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Aspects of Phonology and Morphology of Teotepec Eastern Chatino

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Aspects of Phonology and Morphology of Teotepec Eastern Chatino

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To my mother and father
Sue and Mike McIntosh

“Los Chatinos de mi edad tenemos una gran responsabilidad con nuestra gente, pues puede decirse que somos la generación del cambio, la que tiene que encargar los cambios. Nuestros padres fueron, en general, la última generación que no asistió a la escuela y nuestros hijos son la primera generación que saldrá masivamente escolarizada. La escuela es el principal lugar donde se enseña que nuestras verdades son falsas, y nuestros conocimientos son ridículos ante la “ciencia”, y los niños que aprenden esto, abandonan y menosprecian nuestros rituales, comportamientos y sabiduría, que ahora conciben como irracionales, supersticiosos, absurdos, falsos. La verdad es ahora la verdad occidental, ya no la verdad Chatina, aunque esta verdad nuestra nos haya permitido vivir durante siglos.”

Tomás Cruz Lorenzo† San Juan Quiahije ~ Medio Milenio, 1989

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Aspects of Phonology and Morphology of Teotepec Eastern Chatino

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Supervisors: Anthony C. Woodbury
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This dissertation is a description of aspects of the phonetics, phonology and morphology of Teotepec Chatino (ISO 639-3 identifier: *cya*; here abbreviated as TEO), an indigenous language spoken by approximately 3800 people in the Sierra Madre del Sur, Oaxaca, Mexico. This work presents a synchronic description of the language based on data collected in the field over the course of six field trips totaling eighteen months. This investigation is based on a corpus of thirty hours of transcribed and analyzed texts of naturally occurring speech, narratives, data gathered during elicitation sessions, and an expansion of my earlier grammatical sketch (2011).

The final result is a description of the phonology and phonetics of tone and some of the morphological processes that exist in the grammar. The focus of this work is to describe the structure of the language produced by native Teotepec speakers and how it is used in an array of contexts. This is reflected in a rich body of procedural texts, conversations, speeches, rants, polemics, prayers, and narratives. These texts are the basis for the description of how the language encodes speakers' knowledge about the world and their greater context.

This work arrives at a description of the details of the language while also making broader generalizations about these details. It is not possible that this work cover all aspects of the phonology, phonetics, morphology and so part of the focus has been to capture particular facets of the language and explain them in a way that is detailed while broad enough to be useful to as many as audiences as possible. This includes scholars interested in typology, tone languages, historical linguistics of Otomanguean, linguistic anthropology, anthropology, and the history and culture of the Chatinos, southern Oaxaca and Mesoamerica. The dissertation is written in English; however, I often create grammatical write-ups and practical pedagogical materials for a Spanish literate audience. Materials for TEO have been and will continue to be made available to Spanish and English speakers in order to reach an audience that includes, but is not limited to, members of the community, local and regional educators and literacy efforts, and scholars engaged in the study of Chatino language and linguistics.

The approach to this work is data-driven and text-based. It is written in basic descriptive terms, as outlined in Payne (1997); Shopen (2007); Dixon (2010), and Haspelmath (2010). In this way the writing is carried out with fewer aprioristic notions about the language. The goal is to describe the language in its own terms. Thus the researcher is open to discover completely new, unexpected phenomena, can be guided by the data and their own thinking (Haspelmath, 2010).

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Abbreviations

1PL	First Person Plural
1SG	First Person Singular
2PL	Second Person Plural
2SG	Second Person Singular
3PL	Third Person Plural
3SG	Third Person singular
ADJ	Adjective
ADV	Adverb
ANIM	Animate
ASP	Aspect
CAUS	Causative
COM	Completive Aspect
COMP	Complementizer
COND	Conditional
CONJ	Conjunction
DAT	Dative
DEF	Definite
DEM	Demonstrative
EMPH	Emphatic
EXCL	Exclusive
HAB	Habitual Aspect
HON	Honorific
HUM	Human

IMP	Imperative
INAL	Inalienable
INAN	Inanimate
INCL	Inclusive
INDEF	Indefinite
INT	Interrogative
INTR	Intransitive
LOC	locative
LD	long distance
MASC	masculine
N	Noun
NEG	Negation
NOM	Nominalizer
NP	Noun Phrase
NUM	Numeral
POT	Potential Aspect
PRO	Pronoun
PRG	Progressive Aspect
RN	Relational Noun
REL	Relativizer
RSP	Respectful
SPN	Spanish
STAT	Stative Aspect
SUBJ	Subject
TR	Transitive
VP	Verb Phrase

Glossing Conventions

The glossing conventions for this dissertation are based on the Leipzig Glossing Rules for the interlinear texts (Bickel et al., 2008). The conventions herein conform to the needs of the Teotepéc Chatino in order to represent the language in as transparent a manner as possible. The particular conventions employed in this work are the following:

1. Interlinear glosses are left-aligned vertically, word by word.
2. Many to one glosses for grammatical category abbreviations, aspect, person, number labels and words in the metalanguage composed of more than one lexeme are separated with periods (.) in the gloss-line:

(1)	<i>jyko^E</i>	(2)	<i>xto^{Bi}</i>	(3)	<i>t?wo^{Bi}</i>
	COM.eat.1SG		short.1SG		mouth.1SG
	‘I ate.’		‘I am short.’		‘my mouth.’

3. One to one glosses for segmentable pronoun clitics are separated with the equals symbol <=> in the object language and the gloss line:

(4)	<i>xa^E mdi^E-sna^C yoo^C =u</i>
	when COM.begin COM.grind=2SG.HON
	‘when you began to grind’ (maize)
	(SMC-2010-06-29-txt-AM-jdm 6:11-6:14)

4. Grammatical words constructed of two or more stems are joined with the (-) dash in both the object language and gloss line:

(5) *jyku* *kna* *jose^E* *ja-slya^K*
 COM.eat hidden Jose tortilla-castillian
 ‘José ate bread while hiding.’

Compound grammatical words that do not have a direct one to one translation will be joined with the (-) object language line; however, the gloss line may only have one corresponding gloss lexeme.

5. Segmented affix boundaries are also joined with the (-) dash in both the object language and gloss line:

(6) *xi^C-sna* *xniʔ^C* *ʔi* *ktā^K*
 CAUS-run dog DAT cow
 ‘The dog will make the cow run.’

6. Unless otherwise noted, examples are written in the practical phonemic orthography (§2.7). The second line of a given example contains a one to one glossing and the third line presents a free translation. The fourth line contains a reference and a time stamp if the example is from the text corpus.

(7) *jykwaʔ* *nʔi* *chqʔ^G* *re^C*
 swamp STAT.be (at)back.of here
 ‘There is a swamp behind here (Teotepec).’
 (TEO-2008-07-29-txt-WVM-HRV-jdm 00:06 - 00:08)

Chapter 1

Introduction

This dissertation presents a description and analysis of aspects of the phonology and morphology of Teotepec Eastern Chatino (ISO 639-3 code: *cya*), an indigenous language spoken in the community of Santa Lucía Teotepec near the Pacific coast of the state of Oaxaca, Mexico. This work is part of a larger documentation of lexicon, grammar and texts and is an initial step towards the writing of a complete descriptive grammar.

An important focus of this work is to present a clear and as complete as possible description and analysis of the Teotepec Chatino tone system. This includes a description of the elaborate phonetic and phonemic tone changes, known as sandhi, that occur in this elegantly complex language. This dissertation is the first complete description of the Teotepec Chatino tone system which is an important contribution to the study of tone, tone languages, Otomanguean linguistics and linguistic typology.

A description of the morphophonological processes reflected in the lexicon and inflectional system is an important part of this dissertation. The description of the complexities of the verbal inflectional system is able to be realized, largely, due to the clear analysis of tone, which is utilized heavily in the inflectional patterning of verbal aspect and person marking in the verbs, predicate adjectives, non-verbal predicates and inalienable nouns.

Another important part of this work is the presentation and description of the major

word classes in the language and the use text examples to present these details. Although I have used elicited material, particularly in the analysis of the tone system, I have tried as much as possible to present examples that are from naturally occurring speech. The text examples used in this dissertation are part of a collection of texts that include more than thirty hours of transcribed and translated materials, which is another very important contribution this work makes to the documentation and preservation of Chatino.

This work is organized in the following manner: the remainder of this chapter includes general details about Chatino and its speakers. I present some ethnographic details and discuss sociolinguistic attitudes regarding the language and language attrition. I describe the internal and external relationship of Teotepéc Chatino with regard to the other Eastern Chatino varieties and the Chatino languages of Zenzontepec and Tataltepec. I present a typological profile of the language and describe the the goals of this work. I review the previous work conducted on the Chatino languages and discuss the more recent work that has been carried out by the Chatino Language Documentation Project (CLDP) of the University of Texas at Austin. I present details about the history of the documentation of Teotepéc Chatino, discuss the documentation methods, outline some theoretical considerations and describe the text work that has been completed as a result of this dissertation and language documentation.

Chapter two provides an introduction to the phonology of Teotepéc Chatino. In this chapter I present the syllable shape and introduce the tone inventory. I outline the details of the segmental phonology by describing each phoneme and giving their allophonic variation. At the end of this chapter I present some generalizations about the segmental inventory of Teotepéc Chatino and present the practical phonemic orthography used throughout the remainder of the dissertation.

Chapter three presents the details of the Teotepéc Chatino tone system. In this Chapter I present the tone inventory, the analysis of the tone system and describe the

details of the components that make up the fourteen tone classes in this language. This chapter prepares the reader for Chapter four where I demonstrate the elaborate tone sandhi patterns of adjacent lexical items.

Chapter four describes tone sandhi patterns that occur in connected speech. This chapter focuses on the sandhi processes that occur on adjacent lexical items and outlines the important role the toneless stems have in getting at the finer details of the underlying unlinked tone sequences. This analysis justifies the positing of fourteen tone categories by describing relationships between tone classes that are not readily apparent and differences between tones that appear extremely similar superficially. The entire chapter is devoted to discussion of the various processes that occur with the toneless stems and the interaction of the other tone bearing stems with regard to their phonetic and phonemic realizations in contextual speech.

Chapter five elaborates the processes presented in Chapter four regarding the phonetic and phonemic tone changes in the language by presenting these changes in non-adjacent lexical items. In this chapter I describe how the same types of sandhi changes that occur in adjacent lexemes occur in non adjacent stems; however, with a slightly different set of restrictions. Chapter five also outlines processes of up-step, declination and catathesis that occur with tone sequences of the same tone sets.

Chapter provides a transition between the chapters on phonology and the description of the morphology. This chapter defines the phonological and grammatical word in Teotepéc Chatino. It also outlines the major lexical classes in the language providing examples and cross referencing to later chapters where these classes are outlined in greater detail.

Chapters seven and eight describes all things nominal. Chapter seven describes the pronouns, lexical nouns and alienably and inalienably possessed nouns. Chapter eight describes relational nouns, nouns that refer to place, demonstrative pronouns and adverbs. In this chapter I also outline examples of some of the different kinds of compound nouns. I

present *light*-noun headed compounds and emergent lexical compounds. Chapter eight also describes numerals and quantifiers in Teotepec Chatino and briefly outlines adjectives.

Chapter nine presents verbal inflectional morphology, the aspectual system and things related to the verbal lexical class. I outline the aspectual system and describe the four main verbal aspects in the language. After that, I present a description and analysis of the aspectual tone categories and the inflectional system for marking person. Then I describe some of the particulars about the derivational morphology and the construction of causatives in the language. The chapter wraps up presenting predicate adjectives, nominal predicates and predicates of location and position. Chapter ten presents my conclusions.

1.1 The Chatino people

The Chatino people have traditionally inhabited a small part of the Sierra Madre del Sur that lies between the valley of Oaxaca and the Pacific coast; today, that area is contained within a quadrant from 15°39' to 16°35' N latitude and from 97°04' to 97°40' W longitude. Joyce argues that prior to the arrival of Mixtecs during the Postclassic period, the Chatino people occupied the lower Río Verde Valley (2010:14). Historically, the Chatino people have been agriculturalists who grow corn, beans, chiles, century plant, avocado, cotton, and different kinds of fruit. They have grown colonial crops of coffee and sugarcane and more recently participated as seasonal migrant laborers in nearby coffee plantations, Mexican urban centers, and the US. There are an estimated 42,000 Chatino speakers in Oaxaca, Mexico (INEGI, 2009).

1.1.1 Sociolinguistic context of Teotepec Eastern Chatino

TEO has a small base of approximately 3800 speakers spread over a comparatively large geographic area. Santa Lucía Teotepec is in the southeastern part of the Chatino region (16°08'33.07" N, 97°12'20.40" W) at about 1200 meters above sea level, in the warm

temperate climate of the southern Sierra Madre del Sur of Oaxaca, Mexico, just north of the Pacific Coast. TEO is spoken in many communities surrounding the townships of Santa Lucía Teotepec; Cerro del Aire, La Cañada de Atotonilco, and San Martín Caballero and the smaller ranch communities of Cerro Armadillo, Cañada de Flores, Cerro Niño, Cerro Cuero, La Maltraca, Aguacatal and La Ciénega. The largest communities where Teotepec Chatino is spoken are Santa Lucía Teotepec and Cerro del Aire. See Fig. 1.1 below:¹

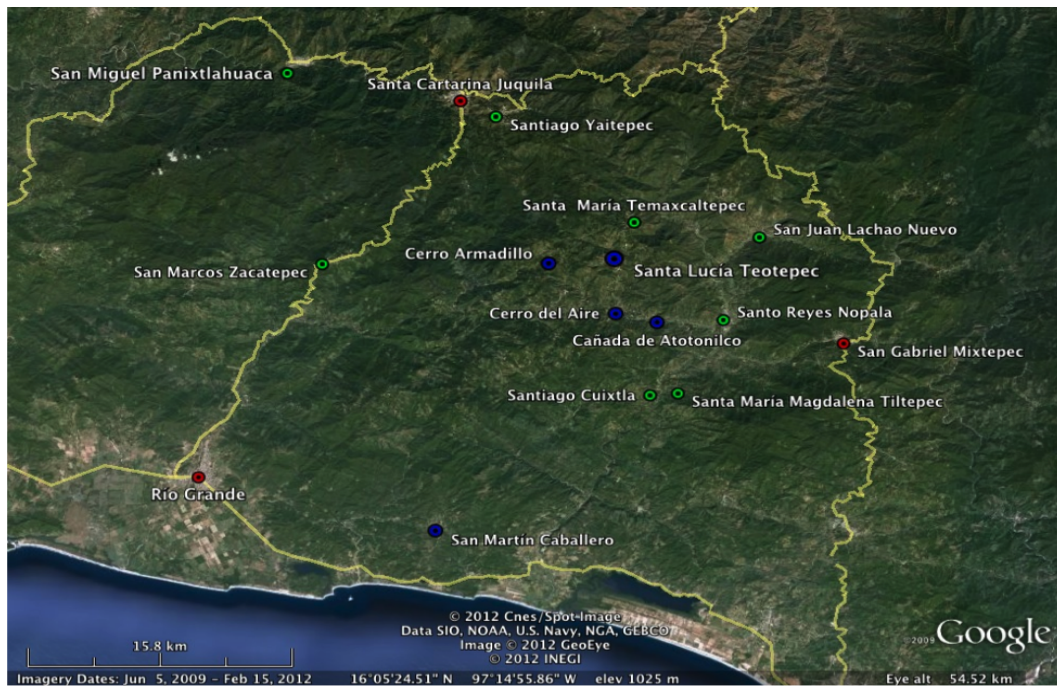


Figure 1.1: Southern Chatino region map

In 1957, Santa Lucía Teotepec was divided by a violent massacre and subsequent civil war. Because of this, as many as half of the inhabitants moved down the mountain to a ranch community and established Cerro del Aire as an independent township or *agencia municipal*.

¹Communities marked in blue speak Teotepec Chatino. Other communities marked in green speak other varieties of Eastern Chatino. Communities marked in red are where Chatino is spoken by less than 10% of the population.

