

MORPHOPHONEMICS OF THE GUEVEA DE HUMBOLDT
ZAPOTEC VERB

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0. This paper presents morphophonemic changes which occur in relation to the verb morphology of Guevea de Humboldt Zapotec, henceforth referred to as GHZ.¹ The basic verbal construction is:

aspect + STEM + bound subject + bound object

Although the verb is taken as the subject of this study, some of the morphophonemic rules presented in this paper also apply to nouns and stative verbs, in which case that will be mentioned. Phonological rules which apply to these classes of words will be referred to as general rules.

Both phonological and grammatical tone perturbation has been observed to occur in various dialects of Zapotec, usually changing the tone of verb, noun or adjective stems (Leal 1950; Speck 1978; Marks 1976). Grammatical tone perturbation has been noted to occur in relation to certain in these other dialects, as well as in relation to the first person. Of particular interest in the study of GHZ morphophonemics and to the study of Zapotec in general, is that the rules of tone perturbation in GHZ are neither numerous nor complicated, while change of vowel modification, occasionally accompanied by tone perturbation, occurs much more frequently.

1. GHZ verbs are divided into two broad classes and each of those two major classes is subdivided into two minor classes. Classification of verbs into these major and minor classes is made on the basis of the aspect prefixes with which the verb stems occur (see Chart 1 in section 1.1.) In a few cases in Class I it is difficult to determine whether a verb belongs to Class Ia or Ib purely on the basis

of the aspect allomorphs with which these occur. The problematic cases involve a vowel-initial stem or an alveopalatal-initial stem. In these cases another criterion is used. If there is a change of stem vowel or tone in the first person singular, the verb is classified as Class IA, provided the change is one found in other verbs of Class IA. If the change is different from those already found in Class IA, the verb is still classified as IA if it is a causative verb. Noncausative verbs with irregular changes are assigned to Class IB.

In GHZ there are six basic aspects: Habitual (H), Incompletive (I), Progressive (Pr), Unreal (U), Potential (P) and Completive (C). There are two Movement categories: Movement Away (MA) and Movement Toward (MT). In both Movement categories there are five aspects, corresponding to all the previously listed aspects except for Progressive, which is expressed by Incompletive-Movement. The Movement aspects will be discussed briefly, but otherwise the Habitual-Movement will be used in examples to represent all of the Movement aspects because stem changes in the Movement categories are not related to aspects.

1.1. The following verb paradigms show all of the aspect allomorphs which occur in each class. The aspects are cited in the third person singular human, indicated by the enclitic *-mè*. The basic stem for each verb is determined from the Completive aspect for all consonant-initial verbs and from the Habitual aspect for vowel-initial stems.

CLASS IA

	-iũ?d <u>braid</u>	-zĩ?b <u>plant</u>	-k ^w az <u>blow</u>	-wí?e <u>see</u>
H	riũ?d-mè	rzĩ?b-mè	rk ^w áz-mè	rwí?e-mè
I	ziũ?d-mè	zzĩ?b-mè	zk ^w áz-mè	zwí?e-mè
Pr	gáyũ?d-mè	gázĩ?b-mè	gák ^w áz-mè	gawí?e-mè
U	nʏũ?d-mè	nzĩ?b-mè	nk ^w áz-mè	nwí?e-mè
P	giũ?d-mè	gzĩ?b-mè	yk ^w áz-mè	g ^w í?e-mè
C	biũ?d-mè	bzĩ?b-mè	bk ^w áz-mè	bwí?e-mè
MA	rígiũ?d-mè	rígzi?b-mè	ríyk ^w áz-mè	ríg ^w í?e-mè
MT	rídgiũ?d-mè	rídzi?b-mè	rídk ^w áz-mè	ríd ^w í?e-mè

	<u>-gá barber</u>		<u>-skǎ? stretch</u>
H	rgá-mè		rískǎ?-mè / ráskǎ?-mè
I	zgá-mè		získǎ?-mè / záskǎ?-mè
Pr	gágá-mè	gáískǎ?-mè /	gáyískǎ?-mè / gáyáskǎ?-mè
U	ngá-mè	nʸískǎ?-mè /	nískǎ?-mè / nʸáskǎ?-mè
P	ígá-mè		gískǎ?-mè / gáskǎ?-mè
C	bgámè		bískǎ?-mè / báskǎ?-mè
MA	ríygá-mè		rígískǎ?-mè / ríygáskǎ?-mè
MT	rídǵá-mè		rídǵískǎ?-mè / rídǵáskǎ?-mè

CLASS IB

	<u>-íʔe die out</u>	<u>-zíb vomit</u>	<u>-áʔn remain</u>	<u>-iúhš get old</u>
H	ríʔew	rzíb-mè	riáʔn-mè	riúš-mè
I	zíʔew	zzíb-mè	ziáʔn-mè	ziúhš-mè
Pr	gáyíʔew	gázíb-mè	gáyáʔn-mè	gáyúhš-mè
U	níʔew	nzíb-mè	nʸáʔn-mè	nʸúhš-mè
P	ǵíʔew	ǵzíb-mè	ǵiáʔn-mè	ǵiúhš-mè
C	bíʔew	bʸzíb-mè	biáʔn-mè	biúš-mè
MA	rígíʔew	rígʸzíb-mè	ríǵiáʔn-mè	ríǵiúhš-mè
MT	rídǵíʔew	rídǵzíb-mè	rídǵiáʔn-mè	rídǵiúhš-mè

	<u>-káwʸ suffocate</u>	<u>-gá be barbered</u>	<u>-žǝʔb swim</u>
H	rkáwʸ-mè	rgá-mè	ržǝʔb-mè
I	zkáwʸ-mè	ngá-mè	zžǝʔb-mè
Pr	gákáwʸ-mè	gágá-mè	gážǝʔb-mè
U	nkáwʸ-mè	ngá-mè	nžǝʔb-mè
P	ykáwʸ-mè	ígá-mè	gžǝʔb-mè
C	bʸkáwʸ-me	bʸgá-mè	bžǝʔb-mè
MA	ríykáwʸ-mè	ríygá-mè	ríǵžǝʔb-mè
MT	rídǵkáwʸ-mè	rídǵá-mè	rídžǝʔb-mè

CLASS IIA

	-ǒ? <u>drink</u>	-lǒ? <u>take out</u>	-žǐ? <u>buy</u>
H	rǒ?-mè	rbǒ?-mè	rzǐ?-mè
I	zǒ?-mè	zbǒ?-mè	zzǐ?-mè
Pr	gáyǒ?-mè	gábǒ?-mè	gásǐ?-mè
U	n ^y ǒ?-mè	mbǒ?-mè	nzǐ?-mè
P	gǒ?-mè	kǒ?-mè / gbǒ?-mè	sǐ?-mè
C	g ^w ǒ?-mè	g ^w lǒ?-mè	g ^w žǐ?-mè
MA	rígiǒ?-mè	ríglǒ?-mè	rígšǐ?-mè
MT	rídgiǒ?-mè	rídlǒ?-mè	rídšǐ?-mè
	-ryé <u>ripen</u>	-dǎhn ^y <u>dig</u>	-dèL ^y <u>fight</u>
H	rév	rgǎhn ^y -mè	rdèL ^y -mè
I	zév	zgǎhn ^y -mè	zdeL ^y -mè
Pr	gáyév	gágǎhn ^y -mè	gádèL ^y -mè
U	n ^y év	ngǎhn ^y -mè	ndèL ^y -mè
P	gév	kǎ?n ^y -mè / ígǎhn ^y -mè	tèL ^y -mè
C	gúryév	g ^w dǎhn ^y -mè	g ^w dèL ^y -mè
MA	rígyév	rígtǎ?n ^y -mè	rígtèL ^y -mè
MT	rídyév	rídtǎ?n ^y -mè	rídtèL ^y -mè
	-láz ^y <u>support</u>	-yú? <u>enter</u>	-àhz <u>bathe</u>
H	rláz ^y -mè	riú?-mè	ràhz-mè
I	zláz ^y -mè	ziú?-mè	zàhz-mè
Pr	gáláz ^y -mè	gáyú?-mè	gáyàhz-mè
U	nláz ^y -mè	n ^y ú?-mè	n ^y àhz-mè
P	láz ^y -mè	cú-mè	gàhz-mè
C	g ^w láz ^y -mè	g ^w yú?-mè	gùhz-mè
MA	rígláz ^y -mè	rígcú-mè	rígiàhz-mè
MT	rídláz ^y -mè	rídcú-mè	rídgiàhz-mè

CLASS IIB

	-dàhg ^W <u>eat</u>	-bǐg ^Y <u>approach</u>	-k ^W á?- <u>take</u>	-dgáhs ^Y <u>sleep</u>
H	ràhg ^W -mè	rbǐg ^Y -mè	rká?-mè	rgáhs ^Y -mè
I	zàhg ^W -mè	zbǐg ^Y -mè	zká?-mè	zgáhs ^Y -mè
Pr	gáyàhg ^W -mè	gábǐg ^Y -mè	gáká?-mè	gágáhs ^Y -mè
U	n ^Y àhg ^W -mè	mbǐg ^Y -mè	nká?-mè	ngáhs ^Y -mè
P	gàhg ^W -mè	g ^Y bǐg ^Y -mè	yká?-mè	ígáhs ^Y -mè
C	g ^W dàhg ^W -mè	g ^W bǐg ^Y -mè	k ^W á?-mè	gúdgáhs ^Y -mè
MA	rígtàhg ^W -mè	ríg ^Y bǐg ^Y -mè	ríyká?-mè	ríygáhs ^Y -mè
MT	rídtàhg ^W -mè	rídbǐg ^Y -mè	rídká?-mè	rídgáhs ^Y -mè
	-čáhs <u>jump</u>	-zǎhb ^Y <u>owe</u>	-náb <u>request</u>	-b ^Y giát <u>return</u>
H	rčáhs-mè	rzǎhb ^Y -mè	rnáb-mè	ríb ^Y giát-mè
I	zčáhs-mè	zsǎhb ^Y -mè	znáb-mè	zíb ^Y giát-mè
Pr	gáčáhs-mè	gázǎhb ^Y -mè	gánáb-mè	gáyíb ^Y giát-mè
U	nčáhs-mè	nzǎhb ^Y -mè	nnáb-mè	níb ^Y giát/n ^Y íb ^Y giát-mè
P	gčáhs-mè	gzǎhb ^Y -mè	g ^Y náb-mè	gíb ^Y giát-mè
C	g ^W čáhs-mè	g ^W zǎhb ^Y -mè	g ^W náb-mè	gúb ^Y giát-mè
MA	rígčáhs-mè	rígzǎhb ^Y -mè	rígnáb-mè	rígíb ^Y giát-mè
MT	rídčáhs-mè	rídzǎhb ^Y -mè	rídnáb- è	rídgíb ^Y giát-mè

1.2. Morphophonemics of the aspect prefixes

There is a general rule, which applies not only to verbs but also to nouns and stative verbs, which inserts an i or a between a nonsyllabic, nonlabialized prefix and two stem-initial consonants as in stretch (IA). If the first consonant of a stem-initial consonant cluster is palatalized, only i (not a) may be epenthesized, as in return (IIB). A second minor rule of epenthesis inserts an i between a prefix which is an obstruent or r, and nonhigh-front vowels in Class IB, as in remain.

