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U. N. 11110 (exp. 01/11/75)
Nopala

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Phonemics Statement- Nopala Chatino
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2nd draft July 6, 1975

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I The Word

The word level in Chatino is where it all happens. ~~Stress~~, phonemic tone, length, and nasalization are all features of the word level since they all occur only on the final syllable. Chatino words may be one or two syllables in length with the following exceptions:

- 1) some words like:
[lakʉsoʔ /lakusoʔ/ 'turkey'
[lakwɪʔya /lakʷiʔya/ 'hawk'
will probably eventually prove to be sequences of two morphemes.
- 2) and some Spanish loan words such as:
[pelotaʔ /pelotaʔ/ 'ball'
are three syllables in length.

When post-clitics present

Chatino speakers of all dialects "put all their eggs in one basket" by the importance of the final syllable, and in the Nopala dialect that emphasis is so great that the rest of the word may be phonologically altered, or even dropped altogether in the speech of some individuals. This results in an uneven distribution of phonemes between stressed and unstressed syllables; fewer being found in the latter than in the former. It also results in severe limitations upon the syllable structure in the unstressed position.

Unstressed syllables are regressively de-voiced according to the following rule:

- The vowel of an unstressed syllable will become voiceless if
- a) the first consonant of the following syllable is voiceless (excluding glottal stop), and
 - b) that vowel is not immediately preceded by a nasal consonant.
- If such a vowel is preceded by a nasal-plus-stop sequence, the stop will also be voiceless.

*this exception applies to the following type of words:

- [sʌʔe] /seʔe/ 'place'
[lʌʔoŋ] /loʔoo/ 'fence'

which are also accepted from phonemic distribution limitations at unstressed syllables.

Another salient feature of the Chatino word is that only like vowels cluster around glottal stop and the voiceless velar fricative. Thus it is impossible to get sequences such as:

*[taʔo] or *[taheʔ]

Rather we find:

- /taʔa/ 'brother' and
/teheʔ/ 'salt'

post-clitics & post-clitics

There are ~~several~~ clitics in Chatino, e.g.:

- /ha-/ 'negation'
/no/ '1st. person plural'
/a.e./ '1st person plural exclusive'
/ʔo/ verbal additionalizer to augment meaning by 'with'

These clitics do not alter the normal phonology of the word, since stress tone, etc. remain just as they would be without the clitic. If one is unfamiliar with the clitic, however, it would appear that stress is falling on the penultimate syllable with a post-clitic.

... of the ...

In addition, phoneme combinations are possible across these morpheme boundaries not possible within a morpheme.

II The Syllable

Stressed syllables pattern as follows:

$C:C+C+V:V:?$

where pre-nuclear consonants may include glottal stop, and where the second vowel position simply means a phoneme of length. Some examples are as follows:

- CV [ta] /ta/ 'to give'
 - CV• [laa] /laa/ 'bravo, mean'
 - CV? [ni?] /ni?/ 'within'
 - CV•? [koo?] /koo?/ 'moon'
 - CCV [?ia] /?ya/ 'loaded' */?sɪŋ/ 'son'*
 - CCV• [snee] /snee/ 'guitar'
 - CCV•? [tliaa?] /tliYaa?/ 'sour'
 - CCCV [ndla] /ndla/ 'dance' *CCCV•*
 - CCCV? [ndla?] /ndla?/ 'shadow' *ndlaa/ 'apricot'*
- CCCV• and CCV•? have not been encountered as yet.

Unstressed syllables, ^{incl. 100} as mentioned under section I, are much more limited, and may take the following shapes:

- CV [hita] /hita/ 'chepiles, edible herb'
- CV? ~~[kufni] /kufni/ 'to make'~~ *[kufni] /kufni/ 'to prepare'*
- CCV [skuui] /skuwi/ 'basket'
- ~~CCV? [nkwi?ia] /nkwi?ya/ 'coconut'~~ *no. of coconut in unstressed sylls.*

In addition to the limitation on ^{structure} structure, there is a limitation as to which phonemes may occur here. Only /u/ and /i/ of the vowels, and 13 of the consonants distribute in unstressed syllables.

An alternate analysis would posit syllabic consonants possible in the syllable-initial position, limiting the number of non-syllabic consonants to two, in the stressed position, and one in the unstressed. This analysis would help to explain the existence of the consonant clusters on the basis of lost initial syllables, with only the consonant remaining.

