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Anochipa tl̄p̄c̄. çan achica ye nican ohuaye ohuaye,  
Tel ca chalchihuitl noxamani noteocuitlatl in  
tlapani oo quetzalli poztequi ya hui ohuaye,  
ānochipa tl̄p̄c̄. çan achica ye nican ohuaya  
ohuaya

<sup>6</sup>The u of Pochutec -lut is a regular correspondence of Proto-Aztec and Classical o: (see Langacker and Campbell 1978). The underlying vowel of -LO is long o:. In Classical Nahuatl this long o: was preserved except when in final position or preceding ?. For example, o:-ni-k<sup>w</sup>i-li-lo:-k 'it has been taken from me.' (Carochi p. 433).

<sup>7</sup>Since Pochutec retained Proto-Aztec \*-t finally, loss of final -h does not appear to be a valid motivation for the development of plural -lut, as it is for -LO in the other dialects. -lut might have been introduced in Pochutec to distinguish first person plural from second person singular, since both are marked by the prefix t-.

<sup>8</sup>Orizaba Nahuatl data is from my own fieldwork in Rafael Delgado, locally known as San Juan del Río, which is located on the outskirts of Orizaba. There are some 5,000 residents in San Juan del Río, all of whom speak Nahuatl and Spanish. My principal informant was Victor Hernández de Jesús.

<sup>9</sup>This should be omomikti(h)ke. I cannot explain the missing plural suffix, since 'they' refers to 'five steers' and should therefore require the plural suffix. There are also some examples of verbs in future tense in the document with plural subjects and no plural suffix. For example, ti-k-ito-s 'we will say' and ti-k-mo-kakiti-s 'we will announce it (to you)' (p. 174) should both have the suffix -ke. I have refrained from marking long vowels and writing glottal stops in the SMH text since they were not indicated by the scribe.

<sup>10</sup>About this, Langacker (1976:36) observes that 'Pochutla is the only Aztec dialect I have found which can lay some claim to being a true sister of Classical Nahuatl rather than a descendant of the classical language or a close dialect thereof.'

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REDUPLICATION IN NAHUATL, IN DIALECTAL AND HISTORICAL PERSPECTIVE

Una Canger

Horacio Carochi (1645) distinguishes and discusses four different cases of reduplication of stem-initial CV- : 1) reduplication with a long vowel used in the formation of plural of nouns (masa:-l : ma:-masa-? 'deer'), 2) frequentative verbs derived from a restricted set of roots through the suffixes -ka and -éa and reduplication with a short vowel (ka-kala-ka intr : ka-kala-éa tr 'jingle'); nonfrequentative verbs are formed from the same set of roots with the suffixes -ni and -na/-nia (kala:-ni intr : kala:-nia tr 'ring'), and 3) and 4) frequentative verbs derived from other verbs through reduplication with CV- or with CV?- (teki 'cut' : te:-teki 'slice' : te?-teki 'cut to pieces').

The two first mentioned cases were not productive in Classical Nahuatl. Plural formation of nouns with the reduplication CV:- was restricted to a small number of nouns (cf appendix A); and loan words from Spanish were not pluralized through reduplication. Karttunen and Lockhart (1976) never even discuss that possibility in their thorough treatment of the plural forms of Spanish loan nouns in Nahuatl.

The derivation of frequentatives through CV- was, as mentioned above, restricted to a set of roots which formed a closed class.

But the last-mentioned cases of reduplication, namely the formation of frequentatives with CV:- and CV?- were clearly productive in the sense that reduplication here was used to add to the verbs certain semantic nuances, which cannot be simply summarized for all the possible examples. Carochi (1645:473) says about these:

Knowing when one doubles this first syllable and how to pronounce it: whether with glottal stop or without, and knowing precisely what the verb means when the first syllable has glottal stop and when it is long, that is the most difficult thing there is in this language. [My translation. UC]

Till today no one has taken up the challenge contained in Carochi's words, and in reality it is an impossible task in Classical Nahuatl because vowel length and glottal stop are, as a rule, not indicated in the texts. But the modern dialects may be used in studying reduplication and may also throw some light on Classical Nahuatl. However, I do not intend in this paper to take up Carochi's challenge. I here only wish to survey and in an organized way present some of the existing material and introduce a dialectal perspective.