A prefix which is simply a nonmodified stop becomes palatalized preceding nonalveopalatal consonants in Class IB, as in vomit and suffocate, and preceding b in Class IIB, as in approach, and a nonmodified stop is optionally palatalized preceding sonorant-initial stems of Class IIB, as in request. Palatalized consonants do not contrast with nonpalatalized ones preceding alveopalatal consonants. Therefore, although words such as swim (IB) function as Class IB verbs, phonemic palatalization of the stop does not occur.

The Habitual r- and Incomplete z- prefixes remain unchanged in all environments, as can be observed in all of the verb paradigms.

The Progressive aspect has two allomorphs, gay- and ga- (resulting from the deletion of the final y preceding a single stem-initial consonant, such as in plant, blow and barber of IA; vomit, suffocate, be barbered and swim of IB; buy, dig, fight and support of IIA; and approach, take, sleep, jump, owe and request of IIB.) Furthermore, after an i has been epenthesized between gay- and a stem-initial consonant cluster, the y may be optionally deleted if i precedes a sibilant, as in stretch (IA).

The Unreal aspect has three allomorphs: n^y-, n- and m-. Assuming that n^y- is the basic form, palatalization is deleted preceding a single stem-initial consonant and it assimilates to the point of articulation of that consonant, unless the consonant is w or an alveopalatal. Assimilation, then, results in two allomorphs of the Unreal aspect: m-, which occurs before bilabial obstruents, as in take out (IIA) and approach (IIB); and n-, which occurs preceding other consonants, as in plant, blow, see and barber of Class IA; buy, fight and support of Class IIA; and jump and request of IIB. Palatalization of n^y- is also deleted preceding a stem-initial high-front vowel, as in die out of Class IB, and it is optionally deleted preceding nonstem-initial i, as in stretch (IA) and return (IIB). The allomorph n^y-, then, occurs preceding other vowels, as in remain (IB), get old (IB), ripen (IIA), eat (IIB), and enter (IIA).

The Potential aspect has four allomorphs: ∅- (zero), i-, y- and g-. The zero allomorph precedes stem-initial fortis consonants in Class IIA, as in take out, buy, dig, fight and enter, and preceding a potential stem-initial la, as in support. The allomorph i- precedes stem-initial g, as in barber (IA), be barbered (IB), dig (IIA) and sleep (IIB). The allomorph y- precedes k (except in Class IIA where it would be zero), as in blow (IA), suffocate (IB) and take (IIB). The allomorph g- occurs in other environments, either modified by palatalization, or nonmodified, according to the above rule of palatalization. A few of the verbs which demonstrate the occurrence of the allomorph g- are: braid, plant, see (g + w --- g^w; 2.3.3.1, rule 11) and stretch of Class IA; vomit, remain and swim of Class IB; and one of the Potential variations of take out (IIA), and others.

The Completive aspect has four allomorphs: b-, ∅- (zero), gu- and g^w-. It is b- in Class I. In Class II it becomes zero preceding k^w, as in take. It is gu- preceding two stem-initial consonants of Class II, as in return (IIB) and sleep (IIB), as well as preceding stem-initial a in Class IIA, as in bathe (a --> ∅ / gu- ___; 2.3.2.2). Elsewhere in Class II the Completive allomorph is g^w-.

The six basic aspect allomorphs for each class are listed in Chart 1.

The Movement prefixes are considered to be complex aspect suffixes. The MA (Movement-away) aspect consists of the following three parts: Aspect + -i (contracted from -ia 'go') + Potential.

	IA	IB	IIA	IIB
HABITUAL	r-	r-	r-	r-
INCOMPLETIVE	z-	z-	z-	z-
PROGRESSIVE	gay-	gay-	gay-	gay-
UNREAL	n ^y -	n ^y -	n ^y -	n ^y -
POTENTIAL	g-	g ^y -	g-	g ^y -
COMPLETIVE	b-	b ^y -	g ^w -	g ^w -

Chart 1: Basic Allomorphs of the Six Aspects

The aspect prefixes of the MA vary somewhat from the basic prefixes as listed in Chart 1, in that Progressive gay- does not occur and the Potential aspect is related to the Potential form of -ia go : ca will go . (The Potential-MA aspect prefix is the lenis counterpart, z, of the stem-initial consonant of ca 'go'.) The MA aspect prefixes which occur before -i are: r- Habitual, z- Incompletive/Progressive, n- (or n^y-) Unreal, z- Potential and b- Completive. The Potential position in the formula is filled by the allomorphs y- and g- (i- and zero never appear in this environment). The y- occurs before both lenis and fortis stem-initial velars, as in blow (IA) and barber (IA), and g- occurs preceding other stem-initial consonants and preceding vowels, as in braid (IA), plant (IA), buy (IIA) and others. The palatalization rule (above) also applies to g-, as in vomit (IB), approach (IIB) and ask (IIB).

The MT (Movement-toward) aspect consists of the following three parts: Aspect + -id (contracted from -ia?d come) + Potential. The aspects of the MT category are the same as those listed for Class IA, except that gay- does not occur and n- would be more basic for Unreal-Movement, although it may vary to n^y-, according to the speaker. Only two allomorphs may fill the Potential slot in the MT category: g- occurs preceding stem-initial vowels, or preceding stem-initial consonant clusters (in which case a non-mid vowel is epenthesized according to the above rules of epenthesis), as in braid (IA) and stretch (IA), and zero occurs preceding stem-initial consonants, as in plant (IA), buy (IIA) and others.

Furthermore, an i is epenthesized in the Movement categories between g- and a stem-initial, non-front vowel, as in bathe (IIA) and drink (IIA).

The five complex MA and MT aspects are listed in Chart 2.

The following paradigms demonstrate a few of the verb stems in all of the aspects of the Movement categories. Although either n- or

	Movement-away	Movement-toward
HABITUAL	rig-	ridg-
INCOM/PROG	zig-	zidg-
UNREAL	nig-/n ^y ig-	nidg-/n ^y idg-
POTENTIAL	zig-	gidg-
COMPLETIVE	big-	bidg-

Chart 2: The Complex Aspects

n^y- may occur in the Unreal aspect of both MA and MT, only n- will be used in the examples. The uniformity of the Movement stems is apparent in the examples, however the initial consonant is sometimes the fortis counterpart of that in the basic stem as in buy (IIA).

	-zǐʔb (IA) <u>plant</u>		-iũʔd (IA) <u>braid</u>	
H	rígziʔb-mè	rídziʔb-mè	rígiũʔd-mè	rídgiũʔd-mè
I/Pr	zígziʔb-mè	zídziʔb-mè	zígiũʔd-mè	zídgiũʔd-mè
U	nígziʔb-mè	nídziʔb-mè	nígiũʔd-mè	nídgiũʔd-mè
P	zígziʔb-mè	gídziʔb-mè	zígiũʔd-mè	gídgiũʔd-mè
C	bígziʔb-mè	bídziʔb-mè	bígiũʔd-mè	bídgiũʔd-mè

	-zíb (IB) <u>vomit</u>		-žǐʔ (IIA) <u>buy</u>	
H	ríg ^y zíb-mè	rídžíb-mè	rígšǐʔ-mè	rídšǐʔ-mè
I/Pr	zíg ^y zíb-mè	zídžíb-mè	zígšǐʔ-mè	zídšǐʔ-mè
U	níg ^y zíb-mè	nídžíb-mè	nígšǐʔ-mè	nídšǐʔ-mè
P	zíg ^y zíb-mè	gídžíb-mè	zígšǐʔ-mè	gídšǐʔ-mè
C	bíg ^y zíb-mè	bídžíb-mè	bígšǐʔ-mè	bídšǐʔ-mè

	-skáʔ (IA) <u>stretch</u>	
H	rígískáʔ-mè	rídgískáʔ-mè
I/Pr	zígískáʔ-mè	zídgískáʔ-mè
U	nígískáʔ-mè	nídgískáʔ-mè
P	zígískáʔ-mè	zídgískáʔ-mè
C	bígískáʔ-mè	bídgískáʔ-mè

2. GHZ verb stems may be simple or compound and they may be derived or nonderived.

2.1. Simple stems are always monosyllabic in GHZ. Compound stems tend to be bisyllabic, but it is not always possible to determine the meaning of both of the syllable, although the second syllable is usually recognizable. The reason for this is that there is a general rule of neutralization in GHZ which simplifies the syllable nucleus of all prestressed syllables. Tones are neutralized to high tone in prestressed syllables across morpheme boundaries (e.g., in compounds). The following examples show the neutralization of syllable nucleus and tone in the first element of noun compounds. The independent forms of the component elements are given for comparison. The neutralization of the first element in the compound sometimes results in homophones.

b^yní joint; b^yni seed; b^yníʔ light; b^yníʔ drop

-rǒʔb big (plural); -mòs pretty.

b^ynírǒʔb big joints; big seeds; big rays of light; big drops

b^yníróbòmòs pretty big joints; pretty big seeds; pretty big rays of light; pretty big drops

Following a velar consonant in prestressed syllables, the sequence of i and another vowel tends to be pronounced simply as i, although in slow deliberate speech some people will pronounce both vowels of the cluster.

giúht squash + yàhg tree --- gítyàhg/giútyàhg papaya

An o followed by a b is optionally raised to u in prestressed syllables.

yǒʔb pain + íhk^y head --- yúbíhk^y/yóbíhk^y headache

The phonological modifications of the first element in a compound have disassociated it from the free form of the morpheme such that even the native speaker cannot identify the meaning of the first element in many cases. Some examples of opaque compound verb stems are:

-íʒ^yn^yá marry (n^yá means hand and the first element may be from -giěhz^y embrace)

-íʒ^yn^yǎʔ earn (-n^yǎʔ means get cleaned cornfield and the first element seems to be the same as in marry)

-žúb^yn^yú pull (the first syllable seems to be from -žòhb^y rub 2.3.3.1,9; the second syllable does not occur as an independent stem)

Another type of compounding is that of the verb stem plus the morpheme -nǒ acompaniment/Instrument or a stative verb stem such as -yǎʔn^y young, which modify the meaning of the verb stem. In these compounds also the first element loses its stress.

gácõ? -mè zĩ?n^y he is working

gácónõ -mè zĩ?n^y fàN he is working with John

gácóyǎ?n^y -mè zĩ?n^y he is just beginning to work

It should be noted here that the rules of morphophonemic changes of vowel nuclei and tone (2.3 and 3.2) affect only the stressed (final) syllable of a compound verb stem.

2.2. GHZ has both causative verb stems (which have noncausative counterparts) and neutral verb stems (which do not have counterparts), as in Isthmus Zapotec (Pickett 1955). Of the causative class the noncausative stems are considered to be basic and the causative stems are derived from them. Class IB consists entirely of noncausative stems and of a few neutral stems.

Although causative stem formation in GHZ is quite complex, most derived stems belong to one of two broad groupings of which the first is most common: (a) those which have noncausative stems in any of the classes but causative stems only in Class IA and (b) those which have noncausative stems in any of the classes but causative stems only in Class IIA.

There is also a small number of verbs which have their noncausative stems in Class IB, with the causative stem in Class IIB, and some very common verbs which have suppletive noncausative and causative stems.

