

AN APPROACH TO THE PHONOLOGICAL AND SYLLABIC SYSTEMS OF THE PANARE LANGUAGE (Venezuela)

André CAUTY

*Departamento de Matemáticas y Ciencias de la Computación
Universidad Simón Bolívar, Sartenejas, Estado Miranda, Venezuela*

Panare is a Cariban language¹ spoken in the Southern region of Cañ-cara del Orinoco, Estado Bolívar, Venezuela.

The analysis of Panare presented in this paper is based on a statistical study of 3,270 syllables from 1,400 words. The corpus was obtained in 1973-1974 while we were doing linguistic research in the Panare zone². The lexicon was mainly collected from two informants, both of whom spoke minimal Spanish.

The two informants are from Caño Amarillo³, and the phonological and syllabic systems presented here are those in usage in this settlement.

¹ This linguistic identification was established in 1924 by P. Rivet and confirmed by C. Loukotka.

² This research was facilitated by a grant from the *Consejo de Desarrollo científico y Humanístico* of the University of the Andes, Mérida, Venezuela.

³ Place names can be located on the map that we present in "Reflexiones sobre denominación y designación en el idioma Panare", *Antropológica* N° 39, Caracas, 1974.

I. THE PHONOLOGICAL SYSTEM

1-. The stresses

The two stresses of intensity noted in the Panare language, strong and weak, will be indicated as follows:

strong stress [']

weak stress : unmarked

In general, every word has one stressed syllable; the stress may be on any syllable of the word. A compound word may have more than one strong stress: for instance, "sugar mill" [karanápi?to] = |karaná pi? to|, where [karaná] = "sugar cane", |pi?| is the radical of the verb "to press" and |to| a morpheme of finality, has two strong stresses⁴.

The corpus does not contain any minimal pairs of contrasting stresses and does not enable us to study closely the question of the stress in the Panare language. There is still some doubt as to whether there exists a pertinent melodic stress. Indeed, pairs of distinct sentences were found in which the difference maybe described in terms of tonality. For instance:

1. [yīm patāyaká kö pu:ká]

2. [yìm patāyaka kö pu:ká]

In sentence 2, "pu:ká is going to his father's house", the word [yìm] means "his father" and the tone is higher than in sentence 1, "pu:ká is going to my father's house". However, the following test was negative:

- a) The two sentences were recorded by one informant
- b) The two sentences were heard by other informants
- c) The identification of the sentences was imprecise.

2. The vowels

2.1. Phonetically the vocalic system is extremely unstable, not only because almost all the vowels have more than one realization, but also because it was impossible to determine any regularity in the distribution of these alternations. Even in texts recorded by the same informant the following different realizations

⁴ [...] is used for phonetic, /.../ for phonemic, and |...| for morphophonemic transcription.

were frequently interchanged : [o] and [ɔ]; [a], [ɑ], [œ] and [ə]; [e] and [ɛ], [ɨ] and [ĩ].

The only general feature noted, is that in the camp of Colorado, the mid 2 level (see the diagram that follows) seems not to be used. For these reasons we consider it more convenient, until more specific investigation is made, first to present only the phonological vocalic system, which will be transcribed as follows⁵:

			unrd.	rounded
high	i		ĩ	u
mid	e		ö	o
low		a		
	front	central		back

The vowels are defined as follows:

- /i/ = high, front, (unrounded)
- /ĩ/ = high, back, unrounded
- /u/ = high, back, rounded
- /e/ = mid (1 or 2), front, (unrounded)
- /o/ = mid (1 or 2), back, rounded
- /ö/ = mid (1), back (central 1 or 2), unrounded
- /a/ = low (1 or 2), central (1 or 2), (rounded when realized as low 2 and central 2)

according to the diagram:

			unrounded	rounded
high	i	ĩ ——— ĩ	ü — u	
mid	2 e			o
1	ε	œ ——— ö		o
2	æ ——— ə			
low	a ——— a			
		front	1 2	back
			central	

⁵ With some informants a pertinent contrast was noted which distinguishes [æ] from [a], for instance in the pair "tobacco" [kowæ] ≠ [kowa] "thread", but even in the case of these informants, neither regularity nor stability was noted, except for the contrasting pairs.

2.2. Though the contrast between long and short vowels is probably pertinent, the corpus does not enable us to study this point. In fact, the long vowels have a very low frequency. The possibility of a relation between length and stress must not be excluded: it seems that a long vowel is also a stressed one. A long vowel is noted as [v:]. For instance, [amanatá:ci] "rainbow", [pó:nã] "friend".