Another smaller group moved closer to the coast and formed the township of San Martín Caballero. As a result of this conflict Santa Lucía Teotepec lost its municipality status. The municipal seat was moved to Santos Reyes Nopala. Today, Santa Lucía Teotepec, Cerro del Aire and Atotonilco are townships that pertain to the municipality of Santos Reyes Nopala, Oaxaca. This change in political status has produced long lasting negative social and economic effects in these communities. However, this change in political status may be one of the very reasons why the variety of Teotepec Chatino continues to be spoken across so many communities and remained vital. Table 1.2 outlines the locality, number and percentage of Teotepec Chatino speakers.

Table 1.1: Number of Teotepec Chatino Speakers (INEGI, 2009)

Municipality	Community	Total Population	TEO Speakers	%
Santos Reyes Nopala	Cerro Iglesia	76	67	88%
Santos Reyes Nopala	El Carrizal	56	49	87%
Santos Reyes Nopala	El Armadillo	443	388	87%
Santos Reyes Nopala	El Aguacatal	259	223	86%
Santos Reyes Nopala	Santa Lucía Teotepec	1379	1151	83%
Santos Reyes Nopala	Cañada de las Flores	208	173	83%
Santos Reyes Nopala	Cerro del Aire	1198	975	81%
Santos Reyes Nopala	Cañada Atotonilco	437	379	80%
Santos Reyes Nopala	La Matraca	219	175	79%
Santos Reyes Nopala	La Ciénega	158	112	70%
Villa de Tututepec de Melchor Ocampo	San Martín Caballero	315	97	31%
Totals		4748	3789	79%

1.1.2 Language attrition

In Eastern Chatino communities there appears to be two tendencies: In some communities, the use of Chatino is decreasing rapidly and in others, this process is much slower. Comparing population statistics for speakers of chatino in different Eastern Chatino communities with Santa Lucía Teotepec helps to give a perspective of Chatino language use. Communities that have become heavily mixed or that are on major routes along highways

to communities that have become mixed show a tendency for the language to not be transferred. According to the 2000 Mexican census, 9 percent of the population speaks Chatino in Santa Catarina Juquila (454 people out of 5044). In the town of Santos Reyes Nopala, only 26 percent of the population speak Chatino (1176 people out of 4581). In San Marcos Zacatepec 39 percent of the population speak Chatino. Other Eastern Chatino communities, like that of San Juan Quiahije, Cieneguilla, San Miguel Panixtlahuaca and Santiago Yaitepec all have a population of Chatino speakers of at least 80 percent. The majority of TEO speaking communities report that 79 to 88 percent of their inhabitants are Chatino speakers. Communities that are reported to have 80+ percent Chatino speaking populations are not heavily mixed and do not lie on highways that lead to major non-Chatino speaking population centers. The following table outlines the percentage of Chatino speakers in some of the Eastern Chatino communities:

Table 1.2: Number of Chatino Speakers in Eastern Chatino Communities (INEGI, 2009)

Municipality	Community	Total Population	Chatino Speakers	%
Santa Catarina Juquila	Santa Catarina Juquila	5044	454	9%
Reyes Nopala	Santos Reyes Nopala	4581	1176	26%
Santa Catarina Juquila	San Marcos Zacatepec	1181	464	39%
San Juan Quiahije	San Juan Quiahije	2095	1696	81%
San Miguel Panixtlahuaca	Panixtlahuaca	5389	4389	81%
San Juan Quiahije	Cieneguilla	1429	1185	83%
Santiago Yaitepec	Yaitepec	3080	2612	85%
Santa Maria Temaxcaltepec	Temaxcaltepec	1212	1025	85%

Nopala and Juquila are economic centers that have been progressively dominated by non-indigenous *mestizo* outsiders since the mid 1860's. Because the census data does not make dialect discriminations within a given population, the number of speakers in these centers may very well be of 'other' Chatino varieties who have recently arrived. This outsider domination and political economic shift has been a major cause of language loss in both of these communities.

A majority of Chatino communities are experiencing language attrition and are in

danger of deep language loss; Nopala and Juquila are just further along in this process. Attitudes regarding the value of the Chatino language, perceptions about what it means to be Chatino and to speak an indigenous language vary. In Teotepec, some younger speakers have told me they feel shame for not speaking Chatino well and also feel embarrassed to speak their language outside the community because of negative attitudes that exist among the *mestizo* population. Santa Lucía Teotepec, like many Chatino communities, is as Suslak describes, “[a] vulnerable local language community being swept up in profound regional and global transformations,” which is likewise dealing with the shifting ways of “reckoning age categories” and transference of local knowledge and linguistic traditions (2009:208).

Education has played a major role towards fostering negative attitudes towards Chatino and language shift. Bilingualism and an array of factors indicate language shift such as loss of registers and the forms associated with them (England, 2003; Grinevald-Craig, 1997). The so-called castilianization of the indigenous population is often the result of bilingual education in the state of Oaxaca. Castilianization is a process where a community like Santa Lucía Teotepec is slowly changing from a Chatino speaking community to a bilingual community which eventually becomes a monolingual Spanish or a castilianized community. The Oaxacan education system has been characterized in the following manner; “The answer given by the state in relation to scholarly instruction of ethnic minorities can be characterized in the search for the standardization [*castellanización*] of the population and their integration in the national system”. (Aguilar, 1991).² Despite the fact that bilingual instructors are trained to conduct bilingual education curricula, teachers in indigenous communities are always under-equipped and underprepared for the task of educating the youth in the local language. ‘Bilingual education’ has merely taken language shift a step further by institutionalizing a policy of Spanish language education taught by teachers who are often bilingual but almost never speak the language of the community where they are

²translated by author.

assigned to teach.

Migration is another factor that may be affecting the vitality of Chatino in Santa Lucía Teotepec. However, there is a history of seasonal migration for work to other Mexican communities where Chatino is not spoken. Nonetheless, since the mid 1990's, political economic factors have led to increased immigration to the United States. Although this migration is also cyclical, the cycles are for much longer periods than the historical seasonal migration and it is common for people to work abroad for five or more years. A result of this kind of migration includes many factors that lead to the disintegration of the traditional political economy. It has changed who occupies key local government positions; the kind of work traditionally associated with men is often carried out by women and children. The intention is to leave for a few years but often never return. Some community members have died crossing the border or in work related accidents, some encounter legal problems and end up in jail, and others simply stay in the United States and form new families. The majority of the individuals who have been migrating have been men between the ages of 17 to 55; however, recently more young women have been making this trip too. Increasingly, children grow up with one immediate family member in the United States and are raised by their mothers or grandmothers which impacts the way the language is transferred.

Language shift is a complex and complicated situation. It is clear that this process is well underway in Santa Lucía Teotepec. Community elders readily acknowledge this and explain that young people are not using the language and that it is simply not being transferred. To these community members it seems absurd that young people would feel shame to speak the language that is of the people and community.

In Santa Lucía Teotepec, Chatino is spoken and used daily in most transactions by children and elders, from the schoolyard to spiritual religious contexts. The language is used for prayers during stewardship or *mayordomo* celebrations, for local political and governmental activities, and for announcements heard over the community's loud speaker

system. Despite this rich daily use of Chatino, there are children that do not speak or understand the language even though their peers are fluent speakers. Conversely, there are some children who have grown up not speaking Chatino at home but have become fluent speakers through social interactions outside of their home in the community. The shifting political economy and the external influence of the education system, coupled with increased exposure to national and international media, does have strong affects on local language attitudes. The shifts in economy change the interaction that youths have with their parents and grandparents, often leaving the traditional means of work for school and higher education; which in turn does influence the dynamics of traditional means for acquiring local knowledge. Only time will tell to see if the language continues to be transferred to the youth and remain vibrant.

1.2 The Chatino language

Chatino refers to a group of Zapotecan languages coordinate with Zapotec in the Otomanguean language family of central southern Mexico. Otomanguean is one of the five unrelated language families that make up the Meso-American linguistic area (Campbell, L. et al., 1986). The Chatino people have historically lived in the Sierra Madre del Sur of Oaxaca. It is estimated that there are about 42,000 Chatino speakers in Oaxaca (INEGI, 2009). However, there are Chatino speakers who live in many other parts of the Mexican Republic and in the United States of America. There is quite a bit of variation within the language and different degrees of intelligibility between communities. To date, efforts to describe Chatino have been limited to particular geographic localities and particular varieties of the language group.

Franz Boas conducted some of the earliest work on Chatino during a field trip in the early part of the twentieth century. He divided Chatino into three distinct groups. The group he labeled as the “first dialect” included many of the communities surrounding

Santa Catarina Juquila and Santiago Yaitepec which would have included Santa Lucía Teotepec; the second was made up of the Tataltepec de Valdés; and the third consisted of Santa Cruz Zenzontepec, San Jacinto Tlacotepec, and Santa María Tlapanalquiahuitl (Boas, 1913). The historical reconstruction work by Upson and Longacre (1965), that incorporated lexicon from Yaitepec, Tataltepec and Zenzontepec, included the three original groupings and although they added Papabuco as dialect of Zapotec, they partially confirmed the summary proposed by Boas.

Following the analysis of Boas (1913), E. Campbell (2013) shows strong evidence that the original groupings of Boas were correct. Campbell has identified at least three distinct languages: Zenzontepec (czn), Tataltepec (cta) and the rest, which is known as ‘Eastern Chatino,’ (cly, ctz, ctp, and cya). Continuing with Campbell’s configuration, Tataltepec and Eastern Chatino form an intermediate subgrouping apart from Zenzontepec, known as Coastal Chatino. Figure 1.2 represents the Zapotecan language family with Campbell’s (2013) analysis of the relationships for the Chatino languages.

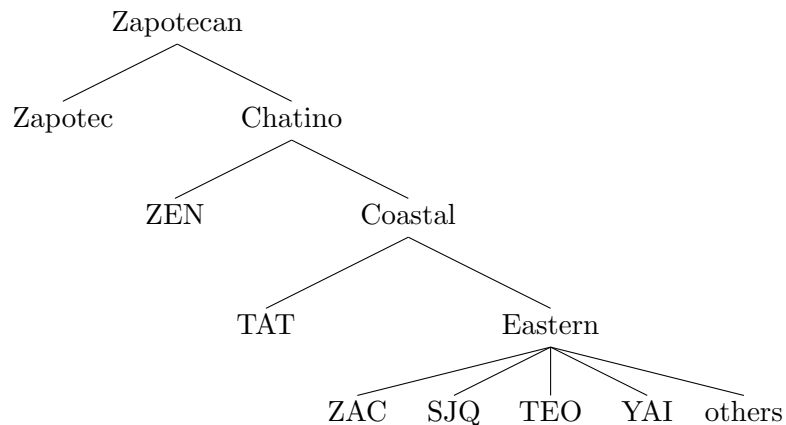


Figure 1.2: Internal and external relations of the Chatino languages

Ethnologue indicates six different varieties of Chatino; Zenzontepec (czn), Tataltepec (cta), Zacatepec (ctz), Eastern Highland (cly), Western Highland (ctp) and Nopala (cya) (Lewis, 2009). Campbell makes a strong argument that there is no evidence to support this analysis. Campbell's analysis is based on phonological, morphological, and semantic innovations as well as the reconstructed tone system proposed by Campbell and Woodbury (2010).

The Eastern Chatino grouping is likewise based on the similarity of linguistic features that exist in the eastern part of the Chatino region, such as lexical cognates, tone classes, and semantics. Because of differences in syllable reduction, tone systems, and lexical semantics within Eastern Chatino, every Eastern Chatino community forms its own language subgroup or topolect as used in Mair (1991). This describes a situation where language varieties may be or may not be mutually intelligible in that they can be understood with some effort but always shares some features because they are related. In the case of Eastern Chatino, this would be based on a typology of languages that for instance exhibit a larger tone inventory than those of ZEN and TAT and that also belong to a particular social and geographic area which helps to define cohesive speech communities. Nonetheless, when two politically separate communities arise from the same speech community, people will speak virtually the same language apart from naturally occurring innovation that takes place over time. This is true in the cases of the communities of San Juan Quiahije and Cieneguilla, Lachao Viejo and Lachao Nuevo, and Santa Lucía Teotepic, Cerro del Aire and San Martín Caballero. Otherwise, Eastern Chatino changes with each given community and no one has yet proposed sets of innovations that clearly identify coherent groupings among sets of community varieties.

1.2.1 A typological profile of Teotepc Eastern Chatino

Chatino is part of the Mesoamerican linguistic area (L. Campbell et al.,1986) and shares several typological traits with these languages. TEO makes a distinction between alienable and inalienable possessed nouns (§7.2.2) and inclusive and exclusive first person plural pronouns (§7.1.1). TEO exhibits relational nouns, body-part based locatives (§8.1), a vigesimal number system (§8.5.1), verbal aspect (§9.4), no plural marking on nouns, zero copula adjectival predicates (§9.7.1), copula constructions that include existentials and nonverbal predicates (§9.7), direct and indirect object marking with a special relational noun that is dependent on animacy and argument order (§8.1.4), and complex adverbial, relative and complement clauses.

This dissertation presents a part of a grammar of Teotepc Eastern Chatino. This language merits study because it features several less commonly observed traits in its grammar. Phonologically, the language includes a set of contrasting oral and nasal vowels and a set of typologically uncommon lamino-alveolar sounds and complex onset consonant clusters. Teotepc Chatino like other Otomanguean languages is tonal (Ch.3). There are nine basic tones that constitute fourteen tone sequences (§3.2) based on underlying unlinked floating tones and other phonetic interactions between the different tone sets (Ch.4). These tones demonstrate a typologically unusual and very extensive set of complex contextual variations (tone sandhi) that include long distance sandhi patterns elaborated by the existence of intervening toneless stems (§4.2 and Chapters 4 and 5).

Morphologically, the language can be described as analytic to mildly synthetic. Teotepc Chatino has a strong head-marking orientation seen in the marking of person in verbs (§9.3) and inalienably possessed nouns (§7.2.2.1). The language can be considered fusional, as evidenced by a verbal aspect system organized by mutated historic aspect prefixes and aspect tones that operate largely independently of each other (§§9.4 and 9.3). A couple of simple derivational processes exist in the verbal (§9.5) and nominal systems

(§7.2.3.5) that reflect simple stem alterations.

Syntactically, the language is head initial. Throughout the nominal system there are many examples of head-complement type constructions seen in *light* headed noun compounds (§8.4.1) and emergent lexical compounds (§8.4.2). The basic constituent order is VSO with the subject following the predicate core argument. There are copula constructions that include existential and nonverbal predicates (§9.7) and predicate adjectives (§9.7.1). The existential predicates may be used to express position and possession (§9.7.3). Teoteppec Chatino reflects a nominative accusative alignment pattern where the S and A singular pronoun arguments are both marked on the verb stem through tonal ablaut and the plural pronominal S and A arguments are marked on the verb with enclitics. All other pronominal O arguments are marked with the use of the relational noun $?i^E$. Complex clauses may be formed through the use of relative clauses and the adjoining of clauses through a kind of clause serialization, managed with the use of particular pronoun referents in order to keep track of the participants and other actors in a given context of linguistic expression.

1.3 Goals of this work

A major focus and goal of this work is to write a natural speech-based description of the language and provide texts. The analysis of the phonology and morphology of TEO is based on the description of my documentary corpus of naturally occurring speech. The use of these materials in considering varied subjects and genres of speech is essential to provide as complete an analysis of the language as possible. This serves the purpose of grammar writing and grammatical analysis and leaves an important record of documented Chatino speech.

A synchronic description of TEO informs research on typology and language universals (Nichols, 1992; Evans and Levinson, 2009). As noted above in §1.2.1, TEO has a large inventory of tones and one of the most complicated tone sandhi systems found in a

Chatino language. Until recently there has been no grammatical description that documents a Chatino language in the context of a full account of its tones. There have been grammatical descriptions without tones (Rasch, 2002), and tone-treatments without further grammatical description (Cruz, E., 2011), but not grammatical description that includes tones. This work joins that of Campbell (2014); Sullivant (2015) and Villard (2015), which reflects a full account of the prosodic system while beginning to provide an account of the grammatical system. This work also answers questions regarding the non-final syllable reduction of nearly all polysyllabic words in this language. Significant differences in the tone and verbal systems and lexical differences in basic grammatical morphemes, like pronouns, create a situation of varying degrees of intelligibility with Eastern Chatino varieties. A grammatical description of aspects of the phonology and morphology of TEO informs research on these synchronic differences and historical relationships.