Although there are some irregularities in each group, it can be said that each of the groups is characterized by certain types of differences between the causative and noncausative counterparts.

2.2.1. For the group of verbs which have their causative stems in Class IA, causativization is usually marked by the fortis counterpart of the stem-initial lenis obstruent in the basic stem and/or by a prefix.

2.2.1.1. Stem-initial lenis obstruents and r of the basic stem are matched by their fortis counterparts in the causative stem. The fortis counterparts of b, d, g, z, ʃ, z, ʒ are p, t, k, c, č, s, š, respectively. Fortis sonorants (m, n, l, r, w, y) do not occur stem-initially in GHZ; a sonorant other than r remains unchanged in the causative stem. č is the fortis counterpart of r in causative stems. c is the fortis counterpart of stem-initial b when it precedes i.

-dí? (IB) be painted, -tí? (IA) paint

b^ydí?w it was painted

btí?-mew he painted it

-zũhn^y (IB) be fried, -cũhn^y (IA) fry

b^yzũhn^y-ú it was fried

bcũhn^y-mèw she fried it

- žál (IB) be opened, -šál (IA) open
 b^yžál puèrt the door opened
 bšál-mè puèrt he opened the door
- ráʔz (IB) be spilled, -čáʔz (IA) spill
 b^yráʔz-ú it spilled
 bčáʔz-mèw he spilled it
- bǐhl^y (IIB) be stretched apart, -cǐhl^y (IA) stretch apart
 g^wbǐhl^y niéʔ miàž table legs got stretched apart
 bcǐhl^y-mè niéʔ miàž he stretched the table legs apart

The following examples show no change of the stem-initial consonant, either because that consonant is already fortis or because it is a sonorant, other than r.

- cáʔz (IA) be slackened, slacken
 bcáʔz-ú it became slackened
 bcáʔz-mèw he slacked it
- tǎʔz^y (IA) be squashed, -tǎʔz^y (IB) squash
 b^ytǎʔz^y-ú it became squashed
 btǎʔz-mèw he squashed it
- níʔb^y (IB) be moved, -níʔb^y (IA) move
 b^yníʔb^y-ú it moved
 bníʔb^y-mèw he moved it
- lǐhb^y (IB) become tied, -lǐhb^y (IA) tie
 b^ylǐhb^y-ú it was tied
 blǐhb^y-mèw he tied it

There are a few verbs that are irregular in that the causative stem does not have a fortis stem-initial consonant.

- gá (IB) be barbered, -gá (IA) barber
 -bǐg^y (IIB) approach, -zǐg^y (IA) make approach
 -b^ygiát (IIB) return, -z^ygiát (IA) make to go back

2.2.1.2. Many causative verbs of Class IA have a causative prefix, usually s- but sometimes z-, ž- or g-.

s- is prefixed both to certain consonant-initial stems and to certain vowel-initial stems. Stem-initial consonants are fortis

after the prefix g-, according to the rule stated earlier, except that r is not replaced by its fortis counterpart.

-gá? (IB) be stretched, -ská? (IA) stretch

b^ygá?w it got stretched

bíská?-mèw he stretched it

-bǐg^y (IIB) approach, -scǐg^y (IA) make approach

g^wbǐg^y-mè he approached

bǐscǐg^y-mèw he pushed it over (made it approach)

-bàhn (IIB) return to life, -spàhn^y (IA) make return to life

g^wbàhn^y krist Christ returned to life

bǐspàhn diðz krist God made Christ return to life

A sonorant (including r) or a fortis consonant in the noncausative stem remains unchanged in the causative stem after the prefix s-.

-ní? (IIB) speak, -snǐ? (IA) make speak

g^wnǐ?-mè he spoke

bǐsnǐ?-mè nǎ? he made me speak

-lǎhb^y (IB) be boiled, -slǎhb^y (IA) make boil

b^ylǎhb^y-ú it boiled

bǐslǎhb^y-mèw she boiled it

-ró? (IB) get fat, -sró? (IA) make fat

b^yró?-mè he got fat

bǐsró? zín^y lě?-mè sugar made him fat

-tú? (IB) get embarrassed, -stú? (IA) embarrass

b^ytú?-mè he got embarrassed

bǐstú?-mè nǎ? he embarrassed me

s- is also prefixed to i- and a-initial stems of Class B.

-ǐ?e (IB) die out, -sǐ?e (IA) turn off

bǐ?e gé the fire died out

bsǐ?e-mè gé he turned the light off

-á?n (IB) remain, -sá?n (IA) leave (make remain)

biá?n-mè he remained

bsá?n-mèw he left it (made it remain)

z- is prefixed preceding e, although z- partially assimilates to a stem-final alveopalatal consonant, becoming ž-.

-éhk^y (IB) be turned, -zéhk^y (IA) turn
 biék^y-ú it turned
 bzéhk^y-mèw he turned it

-éʔʃ (IB) be folded, -žéʔʃ (IA) fold over
 biéʔʃ blàhg the leaf was folded over
 bžéʔʃ-mè blàhg he folded the leaf

z- may also occur preceding a stem-initial y, in which case -y is deleted.

-yǎʔ (IIA) be made, built, -zǎʔ (IA) make, build
 g^wyǎʔ yúʔ the house was built
 bzǎʔ-mè yúʔ he built the house

g- is prefixed to a stem beginning with a nonfront vowel if the vowel is followed by morpheme division or by a sibilant.

-àhz (IIA) bathe (oneself), -gàhz (IA) bathe (someone else)
 ràhz-mè she bathes
 rgàhz-mè mdǒʔ she bathes the baby

-ǒʔ (IIA) drink, -gǒʔ (IA) give to drink, make drink
 rǒʔ-mè she drinks
 rgǒʔ-mè mdǒʔ she makes the baby drink

-úʒ (IA) get dressed, -gúʒ (IA) dress (someone else)
 rúʒ-mè she gets dressed
 rgúʒ-mè mdǒʔ she dresses the baby

∅ (zero) is prefixed to stems beginning with a high-back vowel, if it is not followed by a consonant other than a sibilant.

-ǔʔL (IB) be read, -ǔʔL (IA) read
 riǔʔL lìbr books are read
 rǔʔL-mè lìbr he reads books

There are two examples of a-initial stems from Class IIA and a u-initial stem from Class IA which have the prefix g- in the causative stem followed by k (which is perhaps related to the g- prefix above).

-ád ^y (IIA) <u>receive</u> ,	-skád ^y (IA) <u>give as a gift</u>
-àhl (IIA) <u>be born</u> ,	-skàhl (IA) <u>deliver (baby)</u>
-ǔʔn (IA) <u>cry</u> ,	-skǔʔn (IA) <u>make cry</u>

(-skád^y give as a gift has an alternant causative form, -kád^y.)

2.2.1.3. A few stems of this group undergo a change in the syllable nucleus. This type of causative formation may accompany the fortis consonant and/or the prefixation described above.

A simple vowel V and an aspirated vowel Vh in the basic stem change to an interrupted vowel Vʔ in the causative stem. If the vowel of the noncausative stem has high tone and precedes a fortis consonant, then high tone is retained in the causative stem but the stem final consonant is replaced by its lenis counterpart (fortis consonants do not follow Vʔ except across morpheme boundaries). If the V of a noncausative stem precedes a lenis consonant, then the causative stem has a rising tone. The two verbs with Vʔ in the basic stem have different syllable nuclei in the causative counterparts. More data would be necessary to arrive at conditioning factors for the choice of the causative syllable nucleus when the basic nucleus is Vʔ.

-dáh ^c (IB) <u>be emptied</u> ,	-táʔǰ ^y (IA) <u>empty</u>
-níht ^y (IB) <u>disappear</u> ,	-níʔd ^y (IA) <u>make disappear</u>
-bíš (IIB) <u>be turned over</u> ,	-tíʔž (IA) <u>turn over</u>
-déd ^y (IIA) <u>pass</u> ,	-těʔd ^y (IA) <u>make pass</u>
-zíb (IIA) <u>be planted</u> ,	-zǐʔb (IA) <u>plant</u>
-žǝʔb (IB) <u>be put</u> ,	-šǝb (IA) <u>put</u>
-zǎʔb ^y (IB) <u>be thrown away</u> ,	-sǎhb ^y (IA) <u>throw away</u>

2.2.1.4. Noncausative a-initial stems which undergo a change of vowel modification in the causative stem take the prefix g-, rather than a sibilant prefix, no matter what the final consonant may be. If the stem-final consonant is a palatalized stop, this type of stem may take either Ø- or g-. If Ø- occurs, a is raised to u. If g- occurs with these stems, the vowel may be either a or u.

-àL (IIA) <u>hang (on self)</u> ,	-gǎʔL (IA) <u>hang (in other place)</u>
-áht ^y (IIA) <u>die</u> ,	-gáʔd ^y /-gúʔd ^y /-úʔd ^y (IA) <u>kill</u>
-ág ^y (IIA) <u>be cooked</u> ,	-gáʔg ^y /-gúʔg ^y /-úʔg ^y (IA) <u>cook</u>

2.2.2. For those verbs which have their causative stem in Class IIA the causative stem has some kind of internal stem change and/or the causative prefix l-, d- or z-. Prefixation in this group occurs only when the noncausative stem has an initial y or front vowel. The group of words in this class is small and the generalizations are made on a small corpus. Therefore, most of the words of this group will be listed in the examples.

If an interrupted vowel occurs with rising tone in the environment d__b in a noncausative stem, it is replaced by a simple vowel with high tone in the causative stem. If it occurs with high tone in that environment, it is replaced by an aspirated vowel with high tone in the causative stem and the b is replaced by p (lenis vowels do not occur after Vh in GHZ).

-dǐʔb (IB) <u>be sewn</u> ,	-dǐb (IIA) <u>sew</u>
-dǒʔb (IB) <u>be smoked</u> ,	-dǒb (IIA) <u>smoke</u>
-dáʔb (IB) <u>be slapped</u> ,	-dáhp (IIA) <u>slap</u>

In the next set of words the initial consonant of the noncausative stem changes to a lenis consonant at a different point of articulation or with a different manner of articulation and the vowel quality changes to i contiguous to ž or otherwise to o.

-zěʔ (IB) <u>be sold</u> ,	-žǐʔ (IIA) <u>sell</u>
-gǎʔž (IB) <u>be ripped</u> ,	-dǐʔž (IIA) <u>rip</u>
-rǔʔ (IB) <u>go out</u> ,	-lǒʔ (IIA) <u>take out</u>

The two following words are characterized by noncausative stems with the shape -iaC and, in the causative stem, by loss of a, palatalization of a nonpalatalized final consonant and by prefixation, in one instance by ž- and in another by d-.

-iáN (IB) <u>be mixed</u> ,	-žǐN ^y (IIA) <u>mix</u>
-iáž (IB) <u>be paid</u> ,	-dǐž (IIA) <u>pay</u>

The next three stems are very irregular in the type of stem change that they undergo, and yet some similarity between the causative and noncausative stems may be observed and those similarities are parallel with those between other pairs of stems in this group.

-n ^y áʔ (IB) <u>get cleared</u> ,	-áʔn (IIA) <u>clear</u>
-béʔ (IIB) <u>be chosen</u> ,	-lè (IIA) <u>choose</u>
-éc (IIA) <u>get broken</u> ,	-dǐʔz (IIA) <u>break</u>

Two words whose canonical shape is different from other words of this group have the same stem in both noncausative and causative classes.

