THE STRUCTURE OF THE ITUNYOSO TRIQUE WORD

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1. Introduction

In many Oto-Manguean languages, affixes are prefixal and only clitics may occur at the right edge of the word (Suárez, 1983). This particular pattern is also true for Trique morphology (Hollenbach, 1984; Longacre, 1959). While words of any part of speech may contain a personal enclitic, alienable nouns may be preceded by a single genitive prefix and verbs may be preceded by a non-productive causative prefix and a productive aspectual prefix. The structure of Trique nouns and verbs is schematized below, followed by example sentences in (1) - (9).

(GEN)–NOUN=(CLITIC)
(CAUS)–(ASP)–VERB=(SUBJECT.CLITIC)=(OBJECT.CLITIC)

(1) ya^{3}ʔyoh^{3} tʃi^{4}ʔyə̃h^{4} tʃu^{3}βe^{3}
daily bark dog
'*The dog barks daily.*'

(2) ki^{3}-nih^{3} ɾu^{3}kʷi^{4}ʔi^{43}
PERF-fall.vertical peach
'*The peach fell.*'

(3) kʷeh^{3}-ɾeʔ^{1} ɾi^{3}ə̃^{32} tʃi^{3}ŋga^{4}
PERF.jump-2SG face fence
'*You jumped over the fence.*'

(4) na^{3}ʔmə̃^{4} βeʔ^{3}
sink house
'*The house is sinking.*'

(5) na^{3}βi^{43} si^{3}-sũh^{2}
finish.1sg GEN-work.1sg
a^{3}kʷa^{4}ni^{43}
now
'*I am finishing my work now.*'

(6) k-a^{2}ʔniʔ^{1}-ɾeʔ^{1} ββe^{4} tʃah^{3}
POT-cut-2SG hair head.1SG
'*You will cut my hair.*'

(7) na^{2}-ki^{3}-ʔyah^{3} saʔ^{1}-sih^{3}
CAUS-PERF-make good-3SGM
yə̃^{3}ʔə̃^{32}
light
'*He is fixing the light.*'

(8) ri^{1}kih^{1} kkaʔ^{3} ɾi^{3}ə̃^{32}-ɾeʔ^{1}
POT.give.1SG candle face-2SG
'*I will give you a candle.*'

(9) tʃa^{2}kah^{1}-ɾeʔ^{1}-ũh^{3}
marry-2SG-3SGF
'*You are marrying her.*'

Words in Trique are minimally composed of a single morpheme, but may contain as many as five (including clitics). Examples (1) and (4) demonstrate that aspectual prefixes on verbs and clitic morphology on nouns is not obligatory in Trique. Example (7) shows both a causative and aspectual prefix on a verb. Example (9) shows that up to two enclitics may apply to Trique verbs. Example (5) demonstrates the genitive prefix on an alienable noun.

Despite the limited number of prefixes and clitics which occur, Trique morphology is typified by complex allomorphy and tonal alternations. A number of allomorphs of aspectual prefixes occur, conditioned by both the phonological structure and semantic content of the verb root. This allomorphy also co-occurs with tonal changes at the left edge of the verb or across the entire verb stem. A number of allomorphs of genitive prefixes occur on nouns as well. These are conditioned by both the semantic class of the noun and its phonological structure. Yet, the most complex set of morphophonological alternations occur with Trique enclitics. This morphology is characterized by a set of tonal changes sensitive to the register of the final syllable tone of the lexical stem.

The current paper provides a comprehensive description of aspectual morphophonology, nominal morphophonology, and clitic morphophonology in Trique. The organization of this paper is as follows. In the remainder of this section, I provide a background of the Itunyoso Trique language. In §2, I describe the nominal morphology. In §3, I describe the verb aspect morphology of Itunyoso Trique. Potential verb aspect in Itunyoso Trique is notable for stem-level tonal alternations which not only co-occur with aspectual prefixation, but may also occur independently of any overt prefixation. In §4, I describe the complex set of morphophonological changes occurring with the $1st$ person singular enclitic, changes which occur with the 2^{nd} person singular enclitic, and changes which occur with the 1^{st} person dual enclitic. In §5, I describe the differences in enclitic morphophonology among the different Trique variants. Notably, the split of Trique tones into two distinct registers is useful for accounting for patterns of tone-raising which occur with the different pronominal enclitics.

All data in this paper comes from original fieldwork done by the author on the San Martín Itunyoso variant of Trique between 2004 - 2010. The phonology and phonetics of segments and tone are discussed in depth in DiCanio (2008) and (2010). Segmental and tonal transcriptions in this paper follow the conventions used in these publications with three exceptions: First, "y" is used in place of phonological /j/. Second, geminates are represented using doubled consonants, e.g. "tt" instead of /tː/. Third, tone /35/ is represented as tone /45/ in this text, an analysis which better reflects its phonetic realization. Except for this tonal transcription difference, tonal marking follows conventions used in DiCanio (2008, 2010) and (Hollenbach, 1984), where /5/ is high and /1/ is low.

1.1. **Language Background.** Itunyoso Trique is an Oto-Manguean language spoken in Oaxaca, Mexico by an estimated 2,554 speakers (Instituto Nacional de Estadística y Geografía, 2005) in the municipality of San Martín Itunyoso. It is identified by most Trique speakers as one of the three main variants of the Trique language group, which also includes the Chicahuaxtla and Copala Trique variants. While the Chicahuaxtla and Copala variants are each spread across a larger geographic area which comprises many towns, San Martín Itunyoso is the only town in the Trique region known where its particular language variant is spoken.

FIGURE 1. Map of the Trique region, courtesy of Google (2010)

A map showing the Trique region is given in Figure 1. The towns located to the Southeast of San Martín Itunyoso, such as San José Xochixtlán, La Laguna (Guadalupe), and (San Andrés) Chicahuaxtla, all speak the Chicahuaxtla Trique variant. The towns located to the Southwest, such as Sabana and San Juan Copala, all speak the Copala Trique variant.[1] San Martín Itunyoso shares much of its bordering territory with Santa María Tepostlatongo and Santa María Yucunicoco. These are Mixtec speaking communities which speak a Mixtec variant similar to that of San Juan Mixtepec.

2. Nominal Morphology

Personal enclitics are used to mark arguments on verbs and possession on nouns. As they appear very frequently in Itunyoso Trique morphosyntax, I provide a chart of all subject enclitics in Table 1.

For the second and third person, regular number clitics may precede the personal enclitic: /nu^{2}k^{w}eh^2/, for dual, and /niʔ^2/ for plural. Allomorphs of the 2nd person clitic occur with these number clitics. With the exception of the 1st person singular enclitic, a word-final coda /h/ on an enclitic will delete before a clitic beginning with an obstruent. Thus, one observes the dual enclitic without a coda /h/ with the 3rd person masculine and animal

[1]Many, smaller towns exist in these regions as well. These are not represented on the current map.

TABLE 1. Itunyoso Trique Subject Enclitics

		Number			
Person	*Class*	Singular	Dual	Plural	
1*st*		-h ⇌ ∅	-ʔ*4*	-neʔ*4*	(inclusive)
				-ũh*4*	(exclusive)
2*nd*		-ɾeʔ*1*	-nu²kʷeh²e*4*ɾeʔ*1*	-niʔ²ih*4*ɾeʔ*1*	
3*rd*	Masc.	-sih*3*	-nu²kʷe²sih*3*	-niʔ²sih*3*	
	Fem.	-ũh*3*	-nu²kʷeh²ũh*3*	-niʔ²ũh*3*	
	Animal	-tʃuh*3*	-nu²kʷe²tʃuh*3*	-niʔ²tʃuh*3*	

enclitics. This same phonological rule applies when multiple personal enclitics are attached to a word, e.g. subject and object clitics on verbs.

2.1. **Genitive Morphology and Noun Classes.** Aside from compounding, nominal possession is the only productive morphology affecting nouns in Itunyoso Trique. There are three classes with different possessive morphology. The first class consists primarily of nouns which are inalienably-possessed, the second of nouns which are alienably-possessed and inanimate, and the third of animate nouns. The first class never requires a genitive prefix, whereas a prefix is obligatory for the second class. Animate nouns are distinct in that they require an animal classifier. Possession is marked on all nouns by the set of personal enclitics identical to those used for marking subjects. While enclitics attach to the noun stem of the first and second class, they attach to the classifier with the third. These morphological differences are summarized in Table 2.

TABLE 2. Morphology of Genitive Constructions

Noun Class	Genitive-Marking	Enclitic Placement
Class 1 (inalienable)	Prefix	Noun Stem
Class 2 (alienable)	∅	Noun Stem
Class 3 (animal)	Classifier	Classifier

2.1.1. *Class 1.* The first class of nouns includes all body parts, all kinship terms, certain clothing items, and some frequent nouns. The set of kinship terms in this class extends to non-familial relations that are nevertheless very culturally significant for Trique speakers, such as *compadres*, *comadres*, and *amigos*. Clothing items are a more ambiguous. Certain words, like '*pants*', '*huipil*', and '*hat*' fall within the inalienable noun class, while words like '*shirt*', '*skirt*', or '*shoe*' fall within the alienable noun class. A few other nouns, such as '*hiccups*' or '*tortilla*' also fall into the same class as inalienable nouns. Examples of possessed forms of this first class of nouns are shown in Table 3. In each of these examples, no prefixation occurs. However, the noun stem may be modified by tonal or segmental changes induced by cliticization.

TABLE 3. Inalienably-Possessed Nouns

Unpossessed Noun	Gloss	Possessed Noun	Gloss
ɾa^{3}ʔa^{3}	'*hand*'	ɾa^{3}ʔah^{5}	'*my hand*'
		ɾa^{3}ʔa^{3}-ɾeʔ^{1}	'*your hand*'
yə̃ʔ^{3}	'*tooth*'	yə̃ʔ^{4}-ɾeʔ^{1}	'*your tooth*'
		yə̃ʔ^{3}-sih^{3}	'*his tooth*'
ta^{3}ʔni^{3}	'*child*'	ta^{3}ʔni^{32}	'*my child*'
		ta^{3}ʔni^{4}-ɾeʔ^{1}	'*your child*'
tʃe^{3}	'*father*'	tʃe^{4}ɾeʔ^{1}	'*your father*'
		tʃe^{3}sih^{3}	'*his father*'
tʃi^{4}ɾoh^{4}	'*pants*'	tʃi^{4}ɾo^{43}	'*my pants*'
ta^{3}βi^{3}	'*hat*'	ta^{3}βih^{5}	'*my hat*'
tʃu^{3}ʔnu^{2}	'*huipil*'	tʃu^{4}ʔnuh^{4}	'*my huipil*'
t̪s̪a^{2}	'*tortilla*'	t̪s̪a^{32}	'*my tortilla*'
ne^{4}ʔeh^{4}	'*hiccups*'	ne^{4}ʔe^{43}	'*my hiccups*'

2.1.2. *Class 2.* The second class of nouns is the largest, consisting of alienably possessed inanimate nouns. All nouns within this class require a genitive prefix or a stem onset mutation. There are 7 allomorphs of the genitive within this class: /si^{3}-/, /ti-/, /t-/, /ta^{3}-/, /tu-/, /tʃi-/, and a rule mutating an onset /y/ to /t/. While certain allomorphs have an associated tone /3/ (marked), others vary between either tone /3/ or tone /4/, depending on the noun to which they attach. The prefix /si^{3}-/ is the only fully productive and regular allomorph of the genitive. It is applied to most Itunyoso Trique nouns and may be used with loanwords as well. Table 4 provides some examples of the /si^{3}-/ allomorph. Two loanwords are shown here: the word for '*ball*', which is borrowed from the Spanish word '*pelota*', and the word for '*table*', which is borrowed from the Spanish word '*mesa*.'

TABLE 4. Regular Alienably-Possessed Nouns

Unpossessed Noun	Gloss	Possessed Noun	Gloss
tʃa^{3}tə̃^{3}	'*pineapple*'	si^{3}-tʃa^{3}tə̃h^{5}	'*my pineapple*'
ka^{3}kĩʔ^{3}	'*crime*'	si^{3}-ka^{3}kĩh^{5}	'*my crime*'
nu^{3}ta^{1}	'*tamal*'	si^{3}-nu^{1}ta^{1}-sih^{3}	'*his tamal*'
ku^{3}ɾu^{32}	'*granary*'	si^{3}-ku^{2}ɾu^{2}-sih^{3}	'*his granary*'
lu^{4}ta^{43}	'*ball*'	si^{3}-lu^{4}tah^{4}	'*my ball*'
me^{4}sa^{43}	'*table*'	si^{3}-me^{4}sa^{3}-sih^{3}	'*his table*'
tto^{31}	'*milk*'	si^{3}-to^{1}-ɾeʔ^{1}	'*your milk*'

When nouns with onset geminates are prefixed, consonant length is neutralized. This occurs with any of the prefix allomorphs of the genitive. Examples are shown in Tables 4, 6, and 7. This pattern follows a general distributional principle in Itunyoso Trique where the singleton-geminate contrast only surfaces in the word-initial position of monosyllables. In polysyllabic words, onsets of final syllables are lengthened (DiCanio, 2008, 2010). However, this lengthening is a phonetic process occurring with final syllable prominence in the language. There is no phonological contrast between singleton and geminate consonants word-internally.

The mutational allomorph affects many nouns in Itunyoso Trique with an onset /y/ glide, including all monosyllabic and /VʔV(h)/ stems. However, the allomorph does not apply to loanwords or to certain disyllabic words. It is a frequent allomorph, but non-productive. Table 5 shows examples of nouns which undergo this mutation as well as nouns which take the regular /si^{3}-/ prefix described above. The word /ya^{4}ku^{43}/ '*garlic*' is a loan from Spanish '*ajo*', phonetically [axo]. The other listed exceptions to the onset mutation rule are not loanwords. Among disyllabic noun stems, the mutation rule is irregular.

TABLE 5. Alienably-Possessed Nouns with onset /y/

Unpossessed Noun	Gloss	Possessed Noun	Gloss
yu^{2}ʔβeh^{2}	'*thread*'	tu^{3}ʔβe^{32}	'*my thread*'
yə̃^{32}	'*salt*'	tə̃h^{3}	'*my salt*'
ya^{2}ʔnə̃^{3}	'*mask*'	ta^{2}ʔnə̃h^{5}	'*my mask*'
yo^{3}ʔoh^{5}	'*land*'	to^{3}ʔoh^{4}-sih^{3}	'*his land*'
ya^{3}ʔah^{3}	'*chile pepper*'	ta^{3}ʔah^{3}-sih^{3}	'*his chile pepper*'
yyu^{3}	'*pennyroyal*'	ttuh^{45}	'*my pennyroyal*'
yyah^{3}	'*flower*	tta^{32}	'*my flower*'
ya^{4}ku^{43}	'*garlic*'	si^{3}-ya^{4}kuh^{4} *ta^{4}kuh^{4}	'*my garlic*'
ya^{3}tə̃^{32}	'*mulberry*'	si^{3}-ya^{2}tə̃^{2}-sih^{3} *ta^{2}tə̃^{2}-sih^{3}	'*his mulberry*'
ya^{3}ʔnduh^{3}	'*fertilizer*'	si^{3}-ya^{3}ʔndu^{43} *ta^{3}ʔndu^{43}	'*my fertilizer*'

With one exception, the allomorph /tu-/ occurs before nouns with a bilabial onset. Most of these nouns begin with a geminate consonant. Examples of this allomorph are given in Table 6. The exception to the labial pattern is found in the word /nneʔ^{3}/ '*straw rope*.' This exception will be discussed in a later section in relation to the historical phonology of Trique. The /tu-/ allomorph does not apply to loanwords in Trique, suggesting that it is non-productive. Loanwords '*mango*' and '*table*' take the regular genitive allomorph, shown in the table below.

The remaining three allomorphs of the genitive are restricted to a small class of alienable nouns and are unproductive. Examples of each of them are given together in Table 7. The list of nouns given here represent all those presently known to take these irregular genitive allomorphs.