2.3. All vowels may be nasalized. A vowel, if nasalized, may be followed by a weak nasal consonant some of the Panare speakers preferred the sequence [v-nasal] or the sequence [ṽ-nasal] to the nasalized vowel [ṽ]. Nasalization only occurs in the final position of a syllable, and always furnishes different pronunciations. For instance, "woman" /ũkiʔ/ is pronounced as [ũkiʔ] = [ũnkiʔ] = [unkiʔ]; and "my weapon" /kõ/ presents the simultaneous realizations : [kõ] = [kõŋ] = [kon]⁶.

The corpus contains examples of the following nasalized vowels

high	ĩ		ũ
mid	ẽ	õ̃	õ
low		ã	
	front	central	back

Here [õ̃] is a nasalized sound higher than õ and lower than ĩ which probably covers both nasalized õ and ĩ.

There are many pairs in which an oral vowel is contrasted with what might be a nasal vowel or an oral vowel followed by a nasal consonant. For instance, "hat" [arõko] ≠ [arõkõ] = [arõkõŋ] = [arõkoŋ] "monkey"⁷. Our interpretation of nasalized vowels is set out in section II and in the conclusion, after discussion of syllables closed by a nasal consonant.

2.4. In part II, the contrast between what is called interrupted and uninterrupted vowels is proposed as a minimal pair distinction. The term "interrupted vowel" refers to a vowel followed by a glottal stop or by one of its variants. The interrupted vowels will be transcribed as follows:

⁶ All the phonetic alternations presented in this paper concern the main informants, and were systematically confirmed by other speakers, unless specified otherwise.

⁷ In the West, this word is almost always pronounced as [arakoŋ].

			unrd.	rounded
high	iʔ		ĩʔ	uʔ
mid	eʔ		öʔ	oʔ
low		aʔ		
	front	central		back

The informants provided no evidence of nasal interrupted vowels. The corpus contains many minimal pairs which contrast what may be an interrupted vowel or an oral vowel followed by the glottal stop, with an oral or with a nasal vowel. For instance, "eye" [o] is different from [oʔ] "beer" (Spanish *chicha*) and "flesh" [yoʔ] is different from [yõ] = [yõŋ] = [yoŋ] "my eye". Moreover the following contrasts are found in the triplet:

[pi] "a white colour used as make-up"
 [piʔ] "young"
 [pĩ] = [pĩŋ] = [piŋ] "brother (of a woman)".

- a) Following the convention presented in part II, any vowel, oral, nasal or interrupted, may constitute a syllable. Such a syllable is frequently the first segment of a word, but it may also appear in other positions as in "let's go" [maʔ i]. For instance, [a poʔ] "man", [ũ kiʔ] "woman" and [o ka] "fruit".
- b) Any vowel may follow any consonant or semiconsonant to form a syllable of the type CV or SV (S for semiconsonant). However, the following syllables do not appear in the corpus: tĩ, t'ĩ, nĩ, cĩ and yĩ.
- c) Any vowel may be followed by any consonant or semiconsonant if the consonant or semiconsonant belongs to the next syllable. The study of closed syllables is presented below (section 3.3. to 3.6.) and interpreted in part II and in the conclusion.

Phenomena of diphthongization frequently appear in the morphology. They are not discussed in this paper.

3. The consonants

3.1.

- a) The consonantal system will be described in part II section 3. after the discussion of the phonetic sounds listed in the following table:

glottal	ʔ	h					
	k'						
velar	k	g	x		ŋ	w	
	k'						
alveopalatal	t'	ç	c		ɲ	y	
apicodental	t	s	ç	r	l	n	
labial	p					m	
	stop	fricative	affricate	vibrant	lateral	nasal	semiconsonant

b) The complete absence of voiced consonants from the system is remarkable. The only exception is represented by a few cases in which the voiceless velar /k/ was also pronounced as the voiced [g]; for instance, in the word "poison (curare)" /**mākowa**/ = [mākowa] =[māgo^vva]. This phenomenon was only noted before one of the three vowels: **ö, o, a** i.v. the lowest and furthest back of the vocalic system.

c) Except for ʔ and its variants as defined in section 3.4. and for ŋ, all the consonants and semiconsonants may constitute a syllable of the type CV or SV with any vowel, oral, nasal or interrupted, and this in any word position. Although /x/ is also a variant of the glottal stop, it may appear, in a few cases and only in a few settlements, followed by the vowel /**ö**/ only, to form a syllable of the type CV, for instance in "skin" [pixö] = [piçpö] = [piʔpö]. In all these cases, other alternative phonetic realizations are found. This fact is discussed in section 3.6.

d) The glottal stop, the fricatives, and the nasals minus [ɲ] are the only sounds used to close a syllable⁸.