Reduplication for plural of nouns

In grammars of Classical Nahuatl, we find some thirty nouns which employ reduplication, combined - in most cases - with a suffixed glottal stop to indicate plural:

masa:-λ	ma:masa-ʔ	deer
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In the case of a few nouns the reduplication is combined with the suffixes -tin or -meʔ, and the reduplication may then be optional:

k <sup>w</sup> a:w-λi	(k <sup>w</sup> a:-)k <sup>w</sup> a:w-tin	eagle
ička-λ	(i:-)ička-meʔ	sheep

Note that in the following nouns a prefix precedes the noun stem, but still the noun stem is reduplicated:

ič-po:č-λi	ič-po:-po:č-tin	young woman
te:l-po:č-λi	te:l-po:-poč-tin	young man
ač-ka:w-λi	ač-ka:-ka:w-tin	officer

In most modern dialects this plural formation is unknown or occurs only with one or two nouns. However, it is found in some of the dialects most closely related to Classical Nahuatl: Milpa Alta (Whorf 1946:382), San Martín de las Pirámides (González C. 1922:610), and North Puebla (Canger 1976b). In the last mentioned dialect it occurs with most names for animals, but not typically with humans, and with no inanimates.

In Classical Nahuatl number was distinguished only with animates, but - probably due to Spanish influence - inanimate count nouns are now pluralized in most modern dialects. In North Puebla, reduplication for plural is used with approximately the same nouns as in Classical Nahuatl, and yet, with the expanded use of plural this specific marker of plural has become more specialized, being used exclusively with animates that are nonhuman. Within this category, I have even registered a case of reduplication with a loan word (berdi:seʔ (Spanish perdíz) 'partridge': be:-berdi:se-s 'partridges').

In Tetelcingo, we also find reduplication indicating plural with a restricted number of nouns, but not typically with the same nouns as in Classical Nahuatl or North Puebla. In Brewer & Brewer's dictionary (1962), there are seven names of animals with which reduplication is used, but there are also nine animate, human nouns that take reduplication:

comixi	cu-comix-te	lizard
cuetzpali	cue-cuetzpal-me/te	iguana
chicojtli	chi-chicoj-me	bumblebee
chilpö	chi-chilpön-te	wasp
quimichi	qui-quimich-te	rat
texu	tie-texun-te	badger

tiectli	tie-tec-me	rattlesnake
i-sisihuan-conie	i-...cu-cone-huan	his daughter
i-sohua	in-so-sohuð-hua	his wife
nömictli	nö-nömic-te	husband
pilalaj-conetzi	pilalaj-cu-cone	child
tajtli	tö-taj-te	father
tzipitl	tzi-tzipi-me	second-young- est child
utztlí	u-utz-te	pregnant woman
tlahtoöni	tlö-tlahtoöni-me	holder of civil office
tlayecönqui	tlö-tlayecönqui	holder of reli- gious office

Reduplication has here clearly received a reinterpretation which is different from the one in North Puebla.

For San Martín de las Pirámides and Milpa Alta I have not yet had the chance of analyzing the plural of nouns, so I do not know whether reduplication with a long vowel has also become specialized in those localities.

Apart from the mentioned dialects, reduplication is generally not used with nouns in any modern dialect to indicate plural, with the striking exception of Pipil. In Pipil reduplication constitutes the principal marker of plural with all native nouns as well as with loan nouns:

kāl	kaχ-kāl	house
kúnet	kux-kúnet	child
íkši	ix-íkši	foot
kauáyu	kaχ-kauáyu	horse (Spanish caballo)
kámu	kaχ-kámu	manioc

(from Schultze Jena 1935)

In a short sketch dealing exclusively with reduplication in Pipil of El Salvador, Judith Maxwell says:

Con bases sustantivales la reduplicación de la primera sílaba sirve para indicar pluralidad. Ocurre con o sin otras marcas del plural.

takat	hombre
tajtakat	hombres
tajtakamet	hombres

(Maxwell et al. 1980:14)

Note that in Pipil this reduplication has the equivalent of glottal stop, CVj-, whereas in Classical Nahuatl and the few modern dialects around the Valley of Mexico where reduplication is still used to indicate plural it is always reduplication with a long vowel. "La reduplicación puede ser exacta, C<sub>1</sub>V<sub>1</sub>-, o con aspiración adicional, C<sub>1</sub>V<sub>1</sub>j-. Ante fricativas la segunda opción es menos común, pero ocurre." (Maxwell et al. 1980:14).

Verbs derived with reduplication CV-, and -ka/-ða

There is nothing remarkable about the reduplication CV- that co-occurs with the suffixes -ka (intransitive) and -ða (transitive) in forming frequentatives. Such frequentatives are found in a restricted number in all the dialects and are formed from approximately the same roots everywhere. I have excerpted all the verbs included in Molina's dictionary (1571) which are formed from these roots, and they are listed according to roots in a section called NI in an appendix to Canger 1980.

Other nonproductive cases of reduplication

These were the two simple and unproductive cases mentioned by Carochi. A first step towards a study of the remaining complex of reduplication must consist in separating off other individual or

systematic cases of reduplication which do not participate in the productive system.

1. Words lexicalized with reduplication. First we have a number of nouns, verbs, and adjectival forms which occur only with reduplication. Many of these are found in several or all the dialects; in other words, their reduplication may go back to Proto-Aztecan, and they have become lexicalized in this form. Some examples are:

nenepilli	tongue
šoʔona	beat (instrument)
čiči:k	bitter

Most of these "inherited" reduplications have a short vowel, and many have an inherently repetitive meaning (sprinkle, suck, tickle, tremble, etc.).