{ndla?} 'shadow'

III Segmental Phonemes

We posit the following phonemes:

CONSONANTS

	bilabial	alveolar	palatal	labio-velar	velar	glottal
stops	p*	t d	tʃ	kʷ gʷ	k	ʔ
affricates		ts*	tʃ*			
fricatives		s	ʃ		h	
nasals	m	n	ɲ			
flap		ɾ				
laterals		l	ɭ*			
semivowels			y	w*		

VOWELS

i	u	±length
e	o	
a		±nasalization (except /a/)

* starred phonemes do not distribute in unstressed syllables.

III Segmentals (continued)

STOP SERIES

All labialized phonemes are rare in Chatino, and introduced from Spanish loan words.

/p/
b/ m, ~~and in unassimilated loans~~
p/ elsewhere

examples:

- [pi] /pii/ 'gringo' from old Spanish 'gachupin' "spurred one"
- [lapi?] /lapi?/ 'pencil' from Spanish 'lapiz'
- [mblii] /mblyi/ 'godmother' from Spanish 'comadre'
- [mbaare] /m̥baare/ 'godfather' from Spanish 'compadre'

/t/ and /d/

The /t/ vs. /d/ contrast is a late one brought about by Spanish loans. the contrast is weak, and only one pair has been found thus far to demonstrate it:

- [nte] /nte/ 'people' from Spanish 'gente'
- [nde] /nde/ 'here'

Outside of this pair, we find complementation in the following manner:

/t/
d/ m, n in syllables not devoiced
t/ elsewhere

Some examples follow:

- | | | | |
|----------|----------|-----------|-------------------------------------|
| [ta] | /ta/ | 'to give' | |
| [ti?a] | /tya?a/ | 'water' | |
| [sti] | /sti/ | 'pure' | |
| [ntiiku] | /ntʲiku/ | 'eating' | |
| | | | [ntaa] /ntaa/ 'bean' |
| | | | [ndi?a] /ndi?a/ 'in a little while' |

/t/ and /tʲ/

- | | | | |
|----------|----------|-----------|------------------------------------|
| [ta] | /ta/ | 'to give' | |
| [sti] | /sti/ | 'pure' | |
| [tʲukwa] | /tʲukʷa/ | 'two' | |
| | | | [snye? tia] /snye? tʲa/ 'godchild' |
| | | | [sti] /stʲi/ 'machete' |
| | | | [tiukua] /tʲukʷa/ 'to sit' |

Word-initial, /tʲ/ freely varies to [kʲ].

/tʲ/ acquires voicing in the same environment as /t/, thus:

- [mdʲii] /mdʲii/ 'was toasted'
- [ndia] /ndʲa/ 'all'

III Segmentals (continued)

/k/

/k/ also acquires voicing from its environment in the following manner:

/k/ g/ m, n _voiced elements
k/ elsewhere

for example:

	[ngooʔ] /nkooʔ/ 'foam'	[kooʔ] /kooʔ/ 'moon'
	[nglooʔ] /nklooʔ/ 'you took out'	[klooʔ] /klooʔ/ 'before'
	[nguʔni] /nkuʔni/ 'is making'	[kuʔni] /kuʔni/ 'will make'
/g ^w /and /k ^w /		
/k/	[ka] /ka/ 'to be'	/k ^w /
	[kua] /k ^w ua/ 'that, there'	/g ^w /
	[nkua] /nk ^w ua/ 'was'	[ngui] /ng ^w ui/ 'cleaned'
	[kii] /kii/ 'canoe'	[kuii] /k ^w ii/ 'star'
		[nguʔni] /ng ^w oʔni/ 'you wrote'

Here we see a weak contrast between /k^w/ and /g^w/. This position (n _voiced vowel) is the only point of contrast, and is /g^w/'s only distribution. /nk^wua/ 'was' is by no means a loan word, but the contrast may eventually be shown to be a result of the degree of syllabicity of the /n/ preceding /k/, as versus that of the /n/ preceding [e].

