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NOTICE

AVISO

TATALTEPEC

FURTHER NOTES ON CHATINO HIGHER PHONOLOGY

Leslie G. Pride, Oct.1975

0. Our first knowledge that the Yaitepec people also used a form of 'whistle speech' (as recorded by Cowan, 1948[@1]) came in a conversation with B. W. Upson. Later, as we studied the Chatino tonal system for ourselves, we asked a young fellow to tell us more about it. Transcribing it was a nightmare of intricate curves of varying length, stresses and pauses. Quickly it became obvious that Chatino 'higher' phonology was more than a series of pitch registers or glides, 'flat' or 'rounded' pitches. Unfortunately this very gifted if uneducated monolingual was shot dead that same week, and this study never got any further.

0.1. Previous papers on Chatino tone[@2] have established the segmental 'tonemes' (Howard P. McKaughan, 1954, Pride, 1962)as consisting of four 'registers' with six 'glides' (up and down contiguous glides between the registers). J.W. Upson, with E. Pike, in 1968[@3] reduced this to three registers and four 'glides', by analysing the lowest register, and the glides down to it and up from it, as allotones - "non-basic forms of the allomorphs" - of the mid-low register and its glides. Upson also introduced a new factor into the analysis - contrastive vowel length within the tonic syllable - by saying that all tonemes except the high-mid glide have allotones corresponding to each lengthened vowel.

0.2. It has been possible to use a similar tonal system as framework for analysis of the higher phonology of a very different dialect of Chatino - that spoken in the municipio of Tataltepec de Valdéz, Oax.[@4] However, this paper draws attention to another interesting factor: the presence of contrastive stress on the peak of the final syllable of the phonological 'foot' - hereafter called 'word' - the same syllable that (as Pride, 1962) already carried a heavy functional load, including contrastive pitch and contrastive vowel length. This is not a new feature in Otomanguean phonology. It is found in several of the Chinantecan languages[@5], and a related phenomena is found in Amuzgo[@6], but hitherto it has not been recognised in Chatino.

0.3. Relistening to a recording made in 1962 for our analysis then in the light of Upson, 1968, and of more recent Tataltepec data, certain Yaitepec words stand out as suggesting presence of an extra heavy stress beyond the main stress of the phonological word, eg. ta^{2} shrimp, kwitu^{23} chicken, nguta^{2} centipede, ndla'a^{23} break, split, ti'a^{3} water, kwiya'^{3} fly. Alltones of length, as per Upson 1968, are now conspicuous. All glides now seem more marked than those in Tataltepec words. Perhaps 'whistle speech' is more possible where there is such marked contrast?

1. Phonemics.

1.1. The phonemes and syllables of Tataltepec Chatino have been described by K. Pride, 1965+[27], and as such are basic to this analysis. The same terminology is employed here: 'word', tonic and pre-tonic syllable etc. The form of the Tataltepec dialect is much more 'open' than in Yaitepec, ie. words are longer, and pre-tonic syllables are usually voiced.

1.2.1. Pitch is a continuum within the phonological pause group. Three phonemic levels of pitch can be found on all pre-tonic syllables, except the initial syllabic consonant of multi-syllablic words, where only two pitches are in contrast, high and low, eg. n^{2}dya^{1}'bé^{32} is-divided-into-pieces, šni^{3}'i^{1}^{32} sad; ña^{3}'gsi^{1}i^{21} care for, ngi^{3}'i^{2}i^{21} wash clothes; n^{2}dya^{1}tuu^{2} is stood up, n^{2}dya^{3}ku^{2} is eating.

1.2.2. The complete inventory of contrastive pitch only occurs on the tonic (or final) syllable. There are seven tonemes: three registers and four glides, eg. š^{3}lya'^{1} sheep, kwa^{3}ya'^{2} mushroom, kwa^{1}tya'^{3} fox, kwi^{1}ñg'^{12} honey, nu^{3}su^{2}be^{23} children, ñati^{1}^{32} people, kwa^{3}lya^{21} clown.

These same contrasts are observed when this syllable peak has a lengthened vowel, eg. (yaka^{3}) kwa^{3}lyaa^{1} weaving frame, huu^{2} rope, kwi^{1}yaa'^{3} soap, kwa^{2}ñuu^{12} squirrel, kyee^{23} stone, kyee^{32} flower, š^{3}lyaa^{21}' (ni^{3}) (animal's) gall bladder.

They are also observed when the syllable has the extra heavy stress, eg. kwa^{3}yá'^{1} small fly ~~mosquito~~, (no data for tone 2), ka^{1}tyá^{3} bottle, kwa^{2}'yá^{12} hawk, eagle

kwity$^{3}_{\underline{i}}$'^{23} bed-bug, ka^{1}'ñg^{32} plate, kwa^{3}'ya^{21} gophir.[@8]

There are also words which have both heavy stress and lengthened vowel co-occurring.

All seven tonemes are found whether the syllable is in a "pre-pause environment" (Upson, 1968), ie. comprises a monosyllabic word, or whether it is the tonic syllable of a multi-syllabic word.