-dié (IB) <u>be pressed</u>	-dié (IIA) <u>press</u>
-žǒhb (IB) <u>be degrajned</u>	-žǒhb (IIA) <u>degrain (corn)</u>

Other verb stems in this group have i- or y-initial noncausative stem but take the causative prefix l- in Lass IIA. If the stem vowel is u, then i or y is lost when l- is prefixed.

-yú? (IIA) enter, -lú? (IIA) put in
 -iühn^y (IB) get combed, -lühn^y (IIA) comb

If the vowel following y or i is non-back, l- replaces i or y, which instead of being deleted fuses with the rest of the stem, resulting in these changes: fronting of the vowel if it is not already fronted, palatalization of a stem-final nonpalatalized consonant, loss of vowel modification (? or h), and replacement of a lenis stem-final consonant by its fortis counterpart if the stem has a high tone.

-iáht (IA) go down, -lét^y (IIA) let down
 -iáhs (IA) get up, -lés^y (IIA) lift up
 -yǎ?z (II) be nailed in, -lěz^y (IIA) nail in
 -yèhb^y (IIA) go up, -lép^y (IIA) make go up

2.2.3. There are a few verbs which have irregular causative stems in that they do not fit into the two broad categories described above. Some change from Class IB to Class IIB.

-lǎhz (IB) be pulled out, -lǎhz (IIB) pull out
 -lá?y (IB) be broken, -lá?y (IIB) break
 -dá?b (IB) be taken care of, -dáhp (IIB) take care of
 -gá? (IB) get caught, -ká? (IIB) take

A few verbs have causative/noncausative counterparts which are suppletive.

-áhk (IIA) happen, be done, -cǒ? (IA) do
 -iár (IB) be washed, -dǐhb^y (IIA) wash
 -ǎ? (IIA) lie down, -dǐš (IIA) make lie down

Because the type of causative formation is not completely predictable for a given basic stem, both noncausative and causative stems are listed in the lexicon.

2.3. The first person singular form of the verb stem involves several types of morphophonemic changes from the form of the stem in the other persons. The changes can be classified as change of syllable nucleus, tone perturbation, vowel replacement and consonant replacement. Change of syllable nucleus and tone perturbation are closely related, so they will be presented together.

2.3.1. The syllable nucleus may be simple V, or interrupted V? or aspirated Vh; tones are high \acute{V} , low \grave{V} or rising \check{V} . The rules in this section are general rules, because they apply also to nouns and stative verbs. The rules do not apply to Class IB verbs, which consists entirely of noncausative or neutral stems.

2.3.1.1. There are six situations where there is no change in the syllable nucleus or tone of the first person stem.

(1) Class IB verbs (noncausative or neutral) and alienable nouns are exceptions to the rules that apply to other classes, though they are subject to the general rules of 2.3.1.2 and 2.3.1.3.

-dǎhg^W (IB) become enclosed

b^Ydǎhg^W-mè he became enclosed (inside a house)

b^Ydǎhg^W-á? I became enclosed

-gá? (IB) get caught

b^Ygá?-mè he got caught

b^Ygá?n I got caught

-ní?b^Y (IB) move

b^Yní?b^Y-mè he moved

b^Yní?b^Y-á? I moved

-níht^Y (IB) disappear, get lost

b^Yníht^Y-mè he got lost

b^Yníht^Y-á? I got lost

-cǎ?b (IB) become lazy, lose interest in working

b^Ycǎ?b-mè he got lazy

b^Ycǎ?b-á? I got lazy

-káv^Y (IB) suffocate

b^Ykáv^Y-mè he suffocated

b^Ykáv^Y-á? I suffocated

(2) A nucleus with Vh and low tone does not change (except by the deletion rule in 2.3.1.2).

-gǎhg^W (IA) fish; memorize

bgǎhg^W-mè he fished

bgǎhg^W-á? I fished

-žðhb^Y (IIA) rub

g^Wžðhb^Y-mè he rubbed

g^Wžðhb^Y-á? I rubbed

(3) A nucleus with V? and rising tone does not change if the verb stem does not end in a consonant. (Exceptions are listed in 2.3.1.2.)

-skĩʔe (IA) deceive
 bĩskĩʔe-mè he deceived
 bĩskĩʔen I deceived

-ɔʔ (IIA) drink
 rɔʔ-mè he drinks
 rɔʔn I drink

(4) A nucleus with V and high tone usually undergoes no change when followed either by morpheme boundary or by a fortis consonant.

-gá (IA) barber
 bgá-mè he barbered
 bgán I barbered

-šák (IA) untie
 bšák-mè he untied
 bšák-áʔ I untied

(5) A nucleus with V and a rising tone does not undergo change, excluding a few irregularities listed in 4.

-šăl (IA) open
 bšăl-mè he opened
 bšăl-áʔ I opened

(6) A nucleus with V and low tone which precedes a fortis alveo-palatal or palatalized sonorant does not change.

-sièN^y (IA) warn, advise
 bsièN^y-mè he warned
 bsièN^y-áʔ I warned

-làY (inalienable noun) tooth
 làY-mè his tooth
 dlàY-áʔ my tooth

-dèL^y (IIA) fight
 g^wdèL^y-mè he fought
 g^wdèL^y-áʔ I fought

2.3.1.2. There are five changes in the syllable nucleus.

(1) There is a general rule which changes a simple nucleus V

with low tone to an interrupted V? when it immediately precedes a nonsyllabic, nonlabial sonorant enclitic (3.1). (Low tone changes to high by the general rule in 2.3.1.3.)

-złò (IIB) begin
 gúzłò-mè he began
 gúzłòw it began
 gúzłó?n I began gúzłó?y you began

(2) A nucleus with an interrupted V? and high tone changes to V in first person singular (except for e? in stem-final position).

-bí? (IB) go home
 g^wbí?-mè he went home
 g^wbín I went home

-čá?b^y (IIB) push
 g^wčá?b^y-mè he pushed
 g^wčáp^y-á? I pushed

A nucleus with V? and rising tone changes to V in first person singular if it precedes a stem-final consonant or if it is word-final in a small class of frequently used verbs (marked F).

-dě?d^y (IA) give
 bdě?d^y-mè he gave
 bděd^y-á? I gave

-cǒ? (IA-F) do
 bcǒ?-mèw he did it
 bcón-ú I did it

A nucleus with Vh and a high or low tone changes to V in the first person singular if it precedes a fortis consonant or, in Class IA or IIB, when it is preceded by a stem consonant which is not a stop and followed by a lenis palatalized consonant.

-iáhs-mè (IA) get up
 biáhs-mè he got up
 biás-á? I got up
 -yòhb^y (IA) look for
 byòhb^y-mè he looked for
 byòb^y-á? I looked for

(3) A nucleus with Vh and a rising tone becomes V? in first person singular.

-slǎhb^y (IA) make boil
 bíslǎhb^y-mèw she boiled it
 bíslǎ[?]b^y-á[?]n-ú I boiled it

(4) A simple nucleus V with a high tone becomes V? in first person singular when it occurs between two consonants, the second of which is lenis, in Class IIA stems. The simple V with low tone becomes V? when preceded by a stem-initial consonant and followed by a nonpalatalized fortis L.

-dób (IIA) smoke, pull
 g^wdób-mè he smoked
 g^wdǒ[?]b-á[?] I smoked

-snàL (IA) follow
 bísnǎL-mè he followed
 bísnǎ[?]L-á[?] I followed

(5) There are some modifications of the syllable nucleus of the stem caused by the addition of the second person plural suffix -d (3.) as well as by the affixation of certain nonsyllabic manner enclitics, such as -k then. Although these phenomena await thorough investigation the following observations can be made. A simple nucleus V with low tone or an interrupted nucleus V? with rising tone is changed to an aspirated nucleus Vh when they immediately precede -d SPP. Other syllable nuclei do not change, nor do the previously mentioned nuclei change when they are not stem-final. It is possible that the affixation of manner enclitics have the same or similar effect.

-gù (IB) go completely around
 b^ygù lá[?]d/ b^ygùhd you (pl.) went completely around
 -kě[?] (IA) make stick
 bkě[?] lá[?]d/ bkěhd you (pl.) made stick
 -ké[?] (IIB) go up
 k^wé[?] lá[?]d/ k^wé[?]t you (pl.) went up (see 3.2.)
 -gá (IA) barber
 bgá lá[?]d/ bgád you (pl.) barbered
 -šǎl (IA) open
 bšǎl lá[?]d/ bšǎld you (pl.) opened
 -kí[?]z^y (IA) press
 bkí[?]z^y lá[?]d/ bkí[?]z^yd you (pl.) pressed

2.3.1.3. There are four kinds of tone change in the first person form of the verb stem.

(1) There is a general rule of tone perturbation, which accompanies the general rule of change in syllable nucleus above. When V with low tone changes to V[?] in an open syllable, low tone is perturbed to high. Low tone cannot occur with V[?] in GHZ.

(2) A simple nucleus with a high or low tone before a stem-final lenis consonant changes to rising tone in first person singular. A V with high tone preceding a fortis sonorant also changes to rising tone, as does a V with low tone preceding a fortis palatalized L^Y.

-čúg (IA) cut

bčúg-mè he cut

bčǔg-á? I cut

-lâhn^Y (IIB) pick up

g^Wlâhn^Y-mè he picked up

g^Wlǎn^Y-á? I picked up

-ciàL (IA) catch

bciàL-mè he caught

bciǎL-á? I caught

It should be noted that a lenis consonant does not occur after a simple vowel with low tone in words of native origin in GHZ.

When V[?] occurs in the first person singular stem, except when it occurs due to the application of the general rules, it takes a rising tone; so that if the basic tone is high, it is perturbed to rising.

-déd^Y (IIA) pass

g^Wdéd^Y-mè he passed

g^Wdě?d^Y-á? I passed

(3) In certain frequently occurring verbs (marked F), a rising tone is perturbed to high tone in the first person stem.

-lǔ? (IA-F) teach, show

blǔ?-mè he taught

blún I taught

(4) There is a perturbation of high tone to rising tone when it occurs with e[?] preceding an n across morpheme boundaries. This rule affects forms with first person singular allomorph n and the first person plural inclusive -nó.

-ké? (IIB) go up

rké?-mè he goes up

rké?y you go up
 rkě?n I go up
 rkě?-nó we (in.) go up

2.3.1.4. The Potential and Movement aspects adopt the first person singular syllable nucleus and tone pattern in Class IIA in all persons if the Potential aspect allomorph is \emptyset - (1.2). The adoption of the FPS form may be partial, complete or nonpermitted, as determined by the following rules.

(1) In partial adoption, the tone of the FPS is adopted in the other persons of Potential and Motion aspects, but the syllable nucleus of FPS is not adopted. This happens when a basic V with high tone has become V? with rising tone in FPS.

-gób (IIA) smoke

	<u>TPS</u>	<u>FPS</u>
C	g ^w dób-mè	g ^w dǒ?b-á?
P	kǒb-me / ígób-mè	kǒb-á? / ígǒ?b-á?
MA	rígtǒb-mè	rígtǒb-á?
MT	rídtǒb-mè	rídtǒb-á?