2.1.3. *Class 3.* Class 3 nouns are composed entirely of animal names. Unlike both class 1 and class 2 nouns, enclitics are attached to an obligatory classifier which precedes the

TABLE 6. Alienably-Possessed Nouns with /tu-/ allomorph

Unpossessed Noun	Gloss	Possessed Noun	Gloss
ββe^{32}	'*maguey cactus*'	tu^{4}-βeh^{4}	'*my maguey cactus*'
ββe^{4}	'*hair*'	tu^{3}-βeh^{5}	'*my hair*'
mmi^{31}	'*bridge*'	tu^{3}-mih^{2}	'*my bridge*'
mmi^{32}	'*sweet potato*'	tu^{3}-mih^{2}	'*my sweet potato*'
mmiʔ^{3}	'*soap*'	tu^{3}-mih^{3}	'*my soap*'
nneʔ^{3}	'*straw rope*'	tu^{4}-neh^{4}	'*my straw rope*'
me^{4}sa^{43}	'*table*'	si^{3}-me^{4}sa^{3}-sih^{3}	'*his table*'
		*tu^{3}-me^{4}sa^{3}-sih^{3}	
βa^{4}su^{43}	'*glass*'	si^{3}-βa^{4}su^{3}-sih^{3}	'*his glass*'
		*tu^{3}-βa^{4}su^{3}-sih^{3}	

TABLE 7. Alienably-Possessed Nouns with Idiosyncratic Genitive Allomorphy

Allomorph	Unpossessed Noun	Gloss	Possessed Noun	Gloss
/t-/	a^{3}ɾuʔ^{3}	'*squash bowl*'	t-a^{3}ɾuʔ^{3}-sih^{3}	'*his squash bowl*'
/ta^{3}-/	nne^{32}	'*water*'	ta^{3}-neh^{3}	'*my water*'
	nnih^{3}	'*leather*'	ta^{3}-nih^{3}-sih^{3}	'*his leather*'
/ti^{3}-/	ʈʂuh^{45}	'*box*'	ti^{3}-ʈʂu^{43}	'*my box*'
	ʔnih^{45}	'*corn*'	ti^{3}-ʔni^{43}	'*my corn*'
	tsi^{32}	'*ear of corn*'	ti^{4}–sih^{3}	'*my ear of corn*'
	tsiʔ^{3}	'*fermented cactus drink*'	ti^{3}-siʔ^{3}-sih^{3}	'*his fermented cactus drink*'
/tʃi^{3}-/	tʃah^{3}	'*music*'	tʃi^{4}-tʃah^{4}	'*my music*'
	nna^{31}	'*farmland*'	tʃi^{3}-nah^{3}	'*my farmland*'

noun. This classifier, /tə̃^{4}/, also occurs in Copala Trique with the meaning '*animal of*' (Hollenbach, 2004). However, it is morphologically bound as a classifier in Copala Trique just as it is in Itunyoso Trique; it may only occur preceding a possessed animal noun. Some examples of possessed animal nouns are given in Table 8. Here, we observe that no morphological changes occur on the possessed noun.

TABLE 8. Possessed Animal Nouns

Unpossessed Noun	Gloss	Possessed Noun	Gloss
tʃu^{3}tʃe^{32}	'*chicken*'	təh^{45} tʃu^{3}tʃe^{32}	'*my chicken*'
tʃi^{3}lu^{3}	'*cat*'	təh^{45} tʃi^{3}lu^{3}	'*my cat*'
tʃu^{3}tə̃h^{5}	'*fly*'	tə̃^{4}-ɾeʔ^{1} tʃu^{3}tə̃h^{5}	'*your fly*'
tʃi^{3}luh^{5}	'*worm*'	tə̃^{4}-ɾeʔ^{1} tʃi^{3}luh^{5}	'*your worm*'
si^{4}kuh^{3}	'*cow*'	tə̃^{4}-sih^{3} si^{4}kuh^{3}	'*his cow*'

2.1.4. *Irregular Noun Stems.* Four nouns in Itunyoso Trique have irregular stem forms when they are possessed. These nouns may either take the regular genitive prefix /si^{3}-/ or one of the genitive allomorphs described above. An exhaustive list of nouns with irregular stems are given below in Table 9.

TABLE 9. Irregular Noun Stems

Unpossessed Noun	Gloss	Possessed Noun	Gloss
βeʔ^{3}	'*house*'	tu^{3}k^{w}ah^{5}	'*my house*'
		tu^{3}k^{w}a^{4}-sih^{3}	'*his house*'
tʃũʔ^{3}	'*town*'	tʃi^{3}yə̃^{32}	'*my town*'
		tʃi^{3}yə̃^{4}-sih^{3}	'*his town*'
a^{4}sih^{3}	'*clothing*'	si^{3}-kə̃^{3}ʔə̃h^{5}	'*my clothing*'
		si^{3}-kə̃ʔ^{3}-sih^{3}	'*his clothing*'
t̪t̪s̪uh^{3}	'*egg*'	tʃi^{3}ɾu^{32}	'*my egg*'

2.1.5. *Summary.* Table 10 shows a summary of genitive marking for each noun class.

TABLE 10. Summary of Genitive Marking Types in Itunyoso Trique

Noun Class	Genitive Marking	Allomorphy	Context
Class 1	N + Enclitic	none	Regular, productive
Class 2	Prefix + N + Enclitic	/si^{3}-/	Most nouns, productive
		/t/ mutation	Most nouns with onset /y/, non-productive
		/tu-/	Nouns with labial onset, non-productive
		/ta-/	Irregular, non-productive
		/ti-/	Irregular, non-productive
		/t/	Irregular, non-productive
		/tʃi-/	Irregular, non-productive
Class 3	Classifier + Enclitic + N	none	regular, productive

2.2. **Historical-Comparative Morphology.** Once we begin to examine comparative data across Trique variants and across Mixtecan languages, a clear explanation for the complex genitive allomorphy in alienable nouns emerges. At a historical stage where Trique diverged from Proto-Mixtecan, Trique underwent a process of pre-tonic vowel loss. This process led to the formation of a number of monosyllabic Trique words. Roots in Trique vary in size. Disyllabic roots are the most frequent, but a large proportion (approximately 25%) of roots are monosyllabic and a smaller percentage (11%) are trisyllabic. Final syllables are obligatorily bimoraic in all words. Words are not composed of bimoraic couplets, unlike Mixtecan (Hinton, 1991; Macaulay and Salmons, 1995). The result of this vowel loss on disyllabic roots was the creation of geminate onsets on certain words (DiCanio, 2009). This process did not affect possessed noun stems for phonological reasons. It resulted in a more complex allomorphy among alienable nouns. I describe this entire process here in relation to genitive allomorphy.

The noun class distinction in genitive constructions in the Copala Trique variant is similar to the noun class distinction in Itunyoso Trique. Inalienably possessed nouns are unprefixed and animal names require a classifier marked with an enclitic. The regular genitive prefix is also similar. Examples from Copala Trique with regular prefixation are given in Table 11 and examples with irregular prefixation are presented in Table 12. All data is taken from Hollenbach (2004) and (2007).[2]

TABLE 11. Alienably possessed nouns in Copala Trique with Regular Prefixation

Unpossessed Noun	Gloss	Possessed Noun	Gloss
ra^{3}tsĩ^{3}	'*tomato*'	se^{32}-ra^{3}tsĩ^{13}-soʔ^{3}	'*his tomato*'
ka^{3}tsiʔ^{3}	'*honey*'	se^{32}-ka^{3}tsiʔ^{2}-soʔ^{3}	'*his honey*'
ko^{3}to^{4}	'*shirt*'	se^{32}-ko^{2}to^{4}-soʔ^{3}	'*his shirt*'
rta^{31}	'*tamale*'	se^{32}-rta^{1}-soʔ^{3}	'*his tamale*'

TABLE 12. Alienably possessed nouns in Copala Trique with Irregular Prefixation

Allomorph	Unpossessed Noun	Gloss	Possessed Noun	Gloss
/ta-/	neʔ^{3}	'*straw rope*'	ta^{3}-neʔ^{3}-soʔ^{3}	'*his straw rope*'
	kã^{3}	'*squash*'	ta^{3}kã^{5}-soʔ^{3}	'*his squash*'
/ti-/	ʔnu^{5}	'*corn*'	ti^{3}-ʔnu^{5}-soʔ^{3}	'*his corn*'
/ʃ-/	na^{31}	'*farmland*'	ʃna^{31}-soʔ^{3}	'*his farmland*'
	nãh^{3}	'*net*'	ʃnãh^{5}-soʔ^{3}	'*his net*'
/s-/	ne^{31}	'*meat*'	sne^{31}-soʔ^{3}	'*his meat*'
	ku^{5}	'*bone*'	sku^{5}-soʔ^{3}	'*his bone*'
/y/ > /t, d/	yo^{3}ʔo^{5}	'*land*'	to^{3}ʔo^{5}-soʔ^{3}	'*his land*'
	yãh^{3}	'*paper*'	dãh^{3}-soʔ^{3}	'*his paper*'

The data in Table 11 demonstrates that there is a very similar genitive prefix in Copala Trique to the /si^{3}-/ prefix in Itunyoso Trique. The data in Table 12 demonstrates that there is a similar set of irregular genitive allomorphs in Copala Trique. The /ta-/ and /ti-/ allomorphs are identical to those in Itunyoso Trique, but the /s-/ and /ʃ-/ allomorphs are different. The prefix /ʃ-/ appears to be a spirantized variant of the /tʃi-/ prefix in Itunyoso Trique. Copala Trique has a similar rule where an onset /y/ is mutated into an onset /t/ (Hollenbach, 1992, 2004).

Notably missing from the list of Copala Trique genitive allomorphs is the /tu-/ prefix which attaches to nouns with bilabial onsets. Nouns cognate with the bilabial onset nouns all contain a preceding /yu/ syllable. The possessed forms of these words undergo the same /y/ > /t/ rule shown above. Some examples are given in Table 13.

[2]Following conventions described in her work, I present a phonemic transcription of Hollenbach's Trique orthography.

Table 13. Possessed Copala Trique Nouns with bilabial consonants

Unpossessed Noun	Gloss	Possessed Noun	Gloss
yu^{3}βe^{32}	'*maguey cactus*'	tu^{3}βe^{32}-soʔ^{3}	'*his maguey cactus*'
yu^{3}βeh^{32}	'*rock, outcrop*'	tu^{3}βeh^{3}-soʔ^{3}	'*his rock, outcrop*'
yu^{3}mi^{31}	'*bridge*'	tu^{3}mi^{31}-soʔ^{3}	'*his bridge*'
yu^{3}me^{32}	'*sweet potato*'	tu^{3}me^{3}-soʔ^{3}	'*his sweet potato*'
yu^{3}miʔ^{3}	'*soap*'	tu^{3}miʔ^{3}-soʔ^{3}	'*his soap*'

The possessed nouns in Table 13 are cognate with the possessed forms in Table 6. However, each of the cognate nouns in Copala Trique have a geminate bilabial onset in Itunyoso Trique (including the word /ββeh^{32}/ '*rock, outcrop*', which does not appear in Table 6). The relationship between these two sets of data suggests that a sound change took place historically in Itunyoso Trique, where words of the shape */(y)VC$_{labial}$V/ > /Cː$_{labial}$V/. The possessed forms of these nouns did not undergo such a sound change because the initial syllable in such words was /tu/, not /yu/. The conditioning environment was not met. The result of this process created the additional /tu-/ allomorph of the genitive in Itunyoso Trique.

This process did not merely affect noun stems with bilabial consonants, but applied to any historically disyllabic word with the shape */(y)VCV/ (DiCanio, 2009). Cognates of words with irregular /tV/ prefixes are shown in Table 14, taken from DiCanio (2009). Proto-Mixtec data here comes from Josserand (1983), Cuicatec data comes from Anderson and Concepción Roque (1983), Copala Trique data comes from Hollenbach (2007), and Chicahuaxtla Trique data comes from Good (1979).

Table 14. Mixtecan Cognates with Trique Geminate Onsets

Itunyoso	Chicahuaxtla	Copala	*Proto-Trique	*Proto-Mixtec	Cuicatec	Gloss
ββe^{32}	wwe^{32}	yu^{3}βe^{32}	*/yu^{3}we^{32}/	*/yawiʔ/	yi^{4}va^{4}	*maguey*
ββeh^{45}	wwe^{5}	yu^{3}βe^{5}	*/yu^{3}weh^{5}/	*/yuwiʔ/	yi^{3}va^{3}	*straw mat*
mmiʔ^{3}	mmiʔi^{3}	yu^{3}miʔ^{3}	*/yu^{3}miʔ^{3}/	NA	na^{2}ma^{2}	*soap*
mmi^{31}	mmi^{31}	yu^{3}mi^{1}	*/yu^{3}mi^{1}/	NA	yye^{2}ko^{2}	*bridge*
mmi^{32}	mmi^{32}	yu^{3}me^{3}	*/yu^{3}mi^{3}/	NA	mʔĩ^{24}	*sweet potato*
ββe^{3}	wwe^{3}	yu^{3}βa^{31}	*/yu^{3}wa^{31}/	NA	tã^{4}	*brave*
ββeh^{3}	wwehe^{3}	yu^{3}βeh^{3}	*/yu^{3}weh^{3}/	NA	^{n}de^{2}de^{4}	*rock, outcrop*
nna^{31}	nna^{31}	na^{31}	*/nna^{31}/	NA	yu^{2n}du^{4}	*farmland*
nnə̃h^{3}	nnɨ̃h^{3}	nãh^{3}	*/nnɨ̃h^{3}/	*/yonoʔ/	ya^{4}na^{4}	*bag, net*
kkə̃^{3}	kɨ̃^{3}	kã^{32}	*/kkɨ̃^{32}/	*/yɨkɨ̃ʔ/	yu^{2}ku^{4}	*squash*

Notably, some words with geminate onsets are reconstructable at the Proto-Trique or Proto-Mixtec levels with an initial /yV/ syllable. The last three examples in Table 14 do not have bilabial onsets. Yet, each of these have irregular genitive allomorphy in the Trique variants. At a historical stage, each of these words would have followed the more regular genitive mutation pattern changing /y/ > /t/. Such an explanation accounts for the irregularity of genitive allomorphy among alienable nouns.

3. Verb Aspect Morphology

Itunyoso Trique distinguishes between four verbal aspects: perfective, potential, progressive, and habitual. Habitual aspect is unmarked on the verb stem, while the others are marked with either a prefix or a tonal change on the initial syllable of the verb stem. The progressive aspect is the simplest and involves no allomorphy. It is marked by a /si^{3}/- prefix on the verb. The perfective and potential aspects involve substantial phonologically-conditioned allomorphy. Some examples of verbs with habitual and progressive aspect are given in (10) - (15). Progressive verb forms are in the left column and habitual verb forms are in the right column.

(10) si^{3}-ta^{4}ko^{3}-sih^{3} tʃu^{3}ku^{3}
PROG-dry-3SGM animal
'*He is drying the animal.*'

(11) si^{2}-a^{3}yə̃h^{3} ttũ^{31}-sih^{3}
PROG-expel blood-3SGM
'*He is bleeding.*'

(12) si^{3}-a^{3}tʃih^{5} na^{3}ʔβi^{32}
PROG-peel.1SG orange
'*I am peeling the orange.*'

(13) ya^{3}ʔyoh^{3} oʔ^{4}-sih^{3}-ũh^{2}
daily hit-3SGM-1SG.OBJ
'*He hits me daily.*'

(14) a^{4}yə̃h^{4} ttũ^{31}
expel.1SG blood
'*I bleed.*'

(15) ya^{3}ʔyoh^{3} a^{3}tʃi^{3}-sih^{3} na^{3}to^{32}
daily peel-3SG banana
'*I peel bananas daily.*'

While un-prefixed verb stems can have a habitual reading, it is perhaps more accurate to consider these verbs as being aspectually unmarked. It is normal, for instance, to observe unprefixed verbs used in contexts where one might expect a progressive reading. The use of the unprefixed verb form in (16), for instance, suggests that there may be a more subtle semantic difference between unmarked verbs and verbs with a /si^{3}-/ prefix.