Among these lexicalized forms with reduplication, we may also register some "frozen" reduplicated forms which are found in many dialects and to which we find corresponding unreduplicated forms, but with no predictable semantic relationship between the two. An example is:

nemi	live
ne?-nemi	walk

The old age of some of the lexicalized reduplications is recognized by the fact that they occur in many dialects. But we also have a reduplicated verb, kekesa 'stamp on', which on other grounds can be shown to go back to Proto-Aztecan. The verb kekesa was derived from a simple verb \*kVsa (the first vowel is uncertain). However, after the reduplicated form had come into use, \*kVsa went through the metathesis which Campbell & Langacker (1978:202) have described and identified as one of a series of changes "deriving Proto-Aztecan from Proto-Uto-Aztecan"; thus pre-Proto-Aztecan \*kVsa

gave iksa, a verb found in Classical Nahuatl and several modern dialects with the meaning 'step on'. But the reduplication protected pre-Proto-Aztecan kekesa from the metathesis. It became lexicalized with the meaning 'stamp on', and the morphological connection between kekesa 'stamp on' and iksa 'step on' was lost.

It is striking that a number of adjectives have been lexicalized with reduplication:

toto:nki	warm
šošo:wki	fresh, green
koko:k	picante
sese:k	cold
čiči:k	bitter
či:či:ltik	red
mimiltik	round
kokoški	sick
sosoltik	old

This may have to do with a tendency in Nahuatl towards words of a certain length. In La Huasteca, several more adjectives (that somehow seem to be basic or maybe just not characterized morphologically in any other way) have an inseparable reduplication - almost as an adjectival marker:

weweyak	long
kokohya:k	stinking
yaya:wik	black
teteʔtik	thick (about liquids)
šoʔoltik	soft

(from Kaufman 1969 and Tuggy 1979) (cf. also North Puebla wawahki 'dry').

I append to this paper a list of nouns and verbs that are widely attested in the Nahuatl dialects only with reduplication

(Appendix B). The problem of demonstrating that initial CV- is in fact historically a reduplication in such words is disregarded in the present paper.

2. Reduplication with numbers. Secondly, distributive numbers can be set aside. They are naturally restricted to numbers and semantically well-defined. Distributive numbers are formed with a reduplication prefixed to the simple numbers. In many dialects, the reduplication has  $\eta$  (or the equivalent) when prefixed to the low numbers, but a long vowel when prefixed to higher numbers. The distributive numbers signify 'two of each', 'three at a time', or the like.

In a village in Central Guerrero, Xalatzala, we find for example:

oh-o:me	'two at a time'
yeh-ye:yi	'three at a time'
nah-na:wi	'four at a time'
ma:-ma:k <sup>w</sup> ili	'five at a time'

The expression for 'every day' is in many dialects formed with a reduplication with glottal stop prefixed to the word for 'tomorrow', mo:s $\lambda$ a : moh-mo:s $\lambda$ a 'every day'.

3. Plural of adjectives. Thirdly, in some modern dialects reduplication with glottal stop (or the equivalent) is used systematically in forming the plural of adjectives. This is true in parts of Central Guerrero and in North Guerrero, for example toma:wak : toh-toma:w-keh 'fat'.

Productively used reduplication

This ought to take care of all the simple and fairly unambiguous cases, and we are now left with Carochi's puzzlers, which are also found in most of the dialects spoken today.

In summary, Carochi (1645:473-5) observes that CV $\eta$ - adds intensity to the action and indicates that it occurs independently several times and in several places. I quote two of his examples: in- $\acute{c}$ a $\eta$ - $\acute{c}$ an o:-ya $\eta$ -ya $\eta$ -ke $\eta$  'they went, each to his own house' and te:-pan ti-ki $\eta$ -ki:s-ti-nemi 'you go from house to house (i.e. you go leaving and entering in several places)'. CV:- on the other hand also indicates that an action occurs repeatedly, but in an orderly fashion, with no specific intensity, and in a sequence. Some of his examples are: ni-k-te:-teki in  $\lambda$ a $\acute{s}$ kalli 'I slice/cut the bread' versus ni-k-te $\eta$ -teki in  $\lambda$ a $\acute{s}$ kalli 'I cut the bread to pieces' and ni-k- $\acute{s}$ e:- $\acute{s}$ e:loa in  $\lambda$ aolli 'I spread the corn out over one continuous area' versus ni-k- $\acute{s}$ e $\eta$ - $\acute{s}$ e:loa in  $\lambda$ aolli 'I spread the corn out in different places, from different piles'.