-lán (IIA) rob

C	g ^w lán-mè	g ^w lǎ?n-á?
P	k ^w ǎn-mè	k ^w ǎn-á?
MA	ríglǎn-mè	ríglǎn-á?
MT	rídlǎn-mè	rídlǎn-á?

(2) Complete adoption of the FPS form occurs in Class IIA when only the syllable nucleus or the tone is changed from that of the basic form, unless adoption is not permitted by point (3) below.

-zíht (IIA) play

C	g ^w zíht-mè	g ^w zít-á?
P	kít-mè / ígíht-mè	kít-á? / ígít-á?
MA	rígcít-mè	rígcít-á?
MT	rídcít-mè	rídcít-á?

-zíhd (IIA) dig (a hole)

C	g ^w zíhd-mè	g ^w zǐ?d-á?
P	kǐ?d-mè / ígíhd-mè	kǐ?d-á? / ígǐ?d-á?
MA	rígcǐ?d-mè	rígcǐ?d-á?
MT	rídcǐ?d-mè	rídcǐ?d-á?

	<u>TPS</u>	<u>FPS</u>
	-lúʔ (IIA) <u>put in</u>	
C	g ^w lúʔ-mè	g ^w lún
P	kú-mè / ígúʔ-mè	kún / ígún
MA	ríglú-mè	ríglún
MT	rídlú-mè	rídlún
	-žúʔn (IIA) <u>defecate</u>	
C	g ^w žúʔn-mè	g ^w žún-áʔ
P	sún-mè	sún-áʔ
MA	rígsún-mè	rígsún-áʔ
MT	rídsún-mè	rídsún-áʔ

(3) Adoption of the FPS stem is not permitted in either the Potential or the Movement categories if the basic ClassIIA stem has a Vʔ followed by an obstruent. Furthermore, adoption is not permitted in the Movement categories when an i is epenthesized preceding a stem-initial vowel.

	-díʔz (IIA) <u>cut off</u>	
C	g ^w díʔz-mè	g ^w díc-áʔ
P	kíʔz-mè / ígíʔz-mè	kíc-áʔ / ígíc-áʔ
MA	rígtíʔz-mè	rígtíc-áʔ
MT	rídtíʔz-mè	rídtíc-áʔ
	-áʔn (IIA) <u>clear (field)</u>	
C	gúʔn-mè	gún-áʔ
P	gán-mè	gán-áʔ
MA	rígiáʔn-mè	rígián-áʔ
MT	rídgíáʔn-mè	rídgíán-áʔ

The relationship of the Movement stems to the Potential stem can be observed by the preceding examples and by the rules which accompany them. The basic difference which occurs in stems of this type is that the stem-initial consonant follows that of the basic (Completive) stem, except that if it is an obstruent it becomes fortis if the Potential stem has an optional stem-initial fortis consonant.

2.3.2. Rules of vowel replacement are either completely or partially phonological and somewhat related to aspect, but not to the FPS (as was the case for change of syllable nucleus and tone). They apply primarily to vowel-initial verbs (which are few in number in comparison

to consonant-initial verbs) and to two-consonant-initial verbs which have vowel clusters in the stem. Note that the basic form is determined from the noncompletive forms for these verbs. The rules apply to the Completive form and the last rule of this section applies also to the potential forms.

2.3.2.1. When ia occurs in the stem, the low vowel a is fronted when the vowel sequence follows stem-initial r or č, and i is optionally deleted following k^w.

-riá (IIA) sit down

H	rbiá-mè	<u>he sits down</u>
I	zbiá-mè	<u>he will sit down</u>
Pr	gábiá-mè	<u>he is sitting down</u>
U	mbiá-mè	<u>he would sit down</u>
P	k ^w iá-mè / k ^w á-mè	<u>he may sit down</u>
C	g ^w rié-mè	<u>he sat down</u>
MA	rígčié-mè	<u>he went to sit down</u>
MT	rídčié-mè	<u>he came to sit down</u>

There are three facts which strongly suggest that the Completive form of sit down used to be *g^wjié: (1) it was noted in 2.2 that fortis counterpart of r in causative stems is č and that otherwise only obstruents are replaced by fortis counterparts; (2) it was noted in the preceding section that in certain Class IIA verbs where stem-initial consonant replacement occurs (discussed in detail in 2.3.2) that the initial consonant of the stem which occurs in the Movement categories is usually the fortis counterpart of the Completive stem-initial consonant; (3) the stative verb for sit down, which occurs without a prefix, is jie seated, sitting. Historically, then, it is probable that the stem-initial alveopalatal consonants conditioned the fronting of a to e, and the e remained in the Completive stem when j was replaced by r.

2.3.2.2. The high back vowel u is fronted to i when it would have followed b across morpheme boundary. (u does not follow b in GHZ.) If the basic high back vowel occurs stem-final, the u is replaced by ie. (e occurs stem-finally in GHZ more often than i, especially in simple syllable nuclei.)

-ú?d (IA) grind

	<u>TPS</u>	<u>FPS</u>
H	rú?d-mè	rút-á?
I	zú?d-mè	zút-á?
Pr	gáyú?d-mè	gáyút-á?

	<u>TPS</u>	<u>FPS</u>
U	n ^y úʔd-mè	n ^y út-áʔ
P	gúʔd-mè	gút-áʔ
C	bíʔd-mè	bít-áʔ
-ú (IA) <u>talk</u> (followed by <u>díʔz word</u>)		
H	rú-mè	rún
I	zú-mè	zún
Pr	gáyú-mè	gáyún
U	n ^y ú-mè	n ^y ún
P	gú-mè	gún
C	bié-mè	bién
-ǔʔ (IA-F) <u>carry</u>		
H	rǔʔ-mè	rún
I	zǔʔ-mè	zún
Pr	gáyǔʔ-mè	gáyún
U	n ^y ǔʔ-mè	n ^y ún
P	gǔʔ-mè	gún
C	bǐʔe-mè	bién

2.3.2.3. The low back vowel o is fronted to e where it would have followed g^w (*g^wo is a nonpermissible sequence in GHZ).

-ǒʔ (IIA) <u>drink</u>		
H	rǒʔ-mè	<u>he drinks</u>
I	zǒʔ-mè	<u>he will drink</u>
Pr	gáyǒʔ-mè	<u>he is drinking</u>
U	n ^y ǒʔ-mè	<u>he would drink</u>
P	gǒʔ-mè	<u>he will drink</u>
C	g ^w ěʔ-mè	<u>he drank</u>

2.3.2.4. The low central vowel a is deleted when it would have followed gu- (*ua is a nonpermissible vowel cluster).

-ád ^y (IIA) <u>receive</u>		
H	rád ^y -mè	<u>he receives</u>
I	zád ^y -mè	<u>he will receive</u>

Pr	gáyád ^y -mè	<u>he is receiving</u>
U	n ^y ád ^y -mè	<u>he would receive</u>
P	gǎd ^y -mè	<u>he may receive</u>
C	gúd ^y -mè	<u>he received</u>

-àhz (IIA) bathe

H	ràhz-mè	<u>he bathes</u>
I	zàhz-mè	<u>he will bathe</u>
Pr	gáyàhz-mè	<u>he is bathing</u>
U	n ^y àhz-mè	<u>he would bathe</u>
P	gàhz-mè	<u>he may bathe</u>
C	gùhz-mè	<u>he bathed</u>

2.3.2.5. The low front vowel e preceding a stem-final fortis alveolar stop or affricate is replaced by a in the Potential and Completive aspects. In the Completive, the derived stem-initial a is deleted by the preceding rule (2.3.2.4). Some speakers do not replace e by a in nonClass IIA stems. Stems in the Movement aspects take the basic vowel e rather than the a replacement of the Potential aspect.

-siéhc (IA) add to

H	rsiéhc-mè	<u>he adds to</u>
I	zsiéhc-mè	<u>he will add to</u>
Pr	gásiéhc-mè	<u>he is adding to</u>
U	nsiéhc-mè	<u>he would add to</u>
P	gsiáhc-mè/ gsiéhc-mè	<u>he may add to</u>
C	bsiáhc-mè/ bsiéhc-mè	<u>he added to</u>
MA	rígsiéhc-mè	<u>he goes to add to</u>
MT	rídsiéhc-mè	<u>he comes to add to</u>

-éht^y (IIA) die

H	réht ^y -mè	<u>he dies</u>
I	zéht ^y -mè	<u>he will die</u>
Pr	gáyéht ^y -mè	<u>he is dying</u>
U	n ^y éht ^y -mè	<u>he would die</u>
P	gát ^y -mè	<u>he will die</u>
C	gúht ^y -mè	<u>he died</u>
MA	rígéht ^y -mè	<u>he went to die</u>

MT	rídghéht ^y -mè	<u>he came to die</u>
-éc	(IIA) <u>break (bone)</u>	
H	réc-ú	<u>it breaks</u>
I	zéc-ú	<u>it will break</u>
Pr	n ^y éc-ú	<u>it would break</u>
U	gáyéc-ú	<u>it is breaking</u>
P	gác-ú	<u>it may break</u>
C	gúc-ú	<u>it broke</u>

2.3.3. Consonant replacement may take place in both stem-initial and stem-final positions. In general, stem-initial changes are not phonologically conditioned whereas stem-final consonant changes, of which there are fewer, are usually at least partially phonologically conditioned.

2.3.3.1. The stem-initial consonant which occurs in the Completive aspect is taken as the basic stem-initial consonant of the verb stem; the other consonants are easily derived from this form. All of the following rules (except the last one, which is phonological) apply only to Class II stems. Rules 1 and 2 apply to Class IIB; the other rules apply to IIA stems, except for rule 11, which applies to a stem which occurs in Class IA.

(1) A stem-initial d or r of Class IIB stems is deleted in all aspects other than the Completive, except that if d precedes a vowel it is replaced by t in all Movement aspects.

	-dgáhs ^y	(IIB) <u>sleep</u>
H	rgáhs ^y -mè	<u>he sleeps</u>
I	zgáhs ^y -mè	<u>he will sleep</u>
Pr	gágáhs ^y -mè	<u>he is sleeping</u>
U	ngáhs ^y -mè	<u>he would sleep</u>
P	ígáhs ^y -mè	<u>he may sleep</u>
C	gúdgáhs ^y -mè	<u>he slept</u>
MA	ríygháhs ^y -mè	<u>he goes to sleep (somewhere else)</u>
MT	rídgháhs ^y -mè	<u>he comes to sleep</u>
	-ryé	(IIB) <u>ripen</u>
H	régw	<u>it ripens</u>
I	zégw	<u>it will ripen</u>
Pr	gáyégw	<u>it is ripening</u>

U	n ^y éw	<u>it would ripen</u>
P	géw	<u>it may ripen</u>
C	gúryéw	<u>it ripened</u>
MA	rígyéw	<u>it goes to ripen</u>
MT	rídyéw	<u>it comes to ripen</u>

-dàhg^w (IIB) eat

H	ràhg ^w -mè	<u>he eats</u>
I	zàhg ^w -mè	<u>he will eat</u>
Pr	gáyàhg ^w -mè	<u>he is eating</u>
U	n ^y àhg ^w -mè	<u>he would eat</u>
P	gàhg ^w -mè	<u>he may eat</u>
C	g ^w dàhg ^w -mè	<u>he ate</u>
MA	rígtàhg ^w -mè	<u>he goes to eat</u>
MT	rídtàhg ^w -mè	<u>he comes to eat</u>

(2) Stem-initial *y* of a Class IIB stem (its initial position may have resulted from deletion of a consonant as per the above rule) is deleted in nonCompletive, nonMovement aspects, as in ripen above, which is the only example in the data.