3.2. We shall discuss separately in section 3.4. and 3.5. the variants of the glottal stop and of the nasals.

a) We previously discussed the occurrence of the voiced [g] as a variant of k. We noted in the corpus the following :

a - when /**ke**/ is the last segment of a word, it is almost always pronounced as [k'e] where [k'] is a palatized [k]. A free variation between [ke] and [k'e] in this occurrence is accepted. There is no other realization of [k'] in our corpus.

b - when followed by a back vowel /**i, u, o, ö**/ or by the furthest back realization of /**a**/, [k] is sometimes in alternation with an almost glottal sound which will be

⁸ See discussion of the vibrant /r/ closing a syllable in cases of vowel elision almost always in a rapid speech (part III).

denoted as [ḳ]. The pronunciation of this [ḳ] is more explosive than that of [k]. The replacement of [ḳ] by [k] is always accepted.

b) It would be possible to interpret the phoneme /t'/ as a palatal variant of /t/, or as the complexes /ti/ or /ty/. We preferred to define /t'/ as a phoneme because of its distribution, which is the same as that of /t/, in all positions and combined with any vowel, and because of the, admittedly dubious, minimal pair contrasting [t] and [t'] (cf. part II.1.). A different interpretation is still possible. The palatalization of [t'], as suggested by E. Mosonyi, may be considered a trace of a /i/ which has disappeared. For instance, one finds in Pemon, "loin cloth" [kaita] while in Panare, we have "loin cloth" [kat'a].

One may consider that, in the sequence **pi**, the stop is weakly palatalized and consequently definable as a palatalized allophone [p'] of [p]. For instance, this interpretation should be possible in "family" [piyá:ka] [p'iyá:ka].

The stops /p/ and /t/ present at certain occasions a realization more explosive than in the plain stops. These allophones might be denoted as [p̣] and [ṭ], if necessary. The corpus does not enable us to study this point closely. So it might be possible to offer an almost symmetric subsystem for the allophones of the stops⁹.

/p/	[p']	[p̣]	
/t/	[t']	[ṭ]	
/k/	[k']	[ḳ]	[g]

c) The affricate [tʃ] only occurs in syllables of the type CV, and always in free variation with the fricative [s]. Whereas some Panare speakers use [s] more frequently, others use [tʃ] almost exclusively. This difference seems to be caused by interference from Spanish the more acculturated Panare, who are generally also the younger ones, were found to use [s] and those with less contact with Creole culture used the sound [tʃ]; but in either case, these consonants can be interchanged in any context. For instance, "urine" [tʃuʔ] = [suʔ] ; "this" [tʃi] = [si] ; "two" [aʔtʃa] = [aʔsa]; these are the only realizations that are attested. We shall see in section 4. that only the fricative [s] may also appear in closure position of a syllable.

⁹ This subsystem might be, eventually, extended to the nasals.

d) The lateral [l] was used by some informants in free variation with the vibrant [r]. The main informant used the two sounds in a perfect complementary distribution: [r] before all the vowels except [i] and [l] before [i]. Some informants, particularly in the East, contrast [r] and [l].

e) No allophone of the fricative /c/ was found in the corpus.

3.3. In the Panare language, the juncture between syllables is well defined, consequently, it is sometimes quite difficult to distinguish what might be a glottal stop from what might be a syllable juncture. Moreover, it is difficult, if not impossible with certain speakers, to distinguish a glottal stop when it appears in a final position, although within the spoken chain it can be clearly heard. For example, the glottal stop is readily perceived in the word "fruit" [oʔka], but difficult to distinguish in the isolated word "woman" [ũkiʔ].

At a morphophonemic level, it was observed that the sequence [ʔy] is consistently pronounced [c]; the corpus indicates that |apoʔ yu| /man I/ ="I am a man", is a form which is almost always pronounced [apocu] and that both forms [apocu] and [apoʔyu] are accepted. This modification is clearly phonological, because when the negative /pi/ was introduced, only the form [apoʔpiyu] "I am not a man" was found. When the word /**tamu**/ "husband" was used, the only form produced was [tamuyu] "I am the husband". The same modification was noted in the formation of compound words. For instance, the words /**pata**/ "foot", /**pi**ʔ/ "young" and /**cu**ʔ/ "urine", compounded with the word /**ye**/ "packing", form the following compound words: [pataye] "shoe", [pice] "uterus", and [cuʔce] "bladder" for |pata ye|, |piʔ ye| and |cuʔ ye|.