1.2.2.1. It has already been stated (in Pride,1962) that"the phonetic actualization of the tones may be affected by the presence of glottal stop, nasalization, semi-vowels, laterals and stops," and it will be seen from the random selection of Yaitepec data cited in 0.3. above, that the phonological environment of the tonic syllable in the examples is an onset of unaspirated alveolar or glottal stop, followed by an open ending, or an onset of semi-vowel /y/ followed by a checked ending. Such environments, with the coincidence of the regular/predictable word stress, might suggest a further extra heavy stress. Similarly, it might be argued that the Tataltepec examples cited also have a pre-conditioned environment. The onset consists of semi-vowel /y/ or palatalized consonant, checked or not by a final glottal. However, in our Tataltepec data, this heavy stress is also noted on syllables, open or checked, having any and every consonant of the total inventory as the onset.

1.2.2.2. Shape of the tonemes.

	Unmodified	Modified		
		Vowel length	Extra stress	Length + stress
Registers	—	—	—	—
Down glides	⌢	⌢	⌢	⌢
Up glides	⌣	⌣	⌣	⌣

Unmodified open syllables are of medium duration. They retain this duration even when checked by glottal. Registers are flat, and the downward or upward drift on glides is not great.

Lengthened open syllables are of longer duration, but not twice the unmodified. They are shorter when checked by a glottal. Registers have slight up drift. The curves of glides are more evenly developed.

Extra-stressed syllables are the shortest in duration of all, and very short if checked by glottal. The onset of the stress is right at the beginning of the curve. High and low registers and glides are exaggerated.

Syllables combining length and stress are as long in duration as the lengthened ones, but have a sharp, strong onset of stress, and an exaggerated off glide.

2. Up to this point the analysis was made on the basis of noun stems tested in fixed frames. Apart from idle curiosity to see whether the same inventory of phonological contrasts was also found on verb stems - it was - it was also necessary to compare verb stem tones with those reported in 1962 in the Yaitepec dialect. So a series of verb stems selected from all the classes set up by K. Pride in 1971[9] were tested. It was noted that the basic tone on the verb stem for verb stem and affixes did not change across the four aspects, except that it was lower on the Completive and/or Habitual aspect. Nor did the stem tone change with different pronouns following, nor depending on presence or absence of pronoun or nominal accompaniment. The tone of the pronouns themselves varied according to the preceding stem tone (see later comment on influence of the preceding context). This appears to be different from the stem tone classes defined in Yaitepec.

The first person singular, unaccompanied, is the only person which exhibits a change of tone on the stem, accompanied by an allomorph of vowel length, eg. n̄^{2}dya^{1}ta^{2}ną'^{2} planting I, n̄^{2}dya^{1}tąą^{32} planting-I(inflected); nš^{2}ną^{1}n̄ą'^{2} running I, nš^{2}nąą^{32} running-I(inflected). This is also true of obligatorily possessed

noun stems, eg. $k^{2}iyo^{3}$'o^{12}na'^{2} wife-my, $k^{2}iyo^{1}$'uu^{32} wife-my(inflected)

3. Tone perturbation also occurs, usually caused by the preceding context, and more rarely by the following context. 'Basic' tone is taken to be any tone that is not preceded by high, or high-rising tones, and is not in a peak position for stress in the breath group. Examples have been arranged in groups, and are referred to by number below as they are listed together at the end.

3.1. Examples of perturbation caused by preceding context follow. When a phonological word is preceded by a high or rising-to-high tone or by nothing (breath group initial), then high tones (here including high or mid tones and mid-high glides) become low tones (here including low or mid tones, and mid-low glides). This also includes clitics/particles, except that these do not usually occur initially.

In disyllables of a Low:High tone, the result is reversal of the tone to High: Low, as in the words /$k^{3}a$$ka^{1}$/ will-be,can-do in egs. no.4, /$l^{3}a$$ka^{1}$/ is in eg. no.6, /$k^{3}a$$ha^{21}$/ will-obtain in egs. no.7, /$ts^{3}o$'o^{21}/ good,well in egs. no.8 /$ty^{3}i$$hu$'^{12}/ tasty in egs. no.10, and /$n^{2}d^{3}a$$h^{3}a$'$a^{21}$/ is-willing in egs. no.12. A further example involves the initial negative na^{1} not as the preceding context before $n^{3}a$'a^{1} see,looking: $ts^{3}o$'$o^{21}$$n^{3}a$'$a^{1}$$ku^{1}bi$'$^{3}hwa^{32}$ that baby is good looking; $na^{1}$$n^{1}a$'$a^{12}$ $ku^{1}bi$'^{3} $hw^{3}a$'a^{1} that's not what the baby looks like. This example is typical of the perturbation caused to almost any verb stem in this particular context. Such tone reversal is the most common form of perturbation.

In disyllables ending in mid or falling-to-mid tone, the initial low tone becomes high, and the final tone remains the same, as in the word /$n^{3}a$kwa'^{2}/ maize corn in egs. no.9; or the final tone becomes lower, as in the word /$n^{2}gu^{3}ti^{12}$/ rubbish in egs. no.1.

In monosyllabic words the tone changes from a high/rising-to-high tone to a low/rising-from-low tone, as in the word /tsa^{21}/ very in egs. no.15.

In certain monosyllabic pronouns, there is a constant fluctuation of tone between mid and low, both because of the above factors, and also depending on

whether the syllable is in a descending or ascending sequence, eg. the tones of /yu$^{2\frown 3}$/ he, him in egs. nos. 14 and 16, and elsewhere.