Due to the spread of Spanish in surrounding communities and changes in the political economic landscape, Teotepec Chatino is in danger of falling out of use. Although many young people are fluent speakers of both Chatino and Spanish, the latter is used in educational contexts, contributing to the decay of Chatino's legitimacy. Any documentation and grammatical description can give insight to native speakers about their language. The publishing of culturally relevant texts and materials related to the grammar provides legitimacy to a language that has long existed in a historically hostile political context. This work will also provide information that will be useful to linguists and scholars in related areas of study, particularly those engaged in the study of Otomanguan and Zapotecan languages, generally, and the Chatino language groups, specifically.

1.4 Previous research on Chatino languages

Research on Chatino languages began in the late part of the 19th century by different groups of researchers working on the language over the last 120 years.

1.4.1 Preliminary comparative studies of Chatino

Some of the first Chatino linguistic data appeared in the late nineteenth-century language surveys of Antonio Peñafiel, which include data from two Zenzontepec Chatino communities and three Eastern Chatino communities, found in Mechling (1912). Francisco Belmar's *Investigaciones sobre la lengua chatina* (1902) is one of the first attempts to group Chatino with other languages. In this paper, Belmar compares languages from the communities of Juquila, Zenzontepec, Teojomulco, Tututepec and San Gabriel Mixtepec to posit the relationship of Chatino as a Zapotecan and not a Mixtecan language.

The data from San Gabriel Mixtepec appears to be Coatecan Zapotec (Sullivant, submitted). The data from Tututepec is Mixtec. Belmar included this material to show the contrast between that language and Chatino. Lastly, the data from Teojomulco appears to be a divergent Chatino language sister to the ancestor of ZEN, TAT and Eastern Chatino (Sullivant, under revision). This work is of value to philology and historical linguistics and may be useful to determine if indeed another variety or sub-division of Chatino is warranted.

In 1911 Franz Boas conducted fieldwork on Chatino. As noted in §2.3, this fieldwork led to the publication of an important paper that first identified the three Chatino varieties; Tataltepec, Zenzontepec, and all the others (Boas, 1913), a tripartite division borne out by Campbell (2013).

Jaime de Angulo collected data and studied various languages in the state of Oaxaca, Mexico. His work reveals the linguistic diversity of the area and allows for a preliminary mapping of the genetic affiliations among the different languages in question (Angulo, 1925; Jaime de Angulo, 1926; Angulo, 1926; Angulo and Freeland, 1935).

1.4.2 SIL comparative and descriptive studies of Chatino

Beginning in 1947 the majority of the work on Chatino was conducted by linguists from the Summer Institute of Linguistics (SIL). This work can be characterized by the

documentation of indigenous languages for the twofold purpose of creating linguistic analysis and the translation of the New Testament by SIL Wycliffe Bible Translators into local Chatino varieties. This work began with McKaughan's 1954 IJAL publication (McKaughan, 1954) continued until the early part of the 2000's with the dictionary published by Leslie and Kitty Pride (2004).

The Prides spent more than twenty years living in the region. They first worked in Yaitepec, spent some seventeen years in Tataltepec, and then resided in Panixtlahuaca. K. Pride wrote a description of the Chatino numeral system that includes a structure of how larger numbers are created with data from the varieties of Zenzontepec, Tataltepec and the Eastern Chatino topolects of Yaitepec and Zacatepec. The paper also includes a typological comparison of the numeral system with other Otomanguean languages (Pride, 1961).

In 1970, Pride and Pride published a Tataltepec bilingual Chatino/Spanish dictionary of 1400 entries complete with illustrations, a description of the writing system, and a grammatical outline as an appendix. Leslie Pride's 1984 paper is an analysis of tone and penultimate syllable contrast based on 250 mono- and polysyllabic examples in Tataltepec Chatino.

Upson and Longacre (1965) conducted a reconstruction of Proto-Chatino phonology that presents a 251 cognate set from Zenzontepec, Tataltepec and Yaitepec. For each cognate set a segmental reconstruction is proposed and vowel length contrast on penultimate syllables is posited. Although tone is not discussed, this paper gives one of the most rigorous and extensive treatments of historical phonology of Chatino. Also, Upson and Longacre thought that Papabuco Zapotec was Chatino but they excluded it from the reconstruction.

1.4.2.1 SIL research on Yaitepec Eastern Chatino

In addition to the comparative work outlined above, SIL linguists have also worked on specific Eastern Chatino topolects. As noted in §1, Eastern Chatino comprises Quiahije,

Zacatepec, Yaitepec, Teotepec, and others. One of the first dictionaries and phonemic descriptions of Yaitepec Chatino was written by McKaughan and McKaughan (1951) and McKaughan (1954), respectively.

The Prides presented a work on Yaitepec Chatino syntax (Pride, 1965) in a 249 page book written within the theoretical framework of Tagmemics developed by Pike (1954). Jessamine Upson wrote four papers on Yaitepec Chatino that began to outline aspects of Chatino discourse and grammar. Upson's first work was a discourse analysis of a collection of 20 Chatino riddles (Upson, 1956). This work briefly presents aspects of Chatino morphology and syntax, examines verbs, nouns, particles, and adverbs, describes person marking, and outlines some tone contrasts.

Upson made one of the first attempts to define the Chatino stem classes and how they combine with morphemes described as affixes, tone, and nasal vowels (Upson, 1960). This selection includes a description of the inventory of consonants, vowels, and a four level tone system. The aspectual system, described as a *tense system*, is analyzed as having present, past, and future tenses. Indeed there are aspects that are often translated with these tenses; however, Upson neglects to note the habitual aspect which can easily be confused with the progressive due to the fact that, in TAT and many Eastern Chatino topolects, the habitual and progressive aspects are usually differentiated by tone contrasts alone, exhibiting, in many cases, identical segmental shape on the verb stem. Furthermore, the habitual and progressive are the most common aspects that correspond to Spanish present tense which may be the source of the lack of differentiation. Upson's paper also sheds little light on the tone system of the language, an integral part of Chatino grammar, making a full description incomplete. The importance of this work is that Upson began to describe some of the complexities of Chatino grammar. In the last of these four papers Upson made an attempt to outline the tone system and vowel length contrast in Yaitepec Chatino (Upson, 1968). Upson considers vowel length to be based on a long versus a short syllable nucleus.

Indeed vowel length has been shown to derive from historical dimoraic, monosyllabic words. This contrast can be seen in the varieties of ZEN, TAT, ZAC and TEO (McIntosh, 2011). Upson outlines some processes she describes as “syntactophonemics,” which really look like dissimilation and sandhi rules for adjacent tones.

During the time Upson was working on Yaitepec Chatino, Leslie Pride wrote a description of Yaitepec tone (Pride, 1963). This paper gives a basic tone inventory, describes how the tones operate in the verbal system, and outlines some of the tone sandhi processes in the language. Pride attempts to classify the tones in the verbal system; however, it is unclear his basis for the classification. Pride presents verbs as either accompanied or unaccompanied to show the different tones on the verb stem. He states, “A verb stem containing a suprafix must be accompanied by (a) the pronoun *wə* ‘you all,’ (b) the pronoun *neʔ* ‘he/she/they,’ or (c) pronoun, noun, noun phrase, pronominal phrase, with third person referent, singular or plural... .” These are referred to as accompanied. The tone differences on the accompanied and unaccompanied verbs are possibly different because of sandhi changes, due to the tones on the preceding lexical items mentioned above. Pride does describe certain sandhi processes but doesn’t account for these in the interaction of the accompanied or unaccompanied verb stems.

1.4.2.2 SIL research on Panixtlahuaca Eastern Chatino

The most comprehensive dictionary of Eastern Chatino published before the time of this writing was written by the Prides (2004). This work is organized Spanish-Chatino - Chatino-Spanish, contains 5000 entries, includes illustrations, and has a grammatical sketch as an appendix written by Kitty Pride. The majority of the examples in this work are from Panixtlahuaca Chatino; however, there are citations from Tataltepec and other Eastern Chatino varieties.³

³There is a more extensive Chatino-Spanish dictionary of Yaitepec Eastern Chatino (in press) by Jeffery Rasch and Martín Suárez that contains 7000 entries.

1.4.2.3 SIL research on Nopala Eastern Chatino

There is virtually no work on Nopala Chatino except for a short set of texts by Wardle and Wardle (1980). This work includes an explanation of the writing system which is representative of the popular orthography used by the bilingual education instructors of the Nopala area. The texts have no marking of tone whatsoever, which makes it challenging to see how the tone system functions in this variety of Chatino.

1.4.3 PDMLA research on Chatino

The Project for the Documentation of the Languages of Mesoamerica (PDLMA) headed by Terrence Kaufman (University of Pittsburgh), John Justeson (SUNY Albany), and Roberto Zavala (CIESAS-Sureste, Chiapas, Mexico) ushered in a period of fresh linguistic work by documentary and historical linguists focused on Mesoamerica with the aim of documenting, describing, and analyzing Mixe-Zoquean, Nahuatl and Zapotecan languages (Kaufman et al., 2001). Work on Chatino for the PDLMA has been conducted by Troi Carleton, Jeffrey Rasch and more recently, Eric Campbell.

Jeffrey Rasch, then a graduate student at Rice University, began documenting Yaitepec Chatino in the late 1990's. His early work consists of papers on topics of phonology (Rasch, 1998b), syntax and semantics of the relational noun *ʔin* (Rasch, 1998a), and lexical topics about the relational noun *-ʔo*, (Rasch, 1999).

Rasch's doctoral dissertation is the most complete description of any Chatino variety to date (Rasch, 2002). This work can be considered one of the most important and detailed modern contributions to current research of an Eastern Chatino language. The grammatical description covers many aspects of morphosyntax, and includes the set of texts on which the grammatical analysis is based. Rasch has also published some pedagogical material where he has substantially revised his analysis of the tones. These consist of two manuscripts; a monolingual dictionary (Suárez Martínez et al., 2009) and a monolingual lexicon (Carmona

et al., 2009), both written in Yaitepec Chatino. Most recently, Rasch has written the first full bilingual Chatino-Spanish dictionary in this language (Rasch, in press). This work is complete with a phonological sketch and description of the practical orthography.

PDLMA work on Zenzontepec Chatino included a significant, unpublished toolbox dictionary database by Troi Carleton. Eric Campbell later built on this database and they have published the first bilingual Chatino-Spanish dictionary in the language (Campbell and Carleton, in press). There are also several papers that Carleton coauthored with Rachelle Waksler. These papers cover topics on pronominal markers (Carleton and Waksler, 2000), syntax-semantics (Carleton and Waksler, 2002) and topic marking (Carleton, 2002).

1.4.4 CLDP research on Chatino

Beginning in 2002 research on Chatino began at the University of Texas at Austin in what is known as the Chatino Language Documentation Project (CLDP) (Cruz, E. and Woodbury, 2014b). This project began as a collaboration between Anthony Woodbury and Emiliana Cruz and was an outgrowth of the Center for Indigenous Languages of Latin America (CILLA) at the University of Texas at Austin (Woodbury and England, 2004). Other UT linguists joined the project just about every year afterwards. Hilaria Cruz began working on Quiahije Eastern Chatino in 2003, Stéphanie Villard began working on Zacatepec Eastern Chatino in 2006, Eric Campbell began working on Zenzontepec Chatino in conjunction with the CLDP as well as PDLMA in 2007, I began working on Teotepec Eastern Chatino in 2007, and Ryan Sullivant began working on Tataltepec Chatino in 2008. Lynn Hou and Kate Mesh received an ELDP grant to work on emerging home-sign systems associated with a small number of deaf individuals in San Juan Quiahije. They conducted fieldwork in the communities of San Juan Quiahije and Cieneguilla during July and August of 2012. Jörn Klinger and Colin Bannard have begun work on child language acquisition. Jörn Klinger conducted fieldwork in Teotepec during August of 2012.

1.4.4.1 Comparative historical work (CLDP)

The following describes the work that has been conducted by the CLDP. The description begins with work on Chatino more generally and is then broken down by respective varieties of the language with a chronological presentation.

To date there have been a few historical and comparative papers on Chatino. This work conducted by the CDLP includes an internal classification (Woodbury, 2009; Campbell, 2013), numerals in Proto-Chatino (Campbell, E. and E. Cruz, 2009), comparative tonology (Campbell and Woodbury, 2010), morphosyntax (Cruz, E. et al., 2010), and Proto-Zapotecan to Chatino changes.

Quiahije, Yaitepec, Zacatepec, and Panixtlahuaca Eastern Chatino are some of the most broadly studied topolects of Eastern Chatino. This work has been essential in the documentation, description, and understanding of the Eastern Chatino tone system with the establishment of salient cognate tone sets which has allowed for comparative tone work within the Eastern Chatino language cluster (Cruz, H. and Woodbury, 2006).

1.4.4.2 Zenzontepec Chatino

Zenzontepec Chatino (ZEN) exhibits a small inventory of tones and has not undergone the same vowel syncopation as seen in many of Eastern Chatino varieties. Work on ZEN has been integral to the classification and historical analysis of other Chatino varieties. In his work with the PDLMA and the CLDP Eric Campbell has covered a broad range of grammatical and lexical topics such as ethnobotany (Campbell, 2007), verbal morphology (Campbell, 2011), reported speech (Campbell, 2009a), comparative reconstructions (Campbell, 2010), and the aforementioned diversification and historical work (Campbell, 2013). Campbell's dissertation is a description of aspects of the phonology and morphology of Zenzontepec Chatino (2014).

1.4.4.3 Tataltepec Chatino

The documentation of Tataltepec Chatino by Ryan Sullivant is ongoing. Sullivant has written on the Tataltepec tone system (Sullivant and Woodbury, 2009), wrote a Master's Thesis on verb classes and aspect morphology (Sullivant, 2011a), has presented continued work on the Tataltepec prosodic system (Sullivant, 2012) has written a paper on a shared numeral classifier in Chatino and Mixtec (Sullivant, 2013) and wrote his Doctoral Dissertation on the phonology and morphology of the language (Sullivant, 2015).

1.4.4.4 Eastern Chatino

Work on Eastern Chatino has focused primarily on Quiahije, Zacatepec, Teotepec and more recently Panixtlahuaca and Yolotepec Chatino. There have also been a couple of preliminary studies that have included the Eastern topolect of Lachao Nuevo and Lachao Viejo. There was an MA thesis written about community-based Chatino literacy education (Hammick, 2008). There have been collaborative studies on adjectives (E. Cruz and Woodbury, 2009), existentials and copulas (McIntosh and Villard, 2011), and a description of the methodology for discovering tone (E. Cruz and Woodbury, 2014b). In July of 2012, E. Cruz and Woodbury conducted comparative tone work on Panixtlahuaca and Yolotepec Eastern Chatino ((E. Cruz et al., 2012a; E. Cruz et al., 2012b) as part of a larger tone survey of Eastern Chatino. This work was complementary to and an outgrowth of the tone workshop for linguist speakers of Mesoamerican languages that took place in Oaxaca, Mexico at the ex-convent Centro San Pablo, June 15-24, 2012.

1.4.4.5 Quiahije Chatino

Documentation and description of Quiahije began in 2004 and includes work by Emiliana Cruz, Hilaria Cruz, Thom Smith Stark, and Anthony Woodbury. These papers cover areas of basic phonology (E. Cruz, 2004), lexical tones (E. Cruz and Woodbury, 2005),

tone sandhi (E. Cruz and Woodbury, 2006), alienable and inalienable possession (E. Cruz, 2007), complementation (E. Cruz et al., 2008), verbs of motion (E. Cruz and Woodbury, 2008) poetics and ritual speech (H. Cruz, 2009). E. Cruz's dissertation covers the complex tone system of the language in remarkable detail (E. Cruz, 2011). H. Cruz's dissertation is an expansion of her Master's Thesis, where she describes the linguistic poetics and rhetoric of San Juan Quiahije Chatino (2014). Ryan Sullivant presented a paper at the 40th meeting of the Linguistic Association of the Southwest on tone alignment in San Juan Quiahije Chatino (Sullivant, 2011b).

