

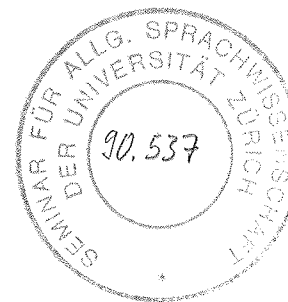
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# KAREN LINGUISTIC STUDIES

*Description, Comparison, and Texts*

BY

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PREFACE

The largest concentration of Karens live in Lower Burma, where, using the 1931 census figures, an estimate might place them at between one and a half and two million. A considerable number live in Thailand, some in the central plains region but most of them in the northern and western hill areas. Within Burma the Sgaw constitute the largest subgroup, followed by the Pho with slightly fewer members, and the Bwe with considerably fewer. These are the three principal subgroups,<sup>1</sup> but there are perhaps as many as twenty to twenty-five smaller groups, as a conservative estimate of those showing clear dialect differences. Conversation with missionaries who have worked among the Karen groups in Thailand would seem to indicate that most Thai Karens are branches of Sgaw or Pho, but this is, except in three specific cases, simply an impression.

Though several of the varieties of Karen have at one time or another in the past had some kind of Mon-Burmese writing system,<sup>2</sup> little is known of the earlier systems. The few examples remain untranslated, and some of the originals have been lost. The Sgaw writing system developed by the Rev. Dr. Jonathan Wade in 1832 has flourished and is at present widely used. Dr. Wade's script, based on Burmese, was later adapted to Pho by Dr. Francis Mason, but his system has undergone various modifications, and several versions seem to be used now; perhaps this accounts for the unsatisfactory features it contains as compared with the almost perfect Sgaw system, at least for representing Moulmein speech. Much Christian educational material and many school texts at primary levels have been published in Sgaw and to a lesser extent in Pho. There are several magazines and newspapers but no dailies. Literary efforts are also beginning to appear: the first novel was published in 1950.

The present studies of Karen were presented to the Graduate Division, University of California, Berkeley, as a doctoral dissertation in Linguistics in 1958. Here I have revised and expanded them as the result of a year of field work in Burma as a Fellow of the Ford Foundation in 1957-58. This enabled me to collect material on one additional dialect which is included here, Palaychi, and to revise and expand the original Pho material.

For financial assistance at various times during the ten years this material was being collected and analyzed I express my thanks to the Department of Linguistics, University of California, Berkeley, the American Council of Learned Societies, and the Ford Foundation.

I am indebted also to many colleagues, teachers, and friends for technical aid and advice. Specifically, I wish to acknowledge my debt to Pro-

<sup>1</sup>H. I. Marshall, "The Karen Peoples of Burma," *Ohio State Univ. Bull.*, XXVI, no. 13 (1922).

<sup>2</sup>Alonzo Bunker, "On a Karen Inscription Plate," *Jour. Amer. Oriental Society*, X (1871), 172-176; Nathan Brown, "On a Karen Inscription," *Trans. Asiatic Society of Japan*, VII (1879), 133-135.

## 100. PHONOLOGY

### 101. Segmental Phonemes

All utterances in Karen are composed of one or more successive occurrences of a sequence of contrasting phonemes which may be represented by the formula 1(2)34(5). Each number represents a class of phonemes, and these phonemes are defined as segmental: 1 stands for any one of the class of phonemes (consonants) which may occur immediately after pause (silence); 2 stands for any one of a small subclass of Class 1 which may occur immediately after certain Class 1 phonemes (forming consonant clusters); 3 stands for any one of the class of phonemes (vowels) which may occur after Class 1 phonemes, or Class 2 when present; 4 stands for any one of the class of distinctive pitch levels (tones) which occur simultaneously with Class 3 phonemes; 5 stands for a subclass of Class 1 which may occur after Class 3 phonemes—it contains only one member, /ʔ/.