(3) Stem-initial *y* of a Class IIA stem is deleted following the Progressive prefix *gay-* and the Unreal prefix *n^y-*. (*y* does not occur following alveopalatals.) In Classes where stem-initial consonant changes cannot take place, the *y* of the prefix adjusts to stem-initial consonant, but in Class II the stem-initial *y* adjusts to the *y* of the aspect prefix. Stem-initial *y* is replaced by c in the Potential and Movement aspects. It is possible that c is the fortis counterpart of *y* just as č is the fortis counterpart of *r*. The fact that c is the stem-initial consonant and not part of the aspect prefix is made clear by the Movement aspects, in particular by the MA category, where c fills the stem-initial position. Stem-initial *y* is replaced by i following the other aspect prefixes.

-yǎ? (IIA) be made

H	riǎ?w	<u>it was made</u>
I	ziǎ?w	<u>it will be made</u>
Pr	gáyǎ?w	<u>it is being made</u>
U	n ^y ǎ?w	<u>it would be made</u>
P	cǎ?w	<u>it may be made</u>
C	g ^w yǎ?w	<u>it was made</u>

	-yèhp ^y (IIA) <u>ascend</u>	
H	rièhp ^y -mè	<u>he ascends</u>
I	zièhp ^y -mè	<u>he will ascend</u>
Pr	gáyèhp ^y -mè	<u>he is ascending</u>
U	n ^y èhp ^y -mè	<u>he would ascend</u>
P	cèhp ^y -mè	<u>he may ascend</u>
C	g ^w yèhp ^y -mè	<u>he ascended</u>
MA	rígcèhp ^y -mè	<u>he goes to ascend</u>
MT	rídcèhp ^y -mè	<u>he comes to ascend</u>

(4) Stem-initial l is never changed before the vowel e, nor is the l replaced by its fortis counterpart in the Movement aspects. (Fortis sonorants do not occur in stem-initial position in GHZ.)

The l is replaced by g before the vowel u and by b before other vowels in the other basic aspects other than Potential. In the Potential aspect the l is replaced by k before the back vowels u and o, and by k^w before other vowels. (Probably k^w is the fortis counterpart of b as suggested by Suárez (1973:244-5) and the labialization of the k^w is lost before the back vowel o.) Furthermore, in the Potential aspect, the l may be optionally replaced by b before o and by g before u instead of the fortis k.

	-lán (IIA) <u>rob</u>	
H	rbán-mè	<u>he robs</u>
I	zbán-mè	<u>he will rob</u>
Pr	gábán-mè	<u>he is robbing</u>
U	mbán-mè	<u>he would rob</u>
P	k ^w ǎn-mè	<u>he may rob</u>
C	g ^w lán-mè	<u>he robbed</u>
MA	ríglǎn-mè	<u>he goes to rob</u>
MT	rídlǎn-mè	<u>he comes to rob</u>

	-liàhz (IIA) <u>wait</u>	
H	rbiàhz-mè	<u>he waits</u>
I	zbiàhz-mè	<u>he will wait</u>
Pr	gábiàhz-mè	<u>he is waiting</u>
U	mbiàhz-mè	<u>he would wait</u>
P	k ^w iàhz-mè/k ^w àhz-mè	<u>he may wait</u>
C	g ^w liàhz-mè	<u>he waited</u>
MA	rígliàhz-mè	<u>he goes to wait</u>

MT	rídliàhz-mè	<u>he came to wait</u>
	-lǒ? (IIA)	<u>take out</u>
H	rbǒ?-mè	<u>he takes out</u>
I	zbǒ?-mè	<u>he will take out</u>
Pr	gábǒ?-mè	<u>he is taking out</u>
U	mbǒ?-mè	<u>he would take out</u>
P	kǒ?-mè/ gbǒ?-mè	<u>he may take out</u>
C	g ^w lǒ?-mè	<u>he took out</u>
MA	ríglǒ?-mè	<u>he goes to take out</u>
MT	rídlǒ?-mè	<u>he comes to take out</u>
	-lú? (IIA)	<u>put in</u>
H	rgú?-mè	<u>he puts in</u>
I	zgú?-mè	<u>he will put in</u>
Pr	gágú?-mè	<u>he is putting in</u>
U	ngú?-mè	<u>he would put in</u>
P	kú-mè/ ígú?-mè	<u>he may put in</u>
C	g ^w lú?-mè	<u>he put in</u>
MA	ríglú?-mè	<u>he goes to put in</u>
MT	rídlú?-mè	<u>he comes to put in</u>
	-lěz ^y (IIA)	<u>force down, hammer in</u>
H	rlěz ^y -mè	<u>he hammers</u>
I	zlěz ^y -mè	<u>he will hammer</u>
Pr	gálěz ^y -mè	<u>he is hammering</u>
U	nlěz ^y -mè	<u>he would hammer</u>
P	glěz ^y -mè	<u>he may hammer</u>
C	g ^w lěz ^y -mè	<u>he hammered</u>
MA	ríglěz ^y -mè	<u>he goes to hammer</u>
MT	rídlěz ^y -mè	<u>he comes to hammer</u>

(5) Stem-initial r is replaced by k^w in the Potential aspect, by č, which is the fortis counterpart of r, in the Movement categories, and by b in other aspects.

	-riáz (IIA)	<u>crow, call</u>
H	rbiáz má?	<u>it (animal) crows</u>

I	zbiáz má?	<u>it will crow</u>
Pr	gábiáz má?	<u>it is crowing</u>
U	mbiáz má?	<u>it would crow</u>
P	k ^w iáz má? / k ^w áz má?	<u>it may crow</u>
C	g ^w riéz má?	<u>it crowed</u>
MA	rígčičiéz má?	<u>it goes to crow</u>
MT	rídčičiéz má?	<u>it comes to crow</u>

(6) Stem-initial d is replaced by fortis t before any vowel except e in the Movement categories and is replaced by g in other aspects. In the Potential aspect g may be replaced by fortis k. When d precedes e, it is replaced by its fortis counterpart t in the Potential and Movement aspects; elsewhere it remains d.

-díb (IIA) sew

H	rgíb-mè	<u>she sews</u>
I	zgíb-mè	<u>she will sew</u>
Pr	gágíb-mè	<u>she is sewing</u>
U	ngíb-mè	<u>she would sew</u>
P	ígíb-mè / kíb-mè	<u>she may sew</u>
C	g ^w díb-mè	<u>she sewed</u>
MA	rígtíb-mè	<u>she goes to sew</u>
MT	rídtíb-mè	<u>she comes to sew</u>

-dób (IIA) smoke

H	rgób-mè	<u>he smokes</u>
I	zgób-mè	<u>he will smoke</u>
Pr	gagób-mè	<u>he is smoking</u>
U	ngób-mè	<u>he would smoke</u>
P	ígób-mè / kǒb-mè	<u>he would smoke</u>
C	g ^w dób-mè	<u>he smoked</u>
MA	rígtǒb-mè	<u>he goes to smoke</u>
MT	rídtǒb-mè	<u>he comes to smoke</u>

-dǎhn^y (IIA) dig

H	rgǎhn ^y -mè	<u>he digs</u>
I	zgǎhn ^y -mè	<u>he will dig</u>
Pr	gágǎhn ^y -mè	<u>he is digging</u>

U	ngǎhn ^y -mè	<u>he would dig</u>
P	ígǎhn ^y -mè/ kǎʔn ^y -mè	<u>he may dig</u>
C	g ^w dǎhn ^y -mè	<u>he dug</u>
MA	rígtǎʔn ^y -mè	<u>he goes to dig</u>
MT	rídtǎʔn ^y -mè	<u>he comes to dig</u>

-dèL^y (IIA) fight

H	rdèL ^y -mè	<u>he fights</u>
I	zdèL ^y -mè	<u>he will fight</u>
Pr	gádèL ^y -mè	<u>he is fighting</u>
U	ndèl ^y -mè	<u>he would fight</u>
P	tèL ^y -mè	<u>he may fight</u>
C	g ^w dèL ^y -mè	<u>he fought</u>
MA	rígtèL ^y -mè	<u>he goes to fight</u>
MT	rídtèL ^y -mè	<u>he comes to fight</u>

(7) Stem-initial *z* is replaced by its fortis counterpart *c* in the Movement categories. If a stem-final labial consonant occurs, *z* is replaced by *k^w* in the Potential and by *b* in the other aspects. But if *z* occurs with a stem-final alveolar stop in this class, it is replaced by *g* in the other aspects and the Potential form may optionally be replaced by *k*.

-zib (IIA) mount; be planted

H	rbíb-mè	<u>he mounts</u>
I	zbíb-mè	<u>he will mount</u>
Pr	gábíb-mè	<u>he is mounting</u>
U	mbíb-mè	<u>he would mount</u>
P	k ^w íb-mè	<u>he may mount</u>
C	g ^w zíb-mè	<u>me mounted</u>
MA	rígcíb-mè	<u>he goes to mount</u>
MT	rídcíb-mè	<u>he comes to count</u>

-zíht (IIA) play

H	rgíht-mè	<u>he plays</u>
I	zgíht-mè	<u>he will play</u>
Pr	gágíht-mè	<u>he is playing</u>
U	ngíht-mè	<u>he would play</u>

C	g ^w zĩht-mè	<u>he played</u>
MA	rĩgcĩt-mè	<u>he goes to play</u>
MT	rĩdcĩt-mè	<u>he comes to play</u>

Contrast the stem-initial behaviour of the d-initial verb sew, above, which has identical inflection to the z-initial play except for the Completive aspect forms, g^wdĩb-mè and g^wzĩht-mè, respectively. This is one reason why the Completive stem is considered diagnostic for the basic stem of consonant-initial verbs. Another reason is found in the causative-noncausative stem sets: -zĩb (IIA) mount with alternants -bĩb, k^wĩb and -cĩb, is paralleled by -zĩ[?]b (IA) plant, which has the same stem form throughout the paradigm; -dĩb (IIA) sew, with alternants -gĩb and -tĩb, is paralleled by -dĩ[?]b (IB) be sewn, which has the same stem form throughout the paradigm.

(8) Stem-initial z is replaced by s in the Potential, Incomplete and Movement aspects of IIA stems, and in the Incomplete of IIB stems. Elsewhere it is z.