1.4.4.6 Zacatepec Chatino

The documentation of Zacatepec Chatino has been important because the language has not undergone non-final syllable loss like some of the other more studied Eastern topolects and it has a large inventory of tone contrasts. The documentation of Zacatepec began in 2006 with work on segmental phonology and prosody (Cruz, H. and Woodbury, 2006) and (Villard, 2007). The basic components of the grammar were described in a grammatical sketch by Villard (2008) and a verb classification study that follows that of Campbell (2009b) was written by Villard (2010), work on verbal inflection Villard (2012) and work on tone by Villard and Woodbury (2012). For her dissertation, Villard is writing a phonological and morphological description of ZAC (2015).

1.4.4.7 Panixtlahuaca Chatino

Documentation of Panixtlahuaca Chatino is underway and ongoing. In addition to the tone survey work conducted by E. Cruz and Woodbury in the summers of 2011-2013, Woodbury has written a description of the unique vowel system of Panixtlahuaca Chatino (Woodbury, 2011b) and written on vowel register and graded nasalization (Kingston and Woodbury, 2014).

1.4.4.8 Teotepec Chatino

Prior to 2003, work on Teotepec Chatino consisted of some citations in the Prides' dictionary. In 2005, Woodbury, E. Cruz and H. Cruz visited the community. In 2006 E. Cruz, H. Cruz and Anthony Woodbury returned to Teotepec to record texts and word lists for a preliminary survey of the language. This resulted in a first pass look at the phonology and tones of the language and proposal for a practical writing system. During this time, they met with teachers and community leaders, conducted a seminar on Chatino writing, and recorded 5.6 hours of texts. On the basis of this work as well as knowledge about the phonology of other Chatino languages, they presented the community with preliminary notes for an orthography. This initial work on TEO set the scene for my subsequent work and current and project.

1.5 History of the present project

In 2007 I was invited to visit the Chatino region with Tony Woodbury and Hilaria Cruz under the auspices of Tony Woodbury's ELDP (Endangered Language Documentation Project) grant MDP0153 entitled *Documentation of Chatino, an Otomanguan language group of Oaxaca, Mexico*. After visiting the Chatino communities of Teotepec, Lachao Nuevo, Lachao Viejo, and Yaitepec I decided to return to Teotepec to ask permission to stay in the community and begin work on their language. When I returned, I presented myself to the authorities with a letter of introduction that outlined my association with the University of Texas at Austin and the CLDP. I provided them with a statement of my general intent to live and work in the community and my desire to document their variety of Chatino. I was granted permission and stayed on in Teotepec for eight weeks in order to create a community-based language documentation project.

During this first visit I began to work with Reginaldo Quintas Figueroa. Reginaldo was attending school during the day but agreed to come and work with me in the afternoons. We worked together compiling verb lists, documenting the lexicon, and studying tone.

During my free time I made friends and accustomed myself to community life.

At the end of December of 2007, I returned to Teotepec and stayed for three weeks, working into January of 2008. During this second visit I met Wilebaldo (Maximino) Velasco Mendoza, an elderly gentleman in his early seventies. He agreed to work with me during the daytime. This visit was important because I was able to meet the new authorities (they change post annually on the 1st of January) and further acquaint myself with the community of Teotepec. This field trip added credibility to the project because people could see that I had returned and was serious about working on Teotepec Chatino.

During the summers of 2008 and 2009 I returned and spent three months during each visit, working under the auspices of Woodbury's ELDP grant, mentioned above. This support afforded me the opportunity to continue working and to conduct research that I used for my Master's Thesis and that makes up part of the corpus for this dissertation.

Over the course of my work with the CLDP up to that point, I had recorded 7.5 hours of text, 6 hours of video, and over 200 GB of .WAV audio files of elicitation that included thousands of lexical items. I designed a writing system based the phonemic analysis in Chapter 2 (§2.7) and on the writing system proposed by Rasch (2002) and further elaborated on by E. Cruz (2004) and made a first pass analysis of the tone system (McIntosh, 2009a). I began working on the creation of a lexicon and wrote a grammatical sketch of the language for my Qualifying Paper for doctoral candidacy (McIntosh, 2010). I presented a version of this sketch as my Master's Thesis (McIntosh, 2011).

Subsequent documentation of Teotepec Chatino has revealed one of the more unique tone systems with dauntingly complicated processes of tone sandhi. Studies on Teotepec have consisted of ongoing descriptions of tone (McIntosh, 2009a, 2012c), a grammatical sketch outlining some of the major grammatical aspects of Teotepec (McIntosh, 2011) a collaborative comparative work with Villard investigating existentials and copulas in Teotepec and Zacatepec Eastern Chatino varieties (McIntosh and Villard, 2011), work on morphology

(McIntosh, 2012b), and collaborative work on an experimental analysis of the phonetics of the tone system (Kelly and McIntosh, 2013).

In March of 2010 I was awarded an ELDP Individual Graduate Student fellowship grant (IGS0098) titled, *An Integrated Approach to Teotepic Chatino Language Documentation through History and Culture*. I requested the grant in order to make an extensive documentation of TEO through the creation and construction of a respectable text corpus. I emphasized speaker training and community participation in order to create a language documentation emphasizing the history and rich culture of speakers of Teotepic Chatino. My work has led to the composition of a community-focused documentation that reflects a rich body of narratives and procedural texts. Community elders and others have worked with the project to document historical narratives, agricultural practices, procedural work practices, toponymic information, and ethno-botanical and medicinal information.

At this point, the project has produced 32 hours of recorded texts, where 30 hours of these texts have been transcribed and translated. This corpus reflects interests of speakers, and presents a coherent integrated record of political economy, history, and socio-cultural themes. This work complements the previous efforts at language documentation that I have accomplished as part of CLDP.

1.6 Documentation methods

This dissertation is based on a combination of both text and elicited materials collected during fieldwork conducted between 2007-2014. The materials include the first pass transcription and translation of 30 hours of the recorded texts and the continued analysis of these materials with native speaker consultant assistance. Elicited materials have been essential to get at the complex tone system and to systematically obtain lexical items that occur less frequently in the text corpus. A majority of the texts have been processed and organized with the use of ELAN from MPI (Wittenburg et al., 2006) and managed with a combination of Microsoft Excel spreadsheets and Word Documents.

1.6.1 Theoretical considerations

The orientation of my work can be framed by what Woodbury (2003), following Sherzer (1990) and Urban (1991), has described as a “discourse centered approach” to language documentation. When looking at how data-documentation is theorized in this approach to the documentation of language and culture, Woodbury emphasizes an “openness to the range of possible uses” for natural discourse and “an emphasis on how natural discourse data was to be represented, transcribed, preserved, disseminated, and made accessible through interpretive apparatuses, including catalogs, translations, notes, commentaries, exegeses, and summaries” (2003:41). This is reflected in my documentation, description, dissemination, and archiving of Teotepec linguistic material.

The focus on the documentation of procedural and cultural narratives as told by local experts and the transcription and translation of these materials is a valuable contribution to the study and preservation of Teotepec Chatino. This is reflected by the intentionally broad formulation of endangered-language documentation through the construction of a rich corpus of local narratives and procedural work processes as described by an array of speakers reflecting multiple viewpoints and memories. The archiving of the project linguistic corpora in the digital archives of the Endangered Language Archive (ELAR) and the Archive of the Indigenous Languages of Latin America (AILLA) places this material where it can be preserved while allowing access to it by many publics. Similarly, through the creation and dissemination of Spanish/Chatino pedagogical materials and booklets of short procedural narratives places language and linguistic material in an easy to reproduce format that can be made available and useful to a wide audience of speakers, educators and language learners locally.

These have been part and parcel of the practices that formulate the documentation of Teotepec Chatino. This is reflected in Woodbury’s discussion regarding corpora theorizations with a central focus to “make and keep records of languages that are falling

into disuse through rapid language shift.” (Woodbury, 2011a). furthermore, throughout my work I have considered the stake holders and what he describes as a “wider array of publics” and I have “try[ed] to know, understand, acknowledge, analyze, and coordinate the enterprise in all its various multifaceted forms.”

The documentation of TEO has been formulated and carried out in a way that reflects these theorizations and stake holders’ interests not just through the dissemination of language materials but also by engaging the entire community in the process. This initially involved presenting myself to the local Authorities describing my project to the local authorities and asking permission to conduct my research. Because the government officials change office annually I would meet with this body each year to re-present myself to the community and to ask permission to continue my research. During these meetings I would give short presentations informing the community officials and elders about the progress of project and share with them my most up-to-date analysis of the language through the dissemination of pedagogical materials and recordings on compact discs. Thorough the facilitation of writing seminars I interacted with primary school aged community youth. I worked with high school and post high school aged youth in the process of documentation and description of the language through the training of basic language documentation techniques. The inclusion of this high/post high school age group was designed with the intent to interface them with community elders by training the youth in basic documentary linguistics. Many of these individuals worked with me by carrying out the documentation process through participating in the interviewing elders. This has not only documented the language but has engaged youth with elders who hold expert knowledge of procedural work and cultural practices, local and regional narratives, and community memories as a means of engaging generations of speakers in a joint effort that has fostered a documentation project that is multifaceted and meaningful to a broad range of individuals and can be utilized for an equally broad range of goals and outcomes.

1.6.2 Text work

Much of my early work on TEO consisted of elicitation sessions to get at the tone system. As the work on this area of the grammar has progressed I have been able to place a greater emphasis on the analysis of natural speech and discourse. During prior periods of fieldwork (2007-09) culturally significant work processes were identified, such as: the cultivation of maize, beans and other food staples as well as the cultivation of sugar cane and its processing into a raw sugar product, known as *panela*. Likewise, I noted a collection of historical narratives and place-based stories that are repeated by elder speakers. My interaction with language consultants and community elders has provided a necessary foundation for consultation on which additional speakers and culturally relevant themes would be important sources for this knowledge.

The recording and documentation of narratives as texts was central to my field research during the summers of 2010-2012. These recordings have been uploaded to the project computers, stored on project-dedicated external hard drives and will be archived at the Endangered Languages Archive (ELAR) housed at SOAS (School of Oriental and African Studies) in the University of London and at AILLA (Archive of Indigenous Languages of Latin America) housed at the University of Texas at Austin. Metadata, as described in Nathan and Fang (2009), were created the day the recording was made and bundled with the media files in a folder uniquely labeled to identify the session or event. These archives contain session specific folders that include the original archivable recordings, related ELAN and Audacity files (Audacity Team), detailed metadata for each recording written in plain text format that includes equipment used, speakers involved, place of the recording, and a brief description of what the documented event is about. Audacity software was used for sound enhancement and ELAN for linguistic analysis, using a template specific to our work on Teotepec.

This part of the documentation of TEO may be similar to what Himmelmann (1998) describes as a “low level” analysis of the data; however, as a given text is reanalyzed, the analysis improves with each pass. This part of the text work moves from a documentary activity very much into the realm of language description. This is where the language documentation and description activities overlap, minimally requiring a phonetic and phonological analysis, a segmental analysis, and well developed orthographic system.

Labels have been developed for ELAN which use the following tiers **TxR** - *raw text*, **ft** - *free translation*, **Tx** - *text*, **gn** - *gloss national*, **ps** - *part of speech*, and **notes**. Figure 1.3 is an image taken from one of the texts that has been transcribed and translated.

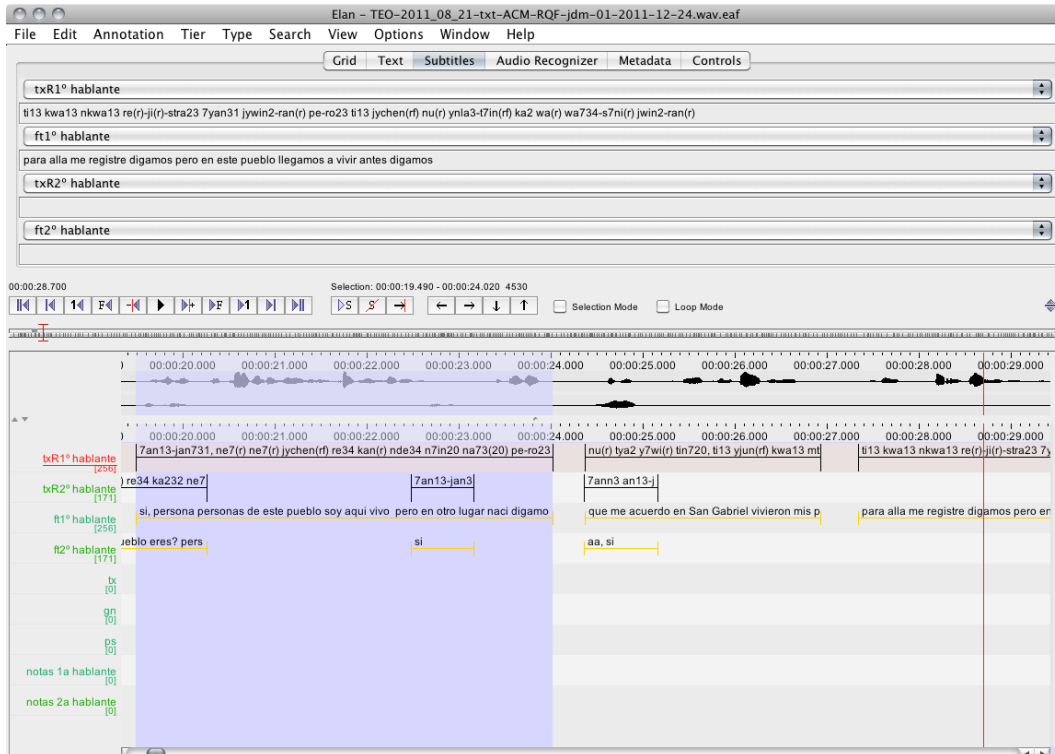


Figure 1.3: Example of TEO text in ELAN

Any of the tiers can be easily exported to a text file with a time-aligned signature

for each utterance, allowing for easy reference back to the original audio file. The first tier, **TxR** - *raw text*, is where the text is transcribed in its “raw” form. At first, Hugo Reyes and I transcribed the text on this tier with all of the surface tone sandhi realizations and underlying tones in parentheses. As our analysis of the tones and sandhi evolved, we decided to transcribe using only the underlying lexical tones. In this way, sandhi rules can be “applied” to a given utterance to show surface level prosodic changes. The **ft** - *free translation* tier is designed to be where Chatino is translated into the language of wider communication - in this case, Spanish. These first two tiers serve as elemental for what is needed to get at the language in order to analyze its grammatical structure. This format will be used to extract transcriptions and translation that will accompany a given audio file for digital archiving or publishing of text materials for community members and other publics.

The tier **Tx** - *text* was originally included to allow for further analysis of the raw text. However, we have never used this tier. This tier could be used to reproduce the raw text with the surface prosodic sandhi realizations. The following two tiers **gn** - *gloss national* (Spanish in Mexico) and **ps** - *part of speech* are designed for text tokenization. Ideally, if the segmentation is good and the transcription and translation are accurate, this is a place where the tokenization would allow for getting at the lexemes for glossing parts of speech, compounds, and morphology. These items can be extracted for a dictionary or lexicon. The **notes** tier is used for making notations about a given text. All of the tiers are interlinked to the **TxR** - *raw text* tier, which acts as the parent interrelating all of the intermediate levels between *notes* and *raw text*.

The typical workflow of the texts for this project has involved the contributions of language consultants who work on the transcriptions in ELAN. Step three could be repeated as many times as necessary in order to achieve an analysis that is adequate for archiving and continued descriptive work. And step four is an ongoing process.

Table 1.3: Text Workflow

Step 1	Step 2	Step 3	Step 4
Record Text with Reginaldo or Hugo Reyes	→ Transcribe-translate: → Hugo Reyes	→ Review-Revise: → Myself & Hugo Reyes	→ Analyze texts → Analyze texts

Texts from the project were recorded and will be archived in 24-bit stereo .WAV files at a 44.1 kHz sampling rate with accompanying MPEG2 video files. Of the 30+ hours of material that have been recorded I have worked closely with speakers to choose the best texts to be used for the analysis of the grammatical description in the dissertation. These materials will be archived and made available through ELAR and AILLA sometime after the dissertation is completed. Texts will be archived in XML format exported from ELAN, along with the .WAV and MPEG2 files.