(16) ki^{3}-ni^{43} yya^{3} nne^{3}-ɾeʔ^{1} a^{4}rũ^{1}-ɾeʔ^{1}
PERF-fall.1SG while sit-2SG write-2SG
'*I fell while you were sitting and writing.*'

There is a single set of morphological alternations which creates perfective and potential verb stems. For both stem types, a prefix of the shape /k(V)/ is attached to the verb root. There are five allomorphs of this prefix: /k-/, /ka-/, /ki-/, /ku-/, /β/ > /k^{w}/. Perfective and potential stems are not identical however. The set of tonal alternations accompanying each stem type differs. It is therefore most sensible to present the morphology of both aspects together before discussing their tonal differences.

3.1. **Perfective/Potential Allomorphy.** Verb roots in Itunyoso Trique can be divided into two, phonologically distinct classes: vowel-initial roots and consonant-initial roots (henceforth V-initial and C-initial). Without exception, V-initial roots always take a /k-/ prefix. Most verb forms in Trique are V-initial, beginning with the vowel /a/ or /u/. There is only one /i/-initial verb root (shown below) and a few /o/-initial roots. There are no /e/-initial roots. C-initial roots take one of four different prefixal allomorphs, some of which are phonologically-conditioned. Examples of V-initial roots with the /k-/ prefix allomorph are given in Table 15.

TABLE 15. Vowel-initial verb roots in Itunyoso Trique

Bare verb root	Gloss	Inflected verb stem	Gloss
a^{3}βiʔ^{3}	'*die*'	ka^{3}βiʔ^{3}	'*has died*'
a^{3}ʔŋgaʔ^{3}	'*laugh*'	ka^{2}ʔŋgaʔ^{2}	'*will laugh*'
a^{3}tʃĩh^{5}	'*ask for*'	ka^{3}tʃĩh^{5}	'*has asked for*'
a^{3}no^{1}ʔoh^{1}	'*wait*'	ka^{1}no^{1}ʔoh^{1}	'*will wait*'
i^{3}ta^{3}	'*slam*'	ki^{3}ta^{3}	'*has slammed*'
oʔ^{4}	'*hit*'	koʔ^{2}	'*will hit*'
u^{4}nə̃h^{3}	'*run*'	ku^{4}nə̃h^{3}	'*has run*'
u^{3}nu^{3}	'*hear*'	ku^{2}nu^{3}	'*will hear*'

The division of Trique verbs into these two classes permits us to account for two patterns in the language. First, the progressive or habitual stems of certain verbs are vowel-initial, while others are consonant-initial. The forms given in the "bare verb root" column in the table above are the habitual stems for these verbs and are the stems used with progressive aspect prefixation (/si^{3}-/). If we were instead to analyze all verbs as containing a /kV-/ prefix, we would be unable to predict which verbs surfaced with a vowel-initial stem form and which ones did not.

Second, this distinction permits us to generalize the tonal morphophonology of the perfective aspect. V-initial verbs take a /k-/ prefix with no associated tone for the perfective aspect. C-initial verbs take a /kV^{3}-/ prefix.[3] Certain V-initial verbs have an initial tone /4/. This is the same tone found in the initial syllable of perfective stems. If we were to analyze these verbs as containing a /kV-/ prefix, instead of a /k-/ prefix, we would be unable to predict whether the perfective aspect prefix required tone /3/ or tone /4/. Tone /4/ only surfaces in the initial syllable of V-initial verb roots. If we posit that tone /4/ is underlying, it allows us to make a simple generalization that all perfective aspect prefix allomorphs of the shape /kV-/ have tone /3/.

3.1.1. *Aspectual allomorphy in C-initial verb roots.* Distributional patterns in the segmental phonology of Itunyoso Trique are sensitive to the feature [LABIAL]. Only one labial segment may occur within a syllable and only one labial consonant is permitted per word (labial culminativity and labial minimality, respectively) (DiCanio, 2008). Aspectual allomorphy is also sensitive to labiality. Two of the four perfective/potential allomorphs are phonologically-conditioned in C-initial verb roots. In each of these cases, a [LABIAL] feature determines the morphological structure of the verb stem. The first pattern involves a consonant mutation of verb roots with an initial bilabial fricative (/β/ or /ββ/). Verbs with an initial /βa/ syllable mutate to /ka/, while verbs with an initial /βe/ syllable mutate to /k^{w}e/. All verbs which have this pattern are shown in Table 16.

[3]Tonal differences between the perfective and potential aspect are discussed in depth in §3.1.2.

TABLE 16. C-initial verb roots with consonant mutation in Itunyoso Trique

Bare verb root	Gloss	Inflected verb stem	Gloss
βa^{2}	'*be (+ stative)*'	ka^{32}	'*was (+ stative)*'
βah^{4}	'*grind (on metate)*'	kah^{1}	'*will grind (on metate)*'
βə̃h^{4}	'*dig*'	kə̃h^{4}	'*has dug*'
ββeh^{3}	'*jump*'	kʷeh^{4}	'*has jumped*'
βeh^{4}	'*beat (intr.)*'	kʷeh^{4}	'*has beat*'

There is one exception to the pattern above. The equative verb stem /βĩ^{3}/ '*be (+ N)*' does not undergo an onset mutation in the perfective or potential aspect. Instead, it takes the more regular /ka-/ prefix, e.g. /ka^{2}βĩ^{3}/ '*will be*', /ka^{3}βĩ^{3}/ '*was*'. The onset mutation rule is marginal in Itunyoso Trique, as there are relatively few /β/-initial verb roots in the language.

The labiality of vowels also conditions aspectual allomorphy. Most C-initial verb roots with a vowel /u/ in the initial syllable take the prefix /ku-/. However, this rule is less regular. A small number of /Cu/-initial verb roots take a /ka-/ or /ki-/ prefix instead. The verbs which take the /ku-/ prefix and their exceptions are shown in Table 17.

TABLE 17. C-initial verb roots with /ku-/ allomorph

Bare verb root	Gloss	Inflected verb stem	Gloss
tʃu^{3}ʔβiʔ^{3}	'*be afraid*'	ku^{3}-tʃu^{3}ʔβiʔ^{3}	'*was afraid*'
tʃu^{3}mə̃^{32}	'*believe*'	ku^{3}-tʃu^{3}mə̃^{32}	'*has believed*'
nu^{4}mih^{3}	'*tie (tr.)*'	ku^{2}-nu^{2}mih^{2}	'*will tie*'
nuh^{3}	'*be (loc.)*'	ku^{3}-nuh^{3}	'*was (loc.)*'
tu^{4}ʔβeh^{4}	'*sell*'	ku^{3}-tu^{4}ʔβeh^{4}	'*has sold*'
ʃũ^{43}	'*remove*'	ku^{2}-ʃũ^{2}	'*will remove*'
Exceptions			
tu^{3}nah^{4}	'*leave (tr.)*'	ki^{2}-tu^{3}nah^{4}	'*will leave*'
nu^{2}βih^{3}	'*be cold*'	ka^{3}-nu^{2}βih^{3}	'*was cold*'

The third aspectual allomorph is the most frequent and regular. Most C-initial verbs take a /ki-/ prefix to mark potential or perfective stems. This pattern applies to C-initial verb roots beginning with any non-labial onset consonant. Examples are given in Table 18.

A smaller class of C-initial verbs in Itunyoso Trique take an initial /ka-/ prefix allomorph. Almost all of the verbs which take this prefix allomorph are stative predicates. This pattern is not completely regular, as some verbs taking a /ki-/ prefix are stative predicates and some verbs taking a /ka-/ prefix are non-stative. Nevertheless, the allomorphy appears to be semantically-motivated. Some representative examples are given in Table 19.

While we have analyzed the /ka-/ prefix as an aspectual allomorph, another analysis is possible. There are two classes of stative predicates in Itunyoso Trique: those which require a '*be*' copula and those which do not. The copula used with the former class is /βa^{2}/. The

TABLE 18. C-initial verb roots with /ki-/ allomorph

Bare verb root	Gloss	Inflected verb stem	Gloss
tʃi^{4}ʔyə̃h^{4}	'*bark*'	ki^{2}-tʃi^{2}ʔyə̃h^{2}	'*will bark*'
ʔyah^{4}	'*do, make*'	ki^{3}-ʔyah^{4}	'*has done/made*'
na^{3}noʔ^{3}	'*look for*'	ki^{2}-na^{2}noʔ^{2}	'*will look for*'
ni^{3}ʔi^{3}	'*know*'	ki^{3}-ni^{3}ʔi^{3}	'*has known*'
ɾə̃^{4}ʔə̃h^{4}	'*dance*'	ki^{2}-ɾə̃^{2}ʔə̃h^{2}	'*will dance*'
sih^{4}	'*arrive*'	ki^{3}-sih^{4}	'*has arrived*'

TABLE 19. C-initial verb roots with /ka-/ allomorph

Bare verb root	Gloss	Inflected verb stem	Gloss
tʃa^{1}kə̃^{1}	'*be tall*'	ka^{3}-tʃa^{1}kə̃^{1}	'*was tall*'
tʃu^{2}nah^{2}	'*be spicy*'	ka^{3}-tʃu^{2}nah^{2}	'*was spicy*'
ʔniʔ^{1}	'*be salty*'	ka^{3}-ʔniʔ^{1}	'*was salty*'
nne^{3}	'*be sitting*'	ka^{3}-ne^{3}	'*was sitting*'
kĩʔ^{3}	'*stink*'	ka^{3}-kĩʔ^{3}	'*had stunk*'
ʔnih^{32}	'*support (obj.)*'	ka^{3}-ʔnih^{32}	'*was supporting*'
ʔnaʔ^{3}	'*come*'	ka^{3}-ʔnaʔ^{3}	'*had come*'

perfective stem form of this verb is /ka^{32}/ '*was*' and the potential form is /ka^{2}/ '*will be*.' Examples of each stative predicate class in the habitual and the perfective aspect are given in Table 20.

TABLE 20. Copula and Non-copula stative predicates

Bare verb	Gloss	Perfective	Gloss	Potential	Gloss
βa^{2} ʔβi^{1}	'*is raw*'	ka^{32} ʔβi^{1}	'*was raw*'	ka^{2} ʔβi^{1}	'*will be raw*'
βa^{2} lo^{2}ʔyo^{3}	'*is crooked*'	ka^{32} lo^{2}ʔyo^{3}	'*was crooked*'	ka^{2} lo^{2}ʔyo^{3}	'*will be crooked*'
nne^{3}	'*is sitting*'	ka^{3}-ne^{3}	'*was sitting*'	ka^{2}-ne^{3}	'*will be sitting*'
nu^{2}βih^{3}	'*is cold*'	ka^{3}-nu^{2}βih^{3}	'*was cold*'	ka^{2}-nu^{2}βih^{3}	'*will be cold*'

Non-copula stative predicates are verbs while copula stative predicates are syntactically adjectives. Yet, when both predicates are marked with perfective or potential aspect, they are phonologically similar. In the potential, the copula '*be*' is identical to the potential prefix /ka^{2}-/. In the perfective, the copula is similar to the perfective prefix /ka^{3}-/. It is possible that the prefix allmorph /ka-/ may actually be a fused form of the copula on stative predicates. Such an analysis would simplify the aspectual prefix allomorphy in Itunyoso Trique and explain why many /ka-/ prefixed verb roots are stative predicates. However, more data is necessary before such a hypothesis could be verified.

There are a few irregular verbs in Itunyoso Trique, but only one involves an irregular segmental change. The habitual, bare root form of the verb '*go*' is /βah^{3}/, while the perfective form is /kə̃^{3}ʔə̃h^{3}/ and the potential form is /kə̃^{2}ʔə̃h^{2}/. These stem allomorphs appear to have undergone an alternation similar to what we observed in Table 16, where /β/ > /k, k^{w}/. However, the presence of nasality and glottalization in the stem alternants makes it more likely that these stems are wholly suppletive. The other irregular verb roots do not take any of the previously mentioned aspectual allomorphs in the perfective or potential aspect. Instead, aspect is marked purely by tonal changes on the verb root. In order to explain these alternations, it is first necessary to delve into the morphologically-conditioned tone changes in the perfective and potential aspect.

3.1.2. *Aspect-conditioned tonal alternations.* V-initial and C-initial verb roots in Itunyoso Trique are tonally distinct. With few exceptions, V-initial roots do not undergo any tonal alternation. They all take a toneless, perfective /k-/ allomorph. C-initial verb roots in Itunyoso Trique each receive a perfective allomorph /kV^{3}-/. However, C-initial verb roots which undergo an onset mutation do not undergo any tonal change in the perfective. Examples of perfective forms of V-initial and C-initial verb roots are given in Table 21.

The absence of tonal changes for V-initial verb roots in the perfective is compelling evidence in favor of dividing Itunyoso Trique verbs into two phonological categories. Many Trique verbs are difficult to elicit in their habitual form. As a result, one observes many verbs with an initial /kV-/ syllable. On the surface, the class of such perfective or potential verbs is opaque. However, careful elicitation of verbs in a habitual context provides clues as to which phonological class the verb belongs. One can easily predict the tone of the initial syllable on perfective C-initial verbs, but it is unpredictable in V-initial verbs.

TABLE 21. Tonal Morphology of Perfective Verb Forms

Class	Bare verb root	Gloss	Perfective stem	Gloss
V-initial	a^{4}tah^{3}	'*say*'	ka^{4}tah^{3}	'*has said*'
V-initial	a^{4}tʃĩ^{43}	'*pass by*'	ka^{4}tʃĩ^{43}	'*has passed by*'
V-initial	a^{3}ka^{1}	'*drip*'	ka^{3}ka^{1}	'*has dripped*'
V-initial	u^{4}nə̃h^{3}	'*run*'	ku^{4}nə̃h^{3}	'*has run*'
V-initial	u^{3}taʔ^{3}	'*put on top of*'	ku^{3}taʔ^{3}	'*has put on top of*'
C-initial	tʃə̃^{3}	'*push*'	ki^{3}-tʃə̃^{3}	'*has pushed*'
C-initial	ni^{4}ka^{43}	'*carry*'	ki^{3}-ni^{4}ka^{43}	'*has carried*'
C-initial	sih^{4}	'*arrive*'	ki^{3}-sih^{4}	'*has arrived*'
C-initial	nu^{4}mih^{3}	'*tie (tr.)*'	ku^{3}-nu^{4}mih^{3}	'*has tied*'
C-initial	ka^{2}ɾaʔ^{2}	'*be wide*'	ka^{3}-ka^{2}ɾaʔ^{2}	'*was wide*'
C-initial	βah^{4}	'*grind (in metate)*'	kah^{4}	'*has ground (in metate)*'
C-initial	βeh^{4}	'*beat (intr.)*'	k^{w}eh^{4}	'*has beat (intr.)*'

Unlike the perfective aspect, potential stems in Itunyoso Trique always involve a tonal alternation. Two patterns are observed. In the first, the potential prefix carries tone /2/. All prefix allmorphs carry this tone and this rule applies equally to V-initial and C-initial verb roots. Some representative examples are shown in Table 22.

TABLE 22. Tonal Morphology of Potential Verb Forms

Class	Bare verb root	Gloss	Potential stem	Gloss
V-initial	a^{3}ni^{3}	'*squeeze*'	ka^{2}ni^{3}	'*will squeeze*'
V-initial	a^{3}tʃĩ^{3}	'*lack*'	ka^{2}tʃĩ^{3}	'*will lack*'
C-initial	tʃi^{4}	'*defecate*'	ka^{2}-tʃi^{4}	'*will defecate*'
C-initial	ni^{4}kah^{3}	'*carry*'	ki^{2}-ni^{4}kah^{3}	'*will carry*'
C-initial	nne^{3}	'*sit*'	ka^{2}-ne^{3}	'*will sit*'

The second potential tonal alternation involves a complete tonal replacement of the verb stem tone with tone /2/. This pattern is more common than the pattern in Table 22. Here, the tone of the potential prefix spreads rightward across the entire verb stem. This process occurs both with V-initial and C-initial verb roots. This potential tone spreading process applies to many verb roots in Trique. It is in insensitive to the number of syllables on the verb root. As the data in Table 23 show, monosyllabic, disyllabic, and trisyllabic verb roots are undergo exhaustive tone spreading. All syllables on the verb root receive tone /2/. This spreading also has an effect on the tonal morphophonology of enclitics. The aspectually-conditioned tonal changes affect the verb stem prior to any enclitic-conditioned tonal change.