The phonological unit thus defined is a syllable, the minimum constituency of which is 134. The remaining elements, Class 2 and Class 5, may or may not be represented. Any such unit may be quoted in isolation and some such units may also be complete utterances.

### 102. Class 1 Phonemes (Consonants)

	Labial	Dental	Palatal	Velar	Glottal
Stops					
vl. unasp.	p	t	c	k	ʔ
vl. asp.	ph	th	ch	kh	
vd.	b	d			
Spirants					
vl. unasp.		θ	s	š	x
vl. asp.			sh		
vd.			z	ɣ	ʰ
Resonants					
vocalic	w		j		
nasal	m	n	ɲ	ŋ	
lateral		l			
trill		r			

The phonemes /z, h, ŋ/ and the entire palatal series, with the exception of /j/, are rare. In the data /z/ occurs only in /zé/, and overlaps

semantically with /phjá/, both meaning "market, bazaar." /ŋ/ occurs in two items, /š/ in three, /ch/ in four, /c/ in seven. All these items carry low functional loads semantically, except perhaps /có/ school. /ñ/ occurs in only thirteen items and /h/ in seven or eight, but both carry fairly high functional loads in terms of frequency of occurrence because of such items as /ñá?/ fish and /há?/ (question particle).

The aspirates are written with aspiration indicated by "h" as a matter of typographical convenience. They are unit phonemes and not clusters.<sup>1</sup>

/p, t, c, k/ are similar to the postconsonantal allophones of English stop phonemes, but more fortis: /pé/ govern, /pí?/ distinct, /pɛ/ divide, /té/ speak, /tí/ uncle, /ta/ bet, /ti?/ cut (with scissors), /cá?/ water lily, /có/ school, /ká/ (V) skin, /ké?/ crooked, /ky/ mushroom, /kə/ bank, shore.

/ʔ/, as a member of Class 1 phonemes, has allophone fortis glottal stop. As the Class 5 phoneme, when stressed and followed by juncture it has allophone fortis glottal stop with mid and low tones but allophone lenis glottal constriction with the high tone. /ʔó?/ be, live, stay, /ʔó/ drink, /ʔó?/ eat, /ʔɔ/ (3d sg. obj. pron.), /ʔɔ?/ open, /jò?/ deep.

/ph, th, ch, kh/ are similar to the English stop phonemes when initial, but more strongly aspirated: /phí/ grandmother, /phé/ (location in time or space), /pha?/ read, /thí/ water, /thé?/ (V) plow, /tha?/ iron (metal), /chɔ?/ cuddle, /chó?/ garden, /khí/ two, /khá?/ bitter, /khy?/ cultivated field.

/b, d/ are prevoiced, i.e., voicing slightly precedes release of the stop, and includes concomitant pharyngealization. In precise speech this prevoicing is sufficiently pronounced to produce implosive release. /bí/ (V) tie, /bá?/ bore (a hole), /bu?/ near, /dú/ brave, /dó?/ big, /di?/ wing.

/w, j/. The back semivowel is accompanied by lip protrusion. The front semivowel may in precise speech have a spirantal allophone [ʒ] as a Class 1 phoneme. As a Class 2 phoneme it is never spirantal. /ji/ far, /jè/ five, /jý/ rat, /phjá/ market, /wá?/ bamboo, /wè/ older sibling, /wè/ town, /khwí/ nine.

/θ/ is a voiceless interdental spirant: /θí/ die, /θá?/ fruit, /θa?/ heart, spirit.

/x/ has a lower high back unrounded offglide, [x<sup>u</sup>], before vowels /i, e, ɛ, ə, a/ and a rounded offglide in the same position, [x<sup>u</sup>], before vowels /o, ɔ/. Both glides are accompanied by lip protrusion. There is no glide before /u, y/. /xí/ dirt, /xè/ run, /xe/ thin, /xé/ toasted rice grains, /xa?/ dark-colored, /xý/ look for, /xú/ united, /xó?/ pagoda, /xɔ?/ eight.