1.7 Consultants

Part of the work that is done in Chatino communities by the Chatino Language Documentation Project has been connected with the ethos of teaching speakers about the linguistics of their languages. Keeping in line with the parameters mentioned in §1.6.1, this has included the creation, sharing and distribution of pedagogical materials (CLDP), the training of speakers in local language seminars, and the inclusion of speakers in broader linguistic initiatives, like the annual tone workshop for native speaker linguists at the San Pablo Cultural center in Oaxaca, Mexico (Taller de Tonos). When I began fieldwork in Santa Lucía Teotepec I came with the intention of continuing this tradition. I started working with people of all ages in order to document the language from multiple perspectives and as my project developed, I became interested in working with community youth and began training them in the basics of language documentation.

This approach to language documentation empowers speakers to understand the linguistic details of their language through the development of metalinguistic awareness.

Emphasizing the unique and elegant structure of the language reinforces the value and prestige of a language that has long been classified as a simple “dialect” (*dialecto* SPN), with little value, by non-indigenous people. While working on the transcription and translation of texts, young speakers would sometimes remark: “Mira como este viejo se repita a si mismo...” ‘look how this silly old man repeats himself... ,’ when in fact the speaker was invoking the parallel structure of a rich form of Chatino verbal art (H. Cruz 2014). The discovery and discussion of the poetic couplet in everyday discourse has given younger speakers a greater appreciation of the poetic structure of their language. Likewise, consultants who have worked with me on the description of the tone system are amazed at the elaborate sandhi rules that exist in the language. Although speakers produce these changes continually, after the patterns are made explicit through the analysis, they are astonished to recognize them everywhere in everyday speech.

Considering the situation of language attrition in the community and throughout the Chatino Region, the decision to engage young speakers in the documentation of their language has been crucial and strategic to counter this process. At the most basic level, this has entailed training of speakers to write their variety of Chatino, the presentation of pedagogical materials as the descriptive analysis developed, and the presentation of comparative cognate sets for tone of TEO and other Eastern Chatino topolects. Going beyond simply training speakers to write, engaging them in the documentation process has been a way to involve community youth in a meaningful linguistic exercise that requires the interaction of youth and elder speakers. The inclusion of those interested in the documentation processes and broader linguistic initiatives has created a valuable loop of knowledge that is acquired less and less through traditional means. Much of my time documenting TEO has involved training young speakers to operate the audio and video recording equipment and to use computer programs for the transcription and translation of the language. Certain consultants became adept at conducting interviews and began engaging elder speakers to

discuss topics related to traditional work practices, the cultivation of local food stocks, and descriptions of traditional and culturally specific beliefs and practices.

In the description of consultant roles for my ELDP grant, I outlined two basic language consultants functions which have varied depending on a given consultant's contribution and participation to the project. These were defined as *Technical* and *Expert* consultants. Expert consultants have acted as advisers to the project and speakers of texts. The majority of the time, these individuals have been community elders; however, the age range for speakers documented has been between 35 to 103 years of age. Their principal role has been to speak and retell different historical narratives and procedural work-based practices of which they hold expert knowledge. These consultants narrate key culturally significant processes, such as *albañería* 'masonry', midwifery, the cargo system, and agricultural practices, like the cultivation of corn, beans and other food staples as well as the cultivation of sugar cane and its processing into *panela*.

The role of the expert consultants has been pivotal in that they hold the reigns to decide what types of texts get documented. These consultants have formed a type of informal advisory, along with the members of the local government and some of the younger technical consultants, where we discussed the progress of the project in terms of its goals and outcomes. This was where we have decided which texts to publish and where to put our efforts for continued documentary work.

Technical consultants have typically worked directly with me in the collection, documentation, transcription, and translation of the texts. These consultants have largely been high school or post high school age. This role required specialized training in the basic techniques of language documentation and description, basic computer skills, technical training for the operation of the Tascam HD-P2 and EdirolR-09HR digital audio field recorders and the Sony HDR-HC9 Mini DV HD Handycam digital video recorder.

Technical consultants have become knowledgeable about documentary and descrip-

tive linguistics. These consultants have been integral to the process of the transcription and translation of texts and to the documentation of TEO generally. They have typically learned to write Teotepec Chatino with precision and to operate ELAN for text transcription and translation. At first, these consultants transcribed and translated texts in an assisted environment and have come to work more independently as they become expert at this process. The value of conducting interviews and working directly with me or independently has allowed for community youth to engage in the documentation and preliminary description of their own language.

The selection of technical consultants was based on finding individuals who could commit to working on the project for the entire summertime fieldwork period. An ideal individual was someone who was very interested in learning how to write Teotepec Chatino and who would be able to engage in the training to become expert in the use of the practical orthography for representing the phonemic segments and fourteen tone sequences. Additionally, someone who was interested in working at the documentation of their language and learning basic documentary linguistic techniques for documenting indigenous languages.

Reginaldo Quintas Figueroa or the local community authorities would often recommend individuals that they believed would be good at working on the project. This usually consisted of recent graduates or classmates of Reginaldo who had received high marks in the local high school. Interested youth would come to talk about becoming part of the project I would always present them with a series of pedagogical materials that outlined the segmental phonology of the consonants and vowels and then the tone sets. I would review all of the manners and points of articulation discussing the different ways sounds are produced in the language with examples of lexicon referring to the different part of the speech apparatus of our own bodies and a depiction of this modeled in an image pointing to the deeper less visible parts, i.e.: the larynx, velum and nasal cavities. I would do this in turn outlining each phoneme and at the end discuss the tone sequences in turn with

multiple examples of minimal pairs to contrast the given lexical tones. This was all done as a basic introduction to the basic elements of the sounds of Teotepec Chatino. As I would work through these sounds I would ask the individual to speak the given examples so that I could hear their speech. I would make mental notes about their strength as a speaker and try to find individuals who were inclined to speak clearly and articulately and who could produce clear examples of the tones. I would also ask the student about their family background as means to ascertain whether their family is from Teotepec or other Chatino communities. In this way I would be able to determine if a given speaker would be using a hybrid of two different topolects or if their speech.

The training and education of community youth has always been of a very high importance in my work. I have had the opportunity to work closely with more than twelve young people over the course of my project. Several of these individuals have gone on to higher education. Two of the main consultants from the last several years, Hugo Reyes Velasco and Reginaldo Quintas Figueroa, are both planing to pursue higher degrees. Mr. Velasco has worked directly with me since 2010 to transcribe and translate a majority of the texts in the database. He is expert at writing the language. He continues working with me and engages in writing his language regularly. Mr. Quintas Figueroa applied for and was accepted at the Autonomous University of Nayarit in Tepic, Mexico. He is there now, in his second semester, working in the undergraduate program on applied linguistics and participating in regional language documentation initiatives aimed at the documentation of the Huichol language.

Chapter 2

Introduction to the Phonology

This chapter describes the segmental phonological patterns found in Teotepec Chatino. It first introduces the phonemic inventory, the tone inventory (as an introduction) and syllabic structure to facilitate the discussion of the segmental phonology and the examples. A subsequent more in-depth description of the segmental phonology follows. Lexical tones are described in detail in Chapter 3 and the phonology and phonetics of the tone system are described in Chapters 4 and 5. A description of the orthography and how it relates to the phonemes in their practical representations is included at the end of this chapter.

2.1 Presentation of data

The following provides a brief discussion which outlines how the linguistic material is organized and presented in this chapter. First, the phonetic representations are presented, followed by a brief discussion outlining the representation of tone. After that, the phonemic inventory of the vowels and consonants of the language is presented, followed by an outline of the different syllable shapes and their exceptions in TEO. The remainder of the chapter consists of an in-depth description of the vowel and consonant phonemes with detailed examples of each of the sounds in the language. Finally, at the end of this chapter, the conventions of the practical orthographic representations of TEO used throughout the remainder of the dissertation are presented.

2.1.1 Phonetic representations

Lexical items in square brackets ([jha] ‘tortilla’) are based on phonetic transcriptions in the International Phonetic Alphabet (IPA). Throughout the phonology chapter, examples are written in the technical phonemic orthography (e.g. /jha/ ‘tortilla’) and where needed presented in the IPA ([jha] ‘tortilla’) to illustrate a point about allophonic variation. In this way the reader is able to compare the two representations in order to understand and verify my analysis. After Chapter 2 and throughout the remainder of the dissertation examples are italicized and presented in the practical phonemic orthography e.g., *yja* ‘tortilla’ (§2.7).

2.1.2 Tone marking

There are two suprasegmental features associated with vowels; length and tone. Table 2.1 presents the Eastern Teotepéc Chatino tone inventory. This system is accounted for by positing nine tones that make up fourteen sequences. The tone sequences link to stems and further divide to form fourteen different groups based on the existence of underlying unlinked tone sequences.¹ The basic nine tones consist of the following: /0/, /M/, /MH/, /L-H/, /HL/, /HM/, /ML/, /MLM/ and the toneless set /Ø/. The notations represent levels H=High M=Mid L=Low 0=Super high and Ø=toneless. Combinations of these values represent ascending and descending sequence values. Tone sequences in parenthesis, /-(L-H)/, /-(H)/ and /-(0)/, that follow the linked tone sequences represent the unlinked or floating tone sequences.

Linked tones are the tones or sequences of tones associated with a given syllable or stem. These tones are represented as **T** in the schemas; **T**, **T-(T)**, **T-(T-T)**, **T-T-(T)** or **T-T**. In this framework **T** can be a single linked tone, /0/ or /M/, a linked contour tone /MH/, /HL/, /HM/, /ML/, or a linked complex tone /MLM/.

¹The lexical tones are described in Chapter 3.

Table 2.1: Teotepec Tone Sequences

Sequence Features	One-Linked			Two-Linked	
		One-Unlinked	Two-Unlinked		One-Unlinked
Level:	0 M	M-(H), M-(0)	0-(L-H)		
Ascending:	MH			L-H	L-H-(0)
Descending:	HM		HL-(L-H)		
	ML		ML-(L-H)		
Complex:	MLM				
Toneless:	∅				

The unlinked tones operate underlyingly. These tone sequences are referred to as either unlinked or floating tone sequences. They are realized only in context and in connection with adjacent and non-adjacent tone categories. In a given context unlinked tones may separate from their host, move to the right, and cause an array of phonetic changes (tone sandhi) on adjacent and non-adjacent lexical items. TEO exhibits a robust system of tone sandhi that is due, in part, to the movement of unlinked tones. The existence of the unlinked tone sequences creates more discrete tone categories leading to a typologically unusually high number of different tone sets in the language (see Chapters 4 and 5).

The hyphen <-> serves two purposes, one is separate linked tones. For example, the sequence /L-H/ is made up of two linked tones **T-T** and the sequence /MH/ is made up of one ascending linked tone **T** sequence associated with the stem. The other purpose is to separate linked tones from unlinked tones represented in parenthesis to the right of the linked sequences, T-(**T**) e.g.: /-(L-H)/, /-(H)/, /-(0)/.

Due to the complexity of the tone system in TEO for the purposes of this dissertation, tone is be marked in a way that reflects the cognate tone sets proposed in H. Cruz and Woodbury (2006) Cruz, E. and Woodbury (2014a). With only slight modifications these

abstract notations are adopted here. The sets are noted with superscripts $\langle A-K \rangle$ on the right edge of a given syllable. These notations are arbitrary and do not have any particular ordering principle aside from their cognate relationship with other Eastern Chatino languages.

Table 2.2: Teotepéc Tone Sequences Set Correspondences

Sequence Features	One-Linked			Two-Linked	
		One-Unlinked	Two-Unlinked		One-Unlinked
Level:	Bi A	J, B	H		
Ascending:	I			E	D
Descending:	G K		F C		
Complex:	Bii				
Toneless:	X				

The tone sets are presented in Table 2.2 for the reader to be able to continue reading with a point of reference. This table mirrors that of Table 2.1, above, with the corresponding set notations that are used throughout the dissertation to refer to a given lexical tone. The toneless or null set noted as ‘X’ here is unmarked throughout the dissertation.

Arguments in favor of the use of this notation system are: 1) The high correspondence to other Eastern Chatino varieties is a useful tool for the continued analysis of other Eastern Chatino varieties; 2) For the purposes of this work, it is more efficient to denote lexical tone without having to add a notation that may include up to four symbols for a syllable that may only contain two or three graphemes in its written form e.g., $ti^{HL-(L-H)}$ versus ti^F ‘rope.’ Throughout Chapters 3, 4 and 5 technical phonemic representations are marked with the use of the letter representations (L, M, H, etc...). In the remaining chapters I return to the abstract tone set designations (A, B, C, etc...).

Historical orthographies for marking tone have consisted of a set of tone numbers following the Americanist tradition where 1 is high and 4 is low (Yip, 2002:21). Later, letters H(igh), M(id) and L(ow) were used to represent these categories in an attempt for greater transparency and to avoid confusion with the Asian tradition which is the inverse of the Americanist system.

2.2 Phonemes

2.2.1 Inventory of vowel phonemes

Teotepec Chatino exhibits nice phonemically distinctive vowels. There are five oral and four nasal vowels. Table 2.3 presents the oral and nasal vowels of TEO.

Table 2.3: Oral and Nasal Vowels of Teotepec Chatino

	oral vowels			nasal vowels		
	front	central	back	front	central	back
high	i		u	ĩ		
mid	e		o	ẽ		õ
low		a			ã	

2.2.2 Inventory of consonant phonemes

Teotepec Chatino has twenty-two consonant phonemes distributed across seven places and seven manners of articulation. The phonemes are presented in the International Phonetic Alphabet, in Table 2.4. The practical phonemic orthography is outlined at the end of this chapter in §2.7 Table 2.82.

Table 2.4: Consonant Phonemes of Teotepec Chatino

	Bilabial	Apico- dentals	Alveo- palatal	Palatal	Velar	Labio- velar	Glottal
Occlusive	p	t, d	t ^j , d ^j		k	k ^w	ʔ
Affricate		t̪s	tʃ				
Fricative		s	ʃ	ç			h
Lateral		l	l ^j				
Nasal	m	n	n ^j				
Glide				j		w	
Tap		r					

2.3 Syllable structure

The basic stem shape of TEO is a monosyllable. Vowel syncopation has resulted in the loss of all non-final syllables of nearly all native words. This is a historical pattern found in other Otomanguean languages and is true for many other Zapotecan languages (Jaeger and Robert D. Van Valin, 1982). Rensch (1976), notes that the minimal form of the syllable in proto-Otomanguean consists of a consonant, a vowel and a tone (CV^{tone}) and that to this minimal form may be added one or more of the following elements: a preposed nasal; a preposed palatal; one of two preposed laryngeals; a postposed laryngeal and a postposed nasal.

Figure 2.1: Proto-Otomanguean syllable structure

(Nasal)(Palatal)(Laryngeal)ConsonantVowel^{tone}(Laryngeal)(Nasal)

Interestingly, this description reflects the synchronic reality of the TEO syllable structure. It is not the case however that TEO has been that way since proto-Otomanguean. Typologically, what Rensch describes is what happens to be found in TEO. Figure 2.2 outlines this syllable shape and defines the set of permitted onsets and codas in TEO.

2.3.1 Syllable shape in Teotepec Chatino

The syllable in TEO minimally consists of a consonant and a vowel: CV. Syllables can carry tone, may exhibit a set of complex consonant onset clusters, can be closed by a glottal stop /ʔ/, and are otherwise open. Syllable stress in Chatino occurs on the ultimate syllable (Upson and Longacre, 1965; Pride, 1997). In monosyllabic varieties of Chatino stress occurs on the syllable.

Figure 2.2: Teotepec syllable template

$$(N)(C_2)C_1(S)V(:)^T(ʔ)$$

In the template of Figure 2.2, the order of C_2 and C_1 are reversed because C_1 is a required consonant slot and C_2 is optional. In this schema (N) is a nasal /n/ or /m/; C_2 can be a stop, a nasal, sibilant, an alveopalatal, a palatal fricative, a glide or a glottal ; C_1 can be a stop, a nasal, a sibilant, a laminal, or a glide; (S) is a sonorant consonant that can either be a nasal /m/, /n/, /n^j/, a glide /j/, /w/, or a liquid /l/ (Table 2.9). The superscript above the vowel V^T is tone. Prosodically, each syllable is assigned one distinct tone set sequence (see §3.2). The glottal stop is the only consonant that can occur in coda position in native words and only one glottal stop is allowed per word.

