæØy*çç*ma*çç
 again, «*cat*çç*le*çç«*cu*çç
 before, *tæoççma*çç
 day (period of time), *nyi*÷çç
 daytime, *aççnyi*÷çç*ni*≥çç
 evening, *han*çç*so*≥çç
 month, *lyetççkwa*çç
 morning, *aççnopççni*≥çç
 night, dark, *za*≥çç*nak*çç
 (*nak*çç 'black')
 now, *aççtæa*÷çç
 suddenly, *aççleççleçç*
 then, *heççpæØy**j**ma*çç*
 today, *a*TM*nyi*÷çç
 tomorrow, ≥*ay*TM*nyi*÷çç
 year, *za*≥çç*pwa*çç
 yesterday, *mØççnyi*÷çç

ADJECTIVES, MODIFIERS

Numbers

one, *aççta*TM
 two, *aççnyi*çç

three, *aççzom*TM
 four, *aççliçç*
 five, *aççgaçç*
 six, *aççzok*TM
 seven, *aççnØt*TM
 eight, *açç««cyet*TM
 nine, *aççku*TM
 ten, *bØn*TM
 twenty, *tsa*TM
 hundred, *hoççtaçç* (*aççta*TM
 'one')

Colors

black, *nak*TM
 blue, *hokççkæwiçç*
 green, *hoççhi*TM
 light (not dark), *zaççççayçç*
 red, *hoççkæik*TM
 white, *tseçç*
 yellow, *hoççnançç*

Tastes

bitter, *hoççkæØtçç*
 chili-hot, *hoççbuk*TM,
hoççkæamçç
 sour, *hoççsik*TM
 sweet, *hoççtik*TM

Size

big, *«co*TM
 deep, *zuçç*
 far, *tsayççloçç*
 long, *loçç*
 long (road), *lomççloçç*
 (lomTM 'road')
 long (time), *zuççloçç*
 long (time, road),
*kayjipoççmaçç**
 narrow, *syep*TM

near, *nwijsos*^{çç}
 shallow, *pakççzwi*TM
 short, *mos*^{çç}
 short (people), *miçççmos*^{çç}
 small, *hiçç*
 tall (people), *miçççloçç*
 thick, *tØtçç*
 thin (not thick), *pakçç*
 wide, *kæawçç*

Adjectives, Miscellaneous

afraid, frightened, *zajj*
 alive, living, *hoççzØnçç*,
oççzØnçç
 all, every, *paçççnuçç*
 angry, *moçççtsik*TM
 ashamed, *aççzakçç*
 bad, *hoççmaçç*
 bent, zig-zag,
kwomççkwomççkeçççç,
konççkonççkeçççç
 blunt, dull, *aççne*TM
 clean, *tsawççtæaçç*
 close by *nam*TM
 cold, *hoççkoçççç*
 crazy, mad, *≥açç*, *≥atçç*
 different, *maççli*TM*liçç**
 dirty, *zyakççzyakççti*TM
 easy, *hoçç«cwon*TM
 empty, *hoççhwaçç*
 fast, quick, *aççkæa*TM*leçççç*
 fast, quick, *momççleçççç*
 fat (people), *nut*TM
 few, *mwaççleçççç*
 flexible, *nuçççnayçççç*
 full, *hoççmØnçççç*
 good, *mØyçççç*, *hoççmØy*TM
 happy, joy, *moçççmØyçççç*
 (moTM 'heart')

heavy, *li÷çç*
hot, warm, *hoççkæamçç*
hungry, *Πok∞TMnoçç*
lazy, *za÷ççkakçç*
left (side), *no≥çç«ciçç*
light (weight), *«caçç*
mad, crazy, *≥aççleçç*
many, *hwaççnuççmajj**,
lwijj
new, *hoççzØn∞TM*
old (of people), *aççzuçç*
old (of things), *hoççza≥çç*
other, *maççmaçç*
poor, impoverished,
mi÷ççΔi÷çç, *za∞TMsaçç*
pregnant, *nawççΠok∞TM*
rich, wealthy, *hak∞TMpaçç*,
lwaççpaçç
right (side), *tsa÷çç«ciçç*
right, correct, *«ca≥ççleçç*
ripe, *hoççØumçç*
rough, *pæwonççzançç*
round, *hoççtom∞TM*
same, *taççlayççlayçç*
sharp, *a∞TMna÷çç*
sick, ill, *kakçç*
slippery, *nØnççkyaçç*
slow, *zaççse∞TMleçç**
smart, *zØnççpØnçç*
soft, *nayçç*
some, *zØyççzØyçç*
sticky, *aççtsam∞TM*
straight, *ta≥ççtæoçç*
strong, firm, hard, *tsakçç*
stupid, *hoçç≥atçç*, *açç≥açç*,
tame (trans.), *tsomjj*
tired, *naçç*
unhappy, *mo≥ççmajj*
(*mo≥∞TM* 'heart')

unripe (fruit), uncooked, raw,
aççza≥∞TM
very, *ho∞TMta÷çç*
weak, *nayççΔo∞TM*
whole, entire, *komççlejj*
young (of people),
kæØççse∞TM