/ɣ/ has allophone voiced velar spirant [ɣ] with tones /-, ˘, ˙/ and allophone voiceless glottal spirant [h] with tones /', ˘?, -?/. /ɣe/ good, /ɣí?/ house, /ɣa?/ walk, /ɣé/ come, /ɣɔ/ red, /ɣì/ strength, /ɣí?/ grind.

<sup>1</sup>It would be possible to analyze the aspirates as clusters by considering the aspiration to be an allophone of the voiced glottal spirant /h/. That has not been done, because the patterning of consonant clusters does not seem to warrant such an interpretation. It might also be possible to consider the aspiration as an allophone of /ɣ/, since that phoneme has voiceless glottal spirant allophones in initial position in precisely those tones in which the aspirates occur. But the aspirates also occur in clusters with /ɣ/: so such a solution seems undesirable even though possible.

/h/ is a voiced glottal spirant [h]: /há?/ (question particle), /hé/ (informal salutation), /hə/ either . . . or . . .

/s/ is a voiceless unaspirated dental spirant, fortis: /sé/ silver, /sí/ run, /sa/ fishing net, /ʔə?se?/ a little bit, /si/ massage.

/sh/ is a voiceless aspirated alveolar spirant, lenis: /shó/ early, /shí?/ sour, /sha?/ sew.

/š/ is a voiceless palatal spirant: /ʔə?šó?/ spy, /šo?/ crowded.

/z/ is a voiced alveolar spirant: /zé/ market.

/m/ is a voiced bilabial nasal resonant: /mú/ alive, /mé?/ talon, /mò/ mother (informal), /mè?/ face.

/n/ is a voiced alveolar nasal resonant: /ní?/ year, /ni/ day, /nà/ ear, /nə?/ you.

/ŋ/ is a voiced velar nasal resonant: /ŋá/ borrow.

/ñ/ is a voiced palatal nasal resonant: /ñó/ easy, /ñá?/ fish, /ñwi?/ wither, /ñà?/ torn.

/l/ is a voiced alveolar lateral resonant: /lí/ finished, /lé?/ cart, /lo/ down, /ly?/ cover over, /lè/ kidney.

/r/ has allophone voiced alveolar lenis spirant, [r̥], as a Class 1 phoneme, and allophone tongue-tip trill as a Class 2 phoneme: /rý/ fin, /'ré?lo/ arrange, /'ralo/ spread out, /ri?/ spin, whirl, /rò/ basket, /rù?/ demolish, /tre/ door, /ʔə?thry?/ quiver, shake.

### 103. Class 2 Phonemes

Five of the phonemes in Class 1 enter into a subclass, designated Class 2, by virtue of their occurrence as second member of consonant clusters. The distribution of such occurrences is as follows:

/ph, m/	plus	/- l, - ɣ, j/
/b/	plus	/- l, r, ɣ, -/
/p/	plus	/w, l, r, ɣ, -/
/k/	plus	/w, l, r, - -/
/kh/	plus	/w, l, - - -/
/t, th, θ/	plus	/w, - r, - -/
/s, sh/	plus	/w, - - ɣ, -/
/d, j, ñ, n, r, l/	plus	/w, - - - -/

/phlá/ wasp, /phla?/ (V) split, /phlá?/ round, /phya?/ (V) scream, /phýí/ scatter, /phýó?/ poor, /phjá/ market, /phjé?/ stupid, /phjá?/ Buddhist monastery, /tà'mlà/ precious stone, /ʔə?mlà?/ robber, /lè'mlé?/ soft rock, /mýá/ spade, /ʔkə?mýi/ dust, /mja?nə?pá?/ a kind of tree.

/bló?/ hall, /bla?/ hang up, /blá/ sink, /byá/ tame, /byé?/ dew, /byo?/ (V) vomit, /'phe?bru?ari/ February.