All simplex native words in TEO conform to the above syllable shape. Native polysyllabic words are compounds. The tone-bearing unit is the syllable. Because there are words with onset clusters of three consonants where the nasal may precede, the above template is necessary. The following examples, based on the TEO syllable temple, outline the *legal* syllable shapes presented from least to greatest number of onset consonants.

2.3.1.1 $C_1V(ʔ)$ and $NC_1V(ʔ)$ shapes

In Table 2.5, C_1 of Fig. 2.2 may be a stop, a lateral, a nasal, a sibilant, an affricate /tʃ/ or /tʃ̃/, an alveopalatal /t^j/, /l^j/ or /n^j/, a labio-velar glide, a labial, a palatal glide,

or a glottal /h/ or /ʔ/.

Table 2.5: C₁V(ʔ) Shapes

/pi ^H /	‘baby turkey’	/wa ^B /	‘us’ 1PL.EXCL
/ti/	‘only’	/tʃo/	‘rain’
/ka ^F /	‘yesterday’	/kaː ^B /	‘nine’
/kaʔ/	‘leaf’	/kãʔ ^F /	‘that’
/ko ^G /	‘fog’	/ku/	‘POT.eat’
/ʔo ^E /	‘with’	/ʔõ/	‘you all’
/la ^E /	‘open’	/lo/	‘in; on’
/lje ^G /	‘a lot’	/ljiʔ ^B /	‘parrot’
/na/	‘charcoal’	/naʔ ^{Bi} /	‘I’
/ni ^C /	‘now’	/niʔ ^C /	‘inside’
/nʃi/	‘straight’	/sa ^K /	‘cup’
/si ^F /	‘butterfly’	/ʃi ^A /	‘sweet’
/tseʔ/	‘tongue’	/tsoʔ ^A /	‘side’
/tsa ^{Bii} /	‘POT.go.2SG’	/tsã ^A /	‘day’
/tʃi/	‘gizzard’	/tʃiʔ ^A /	‘baby chick’
/tʃa/	‘young woman’	/tʃaʔ ^F /	‘word’
/tʃoʔ ^B /	‘pineapple’	/tʃõʔ ^G /	‘at.back.of’
/ça ^A /	‘sugar cane’	/çaʔ ^F /	‘plaza’
/k ^w i ^A /	‘dew’	/k ^w iʔ ^B /	‘same’
/k ^w iʔ ^G /	‘armadillo’	/k ^w eʔ ^G /	‘swine’
/k ^w ẽ ^C /	‘bat’	/k ^w a ^F /	‘broom’
/hũː ^E /	‘thread’	/hũ ^A /	‘they’
/wa/	‘us’ 1PL.EXCL	/waʔ ^C /	‘already’
/jaː ^E /	‘nopal’	/jaʔ ^C /	‘his/her hand’

Table 2.6, below, presents the same syllable shape as above preceded by nasal consonants. In this set, C₁ has a slightly reduced set of possibilities. This shape does not include the laterals /l/ or /l̥/, nor the glide /w/ because these sounds are incompatible with nasals.

Table 2.6: NC₁V(?) Shapes

/ntē ^B /	‘people’	/nda: ^A /	‘bean’
/ntsi ^B /	‘nanche’	/ntjĩ ^E /	‘bedbug’
/nkā: ^E /	‘coconut’	/nkāʔ ^B /	‘his/her mucus’
/nk ^w ē ^G /	‘ripe’	/nʔa/	‘house’
/mda: ^E /	‘COM.give’	/md ^j u ^C /	‘COM.fall’
/mti ^B /	‘rubbish’	/mtē ^F /	‘white’
/mta ^F /	‘black’	/mtsoʔ ^B /	‘mud’
/mne ^G /	‘COM.sound’	/mn ^j o ^B /	‘COM.construct’
/mkōʔ ^E /	‘COM.punch’	/mk ^w a ^F /	‘COM.sweep’
/msi ^B /	‘COM.sneeze’	/msō ^E /	‘COM.fight’
/msi ^G /	‘late; afternoon’	/msa: ^H /	‘weevil’
/mtsā ^E /	‘COM.break’ INTR	/mtsāʔ ^G /	‘COM.moisten’ INTR
/mhi ^E /	‘COM.spend’	/mça ^C /	‘COM.play’
/mfi ^D /	‘tomato’	/mja ^K /	‘mass’
/mfē ^B /	‘COM.wrap’	/mfju ^E /	‘COM.pinch’
/mfi ^B /	‘monkey’		

2.3.1.2 C₂C₁V(?) and NC₂C₁V(?) shapes

In Table 2.7, C₂ may be a stop, a sibilant, a nasal, a labio-velar, a palatal, or a glottal /h/ or /ʔ/. C₁ may be a stop, a sibilant, a nasal, an affricate /t̂s/ or /tʃ/, a lateral /l/, an alveopalatal /t^j/, /l^j/ or /n^j/, a labio-velar glide, a labial or a palatal glide, a glottal /h/ or /ʔ/.

Table 2.7: C₂C₁V(?) Shapes

/tka ^B /	‘just/a while ago’	/tk ^w a ^B /	‘two’
/tlja ^F /	‘food’	/tljaʔ ^B /	‘cold’
/ska/	‘one’	/skā/	‘community guard’
/skaʔ ^G /	‘dipping gourd’	/skāʔ ^I /	‘POT.tie’
/hʔo ^C /	‘saint’	/hn ^j aʔ ^F /	‘chile’
/çta/	‘tobacco’	/çtā ^E /	‘hammock’
/çtāʔ/	‘his/her fingernail’	/çtʃe/	‘century plant fiber’
/çtē ^A /	‘village’	/çtʃeʔ ^B /	‘thorn’

/çk ^w aʔ/	‘marsh’		/çʔa ^E /	‘his/her mother’
/çʔã ^G /	‘POT.wash’		/çla ^B /	‘POT.arrive’
/kti ^J /	‘seven’		/ktseʔ ^F /	‘pus’
/kna ^E /	‘snake’		/knaʔ ^E /	‘meat’
/kla ^B /	‘twenty’		/kla ^H /	‘POT.suspend’
/kle ^K /	‘mayor’		/klo ^B /	‘POT.grow’
/kɭa ^G /	‘bitter’		/kn ^j aʔ ^G /	‘honey’
/k ^w ʃi ^E /	‘simple’		/k ^w tĩ ^B /	‘head lice’
/hwi ^H /	‘whistle’		/ʔni/	‘animal’

Table 2.8 presents the same shape as above preceded by a nasal consonant. In this shape, C₂ may be a stop, a nasal, a sibilant, a palatal /tʲ/, a palatal fricative /ç/, a labio-velar glide /w/, a glottal /h/. C₁ may be a stop, a sibilant, a nasal /n/, an affricate /t̃s/ or /t̃ʃ/, a lateral /l/, a palatal /tʲ/, /lʲ/ or /nʲ/, a labio-velar glide, a labial or a palatal glide, or a glottal /h/ or /ʔ/.

Table 2.8: NC₂C₁V(ʔ) Shapes

/ndʔã ^A /	‘maize’		/nskã ^A /	‘corner’
/nsk ^w a ^A /	‘chayote squash’		/nsk ^w aʔ ^B /	‘maize’
/ntkõʔ ^A /	‘fist’		/nkʔa ^G /	‘green’
/nk ^w la/	‘ripe’		/nk ^w he ^A /	‘goosefoot’
/mwɭu ^E /	‘COM.fall’		/mwjuʔ ^B /	‘spider’
/msta ^E /	‘COM.break’		/mst ^j i ^E /	‘COM.laugh’
/msk ^w a ^C /	‘COM.lie’		/msk ^w ã ^H /	‘COM.lie.1SG’
/mʃkõ ^B /	‘COM.weave’		/mʃk ^w ẽ ^B /	‘COM.answer’
/mçk ^w i ^E /	‘COM.massage’		/mçk ^w iʔ ^E /	‘COM.swallow’
/mnʔã ^B /	‘COM.see.1SG’		/mʔni ^G /	‘COM.do’
/mjɭa ^B /	‘COM.fart’		/njɭa ^D /	‘PRG.fart’

2.3.1.3 C₂C₁SV(ʔ) and NC₂C₁SV(ʔ) shapes

Table 2.9 outlines the syllable shapes with three or four consonant cluster onsets. The majority of the examples presented here are verbs. This is not unexpected; vowel syncopation in TEO has left complex consonant onsets at the beginning of verbal lexemes. Considering the syllable structure outlined above (N)(C₂)C₁(S)V(:)^T(ʔ) in Table 2.9 ; C₂ may be an stop, a sibilant, a palatal fricative /ç/, or a glottal fricative. C₁ is a glottal /h/

or /ʔ/, and the position directly preceding the vowel (S) is a sonorant consonant that can either be a nasal /n/, an alveopalatal /ɲ/, or a glide /j/ /w/. All of the prenasal forms are open syllables because of the restriction of one glottal stop per word. The one word that has a closed syllable has /h/ as C₁. In the prenasal open syllable forms the glottal stop occurs in the C₁ position.

Table 2.9: C₂C₁SV(?) and NC₂C₁SV(?) Shapes

/tʔjã ^E /	‘POT.lower.it.1SG’	/ndʔja ^H /	‘HAB.lower.it’
/tʔwa ^B /	‘cold’	/ndʔjã ^E /	‘HAB.lower.it.1SG’
/sʔju ^H /	‘POT.cut.it’	/ndʔja ^E /	‘pretty’
/sʔjũ/	‘POT.cut.it.1SG’	/ndʔjo ^C /	‘PRG.drink’
/ʃʔja ^H /	‘POT.yell’	/ndʔjõ ^C /	‘PRG.drink.1SG’
/ʃʔjã/	‘POT.yell.1SG’	/nsʔju ^H /	‘HAB.cut.it’
/çʔna ^C /	‘plate of food’	/nsʔjõ ^I /	‘PRG.cut.it.1SG’
/çʔni ^I /	‘PRG.do’	/nsʔja ^H /	‘HAB.yell’
/çʔja ^C /	‘mountain’	/nsʔjã/	‘HAB.yell.1SG’
/çʔja ^E /	‘POT.lower.it’	/mdʔja ^G /	‘COM.lower it’
/hʔwa ^B /	‘banana’	/mdʔjã/	‘COM.lower.it.1SG’
/khwi ^B /	‘POT.kill’	/msʔjõ/	‘HAB.cut it.1SG’
/khwiʔ ^B /	‘POT.sell’	/msʔja ^C /	‘COM.yell’
/kʔni ^B /	‘POT.do’	/msʔju ^E /	‘COM.cut.it’
/kʔju ^C /	‘flea’	/msʔjã ^E /	‘COM.yell.1SG’
/mhl ^ɰ o ^E /	‘COM.destroy/finish’	/nthl ^ɰ o ^H /	‘HAB.destroy/finish’

2.3.2 Exceptions to the TEO syllable template

There are three exceptions to the syllable template: (N)(C₂)C₁(S)V(:)^T(?). For the shape NC₂C₁SV(?) presented in §2.3.1.3 (just above) there are two verb stems where the glottal stop /ʔ/ occupies the S position. This occurs in the historic disyllabic roots of */-leʔe/ and */-laʔa/. When the historic aspect prefixes were added to these stems it created trisyllabic verbs. In TEO these stems have been reduced to be monosyllables with complex sets of onset clusters. Table 2.10 presents the three examples for this exception in TEO.

Table 2.10: Exceptions to the NC₂C₁(S)V(?) Syllable Shape

PRG	HAB	Gloss
/ndlʔa ^C /	/ndlʔa ^B /	‘to blow’
/ndlʔa ^D /	/ndlʔa ^B /	‘to crack’
/ndlʔe ^D /	/ndlʔe ^B /	‘to lick’

In TEO the historic aspect allomorphs of particular PRG and HAB aspect verb forms where the voiced palatal glide /j/ precedes the N position in the TEO syllable template (N)(C₂)C₁(S)V(:)^T(?) (§2.3.1). The comparison of cognate verb forms with the segmentally conservative Eastern Chatino variety of ZAC (Villard, 2014) reveals how the progressive aspect allophone /j/ was simply added to the front of the progressive in TEO. Table 2.11 presents PRG aspect verb forms with a preposed voiced palatal glide /j/ occurring before the nasal slot and voiceless stop and affricate sounds in the sonorant (S) position of the Teotepec syllable template.

Table 2.11: Adding of Palatal /j/ for PRG Verb Forms

TEO	ZAC	Gloss
/jnta ^I /	/nkj-ata ^I /	‘PRG.sow’
/jnts̃e ^I /	/nkj-uts̃e ^I /	‘PRG.be.scared’
/jntʃo ^I /	/nkj-atso ^I /	‘PRG.explode.it’

Example 2.1 below, shows how if the verb /jnts̃e^I/ ‘PRG.be.scared’ is analyzed as the basic syllable shape (NCV) with a preposed nasal the voice palatal glide /j/ falls outside the *legal* template. Examples 2.2 and 2.3 show how if the same verb is analyzed as a shape with a complex onset as in NC₂C₁V or C₂C₁(S)V, falling to the right of left of the C₁ position, this form violates the syllable template with the voiced glide /j/ occupying the N slot or the affricate sound /tʃ/ occupying in the (S) slot, which can only be occupied by a sonorant, nasal, glide or liquid sound.

<p>(2.1)</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="text-align: center;">*j</td> <td style="text-align: center;">n</td> <td style="text-align: center;">t̂s</td> <td style="text-align: center;">ẽ</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">(PAL)</td> <td style="text-align: center;">N</td> <td style="text-align: center;">C₁</td> <td style="text-align: center;">V</td> </tr> </table>	*j	n	t̂s	ẽ					(PAL)	N	C ₁	V	<p>(2.2)</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="text-align: center;">*j</td> <td style="text-align: center;">n</td> <td style="text-align: center;">t̂s</td> <td style="text-align: center;">ẽ</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">N</td> <td style="text-align: center;">C₂</td> <td style="text-align: center;">C₁</td> <td style="text-align: center;">V</td> </tr> </table>	*j	n	t̂s	ẽ					N	C ₂	C ₁	V	<p>(2.3)</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="text-align: center;">j</td> <td style="text-align: center;">n</td> <td style="text-align: center;">*t̂s</td> <td style="text-align: center;">ẽ</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">C₂</td> <td style="text-align: center;">C₁</td> <td style="text-align: center;">(S)</td> <td style="text-align: center;">V</td> </tr> </table>	j	n	*t̂s	ẽ					C ₂	C ₁	(S)	V
*j	n	t̂s	ẽ																																			
(PAL)	N	C ₁	V																																			
*j	n	t̂s	ẽ																																			
N	C ₂	C ₁	V																																			
j	n	*t̂s	ẽ																																			
C ₂	C ₁	(S)	V																																			

Table 2.12 presents PRG aspect verbs with more complex onsets that likewise do not conform to the Teotepec syllable template. These following forms, like those in Table 2.11, present the same preposed voiced palatal glide /j/ occurring before the nasal slot of the *legal* template (N)(C₂)C₁(S)V(:)^T(?).

Table 2.12: Preposing of /i/ and /j/ in PRG Verb Forms

TEO	ZAC	Gloss
/jndlo ^D /	/nku-tilyo ^D /	‘PRG.fall.down’
/jndloʔ ^G /	/nkj-alo ^G /	‘PRG.grow’
/jndla ^E /	/nti-kjala ^E /	‘PRG.melt’
/jndla ^D /	/nti-kjala ^D /	‘PRG.arrive.t/here=base’
/jndlaʔ ^I /	/nkj-alaʔ ^I /	‘PRG.touch’

Example 2.4 shows how if the verb /jndla^E/ ‘PRG.melt’ is analyzed as NC₂C₁(S)V the segments following the glide would conform C₂C₁(S)V; however, the N slot would be filled with the voiced palatal glide /j/.