VERBS

able, *tæojjleçç*
arrive, reach, *aççlopçç*,
≥wiçç
ask question, *aççtØyçç*
be born, *naw∞TMpu÷çç*
beckon, wave, *Øepçç*
become erect, *aççlaçç*
bend, *kwomjj*
bite, *tsØt∞TM*
blow (with mouth), *mØtçç*
boil, *lum∞TM*
bounce (baby, trans.),
açç«cyençç
break (glass etc., trans.,
intrans.), *a∞TMΔi÷çç*
break (string), *aççpæØnçç*
breathe, *zak∞TMdØnçç*
bring, *aççpØyçç*
burn (intrans.), *ΠØnççΔunçç*
(*ΠØnçç* 'fire')
burn (trans., intrans.), *zok∞TM*
buy, *Δak∞TM*
call, cry out, *nyakçç*
carry from tump linear in a
vehicle, *hØnçç*
carry in arms or on shoulder,
pay∞TM
carry on head, *aççkæo∞TM*
chew, *Δawçç*

meet, *aççpo*TM
 melt, dissolve, «*cu*»TM
 mix, *aççnØtçç*
 moving, *hoççhamçç*
 name (vb.), *mØnççmØnçç*
 need, *la÷ççliçç*
 not spoil, *maççmaçç*
 open, *dapçç*
 play, *aççbaw*TM,
 *aççzap*TM
 point, *hiçç*
 pound (rice), *tæuçç*
 pull, *beçç*
 put, place, *dançç*, *to*^{çç}
 remember, *mo*TM*maçç*
 *kop*TM (*mo*TM*maçç* 'in
 the heart', *kop*TM 'keep';
 two words)
 return, «*catçç*
 rot, *Δançç*
 rough movement, *lwakçç*
 rub, *nunçç*
 rule over (as a king),
 *aççkæo*TM
 run, flee, *zik*TM
 say, speak, tell, *za*^{çç} *ΠØnçç*
 scratch to hurt, *Δik*TM
 scratch to soothe, *sikçç*
 scream, *aççΠawçç*
 search, *lomçç*
 see, *≥Øn*TM
 sell, *ha*^{çç}
 sew, stitch, *si*TM
 shade (vb.), *homçç*
 shade, block light, *aççho*TM
 shake, *siçç*
 shake (intrans.), *açç«cyen*TM
 shoot, *hapçç*
 show, *aççhoçç*

sing, *≥awçç*
 sit, *tæu*TM
 sleep, *Øipçç*
 smell (notice smell),
 aççtumçç
 smell bad, *nomçç*
 smell good, *zi*^{çç}
 sneeze, *aççkæik*TM
 snore, *naççkwaçç*^{çç}*≥awçç**
 soak (rice etc.), *aççzomçç*
 split, *aççpæiçç*
 squeeze, *pæyet*TM
 stab, pierce, *top*TM
 stamp the foot, *nakçç*
 stand, *aççØo*^{çç}
 steal silently (theft),
 *a*TM*hu÷çç*
 stretch legs apart, *ka*TM
 suck, *sip*TM
 swallow (vb.), *Øokçç*
 swell up, *pæi*TM
 swim, *aççkæØy*TM
 take, *kopçç*
 take, *la÷çç*
 think, *aççØa*^{çç}
 throw away, *aççΠØt*TM
 tickle, *luk*TM
 tie, *kæakçç*, *kæaçç*
 tie hair in knot,
 *kæeççtæwop*TM
 tremble, *aççbØn*TM
 turn (trans., intrans.),
 *açç≥wi*TM
 untie, *da*TM
 wake up, awaken, *zoçç*
 walk, *hamçç*
 want, *tsu*TM
 wash (cloth, hands), *soçç*
 weave, *nyiççtakçç*

weep, cry, *sopçç*
 wet, *hoççΔançç*
 yawn, *[[iççkæaççkaççji**

FUNCTION WORDS AND AFFIXES

Classifiers

classifier for animals and round things, eyes, balls, *tom∞TM*
 classifier for leaves, *pæa∞TM*
 classifier for men, males, *sØn∞TM*
 classifier for thin things, paper, *kæawçç*
 classifier for women, females, *«ca∞TM*
 classifier long things, fish, string, *Ôa≥çç*

Conjunctions

and, *Ønççto÷ççleçç*
 because, *«cemççtæØy∞TMlo?ççleçç**
 if, *tæØyççba∞TM*
 not, *mØn∞TM*

Locations

here, *iççkæaççmaçç*
 that, *«cuççÔaççji*
 there, *«cuççkæaççmaçç*
 this, *iççÔaçç*

Question Words

how much?, *oççbiçç*
 how?, *bØççle∞TM*
 what?, *«cem∞TM*
 when?, *oççtuççeçç*

where at?, *oççyo≥ççmaçç*
 where to?, *oççÔo≥ççtoçç*
 who?, *oçç[[a∞TM*

Noun Suffixes, Post Positions

from, *maççkæa≥ççeçç*
 in front of, *tæØnççtæo∞TM*
 inside, *homççmo≥∞TM*
 with, (instrumental post position), *pæay∞TM*
 locative suffix, *maçç*
 suffix for large things, *-nuçç*
 suffix for small things, *-saçç*
 to (post position), *to∞TM*
 under, *pæa≥∞TM*
 with, together with, *pæØy∞TMtomççleçç**