/pwé/ festival, /pwa?/ rise, /pli/ rope, /plè/ servant, /tə?plý?/ shake out, /prə?/ make a crackling noise, /prá/ compete, /prí?/ fill in, /pya/ person, /pyà/ old, /pyì?/ intestines.

/kwá/ axe, /ʔə?kwi/ bent over, /krà/ (N) plow, /ma'kró/ do aimlessly, /klá/ pronounce correctly, /klá?/ rotten, /kló/ bronze drum.

/khwá/ male (human), /khwí/ nine, /khlí/ boat; seed, /khlá?/ banyan tree, /khla?/ sick (of babies, both human and animal), /khló?/ snail.

/twi/ drag, /wé/ support, /<sup>h</sup>kə<sup>h</sup>tri/ earthen jar, /trɛ/ door, /thwí<sup>h</sup>/ dog, /thwé/ right (side), /<sup>h</sup>θə<sup>h</sup>thry<sup>h</sup>/ quiver, shake, /θwí/ nest, /θwɛ<sup>h</sup>/ rough, /θwé<sup>h</sup>/ shake the head (only of elephants), /θrɛ<sup>h</sup>/ smooth off rough places, /<sup>h</sup>tə<sup>h</sup>θrɔ<sup>h</sup>/ (N) echo.

/swá/ crawl, /swí/ tough, obstinate, /sɣɛ/ river rapids, /sɣo/ grasp, /sɣo<sup>h</sup>/ brittle, /shwá<sup>h</sup>/ push, /shwí/ shove into, /shɣý<sup>h</sup>/ wash (clothes), /shɣá<sup>h</sup>/ wild, /shɣɛ<sup>h</sup>/ avoid.

/dwé<sup>h</sup>/ cricket, /dwa<sup>h</sup>/ solve, /jwa/ flow; God, /ñwi<sup>h</sup>/ wither, /<sup>h</sup>pə<sup>h</sup>ñwé/ persecute, /nwé<sup>h</sup>/ yam, /nwí/ seven, /<sup>h</sup>kə<sup>h</sup>rwe/ windlass, /rwá<sup>h</sup>/ village, /lwí/ four, /lwé/ coax.

## 104. Class 3 Phonemes (Vowels)

	Front	Central	Back
	unrounded	unrounded	rounded
High	i	y	u
Mid	e	ə	o
Low	ɛ	a	ɔ

/i/ has a lower high and somewhat lax allophone before /<sup>h</sup>/ with mid and low tones; otherwise the allophone is high and tense: /bí/ tie, /bí<sup>h</sup>/ flat, /pli/ rope, /ti<sup>h</sup>/ make an effort, /pì/ pinch, /pì<sup>h</sup>/ sticky.

/e/ is a higher mid front tense vowel which has a slightly raised allophone before /<sup>h</sup>/ with mid and low tones: /dé/ navel, /dé<sup>h</sup>/ frog, /ple/ tongue, /kle<sup>h</sup>/ silly, /xè/ run, /pè<sup>h</sup>/ baggy.

/ɛ/ is a lower mid front tense vowel. It has an occasional raised allophone with mid and low tones and an occasional lowered allophone with the high tone. Both of the occasional allophones apparently vary freely with the principal allophone: /ché/ market basket, /shé<sup>h</sup>/ fish trap, /lɛ/ go, /lɛ<sup>h</sup>/ scorch, /jè/ five, /jè<sup>h</sup>/ chop, mince.

/y/ is a lower high central tense vowel, unrounded but with slight lip protrusion: /shý/ (V) pound, /ɣý<sup>h</sup>/ steal, /ky/ mushroom, /ɣy<sup>h</sup>/ throw, /jý/ rat, /pý<sup>h</sup>/ creep.

/ə/ is a lower mid central vowel which has a slightly raised and fronted allophone before /<sup>h</sup>/ with the mid tone. Lax and short before /<sup>h</sup>/ with mid and low tones when unstressed: /ká/ distended, /ká<sup>h</sup>/ lazy, /pə/ level, /jə<sup>h</sup>/ I, /kə/ bank, shore, /lə<sup>h</sup>/ ended.