<p>(2.4)</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="text-align: center;">*j</td> <td style="text-align: center;">n</td> <td style="text-align: center;">d</td> <td style="text-align: center;">l</td> <td style="text-align: center;">a</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">N</td> <td style="text-align: center;">C₂</td> <td style="text-align: center;">C₁</td> <td style="text-align: center;">(S)</td> <td style="text-align: center;">V</td> </tr> </table>	*j	n	d	l	a						N	C ₂	C ₁	(S)	V	<p>(2.5)</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td style="text-align: center;">*j</td> <td style="text-align: center;">n</td> <td style="text-align: center;">d</td> <td style="text-align: center;">l</td> <td style="text-align: center;">a</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">(PAL)</td> <td style="text-align: center;">N</td> <td style="text-align: center;">C₂</td> <td style="text-align: center;">C₁</td> <td style="text-align: center;">V</td> </tr> </table>	*j	n	d	l	a						(PAL)	N	C ₂	C ₁	V
*j	n	d	l	a																											
N	C ₂	C ₁	(S)	V																											
*j	n	d	l	a																											
(PAL)	N	C ₂	C ₁	V																											

Example 2.5 shows how if the verb /jndla^E/ ‘PRG.melt’ was analyzed as NC₂C₁V, the palatal glide precedes the N slot fall falling outside the proposed template. Again here, one explanation is that the /i/ or the /j/ of the historical PRG and HAB aspect marker was simply preposed at some stage in the segment reduction of the stem creating the shape, (PAL)(N)(C₂)C₁(S)V(:)^T(ʔ), thereby including shapes like those in examples 2.1 and 2.5 above as legitimate morphological syllable shapes. In TEO because these are limited to just a few stems this is considered an exception to the basic shape of Figure 2.2.

2.4 Vowel phonemes

The following section and subsections outline the oral and nasal vowel phonemes presented in Table 2.3 of §2.2.1. These sounds are demonstrated in their various permitted contexts, minimal pairs are provided and their contextual allophony is outlined.

2.4.1 Oral vowel phonemes

Table 2.13 presents minimal and near-minimal pairs of oral vowel contrasts.

Table 2.13: Oral Vowel Minimal and Near Minimal Pairs

/ka ^G /	‘left’		/ktsaʔ ^H /	‘POT.get wet’
/ke ^I /	‘your head’		/ktseʔ ^F /	‘pus’
/ki: ^F /	‘reed’		/ktsiʔ ^F /	‘iguana’
/ko ^B /	‘POT.grind’		/ktsɔʔ ^M /	‘POT.rot’
/ku/	‘POT.eat’			

2.4.1.1 High front unrounded vowel /i/

The high front unrounded vowel /i/ is realized as [i] of the IPA. Table 2.14 presents the different contexts in which this vowel can occur.

Table 2.14: High front Unrounded Vowel /i/

/pi ^H /	‘baby turkey’		/ti ^F /	‘rope’
/tiʔ ^F /	‘still; yet’		/ndi ^I /	‘PRG.to.finish’
/mti ^B /	‘rubbish’		/çti ^B /	‘POT.become.skinny’
/kti ^E /	‘smooth’		/kti ^J /	‘seven’
/sti/	‘his/her father’		/stʲiʔ ^G /	‘milk’
/ftʲi/	‘POT.lie.down’		/çtʲi ^C /	‘paper’
/ktʲi ^E /	‘weave; fabric’		/ktʲiʔ ^F /	‘frog’
/ki: ^C /	‘grass; hay’		/ki:ʔ/	‘fire/flame’
/k ^w i ^B /	‘tepache’		/k ^w iʔ ^C /	‘baby’
/tʲk ^w i ^H /	‘POT.get.hung’		/çk ^w i ^C /	‘POT.boil’

/sʔi ^J /	‘no’	/xʔi ^B /	POT.buy.it’
/kʔsi ^B /	‘POT.become.yellow’	/kʔsiʔ ^F /	‘iguana’
/kʔsi ^C /	‘yellow’	/çʔsiʔ ^B /	‘POT.enter’
/tʃi/	‘gizzard’	/tʃiʔ ^A /	‘chick’
/ksi ^K /	‘cross’	/kʃi ^E /	‘weak’
/hi/	‘lack; absence’	/hi ^G /	‘ash’
/khi ^F /	‘fox’	/nk ^w hi ^E /	‘COM.spend’
/ʔi ^I /	‘piece; slice’	/ʔiʔ ^H /	‘parrot’
/ʔmi ^{Bii} /	‘you’	/mʔni ^G /	‘COM.do’
/ni ^G /	‘his/her name’	/niʔ ^C /	‘inside’
/ni/	‘straight’	/hnʔi ^C /	‘bird’
/hwi ^E /	‘whistle’	/çwi ^H /	‘POT.clean’

The high front unrounded vowel /i/ does not occur after the voiced palatal glide /j/ and is found to occur after the apico-dental lateral /l/ and the tap /ɾ/ in only very select environments. /i/ occurs after /l/ in one compound word in the database /ti^G-sli^H/ ‘swing’ and in Spanish names e.g., /li^Fpa/ ‘Felipa,’ /li^Fno/ ‘Aquilino.’ Likewise, /i/ occurs after /ɾ/ only in Spanish names /ri^Fke/ ‘Enrique’ and /kri^B-ʃto^K/ ‘Cristo.’

Table 2.15 presents minimal pairs of the high front unrounded vowel /i/.

Table 2.15: Minimal and Near Minimal Pairs for /i/

/i/ ≠ /e/	/k ^w iʔ ^C /	‘baby’	/k ^w eʔ ^G /	‘swine’
/i/ ≠ /e/	/niʔ ^C /	‘inside’	/neʔ/	‘people’
/i/ ≠ /a/	/hi ^H /	‘lack.of’	/ha ^B /	‘no’
/i/ ≠ /a/	/k ^w i ^B /	‘ <i>tepache</i> ’	/k ^w a ^C /	‘that’
/i/ ≠ /a/	/niʔ ^C /	‘inside’	/naʔ ^G /	‘I’
/i/ ≠ /o/	/si ^F /	‘butterfly’	/so ^C /	‘beard’
/i/ ≠ /o/	/ʃi ^A /	‘sweet’	/ʃo ^K /	‘cheese’
/i/ ≠ /o/	/tiʔ ^C /	‘still’	/toʔ ^A /	‘center’
/i/ ≠ /u/	/ʔi ^I /	‘piece; slice’	/ʔu ^A /	‘on the ground’
/i/ ≠ /u/	/ni ^C /	‘now’	/nu/	‘that’

2.4.1.2 Mid front unrounded vowel /e/

The mid front unrounded vowel /e/ is realized as [e] of the IPA. Table 2.16 presents the different contexts in which this vowel can occur.

Table 2.16: Mid Front Unrounded Vowel /e/

/teʔ ^G -lo ^F /	‘skirt’	/nde ^C /	‘here’
/çtʲe ^C /	‘pitch pine’	/ktʲeʔ ^G /	‘ant’
/ke ^A /	‘stone’	/ke ^G /	‘his/her head’
/kʲe ^C /	‘flower’	/kʲeʔ ^B /	‘POT.cook’
/k ^w eʔ ^G /	‘swine’	/k ^w e:ʔ ^A /	‘crab’
/nk ^w ʔe ^B /	‘COM.lick’	/t̃eʔ/	‘his/her tongue’
/çtʲe/	‘maguey fiber’	/çtʲeʔ ^B /	‘thorn’
/mseʔ/	‘COM.deflate’	/çseʔ/	‘POT.deflate’
/kʲeʔ ^G /	‘raccoon’	/nk ^w he ^A /	‘goosefoot’
/theʔ/	‘salt’	/kle ^K /	‘mayor’
/nk ^w le ^K /	‘napkin’	/l̃e ^A /	‘a lot’
/sl̃e ^G /	‘beetle’	/tne ^G /	‘blood’
/sne ^E /	‘toad’	/mne ^G /	‘COM.sound’
/neʔ/	‘people’	/sñeʔ/	‘his/her son’
/sñeʔ-la ^F /	‘son-in-law’	/l̃ʔwe ^B /	‘fern’
/skʔwe ^F /	‘Juquila’	/wa ^B -re ^C /	‘us’ 1PL.EXCL
/re ^C /	‘here’		

The mid front unrounded vowel /e/ does not occur after the palatal fricative /ç/ or the labial nasal /m/. This sound has a limited distribution following the tap /ɾ/. Although /e/ is found following the sound /s/ in native lexicon it is also found following /s/ and /j/ in Spanish loans e.g., /se^Btʲe^Cmwre/ ‘September’ and /re^F-je/ ‘Reyes.’

Table 2.17 presents minimal pairs for the low front unrounded vowel /e/.

Table 2.17: Minimal and Near Minimal Pairs for /e/

/e/ ≠ /i/	/k ^w eʔ ^G /	‘swine’		/k ^w iʔ ^C /	‘baby’
/e/ ≠ /i/	/neʔ/	‘people’		/niʔ ^C /	‘inside’
/e/ ≠ /i/	/ne ^B /	‘HAB.sound’		/ni ^C /	‘now’

/e/ ≠ /ẽ/	/swe/	‘your chin’		/swẽ ^{Bi} /	‘my chin’
/e/ ≠ /a/	/sne ^E /	‘toad’		/sna ^J /	‘three’
/e/ ≠ /a/	/kle ^K /	‘mayor’		/kla ^A /	‘fish’
/e/ ≠ /a/	/neʔ/	‘people’		/naʔ ^G /	‘I’
/e/ ≠ /o/	/kle ^K /	‘mayor’		/klo ^B /	‘POT.grow’
/e/ ≠ /o/	/t̃seʔ/	‘tongue’		/t̃soʔ ^A /	‘side’
/e/ ≠ /u/	/ke ^I /	‘your head’		/ku/	‘POT.eat’
/e/ ≠ /u/	/l̃je ^G /	‘much’		/l̃ju ^A /	‘ground’

2.4.1.3 Low Central Unrounded Vowel /a/

The low central unrounded vowel /a/ is realized as /a/ of the IPA. This sound does not have restrictions regarding the consonants that it can follow. Table 2.18 presents the different contexts in which this vowel can occur.

Table 2.18: Low central unrounded vowel /a/

/pa ^K /	‘dad’		/pa-sk ^w a ^K /	‘Easter’ SPN loan
/ta ^H /	‘POT.give’		/ta ^G /	‘shrimp’
/nda: ^A /	‘bean’		/ndaʔ ^B /	‘cujinicuil’ SPN
/t ^j a ^E /	‘squirrel’		/t ^j aʔ/	‘slow’
/nt ^j a/	‘HAB.sow’		/ʃt ^j aʔ ^F /	‘POT.mix’
/ka ^B /	‘POT.be’		/çka/	‘tree’
/ka: ^J /	‘nine’		/kaʔ ^E /	‘plank’
/ska/	‘one’		/skaʔ ^G /	‘dipping gourd’
/k ^j aʔ ^E /	‘soap’		/k ^j aʔ ^F /	‘measuring tape’
/k ^w a ^F /	‘there’		/sk ^w a ^J /	‘six’
/sk ^w aʔ ^G /	‘peel’		/sk ^w aʔ ^B /	‘cockroach’
/ʔa ^E /	‘very; infatic’		/tʔa ^A /	‘fiesta’
/tʔa ^G /	‘relative’		/çʔa ^E /	‘bean stalk’
/nkʔa ^G /	‘green’		/nkʔa ^E /	‘red’
/t̃sa/	‘until’		/t̃sa ^{Bii} /	‘POT.go’
/mtsa ^B /	‘COM.distribute’		/mtsaʔ ^F /	‘COM.advise’
/tʃa/	‘young woman’		/tʃaʔ ^F /	‘word’
/çtʃa/	‘day after tomorrow’		/ktʃa ^G /	‘sun’
/ktʃaʔ ^B /	‘POT.sprinkle’		/ntʃaʔ/	‘HAB.get wet’
/sa/	‘ready’		/sa ^K /	‘cup’
/ʃa ^E /	‘brilliance; radiance’		/mʃa ^K /	‘mass’

/ç̣a ^A /	‘sugarcane’	/ç̣aʔ/	‘his/her foot’
/kç̣a ^C /	‘game’	/kç̣a ^B /	‘POT.play’
/ha ^B /	‘no’	/ha:ʔ ^G /	‘sleeping mat’
/kha/	‘POT.die’	/lha/	‘empty; free’
/ntḥa ^E /	‘lazy’	/nṭḥa ^I /	‘moribund’
/la:ʔ ^G /	‘church’	/la:ʔ ^E /	‘open’
/ç̣la ^B /	‘POT.arrive.here=base’	/ç̣laʔ ^B /	‘mamey’
/ṭḷj̣a ^F /	‘food’	/ṭḷj̣aʔ ^B /	‘cold’
/hḷj̣a ^E /	‘Ixpantepec’	/kḷj̣aʔ ^G /	‘bitter’
/jma ^K /	‘lime’	/jna ^F /	‘corncob’
/tṇj̣a ^F /	‘work’	/ṭʃ̣aʔ ^F -tṇj̣a/	‘Chatino’
/na ^E /	‘PRG.search.for’	/naʔ ^G /	‘I’
/kna ^E /	‘snake’	/knaʔ ^E /	‘meat’
/ç̣na ^A /	‘huarache’	/ç̣ʔna ^C /	‘plate’
/ç̣ṇj̣a ^B /	‘bouquet’	/ç̣ṇj̣aʔ ^G /	‘trunk’
/ja:ʔ ^E /	‘nopal’	/jaʔ ^C /	‘his/her hand’
/ç̣ʔja ^G /	‘cornstalk’	/ʃ̣jaʔ ^I /	‘again’
/wa ^B -re ^C /	‘us’	/waʔ ^F /	‘already’
/ç̣k ^w a ^F /	‘porridge’	/ç̣k ^w aʔ ^A /	‘marsh’
/wra ^B /	‘hour’	/ra:ʔ ^E /	‘scratched; rough’

Table 2.19 presents minimal pairs for the low central unrounded vowel /a/.

Table 2.19: Minimal and Near Minimal Pairs for /a/

/a/ ≠ /i/	/ka ^F /	‘yesterday’	/ki: ^C /	‘straw’
/a/ ≠ /i/	/k ^w a ^C /	DEM distal	/k ^w i ^B /	‘tepache’
/a/ ≠ /i/	/naʔ ^G /	‘I’	/niʔ ^C /	‘inside’
/a/ ≠ /i/	/ndʔa ^A /	‘ear of corn’	/ndʔi ^H /	‘PRG.grind.finely’
/a/ ≠ /e/	/nʔa/	‘house’	/nʔe ^G /	‘some’
/a/ ≠ /e/	/kla ^A /	‘fish’	/kle ^K /	‘mayor’
/a/ ≠ /e/	/kṭsaʔ/	‘POT.get.wet’	/kṭseʔ ^F /	‘pus’
/a/ ≠ /ã/	/ta ^G /	‘shrimp’	/tã ^G /	‘lard’
/a/ ≠ /ã/	/ṭj̣ʔa ^A /	‘water’	/ṭj̣ʔã/	‘POT.walk’
/a/ ≠ /ã/	/ṭj̣k ^w a ^B /	‘POT.sit’	/ṭj̣k ^w ã ^F /	‘steel’
/a/ ≠ /o/	/kla ^A /	‘fish’	/klo ^B /	‘POT.grow’
/a/ ≠ /o/	/knaʔ ^E /	‘meat’	/knoʔ ^C /	‘worm’
/a/ ≠ /u/	/na/	‘soot’	/nu/	‘that’

2.4.1.4 Mid back rounded vowel /o/

The mid back round vowel /o/ is realized as /o/ of the IPA. Table 2.20 presents the different contexts in which this vowel can occur.