/ʔ/ Glottal stop

[kaʔ] /kaʔ/ 'leaf'	[ka] /ka/ 'to be'
[kulaʔ] /kulaʔ/ 'old'	[kulaʔ] /kulaʔ/ 'to touch'
[hia] /hya/ 'sugar cane'	[hiʔa] /hyaʔa/ 'bean plant'
[ni] /ni/ '3rd person pronoun' (respectful)	[ʔni] /ʔni/ 'animal'
[kuiiu] /k ^w iyu/ 'horse'	[kuiʔo] /k ^w iʔo/ 'to drive an animal'

AFRICATES AND FRICATIVES

/s/	/s̃/
[sti] /sti/ 'my father'	[s̃ʔe] /s̃eʔe/ 'scorpion'
[s̃ʔe] /s̃eʔe/ 'place'	[sñ] /sño/ 'to run'
[sñ] /sño/ 'three'	[ši] /ši/ 'sweet'
[sii] /sii/ 'butterfly'	[saa] /saa/ 'light'
/ts/	/t̃s̃/
[tsa] /tsa/ 'to go'	[kuts̃i] /kuts̃i/ 'lion'
[kuts̃ii] /kuts̃ii/ 'yellow'	[ts̃iʔ] /ts̃iʔ/ 'little bit'
[ts̃i] /ts̃i/ 'plastic'	[ts̃a nts̃i] /ts̃a nts̃i/ 'praying mantis'
[ts̃a nts̃i] /ts̃a nts̃i/ 'slender'	

III Segmentals (continued)

FRICATIVES (continued)

/h/

[hi] /hi/ 'lacks'
 [hoʔo] /hoʔo/ 'god, saint'
 [xiʔi] /hiʔi/ 'paper'
 [xiha] /hiha/ 'tortilla'

/h/

x/ I
 h/ elsewhere

NASALS

/m/

[maare] /maare/ 'godmother'
 [mdeʔe] /mdeʔe/ 'were married'
 [msii] /msii/ 'late'

/n/

[nde] /nde/ 'here'
 [nsti] /nsti/ 'ciruela'
 [naʔ] /noʔo/ 'house'
 [sniʔ] /sniʔ/ 'dog'
 [tɲu] /tɲu/ 'very big'

/ñ/

[ñʔ] /ñoʔo/ 'to see'
 [sñi] /sñi/ 'to grab'
 [tɲy] /tɲo/ 'work'

/m/ is a rare phoneme, occurring in loan words and a few verb aspect prefixes. /n/ undergoes a morphophonemic change in fast speech to /r/, as in the following example:

[tsan] /tsano/ ⇒ [tsar] 'let's go'

LATERALS

/l/

[sla] /sla/ 'to open'
 [laa] /laa/ 'bravo, mean'
 [tla] /tla/ 'strong'

/lʲ/

[slia] /slʲa/ 'cup'
 [liaʔ] /lʲaʔ/ 'outside'
 [tlia] /tlʲa/ 'cold'

FLAP

/r/ is another phoneme very limited in distribution, being found in Spanish loan words. As previously noted, /n/ may undergo a morphophonemic change to /r/ in certain environments.

[ro] /ro/ 'rice' from Spanish 'arroz'
 [rbaare] /mpaare/ 'godfather' from Spanish 'compadre'
 [maare] /maare/ 'godmother' from Spanish 'godmother'
 [wareʔ] /wareʔ/ 'we, exclusive' from [uaʔ nde] /waʔ nde/ 'we, excl., here'

SEMIVOWELS

/w/

tu?ua /tu?wa/ 'lip'
 ua? /wa?/ 'we, excl.'
 ura /wra/ 'hour' Span. 'hora'
 suuee /suwee/ 'chin'

/k^w/

kua /k^wa/ 'there, that'
 t^hukua^h /tuk^wa/ 'two'

/y/

iu?ua /yu?wa/ 'cargo'
 šliu /ši?yu/ 'to cut'
 ?ia /?ya/ 'loaded'
 iaa? /yaa?/ 'hand'
 siie? /siye?/ 'nose'

/š/

šu? /šu?/ 'tasty'
 šaa /šaa/ 'light'

/n̄/

nyA?₂ /n̄o?o/ 'to see'
 snye? /s̄ne?/ 'son'

III Segmental Phonemes (continued)

VCWELS

The Chatino vowel system consists of five vowels, all of which may occur with a phoneme of length, and all of which except the central may occur with a phoneme of nasalization. In unstressed syllables vowel quality is difficult to assess, usually tending to [ʌ].