TABLE 23. Tone Spreading on Potential Verb Forms

Bare verb root	Gloss	Potential stem	Gloss
a^{3}tʃĩh^{3}	'*grow (intr.)*'	ka^{2}tʃĩh^{2}	'*will grow*'
a^{3}tʃi^{1}ʔi^{1}	'*begin*'	ka^{2}tʃi^{2}ʔi^{2}	'*will begin*'
a^{4}tʃĩ^{43}	'*pass by*'	ka^{2}tʃĩ^{2}	'*will pass by*'
u^{4}tʃũh^{3}	'*smell (tr.)*'	ku^{2}tʃũh^{2}	'*will smell*'
tʃi^{3}ɾaʔ^{3}	'*burp*'	ki^{2}-tʃi^{2}ɾaʔ^{2}	'*will burp*'
na^{3}ɾi^{3}ũ^{3}	'*measure*'	ki^{2}-na^{2}ɾi^{2}ũ^{2}	'*will measure*'
ʔnaʔ^{3}	'*come*'	ka^{2}-ʔnaʔ^{2}	'*will come*'
tʃe^{4}	'*walk*'	ka^{2}-tʃe^{2}	'*will walk*'

In these cases, both tonal spreading and prefixation mark the potential aspect in Itunyoso Trique. Yet, which is the primary exponent of the potential? A comparison with other Trique verbs may shed light on this question. A small class of verbs in Itunyoso Trique do not take any prefixation in the perfective or potential aspect. Instead, aspect is marked solely by tonal changes on the verb root. In these cases, prefixation is unnecessary. Some examples are shown in Table 24.

The examples here are unique for another reason as well: there is no distinct habitual form of the verb root. In each of these cases, the potential stem is used in contexts with a habitual or progressive reading. The lack of a habitual verb form may not be entirely

TABLE 24. Unprefixed Verb Roots

Perfective stem	Gloss	Potential stem	Gloss
tʃa^{32}	'*has eaten*'	tʃa^{2}	'*will eat*'
tʃa^{4}kah^{3}	'*has married*'	tʃa^{2}kah^{2}	'*will marry*'
tʃi^{3}ɾaʔ^{3}	'*has broken (intr.)*'	tʃi^{2}ɾaʔ^{2}	'*will break*'
na^{4}kwi^{3}	'*has chosen*'	na^{2}kwi^{2}	'*will choose*'
na^{3}βĩ^{3}	'*has become*'	na^{2}βĩ^{2}	'*will become*'

surprising for these verbs, however. Four of them (all but '*eat*') are achievement predicates, which are semantically odd in the progressive aspect. Though there may be a semantic motivation for the absence of a habitual verb form here, these examples show that tone may be sufficient as a sole exponent of potential aspect. While we observe verb stems with potential aspect prefixation and tonal alternations, there are no verbs where prefixation is the sole exponent of potential aspect marking. Tonal alternations are obligatory. Tone is a more dominant morphological exponent for potential aspect than the process of prefixation.

4. Clitic Morphophonology

4.1. **The lexical stem.** Throughout this paper, we have been assuming the existence of a bare stem form for nouns and verbs in Itunyoso Trique. Insofar as we assume that such a form is isomorphic with words in isolation, the stem shape is obvious in the case of alienable nouns. The phonological shape of bare stems is less apparent when we consider certain verbs or inalienable nouns. Some inalienably-possessed nouns have an obligatory enclitic and certain verb roots are obligatorily marked for aspect.[4] Despite this difficulty, a common stem shape occurs for nearly all words. Most enclitics do not condition segmental or tonal changes on the word. Only the 1st person singular, the 2nd person singular, and the 1st person dual cause changes in stem phonology. It is therefore convenient to assume that the stem form of Trique words is the phonological shape used when other enclitics are applied to the word. For verbs, this stem also happens to be the form used with all full NP subjects.

Two general processes in Itunyoso Trique cause a tonal change on a stem regardless of the enclitic which is attached. Each of these processes targets a bare noun stem contour tone /32/ and /31/. Many bare noun stems with tone /32/ will have a possessed stem tone /2/. In a few cases, stems with tone /4/ also undergo this stem tone mutation rule. This process affects monosyllabic stems as equally as it affects polysyllabic stems. However, not all noun stems with tone /32/ are affected by this rule. Most polysyllabic words with tone /31/ show an alternation with tone /1/. This is the result of a regular process of leftward low tone spreading in Itunyoso Trique words (DiCanio, 2008). Tone /31/ surfaces as a contour tone on monosyllabic stems, but always disassociates on polysyllabic words, e.g. /3.1/, /3.1.1/. In these cases, the low /1/ tone target spreads across the entire morphological word, but will not delink the tone /3/ target at the left edge of the word. Some representative examples of these alternations are given in Table 25.

[4]There is no infinitive verb form. All verbs in an infinitival clause are marked for aspect.

TABLE 25. Stem-level tonal changes

Tone	Bare stem	Gloss	Inflected stem	Gloss
/32/	ku^{3}ɾu^{32}	'*granary*'	si^{3}-ku^{2}ɾuh^{2}-sih^{3}	'*his granary*'
			si^{3}-ku^{2}ɾuh^{2}	'*my granary*'
	ɾu^{3}ne^{32}	'*bean*'	si^{3}-ɾu^{2}ne^{2}-sih^{3}	'*his bean*'
			si^{3}-ɾu^{2}neh^{2}	'*my bean*'
	nnu^{32}	'*epazote*'	si^{3}-nu^{2}-sih^{3}	'*his epazote*'
			si^{3}-nuh^{2}	'*my epazote*'
	k^{w}a^{3}ʔah^{2}	'*steambath*'	si^{3}-k^{w}a^{2}ʔah^{2}-ũh^{3}	'*her steambath*'
			si^{3}-k^{w}a^{2}ʔa^{2}	'*my steambath*'
/4/	ko^{3}no^{4}ʔo^{4}	'*medicine*'	si^{3}-ko^{2}no^{2}ʔo^{2}-sih^{3}	'*his medicine*'
			si^{3}-ko^{2}no^{2}ʔo^{2}	'*my medicine*'
	snə̃^{4}ʔə̃h^{4}	'*language*'	si^{3}-snə̃^{2}ʔə̃h^{2}-sih^{3}	'*his language*'
			si^{3}-snə̃^{2}ʔə̃^{2}	'*my language*'
/31/	ɾu^{3}si^{1}	'*stick*'	si^{3}-ɾu^{1}si^{1}-sih^{3}	'*his stick*'
			si^{3}-ɾu^{1}sih^{1}	'*my stick*'
	nu^{3}ta^{1}	'*tamale*'	si^{3}-nu^{1}ta^{1}-sih^{3}	'*his tamale*'
			si^{3}-nu^{1}tah^{1}	'*my tamale*'
	ka^{3}tʃũʔ^{1}	'*shadow*'	si^{3}-ka^{1}ʃũʔ^{1}-sih^{3}	'*his shadow*'
			si^{3}-ka^{1}ʃũ^{1}ʔũh^{1}	'*my shadow*'

When a stem with tone /31/ receives a genitive prefix /si^{3}-/, low tone spreading is permitted to apply across an additional syllable. This process and the alternation affecting contour tone /32/ are general insofar as they cause a change to the basic stem tone of the lexical item. This stem form may then undergo further tonal alternations associated with personal enclitics. Such additional changes are discussed in §4.2.1.

In this section, I describe the complex tonal and segmental modifications that apply to noun and verb roots when the 1st person singular, the 2nd person singular, and the 1st person dual enclitics are applied. As a rule, I will discuss the more regular patterns for each enclitic first, before presenting the exceptions and quirky irregularities in the system. When the potential aspect changes the tonal pattern on the entire verb root, this causes changes to the tonal alternations associated with enclitics. The interaction between aspectually-conditioned tonal morphology and enclitic tonal morphophonology are discussed within each section here and summarized at the end.

4.2. **1st Person Singular Toggling.** Two phonological processes are used to mark the presence of a 1st person singular enclitic: /h/-toggling and tonal alternations. In order to explain these processes, it is necessary to remind the reader that Itunyoso Trique has three possible rime types which occur in final syllables: /Vː/, /Vh/, and /Vʔ/. Final syllables are either open with a long vowel or closed by a glottal consonant with a shorter vowel. Non-final syllables are all open with short vowels. For all Trique words, the 1.SG enclitic is marked by affixing a coda /h/ on a final syllable /Vː/ rime or by deleting a coda /h/ from a /Vh/ rime (and lengthening the vowel). This process is often accompanied by tonal changes on the final syllable of the stem. Examples of toggling are shown in Table 26.

TABLE 26. /h/-toggling of 1st person singular in Itunyoso Trique

Bare stem	Gloss	Inflected stem	Gloss
a^{3}tʃi^{3}	'*peel*'	a^{3}tʃih^{5}	'*I peel*'
so^{3}ʔo^{3}	'*be deaf*'	so^{3}ʔoh^{5}	'*I am deaf*'
nne^{3}	'*plough*'	si^{3}-neh^{5}	'*my plough*'
ku^{3}ɾu^{32}	'*granary*'	si^{3}-ku^{2}ɾuh^{2}	'*my granary*'
a^{4}tʃih^{3}	'*grow (intr.)*'	a^{4}tʃi^{43}	'*I grow*'
ŋgah^{3}	'*be lying*'	ŋga^{32}	'*I am lying*'
nneh^{3}	'*dream*'	si^{3}-ne^{32}	'*my dream*'
ka^{2}kih^{3}	'*nail*'	si^{3}-ka^{2}ki^{2}	'*my nail*'

In the toggling data, /h/ is deleted and added, depending on its presence or absence in the bare stem. Toggling occurs throughout the language and affects verbs as equally as nouns. With few lexical exceptions, all nouns undergo toggling, regardless of which class they belong or of which genitive allomorph they take. All verbs undergo toggling as well.

This particular type of pattern is also known as a morphological reversal (Baerman, 2007). Following Baerman's criteria, a morphological reversal occurs when an alternation exists between two morphological exponents such that the values are switched in two different contexts. The /h/ toggling pattern clearly fits this criterion. This pattern does not match Baerman's second criterion, however. The paradigms observed in each context are not mirror images of each other. Words with /Vʔ/ rimes undergo an alternation changing /Vʔ/ to /Vh/. There is no pattern where the opposite alternation occurs.[5]

There are two ways in which the 1.SG enclitic can affect words with a final /Vʔ/ rime. Usually, words undergo a replacement of the glottal coda, e.g. /Vʔ/ > /Vh/. Examples of the /Vʔ/ > /Vh/ stem alternation are shown in Table 27.

TABLE 27. 1st person singular marking on /Vʔ/ rime stems

Bare stem	Gloss	Inflected stem	Gloss
na^{3}tʃə̃ʔ^{3}	'*turn*'	na^{3}tʃə̃h^{5}	'*I turn*'
to^{3}koʔ^{1}	'*hang (tr.)*'	to^{3}koh^{3}	'*I hang*'
ʔnaʔ^{3}	'*come*'	ʔnah^{2}	'*I am coming*'
ka^{3}siʔ^{3}	'*honey*'	si^{3}-ka^{3}sih^{5}	'*my honey*'
sta^{3}ŋgaʔ^{3}	'*nape*'	sta^{3}ŋgah^{5}	'*my nape*'
kkə̃ʔ^{3}	'*corn dough*'	si^{3}-kə̃h^{3}	'*my corn dough*'

However, certain words with /Vʔ/ rimes do not undergo a replacement of the glottal coda. Instead, a /V+h/ sequence is appended to the stem. The vowel in this sequence is always

[5] Yet, certain tonal toggles, discussed in §4.2.1, may satisfy both criteria.

an exact copy of the final vowel in the stem. The words which undergo the pattern are lexically-specified and there is no phonological conditioning. Words of various sizes and with different final rime vowels may receive a reduplicated /Vʔ/ clitic allomorph. Examples of words illustrating this allomorph are given in Table 28.

TABLE 28. 1.SG enclitic allomorphy on /Vʔ/ rime stems

Bare stem	Gloss	Inflected stem	Gloss
kĩʔ^{3}	'*smell (intr.)*'	kĩ^{3}ʔĩh^{5}	'*I smell*'
na^{3}noʔ^{3}	'*look for*'	na^{3}no^{3}ʔoh^{5}	'*I look for*'
na^{2}ɾə̃ʔ^{3}	'*pick up (mass N.)*'	na^{2}ɾə̃^{3}ʔə̃h^{5}	'*I pick up*'
ka^{3}ɣaʔ^{3}	'*bottle, metal*'	si^{3}-ka^{3}ɣa^{3}ʔah^{5}	'*my bottle, metal*'
ka^{3}tʃũʔ^{1}	'*shadow*'	si^{3}-ka^{1}ʃũ^{1}ʔũh^{1}	'*my shadow*'
yə̃ʔ^{3}	'*tooth*'	yə̃^{3}ʔə̃h^{5}	'*my tooth*'

There are some substantial differences in clitic morphology between Trique variants. The general process of /h/-toggling does not occur in Copala Trique (Hollenbach, 1984:334). Instead, /-h/ is appended to all stems as one exponent of the 1.SG clitic (the other exponent being different tonal alternations). Like Itunyoso Trique, certain stems with final /Vʔ/ rimes receive a reduplicative /Vh/ allomorph. In Chicahuaxtla Trique, an /h/ toggling process similar to the one found in Itunyoso Trique occurs for the 1.SG and the 3.SGF clitics (Longacre, 1959; Good, 1979), but with a different set of tonal alternations.

4.2.1. *Tonal Alternations specific to the 1^{st} person singular enclitic.* The set of tonal alternations associated with the 1.SG enclitic are quite complex and many of the alternations have exceptions. I will present the most frequent patterns first and discuss the exceptions in §4.2.1.4. It is possible to identify four *types* of tonal processes: tonal alternations occurring with /h/ deletion, tonal alternations occurring with /h/ addition, tone /4/ stem allotony, and marginal tone changes. The type of tonal alternation that occurs on a stem is largely determined by the underlying tone and rime type of the final syllable. There are 17 possible tone-laryngeal rime combinations in Itunyoso Trique, shown in Table 29.

TABLE 29. Rime Tonal Patterns in Itunyoso Trique

Tone	/Vː/ rime	Gloss	/Vh/ rime	Gloss	/Vʔ/ rime	Gloss
/4/	ββe^{4}	'*hair*'	tʃeh^{4}	'*load*'	-	-
/3/	nne^{3}	'*plough*'	nneh^{3}	'*dream*'	nneʔ^{3}	'*straw rope*'
/2/	nne^{2}	'*lie (tr.)*'	ββeh^{2}	'*cave*'	ttʃeʔ^{2}	'*short*'
/1/	nne^{1}	'*naked*'	kə̃h^{1}	'*naked*'	tsiʔ^{1}	'*sweet*'
/43/	ru^{4}ne^{43}	'*avocado*'	-	-	-	-
/32/	ru^{3}ne^{32}	'*bean*'	kk^{w}eh^{32}	'*edible green*'	-	-
/31/	nne^{31}	'*meat*'	-	-	-	-
/45/	-	-	ββeh^{45}	'*straw mat*'	-	-
/13/	-	-	yoh^{13}	'*light*'	-	-

In DiCanio (2008), I argue that Itunyoso Trique has a register tone system (Yip, 1993, 2002). I repeat the proposed system below in Table 30. This division of tones into registers is useful for the discussion of tonal alternations in the clitic morphology. The tones in each register undergo a different type of alternation. Certain tonal alternations are parallel in each register.