The glottal is consistently pronounced [k] when it appears in the final position of a word which has the suffix |uya| "by". For example, we have [ũkikuya] "by the woman" and not the anticipated *[ũkiʔuya] corresponding to |ũkiʔ uya|. Similarly the glottal stop is pronounced as [k] in the process of determination when it appears before the semiconsonant /w/ or the vowel /u/. For instance, we found [ũkikwaru] "the neck of the woman", instead of the expected *[ũkiʔwaru] corresponding to |ũkiʔ waru|.

On the basis of these observations, the following morphophonemic criterion is proposed to determine the presence of the glottal stop in the final position¹⁰.

¹⁰ This criterion is not applied when /ʔ/ appears in other positions: "chief" [iʔyã] ≠ icã "leaves".

When the glottal stop occurs before the semiconsonant /w/ or the suffix |uya| it is realized as the velar stop [k]; and when it occurs before the semiconsonant /y/, the sequence /ʔy/ is pronounced [c]. In other settlements, Colorado for instance, the glottal stop is sometimes realized as [t]. The form [apot] was heard for |apoʔ|.

3.4. During later visits to the Panare zone, we were able to study the occurrences and modifications of the glottal stop in accordance with the above criterion¹¹. The most consistent results were those of the usages of the variants of the glottal stop. (A statistical study, unpublished manuscript, of the syllabic system resulted in conclusions identical to those presented here). In almost all instances (more than 98% of the samples) where a glottal stop was predicted by the criterion, one or more other pronunciations of the same word occurred, one of which with the effective presence of the glottal stop and the other (or the others) with replacement of the glottal stop by one of the fricatives. For example, the following pronunciation of the expression "our thigh" are found in the corpus: |peʔto| = [peʔto] = [pesto] = [peχto]¹²; while the criterion requires the presence of ʔ in the final position of the word |peʔ| "thigh". Similarly, the inflexional morpheme of the past tense |yaʔ| was found with phonetic realizations :[yaʔ] = [yah] = [yax].

Bearing in mind the occurrences in closure position and in words having several distinct phonetic pronunciations for the same informant, it seems more simple to define the fricatives (with the possible exception of [x] found also in a few CV type syllables) not as consonantal phonemes of the Panare language but rather as variants of the glottal stop.

If it is the case, these variants are found in the following distribution¹³:

Before a stop or a fricative, one finds [ʔ], [χ], or [s] after the vowels [i], [e] and [o]; [h] or [x] after the vowel [a]; and one finds [ʔ], [x] or [χ] after the vowel [ö]. Before a nasal or the vibrant [r] only [ʔ] is found. Before the semiconsonant [y] one finds [c] if [ʔ] is in the final position and [ʔ] in the others cases. Before the semiconsonant [w], and if [ʔ] is in the final position of the word, one finds [k] or [t] in few cases as noted in section 3.3. Some examples "beard" [tãçipóʔtó] = [tãçipóstó] = [tãçipóχtó]. A possible

¹¹ In all the cases presented in this paper the glottal. is also realized phonetically.

¹² [peχto] is frequent in Colorado and Túriba.

¹³ This description is relative to the part of the corpus which includes those items which contain a glottal stop, so the noted distribution is to be considered as a tendency rather than a rule.

diphthongization of vowels preceding ʔ was noted: [tãçipóiçtó], "hole" [yaʔtã] = [yaxtã] = [yahtã], "why" .[öʔtó] = [öçtó] = [öxtó], "sugar mill" [karanápiʔto] = [karanápísto] = [karanápiçto].

3.5. Similarly, in case of the variants of the nasals, open and closed syllables must be considered separately because the closed syllables are the only ones which present several alternative realizations.

a) The open syllable NV. In syllables of this type the velar ŋ is never found, although the other nasals may be combined with any vowel in any position in the word. The labial /m/ is distinguished from /n/, for instance in the pair "breast" [maʔ] ≠ [naʔ] "*ocuma*". It was impossible however to contrast [n] and the alveopalatal [ɲ] which were affirmed by more than one informant, and in a significant number of instances, to be the "same" sound. A more detailed observation of the corpus revealed the following complementary distribution for [n] and [ɲ]: after the vowels /e/ and /i/ only the palatalized [ɲ] occurs and, in all other cases, the dental [n] occurs. However, in the final position of the word the syllable /ne/ is almost always pronounced [ɲe]¹⁴.