/i/	nasal	length
[sti]/sti/ 'father'	[sti]/sti/ 'my father'	
[kui]/kwi/ 'new'	[kuii]/k ^w ii/ 'armadillo'	[kuii]/k ^w ii/ 'star'
[tʌʔi]/tiʔi/ 'sick'	[tʌʔi]/tiʔi/ 'I am sick'	
[ti]/ti/ 'only'		[tii]/tii/ 'ten'
/e/	nasal	length
[tie]/tve/ 'abdomen'	[sɪeʔ]/siyeʔ/ 'nose'	[tiee]/tyee/ 'head'
[suʔue]/suʔwe/ 'good'	[sʌʔe]/seʔe/ 'place'	[suwee]/suwee/ 'chin'
[nde]/nde/ 'here'	[nte]/nte/ 'people'	
[tiikeʔ]/tʷikeʔ/ 'fever'		[tiikee]/tʷikee/ 'stomach'
/a/	length	
[ka]/ka/ 'to be'	[kaa]/kaa/ 'nine'	
[ska]/ska/ 'one'	[skaa]/skaa/ 'sugar'	
[la]/la/ 'where'	[laa]/laa/ 'bravo, mean'	
/o/	nasal	length
[klo]/klo/ 'to grow'		[tloo]/tloo/ 'face'
[skoʔ]/skoʔ/ 'chapulin'	[skʔʔ]/skoʔ/ 'to tie'	[kooʔ]/kooʔ/ 'moon'
[ʔo]/ʔo/ 'and'	[ʔʔʔ]/ʔo/ 'exclamation'	

Phonetically, the Chatino /o/ is often heard as an [o^u] offglide.

/u/	nasal	length
[ku]/ku/ 'to eat'	[ku]/ku/ 'owl'	[kuu]/kuu/ 'camote'
	[hituʔ]/hituʔ/ 'pot'	[hituu]/hituu/ 'shotgun'
	[k ^w u]/k ^w u/ 'to bless'	[k ^w uu]/k ^w uu/ 'tall'
[tliu]/tliju/ 'big'		
[stiu]/st ^j u/ 'cat'		

Lengthened, oral /u/ has not yet been found. Since /u/ is a less used vowel, we consider this simply an as-yet unfilled hole in the pattern.

Phonetically, the Chatino /u/ is often heard as an [u^o] offglide.

IV Tone

Chatino tone is a feature of the word, and is contrastive only on the final syllable. Unstressed syllables carry a non-contrastive tone which may be identical with the final tone of the utterance preceding it in a stream of speech.¹

We posit the following phonemic tones:

upglide	level	downglide
21		12
32	2	23
43	3	
	4	

These tones may be elicited after pause or after a tone /3/ in nouns and adjectives. Tone plays a heavy role in Chatino syntax, but after a preliminary study of the complex verb system no additional contrastive tones have been encountered.

Another worker in Chatino has described the sandhi system of a related dialect to be regular and progressive.² After a preliminary study it appears this is probably the case with the Nopala dialect as well. It is worth noting, however, that in a list of cognate words shared between these two dialects (which have 75% intelligibility) the basic word tones differ between the two by a very high percentage.

/2/	/3/	/4/	/43/
/sk ^w aʔ/ 'tree bark'	/nsk ^w aʔ/ 'corn'	/sk ^w aʔ/ 'roach'	
/kIt ^s aa/ 'sun'	/k ^w iyaa/ 'game'	/ndlaa/ 'apricot'	/hitaa/ 'chepiles'
/kunc/ 'snake'	/skco/ 'town messenger'	/t ^h oc/ 'spicy'	
/hita/ 'tobacco'	/hila/ 'cornfield'	/ndla/ 'cloud'	/k ^w ee/ 'flower'
		/nd ^v ee/ 'Michael'	
/21/	/32/	/12/	/23/
/hyo/ 'field'	/t ^h o/ 'work'	/ku/ 'I'll eat'	/t ^s uʔ/ 'my back'
/lo t ^v e/ 'abdomen'	/hit ^v e/ 'pine'	/sl ^v aʔ/ 'sheep'	
		/t ^s a nt ^s i/ 'praying mantis'	/t ⁿ ee/ 'my blood'
			/ndaa/ 'roadrunner'

This far, the only distributional restrictions encountered have been the following:

- /32/ and /43/ have not been found in checked syllables
- /12/ has not been found on a lengthened vowel
- /43/ has not been found on an unlengthened vowel

1. information from Leslie Pride from his experience working with "whistle speech" in Yaitepec.
2. "Chatino Length and Tone" Jessamine Upson Anthropological Linguistics February, 1968.