

DISTINCTIVE FEATURES IN KANKANAËY

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0. INTRODUCTION

This description of Kankanaey phonology is based on the dialect of approximately 10,000 people living in Kibungan, Benguet Province. This dialect is spoken in an area extending from Kibungan in the south to Bakun in the north. While there are distinctive vocabulary items and intonational patterns among the various barrios, mutual intelligibility is high, so the phonemes presented in this paper can be considered valid for the whole area.

Data upon which this study is based was gathered in Kibungan between October, 1974, and March, 1975, under the auspices of the Summer Institute of Linguistics.

1. PHONOLOGICAL WORD

1.1 DEFINITION

The phonological word consists of one to eight syllables and is generally coterminous with a grammatical word. Phonological and grammatical words differ when the phonological word consists of two or more grammatical words, as when postclitic pronouns form part of the phonological word, e.g., *ʔasʔwam*¹ (wife + your) 'your wife', *pinádasko* (past + try + I) 'I tried'.

1.2 STRESS WITHIN THE PHONOLOGICAL WORD

In the phonological word one syllable bears major stress, the other syllables a lesser degree of stress. Stress always falls on one of the last three syllables, but within these three syllables its placement is unpredictable. In some cases its position is the minimal difference between a pair of words, e.g., *ʔótot* 'rat'; *ʔotót* 'flatulence'; *sáʔoŋ* 'adze', *saʔóŋ* 'canine tooth'; *manbálin* 'to travel', *manbalín* 'to become'.

¹Examples are written in phonemic script wherever possible to facilitate both printing and reading.

The phonological constituents of stress are prolongation of the syllable peak, increase in volume, and rise in pitch. These constituents, however, are highly susceptible to higher level intonational pressures.

2. SYLLABLE

2.1 CONTRASTING SYLLABLE TYPES

A syllable consists of an obligatory onset and peak with an optional coda.² The onset and coda are filled by consonants, and the peak is filled by a vowel. There are two syllable patterns, CV and CVC. Examples of CV syllables are *mo* 'if, when'; *ta* 'conjunction'; *di* 'particle'. Examples of CVC syllables are *tan* 'because', *din* 'particle', *mon* 'but'.

2.2 DISTRIBUTION OF SYLLABLES WITHIN PHONOLOGICAL WORD

There seems to be no restriction on the distribution of the two syllable types, CV and CVC, within the phonological word, e.g., *bogat* 'rumen', *tipkán* 'mosquito', *det'á* 'floor', *kalf* 'speech, language'.

3. INTERPRETATION OF AMBIVALENT SEGMENTS

3.1 SINGLE SEGMENTS

The high vocoids *i* and *o* are interpreted as vowels when they occur as syllable peaks and as consonants *y* and *w* when they occur as syllable onset or coda, e.g., *ya'ód* 'back of knee', *wanés* 'g-string', *labí* 'night', *síko* 'elbow', *ʔewéy* 'rattan'.

The high vocoid [ü] is interpreted as a consonant *y*, since it occurs only following *o* in the syllable coda position, e.g., *láboy* 'variety of moss', *tanšóy* 'water cress'

3.2 SEQUENCES

Ambivalent sequences of two vocoids in which both vocoids occur as syllable peaks, *oa*, *oi*, *ia*, *io*, *ie*, are interpreted as *owa*, *owi*, *iya*, *iyo*, *iey*, e.g., *bowáya* 'crocodile', *kowáko* 'pipe', *mantowíli* 'to look back', *ʔiyadóyad* 'to rock in arms', *siyám* 'nine', *nabiyógan* 'dirty', *masíyek* 'to laugh'. The sequence *oe* has not been noted. This interpretation is corroborated by morphophonemic evidence indicating the presence of a semi-vowel. In some roots, an unstressed vowel is deleted when certain affixes are added, but the linking semi-vowel is retained, e.g., *-in-* + *ʔiyát* becomes *ʔinyát*; *ka-* + *dowá* becomes *kadwá*.

Ambivalent consonant clusters and lengthened consonants are interpreted as sequences of two consonants, since they occur only word medially between two syllable peaks, forming the coda of one syllable and the onset of the next syllable, e.g., *ʔitsá* 'tea', *ʔintó* 'where', *tigwí* 'species of bird', *kompáy* 'sickle', *mankeáyát* 'to raise eyebrows'.

²The terms 'onset', 'peak', and 'coda' are taken from Hockett (1955:126-7).

4. SYSTEMATIC PHONEMES

The eighteen segmental phonemes of Kankanaey can be classified into three groups on the basis of the features continuant and syllabic. Stops, *b d g p t k ʔ*, are -continuant, -syllabic; continuants, *m n ŋ l s w y*, are redundantly +continuant, -syllabic; vowels, *i a e o*, are +continuant, +syllabic.