In descriptions of modern dialects, we find labels characterizing the diversified uses of reduplication such as "intensified action", "repetitive action", "plural of subject or object". "Reduplication often indicates repetitive or intensified action or some similar semantic shift." (Tuggy 1979:85). "Some stems evidence reduplication to mark plurality of subject or object, or repetitive action." (Brockway 1979:172). "Reduplication is most commonly used to give the verb a new meaning that is more intense ... Reduplication also can indicate repeated action on verbs in which repeated action is inherent." (R. & C. Beller 1979:272 and 273). And "in any stem in which reduplication has not come to denote a completely different meaning of the stem, reduplication of the initial syllable generally indicates intensification of the meaning." (Sischo 1979:352).

In general, no systematic attempt has been made to distinguish inherited from productive cases of reduplication or to consistently correlate the two or three types of reduplication with the suggested semantic labels. However, Howard Law and Harold Key are exceptions to this generalization. Law (1958:124-5) says:

Three initial reduplicatives of first relative order from

the root occur as stem formatives. They are as follows: Morpheme 318 C<sub>1</sub>V<sub>1</sub>- indicates a derived but non-predictable meaning from the root ... Morpheme 319 C<sub>1</sub>V<sub>1</sub>h- indicates simple repeated action ... Morpheme 320 C<sub>1</sub>V<sub>1</sub>:- indicates repeated action with reference to various objects.

Key (1960:131-2) says:

Initial stem reduplication occurs involving either the basic root or any preposed root or prefixed object. There are two patterns of initial reduplication designated C<sub>1</sub>V<sub>1</sub>- and C<sub>1</sub>V<sub>1</sub>h-, and constituting two distinct morphemes. C<sub>1</sub>V<sub>1</sub>- repetition or emphasis of action. ([in a foot note to this:] "An allomorph C<sub>1</sub>V<sub>1</sub>:- appears to indicate a persisting or continuing of the same action." [end of foot note]) .. C<sub>1</sub>V<sub>1</sub>h- ~ V<sub>1</sub>h- (the latter occurs with the vowel-initial roots) multiplication of action but with variation, distributive action.

These short quotations from descriptions of a variety of Nahuatl dialects show that we do in fact find reduplication used productively in the modern dialects and possibly in approximately the same ways as described in Carochi's grammar. However, for lack of time and data, I shall have to restrict myself to one dialect.

In 1973 I collected some data in Zitlala, Central Guerrero, on the dialect in general and some specifically on reduplication. These data from Zitlala on reduplication I append to the present paper (Appendix C), but only with a great deal of reservation. My reservation is concerned with the reliability of the data. In collecting the material, I produced the greater part of the reduplicated words, presented them to the informants, and asked them for an interpretation, and I did not have the possibility, while I was there, of comparing these forms systematically with the ones that occur in texts also collected in Zitlala and of analyzing the whole body of material. I have not later been back to Zitlala to check

my data and continue the study of reduplication. So what I have are some reliable examples from texts and some slightly doubtful, elicited ones with interpretations of their meanings. My reason for appending the material is to give others the possibility of using it in studying reduplication in other dialects - or in Zitlala. It should be added that reduplication is used prolifically in Zitlala, and it is my impression that Central Guerrero would be an excellent place for a thorough study of the semantics of reduplication.

The Zitlala material - as well as existing material from other dialects - shows a general agreement with Carochi's description of the content of the two types. In the following three examples:

- |                                   |  |
|-----------------------------------|--|
| (1) ne:č-čoh-čoktia               | it (smoke) makes me cry<br>(on and off)    |
| (2) o: ti-čoh-čokakeh             | we cried (all of us,<br>individually)      |
| (3) o: čoh-čolohkeh o: yah-yahkeh | they fled, they went off<br>(individually) |

reduplication with glottal stop (here h) indicates that the action takes place distributively, either several times with irregular intervals (1) or performed by several different persons (2) and (3); in the latter case the reduplication emphasizes that every single person carries out the action (2) or that they do it in different places or directions (3).

In the following examples we have reduplication with a long vowel:

- |                     |   |
|---------------------|---|
| (4) λa-to:-topo:nis | a bull made of reeds and connected<br>firecrackers will detonate (the<br>connected firecrackers will explode<br>in an orderly and planned sequence) |
| (5) ki-pi:-piloah   | they hang it up (an offering of   |



intestines on an arch) piece by piece

In one text about the revolution, we find the verb ki:štia 'take out' once with CVh- and once with CV:-

- (6) o: λa-ki:-ki:štihkeh they took out things (systematically, piled them up, and burnt them)
- (7) mič-o:n-λa-kih-ki:štili:skeh they would take your things (individual and random objects)

I would like to suggest some terms that we who work with Nahuatl could all agree on for the basic contents of these two productive types of reduplication. They emerge quite clearly in many examples, but have received a number of different labels. I suggest that we call the content of CVh- distributive. It has been described as plurality of subject or object, repeated action or distributive action.