/a/ is a low central tense vowel: /pá/ father (informal), /pà/ father (formal), /pá<sup>h</sup>/ wheel, /pa/ side, /tha<sup>h</sup>/ iron (metal), /pyà<sup>h</sup>/ fishing net.

/u/ is a high back rounded vowel with lip protrusion. It has a slightly lowered and relaxed allophone before /<sup>h</sup>/ with mid and low tones: /thú/ gold, /thú<sup>h</sup>/ perpendicular, /mu/ intoxicated, /thu<sup>h</sup>/ (V) polish, /kù/ fall down, /kù<sup>h</sup>/ fell (trees).

/o/ is a higher low back rounded vowel with lip protrusion: /jó/ simple, /jó<sup>h</sup>/ jam, /ko/ hard, /sho<sup>h</sup>/ poke, /kò/ hot, /lò<sup>h</sup>/ together.

/ɔ/ is a higher low back rounded vowel with lip protrusion: /sɔ/ older brother, /shɔ<sup>h</sup>/ push, /lɔ/ down, /sho<sup>h</sup>/ accommodate, hold, /klɔ/ cow, /xò<sup>h</sup>/ prison.

## 105. Class 4 Phonemes (Tones)

This class is composed of three phonemes—high, mid, and low—each with two allophones depending on the presence or absence of final /<sup>h</sup>/. Normally the high tone is indicated by /<sup>h</sup>/, the low tone by /<sup>l</sup>/, and the mid tone is left unmarked. However, here and elsewhere, whenever it is desired to refer to the mid tone as such a hyphen will be used to represent it, thus: /-/. Though there are only three phonemic tones, the term "tone" will be used to refer to any of the six allophones as a matter of convenience. Thus /<sup>h</sup>/ and /<sup>h</sup><sup>h</sup>/ will both be referred to as tones, though they are in fact allophones of the same tone. Such usage is convenient in discussing points at which the various allophones behave differently. The accompanying diagram indicates the general phonetic quality of the allophones.

	/ <sup>h</sup> /	/ <sup>h</sup> <sup>h</sup> /	/- /	/- <sup>h</sup> /	/ <sup>l</sup> /	/ <sup>l</sup> <sup>h</sup> /
H						
M						
L						

Though the pitch levels are relative to each other, every allophone has certain features in addition to pitch which distinguish it from all others.

/<sup>h</sup>/ is high in pitch with a slight rise at the end.

/<sup>h</sup><sup>h</sup>/ begins at high pitch and falls to low, accompanied by increasing glottal constriction of the vowel.

/- / is mid in pitch with a slight drop at the end.

/-<sup>h</sup>/ is mid in pitch, and the vowel is terminated abruptly by glottal closure.

/<sup>l</sup>/ begins slightly lower than mid pitch and falls to low, the drop being greater than that of /- / but not so great as that of /<sup>h</sup><sup>h</sup>/, and is accompanied by a somewhat "open" breathy voice quality.

/<sup>l</sup><sup>h</sup>/ is low in pitch; the vowel is terminated abruptly by glottal closure and is accompanied by "open" breathy voice quality.

/sý/	hand	/tá/	one
/sý <sup>h</sup> /	poison	/tá <sup>h</sup> /	post
/sy/	far apart	/tə/	spoon
/sy <sup>h</sup> /	drop with a bang	/tə <sup>h</sup> /	brick building
/ <sup>h</sup> kə <sup>h</sup> sý/	monkey-tiger	/tə/	ant
/sý <sup>h</sup> /	baby's hammock	/tə <sup>h</sup> /	drop with a thud

## 106. Class 5 Phoneme

This class contains only one member, /ʔ/, the only phoneme which may occur in postvocalic position.