TABLE 30. Tonal Register in Itunyoso Trique

Tone Feature		Level Tone	Falling Tone	Rising Tone
+Upper	+High	/4/	/43/	/45h/
	−High	/3/		
−Upper	+High	/2/	/32/	/13h/
	−High	/1/		

4.2.1.1. *Tonal Alternations associated with /h/ deletion.* Upper register stems with a final /Vh/ rime undergo and alternation to a falling /43/ tone when /h/ deletion occurs. This process affects words with tone /45/ and /4/. Tone /3/ undergoes an alternation to tone /32/. Monosyllabic stems are affected differently by this tonal alternation than polysyllabic stems. In the former case, tone /45/ will become /43/. In the latter case, a disyllabic stem with tone /3.5/ will become /3.43/. These tonal alternations only affect the final syllable of the stem. Examples of this process are given in Table 31.

TABLE 31. Upper register tonal lowering

Tone	Bare stem	Gloss	Inflected stem	Gloss
/45/	kuh^{45}	‘*bone*’	si^{3}-ku^{43}	‘*my bone*’
	nə̃h^{45}	‘*wash (clothing)*’	nə̃^{43}	‘*I wash*’
	ta^{3}koh^{5}	‘*foot*	ta^{3}ko^{43}	‘*my foot*’
	si^{3}nuh^{5}	‘*crazy*’	si^{3}nu^{43}	‘*I am crazy*’
/4/	βə̃h^{4}	‘*dig*’	βə̃^{43}	‘*I dig*’
	ʔyah^{4}	‘*do, make*’	ʔya^{43}	‘*I make*’
	yə̃^{4}ʔə̃h^{4}	‘*guitar*’	tə̃^{4}ʔə̃^{43}	‘*my guitar*’
	ska^{4}tah^{4}	‘*brother-in-law*’	ska^{4}ta^{43}	‘*my brother-in-law*’
/3/	kah^{3}	‘*beam, girder*’	si^{3}-ka^{32}	‘*my beam, girder*’
	nih^{3}	‘*fall off*’	ni^{32}	‘*I fall off*’
	ya^{3}ʔah^{3}	‘*chile pepper*’	ta^{3}ʔa^{32}	‘*my chile pepper*’
	ta^{3}tʃeh^{3}	‘*mix*’	ta^{3}tʃe^{32}	‘*I mix*’

The tonal alternations shown here illustrate a frequent pattern among upper register tones. This process is completely regular for tone /45/ with no exceptions, but does not apply to all stems with tone /4/ or /3/. By contrast, the patterns for lower register tones (/32/, /2/, /1/, /13/) are completely regular with no exceptions. Lower register tones do not undergo a process of lowering when /h/ deletion occurs. Instead, tone remains unaltered when /h/ deletion occurs. Some representative examples are shown in Table 32.[6]

TABLE 32. Absence of tonal alternation in lower register

Tone	Bare stem	Gloss	Inflected stem	Gloss
/32/	kkʷeh^{32}	'*edible green*'	si^{3}-kʷe^{32}	'*my edible green*'
	yyah^{32}	'*flower*'	tta^{32}	'*my flower*'
	kʷa^{3}ʔah^{2}	'*steambath*'	si^{3}-kʷa^{2}ʔa^{2}	'*my steambath*'
	sə̃^{3}ʔə̃h^{2}	'*money*'	si^{3}-sə̃^{2}ʔə̃^{2}	'*my money*'
/2/	koh^{2}	'*separate corn kernels*'	ko^{2}	'*I separate corn kernels*'
	ku^{2}kʷah^{2}	'*tepache jug*'	si^{3}-ku^{2}kʷa^{2}	'*my tepache jug*'
/1/	βa^{3} kə̃h^{1}	'*be naked*'	βa^{3} kə̃^{1}	'*I am naked*'
	na^{1}ʔah^{1}	'*shame*'	si^{3}-na^{1}ʔa^{1}	'*my shame*'
/13/	yah^{13}	'*powder*'	tah^{13}	'*my powder*'

In most of the examples above, there are no tonal changes on the stem. For disyllabic stems with tone pattern /3.2/, the stem tone changes to tone /2/. This process reflects a more general pattern where tone /32/ and /2/ alternate in 1.SG enclitic morphology when /h/ is added to the stem.

4.2.1.2. *Tonal Alternations associated with /h/ addition*. The tonal alternations associated with /h/ addition are more complex than those associated with /h/ deletion. Seven tonal patterns occur on final syllables with /Vː/ rimes and three tonal patterns occur on final syllables with /Vʔ/ rimes. The tonal alternations that occur when /h/ is added to a stem are identical for both rime types. Like the tonal alternations occurring with /h/ deletion, lower register tones /2/ and /1/ do not undergo tonal changes. Most of the tonal alternations are restricted to upper register tones.

Stems with tone /4/ and most stems with tone /3/ undergo an alternation to tone /45/ when /h/ is added to the stem. This process of tonal raising with /h/ addition mirrors the process of tonal lowering with /h/ deletion, discussed in §4.2.1.1. However, the morphotonal exponents for individual stem tones are not identical. When /h/ is deleted, tone /3/ > /32/ and tone /4/ > /43/. When /h/ is added, the stem tones neutralize to /45/. Examples of this process are shown in Table 33.

As a mirror image of the /4/ > /43/ tonal change with /h/ deletion, stems with tone /43/ undergo a change to tone /4/ when /h/ is added. Like /h/-toggling, the tonal patterns are a type of morphological reversal. This process is regular in Itunyoso Trique and it affects loanwords. All monosyllabic stems and most disyllabic stems with tone /43/ in a final syllable undergo this toggling. Examples of are shown in Table 34.

Level tones /2/ and /1/ do not undergo any tonal alternation when /h/ is added to the stem. This pattern is also found for certain lexical stems with tone /3/. This is more

[6]While tone /13/ surfaces on /Vh/ stems, the tone is quite rare (only 12 words attested). Stems with this tone are mostly adverbs and discourse particles, neither of which usually receive a personal enclitic. For this reason, only one example of this tone is given here.

TABLE 33. Tone raising with stem tones /3/ and /4/

Tone	Bare stem	Gloss	Inflected stem	Gloss
/4/	stĩ^{4}	‘*fingernail*’	stĩh^{45}	‘*my fingernail*’
	ʈʂi^{3}ʔi^{4}	‘*excrete*’	ʈʂi^{3}ʔih^{5}	‘*I excrete*’
/3/	yũ^{3}	‘*palm leaf*’	tũh^{45}	‘*my palm leaf*’
	ni^{3}ʔi^{3}	‘*know*’	ni^{3}ʔih^{5}	‘*I know*’
	yə̃ʔ^{3}	‘*tooth*’	yə̃^{3}ʔə̃h^{5}	‘*my tooth*’
	ni^{3}kĩʔ^{3}	‘*stand*’	ni^{3}kĩh^{5}	‘*I am standing*’

TABLE 34. Tone /43/ ⇌ /4h/ toggle

Bare stem	Gloss	Inflected stem	Gloss
/h/-addition			
ru^{4}ne^{43}	‘*avocado*’	si^{3}-ru^{4}neh^{4}	‘*my avocado*’
nu^{4}βi^{43}	‘*church*’	si^{3}-nu^{4}βih^{4}	‘*my church*’
me^{4}sa^{43}	‘*table*’	si^{3}-me^{4}sah^{4}	‘*my table*’
le^{4}tu^{43}	‘*bother*’	le^{4}tuh^{4}	‘*I bother*’
ʃũ^{43}	‘*take off*’	ʃũh^{4}	‘*I take off*’
/h/-deletion			
tʃi^{4}ɾoh^{4}	‘*pants*’	tʃi^{4}ɾo^{43}	‘*my pants*’
ku^{3}ɾuh^{4}	‘*casserole pot*’	si^{3}-ku^{3}ɾu^{43}	‘*my casserole pot*’
yə̃^{4}ʔə̃h^{4}	‘*guitar*’	tə̃^{4}ʔə̃^{43}	‘*my guitar*’
a^{4}ɾah^{4}	‘*construct*’	a^{4}ɾa^{43}	‘*I construct*’
sih^{4}	‘*arrive*’	si^{43}	‘*I arrive*’

common among tone /3/ stems with a /Vʔ/ rime than with stems with a /Vː/ rime. There is only one attested word of the latter type. Examples of these alternations are shown in Table 35. Lower register stems with a /Vʔ/ rime do not change tone when they receive the reduplicative allomorph, /Vh/, as illustrated by the word ‘*return (tr.)*’ in the data set.

Contour tones /32/ and /31/ which are not affected by stem alternations where the tones neutralize to tone /2/ (see §4.2) undergo a neutralization to tone level /3/ when /h/ is added to the stem. The alternation occurs in both monosyllabic and disyllabic stems with tone /32/, but only occurs on monosyllabic stems with tone /31/ (there is one exception, listed below). Examples of this process are given in Table 36.

4.2.1.3. *Tone /4/ Stem Allotony*. Certain nominal and verbal stems with tone /3/, /2/, and /32/ in Itunyoso Trique undergo a stem change to tone /4/ when /h/ is suffixed. Unlike the tonal alternations which affect tone /43/, in these cases the entire stem's tone is replaced with tone /4/. This includes any genitive prefix that applies to the root. Some examples of this process are given in Table 37.

TABLE 35. Absence of tonal changes with /h/ addition

Tone	Bare stem	Gloss	Inflected stem	Gloss
/3/	$\text{ka}^{2}\text{ɾĩ}^{3}$	'*wheel*'	$\text{si}^{3}\text{-ka}^{2}\text{ɾĩh}^{3}$	'*my wheel*'
	mmiʔ^{3}	'*soap*'	$\text{tu}^{3}\text{-mih}^{3}$	'*my soap*'
	$\text{si}^{3}\text{keʔ}^{3}$	'*mud*'	$\text{si}^{3}\text{-si}^{2}\text{keh}^{3}$	'*my mud*'
/2/	$\text{a}^{3}\text{ɾũ}^{2}$	'*smoke*'	$\text{a}^{3}\text{ɾũh}^{2}$	'*I smoke*'
	$\text{na}^{2}\text{ni}^{2}\text{yaʔ}^{2}$	'*wash (oneself)*'	$\text{na}^{2}\text{ni}^{2}\text{yah}^{2}$	'*I wash myself*'
	$\text{na}^{2}\text{ʔniʔ}^{2}$	'*wash (dishes)*'	$\text{na}^{2}\text{ʔnih}^{2}$	'*I wash (dishes)*'
/1/	$\text{tʃa}^{1}\text{kə̃}^{1}$	'*be tall*'	$\text{tʃa}^{1}\text{kə̃h}^{1}$	'*I am tall*'
	$\text{ka}^{1}\text{tĩ}^{1}$	'*be skinny*'	$\text{ka}^{1}\text{tĩh}^{1}$	'*I am skinny*'
	$\text{ni}^{1}\text{ʔnaʔ}^{1}$	'*be lively*'	$\text{ni}^{1}\text{ʔnah}^{1}$	'*I am lively*'
	$\text{na}^{1}\text{koʔ}^{1}$	'*return (tr.)*'	$\text{na}^{1}\text{ko}^{1}\text{ʔoh}^{1}$	'*I return*'

TABLE 36. Contour tone neutralization to tone /3/ in association with /h/ addition

Tone	Bare stem	Gloss	Inflected stem	Gloss
/32/	$\text{si}^{3}\text{ni}^{32}$	'*skirt*'	$\text{si}^{3}\text{-si}^{3}\text{nih}^{3}$	'*my skirt*'
	$\text{na}^{2}\text{nu}^{32}$	'*get dressed*'	$\text{na}^{2}\text{nuh}^{3}$	'*I get dressed*'
	ya^{32}	'*tongue*'	yah^{3}	'*my tongue*'
	$\text{yə̃}^{3}\text{ʔə̃}^{32}$	'*light*'	$\text{tə̃}^{3}\text{ʔə̃h}^{3}$	'*my light*'
/31/	nne^{31}	'*meat*'	$\text{si}^{3}\text{-neh}^{3}$	'*my meat*'
	$\text{to}^{3}\text{koʔ}^{1}$	'*hang (tr.)*'	$\text{to}^{3}\text{koh}^{3}$	'*I hang*'
	tʃa^{31}	'*head*'	tʃah^{3}	'*my head*'
	nna^{31}	'*farmland*'	$\text{tʃi}^{3}\text{nah}^{3}$	'*my farmland*'

TABLE 37. Tone /4/ stem allomorphy in association with /h/ addition

Tone	Bare stem	Gloss	Inflected stem	Gloss
/3/	$\text{tu}^{3}\text{ku}^{3}$	'*play*'	$\text{tu}^{4}\text{kuh}^{4}$	'*I play*'
			$\text{tu}^{3}\text{ku}^{3}\text{-sih}^{3}$	'*he plays*'
	nneʔ^{3}	'*straw rope*'	$\text{tu}^{4}\text{-neh}^{4}$	'*my straw rope*'
			$\text{tu}^{3}\text{-neʔ}^{3}\text{-sih}^{3}$	'*his straw rope*'
/2/	$\text{u}^{3}\text{tu}^{2}$	'*scratch*'	$\text{u}^{4}\text{tuh}^{4}$	'*I scratch*'
			$\text{u}^{3}\text{tu}^{2}\text{-sih}^{3}$	'*he scratches*'
	$\text{tʃu}^{3}\text{ʔnu}^{2}$	'*huipil*'	$\text{tʃu}^{4}\text{ʔnuh}^{4}$	'*my huipil*'
			$\text{tʃu}^{3}\text{ʔnu}^{2}\text{ũh}^{3}$	'*her huipil*'
/32/	kka^{32}	'*corn tassle*'	$\text{si}^{4}\text{-kah}^{4}$	'*my corn tassle*'
			$\text{si}^{3}\text{-ka}^{2}\text{-sih}^{3}$	'*his corn tassle*'
	ββe^{32}	'*maguey cactus*'	$\text{tu}^{4}\text{-βeh}^{4}$	'*my maguey cactus*'
			$\text{tu}^{3}\text{-βe}^{2}\text{-ũh}^{3}$	'*her maguey cactus*'

Unlike the stem tonal alternations where tones /32/ and /31/ neutralize to tone /2/, this stem tonal allomorphy occurs with the 1*st* person singular clitic and, with some roots, in the 2*nd* person singular clitic as well. When other clitics apply to lexical stems, the root tone remains unchanged. In the examples '*my straw rope*' and '*my corn tassle*', we observe a tonal change not only on the lexical root, but on the genitive prefix as well. This tonal change applies both the phonologically-conditioned genitive prefix allomorph /tu-/ and to the regular genitive prefix allomorph /si*3*-/. These stem tonal alternations involve a replacement of tone at the lexical level.

4.2.1.4. *Marginal Tonal Alternations*. Two additional tonal alternations occur as exponents of the 1*st* person singular enclitic. These alternations are rare or only occur in a small set of lexical roots. In the first pattern, kinship terms with tone /3/ alternate with tone /32/. Examples of this pattern are shown in Table 38. This pattern is distinct from the tonal alternation where tone /3/ > /32/ with /h/ deletion. There is no coda /h/ in the stem forms used with the 3*rd* person masculine singular enclitic. This tonal alternation occurs without /h/-toggling, but appears to be semantically restricted to kinship terms.

TABLE 38. Alternation between /3/ ~ /32/ in kinship terms

Bare stem	Gloss	Inflected stem	Gloss
tʃe*3*	'*father*	tʃe*32*	'*my father*'
		tʃe*3*-sih*3*	'*his father*'
nni*3*	'*mother*'	nni*32*	'*my mother*'
		nni*3*-sih*3*	'*his mother*'
ta*3*ʔni*3*	'*son*'	ta*3*ʔni*32*	'*my son*'
		ta*3*ʔni*3*-sih*3*	'*his son*'
cnə̃*3*	'*brother (of male)*'	cnə̃*32*	'*my brother*'
		cnə̃*3*-sih*3*	'*his brother*'

The remaining pattern involves an alternation between tone /4/ on a bare stem and tone /32/. There are only four examples of this particular pattern. This alternation resembles the patterns where tone /3/ > /32/ and the pattern where /4/ > /43/. Both patterns occur with /h/ deletion on the stem. In fact, the pattern here appears to be an odd fusion of each of these tone lowering patterns. Examples are shown in Table 39.