It is not impossible that the palatalization (cf. 3.2.a) is to be interpreted as a prosodic marker of still unanalysed syntagmatic relations between one structure and another, at both the phonological and grammatical levels.

b) The closed syllable VN. With the exception of ɲ, all the nasals may close, or (in the case of **m**) constitute a syllable; for instance: "metal" [amçiri], "my father" [yim], "woman" [ũnkĩʔ] and "guitar" [kanto], where the normal distribution of the variants of /n/ is seen:

[m] before /p/, /c/, /ç/ or ø; [n] in other cases. As already remarked, some Panare speakers prefer the nasalized vowel to the closed syllable VN (cf. Part I, 2.3.) and in all the cases of syllables closed by a nasal consonant, several different pronunciations are found in the corpus, including one with the nasalized vowel. For example "monkey" [arökõ] = [arökõŋ] = [arökõŋ], and "guitar" [kanto] = [kãnto] = [kãto]. It seems more convenient to study this point in relation with morphology (for instance, the possessive construction) or with prosody.

¹⁴ There are a few cases (12% of the syllables) in which n and ɲ are found in free variation, for instance [eʔnepa] = [eʔɲepa], *autodenomination*: "Panare". In a new corpus the situation is a little more complex, and the above description only justifies 78% of the syllables of the type NV.

3.6. It was noted in section 3.4. that the fricative [x], when closing a syllable, is a variant of the glottal stop like the other fricatives. In section 3.1.b. we noted that [x] appears, with a very low frequency, only in the open syllable |xö|. The following model, based on examples from the corpus, suggests that it is the sequence /ʔp/ which has the fricative variant [x]: "skin" [piʔpö] = [piχpö] = [pixpö] = [pixö]; "late" [tamaʔpe] = [tamaxe]. This suggestion is based on the following facts:

a) [x] cannot be the first phonetic segment of a word, while [ʔ] appears only in closure position of a syllable.

b) [x], when occurring between two vowels, is in free variation with [χp], [xp] and [ʔp] at least for certain informants, if the second vowel is /ö/.

c) In some settlements, as in Colorado, the syllable |xö| is rejected, the only phonetic realization actually heard is [χpö], while [ʔpö] is the only other realization accepted.

Some possible interpretations of this alternation may be the following:

A) to consider the phoneme /x/ as a recent development, defined by the minimal pair: "fart" [pikö] ≠ [pixö] "skin" and different from [pitö] "an unidentified insect".

B) to consider the alternation as a phenomenon of elision of the consonant /p/ coupled with a simultaneous stronger realization of the glottal stop which is then realized as [x].

C) to consider the sound [x] as a trace of a segment which has disappeared from the language, as suggested by B.J. Hoff in a personal communication, for instance in the word "fire" [waxto].

" D) a combination of these three interpretations.

In our opinion the interpretation B, with its counterpart C, is the better one, because it is phonetically insightful: the pronunciation of the segment [ʔp] needs a great amount of energy, and because this interpretation raises new interesting problems summed up by the questions "why, how, where and when is this deletion possible and realized?"

II. MINIMAL PAIR CONTRASTS

1. Minimal pairs occur very frequently in the Panare language. It was possible to find a minimal pair for any two consonants or semiconsonants. The only exception is the sound [t'] which is not contrasted with the semiconsonants; moreover, the pairs distinguishing it from the other consonants are doubtful: especially as it is always possible to interpret this sound as sequence [ty] or [ti]. The most striking contrasts noted were between "husband" [tamu] ≠ [t'amu] "chin"; "loin cloth" [kat'a] ≠ [kara] "new" ≠ [kana] "fish". Our decision to define /t'/ as a phoneme is based mainly on commodity and so is contestable. Since the glottal stop is restricted to syllable final position, there is no direct opposition with consonants other than the nasals. Nevertheless, the closure by the glottal stop, as well as by nasal consonants, performs a distinguishing function as shown in section 2.3. Yet we do not consider [ʔ] as a consonantal phoneme, but rather as a feature of the vowel or of the syllable, or eventually as a consonantal one but with a terminating function. Therefore, we propose that there is a minimal contrast: *interrupted vowel* ≠ *uninterrupted vowel*. Similarly, we propose that the nasals which serve to close a syllable may be interpreted as a feature of the vowel, thus establishing a minimal contrast between nasal and oral vowels; the other interpretations being to consider nasalization as a syllabic feature or to attribute a terminating function to the nasal consonants in the closure position. There are some compelling reasons for supporting these interpretations: the existence of the contrasts, for instance the triplet cited above in part I, 2.4.), the very simplicity of the description of the syllabic system which results from it, the satisfactory separated treatment of the words in which a closed syllable appears and which are also those having more than one phonetic realization, and the fact that nasalization and glottalization play an important role in morphology.