4.1 STOPS

4.1.1 Contrast

The stops are distinguished on the basis of four features, oral, voiced, acute, and back, as shown in Table 1. Oral stops, *b d g p t k ʔ*, contrast with *ʔ* by the feature +oral and are distinguished from each other on the basis of voicing and articulatory position, e.g., *tebék* 'sharp stick', *tepék* 'mouth'; *kóba* 'g-string', *kópa* 'backpack carrier'; *dalít* 'eel', *talúit* 'chisel'; *digwáy* 'mangosteen', *tigwí* 'bird'; *péweg* 'knee', *péwek* 'typhoon'; *sógod* 'comb', *sókod* 'cane'; *págew* 'chest', *ʔágew* 'day, sun'; *tíli* 'anus', *ʔíli* 'dwelling place'; *lakém* 'harvesting knife', *laʔém* 'inside'.

TABLE 1
FEATURES DISTINGUISHING THE STOPS OF KANKANAEY

	b	d	g	p	t	k	ʔ
oral	+	+	+	+	+	+	-
voiced	+	+	+	-	-	-	-
acute	-	+	-	-	+	-	-
back	-	-	+	-	-	+	-

4.1.2 Variation

Two randomly ordered rules account for the phonological variation that occurs in the stop series.

a.
$$\left[\begin{array}{l} + \text{ stop} \\ + \text{ released} \end{array} \right] \rightarrow [- \text{ released}] / \text{ ______ }$$

Stops are unreleased when they occur syllable final.

b.
$$k \rightarrow k / \left[\begin{array}{l} \text{ ______ } i (C) \\ C i \text{ ______ } \end{array} \right]$$

k shifts from back velar to velar position when the peak slot of the syllable is filled by *i*.

4.1.3 Distribution

The oral stops occur without restriction in both onset and coda slots of the syllable. *ʔ* occurs only syllable onset. In phonological word medial consonant clusters (the cluster being composed of the coda of one syllable and the onset of the following syllable), the oral stops can occur in almost any combination with any of the consonants. The only cluster combinations that have not been observed are *bp*, *bw*, *gŋ*, *pb*, *pw*, *tw*.

ʔ never occurs as the first member of a cluster, but as the second member, it can occur in combination with each of the other consonants.

There are no constant clusters word initially or finally.

4.2 CONTINUANTS

4.2.1 Contrast

The continuants are distinguished on the basis of five features, nasal, lateral, sibilant, acute, and back, as shown in Table 2.

TABLE 2
FEATURES DISTINGUISHING THE CONTINUANTS OF KANKANAEY

	m	n	ŋ	s	l	w	y
nasal	+	+	+	-	-	-	-
lateral	-	-	-	-	+	-	-
sibilant	-	-	-	+	-	-	-
acute	-	+	-	+	+	-	+
back	-	-	+	-	-	+	-

m, *n*, and *ŋ* are distinguished from other continuants by the feature +nasal and from each other by the features acute and back, e.g., *ʔibagám* 'you ask', *bágan* 'irrigation channel', *bagáŋ* 'neck'; *ʔodóm* 'another', *ʔodán* 'rain', *ʔodán* 'lobster'.

s is distinguished from the other continuants by the feature value +sibilant, e.g., *sáwa* 'unit of ten', *saʔón* 'canine tooth', *layʔós* 'folksong'.

l is distinguished from the other continuants by the feature +lateral, e.g., *láya* 'ginger', *laʔóg* 'variety of sugar cane'.

w and *y* are distinguished from each other by the features acute and back, e.g., *táwa* 'window', *dáya* 'sky', *ʔágew* 'sun', *ʔátey* 'liver'.

4.2.2 Distribution

The distribution of the nonsyllabic continuants is unrestricted in the onset and coda slots of the syllable. In consonant clusters within the phonological word, they occur as both initial and final consonants in the cluster, in many different combinations. Cluster combinations not yet observed are *sw*, *mw*, *ws*, *wŋ*, and *yw*.

4.3 VOWELS

4.3.1 Contrast

The four vowels are distinguished on the basis of the features low, acute, and back, as shown in Table 3.