4.2.2. *Summary of Tonal Alternations.* The large set of tonal alternations affecting stems with the 1*st* person singular enclitic follows a two general principles. First, one observes no tonal alternations among lower register level tones. Bare stems with tone /1/ or /2/ do not undergo any tonal alternations with /h/ deletion or addition. Second, one observes a pattern of tone raising in the context of /h/ addition, but tone lowering in the context of /h/ deletion. There are also two tonal alternations which accompany the morphological toggle with /h/. Tonal pairs /43/ & /4h/ and /32/ & /3h/ alternate with the process of /h/ reversal. All tonal alternations are summarized in Table 40 below.

TABLE 39. Irregular Tone Changes with tone /4/

Bare stem	Gloss	Inflected stem	Gloss
βah^{4}	'*grind (on metate)*'	βa^{32}	'*I grind*'
		βah^{4}-ũh^{3}	'*she grinds*'
tʃə̃h^{4}	'*push*'	tʃə̃^{32}	'*I push*'
		tʃə̃h^{4}-sih^{3}	'*he pushes*'
tʃe^{4}	'*walk*'	tʃe^{32}	'*I walk*'
		tʃe^{4}-sih^{3}	'*he walks*'
tʃi^{3}ʔnih^{4}	'*side*'	tʃi^{3}ʔni^{32}	'*my side*'
		tʃi^{3}ʔnih^{4}-sih^{3}	'*his side*'

TABLE 40. Tonal Alternations with 1st person singular enclitic

Bare stem tone	Bare stem rime	Inflected stem tone	Inflected stem rime
/45/, /4/	Vh	/43/	Vː
/3/	Vh	/32/	Vː
/32/, /2/, /1/	Vh	/32/, /2/, /1/	Vː
/43/	Vː	/4/	Vh
/4/, /3/	Vː	/45/	Vh
/3/	Vʔ	/3/	Vh
/32/, /31/	Vː	/3/	Vh
/2/, /1/	Vː/Vʔ	/2/, /1/	Vh

4.3. 2nd Person Singular Tonal Processes.

The 2nd person singular enclitic morpheme in Itunyoso Trique is /-ɾeʔ^{1}/. The enclitic may condition low tone spreading on the lexical root on which it attaches, tone raising on the preceding syllable (to tone /4/), or no tonal changes at all on the stem. The process of low-tone spreading is unique to Itunyoso Trique. Chicahuaxtla Trique has a similar process of tone-raising conditioned by the 2nd person enclitic, but no process of low-tone spreading (Longacre, 1959). Unlike the tonal processes triggered by the 1st person singular enclitic, words which undergo tone raising or lowering are more predictable. Words which undergo tone raising with /h/ addition with the 1st person singular enclitic also undergo tone raising withe the 2nd person singular enclitic. Words which do not undergo tone raising with the 1st person singular enclitic either undergo no tonal changes or low tone spreading with the 2nd person singular enclitic.

In the first pattern, the 2nd person clitic conditions low tone spreading. The low tone /1/ on the enclitic spreads one syllable to the left, changing the final stem syllable tone to /1/. In general, this process occurs for all lexical stems where tone is falling across the root. In other words, all stems with a falling tone (/43/, /32/) and all stems with falling tone patterns across syllables, e.g. 4.3, 3.2, will undergo the low tone spreading rule with the 2nd person clitic.[7] As most Spanish loanwords take tone pattern /4.43/[8], this rule applies to loanwords as well. Examples of the low tone spreading process are given in Table 41.

TABLE 41. Low Tone Spreading with 2nd person singular clitic

Tone	Bare stem	Gloss	Inflected stem	Gloss
/43/	a^{4}ya^{43}	‘*read*’	a^{4}ya^{1}-ɾeʔ^{1}	‘*you read*’
	tʃa^{4}βi^{43}	‘*key*’	si^{3}-tʃa^{4}βi^{1}-ɾeʔ^{1}	‘*your key*’
/32/	ya^{3}ʔa^{32}	‘*cord*’	ta^{3}ʔa^{1}-ɾeʔ^{1}	‘*your cord*’
	kka^{32}	‘*corn tassle*’	si^{3}-ka^{1}-ɾeʔ^{1}	‘*your corn tassle*’
/4.3/	si^{4}tuh^{3}	‘*navel*’	si^{4}tuh^{1}-ɾeʔ^{1}	‘*your navel*’
	a^{4}tʃih^{3}	‘*believe*’	a^{4}tʃih^{1}-ɾeʔ^{1}	‘*you believe*’
/3.2/	a^{3}ɾũ^{2}	‘*scratch*	a^{3}ɾũ^{1}-ɾeʔ^{1}	‘*you scratch*’
	a^{3}ʔβi^{2}	‘*grind (in mortar)*’	a^{3}ʔβi^{1}-ɾeʔ^{1}	‘*you grind*’
/4/	ɾa^{4}ʔyə̃h^{4}	‘*be in a hurry*’	ɾa^{4}ʔyə̃h^{1}-ɾeʔ^{1}	‘*you are in a hurry*’
	yə̃^{4}ʔə̃h^{4}	‘*guitar*’	tə̃^{4}ʔə̃h^{1}-ɾeʔ^{1}	‘*your guitar*’
/3/	ni^{3}ʔyah^{3}	‘*see*’	ni^{3}ʔyah^{1}-ɾeʔ^{1}	‘*you see*’
	nneh^{3}	‘*dream*’	si^{3}-neh^{1}-ɾeʔ^{1}	‘*your dream*’
/2/	tʃa^{2}kah^{2}	‘*get married*’	tʃa^{2}kah^{1}-ɾeʔ^{1}	‘*you got married*’
	ttʃeʔ^{2}	‘*be short*’	ttʃeʔ^{1}-ɾeʔ^{1}	‘*you are short*’

In §4.2.1.3, I described a pattern where certain lexical roots have tone /4/ stem allomorphs with the 1st and 2nd person singular enclitics. Many lexical roots with this stem tonal allomorphy undergo low tone spreading with the 2nd person enclitic. Similar to the data in the Table above, there is a falling tone pattern across syllables in the bare stem form of these words. A few examples of this alternation are given in Table 42.

TABLE 42. Low Tone Spreading with Tone /4/ Stem Allomorphs

Bare stem	Gloss	1st person	Gloss	2nd person	Gloss
tʃe^{3}ke^{2}	‘*demand*’	tʃe^{4}keh^{4}	‘*I demand*’	tʃe^{4}ke^{1}-ɾeʔ^{1}	‘*you demand*’
u^{3}tu^{2}	‘*scratch*’	u^{4}tuh^{4}	‘*I scratch*’	u^{4}tu^{1}-ɾeʔ^{1}	‘*you scratch*’
ni^{3}koʔ^{2}	‘*follow*’	ni^{3}koh^{4}	‘*I follow*’	ni^{4}koʔ^{1}-ɾeʔ^{1}	‘*you follow*’

A smaller set of words in Itunyoso Trique undergo a process of tone raising with the 2nd person singular enclitic. The final syllable of the stem raises to tone /4/. While the process of low tone spreading applies to stems with varying underlying tonal patterns, tonal raising only applies to lexical stems with an underlying level tone /3/. Furthermore, nearly all lexical stems which undergo tone raising with the 2*nd* person enclitic, also undergo tone raising to tone /45/ with the 1st person singular enclitic (see Table 33). The words that undergo tone raising with the 2nd person enclitic but do not undergo tone raising with the

[7] Words with tone /31/ obligatorily undergo low tone spreading when prefixation applies, so they are excluded here. For a general treatment of this, see DiCanio (2008).

[8] Most Spanish loanwords are disyllabic.

1^{st} person singular enclitic are a principled exception. They each contain a coda /h/ in the bare stem and undergo a process of /h/ deletion and tone lowering. Given this, it is possible to make a general claim that certain lexical stems in Trique are *tone raising* with respect to enclitic tonal morphophonology. Examples of tone raising stems with the 2^{nd} person enclitic are given in Table 43.

TABLE 43. Tone Raising Stems with 2^{nd} person singular enclitic

Bare stem	Gloss	Inflected stem	Gloss
ɾa^{3}ʔa^{3}	'*hand*'	ɾa^{3}ʔa^{4}-ɾeʔ^{1}	'*your hand*'
ɾi^{3}ki^{3}	'*stomach*'	ɾi^{3}ki^{4}-ɾeʔ^{1}	'*your stomach*'
u^{3}nu^{3}	'*hear, understand*'	u^{3}nu^{4}-ɾeʔ^{1}	'*you hear*'
si^{3}kiʔ^{3}	'*chewing gum*'	si^{3}-si^{3}kiʔ^{4}-ɾeʔ^{1}	'*your chewing gum*'
ni^{3}kĩʔ^{3}	'*be standing*'	ni^{3}kĩʔ^{4}-ɾeʔ^{1}	'*you are standing*'
ya^{3}ʔah^{3}	'*chile pepper*'	ta^{3}ʔah^{4}-ɾeʔ^{1}	'*your chile pepper*'

Many Itunyoso Trique roots do not undergo tonal alternations with the 2^{nd} person singular enclitic. Non-alternating stems vary in their underlying tonal patterns between tone /2/, /3/, and /32/. There is a surface tonal neutralization between stems which undergo tone raising and stems with an underlying tone /4/, as well as a neutralization between stems which undergo low tone spreading and stems with an underlying tone /1/. For the purposes of classification, I will leave aside these words. Examples of non-alternating stems with the 2^{nd} person singular enclitic are shown in Table 44.

TABLE 44. Non-alternating stems with 2^{nd} person singular enclitic

Tone	Bare stem	Gloss	Inflected stem	Gloss
/32/	na^{2}nu^{32}	'*get dressed*'	na^{2}nu^{32}-ɾeʔ^{1}	'*you get dressed*'
	tʃa^{32}	'*eat*'	tʃa^{32}-ɾeʔ^{1}	'*you eat*'
/3/	kkə̃^{3}	'*squash*'	si^{3}-kə̃^{3}-ɾeʔ^{1}	'*your squash*'
	ya^{2}ʔnə̃^{3}	'*mask*'	ta^{2}ʔnə̃^{3}-ɾeʔ^{1}	'*your mask*'
/2/	ku^{2}kʷah^{2}	'*tepache jug*'	si^{3}-ku^{2}kʷah^{2}-ɾeʔ^{1}	'*your tepache jug*'
	na^{2}ʔniʔ^{2}	'*wash (tr.)*'	na^{2}ʔniʔ^{2}-ɾeʔ^{1}	'*you wash*'

4.4. **1^{st} Person Dual Tonal and Segmental Phonology.** The 1^{st} person dual enclitic, −/ʔ/, conditions two phonological processes on Itunyoso Trique words. There is a segmental alternation, which is completely regular, and a tonal alternation which affects only certain words. The segmental alternation affects words where the final syllable of the stem has a central vowel: /a/ or /ə̃/. These vowels are labialized before the 1^{st} person dual enclitic to /o/ and /ũ/, respectively. Both vowels in stems containing a /VʔV/ sequence undergo this alternation. Stems ending in a non-central vowel do not undergo any alternation. The labialization process is completely regular and affects loanwords as well. Examples are shown in Table 45.

TABLE 45. Vowel alternations with 1st person dual enclitic

Bare stem	Gloss	Inflected stem	Gloss
sə̃^{3}ʔə̃h^{2}	‘*money*’	si^{3}-sũ^{2}ʔũʔ^{2}	‘*our money*’
na^{2}ɾə̃h^{3}	‘*close (tr.)*’	na^{2}ɾũʔ^{3}	‘*we close*’
a^{3}ʔŋgaʔ^{3}	‘*laugh, smile*’	a^{3}ʔŋgoʔ^{4}	‘*we laugh, smile*’
a^{4}ya^{43}	‘*read*’	a^{3}yoʔ^{4}	‘*we read*’
ɾa^{3}ʔa^{3}	‘*hand*’	ɾo^{3}ʔoʔ^{4}	‘*our hand*’

Certain lexical stems undergo a process of tone raising to tone /4/ before the 1st person dual enclitic. Yet, in uninflected lexical stems, tone /4/ never surfaces on a /Vʔ/ rime. Tone /4/ is purely a grammatical tone on /Vʔ/ rimes, conditioned by enclitic morphology. Tone raising is mostly unpredictable and lexically-specified. However, like the tonal morphophonology associated with the 1st person singular enclitic, lexical stems with a lower register tone never undergo tone raising. In a few cases, lower register tones lower to tone /1/. Examples of tone raising are given in Table 46. Examples with lower register tone and no tonal raising are given in Table 47.

TABLE 46. Tone raising with the 1st person dual enclitic

Tone	Bare stem	Gloss	Inflected stem	Gloss
/3/	a^{3}ʔnə̃ʔ^{3}	‘*be sick*’	a^{3}ʔnuʔ^{4}	‘*we are sick*’
	ta^{3}ki^{3} ta^{3}ne^{3}	‘*elbow*’	ta^{3}ki^{3} ta^{3}neʔ^{4}	‘*our elbow*’
	nni^{3}	‘*mother*’	nniʔ^{4}	‘*our mother*’

TABLE 47. Absence of tone raising with the 1st person dual enclitic

Tone	Bare stem	Gloss	Inflected stem	Gloss
/3/	ya^{3}ʔah^{3}	‘*chile pepper*’	to^{3}ʔoʔ^{3}	‘*our chile pepper*’
	kĩʔ^{3}	‘*smell (intr.)*’	kĩʔ^{3}	‘*we smell*’
/32/	ko^{3}ʔo^{32}	‘*drink*’	ko^{3}ʔoʔ^{3}	‘*we drink*’
	na^{2}ʔneh^{3} ɾi^{3}ə̃^{32}	‘*dream (V.)*’	na^{2}ʔneh^{3} ɾi^{3}ũʔ^{3}	‘*we dream*’
/2/	sə̃^{3}ʔə̃h^{2}	‘*money*’	si^{3}-sũ^{2}ʔũʔ^{2}	‘*our money*’
	ttʃeʔ^{2}	‘*be short*’	ttʃeʔ^{1}	‘*we are short*’
/1/	tʃi^{3}ʔi^{1}	‘*illness*’	si^{3}-tʃi^{1}ʔiʔ^{1}	‘*our illness*’
	ka^{1}tĩ^{1}	‘*be skinny*’	ka^{1}tĩʔ^{1}	‘*we are skinny*’

4.5. **Summary of Enclitic Morphophonology.** The set of tonal and segmental alternations which occur with different personal enclitics in Itunyoso Trique are quite complex. Yet, despite this apparent complexity, a few general patterns emerge. First, certain lexical stems have wholly different forms when they occur with an enclitic. As I described in §4.1 and §4.2.1.3, the tone across a lexical stem may be replaced with either tone /2/ or tone

/4/, respectively. This pattern is lexically specific. Second, lexical stems which undergo tonal raising with the 1st person singular enclitic also undergo raising before the 2nd person singular enclitic. From this observation, I argue that lexical stems are divided into ‘*raising*’ and ‘*non-raising*’ classes. Third, the tonal morphophonology of Trique is sensitive to the division of stems into underlying tonal registers. All raising stems have an underlying upper register tone. Lexical stems with an underlying lower register tone do not undergo tonal alternations with any of the enclitics which attach to them.

Many of the morphophonological processes associated to particular clitics also occur in other parts of Trique grammar. While low tone spreading is conditioned by the 2nd person singular enclitic, it also occurs with uninflected stems carrying tone /31/ (DiCanio, 2008). The morphological reversal, /h/ $\rightleftharpoons$ Ø, is conditioned by the 1st person singular enclitic, but also occurs as a marker of nominal derivation with certain quantifiers. For instance, observe the data in Table 48.