The basic content of CV:- is more difficult to name appropriately; it seems to combine repetition with sequentiality or orderliness, and it might be possible to call it consecutive. I find it desirable to avoid such terms as repetitive or iterative because they describe an aspect of the contents of both CVh- and CV:-.

I do not know where the often-mentioned aspect of intensity or intensified action belongs, whether with CVh- 'distributive' or with CV:- 'consecutive', or maybe with a third unidentified type.

In the Zitlala data not all examples fit the recognized basic contents of the two types. Furthermore - as observed from other dialects - the prefix λa can also be reduplicated; the meaning of such forms is not yet entirely predictable, but intensity may be involved in some examples:

- (8) λah-λa-ko:wa he buys much/strongly
- (9) λah-λa-pa:ka she does nothing but wash
- (10) λah-λa-nemaka he sells, but has little to sell
- (11) λah-λa-k<sup>W</sup>a he eats much/strongly
- (12) koš ti-λah-λa-k<sup>W</sup>a you do not eat anything at all

However, in Zitlala reduplication also seems to be used productively in an entirely different sense, namely indicating that the object or action is not real, but only imitating that which the unreduplicated form signifies:

- koh-kone:λ doll
- kone:λ child
- mah-masa:λ imitation of a deer
- masa:λ deer
- kah-kalli awning used at the market to create shade ("pretend house")
- kalli house
- ti-ko:-koči you are pretending to sleep
- čo:-čo:ka he pretends to cry

Curiously enough, the word for 'mushroom', which in all other dialects has the inherited reduplication with a short vowel, nanakaλ and thus probably suggests no connection with the word nakaλ 'meat', here has CVh-, nah-nakaλ, and can be interpreted as 'pseudo meat' on a par with koh-kone:λ 'pseudo child'.

This perhaps farfetched interpretation should possibly somehow be related to a use of reduplication as diminutive found randomly in various dialects.

Conclusion

To sum up:

1) Forms that have reduplication with a short vowel are most likely inherited from Proto-Aztecan, both in individual words and in frequentative verbs derived from a restricted set of roots.

2) The use of reduplication to mark plural of nouns is not so widespread and uniform that it can naturally be assumed to have its origin in Proto-Aztecan.

3) Because of its widespread occurrence, I assume that the productive use of CV?- as 'distributive' and of CV:- as 'consecutive' goes back at least to General Aztecan. The fact that CV?- is employed in deriving some of the distributive numbers may support this assumption.

4) At this point, I can say little about the history of the possible use of reduplication to indicate 'pseudo' as recognized in Zitlala, but I find it suggestive that the word for 'doll' is "reduplicated child" in most dialects.

Appendix A: Classical Nahuatl nouns that form the plural with reduplication

čik <sup>W</sup> alo-λ	či:-čik <sup>W</sup> alo-?	a bird
ička-λ	i:-ička-me?, ička-me?	sheep (cotton)
kolo:-λ	ko:-kolo-?	scorpion
kone:-λ	ko:-kone-?	child
koyame-λ	ko:-koyame-?	jabalí
koyo:-λ	ko:-koyo-?, koyo:-me?	coyote
ko:wa:-λ	ko:-ko:wa-?	snake
k <sup>W</sup> a:w-λi	k <sup>W</sup> a:w-tin, k <sup>W</sup> a:-k <sup>W</sup> a:w-tin	eagle
k <sup>W</sup> eλač-λi	k <sup>W</sup> e:-k <sup>W</sup> eλač-tin	wolf
k <sup>W</sup> eya-λ	k <sup>W</sup> e:-k <sup>W</sup> eya-?	frog
masa:-λ	ma:-masa-?	deer
mič-in	mi:-mič-tin, miči-me	fish
mis-λi	mi:-mis-tin	puma
mo:yo:-λ	mo:-mo:yo-?	mosquito
ose:lo:-λ	o:-ose:lo-?, ose:lo:-me?, ose:lo:-tin	jaguar
pil-li	pi:-pil-tin	lord
si:λal-in	si:-si:λal-tin	star
si?-λi	si:-si?-tin	hare
sol-li	so:-sol-tin, sol-tin	partridge
λa:ka-tekolo:-λ	λa:-λa:ka-tekolo-?	devil
λa:ko?-λi	λa:-λa:ko?-tin	slave
tekolo:-λ	te:tekolo-?	owl
te:k <sup>W</sup> -λi	te:-te:k <sup>W</sup> -tin	lord
teo:-λ	te:-teo-?	god
tepe:-λ	te:-tepe-?	mountain
ti:si-λ	ti:-ti:si-?	doctor

to:č-λi	to:-to:č-tin	rabbit
we?šo:lo-λ	we:-we?šo:lo-?	turkey
wilo-λ	wi:-wilo-me?	dove

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ač-ka:w-λi	ač-ka:-ka:w-tin	lord
ič-po:č-λi	ič-po:-po:č-tin	young woman
te:l-po:č-λi	te:l-po:-po:č-tin	young man