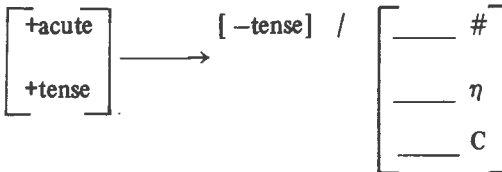
TABLE 3
FEATURES DISTINGUISHING THE VOWELS OF KANKANAEY

	i	e	o	a
low	-	-	-	+
acute	+	-	-	-
back	-	-	+	-

i is distinguished from *e*, *o*, and *a* by the feature +acute; *o* is distinguished from *i*, *e*, and *a* by the feature +back; and *a* is distinguished from *i*, *e*, and *o* by the feature +low, e.g., *ʔótek* 'brain', *ʔétek* 'lie'; *pakdá* 'bridge', *pakdé* 'warning sign'; *sígid* 'broom', *síged* 'good'.

4.3.2 Variation

i, a high front vocoid, has two variants, one +tense, the other -tense. Their phonological distribution is predicted by the following rule.



The -tense variant of *i* occurs preceding word boundary, η , and syllable coda. The +tense variant occurs elsewhere, e.g., [*pɪtʰpítʰɒn*], *pítʰpítʰɒn* 'grasshopper'; [*gɪɲɒ*], *gítʰɲɒ* 'snail'; [*sóbɒl*], *sóbítʰ* 'lips'; [*lɒbɪ*], *labítʰ* 'night'; [*silibɒm*], *silibám* 'be careful'.

e is a high central unrounded vocoid whose variants spread horizontally from central to back and vertically from high to mid. The distribution of these variants cannot be predicted on the basis of environmental conditioning; neither is there clear evidence of contrast. In many cases the variants freely fluctuate, e.g., [*lebétʰ* *lebítʰ*], *lebétʰ* 'pond'; [*bɪʔéy* *bɪʔítʰy*], *beʔéy* 'house'; [*lɪntéy* *lɪntítʰy*], *lɪntéy* 'law'; [*mɒtʰtɒdém* *mɒtʰtɒdítʰm*], *mattadém* 'sharp'. In other cases, less fluctuation has been noted, e.g., [*ʔókɪn*], *ʔóken* 'puppy'; [*ʔéwɛy* *ʔéwítʰy*], *ʔéwɛy* 'snake'; [*lɒmés*], *lamés* 'fruit'; [*pédís* *pédítʰs*], *pedís* 'bile'; [*tébékʰ*], *tebékʰ* 'sharp stick'. But while it is difficult to predict what variant will occur in a given environment, some restrictions and tendencies have been observed. The high tense variants [*i*] and [*iʰ*]

occur only in open syllables. The central variants [i] and [ə] tend to be backed, [iʔ], [ī], [əʔ], and [ē], preceding *k* in closed syllables. The mid variants [ə] and [ē] occur only in closed syllables. The following conclusion can also be made concerning the phonetic norm of the variants, based on their relative frequency of occurrence.³ The high central variants [i] and [ī] occur most frequently; the high back variants [ī] and [ī] occur less frequently; occurrence of the mid variants [ə] and [ē] is extremely infrequent. For this reason, the features high central are considered the phonetic norm of *e*.

a is a central lax vocoid with mid and low variants [ʌ] and [a], whose distribution is predicted by the following rule.

$$\text{ʌ} \longrightarrow \text{a} / \text{ ____ }'$$

The low variant [a] occurs only in stressed open syllables; the mid variant [ʌ] occurs elsewhere, e.g., [mʌndʌnʌgʔ], *mandʌnʌg* 'to worry'; [kʌwʌwʌtʌn], *kawʌwʌtʌn* 'rooster'; [ʔʌwʌkʔ], *ʔʌwʌk* 'body'; [bʌgʌŋ], *bagʌŋ* 'neck'.

o is a back rounded vocoid with two high variants, [u] and [ū], and one mid variant, [o]. The high lax variant occurs only in unstressed closed nonfinal syllables except when contiguous to ʔ or *k*, and also in final syllables when the coda is *y* and the onset is not ʔ.

The tense variants [u] and [o] fluctuate elsewhere with the restriction that [u] never occurs following *k* or contiguous to a word boundary, e.g., [mutʔyókʔ], *motyók* 'summit'; [lóbokʔ], *lóbok* 'grave'; [lʌmotʔ] *lamót* 'root'; [ʔgʔsá], *ʔogʔsá* 'deer'; [duntógʔ], *dontóg* 'mountain'; [lokʔtó], *loktó* 'camote'; [lábuy], *lábuy* 'variety of moss'; [doʔóy], *doʔóy* 'there'; [kóko], *kóko* 'fingernail'; [digó], *digó* 'broth'; [ʔogáli ʔugáli], *ʔogáli* 'custom'; [lógʌn lúgʌn], *lógʌn* 'ride'; [póségʔ púségʔ], *póseg* 'navel'.