## 107. Distributional Restrictions

Two further subclasses of phonemes are identified by the restrictions of occurrence with each other. The two subclasses are designated 1a and 4a. The former occurs only with the latter. Subclass 1a contains the voiceless aspirated stops /ph, th, kh, sh/, /θ/, and the voiced stop /d/. Subclass 4a contains the tones /', '?, -ʔ/.

The allophones of the Class 1 phoneme /ɣ/ follow the same pattern: [h] occurs only with subclass 4a, [ɣ] elsewhere.

The palatals /z, ʃ, c, ch/ and the nasal /ŋ/ also occur only with subclass 4a. These phonemes are not included in subclass 1a because of their very limited occurrence. This fact, together with the fact that other phonemes of the class (excepting /d/) constitute a kind of phonetic unity, is taken as sufficient reason for excluding them.

From the phonetic pattern we might expect /b/ also to be included in 1a. However, four examples occur with tones other than those of 4a.

In addition to the above-mentioned restrictions in distribution, some other combinations fail to occur in the data, but such gaps present no systematic patterning and so are considered to be random and of no structural significance.

## 110. Suprasegmental Phonemes

Contrastive features of utterances which occur simultaneously with and which may vary with different occurrences of the same segmental phonemes are defined as suprasegmental phonemes. These include stress, juncture, and intonation.

Of the total corpus used in this study only a small portion contained sufficient phonetic detail of suprasegmental features to make possible a study. The following statements are therefore based on so small a sample that they must be considered as only tentative.

On the phonetic level at least five different vowel lengths are discernible in utterances of more than one syllable, and these various lengths are correlated with features of stress and juncture. In the following statements of the distributions of these various features the numbers 1-5 represent the different lengths of vowel from shortest to longest.

[1]. Vowels with tones /-ʔ/, /' ʔ/. In sequences of two syllables in normal transition, both of the shape /Cəʔ/ (where C = consonant) and both weakly stressed, the vowel of the first syllable will be slightly longer and have slightly heavier stress. In most of the examples of this kind the first syllable is a pronominal form. In sequences of the shape /'CəʔCVʔ/ where V is a vowel other than /ə/ and both syllables are weakly stressed, the vowels have equal length and stress.

Vowel lengths 2-5 do not occur with tones /-ʔ/ and /' ʔ/, and vowel length 1 does not occur with tones /', '?, -, 'ʔ/.

[2]. Vowels with secondary stress and in normal transition with a following syllable.

[3]. Vowels with primary stress and in normal transition with a following syllable; vowels with secondary stress followed by internal juncture /-/ or /./.

[4]. Vowels with primary stress followed by internal juncture /-/, /./ or /:/; vowels followed by terminal juncture /./ or /:/.

[5]. Vowels followed by terminal juncture /·/ or /!/.

## 111. Stress

Stress here is defined simply as contrasting degrees of loudness. Three phonemic stresses are set up, though it seems likely that the secondary stress may eventually be found to be two phonemes rather than one. There are surely differences in loudness (allophones?) among the various occurrences of secondary stress, but it has not yet been possible to define the differences or even positively to identify them. The difficulty lies principally in finding minimal contrasts, which are necessary because of the tonal features. For example, tone /' ʔ/ always gives the impression of being more heavily stressed than any of the others. The stresses are indicated as follows:

/~/. Weak stress with two allophones, as described under vowel length 1 above.

/ / (unmarked). Secondary stress.

/'/ . Primary stress.

Stress phonemes are written before the initial consonant of the syllable affected.

/~jəʔ'le./ I went.

/~jəʔ'krəʔle./ I should go.

/~jəʔ'təʔle'báʔ./ I didn't go.

/~jəʔ'ɛʔdɔʔle./ I want to go.

/~jəʔ'təʔ'ɛʔdɔʔle'báʔ./ I don't want to go.

/báʔ'təʔbáʔ, ~jəʔ'təʔ'le'báʔ./ Perhaps I won't go.

/~jəʔle-'lɔ́, ~ʔəʔwé-~təʔkhlyʔ'hédiʔbáʔ./ I (had) gone (when) he [not yet] came.