3.2. There is also a kind of perturbation caused by co-occurring phonological 'in situ'/ inceding context. When the tonic syllable coincides with the initial intonational stress peak of the breath group, a tone reversal takes place. High: Low becomes Low: High as in the word /ñi^{3}ya^{1}/ like, kind-of in egs. no.5; or a High: High-falling becomes a Low: Low-rising as in the word /ngi^{2}i^{3}i^{21}/ washed in eg. no.11 (multisyllable), and ~~in egs. no.~~ as in the word /^{3}tlya^{12}/ early in egs. no.13 (disyllable). This is true of many, if not most, verb stems. Similarly the words /^{3}škwi'^{1} ~ t^{3}škwi'^{1}/ always, entirely and /lo^{3}'o^{1}/ with, when in this peak initial position, always have a higher pitch than the following tones.

3.3. Not much evidence is seen of perturbation caused by the following context. The word /ña^{3}'a^{1}/ see, looking, when pause group final, modifies the word preceding it by lowering the tone, eg. lye^{32} ña^{3}'a^{1} ka^{2}lya^{12} hwa^{32} those corn plants are really looking bad. /lye^{21}/ very much, extremely normally is a rising-to-high tone, and is here pitched lower than /ña^{3}'a^{1}/, like all the other high/rising-to-high tones that co-occur with it also occur preceding it, even though they have the initial peak dominant clause stress like /lye^{21}/ has here. By contrast the word /tsa^{21}/ very does not modify its preceding context, but is modified by it, eg. no.15.

In another pair of contrasting sentences, eg. no.3, the word /na^{3}'ni^{2}/ animal has an identical preceding environment, but when it is followed by a High: Low word, then it is perturbed to Mid: Low. This is explained because in the first sentence /na'ni/ has the main stress in the final pause group, /na'ni hi'i ngu'/, and in the second, /tyala/ has the main stress, not /na'ni/.

3.4. Examples of perturbation used in text:

1. tso'o^{21} ti^{2} ngti'i^{32} na^{2} ngutí^{23} — *we're doing a good job collecting up rubbish*
good only collecting we rubbish

nde'i^{13} tsa^{21} ngutí^{23} kaya^{3} — *there's a lot of rubbish in the street*
is-there very rubbish street

tsa^{2} mohtu^{3} ti^{2} ngutí^{12} nde'i^{12} kwa^{32} — *there's a whole pile of rubbish there*
one heap only rubbish is-there there

na'a^{23} yu^{3} nde'i^{12} ngutí^{12} kahwa^{32} — *he saw there was some rubbish over there*
saw he is-there rubbish to(dir)-there

2. tškwi'^{1} nu'u^{3} ši^{2} lo'o^{1} yu^{2} tša'^{1} kaa^{32} yu^{2} yala^{3} ti^{2}
speak you little with him that come he quick only

go and tell him to come quickly

3. tyu^{32} yiha^{3} ndyatuu^{23} na'ni^{2} hi'i^{3} ngu'^{3} — *over several years they got MORE AND more cattle*
several years were-stood-up animals of them

tyu^{32} yiha^{3} ndyatuu^{23} na'ni^{3} tyala^{21} — *over several years there were more and more fierce animals*
several years were-stood-up animals fierce

4. ndu'ni^{12}na^{3} hwa'a^{1} tša'^{2} kaka^{1} na^{2} kuliya'^{2} — *we're doing this to get rich*
doing we like-this that can-be we rich

na^{1} kaka^{3} hi'i^{3} ma^{3} kwa'ni^{1} ma^{2} hwa'a^{2} — *you can't do like this*
not can to you do you like-this

5. ška^{1} ti^{2} ñi'ya^{3} kña^{32} ngwa'ni^{23} tsaka^{1} yu^{3} — *one man did just one kind of work*
one only kind-of work did one he

ša'^{32} ñi'ya^{1} ngwa'ni^{23} ykwi'^{2} — *he himself did differently*
different kind-of did self

6. nga'a^{21} laka^{1} ngu'^{3} sube^{23} bi'^{2} ñi'ya^{1} laka^{3} šni'^{3} ša'^{32} ñati^{32}
not-ever are they children those like are sons other people

those children are not at all like other peoples' children

7. ... si^{2} kahá^{21} kiyo'o^{23} ngu'^{3} si^{2} na^{1} kahá^{32} kiyo'o^{23} ngu'^{3}
if get wife they if not get wife they

if they are going to marry or if they are not

bilya^{1} kahá^{32} kiyo'o^{23} — *not yet married*
not-yet got wife

8. tso'o^{21} tsa^{21} su^{2} nde'i^{12} na^{2} ni'i^{32} re^{2} — *this house where we live is very good*
good very where live we house this

ntška^{1} tso'o^{32} tiya'^{1} ti^{2} — *it's improving slowly*
is-getting good slow only

9. ndya^{32} yu^{2} ši^{3} tša'^{2} kata^{3} nškwa'^{2} — he went to plant corn for a while
went he little that plant corn

kiña^{3}g^{12} tsa^{21} nškwa'^{2} nde^{3}'i^{23} — there's a lot of corn
much very corn is-there

10. tyihg'^{1} tsa^{21} kwañg'^{2} re^{3} — this meat is really tasty
tasty very meat this

ng^{1} tyihg'^{3} kwañg'^{2} re^{3} — this meat is not tasty
not tasty meat this

11. yala^{3} ti^{2} ngi'i^{21} yu^{2} late'^{2} — he washed the clothes quickly
quick only washed he cloth

ngi'i^{12} yu^{2} late'^{2} to'^{2} sta^{3}g^{23} — he washed the clothes at the river
washed he cloth edge-of river