2. Examples of minimal pairs

2.1. The following monosyllabic items may serve to form the principal oppositions between the phonemes of the Panare language:

aʔ	"a worm"	piʔ	"young"
o	"eye"	pĩʔ	"wife"
oʔ	"beer" (Spanish: <i>chicha</i>)	peʔ	"thigh"
u	"head"	pĩ	"brother of a woman"
iʔ	"mountain"	pi	"colour"
ya	"in" (suffix)	poi	"a kind of bird" (maybe poiʔ)

yō	"tooth"	wa	"anus"
yoʔ	"flesh"	waʔ	"onion"
pa	"back"	ta	"mouth"
pōʔ	"a bee"	wōʔ	"penis"
tō	"where"	kō	"and"
to	"stone"	wi	"a snake"
teʔ	"bird' song"	we	"in the sun"
t'a	"listen"	maʔ	"breast"
t'oʔ	"one's flesh" (= t + yoʔ)	mī	"this"
t'ō	"one's eye" (= t + yō)	mā	"to be (there)"
naʔ	"ocuma"	mo	"there is"
ni	"look"	ko	"weapon"
çi	"this"	çuʔ	"urine"
ye	"packing"	co	"potato"
yeʔ	"sing"	ca	"give me"
yu	"I"	cuʔ	"without tail"
ka	"sky"	kai	"how"
kaʔ	"grease"	koi	"a skin disease"
kā	"he"	kō	"my weapon"

2.2. With the following 22 disyllabic items (all except |taka| are words, |taka| is a suffix) it is possible to form 29 minimal pairs contrasting almost all the consonants:

/p/	is distinguished from	/m, n, w, t, ç, k, r, y/
/t/	"	/p, ç, w, k, r, n, y/
/t'/	"	/r, n/
/k/	"	/p, m, w, y, n/
/ç/	"	/p, t, w/
/r/	"	/p, t, t', k, n, w, y/
/m/	"	/p, n, w, k/
/n/	"	/w, r, p, t, t', y, r, k/
/w/	"	/m, n, p, ç, t, k, y, r/
/y/	"	/p, t, k, r, n, w/

	p	t	t'	k	ç	r	n	y	w
p		pata		paka		para	pana	paya	pawa
t				taka					tawa
k			kat'a			kara	kana		
ç					çaka				
m		mata				mara			
n	napa	nata							
w	wapa	wata							

These words are:

pata	"foot"	çaka	"descent"
paka	"cow" (from Spanish)	mata	"shoulder"
para	"knife"	mara	"glass"
pana	"ear"	napa	"who(?)"
paya	"an insect"	wapa	"a basket" (from Spanish)
pawa	"turkey" (from Spanish)	nata	"door"
taka	"across"	wata	"blow gun"
tara	"a basket"	waka	"a snake (sometimes waraka)"
keys	"loin cloth"	wara	"tapir"
kana	"fish"	wana	"savannah"
kara	"new"	waya	"papaya"

2.3. To close this part, the alternative phonological interpretations presented in this approach to the phonological system of the Panare language are recapitulated.

- A) i) stresses as in section I, 1.
 ii) vowels as in sections I, 2.1., I, 2.3., I, 2.4.
 iii) consonant as follows:

	k			w
	t'	c	(ñ)	y
	t	ç	r	n
	p			m

- B) i) stresses as in A.
 ii) vowels as in sections I, 2.1. and I, 2.4.
 iii) consonants as in A, plus the variants of the nasals in the closure position.
- C) i) stresses as in A.

- ii) vowels as in I, 2.1. and I, 2.3.
- iii) consonants as in A, plus /ʔ/ and its variants for closed syllables.

- D) i) stresses as in A.
 ii) vowels as in I, 2.1.
 iii) consonants as in B and C.

- E) i) stresses as in A.
 ii) vowels as in I, 2.1.
 iii) consonants as in A.
 iv) nasalization and glottalization as a syllable fact which would be analysed at both morphological and prosodic levels.

2.4. The following description of the phonological system is proposed:

p	t	t'	k	m	n	ç	c	r	w	y	i	e	o	ö	a	u	ï	
-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	syllabic
-	-	-	-	-	-	+	+	+	+	+								continuant
-	-	-	-	+	+													nasal
-	+	+	-	+	-	+	+											coronal
+	+	+	-			-	+											anterior
	-	+																retroflex
									+	+	+	-	-	-	-	+	+	high
									+	-	-	-	+	+	+	+	+	back
												-	-	+				low
												+	-	+	-			round

III. THE SYLLABIC SYSTEM AND VOWEL ELISION

We choose a notation in accordance with interpretation A of the phonological system. This notation is compatible with interpretation E, and it is easy to infer from it a notation in accordance with the other interpretations.

We have mentioned in Part I, all the syllabic types which occur in the Panare language. From these data, it is possible to deduce the following syllabic law:

$$\text{Syllable} = (\text{C or S}) + \text{V}$$

a vowel (oral, nasal or interrupted) alone or preceded by a consonant or a semiconsonant.