	-zùhz ^y (IIA)	<u>get drunk</u>
H	rzùhz ^y -mè	<u>he gets drunk</u>
I	zsùhz ^y -mè	<u>he will get drunk</u>
Pr	gázùhz ^y -mè	<u>he is getting drunk</u>
U	nzùhz ^y -mè	<u>he would get drunk</u>
P	sùhz ^y -mè	<u>he may get drunk</u>
C	g ^w zùhz ^y -mè	<u>he got drunk</u>
MA	rĩgsùhz ^y -mè	<u>he goes to get drunk</u>
MT	rĩdsùhz ^y -mè	<u>he comes to get drunk</u>

	-zǎhb ^y (IIB)	<u>owe</u>
H	rzǎhb ^y -mè	<u>he owes</u>
I	zsǎhb ^y -mè	<u>he will owe</u>
Pr	gágǎhb ^y -mè	<u>he is owing</u>
U	nzǎhb ^y -mè	<u>he would owe</u>
P	gzǎhb ^y -mè	<u>he may owe</u>
C	g ^w zǎhb ^y -mè	<u>he owed</u>
MA	rĩgzǎhb ^y -mè	<u>he goes to owe</u>
MT	rĩdzǎhb ^y -mè	<u>he comes to owe</u>

(9) Stem-initial ž fluctuates with z (and with š and s). Although the fluctuation varies according to the speaker, it seems

that ž (š) is the older form, which for some words has been almost or entirely lost, especially in certain aspects. The variation most commonly occurs in the Completive and Movement aspects.

A stem-initial ž which is followed by the high front vowel i is replaced by s in the Potential and Incomplete; it is replaced by š fluctuating with s in the Movement categories; it fluctuates with z in the Completive and is replaced by z elsewhere.

-žĭ? (IIA) buy

H	rzĭ?-mè	<u>he buys</u>
I	zsĭ?-mè	<u>he will buy</u>
Pr	gázĭ?-mè	<u>he is buying</u>
U	nzĭ?-mè	<u>he would buy</u>
P	sĭ?-mè	<u>he may buy</u>
C	g ^W žĭ?-mè/ g ^W zĭ?-mè	<u>he bought</u>
MA	rígšĭ?-mè/ rígsĭ?-mè	<u>he goes to buy</u>
MT	rídšĭ?-mè/ rídsĭ?-mè	<u>he comes to buy</u>

If ž is followed by the high back vowel u (the verb stem must be monosyllabic), it tends to follow the pattern for the high front vowel, but fluctuation between alveolar and alveopalatal sibilants occurs in the other aspects except the Potential. The alveopalatal pronunciation in those cases is restricted to the speech of older people.

-žú?n (IIA) defecate

H	ržú?n-mè/ rzú?n-mè	<u>he defecates</u>
I	zšú?n-mè/ zsú?n-mè	<u>he will defecate</u>
Pr	gážú?n-mè/ gázú?n-mè	<u>he is defecating</u>
U	nžú?n-mè/ nzú?n-mè	<u>he may defecate</u>
P	---/ sún-mè	<u>he may defecate</u>
C	g ^W žú?n-mè/ g ^W zú?n-mè	<u>he defecated</u>
MA	rígšún-mè/ rígsún-mè	<u>he goes to defecate</u>
MT	rídšún-mè/ rídsún-mè	<u>he comes to defecate</u>

If ž precedes a or o, it is replaced by š in fluctuation with s in the Incomplete and in the Movement categories, and ž fluctuates with z elsewhere. The fluctuation occurs most commonly in the Completive and Movement categories.

-žáhk (IIA) happen

H	ržáhk-mè/ rzáhk-mè	<u>he happens</u>
I	zšáhk-mè/ zsáhk-mè	<u>he will happen</u>

Pr	gáǰáhk-mè/ gázáhk-mè	<u>he is happening</u>
U	nžáhk-mè/ nzáhk-mè	<u>he would happen</u>
P	gžáhk-mè/ gzáhk-mè	<u>he would happen</u>
C	g ^w žáhk-mè/ g ^w záhk-mè	<u>he happened</u>
	-žòhb ^y (IIA)	<u>rub</u>
H	ržòhb ^y -mè/ rzòhb ^y -mè	<u>he rubs</u>
I	zšòhb ^y -mè/ zsòhb ^y -mè	<u>he will rub</u>
Pr	gážòhb ^y -mè/ gázòhb ^y -mè	<u>he is rubbing</u>
U	nžòhb ^y / nzòhb ^y -mè	<u>he would rub</u>
P	gžòhb ^y -mè/ gzòhb ^y -mè	<u>he may rub</u>
C	g ^w žòhb ^y -mè/ g ^w zòhb ^y -mè	<u>he rubbed</u>
MA	rígšòhb ^y -mè/ rígsòhb ^y -mè	<u>he goes to rub</u>
MT	rídšòhb ^y -mè/ rídsòhb ^y -mè	<u>he comes to rub</u>

One word in the data with a stem-initial ž followed by u follows the pattern for ž preceding o, rather than that for ž preceding u. The reason for this is that the stem is a compound and the first element is a contracted form of -žòhb^y rub (see section 2.1 for contraction rules). Because it is a contracted form of another verb stem-initial consonant replacement follows that which is associated with the noncontracted form.

	-žúb ^y n ^y ú (IIA)	<u>pull</u>
H	ržúb ^y n ^y ú-mè/ rzúb ^y n ^y ú-mè	<u>he pulls</u>
I	zšúb ^y n ^y ú-mè/ zsúb ^y n ^y ú-mè	<u>he will pull</u>
Pr	gážúb ^y n ^y ú-mè/ gázúb ^y n ^y ú-mè	<u>he is pulling</u>
U	nžúb ^y n ^y ú-mè/ nzúb ^y n ^y ú-mè	<u>he would pull</u>
P	gžúb ^y n ^y ú-mè/ gzúb ^y n ^y ú-mè	<u>he may pull</u>
C	g ^w žúb ^y n ^y ú-mè/ g ^w zúb ^y n ^y ú-mè	<u>he pulled</u>
MA	rígžúb ^y n ^y ú-mè/ rígzúb ^y n ^y ú-mè	<u>he goes to pull</u>
MT	rídžúb ^y n ^y ú-mè/ rídzúb ^y n ^y ú-mè	<u>he comes to pull</u>

(10) Stem-initial k is labialized to k^w in the Completive aspect, probably due to a fusion of the aspect prefix with the stem-initial consonant. In other aspects it is k. This rule applies to Class IIB verbs.

	-ká? (IIB)	<u>take, grasp</u>
H	rká?-mè	<u>he takes</u>

I	zká?-mè	<u>he will take</u>
Pr	gáká?-mè	<u>he is taking</u>
U	nká?-mè	<u>he would take</u>
P	yká?-mè	<u>he may take</u>
C	k ^w á?-mè	<u>he took</u>
MA	ríyká?-mè	<u>he goes to take</u>
MT	rídká?-mè	<u>he comes to take</u>

(11) Stem-initial w becomes a labialization of the preceding velar prefix in the Potential aspect. Although it could be considered to be labialization of the other obstruent prefixes also, it is interpreted as a separate segment when it occurs with nonvelar consonants. (Only the velar consonants are labialized elsewhere in words of GHZ origin.) In the Completive aspect, following b, the w freely varies with \emptyset . Elsewhere it is w.

	-wié? (IA)	<u>see</u>
H	rwié?-mè	<u>he sees</u>
I	zwié?-mè	<u>he will see</u>
Pr	gáwié?-mè	<u>he is seeing</u>
U	nwié?-mè	<u>he would see</u>
P	g ^w ié?-mè	<u>he may see</u>
C	bwié?-mè/ bié?-mè	<u>he saw</u>
MA	ríg ^w ié?-mè	<u>he goes to see</u>
MT	rídg ^w ié?-mè	<u>he comes to see</u>

2.3.3.2. There are two rules for stem-final consonant replacement.

(1) A lenis obstruent which follows an interrupted vowel V[?] with high tone in the basic form is replaced by its fortis counterpart in the first person singular when vowel interruption is lost.

	-čá?b ^y (IA)	<u>push</u>
	bčá?b ^y -mè	<u>he pushed</u>
	bčáp ^y -mè	<u>I pushed</u>

(2) A stem-final b^y is optionally, but preferably, deleted when it follows an aspirated vowel V^h with low tone and it precedes a consonant-initial enclitic. (This means it is not deleted in first person singular and second person singular forms.)

	-lòhb ^y (IA)	<u>blow</u>
	blòb ^y -á?	<u>I blew</u>

blòhb ^y -f?	<u>you blew</u>
blò-mè/ blòhb ^y -mè	<u>he blew</u>
-zièhb ^y (IB)	<u>get frightened</u>
b ^y zièhb ^y -á?	<u>I got frightened</u>
b ^y zièhb ^y -f?	<u>you got frightened</u>
b ^y ziè-mè/ b ^y zièhb ^y -mè	<u>he got frightened</u>

The verb tell is irregular in the Completive aspect in that the final b^y is replaced by z^y, and it is the only word in which this alternation takes place. The z^y is also optionally deleted preceding a consonant-initial enclitic.

-àhb ^y (IIA)	<u>tell</u>
ràhb ^y -á?	<u>I tell</u>
ràhb ^y -f?	<u>you tell</u>
rà-mè/ ràhb ^y -mè	<u>he tells</u>
gùhz ^y -á?	<u>I told</u>
gùhz ^y -f?	<u>you told</u>
gù-mè/ gùhz ^y -mè	<u>he told</u>

The verb -dàhb^y swallow does not follow this optional b^y deletion rule, probably to distinguish it from the similar verb tell.

-dàhb ^y (IIB)	<u>swallow</u>
ràhb ^y -á?	<u>I swallow</u>
ràhb ^y -f?	<u>you swallow</u>
ràhb ^y -mè	<u>he swallows</u>
g ^w dàhb ^y -á?	<u>I swallowed</u>
g ^w dàhb ^y -f?	<u>you swallowed</u>
g ^w dàhb ^y -mè	<u>he swallowed</u>

A similar process takes place in the verb -dě^yd^y give, but it cannot be included in the above rule because this is the only verb in which d^y is deleted. It contrasts with -tě^yd^y make pass, which does not accept optional deletion of the final consonant.

-dě ^y d ^y (IA)	<u>give</u>
bdě ^y -á?	<u>I gave</u>
bdě ^y d ^y -f?	<u>you gave</u>
bdě ^y -mè/ bdě ^y d ^y -mè	<u>he gave</u>

-tě?d^y (IA) make pass
 btě?d^y-á? I made pass
 btě?d^y-f? you made pass
 btě?d^y-mè he made pass

3. The GHZ person indicators occur not only with the verbs, but also with nouns and stative verbs.

3.1. The basic person indicators are presented in Chart 3. Only those forms which are so indicated by presence of a hyphen are bound forms. The plural -yáhk is optional when in parentheses.

		SINGULAR	PLURAL	
Personal	FP	-á?	<u>in</u> nó	
			<u>ex</u> nó?	
	SP	-f?	lá?d / -d	
	TP-h	-mè	-yáhk-mè	
		-a	má?	(-yáhk) má?
		-t	-ú	(-yáhk)-ú
	FoP		∅	
Impersonal		-mú		

Chart 3: Person Indicators

Abbreviations: First position F, S, T, Fo = First, Second, Third, Fourth, respectively; second position P = Person; third position S, P = Singular or Plural, respectively; -h = human, -a = animal, -t = thing; in = inclusive and ex = exclusive.