12. ng^{1} ndaha'g^{23} rey^{12} šñi^{23} tša'^{3} klyoo^{12} — the king didn't want to agree to it at first
not willing king grab word at-first

ndaha'g^{21} stya'g^{21} ndya^{32} — the mother was willing to go
willing mother went

13. tlya^{21}tsa^{21} ndya^{32} yu^{2} khg^{32} — he left for work very early
early very went he work

nde^{2} tlya^{12} ngutu'u^{21}yu^{2} ndya^{32} yu^{3} — he got up and left early
at early came-out he went he

14. nda^{12} yu^{2} ši^{3} šlya^{12} 'ng^{2} — he gave me a little bread
gave he little bread to-me

ntsu'u^{23} tsa^{21} šlya^{23} hi'i^{1} yu^{3} — he's got a lot of bread
has very bread to him

15. lye^{21} tsa^{32} laka^{3} tšalyuu^{32} re^{3} hwañi^{3} — the world is in some state now
extremely very is world this now

ntsu'u^{23} tsa^{21} nu^{2} ti'i^{12} hi'i^{1} ng^{2} — there are a lot of poor people among us
has very the poor to us

16. si'i^{32} yu^{2} ngwa'ni^{32} yu^{2} hi'i^{3} — it wasn't he who did it
not he did he it

si'i^{32} ka^{3} bi'^{2} su^{2} ndya^{32} yu^{2} — it wasn't there that he went
not to there where went he

ng^{1} hloo^{12} ti'^{2} yu^{3} tša'^{2} bi'^{2} — he didn't know about that thing
not knew he word that

ng^{1} ndyuhwi'^{23} yu^{3} hi'i^{3} — he didn't sell it
not sell he it

ng^{1} ngwi'ya^{21} yu^{2} hi'i^{3} — he didn't buy it
not buy him it

Footnotes

[1]George M. Cowan, Mazateco Whistle Speech, Lang., 24. 280-286 (1948).

[2]Howard P. McKaughan, Chatino Formulas and Phonemes, IJAL, 20. 23-27 (1954); Jessamine Upson, A Preliminary Structure of Chatino, AL,2. 6. 22-29 (1960); Leslie G. Pride, Chatino Tonal Structure, AL 5. a. 1928 (1963).

[3]Jessamine Upson, Chatino Length and Tone, AL, 10. 2. ..-.. (1968)

[4]The dialect of Chatino spoken in Tataltepec de Valdéz, Juquila, Oaxaca, is spoken by some 1500 people, centred in the one municipal town. It has a mutual intelligibility of less than 20% with Tepenixtlahuaca and Panixtlahuaca, the nearest towns in the Yaitepec dialect. Historically it probably represents a stage of transition halfway between the dialects of Zenzontepec-Tlapanalquiahuitl on the one hand, and Panixtlahuaca-Yaitepec-Nopala (the main area) on the other. The more 'open' longer forms of speech of Tataltepec have resemblance to forms in Zacatepec and S. Juan Lachao in the main area.

Material was collected under the auspices of the Summer Institute of Linguistics during field trips between 1964 and 1975, more particularly in Aug.-Sept. 1975, working with two able language assistants, Salomé Hernández (20 yrs.) and Felfcito Hernández (22 yrs.), under the supervision of .....

[5]Rensch and Rensch, The Lalana Chinantec Syllable ..... (1966)
William Merrifield, Palantla Chinantec Syllable Types, AL, 5. 5. (1963)
David Westley, Tepetotutla

[6]A. Bauernschmidt, Amuzgo Syllable Dynamics, Lang. 41, 471-483 (1965)

[7]Kitty and Leslie Pride, Tataltepec Chatino Syllables, unpublished manuscript (1964). The transcription used here for tone is: 1 - high, 2 - mid, 3 - low, and contiguous glides are transcribed 12, 23 etc. Extra heavy stress is written as acute accent /'/. Apostrophe is used for glottal, underlining of vowel for nasalization.

[8]All the examples cited here were tested within the framework of the breath group/phonological clause, in the place where they would receive the major stress of that unit.

[9]Kitty Pride, Tataltepec Chatino Verbs, unpublished manuscript, (1971).

CONTRASTING TONE SETS - NOUNS

TATALTEPEC - 1975 (1 + 2)

Tones marked: high(1), mid(2) and low(3), down glides(12 and 23), up glides (32 and 21)
Have attempted to show a complete set of contrasts for the following categories: Without contr.stress or contr. vowel length; With Length, but no Stress; With Stress, but no Length.

Without Length or Stress (contrasted item is just before final /'nạ/)

1.	ndaa yu sca quiche' 'nạ	'he gave me one thorn'
2.	ndaa yu sca cualya 'nạ	'he gave me one fish'
3.	ndaa yu xi catya 'nạ	'he gave me a little tobacco'
12.	ndaa yu sca nạ ndubi 'nạ	'he gave me a [illegible] shining thing'
23.	ndaa yu sca nạ sube 'nạ nu	'he gave me a little thing'
32.	ndaa yu sca xlyu 'nạ	'he gave me a knife'
21.	ndaa yu sca chcuạ 'nạ	'he gave me a metal(thing)'

With Length but no Stress.