## 112. Juncture

Three internal junctures and four terminal junctures are postulated. The internal junctures are defined by vowel lengths and breaks in an otherwise unbroken speech continuum. All three internal junctures are potential pause points, since hesitation may occur at these points. Inadvertent breaks between juncture points necessitate beginning again at least as far back as the first juncture preceding the break.

External junctures are defined by vowel lengths and by modification of the tone of the immediately preceding syllable.

## 112.1. Internal Junctures

Vowel lengths are indicated in brackets under each example.

/-//. The preceding vowel has length 4 with primary stress or length 3 with secondary stress; continuum usually not broken.

/ˈjəʔlɛ-ˈlǎ, ˈʔəʔwé-ˈtəʔkhlyʔhédiʔbáʔ./  
[ 1 3 4 1 4 1 1 3 1 4 ]  
I (had) gone (when) he [not yet] came.

/././. The preceding vowel has length 4 with primary stress or length 3 with secondary stress; speech continuum broken and may include pause.

/ˈbáʔtəʔbáʔ, ˈjəʔtəʔlɛbáʔ./  
[ 3 1 3 1 1 3 4 ]  
Perhaps I won't go.

/;/. The preceding vowel has length 4 and primary stress, and tone of that syllable has rising pitch beginning approximately at mid level and rising to high; speech continuum broken and usually (?) includes a brief pause. This juncture occurs rarely in the data.

/ˈtəʔblǎʔnéʔ; ˈkúʔthǎʔwé-ˈlǎ-ˈkəʔma-nèʔɔ-lɔʔ./  
[ 1 2 4 3 2 4 4 1 4 2 4 5 ]  
At that time (he) planned what (he) would do to get her.

## 112.2. Terminal Junctures

Here vowel lengths are indicated as before, and pitch and tonal contours are indicated in brackets following the example.

/././. The preceding vowel has length 4 and primary stress or length 3 with secondary stress. In either case, stress diminishes rapidly and tone has falling pitch. Tones with falling pitch normally, /ˈʔ/ and /ˈ/, are modified only in the relative rapidity with which the pitch drops, the drop being less abrupt when followed by this juncture.

/ˈjəʔkəʔbáʔlɛ./ [ — — — ]  
[ 1 1 3 4 ]  
I ought to go.

/ˈjəʔtəʔlɛ-ˈbáʔbáʔ./ [ — — — ]  
[ 1 1 3 3 4 ]  
I didn't happen to go.

/:/./. The preceding vowel has length 4 and the tone is not affected.

/ˈjəʔkəʔlɛ:/ [ — — — ]  
[ 1 1 4 ]  
I'm going.

/ˈjəʔlɛ-ˈkǎ:/ [ — — — ]  
[ 1 3 4 ]  
I can go. (but . . .)

/././. The preceding vowel has length 5 and tone is replaced by rising pitch which begins at mid level and rises, but not to high level.

/ˈshúsýˈthwéʔ-háʔ./ [ — — — ]  
[ 3 2 4 5 ]  
(Is it) to the right?

/ˈjəʔmalóˈbáʔ-lwǎˈníʔ-lɔʔ./ [ — — — ]  
[ 1 3 2 4 2 4 5 ]  
I studied four years.

/!/./. The preceding vowel has length 5; tone sustained and then terminated by abrupt decrease in stress and drop in pitch. In the data only mid tone /-/ occurred in this position and that only rarely.

/ˈjəʔbáʔlɛ!./ [ — — — ]  
[ 1 2 5 ]  
I have to go!

Any sequence of phonemes which does not contain one of the above-listed junctures is said to be in normal transition.

## 113. Intonation

By intonation is meant here any deviation, in the course of an utterance, from a mean pitch level as established by the tone of the first syllable of the utterance. In the data only two such features were observed and one was rare. This fact, perhaps more than any other, may reflect the artificiality of the situation in which the data were collected.