4.3.3. Distribution

Vowels occur only in the peak slot of the syllable, but are not otherwise restricted in their distribution. Any vowel may occur contiguous to any consonant. There are no vowel clusters.

4.4 FEATURE SUMMARY OF SYSTEMATIC PHONEMES

A summary of the distinctive features of the eighteen systematic phonemes of Kankanaey is found in Table 4. Feature values have been left blank wherever possible to eliminate redundancy in distinguishing the phonemes.

³This conclusion is based on an analysis of the range of variation occurring in the speech of ten individuals, using a word list of over eighty words in each of which the phoneme *e* occurred at least once.

TABLE 4
DISTINCTIVE FEATURE SUMMARY OF
SYSTEMATIC PHONEMES OF KANKANAËY

	b	d	g	p	t	k	ʔ	m	n	ŋ	s	l	w	y	i	e	a	o		
syllabic															-	-	+	+	+	+
continuant	-	-	-	-	-	-		+	+	+					+	+	+	+	+	+
acute	-	+	-	-	+	-		-	+	-					-	+	+	-	-	-
back	-	-	+	-	-	+		-	-	+					+	-	-	-	-	+
low																-	-	+	-	
voiced	+	+	+	-	-	-														
oral	+	+	+	+	+	+	-													
nasal								+	+	+					-	-				
lateral													+							
sibilant														+						

5. TENTATIVE ORTHOGRAPHY

The tentative orthography for Kankanaey makes several departures from the phonemic transcription in order to conform more closely to the orthography of the national language, Pilipino.

ʔ is omitted word initially and intervocalically. Word medially, contiguous to a preceding consonant, it is represented by a hyphen, e.g., *káiw* 'wood, tree'; *abé* 'also'; *man-áni* 'to harvest'; *nad-ép* 'extinguished'.

ŋ, as is customary in Philippine languages, is represented by the digraph *ng*, e.g., *tangsóy* 'water cress', *nadngé* 'heard'.

Hyphen is used to distinguish velar nasal from a sequence of *n* and *g*, e.g., *man-gén* 'to carry', *mangán* 'to eat'.

Although stress is not predictable, it is omitted from the tentative orthography for three reasons: 1) very few word pairs are distinguished by stress only; 2) stress is not marked in Pilipino, although it is also phonemic in that language; and 3) in initial reading tests, the readers had no difficulty in placing stress properly, even though stress was not indicated in the written text.

6. ILLUSTRATIVE TEXT⁴

1. *Man-abat kanos da gayang en kiling issan sebang di kaong.* 2. *Kanan kanon din*
Met reportedly crow and *kiling* bird on trail of sow. Said reportedly
gayang en, "Ay soot kayman san bagangmo ay mandada?"
the crow, "Why in fact your neck bleeding?"

⁴This text is written according to the tentative orthography described in section 5.

3. *Kanan kanon din kiling en*, "Aga, omali kas na ta gedgeden taka din bagangmo. Said reportedly the *kiling*, "No, come here so that cut we-you your neck.
4. *Mandada adin bagangmo et siyadin kaman din bagangko din dod-otna*," Will bleed indeed your neck and thus like my neck its feathers,"

kanan kanon din kiling.
said reportedly the *kiling*.

5. "Aw koday," *kanan kanon din gayang ay sana*.
"Yes agreed," said reportedly crow that.

6. *Kambaw oggoanaet kano yan natokang gayang et natey, yan mayekyekyek*
So he cut throat reportedly and fell over crow and died, and hooted with

kano din kiling ay sana, tan in-etekanan gayang.
laughter reportedly *kiling* that, because fooled crow.

Free Translation

1. The crow and the *kiling* bird reportedly met on a sow trail.
2. The crow reportedly said, "Why in fact is your neck bleeding?"
3. The *kiling* reportedly replied, "It isn't. Come here so that we'll cut your neck.
4. Your neck will bleed indeed and thus your neck feathers will be like mine," the *kiling* reportedly said.
5. "All right," that crow reportedly agreed.
6. So he reportedly cut his throat and the crow fell over and died, and the *kiling* hooted with laughter, because he had fooled the crow.

REFERENCES

- FRANTZ, DONALD G. January 1972. Cheyenne distinctive features and phonological rules. *International Journal of American Linguistics* 38:1.
- HOCKETT, CHARLES F. 1955. A manual of phonology. *International Journal of American Linguistics* 21:4.
- HUTTAR, G.L. and JUDITH A. ESLICK. 1972. Distinctive features in Sarnami Hindustani. *Phonetica* 25.
- PIKE, KENNETH L. 1947. *Phonemics: a technique for reducing languages to writing*. Ann Arbor: University of Michigan Press.