1.	ndaa yu xlyaa' nị' 'nạ	'he gave me the animal's gall bladder'
2.	ndaa yu xi quii' 'nạ	'he gave me a little fire'
3.	ndaa yu xi cuiyaa' 'nạ	'he gave me a little soap'
12.	ndaa yu sca ntsmịị 'nạ	'he gave me an orange'
23.	ndaa yu sca ngoo' 'nạ	'he gave me a moorhen'
32.	ndaa yu xi quii 'nạ	'he gave me a little grass'
21.	ndaa yu sca jụụ 'nạ	'he gave me a rope'.

With Stress but no Length (contrasted item is just before final /ca jua/)

1.	na'ạ yu sca cuañ́ ca jua	'he saw a snake over there'
2.	na'ạ yu sca nạ tyucuí ca jua	'he saw a long thing over there'
3.	na'ạ yu sca tyuń́ ca jua	'he saw a large shrimp over there'
12.	na'ạ yu ji'ị sca nu qui'yú ca jua	'he saw a man over there'
23.	na'ạ yu sca ⌀nạ nga'á ca jua	'he saw something green over there'
32.		
21.	ndyacu yu xi xlyá ca jua	'he ate a little lunch over there'
12.	na'ạ yu sca cua'yá ca jua	'he saw a gavilán over there' (S.H)
21	na'ạ yu sca cua'yá ca jua	'he saw a tuza over there' "

Voiceless initial consonants.

ti²ya'a³ bejuco
ltsa'³ mojado
lca'³ hoja
tya mazorca
? ycua³ parejo (level)
ltso' colmillo (snake fang)
sca lta³ jing par de huaraches
lta³, cuiya' lta armspan
mso barba
lti ti (tu'ba) delgado (papel)
(cña³²)(l)ca (yu)
(l)cui² tepache
(tsa³) lcui³ sloping down
ycuii³² dibujo
tyi'a ncuu agua bendita
(~~sca~~ tsa) tu'be la mitad
(ti) j'ni²ti³ sloping

jlya'³ melaza de caña
jyu'be³² ala *breathy + hiss*
voiced yng²³ caracól
(ta) jña prestar
?(tyi'a) jta sudor
(ti) j'ni (la) on other side (of valley)

yca³ palo
ycua³ atole
ycua'² ciénaga (bog)
ycui' ti na' solito
y/ jija año
jy'a²¹ frijolar
jy'o³² alma, muerto
jy'a¹² mi mamá
(scube) ysi³ huevos de tortuga
ysi arena
different (to') yta³² zanja
(ba') ytso (cute)
el cohete reventó

(tso') wca² left side
(ne') nca'¹ gemelos, cuates
j' wcha pasado ~~pasado~~ mañana
wchg(que') vapor de la olla
(ne') wsiya autoridades
sna semana

(ne') wta'a¹ brujos
wtg²³(jiñi¹²) nido
wtyi³ seco

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jiche'³ espina
jiche³² pueblo
jichi³ metate
jicha³ quee² cabello
ji'a¹ 'a² muchos
y — jija³ tortilla *(as año)*
jiso² red (bag)
jisó²³ avocate
ltso'³ grano
jita³ chepiles edible greens
jita²³ harina *de pan* *(idyo's ja stya)*

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mta tng vena, arteria
sti mi papá
(cuiyu) stya ti' tiene cosquillos
styi' leche
sta' (yca) ramas
jityi(jiñi) plumas de pajarito
styi jiñi
sca'² jícara
(to') sca'³ mejilla (cheek)
scua²¹ mole
scua³ séis
scua'³ cáscara

scui¹ redondo
scui² liso (smooth)
ti²³ "

(sca) lta jing
mta tng
yta zanja
cuta toro
jita harina
jta sudor

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ycua' ciénaga (bog)
lca' leaf
(ne') nca' cuate
sca' jícara

---

ltso' colmillo
ba' ytso cute
jitso' grano
ti tso' al lado de

---

yng²³ caracól
jing 'ya yo escucho

---

ycua³ parejo
ycua³ atole
scua¹ molé

+ [illegible]
Y by pre-release of vl. palatal air (hiss)
n
j(i) by prerelease, breathy (strident)
w by lip air

16/18

CONTRASTING TONE SETS - VERBS

Without Length or Stress (contrasted item is the third word in line)

1. Tso'o ti ndijya yu lo'o tya'a yu 'he plays well with his relative'
2. tso'o ti nchcui' yu lo'o tya'a yu 'he speaks well to his relative(s)'
3. tso'o ti ndyala yu lo'o tya'a yu 'he and his relative arrived well'
12. tso'o ti nxna yu lo'o tya'a yu 'he and his relatives run well'
? 23. tso'o tsaa nda'ya so'u xcube 'the chicken lays eggs real well'

(S.H: tso'o tsaa nda'ya so'u ji'i tya'a yu 'relatives hen lays well')

32. tso'o ti nxuti'i yu ji'i (lo'o) tya'a yu (he collects up his relatives well'

(SH) 21. tso'o tsaa ngui'i yu ste' yu 'he washes his clothes real well(

(FH) 21. tso'o tsaa ndañi chcua 'the bell/instrument usually sounds well'

With Length but no Stress:

1.