-dàhg^w (IIB) eat
 g^wdàhg^w-á? I ate
 g^wdàhg^w-f? you ate
 g^wdàhg^w-mè he/she ate
 g^wdàhg^w má? it (animal) ate
 g^wdàhg^w-ú It (machine) devoured

g ^w dàhg ^w nó	<u>we (inclusive) ate</u>
g ^w dàhg ^w nó?	<u>we (exclusive) ate</u>
g ^w dàhg ^w lá?d	<u>you (plural) ate</u>
g ^w dàhg ^w d	<u>you (plural) ate</u>
g ^w dàhg ^w -yáhk-mè	<u>they ate</u>
g ^w dàhg ^w (-yáhk) má?	<u>they (animals) ate</u>
g ^w dàhg ^w (-yáhk)-ú	<u>they (machines) devoured</u>

gáyǒb^y-á? dn^yǒ?b^y-á?, par gàhg^w-∅

I'm looking for my son so he (known) can eat (FoP)

né? ràhg^w-mú gí?n^y one (impersonal) eats chile here

3.2. The allomorphs of the person enclitics are described in this section.

The vowel-initial enclitics -á?, -í? and -ú have nonsyllabic alternants which occur following a stem-final vowel (or word-final vowel if a modifier intervenes between the stem and the person indicator, or if the person indicator follows a noun or stative verb). Their nonsyllabic alternants are -n, -y and -w, respectively. (The syllabic -u may follow any of the person enclitics as a bound object.) Syllabic enclitics are set off by a hyphen, indicating that they are secondarily stressed syllables.

biàhb-á?	<u>I fell</u>
bsí?en	<u>I turned (it) off</u>
biàhb-ì?	<u>you fell</u>
bsí?ey	<u>you turned (it) off</u>
biàhb-ú	<u>it fell (subj.)</u>
bí?ew	<u>it died out (subj)</u>
bwién-ú	<u>I saw it (obj.)</u>
bsiàhb-á?w	<u>I made it fall (obj.)</u>

Both -á? and -í? have an optional alternant which ends in a consonant (same as above) if they follow a consonant and precede -u. The alternants are -á?n and -í?y, respectively.

ráp-á?w / ráp-á?n-ú I have it

ráhp-í?w / ráhp-í?y-ú you have it

In the first person singular some people use the consonant-final alternant -á?n even when it occurs word-final, but -á? is the most common alternant. (The first person free pronoun is nǎ?.)

biàhb-á? / biàhb-á?n I fell

Third person singular, human, -mè has the alternant m, which is sometimes used in fast speech following a vowel.

bià gácǒ?-mè / bià gácǒ?m What's he doing?

In the second person plural, the free form is usually used, but there is an alternant -d that is used in familiar speech. The -d has an alternant -t, which occurs immediately following an interrupted vowel with high tone.

bgá lá?d / bgád you barbered
 bšál lá?d / bšáld-ú you opened it
 yká? lá?d-ú / yká?t-ú you will take it

The third person plural marker has several alternant forms, which are, in general, idiolectally determined. The older form seems to be -yáhk, but because of its occurrence in a non-final, secondarily stressed syllable it has been shortened by many speakers to -yá, -iá or -í. Furthermore some speakers who use the -i alternant have a non-syllabic variant, -y, after stem-final vowels. In recorded text material speakers often vary between use of two forms, one of them being -yáhk.

The pluralizer does not usually occur in the third person plural animal or thing forms, being used only when it is necessary to specify that it is plural. When it does occur, it is the -yahk form which must precede má? and -ú.

$g^w d\grave{a}hg^w -y\acute{a}hk -m\grave{e}$ / $g^w d\grave{a}hg^w -y\acute{a} -m\grave{e}$ /
 $g^w d\grave{a}hg^w -i\acute{a} -m\grave{e}$ / $g^w d\grave{a}hg^w -\acute{i} -m\grave{e}$ they ate
 $g^w d\grave{a}hg^w m\acute{a}?$ / $g^w d\grave{a}hg^w -y\acute{a}hk m\acute{a}?$ they (animals) ate
 $g^w d\grave{a}hg^w -\acute{u}$ / $g^w d\grave{a}hg^w -y\acute{a}hk -\acute{u}$ they (machines) devoured

The free morphemes for third person singular -animal, first person plural-inclusive, first person plural-exclusive, fourth person and impersonal do not have alternant forms.

4. The following irregular verbs present some forms not described in the previous rules. Most of the irregularities occur in the verb stem, but the first two verbs, which are verbs of motion, also have slightly irregular aspect prefixes, especially in the progressive aspect. It is regular for the first person plural stems to follow the third person singular stem. Some of these verbs, however, have a different first person plural stem. When this occurs, the FPP stem is listed. It should be noted that all verbs listed in this section are commonly used verbs. (FPP-in is used in the examples where there is a FPP difference, but the stem is the same for both inclusive and exclusive FPP.)

go

	<u>FPS</u>	<u>SPS</u>	<u>TPS</u>	<u>FPP</u>
H	rián	riáy	riá-mè	rió nó
I	zián	ziá?y	zià-mè	zió nó
Pr	zán	zá?y	zà-mè	zó nó
U	n ^y án	n ^y á?y	n ^y à-mè	n ^y ó nó
P	cán	cá?y	cà-mè	có nó
C	g ^w yán	g ^w yáy	g ^w yá-mè	g ^w yó nó

The verb go also has an irregular FPP-in command form, có? let's go, which is commonly used in place of the regular FPP-in command form, có nó (see Potential).

come

	<u>FPS</u>	<u>SPS</u>	<u>TPS</u>	<u>FPP</u>
H	riǎL-á?	riǎhd-í?	riǎhd-mè	riǒ?b nó
I	siǎL-á?	siǎhd-í?	siǎhd-mè	siǒ?b nó
Pr	ziǎL-á?	ziǎ?d-í?	ziǎ?d-mè	ziǒ?b nó
U	n ^y àL-á?	n ^y ǎhd-í?	n ^y ǎhd-mè	n ^y ǒ?b nó
P	giǎL-á?	giǎ?d-í?	giǎ?d-mè	giǒ?b nó
C	biǎL-á?	biǎhd-í?	biǎhd-mè	biǒ?b nó

Some of the aspects of the verb come have partially contracted stems when they occur with the noun gio rain.

rǎhd gio	<u>it rains (the rain comes)</u>
sǎhd gio	<u>it's going to rain (the rain's coming)</u>
zi?d gio	<u>it's beginning to rain</u>
gi?d gio	<u>it may rain</u>

pass (IIA)

	<u>FPS</u>	<u>SPS</u>	<u>TPS</u>	<u>FPP</u>
H	rdě?d ^y -á?	rdéd ^y -í?	rdéd ^y -mè	rdě?d ^y nó
I	zdě?d ^y -á?	zdéd ^y -í?	zdéd ^y -mè	zdě?d ^y nó
Pr	gádě?d ^y -á?	gádéd ^y -í?	gádéd ^y -mè	gádě?d ^y nó
U	ndě?d ^y -á?	ndéd ^y -í?	ndéd ^y -mè	ndě?d ^y nó
P	těd ^y -á?	těd ^y -í?	těd ^y -mè	těd ^y nó
C	g ^w dě?d ^y -á?	g ^w déd ^y -í?	g ^w déd ^y -mè	g ^w dě?d ^y nó

The following two verbs are irregular only in the Completive aspect. Therefore, only the Habitual and Completive aspects will be listed, with the Habitual as representative of the nonCompletive forms.

lie down (IIA)

	<u>FPS</u>	<u>SPS</u>	<u>TPS</u>
H	rǎʔn	rǎʔy	rǎʔ-mè
C	gút-áʔ	gúht-íʔ	gúht-mè

tell

H	ràhb ^y -áʔ	ràhb ^y -íʔ	ràhb ^y -me/ rà-mè
C	gùhz ^y -áʔ	gùhz ^y -íʔ	gùhz ^y -mè/ gù-mè

bring, accompany (IIA)

This verb begins with a contracted form of go.

H	rín ^y nón	rín ^y nõy	rín ^y nõ-mè
I/Pr	zín ^y nón	zín ^y nõy	zín ^y nõ-mè
U	nín ^y nón	nín ^y nõy	nín ^y nõ-mè
P	cín ^y nón	cín ^y nõy	cín ^y nõ-mè
C	g ^w ín ^y nón	g ^w ín ^y nõy	g ^w ín ^y nõ-mè

The verb begin has an optional irregular form in the Potential aspect. In Isthmus Zapotec (Pickett 1971), the stem of this verb is -zulo. In most of the GHZ aspects, the form has been reduced to -zlò. However, the first syllable may occur in the Potential stem in GHZ, as can be seen in the example. Only the contracted form occurs in the Movement categories.

begin (IIA)

	<u>FPS</u>	<u>SPS</u>	<u>TPS</u>
H	rízlóʔn	rízlóʔy	rízlò-mè
I	zízlóʔn	zízlóʔy	zízlò-mè
Pr	gáyízlóʔn	gáyízlóʔy	gáyízlò-mè
U	n ^y ízlóʔn	n ^y ízlóʔy	n ^y ízlò-mè
P	gízlóʔn/ súlóʔn	gízlóʔy/ súlóʔy	gízlò-mè/ súlò-mè
C	gúzlóʔn	gúzlóʔy	gúzlò-mè
MA	rígízlóʔn	rígízlóʔy	rígízlò-mè
MT	rídgízlóʔn	rídgízlóʔy	rídgízlò-mè

wait (IIA)

	<u>FPS</u>	<u>SPS</u>	<u>TPS</u>	<u>FPP</u>
H	rbiǎʔz-áʔ	rbiàhz-íʔ	rbiàhz-mè	rbiǎʔz nó
I	zbiǎʔz-áʔ	zbiàhz-íʔ	zbiàhz-mè	zbiǎʔz nó
Pr	gábiǎʔz-áʔ	gábiàhz-íʔ	gábiàhz-mè	gábiǎʔz nó
U	mbiǎʔz-áʔ	mbiàhz-íʔ	mbiàhz-mè	mbiǎʔz nó
P	k ^w iǎʔz-áʔ	k ^w iàhz-íʔ	k ^w iàhz-mè	k ^w iǎʔz nó
C	g ^w liǎʔz-áʔ	g ^w liàhz-íʔ	g ^w liàhz-mè	g ^w liǎʔz nó

The two following verbs are irregular in that vowel aspiration is not deleted in the FPS, but the Potential of die adopts what would have been the regular FPS suprasemental pattern.

die (IIA)

	<u>FPS</u>	<u>SPS</u>	<u>TPS</u>
H	réht ^y -áʔ	réht ^y -íʔ	réht ^y -mè
C	gát ^y -áʔ	gát ^y -íʔ	gát ^y -mè

happen (IIB)

H	rzáhk-áʔ	rzáhk-íʔ	rzáhk-mè
P	gzáhk-áʔ	gzáhk-íʔ	gzáhk-mè

NOTES

¹Guevea de Humboldt is located in the Isthmus of Tehuantepec in the state of Oaxaca, Mexico. There are about 8,000 speakers of this dialect of Zapotec. Although geographically not too distant from Juchitán and the dialect described by Pickett, the intelligibility between the two dialects is quite low (less than 20 percent).

Fortis consonants are: p, t, k, c, č, s, š, M, N, L, W, Y.

Lenis consonants are: b, d, g, z, j, z, ž, m, n, l, w, y and r.
(Fortis f, x, N, R occur in words borrowed from Spanish.)

Vowels are i, e, a, o, u. Consonant modifications are palatalization C^y and labialization C^w. Syllable nucleus modifications are glottal interruption V^ʔ and aspiration Vh. The tones are high á, low à and rising ǎ.

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