TABLE 48. Morphological Reversal in Derivational Morphology

Quantifier	Gloss	Nominalized form	Gloss
ŋgo^{2}	‘*one*	ŋgoh^{13}	‘*one (pron.)*’
ββih^{2}	‘*two*’	ββi^{13}	‘*two (pron.)*’
βa^{2}ʔnih^{2}	‘*three*’	βa^{1}ʔni^{3}	‘*three (pron.)*’
kə̃^{2}ʔə̃h^{2}	‘*four*’	kə̃^{1}ʔə̃^{3}	‘*four (pron.)*’
ũʔ^{2}	‘*five*’	ũ^{1}ʔũh^{3}	‘*five (pron.)*’
βa^{2}tə̃^{2}	‘*six*’	βa^{1}tə̃h^{3}	‘*six (pron.)*’

Numerals with a coda /h/ undergo /h/ deletion when they are nominalized. If a numeral does not have a coda /h/, it undergoes /h/ addition when it is nominalized. While this morphological reversal is similar to the process which occurs with the 1st person singular, the reversal here is independent from tonal patterns in derivation. All underived quantifiers carry tone /13/, while all derived forms carry tone /2/. With the exception of /tʃə̃^{1}/ ‘*eleven*’, which undergoes a nominal tonal derivation /1/ > /2/, no numeral above six undergoes any explicit morphophonological change when nominalized.

5. Cross-Linguistic Differences in Clitic Morphophonology

5.1. **1st person singular toggle and tonal phonology.** Both Chicahuaxtla and Copala Trique have processes similar to the morphological reversal observed in Itunyoso Trique which occur with the 1st person singular enclitic. In Copala Trique, for instance, this clitic is simply marked with a coda /h/. Where the underlying representation of a stem contains a coda /h/, there is a surface-level neutralization between the uninflected stem form and the cliticized variant (Hollenbach, 1992:350). Bare stems with a coda /ʔ/ undergo a replacement of the coda with /h/, like in Itunyoso Trique (see Table 27). Examples of this process, taken from Hollenbach (1992), appear in Table 49.[9]

[9]I have replaced some of Hollenbach’s Trique orthographic variants with IPA variants. As per Hollenbach, tone is transcribed only on the final syllable of the word when non-final syllables have a predictable tone

TABLE 49. Copala Trique 1st person singular enclitic morphophonology

Bare Stem	Gloss	Inflected Stem	Gloss
araa^{3}	'*fills*'	arah^{3}	'*I fill*'
aʈʂaa^{5}	'*sings*'	aʈʂah^{5}	'*I sing*'
narii^{32}	'*drew*'	narih^{32}	'*I drew*'
unãh^{5}	'*runs*'	unãh^{5}	'*I run*'
nah^{3}	'*lies*'	nah^{5}	'*I lie*'
ʂaʔ^{2}	'*lover*'	ʂah^{2}	'*my lover*'

Like Itunyoso Trique, certain words with a coda /ʔ/ take a reduplicative /Vh/ clitic allomorph, e.g. /ki-riʔ^{3}-ih^{3}/ '*I got*', but Hollenbach states that this particular allomorph only occurs in the speech of older speakers. However, like Itunyoso Trique, certain words in Chicahuaxtla Trique with a coda /ʔ/ receive a reduplicative /V(h)/ allomorph when cliticized. Longacre (1959) provides three examples of this process, shown in Table 50. In Itunyoso and Chicahuaxtla Trique, these alternations are not restricted to older speakers.

TABLE 50. Chicahuaxtla Trique 1sg enclitic reduplicative allomorphy

Bare Stem	Gloss	Inflected Stem	Gloss
gɨ̃ʔ^{3}	'*stink*'	gɨ̃^{3}ʔɨ̃^{45}	'*I stink*'
na^{3}riʔ^{32}	'*will find*'	na^{1}ri^{1}ʔih^{1}	'*I will find it*'
zaʔ^{1}	'*good*'	za^{1}ʔah^{1}	'*I am good*'

The 1st person singular enclitic morphology of Chicahuaxtla Trique is more similar to the Itunyoso Trique pattern than Copala Trique is. Underlying stem forms with a final syllable coda /h/ always undergo /h/ deletion when the stem is marked with the personal enclitic. However, stem forms with a final syllable coda also /ʔ/ undergo /ʔ/ deletion. With the exception of words with the lowest tone, no replacement of /ʔ/ with /h/ occurs.[10] Certain stem forms without a final syllable coda /h/ undergo /h/ insertion. Stem forms without /h/ insertion are a principled exception (see below). Thus, the normal pattern in Chicahuaxtla Trique is for any laryngeal coda to be deleted as a marker of the 1st person clitic, but for /h/ to often be inserted where no laryngeal coda is present. Examples of the Chicahuaxtla Trique laryngeal alternations are given in Table 51 (data from Longacre (1959)).[11]

This pattern occurs throughout the Chicahuaxtla Trique data in Longacre (1959), even though Longacre did not make this particular generalization. Longacre's analysis considers tonal changes and laryngeal alternations together to be combined components of a single allomorph of the 1st person singular enclitic morpheme. He argues that such allomorphs affect an arbitrary set of lexical roots in the language. However, comparing the Itunyoso

equivalent to the first tone affiliated with the final syllable, e.g. /araa^{32}/ = /a^{3}raa^{32}/. Otherwise, tone is marked on all syllables.

[10]This exception is noted in Longacre (1959:31) and repeated in Good (1979:106).

[11]I have replaced some of Longacre's Trique orthographic variants with IPA variants. I have altered the tonal transcription to match that of Hollenbach (1984; 1992; 2004) and DiCanio (2008; 2010).

TABLE 51. Chicahuaxtla Trique 1st person singular enclitic morphophonology

Final Rime	Bare Stem	Gloss	Inflected Stem	Gloss
/Vː/	nne^{312}	'*meat*'	zi^{3}-neh^{4}	'*my meat*'
	yã^{323}	'*salt*'	dãh^{4}	'*my salt*'
	ri^{2}ki^{2}	'*will give it*'	ri^{2}kih^{2}	'*I will give it*'
/Vh/	yãh^{3}	'*paper*'	dã^{43}	'*my paper*'
	ruh^{3}	'*pot*'	zi^{3}-ru^{43}	'*my pot*'
	gu^{3}nãh^{4}	'*ran*'	gu^{3}nã^{43}	'*I ran*'
/Vʔ/	ga^{3}tsiʔ^{2}	'*honey*'	zi^{3}-ga^{2}tsi^{45}	'*my honey*'
	da^{3}ʔnɨʔ^{21}	'*uncle*'	da^{3}ʔnɨ^{45}	'*my uncle*'
	a^{3}gãʔ^{32}	'*beat*'	a^{3}gã^{45}	'*I'm beating it*'

Trique morphophonological data to the Chicahuaxtla pattern, we observe obvious similarities that appear regular between the two language variants. This comparison also provides some insight into the exceptions to the /Vː/ > /Vh/ rule in Chicahuaxtla Trique. Certain /Vː/ stems in Chicahuaxtla Trique do not undergo /h/ insertion. In many cases, either the cliticized stem or the bare stem carries tone /45/. Data showing these exceptional cases is provided in Table 52 (from Longacre (1959)).

TABLE 52. Chicahuaxtla Trique 1st person singular enclitic morphophonology without /h/ insertion

Bare Stem	Gloss	Inflected Stem	Gloss
ri^{3}ki^{3}	'*stomach*'	ri^{3}ki^{45}	'*my stomach*'
du^{3}kʷa^{4}	'*house*'	du^{3}kʷa^{45}	'*my house*'
a^{3}ta^{3}	'*carry*'	ga^{3}ta^{45}	'*I carried*'
a^{3}tʃĩ^{45}	'*ask*'	a^{3}tʃĩ^{43}	'*I am asking*'
ga^{3}tʃa^{45}	'*sang*'	ga^{3}tʃa^{43}	'*I sang*'

This observation is relevant if we consider that tone /45/ in Itunyoso Trique always co-occurs with coda /h/. With a coda /h/ co-occurring with tone /45/, the alternations in Table 52 would be identical to the patterns discussed for Itunyoso Trique in Tables 31 and 33. In Itunyoso Trique, tonal raising and /h/ insertion occurs for upper register tones without a coda /h/ while tonal lowering and /h/ deletion occurs for upper register tones with a coda /h/. Coda /h/ does not occur in the context of tone /45/ in Chicahuaxtla Trique (Hollenbach, 1977). The regularity of the Itunyoso Trique laryngeal alternation and this particular morphophonological gap in the Chicahuaxtla data suggest that, at a historical stage, the Chicahuaxtla Trique variant lost an /h/ coda with tone /45/.

If this hypothesis is correct, then it also explains why most /Vʔ/ stems in Chicahuaxtla Trique do not undergo a replacement of the coda /ʔ/ with /h/. All the uncliticized stems in Chicahuaxtla Trique with a coda /ʔ/ take tone /45/ in their 1st person cliticized form. A general rule where a coda laryngeal /ʔ/ was replaced with a coda /h/, like in Itunyoso

Trique, would have existed historically. The differences in the laryngeal alternations between Itunyoso and Chicahuaxtla Trique can be accounted for if we consider this particular sound change.

5.1.1. *Tonal Alternations.* Chicahuaxtla Trique and Copala Trique share certain enclitic-specific tonal alternations with Itunyoso Trique. In Chicahuaxtla Trique, tones /4/ and /3/ raise to tone /(4)5/ when marked with the 1^{st} person singular enclitic. This raising does not occur for certain cases with tone /4/ nor for any of the four falling tones. Bare stems with tones /2/ and /1/ are realized with tone /1/ when inflected. This particular split in a pattern of tone-raising and non tone-raising is similar to the tonal register split discussed in the Itunyoso Trique data. Table 53 provides a comparison of the tonal alternations between these Trique variants. The Chicahuaxtla Trique data comes from Good (1979:106).

TABLE 53. Tonal Alternations with 1^{st} person singular enclitic

Variant	Bare stem tone	Stem rime	Inflected stem tone	Stem rime
Itunyoso	/45/, /4/	Vh	/43/	Vː
Chicahuaxtla	/4/, /3/, /32/, /23/, /1/	Vh	/43/	Vː
Chicahuaxtla	/5/	Vː	/43/	Vː
Itunyoso	/4/, /3/	Vh	/32/	Vː
Itunyoso	/32/, /2/, /1/	Vh	/32/, /2/, /1/	Vː
Chicahuaxtla	/2/, /1/	Vh	/1/	Vː
Itunyoso	/43/	Vː	/4/	Vh
Chicahuaxtla	/43/	Vː	/4/	Vh
Itunyoso	/4/, /3/	Vː	/45/	Vh
Chicahuaxtla	/4/, /3/	Vː	/5/	Vː
Chicahuaxtla	/4/, /32/, /31/, /21/	Vː	/4/	Vh
Itunyoso	/32/, /31/	Vː	/3/	Vh
Chicahuaxtla	/32/	Vː	/43/	Vː
Chicahuaxtla	/32/	Vː	/1/	Vh
Itunyoso	/2/, /1/	Vː	/2/, /1/	Vh
Chicahuaxtla	/2/, /1/	Vː	/1/	Vh
Chicahuaxtla	/2/	Vː	/1/	Vː
Itunyoso	/3/	Vʔ	/45/	Vh
Itunyoso	/3/, /2/, /1/	Vʔ	/3/, /2/, /1/	Vh
Chicahuaxtla	/32/, /31/, /2/, /21/	Vʔ	/5/	Vː
Chicahuaxtla	/1/	Vʔ	/1/	Vh

The set of tonal alternations in Chicahuaxtla Trique appear more irregular than in Itunyoso Trique. Many bare stem tones undergo an alternation with tone /43/ when a coda /h/ is deleted. Furthermore, most of the stem tones which co-occur with a coda /ʔ/ raise to tone /5/ when cliticized. In Itunyoso Trique, only stems with tone /3/ may raise to /45/

when cliticized. Despite these dialectal differences in the tonal morphophonology of the 1^{st} person singular enclitic, Good states that a set of different tones (/32/, /31/, /21/) undergo a change to tone /4/ when /h/ insertion occurs. This pattern resembles the Itunyoso Trique pattern where certain stems with tone /3/, /2/, and /32/ have tone /4/ stem allomorphs when cliticized (see §4.2.1.3).

While this stem allomorphy is restricted in Itunyoso and Chicahuaxtla Trique to certain stems, it is regular in Copala Trique. Tone /4/ tone sandhi variants occur for bare stem tones /3/, /31/, and /13/[12] (Hollenbach, 1992). Examples of the Copala Trique pattern, taken from Hollenbach (1992), are given in Table 54. These sandhi variants are restricted to the 1^{st} or 2^{nd} person singular, as they are in Itunyoso Trique.

TABLE 54. Copala Trique tone /4/ sandhi variants

Tone	Bare Stem	Sandhi Stem	Gloss
/3/	tiriʔ^{3}	tiriʔ^{4}	'*spoiled*'
	kuno^{3}	kuno^{4}	'*heard*'
/31/	kanã^{31}	kanã^{4}	'*washed face*'
/13/	gũ^{13}	gũ^{4}	'*will become*'
	kuno^{13}	ku^{2}no^{4}	'*will hear*'

In Itunyoso Trique, I observed that certain bare stems with tones /4/, /32/, and /31/ take a tone /2/ stem allomorph when marked with any enclitic (see Table 25). Copala Trique also retains a similar pattern of stem allomorphy. Bare stems with tone /31/ and /32/ undergo an alternation to /1/ or /2/, respectively, when any enclitic attaches. Examples of this pattern are given in Table 55, taken from (Hollenbach, 2004).

TABLE 55. Copala Trique low tone stem allomorphy

Tone	Bare Stem	Gloss	Inflected Stem	Gloss
/31/	rta^{31}	'*tamale*'	se^{32}-rta^{1}	'*tamal of*'
	ka^{3}tʃũʔ^{1}	'*shadow*'	se^{32}-ka^{1}tʃũʔ^{1}	'*shadow of*'
/32/	ska^{32}	'*basket*'	se^{32}-ska^{2}	'*basket of*'
	nato^{32}	'*banana*'	se^{32}-nato^{2}	'*banana of*'

Despite having certain *stem-level* tonal alternations in common with Itunyoso Trique, Copala Trique has very different tonal alternations with the 1^{st} person singular enclitic. As I mentioned above, there is no process of /h/ deletion in the language. For most bare stems with a final /Vh/ rime, the cliticized stem and the bare stem are homophonous. However, if this rime contains tone /3/, tonal raising to /5/ occurs. An example of this process is given in Table 56. /Vː/ stems with tones /4/, /31/, and /13/ undergo /h/ insertion and a tonal neutralization to /3/ on the final stem syllable. Examples of this process are also given in Table 56.

[12]All forms with tone /13/ appear to be verbs with potential aspect. The bare stems of these verbs do not have tone /13/, but tone /3/ or /32/ (Hollenbach, 2007).

TABLE 56. Copala Trique 1st person singular enclitic tonal morphophonology

Rime	Tone	3.sg stem	Gloss	1.sg stem	Gloss
/Vh/	/3/	kinah^{3}-soʔ^{3}	'*he laid down*'	kinah^{5}	'*I laid down*'
/Vː/	/4/	do^{4}-soʔ^{3}	'*his indian basket*'	doh^{3}	'*my indian basket*'
		tʃiʔa^{4}-soʔ^{3}	'*his neck*'	tʃiʔah^{3}	'*my neck*'
	/31/	ʂu^{31}-soʔ^{3}	'*his cheek*'	ʂuh^{3}	'*my cheek*'
	/13/	kara^{13}-soʔ^{3}	'*he will fill*'	ka^{2}rah^{3}	'*I will fill*'

In general, the morphophonological patterns occurring with the 1st person singular enclitic are more similar between Itunyoso and Chicahuaxtla Trique than between Itunyoso and Copala Trique. The two former variants have closely-related /h/ toggling processes with similar tonal alternations. Copala Trique does not exhibit a process of /h/ deletion for the 1st person singular enclitic. Furthermore, many of the tonal alternations in Chicahuaxtla and Itunyoso Trique are similar. There is a process of tonal lowering concomitant with /h/ deletion on certain bare stems with a higher tone, but a process of tonal raising applied with /h/ insertion. Tones /2/ and /1/ do not undergo tonal raising in either of these variants. In Copala Trique, tone raising may only apply to bare stems with tone /3/ when /h/ is inserted.