2. tso'o ti ndyalaa na nguxa' bi' 'what was being mixed dissolved well'

3. tso'o ti ndyalaa' (SH) na nguxa' bi' 'what was being mixed well'
ngualaa' (FH) cooled

12. tso'o ti xtyuu cho' (SH) lo'o tya'a cho' 'she and her relative
yu (FH) yu returned home well'

and 2 23. tso'o ti ndyoo cho' lo'o tya'a cho' 'she and her relative are grinding well'

(FH) 21. tso'o ti ndiyuu cho' lo'o tya'a cho' 'she and her relative always grind well'

21. tso'o ti ndyaluu (SH) ndaa lo yuu 'the beans grow up well in the ground'
nclyuu (FH)

With Stress but no Length:

1.

2. tso'o ti ndyalá' yu yu'ba (SH) 'he handles cargo well'
nclyá' (FH)

3. tso'o ti ndaquiyá' yu cha' bi' 'he obeys that word well'

21. tso'o ti cula'á yu ca'ña 'he will really break that dish well'

(FH) 12. tso'o ti cujui'i quee yu ca'ña 'he will really throw the dish on the rocks'

23. tso'o ti cula'á yu chcua musca 'he will play the instrument well'

32. tso'o ti ngula'á yu chcua musca li' 'he played the instrument very well then'

21. tso'o ti nduná yu musca bi' 'he listened to the music well'

CONTRASTING TONE SETS - VERBS

Without Length or Stress (contrasted item is the third word in line)

1. Tso'o ti ndijya yu lo'o tya'a yu 'he plays well with his relative'
2. tso'o ti nchcui' yu lo'o tya'a yu 'he speaks well to his relative(s)'
3. tso'o ti ndyala yu lo'o tya'a yu 'he and his relative arrived well'
12. tso'o ti nxnq yu lo'o tya'a yu 'he and his relatives run well'
23. tso'o tsaa nda'ya so'o xcube 'the chicken lays eggs real well'

(S.H: tso'o tsaa nda'ya so'o ji'i tya'a yu 'relatives hen lays well')

32. tso'o ti nxuti'i yu ji'i (lo'o[FH]) tya'a yu (he collects up his relatives well'

(SH) 21. tso'o tsaa ngui'i yu ste' yu 'he washes his clothes real well(

(FH) 21. tso'o tsaa ndañi chcuq 'the bell/instrument usually sounds well'

With Length but no Stress:

1.

2. tso'o ti ndyalaa nq nguxa' bi' 'what was being mixed dissolved well'
3. tso'o ti ndyalaa' (SH) nq nguxa' bi' 'what was being mixed well'
   ngualaa' (FH) cooled
12. tso'o ti xtyuu cho' (SH) lo'o tya'a cho' 'she and her relative
    yu (FH) yu returned home well'
23. tso'o ti ndyoo cho' lo'o tya'a cho' 'she and her relative are
    grinding well'

(FH) 21. tso'o ti ndiyuu cho' lo'o tya'a cho' 'she and her relative always
grind well'

21. tso'o ti ndyaluu (SH) ndaa lo yuu 'the beans grow up well in the ground'
    nclyuu (FH)

With Stress but no Length:

1.

2. tso'o ti ndyalá' yu yu'ba (SH) 'he handles cargo well'
   nclyá' (FH)
3. tso'o ti ndaquiyá' yu cha' bi' 'he obeys that word well'
21. tso'o ti cula'á yu ca'ñq 'he will really break that dish well'

(FH) 12. tso'o ti cujui'i quee yu ca'ñq 'he will really throw the dish on the rocks'

23. tso'o ti cula'á yu chcuq musca 'he will play the instrument well'
32. tso'o ti ngula'á yu chcuq musca li' 'he played the instrument very well then'
21. tso'o ti nduná yu musca bi' 'he listened to the music well'

THE USE OF ROTATING/REVERSIBLE TWO- OR MULTI- WORD FRAMES

Material presented to workshop class, Mitla Nov.14th, illustrated by examples from Tataltepec Chatino, by Leslie Pride, based on method demonstrated by John Alsop in 1977.

(two sets of Chatino test sentences already on board, in phonemic orthography without any tone markings)

In Chatino it is easier to start with two- or multi-syllable words than with monosyllables, to get maximal audible tone environment for listening, but monosyllables can be analysed the same way later.

One should select a corpus of 250 well-chosen words, assuming the linguist already knows what a word is, where the syllable breaks occur and where the word stress (hence the tonic syllable) occurs. These words are chosen from all the grammatical classes (nouns, verbs, descriptives, prepositions) that can produce 2-word sentences, and from the different word-syllables classes, incorporating examples of all the phonemic syllable onsets and rhymes.

While it is impossible to totally neutralise grammatical conditioning, it is suggested that one uses the least marked forms of verbs and possessed nouns, and that one uses a standard form, e.g. 3rd pers.sg. unmarked habitual.

The intention is to generate sets of (initially) two-word test sentences using this corpus of 250 words. Where it is possible to reverse a pair of words that is an advantage. It doesn't matter if reversal changes the meaning provided that it doesn't violate sentence

boundaries. It is also important that the sentences be fully natural, and that this principle not be stretched. Humorous sentences are permissible, but not unnatural ones. Probably no more than 20 sentences should be in one test group - reversals can be mixed in the same group or in a parallel group.

Alertness of helper. It is good to mix the sentences, within the limits of the exercise, to keep the helper fresh, and stop him developing bad repetitional intonational patterns.

The sentences are elicited orally, but should be recorded at the same time. Helper, if he can read, reads down the list, repeating each sentence two or three times. Sometimes it is helpful to write in the Spanish gloss. In addition, he could reread the whole test group once more. If a parallel group is used across the page, sometimes he could read across the groups. The system is flexible.