Though all the syllables actually heard are interpretable according to the syllabic law, it is helpful to introduce the type St +Vi + V, a stop followed by the vibrant and a vowel, and the possibility of closing a syllable with the vibrant /r/. The following pronunciations, which justify this introduction, are found in the recorded corpus and result from the elision of a vowel, generally in rapid speeches¹⁵:

"sun" [ecérkõ] = [ecérökõ], "monkey" [árkõ] = [árökõ], "hen" [prá:ru] = [pará:ru] and "dog" [krönopõ] = [körönopõ].

The elision may occur when the vibrant is in intervocalic position, and especially when it occurs between two identical vowels. The elided vowel may be that which precedes or that which follows the vibrant. With some caution because of the rarity of this phenomenon, less than 1% of the syllables present in the corpus, the following elision rule may be formulated (cf. I, 2.2.): "The elided vowel never is the accentuated one, and always is the shortest one".

The result is that it is always possible to choose the pronunciation in accordance with the syllabic law, (C or S) + V, or those in accordance with the two possibilities introduced above:

Syllable = [St + Vi + V] or [(C or S) + V + (Vi)].

In the Panare camp of Caño Amarillo, pronunciations based on the latter seem to be more frequent.

In the following table are computed the respective frequencies for the different syllabic types:

Type	Frequency
CV	77.5%
SV	11.5%
V	9.9%

Almost all of the missing 1% are represented by the StViV type.

¹⁵ The palatalized /t'/ does not belong to the StViV syllabic type. In the camp of Colorado, the type VVi is never heard, although it is understood: there, as in Túriba, "monkey" is realized [arakõ] and "dog" [kirinopõ].

IV. CONCLUSIONS AND HYPOTHETICAL PERSPECTIVES

To conclude this paper, we present some aspects relative to the contrastive and expressive functions and we suggest in what way this approach is also an "ébauche".

1. Panare speech is strongly discontinuous (we have already noted the difficulty in distinguishing between a possible glottal stop and a syllable juncture): it sounds like a discontinuous sequence of short isolated segments. The difference in this respect, between Panare and French is striking and was perceived by the main informant, who was astonished by the continuity of the latter. Although in our approach the syllable has been relegated to a very modest position, we are forced now to the conclusion that the syllable must play an important role in the Panare language. Furthermore, in our opinion, the difficulty of the discussion of the problems connected with the closed syllables arises from the decision to interpret the facts in terms of phonemes. We hope to show how much more simple and convenient it is to interpret the observed phenomena as a feature of the syllable than as consonantal and/or vocalic phonemes.

Two isomorphic presentations of our interpretation are possible. The first, more classical, one consists in considering the glottal stop, its variants and in general all the consonants which appear in the closure position, as phonemes which mainly perform a terminating function; this function being a pertinent feature of these phonemes. The second presentation consists in interpreting the same facts in terms of the syllable. To do so, we need an extension of the classical definition of the syllable: "Within a segment, a syllable is the shortest unit that is realized in a single emission of voice".

It is new to include, as a pertinent feature, the way in which the voice which realizes the syllable is either cut off or continued. Any Panare syllable is terminated in one of the following ways:

- i) The air stream is continuously modulated, the mouth being kept open.
- ii) It is really stopped or strongly reduced in the throat.
- iii) The column of air is discontinuously changed in the nasal cavity.
- iv) It is really stopped or strongly reduced by the closed lips.

Corresponding to these ways of either stopping the column of air which realizes a syllable or continuing it, four different basic types of syllables are obtained: the oral, the interrupted, the nasal and the labial, respectively.

Each type is constituted by a vowel alone or by a consonant (we do not distinguish here between consonant and semiconsonant) followed by a vowel.

The following notation is proposed

- i) oral syllable : (C) V
- ii) interrupted syllable : (C) V[?] or (C) V^[a] where [a] = [s, x, h or χ]
- iii) nasal syllable : (C) Vⁿ or (C) V^[a] where [a] = [n or ŋ]
- iv) labial syllable : (C) V^m

These types correspond to the following situations described in the approach:

- (C) V = an open syllable realized with an oral vowel
- (C) V[?] = a closed syllable, where the closing is the glottal stop or one of its variants
- (C) Vⁿ = a syllable closed by a nasal except /**m**/
- (C) V^m = a syllable closed by /**m**/ or the syllable realized by the single sound [m].