Appendix B: Nahuatl words attested with an inseparable reduplication in several nonadjacent dialects<sup>1</sup>

NOUNS:

či(:)čika:sλi	nettle	ClN, Tetel, NP, Tlax, CGro, SdeP, NGro, VC, Isth
čočoka	stingy, wart	ClN, Tetel, CGro, SdeP, NGro, Mich, WP
čo:čokolli	jug	ClN, CGro, Tlax, SdeP, Isth, Pi, WP
čočoma?λi	cloth	ClN, Tetel, Tlax, VC, Isth, Mich, WP
čočopa:sλi	batten, loom	ClN, VC, NGro
e?e:kaλ	wind	ClN, Tetel, CGro, NP, Tlax, LaH, SdeP, NGro, WP, SGro, Pi
kakawaλ	cacao; peanuts	ClN, Tetel, Tlax, LaH, CGro, NGro, Pi
ko(:)kone:λ/ko?kone:λ	doll	ClN, Tetel, CGro, NP, Tlax, NGro
mama:sλi	fan	ClN, VC, NGro
na(?)nakaλ	mushroom	ClN, Tetel, CGro, Tlax, NP, VC, SdeP, Isth, NGro
nenepi(:)lli	tongue	ClN, Tetel, CGro, Tlax, NP, VC, LaH, SdeP, Isth, NGro, WP, Po
pa:pa:lo:λ	butterfly	ClN, Tetel, CGro, Tlax, NP, LaH, VC, SdeP, Isth, NGro, SGro, Pi
popo:čλi	incense	ClN, Tetel, CGro, VC, NGro, WP
tatapa?λi	cloth	ClN, Tetel, NGro
to:to:λ	bird	ClN, Tetel, CGro, Tlax, LaH, VC, SdeP, Isth, NGro, Pi, Po
to:tolin	turkey	ClN, Tlax, LaH, VC, Isth, Po
to:tomo:čλi	corn husk	ClN, Tetel, CGro, Tlax, SdeP, VC, NGro, Pi, Po

VERBS:

čečeloa	shake, strain	ClN, Tetel, CGro, Tlax, LaH, VC, SdeP, Isth, NGro, WP
čočona	beat (instrument)	ClN, Tetel, CGro, Tlax, LaH, VC, SdeP, NGro, WP, Isth, Pi

či:či:	suckle	ClN, Tetel, Tlax, CGro, LaH, VC, SdeP, Isth, NGro, WP, Pi
či:či:liwi/či:či:ltik	(turn) red	ClN, Tetel, Tlax, CGro, LaH, VC, SdeP, NGro, WP, Isth, Pi
či:liwi/či:ltik	" "	NGro, WP, Isth, Pi
čiči:na	suck,	ClN, Tetel, Tlax, CGro, LaH, VC, SdeP, NGro, WP, Isth, Pi
	smoke tobacco	
ke(?)keloa/ke?kele?	tickle/	ClN, Tetel, CGro, Tlax, LaH, NP, VC, SdeP, NGro, WP, Isth
	ticklish	
kekeškiya	itch	ClN, Tetel, CGro, VC, NGro
ma:ma:	carry	ClN, Tetel, Tlax, CGro, LaH, VC, SdeP, NGro, WP, Isth, Pi
mimiloa	roll	ClN, Tetel, CGro, Tlax, VC, SdeP, NGro, WP, Isth, Pi
pa?paloa	lick	ClN, Tetel, CGro, SdeP, NGro, WP, Isth
pepečoa	paste,	ClN, Tetel, CGro, LaH, VC, SdeP, NGro, Pi
	patch up	
pe?pena	pick out,	ClN, Tetel, Tlax, NP, CGro, LaH, VC, SdeP, NGro, WP, Pi
	pick up	
pipičoa	suck, lick	ClN, Tetel, LaH, VC, SdeP
pipi:na	suck	ClN, LaH, SdeP, Isth
popo:ka	smoke (intr)	ClN, Tetel, Tlax, CGro, LaH, VC, SdeP, Isth, NGro
po?po:wa/popo:λ	clean/broom	ClN, Tetel, Tlax, CGro, LaH, NGro, WP, Pi
λala	burn (intr)	ClN, Tetel, Tlax, CGro, LaH, VC, SdeP, Isth, NGro, Pi
λalasi	cough	ClN, Tetel, Tlax, CGro, LaH, VC, SdeP, NGro, WP, Isth, Pi
tataka	scratch	ClN, Tetel, Tlax, CGro, VC, SdeP, NGro, WP
wawana	scrape	ClN, Tetel, LaH, SdeP, WP, Isth, Pi
wiwičoa	shake	ClN, Tetel, (SdeP), WP
wiwiyoka	tremble	ClN, Tetel, SdeP, WP
wiwiλa	pull out	ClN, Tetel, CGro, LaH, VC, SdeP, NGro, WP, Isth, Pi

Appendix C: Material on reduplication from Zitlala, Central Guerrero

i. Words with inseparable reduplication. Not included are

words that were listed in appendix B.