5.2. **2nd person singular enclitic and tonal phonology.** In Itunyoso Trique, I observed three patterns on stems with the 2nd person singular enclitic. Tone-raising stems, all of which have a final tone /3/, will undergo raising to tone /4/. Stems with a falling tone pattern, either across the word or on the final syllable, undergo a process of low tone spreading from the enclitic. The final syllable tone on these stems will be /1/.[13] Other stems do not undergo any tonal changes. In Copala and Chicahuaxtla Trique, only the tone-raising and non-changing stems occur when cliticized (Hollenbach, 2004; Longacre, 1959; Good, 1979). The process of low tone spreading is unique to Itunyoso Trique. Considering that a more general pattern of low tone spreading exists for tone /31/ in different Trique languages (DiCanio, 2008; Hollenbach, 1984), the Itunyoso lowering pattern with the clitic may have evolved as an over-generalization where a process affecting lexical stems was generalized to the phonological word (containing affixes and clitics).

The Copala Trique clitic tonal patterns are simpler than the patterns in Chicahuaxtla Trique. Hollenbach (2004) provides an overview of the tonal changes affecting different bare stem tonal patterns. There are two 2nd person singular enclitics: /soʔ^{1}/ '*you (formal)*' and /diʔ^{1}/ '*you (familiar)*'. Each of these enclitics conditions the same tonal alternations on the preceding stem. Words with tone /3/ on a final syllable with a /Vh/ rime will undergo tone raising to /5/. This process co-occurs with a pattern of /h/ deletion. Words with tone /3/ on a final syllable with a /Vː/ rime will undergo tone raising to /4/. These processes affect any stems with tone /3/, including those where the tone is part of a sequence, e.g. /31/, /13/. Stems without these tonal patterns do not undergo any tonal changes when cliticized. Examples of the Copala Trique pattern are given in Table 57, taken from Hollenbach (2004:205–206).

[13]It is plausible that such a process could be considered anticipatory lowering.

TABLE 57. 2nd person singular enclitic tonal morphophonology in Copala Trique

Rime	Tone	3.sg.M stem	Gloss	2.sg stem	Gloss
/Vh/	/3/	ta^{3}-kãh^{3}-soʔ^{3}	'*his sandal*'	ta-kã^{5}-soʔ^{1}	'*my sandal*'
	/13/	se^{32}-ka^{3}nuh^{13}-soʔ^{3}	'*his shoe*'	se^{32}-ka^{2}nu^{5}-soʔ^{1}	'*my shoe*'
/Vː/	/3/	ara^{3}-soʔ^{3}	'*he fills*'	a^{3}ra^{4}-soʔ^{1}	'*you fill*'
		raʔa^{3}-soʔ^{3}	'*his hand*'	ra^{3}ʔa^{4}-soʔ^{1}	'*your hand*'
	/31/	ʂu^{31}-soʔ^{3}	'*his cheek*'	ʂu^{4}-soʔ^{1}	'*your cheek*'
/Vʔ/	/3/	nokoʔ^{3}-soʔ^{3}	'*he follows*'	no^{3}koʔ^{4}-soʔ^{1}	'*you follow*'
No change					
/Vh/	/32/	kãʔã^{32}-soʔ^{3}	'*he left*'	kãʔã^{32}-soʔ^{1}	'*you left*'
	/2/	ni^{3}nah^{2}-soʔ^{3}	'*he will pant*'	ni^{3}nah^{2}-soʔ^{1}	'*you will pant*'
/Vː/	/4/	nu^{3}βa^{4}-soʔ^{3}	'*he sewed*'	nu^{3}βa^{4}-soʔ^{1}	'*you sewed*'
	/5/	nã^{5}-soʔ^{3}	'*he washes*'	nã^{5}-soʔ^{1}	'*you wash*'
/Vʔ/	/1/	na^{3}riʔ^{1}-soʔ^{3}	'*he will meet*'	na^{3}riʔ^{1}-soʔ^{1}	'*you will meet*'

The Copala pattern is similar to the Itunyoso raising pattern. In both language variants, only stems with tone /3/ undergo tone-raising. Lower register tones never undergo raising preceding the 2.sg clitic in Itunyoso Trique and neither do higher register tones. The pattern in Copala Trique is identical in this respect. However, more bare stem tones condition tonal raising than in Itunyoso Trique.

The pattern in Chicahuaxtla Trique is similar to that of Copala Trique, but tone-raising affects even more stem tonal patterns (Good, 1979). There are two 2nd person singular enclitics in Chicahuaxtla Trique: /reʔ^{1}/ '*you (formal)*' and /soʔ^{1}/ '*you (familiar)*'. Most stems with a final /Vʔ/ rime undergo raising to tone /4/. Only stems with tone /1/ do not undergo tone-raising. Stems with a /Vː/ rime with tone /3/ or /31/ undergo tone raising as well. Stems with a final /Vh/ rime do not undergo tonal changes except if the final syllable tone pattern is /3/. In these contexts, tone raising to /5/ occurs (instead of to /4/). Examples of these patterns are given in Table 58. While the tonal/laryngeal generalizations presented here come from Good (1979), the individual examples are found in Longacre (1959).

Chicahuaxtla Trique is distinct from Copala Trique insofar as it permits tone-raising on many rime types. Yet, it is similar because tone raising seems to be restricted to tones /3/ and /31/ when a bare stem has a final /Vː/ rime. Tone-raising only occurs on stems with tone /3/ in Itunyoso Trique. In all Trique variants, certain words with tone /3/ undergo tone-raising to /(4)5/ when /h/ insertion occurs with the 1st person singular enclitic. This raising process is similar to the process described here for the 2nd person singular enclitic. Given this similarity in this tonal morphology, it is probable that certain lexical stems with tone /3/ were part of a *tone-raising class* at a historical stage, much as they currently are in Itunyoso Trique. Itunyoso and Copala Trique are conservative with respect to tone-raising, while Chicahuaxtla Trique is innovative because the tone-raising process includes stems without tone /3/.

TABLE 58. 2nd person singular enclitic tonal morphophonology in Chicahuaxtla Trique

Rime	Tone	Bare stem	Gloss	Inflected stem	Gloss
/Vʔ/	/32/	yãʔ^{32}	'*teeth*'	yãʔ^{4}-reʔ^{1}	'*your teeth*'
	/21/	da^{3}ʔnɨʔ^{21}	'*uncle*'	da^{3}ʔnɨʔ^{4}-reʔ^{1}	'*your uncle*'
	/3/	tãʔ^{3}	'*ear of corn (stem)*'	zi^{3}-tãʔ^{4}-reʔ^{1}	'*your ear of corn*'
	/2/	zi^{3}-ga^{2}tsiʔ^{2}	'*honey (stem)*'	zi^{3}-ga^{2}tsiʔ^{4}-reʔ^{1}	'*your honey*'
	/1/	gu^{1}tʃiʔ^{1}	'*will arrive*'	gu^{1}tʃiʔ^{1}-reʔ^{1}	'*you will arrive*'
/Vː/	/45/	a^{3}tʃĩ^{45}	'*ask*'	a^{3}tʃĩ^{45}-reʔ^{1}	'*you are asking*'
	/4/	du^{3}kʷa^{4}	'*house (stem)*'	du^{3}kʷa^{4}-reʔ^{1}	'*your house*'
	/3/	wwĩ^{3}	'*be*'	wwĩ^{4}-reʔ^{1}	'*you are*'
	/2/	ʒa^{2}	'*will eat*'	ʒa^{2}-reʔ^{1}	'*you will eat*'
	/1/	da^{3}ʔmã^{1}	'*leg*'	da^{3}ʔmã^{4}-reʔ^{1}	'*your leg*'
	/43/	ʒa^{43}	'*eat*'	ʒa^{43}-reʔ^{1}	'*you are eating*'
	/32/	a^{3}ya^{32}	'*read*'	a^{3}ya^{32}-reʔ^{1}	'*you are reading it*'
	/31/	to^{31}	'*milk*'	zi^{3}-to^{4}-reʔ^{1}	'*your milk*'
/Vh/	/4/	u^{3}nãh^{4}	'*run*'	u^{3}nãh^{4}-reʔ^{1}	'*you are running*'
	/3/	wa^{32} llih^{3}	'*be little*'	wa^{32} lli^{45}-reʔ^{1}	'*you are little*'
	/2/	ga^{2}tʃĩh^{2}	'*will cough*'	ga^{2}tʃĩh^{2}-reʔ^{1}	'*you will cough*'
	/1/	rã^{4}ʔãh^{1}	'*dance*'	rã^{4}ʔãh^{1}-reʔ^{1}	'*you are dancing*'
	/32/	tʃeh^{32}	'*path (stem)*'	zi^{3}-tʃeh^{32}-reʔ^{1}	'*your path*'

5.3. **1st person dual/plural enclitic and tonal phonology.** In all Trique variants, the 1st person inclusive (dual in Itunyoso) enclitic is realized as /ʔ/. In Itunyoso and Chicahuaxtla Trique, a process occurs which causes the stem-final vowel /a/ or /ã/ to mutate to /o/ or /ũ/, respectively. Identical to Itunyoso Trique, stems with a /VʔV/ sequence undergo a replacement of both vowels with labialized variants, e.g. /aʔa/ > /oʔo/. This process is presented in Table 45 for Itunyoso Trique and in Table 59 for Chicahuaxtla Trique. The data here comes from Longacre (1959). None of these vowel alternations occur in Copala Trique (Hollenbach, 1984, 1992, 2004).

Across the Trique variants, tone raising to /4/ occurs on stems with only certain tones. An arbitrary set of rimes with tone /3/ undergo tone-raising in Itunyoso Trique. Stems with tone /3/, /31/, and /13/ undergo tone raising to /4/ in Copala Trique. In Chicahuaxtla Trique, the phonological shapes of stems which undergo tone-raising are more varied. For instance, all stems with a final /Vʔ/ rime undergo tone-raising, except if the final tone is /1/. Many stems with a final /Vː/ rime undergo tone-raising to /4/, except if the final tone is /32/, /2/, or /1/ (shown below). Stems with a final /Vh/ rime also undergo tone-raising to /4/, but like stems with final /Vː/ rimes, raising does not occur if the final tone is /32/, /2/, or /1/. I provide examples of both the Copala and Chicahuaxtla Trique patterns in Table 60.

TABLE 59. Chicahuaxtla Trique 1st person plural inclusive enclitic morphophonology

Bare stem	Gloss	Inflected stem	Gloss
u^{3}tʃã^{45}	'*vomit*'	u^{3}tʃũʔ^{4}	'*we're vomiting*'
u^{3}nãh^{4}	'*run*'	u^{3}nuʔ^{4}	'*we're running*'
rã^{4}ʔãh^{1}	'*dance*'	rũ^{4}ʔũʔ^{1}	'*we're dancing*'
du^{3}nah^{4}	'*leave*'	du^{3}noʔ^{4}	'*we left it*'
a^{3}ya^{32}	'*read*'	a^{3}yoʔ^{32}	'*we're reading*'
ra^{3}ʔa^{3}	'*hand*'	ro^{3}ʔoʔ^{4}	'*our hand*'

The Copala Trique data comes from Hollenbach (2004) and the Chicahuaxtla Trique data comes from Longacre (1959).

TABLE 60. 1.incl tonal morphophonology in Copala and Chicahuaxtla Trique

Variant	Tone	Bare stem	Gloss	Inflected stem	Gloss
Copala	/5/	kinã^{5}	'*washed*'	kinãʔ^{4}	'*we washed*'
	/4/	kano^{4}	'*hit*'	kanoʔ^{4}	'*we hit*'
	/3/	kuno^{3}	'*heard*'	kunoʔ^{4}	'*we heard*'
	/2/	kuno^{2}	'*will sow*'	kunoʔ^{2}	'*we sowed*'
	/13/	se^{32}-kanuh^{13}	'*shoe*'	se^{32}-ka^{2}nuʔ^{4}	'*our shoe*'
	/31/	kanã^{31}	'*washed face*'	kanãʔ^{4}	'*we washed our face*'
	/32/	kaʔmi^{32}	'*spoke*'	kaʔmiʔ^{3}	'*we spoke*'
Chicahuaxtla	/(4)5/	u^{3}tʃã^{45}	'*vomit*'	u^{3}tʃũʔ^{4}	'*we are vomiting*'
	/4/	du^{3}nah^{4}	'*leave*'	du^{3}noʔ^{4}	'*we left it*'
	/3/	wwĩ^{3}	'*be*'	wwĩʔ^{4}	'*we are*'
	/2/	zi^{3}-zã^{2}ʔãh^{2}	'*money (stem)*'	zi^{3}-zũ^{2}ʔũʔ^{2}	'*our money*'
	/1/	zi^{3}-ru^{3}wih^{1}	'*knee-cap (stem)*'	zi^{3}-ru^{3}wiʔ^{1}	'*our knee-cap*'
	/43/	ʒa^{43}	'*eat*'	ʒoʔ^{4}	'*we are eating*'
	/32/	zi^{3}-tʃeh^{32}	'*path (stem)*'	zi^{3}-tʃeʔ^{32}	'*our path*'
	/31/	zi^{3}-ne^{31}	'*meat (stem)*'	zi^{3}-neʔ^{4}	'*our meat*
	/23/	zi^{3}-ruh^{23}	'*pot (stem)*'	zi^{3}-ruʔ^{4}	'*our pot*'

The absence of tone-raising on stems with tone /32/, /2/, or /1/ in Chicahuaxtla Trique reflects a pattern where tone-raising does not occur on lower register tones. This particular pattern was observed in the Itunyoso Trique 1sg. enclitic morphophonology, but it appears to be more general in Chicahuaxtla Trique, occurring with both the 1st person singular and inclusive enclitics.

Among the three Trique variants, Itunyoso Trique has the most restricted morphophonology with respect to the 1st person inclusive/dual enclitic. An arbitrary class of lexical stems with tone /3/ may undergo tone-raising. The pattern in Copala Trique is similar, as only stems with tone /3/ (/3/, /31/, /13/) may undergo tone-raising. However, the process in

Copala Trique regularly applies to all stems with these particular tonal patterns. In Chicahuaxtla Trique, a larger set of stems may undergo tone-raising. However, lower register tones are restricted.

5.4. **Summary/Conclusions.** Clitic morphology varies substantially among the different Trique variants, especially with respect to tonal alternations. However, a few shared patterns are striking. First, for most Trique variants, bare stems with tone /3/ or with sequences containing tone /3/ will undergo processes of tone-raising with the 1^{st} person singular, 2^{nd} person singular, and 1^{st} person inclusive enclitics. The fact that tone-raising occurs with all of these enclitics for a specific tonal class suggests that tone /3/ functioned as a neutral tone at a historical stage in Trique. Neutral tones are prone to tonal alternations because they are phonologically unspecified for tone. Adjacent floating tones on clitics would be realized on stems with neutral tones, causing a surface-level tonal alternation on the stem's tone.

Second, for all Trique variants, there is a tendency for lower tones to resist processes of tonal raising. In Itunyoso Trique, lower register tones do not undergo tonal alternations associated with morphological reversal with the 1^{st} person singular enclitic. The same pattern is found in Chicahuaxtla Trique for the 1^{st} person singular and inclusive enclitics. In Copala Trique, tones /2/ and /1/ do not participate in any clitic-conditioned tonal alternations. Hollenbach (1984) discusses the featural content of Copala Trique tones, arguing that tones /2/ and /1/ belong to a lower tonal register. As I have argued, such a distinction is useful in explaining morphological toggling and tonal alternations in Itunyoso Trique. It may also be useful in explaining these patterns in Chicahuaxtla Trique.

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