Transcription

The aim of transcription is phonetic accuracy, without yet postulating any opinions as to phonemic levels or glides. The aim is to draw a contour of the tone sequence across each two-word test sentence, indicating relative height of start and finish, and of one word in relation to the other. Any addition information about curving or length of tone can also be drawn in. At this stage it is best to disregard any previous opinions as to what tone a certain word is on.

So we go down the two test groups here, making a first transcription, bearing in mind that at first there will be a lot of phonetic detail that we won't hear until after several weeks our [illegible] will be sharpened.

nšn~ kwayu	kwihi ku?~
nšn~ kwihi	ndyuc~: msu
nguši kalu	kalu nguši
?ikye tihi	kuš~: kalu
nšasu kityi	nšasu kolo
nšasu yaka	kityi hi?~
kolo nšasu	sat~ ngat~
kalu kwiči	suwe ni?ř
ndyaka ngatř	ngatř ndyaka
wata ngatř	kišu: kulakwa
lkuti tyaha	tyaha lkuti
yaka kišu:	kutř: yaka
yaka kityi	tukwæ skwæ

taha kuɬ: tukwə̄ tyaha

skwə̄ ngatɬ satɬ tiʔɬ

It will be noted that the syllable-word CV classes are mixed here, and that there are some 3-syll. words included; where the initial syll. has no vowel that consonant is syllabic; although tone should be noted on these, tone is only being transcribed on the last 2 sylls., the tonic and pretonic. Initial test groups would observe CV restrictions, but after it is evident that these do not affect the tone sequences, then test groups may include sentences with words of any CV group.

An initial transciption of the tone contours has now been made. The next stage is to group together sentences whose contours have a similar shape. In this way several provisional groupings may be postulated:

ndyaka ngatɬ nʉ̄nə̄ kwayu wata ngatɬ

skwə̄ ngatɬ yaka kiʉ̄u: tyaha lkuti

kuʉ̄i mɛu nʉ̄nə̄ kwihi

kwihi kuʔɑ satɬ ngatɬ

kalu kwiči

nšasu yaka

ngušì kalu   nšasu kityi   yaka kityi

lkuti tyaha   ngatɨ ndyaka   taha kuɨ:

nšasu kolo   tukwã skwã

kityi hi?ɨ   etc.

These contour groups now form ones new test groups, and are tested and transcribed in the same way. However, further testing and sharpening of the ears will reveal that not each member of each group is homophonous. Differences should be noted, and sentences further regrouped. This process will have to be repeated until the linguist is confident of the accuracy of his hearing and transcription. Some word tone patterns will require special testing, with supplementary data. Such a pattern in Tataltepec was the low-mid fall one, where the falling glide appeared to begin at any point from low to quite high. Since this is the most common Tataltepec tone class, this required considerable testing. Other tones and tone sequences may not be

common at all - very little data may be turned up from the initial sample of 250 words.

Tone analysis (Pride/Alsop) November,83 (lesson 1)

At this point the revised test data looks like this (numerical phonemic notation is also included for later reference - it is explained later):

msu kuši 2-45 4-2	kuši msu 4-2 2-45
nšnă kwayu 4-32 21-45	kwihi ku?ŭ 4-2 2-45
nšnă kwihi 4-23 4-2	ndyuĉ↑: msu 2-45 4-23
nguši kalu 4-21 45-23	kalu nguši 21-45 4-21
?ikye tihi 2-4 4-2	kuš↑: kalu 4-4 45-21
nšasu kityi 45-2 2-4	nšasu kolo 45-2 21-23
nšasu yaka 21-2 2-2	kityi hi?↑ 2-4 2-4
kolo nšasu 21-23 45-2	sat↑ ngat↑ 4-23 4-2
kalu kwiči 45-23 4-32	suwe ni?↑ 4-23 4-23
ndyaka ngat↑ 2-4 4-2	ngat↑ ndyaka 4-2 2-4
wata ngat↑ 4-2 4-2	kišu: kulakwa 2-45 2-45
lkuti tyaha 4-2 4-23	tyaha lkuti 4-23 4-2

Tone analysis (Pride/Alsop) November,83 (lesson 1)

yaka kiŋu: 2-2 2-45 kutɬ: yaka 4-23 2-2

yaka kityi 2-2 2-4 tukwa skwa 4-4 4-4

taha kuɬ: 4-4 4-4 tukwa tyaha 4-4 4-23

skwa ngatɬ 4-4 4-2 satɬ tiʔɬ 4-23 4-23

and one is now able to evaluate the tones phonemically. If we verbalise the contour patterns we find the following tone sequences in both the first and second words of the sentences:

higher than high-high

high-low

higher than low-low

high-low fall

rising-high

rising-low

rising-low fall

rising-high fall

low-mid(?high)

low-low rise

low-mid rise

low-high rise

low-high fall

falling-high fall

falling-high.

No high-mid was found to contrast with high-low, and no low-high was found to contrast with the supposed low-mid, so we are forced to the assumption that there is no contrastive mid tone, just a high and a low; therefore the low-high fall which sounded suspiciously like mid-high fall, is phonemically a low-high fall. Similarly there was no contrast between a low-mid fall and a low-high fall (which are phonologically conditioned sub-members), nor between a falling-mid and a falling-high. Resolution of the high-high sequence was made by contrasting low-high with high-high (when this was stepping up phonetically) on the first syllable, and by contrasting high-low with high-high (when this was down-stepping phonetically) on the second syllable. The low-low sequence presented clearer contrast with high-low, and never up-steps. None of these tones are only caused by tonal sandhi, but there is one additional tone - falling-high rise - which is.