<u>čača</u>	deaf
<u>čačətete</u>	deaf and dumb
<u>ča:ča:řon</u>	crackling (Sp. chicharrón)
<u>te:čiħčikiltik</u>	thin, skinny
<u>i:te:nčočopiyah</u>	its beak
<u>kahkaya:wa</u>	deceive
<u>na:nařka</u>	squeak
<u>nanalka</u>	get angry
<u>no:nohkilli</u>	an edible plant
<u>nohno:nk<sup>w</sup>ah</u>	apart
<u>ša:řayaka</u>	mask
<u>řo:řoλame:řin</u>	firefly
<u>tatapaltik</u>	deaf
<u>tete</u>	dumb
<u>tehte:moa</u>	look for
<u>teteponλi</u>	knee
<u>wi:wifaka(řin)</u>	hummingbird

ii. Examples of CVh- from texts

k <sup>w</sup> alli k <sup>w</sup> a:k <sup>w</sup> awte:- <u>čiħ</u> -čibo	with very twisted horns
ne:č- <u>čoh</u> -čo:ktia	it (smoke) makes me cry (on and off)
o: ti- <u>čoh</u> -čo:kakeh	we cried (all of us, individually)
o: <u>čoh</u> -čolohkeh o: <u>yah</u> -yahkeh	they fled, they went off (individually)
mičo:nλa- <u>kih</u> -ki:řtili:skeh	they would take your things (individual and random)

no-k<sup>w</sup>ah-k<sup>w</sup>ah pičomeh no-  
teh-teliksah yo:lkeh

o: ko:n-moh-mohtih  
o: pe:w no-ših-šinia no-  
moh-moya:wa λimo:čil  
š-noh-no:ča  
i:λ an pah-panoa  
wešo:lo:meh pah-pala:nih  
šlah tik-pih-piyah  
o: no-sah-sa:loh i:pan o:n k<sup>w</sup>awλi

noči o: ših-šini: n yeho:n λimo:čil

noči ših-šini: n

kim-toh-tokatinemih  
te:-toh-tomaktikeh  
o: λa-toh-topo:n λeyo:wa

weh-we:wetkeh  
weh-we:yi:meh  
o: pe:w teh te:-wih-wi:tekih

ok seki k-wih-wi:tektiwh in  
tepo:na:sλi

objects)  
the pigs bite at each other,  
the animals kick at each  
other

she became very scared  
sparks began to sprinkle,  
to spread in all directions  
speak to her!  
it passes under  
the turkeys flutter  
we have absolutely nothing  
he tied himself on to  
that tree (in various  
places)

everywhere those sparks  
sprinkled  
everybody (participants in  
a fiesta) goes there  
individually

they go following them  
thick (pl)  
there was occasional shooting  
at night

the old men (pl)  
they are big  
they then began to beat  
people (here and there)  
others go beating the drum

koš ti-λah-λak<sup>w</sup>a  
besi:nos sa: ki-λah-λastokeh  
okeseпа teh pe:wa no-λah- λaloah

you do not eat at all  
the neighbors are only looking  
at it  
again they then begin to

i:pan tepe:λ  
o: λah-λawa:nkeh

run off to the mountains  
they got very drunk

ii. Elicited examples of CVh-

ah-atolli  
čah-čaya:ni  
i:m-čah-čan  
a-čih-či:wa

pseudo atole  
it breaks, shatters  
their houses (each his own)  
makes cinta (palm braids  
for hats; this is the  
main product of Zitlala)

čih-či:wa  
ki-čih-či:wa atolli  
ki-či:wa mi:llah

make, produce  
she makes atole  
he works in the field

no-kah-kal  
kah-kawa:ni  
koh-ko:nλi,  
koh-ko:nđi:nλi

my toy house  
it burns in various places  
toy pot

λa:l-koh-kone:λ  
koh-ko:wa  
ki-k<sup>w</sup>ah-k<sup>w</sup>a  
k<sup>w</sup>ih-k<sup>w</sup>i:ni

white lizard  
pretends to buy  
eats little, chews (gum)  
sounds in various places

o: nik-(mah)-ma:а  
ki-mah-ma:ma  
ki-mah-mana  
mah-masa:λ  
mah-masa:-meh  
meh-me:ya

I beat him  
carries a little  
makes tortillas slowly  
pseudo deer  
pseudo deer (pl)  
where water gathers

ki-neh-nemaka  
nite:-noh-no:ča  
ki-pah-pa:ka  
pah-pahpaloa  
no-peh-peλ  
ših-šini: n λe:yolli  
ki-λah-λa:lia

pretends to sell  
I tell, relate  
washes dishes  
licks (about flame)  
my pseudo mat  
corn pours out  
she makes it (bread) in  
a disorderly and slovenly

	manner
<u>teh-teyoh</u>	place full of stones
<u>ki-teh-teki</u>	cuts it to pieces
<u>weh-weði</u>	falls