By far the most common intonational feature is a noticeable and steady lowering of the mean pitch level from the beginning to the end of the utterance. This intonation is most noticeable when two or more successive syllables have the same tone, or when two syllables having the same tone are separated by a weakly stressed syllable. Tones /ˈ/ and /-/ remain relatively distinct. The two falling tones, /ˈʔ/ and /ˈ/, and the two stopped tones, /-ʔ/ and /ˈʔ/, frequently seem not to contrast in a given utterance, though they do contrast in different utterances. These differences may be expressed as follows:

A

1. /... ˈ ˈ ˈ .../ [ ... — — — ]

2. /... ˈ ˈ ˈ .../ [ ... — — — ]

B

1. /... ˈ ˈ ˈ .../ [ ... — — — ]

2. /... ˈ ˈ ˈ .../ [ ... — — — ]

3. /... ˈ ˈ ˈ .../ [ ... — — — ]

4. /... ˈ ˈ ˈ .../ [ ... — — — ]

A1 contrasts with both B1 and B2, though there is no contrast within A1. A2 contrasts with both B3 and B4, though there is no contrast within A2. B1 and B2 contrast, and B3 and B4 contrast.

This falling intonation is interpreted as the normal pattern in speech and is not marked.

In a few short utterances the mean pitch level seems to remain relatively constant and the tones contrast very much as indicated in Section 105 above. Such sustained intonation is indicated by the symbol /\*/ placed at the beginning of the utterance.

In short utterances which do not contain repetitions of any tone it has not so far been possible to determine whether the mean pitch has been affected. Such utterances are for the present considered to have nondistinctive, or at least indeterminate, intonation and are left unmarked.

/\*tɛ'ba'-wɛ'khwa:/ (I) told older brother.

/\*tɛ'ba'-wɛ'my:/ (I) told older sister.

'ba'tə'ba', ~ja'tə'ləba'./ Perhaps I won't go.

~ja'lɛ-'θá./ (nondistinctive) I can go.

Features of stress may also affect pitch levels and tonal contours, but we need considerably more phonetic detail than is available at present in order to deal effectively with such features.

## 200. WORD CLASSES

The following is a list of word classes and their abbreviations.

V	verb	cN	classifier
mV	modal verb		
aV	adjectival verb	R	relator
sV	secondary verb	pR	prepositional relator
		cR	conjunctive relator
mA	modal auxiliary		
aA	aspectual auxiliary	A	adverbial
N	noun	M	marker
aN	attributive noun	cM	coördinate marker
pN	pronoun	tM	topic marker
dN	demonstrative noun	iM	interrogative marker
		nM	narrative marker
qS	quantifying specifier		
iS	interrogative specifier	I	interjection

Word classes are syntactically defined. The class of pronouns constitutes a paradigm in addition to its positional definition. The classes of verbs and nouns are defined in terms of the minimum free constructions in which they occur. The classes of relators and adverbials are defined in terms of noun and verb constructions with which they occur. Markers are defined in terms of their occurrence after other single forms or constructions, but they do not enter into the construction; rather, they simply mark the construction as having a particular significance. Interjections occur either initially or finally in an utterance but not medially, and they occur only in conversational style. In final position, interjections and narrative markers are mutually exclusive. The use of interrogative markers and, in narrative style, narrative markers, both in final position, is mandatory, but interjections are a matter of choice on the part of the speaker.

## 201. Verbs

Syntactically free forms which may enter into construction with other forms are primary verbs, or simply "verbs." Only verbs occur as the sole constituent of an utterance, though occasionally a noun may occur as an echo-question. In such cases a terminating interrogative marker is always present, and, though it is not considered to be a constituent of the utterance, a terminal marker is not necessary with single verb utterances unless a question is intended; thus single verbs may occur in noninterrogative utterances but single nouns may not. Verbs occur also in attributive construction with nouns, occupying a position after the noun. /'ó?/ yes; exist, live, /mè/ yes; is, /bá?/ yes; correct.