So, on the first syllables we find the following contrasting tones: high, low, rising and falling, and on the second syllables the following: high, low, low rise, mid rise, high rise, high fall and low fall. If we choose to assign numbers, along a 5-stave scale, we may want to call high - 2, and low - 4, because the rising or high rise tones actually go much higher than high, and the falling or low fall tones go lower than low. The remaining tones are assigned numbers according to the approximate phonetic starting and finishing position of the glide. The low rise tone begins lower than low and ends higher than 3, so it could be called 53 or 42 in contrast to the mid rise, 32.

Tone analysis (Pride/Alsop) November,83 (lesson 1)

Having obtained your phonemic tones on 2-syllable word sequences, follow the same procedure on 1-syllable words, monosyllable with monosyllable, or monosyllable with multi-syllable. It may be harder to find all 7 tonic-syllable contrasts on the monosyllables, though in general the contrasts correspond with those of the monosyllables.

For extra accuracy, follow the same procedures on three- or four-word sentences.

The results (the sum of all your test sentences) can be compiled into a single matrix of examples, which is also in itself a test-bed for the later checking of word tones. Each word has been tested under all possible conditions, and every bit of data noted is relevant. This matrix also includes conditions and examples of all tone sandhi (not treated in this lesson), and a close study of the relationships of the contours will show the sub-phonemic detail. Separate matrices would be needed for listing 3-word and 4-word sequences if any further analytical information was discovered from looking at a sample of them.

[illegible] RECOGNITION OF NATURAL COMBINATION [illegible]

Tucson Jan 91

1. In this analysis, approximately 250 monosyllabic and polysyllabic words were selected from all the major word classes of Tataltepec Chatino and were combined into some 1100 two-word utterances, some with the capacity of being reversed, some without that capacity. The tone patterns of these utterances were recorded on tape, then transcribed and grouped. In all of these two-word units, the prominent phonological stress was the same - on the ultima of the second word, irrespective of word class or position in the grammatical unit. After successive sortings and refinings, these utterances eventually formed a matrix showing clearly all the contrastive patterns. Repeatedly hearing the data in this way (from live speaker and from recording) resulted, in the opinion of this researcher, in a fantastic sharpening of perception.

Words are selected from all word classes and are joined into lists of two-word utterances where both words in the utterance have the same phonological shape, apart from tone. The criteria for joining them in utterances is that of natural speech construction. The utterances may be of any grammatical construction or lexical meaning. That does not matter initially. All that is important is that the utterance is the same phonological shape and is a legitimate natural speech form. All that is in focus is the tone pattern of the two-word utterance when said naturally. If the language permits, words should be selected which can also be reversed syntactically, albeit with a change of meaning, to test the effect of preceding or following tones. Reversibility is helpful, but not crucial, however, because the frequent use of a limited number of words in many combinations will expose them to all kinds of tests anyway. So, the test utterances are natural speech frames which are interchangeable or reversible, exposing the data to every kind of environmental situation which might cause change. The aim is to get examples of all possible combinations of tone patterns in two-word sequences and to fill as many cells as possible in a matrix of the theoretically possible combinations.

Monosyllabic words are used first, then disyllables, of each different canonical shape in turn. The test can be extended ad infinitum to trisyllables and to three or more word utterances, and to the whole inventory of the language. (This is also true of the fixed frame analysis of Pike.)

The tone patterns of the utterances in each list are then recorded in strictly phonetic configurations, drawn according the the subjective auditory impressions of the investigator. No attempt is made at this point to mark tone more exactly by using tone numbers or diacritic marks or to determine the relative height of the tone contours; it is the contrastive tone contours that are important. Then the lists are successively grouped and regrouped into lists having similar tone patterns, until the maximal number of different tone patterns has been identified. Once the contrastive patterns have been established, phonological analysis of them can be done and the tone phonemes can be described in terms of fixed points of reference.

The end result of *~~Process Analysis~~ in terms of phonological tones, levels and sandhi rules could also be arrived at via a fixed frame analysis. The difference is that a *~~Process Analysis~~ (natural combination matrix procedure) brings together all the pertinent information in one moderately-sized test-bed (matrix), but the success of a fixed frame analysis depends on establishing a sufficient number of frames to cover all word classes, phonological types and environmental situations and it is difficult to find a small number of fixed frames to do this. Because *~~Process Analysis~~ is based on all naturally occurring combinations of two words, it is able to give the same attention to all word classes in the language. The temptation of a fixed frame analysis is to work almost exclusively with nouns in establishing the basic tone contrasts. The procedure of using natural combinations and of reversing sequences where possible involves the investigator in the study of the tone behavior of verbs from the very start.

This method of using naturally occurring word combinations in a matrix of possible combinations was introduced by John Alsop to a SIL workshop on Zapotecan languages held at the Jaime Torres Bodet Linguistic Center in Mitla, Oaxaca, in December, 1976, and the credit for its development and use belongs to him. He used it with success on the tone systems of a number of Zapotec languages.

8. Charting on a squared matrix the relative phonetic variations of these patterns in combination enables one to do one further step after the phonology, that is — to write phonetic rules.