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<u>lah-la-te:ma</u>	puts something in several sacks
<u>lah-la-teki</u>	cuts small
<u>lah-la-pahpaloa</u>	licks everything
<u>lah-la-pa:ka</u>	does nothing but wash
<u>lah-la-nemaka</u>	sells, but has little to sell
<u>lah-la-ne:-nemaka</u>	sells (little) to various people
<u>lah-la-čihč:i:wa</u>	makes little cinta
<u>lah-lai</u>	drinks heavily
<u>lah-la-ko:wa</u>	buys much
<u>koš lah-la-k<sup>W</sup>a</u>	does not eat at all
<u>lah-la-k<sup>W</sup>a</u>	eats heavily
<u>lah-la-ma:ma</u>	carries little

iii. Examples of CV:- from texts

o: la- <u>ki:-ki:štihkeh</u>	they took out everything systematically
ki- <u>pi:-piloah</u>	they hang it up (an offering of intestines) piece by piece
wah- <u>pi:-pilkatoken</u>	they (rocks) hang as if ready to fall
si:laimeh <u>po:-poliwih</u>	they (stars) disappear one by one
o: la- <u>se:-se:wihkeh</u>	they put out the fire in a number of houses

la- <u>to:-topo:nis</u>	a bull (made of reeds and connected firecrackers) will detonate
ma tito- <u>la:-la:-lalo:kan</u> i:yewalik <sup>W</sup> yan	let us run around it (a place of reeds, to set fire to it from all sides)
wah k <sup>W</sup> alkan o: pe:w no- <u>la:-la:-laloah</u> teh	next morning they then began to run
niman <u>le:-leyo:watok</u>	then it is night
ko:n- <u>ye:-yewaloah</u> o:n ke:nlah tepe:đi:nli	they go around and around the small peak there

iv. Elicited examples of CV:-

nikim- <u>đa:-đak<sup>W</sup>a</u> ni:štolołohwan	I close my eyes
kim- <u>đa:-đak<sup>W</sup>a</u> h i:mkamakwan	they close their mouths
<u>đo:-đo:ka</u>	he pretends to cry
ti- <u>ko:-kođi</u>	you pretend to sleep
ihtik i:m- <u>ko:-ko:nwan</u>	in their pots
ki- <u>ko:-ko:wa</u>	he buys it in several places
ki- <u>k<sup>W</sup>a:-k<sup>W</sup>a</u>	he eats it slowly
ki- <u>k<sup>W</sup>a:-k<sup>W</sup>a:-k<sup>W</sup>a</u>	he eats little from several plates
ki- <u>ma:-mana</u>	she makes tortillas
ki- <u>ne:-nemaka</u>	he sells it to several persons
ki- <u>pa:-paloa</u>	he slowly dips the tortilla (in the beans)
ki- <u>te:-teki</u>	he cuts it in pieces in an orderly way
ki- <u>te:-te:ma</u>	she puts it (corn) (in small piles on a sheet of plastic to sell)
ki- <u>la:-la:lia</u>	she puts it (tomatoes) (in small piles on a sheet of plastic to sell)
nikim- <u>la:-lapoa</u> ni:štolołohwan	I open my eyes

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<u>λa</u> :-λako:wa	buys little
<u>λa</u> :-λanemaka	sells little
<u>λa</u> :-λapaloa	dips slowly (in the soup)

NOTES

<sup>1</sup>Data for this appendix come from the following dialects or dialect areas: Classical Nahuatl (ClN: Molina 1571), Tetelcingo, Morelos (Tetel: Brewer & Brewer 1962) Cuacuila, North Puebla (NP: Canger 1976b.Pp 453), San Pedro Tlalcuapan, Tlaxcala (Kaufman 1979a.Pp 87), Central Guerrero (CGro: Canger 1973.Pp 263, 1976f.Pp 93, Ramírez & Dakin 1979), La Huasteca (LaH: Kaufman 1969.Pp 137, Canger 1976e.Pp 104), Veracruz (VC: Kaufman 1979b.Pp 112), Sierra de Puebla (SdeP: Key & Key 1953, Canger 1976d.Pp 71) Isthmus (Isth: García de León 1976, Canger 1976c.Pp 99), North Guerrero (NGro: Canger 1976a.Pp 402), South Guerrero (SGro: Canger 1976g.Pp 75), Michoacán (Mich: Sischo 1979), Western Periphery (WP: Guerra 1692, Cortés y Zedeño 1765), Pipil (Pi: Schultze Jena 1935, Aráuz 1960), Pochutec (Po: Boas 1917).

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