Some advantages of this interpretation are the following ones:

- a) the description seems to be more faithful to the linguistic reality of the discontinuous Panare language,
- b) two important problems are solved in a unifying perspective, that of the variants of the glottal stop and that of the nasals in the closing position,
- c) the syllable **m** is not left as an isolated and uninterpretable fact,
- d) the interpretation provides a unifying explanation to the following-facts:
 - the different status of /ç/ and [s]¹⁶
 - the impossibility of finding certain consonantal phonemes in the word initial position
 - the asymmetry which appeared between open and closed syllables
 - the fact that the glottal presents a great many variants
 - the absence of nasalized-and-interrupted vowels in Panare.

All advantages which either consist in a more simple or in a more insightful description, are based on the following linguistic and physiological facts:

¹⁶ /ç/ which is never found in the closing position may not be a variant of the glottal stop, while its free variant [s], which may be too a variant of the glottal, does not appear in this position. There exists, however, one exception. The expression "my mother" [yanö] is sometimes realized [sanö], probably for diachronic reasons.

a) the proposed pertinent features are highly distinguishable: it is impossible not to contrast between "the voice really stopped in the throat or strongly reduced in the throat or in the palatal zone" and "to stop it or strongly reduce it by the closed lips" etc.

b) there are several possible ways to reduce the column of air in the throat or in the palatal zone, each of which corresponds to a variant of the glottal stop of uncertain oppositional value from a traditional point of view. In the syllabic interpretation we get the advantage that these different ways define without ambiguity, only one type of syllable.

Furthermore this interpretation eliminates, for instance, the following morphophonological difficulty. A significant number of verbs present the peculiarity that the glottal stop which terminates the radical is present, for instance, in the imperative tense while it is one, and not always the same, of its variants which is found in other tenses. And there is no regularity in the distribution of these sounds, but only a certain stability for one and the same informant.

c) it is quite difficult to initiate a syllable by an interruption of the voice

d) it is impossible to reduce or to stop the column of air in the nasal cavity and then in the throat or in the palatal zone. The absence of nasalized-and-interrupted vowels in the corpus, may correspond to this impossibility.

The consequences of this double isomorphic point of view are not only of convenience and coherence, but also theoretical. For instance, the kind of syllables used in the minimal pairs may produce interferences with the phonemes. to be distinguished. Another theoretical consequence, is that it seems necessary to introduce a multiple articulation, at least for the Panare language, with the syllable as an intermediate unit between phonemes and morphemes. Another consequence would be the fact that Panare might be considered as an intermediary step in an evolution leading to a tonal language in which the syllable would effectively play a basic part, since the eventual pertinence of the melodic stress seems to be an innovation in the Cariban languages.

2. In the limits of this "ébauche" it seems convenient to mention the hypothesis of a discrete and pertinent modulation of the voice in terms of three characteristics duration, intensity and pitch. All the features which are present in the corpus might be interpreted from this point of view. For instance, the word

"ear" |pana| and the suffix |-pana| "in the direction of", present a phonetic difference still undetermined. From the listener's point of view, continuous changes can be noted only in the case of the word **pana**. It is still impossible to decide between these two unsatisfactory transcriptions "ear" [paná] = [panna]. But this phenomenon perhaps replaces an accentuated syllable. Similar interpretations and conclusions may be formulated with respect to duration and pitch.

3. We think that the duration of the pause, or the intensity of the reduction of the "noise level", between two syllables develops a contrastive function in Panare¹⁷. To isolate or underline a word in the spoken chain, frequent use is made of a phenomenon of "agglutination", i.e. a shortening of the vocalic pauses within the word. When repeating a nonunderstood word, the informant generally speaks more rapidly and the intervocalic pauses disappear. So we arrive at the conclusion that the reduction of these pauses might be a feature with a contrastive function. Rather it may be seen as a special case of a general phenomenon of reduction or agglutination. For instance, the elision of a vowel with the vibrant as presented in part III, is interpretable in terms of the contrastive function, a word and specially a compound one, is better apprehended by a Panare auditor when it is "agglutinated". Similarly the morphophonemic criterion proposed in the approach is interpretable too in this way, and more generally the complexity of prefixation and suffixation in the paradigms of verbal conjugation is partly interpretable in terms of the contrastive function.

4. We have observed two realizations of the expressive function. The first one consisted in a very considerable rise of the tone to express a wish to convince. The second one consisted in the strongly lengthened realization of a syllable to express the highest possible degree of a superlative, i.v. a way to express emphasis. The second feature only affects a syllable, while the first one affects a sentence and even a whole discourse.

We hope that further field work will enable us to solve the phonological mystery of the discontinuity in Panare speech and to clear up the prosodic problems just mentioned in this paper.

Caracas, June, 1975.

¹⁷ We use here the term contrastive as it is defined by A. Met, for instance in *Eléments de linguistique générale*, Colin, Paris, 1970.

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