Table 2.20: Mid Back Rounded Vowel /o/

/to [?] A/	‘center’	/to [?] D/	‘water trap’
/kto ^G /	‘chicken’	/çto ^E /	‘hole’
/t ^j o/	‘rain’	/t ^j o [:] E/	‘adobe’
/t ^j o [?] C/	‘century plant’	/t ^j o [?] F/	‘navel’
/ko ^G /	‘fog’	/ko [?] E/	‘moon’
/sko ^B /	‘fish’	/sko [?] H/	‘grasshopper’
/çko/	‘comb’	/çko [?] E/	‘well’
/ʔo ^E /	‘with; also’	/hʔo ^C /	‘saint; god’
/tso [?] A/	‘side’	/çtso [?] F/	‘grain’
/ktso/	‘POT.explode’	/ktso [?] F/	‘POT.rot’
/tʃo [?] D/	‘pineapple’	/tʃo [?] H/	‘badger’
/ntʃo ^I /	‘PRG.burst’	/çtʃo [?] /	‘POT.defecate’
/kso/	‘crunchy’	/kso [?] B/	‘POT.gather up’
/çso ^A /	‘net’	/çso ^C /	‘avocado’
/ʃo ^K /	‘cheese’	/ʃo [?] B/	‘female’
/tço ^A /	‘far’	/kço [?] H/	‘POT.self.serve’
/jho ^G /	‘squash’	/kho [?] /	‘POT.sting’
/lo/	‘in’	/lo [?] F/	‘and’
/tlo ^E /	‘his/her face’	/çlo/	‘his/her eye’
/klo ^B /	‘POT.grow’	/klo ^G /	‘first’
/l ^j o ^B /	‘POT.take out’	/l ^j o [?] F/	‘small’
/kno [?] C/	‘worm’	/sno [?] /	‘eight’
/çn ^j o ^H /	‘POT.borrow’	/jn ^j o ^H /	‘PRG.borrow’
/mwyo [?] A/	‘spider’	/ro ^K /	‘rice’

The mid back rounded vowel /o/ does not occur after the voiceless and voiced stops /p/ and /d/, after the palatal velar /k^j/ or the labiovelar /k^w/, nor does this sound occur after the bilabial nasal /m/ or the labiovelar glide /w/. This sound has a very limited distribution after the tap /r/ only occurring in one instance of the database in the borrowed Spanish word /ro^K/ ‘rice’.

Table 2.21 provides examples of minimal and near minimal pairs.

Table 2.21: Minimal and Near Minimal Pairs for /o/

/o/ ≠ /i/	/koʔ ^E /	‘moon’		/kiʔ ^A /	‘flame’
/o/ ≠ /e/	/klo ^B /	‘POT.grow’		/kle ^K /	‘mayor’
/o/ ≠ /a/	/klo ^B /	‘POT.grow’		/kla ^A /	‘fish’
/o/ ≠ /a/	/knoʔ ^C /	‘worm’		/knaʔ ^E /	‘meat’
/o/ ≠ /õ/	/fo ^K /	‘cheese’		/fõ ^H /	‘POT.fight’
/o/ ≠ /õ/	/ko ^B /	‘POT.grind’		/kõ ^{Bi} /	‘POT.grind.1SG’
/o/ ≠ /u/	/çko/	‘comb’		/çku/	‘COM.eat’
/o/ ≠ /u/	/ko ^G /	‘fog’		/ku/	‘POT.eat’

2.4.1.5 High back rounded vowel /u/

The high back rounded vowel is realized as [u] of the IPA. Table 2.22 presents the different contexts in which this vowel can occur.

Table 2.22: High Back Rounded Vowel /u/

/tju ^G /	‘young man’		/çtju ^C /	‘POT.fall.down’
/ku/	‘POT.eat’		/ntju ^I /	‘PRG.eat’
/kju ^B /	‘horse’		/su ^G /	‘PRG.lie.down’
/la-fju ^I /	‘buzzard’		/juʔ ^F /	‘sir; mister’
/mʃju ^E /	‘COM.pinch’		/kʃju ^H /	‘POT.pinch’
/tçju ^F /	‘lock’		/kçju ^H /	‘POT.pierce’
/tsa-tlu ^C /	‘en masse’		/ʃka ^B -ju ^K /	‘mezcal’
/ɽju ^A /	‘ground’		/ɽju ^K /	‘knife’
/nu/	‘the’		/tnu/	‘big’
/ju/	‘him’		/ju ^A /	‘earth’
/kʔju ^J /	‘five’		/kʔju ^C /	‘flea’

Like the mid back round vowel, the high back rounded vowel /u/ does not occur after the voiceless and voiced stops /p/ and /d/, the labiovelar /k^w/, the bilabial nasal /m/ and the labiovelar glide /w/. Additionally, this sound is not found following the glottal stop

/ʔ/ and the alveopalatal nasal /nʲ/. /u/ is found following the apico-dental lateral /l/ in one compound word /tʰsa-tlu^C/ ‘en masse’ and is found following the tap /ɾ/ in the Spanish name /ma^B-ru^K/ ‘Maru.’

Table 2.23 provides examples of minimal and near minimal pairs for /u/.

Table 2.23: Minimal and Near Minimal Pairs for /u/

/u/ ≠ /o/	/ku/	‘POT.eat’		/ko ^B /	‘POT.grind’
/u/ ≠ /a/	/nu/	‘that’		/na/	‘soot’
/u/ ≠ /e/	/k ^j u ^B /	‘horse’		/k ^j e: ^C /	‘flower’
/u/ ≠ /i/	/ku: ^{Bii} /	‘POT.eat.2SG’		/ki: ^C /	‘straw’

2.4.1.6 Progressive nasal assimilation

Oral vowels become nasalized through progressive assimilation when they directly follow nasal sounds /m/, /n/ and /nʲ/. This is also the case when the nasal consonants occur in combination with the glottal consonants /ʔ/ and /h/. This kind of assimilatory process is purely phonetic and does not affect vowel height e.g.: /ʔmi/ ‘you’ is [ʔmĩ], /nʲi/ ‘straight’ is [nʲĩ], /nʲi/ ‘now’ is [nʲĩ], /neʔ^A/ is [nẽʔ^A], /na/ ‘soot’ is [nã], /knoʔ/ ‘worm’ is [knõʔ], /tne^G/ ‘blood’ is [tnẽ^G] and /nu/ ‘NOM’ is [nũ].

2.4.2 Nasal vowel phonemes

Nasal vowel phonemes, however, exhibit a quality difference when compared to their oral counterparts. Vowels /ĩ/, /ẽ/, are lower when compared to /i/ and /e/; /ĩ/ is [ĩ] and /ẽ/ is [ẽ]. The central low vowel /ã/ is backed [õ] and the vowel /õ/ does not change. In the context of the 1SG inflectional category the /u/ vowel merges with the /õ/ vowel. The /õ/ vowel does present an allophonic variation raising to [ũ] word initially and following a glottal stop /ʔ/ or glottal fricative /h/ e.g., /ʔõ/ [ʔũ] ‘you’ (HON) and /hõ:/ [hõ:] ‘they’. Table 2.24 presents minimal and near minimal pairs for oral and nasal vowels.

Table 2.24: Oral and Nasal Vowel Minimal and Near Minimal Pairs

Phoneme	Oral	Gloss	Nasal	Gloss
/a/ ≠ /ã/	/ka ^B /	‘POT.be’	/kã ^{Bi} /	‘POT.be.1SG’
/a/ ≠ /ã/	/kaʔ/	‘leaf’	/kãʔ ^B /	‘that’
/a/ ≠ /ã/	/tʃa/	‘young.woman’	/tʃã ^G /	‘a while’
/a/ ≠ /ã/	/çta/	‘tobacco’	/çtã ^E /	‘hammock’
/a/ ≠ /ã/	/çʔa ^E /	‘bean field’	/çʔã ^E /	‘his/her mother’
/e/ ≠ /ẽ/	/swe/	‘your chin’	/swẽ ^{Bi} /	‘my chin’
/e/ ≠ /ẽ/	/çtʃe/	‘maguey fiber’	/çtʃẽ ^A /	‘town’
/i/ ≠ /ĩ/	/kʔi ^H /	‘POT.toast.it’	/kʔĩ/	‘air/wind’
/i/ ≠ /ĩ/	/tʃi ^A /	‘chick’	/tʃĩ ^F /	‘little.bit’
/i/ ≠ /ĩ/	/çtʃi/	‘POT.dry’	/çtʃĩ/	‘scar’
/i/ ≠ /ĩ/	/tyk ^w iʔ/	‘POT.speak’	/tyk ^w ĩʔ ^{Bi} /	‘POT.speak.1SG’
/o/ ≠ /õ/	/ko ^G /	‘fog’	/kõ ^G /	‘camote’
/o/ ≠ /õ/	/çto ^E /	‘hole’	/çtõ ^F /	‘rifle’
/u/ ≠ /ũ/	/ku/	‘POT.eat’	/kũ ^{Bi} /	‘POT.eat.1SG’

2.4.2.1 High front unrounded nasal vowel /ĩ/

The high front unrounded vowel is realized as [ĩ] of the IPA. Table 2.25 presents the different contexts in which the /ĩ/ vowel can occur.

Table 2.25: High Front Unrounded Nasal Vowel /ĩ/

/ktĩ/	‘shoot/sprout’	/ntĩʔ ^F /	‘plane’
/nstĩ ^A /	‘plum’	/stʃĩ/	‘feather’
/çtʃĩ ^B /	‘scar’	/tʃkĩ ^B /	‘POT.burn.it’
/sk ^w ĩ ^H /	‘POT.shake.off’	/çk ^w ĩʔ ^H /	‘POT.swallow’
/ʃk ^w ĩ ^I /	‘POT.confuse’	/çk ^w ĩʔ ^B /	‘POT.smell.it’
/ʔĩ ^E /	‘of; to’	/tʃĩ ^H /	‘POT.ground.finely’
/tʃĩ ^G /	‘around’	/tʃĩ/	‘POT.live’
/ntsĩ ^D /	‘PRG.sneeze’	/tʃĩʔ ^F /	‘little.bit’
/sĩ ^A /	‘dinner’	/msĩ ^G /	‘afternoon’

/ksiʔ ^H /	‘POT.wring.out’		/msiʔ ^E /	‘COM.wring.out’
/ʃiʔ ^A /	‘sugarcane chaff’		/ʃiʔ ^F /	‘bush’
/nʃi ^E /	‘Yaitepec’		/nʃiʔ ^H /	‘HAB.be.wrung.out’
/hi ^B -jaʔ ^C /	‘very’		/khi/	‘itch’
/tʰhi ^A /	‘leather/skin’		/tʰhi ^B /	‘POT.pass’
/hwi/	‘COM.say’		/çwi/	‘POT,say’

The high front unrounded nasal vowel /ĩ/ does not occur after the voiceless and voiced stops /p/ and /d/, after the palatal velar /kʲ/, the palatal fricative /ç/ or the voiced palatal /j/. Nor does this sound occur after the laterals /l/ and /lʲ/, the nasal series /m/, /n/ and /nʲ/, or the tap /r/.

Table 2.26 provides examples of minimal and near minimal pairs for /ĩ/.

Table 2.26: Minimal and Near Minimal Pairs for /ĩ/

/ĩ/ ≠ /i/	/khiʔ ^H /	‘skin’		/khi ^F /	‘skunk’
/ĩ/ ≠ /i/	/tʰk ^w iʔ ^H /	‘POT.speak.1SG’		/tʰk ^w iʔ/	‘POT.speak’
/ĩ/ ≠ /i/	/tʃiʔ ^F /	‘little.bit’		/tʃiʔ ^A /	‘chick’
/ĩ/ ≠ /ẽ/	/kti/	‘shoot; sprout’		/ktẽ ^G /	‘COM.fall’
/ĩ/ ≠ /ẽ/	/msi ^G /	‘afternoon’		/mse ^E /	‘COM.become.wide’
/ĩ/ ≠ /ẽ/	/ʃi ^A /	‘sugarcane chaff’		/ʃẽ ^G /	‘wide’
/ĩ/ ≠ /ã/	/ndʔi ^H /	‘PRG.grind.finely’		/ndʔã ^A /	‘ear of corn’
/ĩ/ ≠ /ã/	/tk ^w i/	‘long’		/tk ^w ã ^G /	‘tortilla basket’
/ĩ/ ≠ /ã/	/tʰʔi ^G /	‘around’		/tʰʔã/	‘POT.walk.around’
/ĩ/ ≠ /õ/	/ski ^B /	‘POT.burn’		/skõ ^C /	‘his/her arm’
/ĩ/ ≠ /õ/	/stʰi/	‘feather’		/stʰõ ^E /	‘purple dove’
/ĩ/ ≠ /õ/	/ʃi ^A /	‘sugarcane chaff’		/ʃõ ^H /	‘POT.fight’
/ĩ/ ≠ /ũ/	/ʔi ^E /	‘to/of’		/ʔũ/	‘you’ (HON)

2.4.2.2 High Front Unrounded Nasal Vowel /ẽ/

The mid front unrounded vowel is realized as [ẽ] of the IPA. Table 2.27 presents the different contexts in which /ẽ/ vowel can occur.

Table 2.27: Mid front unrounded nasal vowel /ẽ/

/ntẽ ^B /	‘people’		/mtẽ ^G /	‘COM.fall’
/ktẽ ^G /	‘POT.fall’		/ktẽʔ ^G /	‘opossum’
/çtẽ ^F /	‘COM.enter’		/yntẽ ^C /	‘COM.wash’ INTR
/mdẽ/	‘COM.marry’		/nt ^j ẽ/	‘HAB.fall’
/k ^w ẽ ^C /	‘bat’		/k ^w ẽ: ^G /	‘noisy; strong’
/mʃk ^w ẽ ^B /	‘COM.answer’		/msk ^w ẽ ^B /	‘COM.rise’
/nʔẽ ^G /	‘some’		/tʔẽ ^G /	‘pitcher’
/sʔẽ ^A /	‘place’		/ʃʔẽ ^A /	‘scorpion’
/mtsẽ ^G /	‘spotted’		/çtsẽ ^G /	‘COM.scare’
/tʃẽ ^H /	‘POT.cross’		/çtʃẽ ^A /	‘village’
/msẽ ^E /	‘COM.become.wide’		/mʃẽ ^E /	‘COM.widen’
/sjẽʔ/	‘his/her nose’		/jwẽ ^G /	‘COM.ripen’
/ʔwẽ ^A /	‘you’ (familiar)		/rẽʔ/	‘people’

Like /ĩ/ the mid front unrounded nasal vowel /ẽ/ does not occur after the voiceless stop /p/, after the palatal velar /k^j/, after the palatal fricative /ç/, the laterals /l/ and /l^j/, or the nasal series /m/, /n/ and /n^j/. This sound only occurs once in the database after the sibilant /s/, the labiovelar glide /w/ and the tap /ɾ/. Table 2.28 provides examples of minimal pairs.

Table 2.28: Minimal and Near Minimal Pairs for /ẽ/

/ẽ/ ≠ /ĩ/	/ktẽ ^G /	‘COM.fall’		/ktĩ/	‘shoot; sprout’
/ẽ/ ≠ /ĩ/	/msẽ ^E /	‘COM.become.wide’		/msĩ ^G /	‘afternoon’
/ẽ/ ≠ /ĩ/	/ʃẽ ^G /	‘wide’		/ʃĩ ^A /	‘sugarcane chaff’
/ẽ/ ≠ /e/	/swe ^E /	‘your chin’		/swẽ ^{Bi} /	‘my chin’
/ẽ/ ≠ /e/	/çtʃẽ ^A /	‘village’		/çtʃe/	‘maguey fiber’
/ẽ/ ≠ /ã/	/nʔẽ ^G /	‘some’		/nʔã/	‘house’
/ẽ/ ≠ /ã/	/sʔẽ ^A /	‘place’		/sʔã ^E /	‘casserole’
/ẽ/ ≠ /ã/	/ʃẽ ^G /	‘wide’		/ʃã ^A /	‘ingredients’
/ẽ/ ≠ /ã/	/ʃʔẽ ^A /	‘scorpion’		/ʃʔã/	‘full’
/ẽ/ ≠ /õ/	/ʃẽ ^G /	‘wide’		/ʃõ ^H /	‘POT.fight’

2.4.2.3 Low central unrounded nasal vowel /ã/

The low central unrounded nasal vowel is realized as [õ] of the IPA. Table 2.29 presents the different contexts in which /ã/ can occur.

Table 2.29: Low Central Unrounded Nasal Vowel /ã/

/tã ^A /	‘lard’	/çtã ^A /	‘his/her fingernail’
/ʃtã ^B /	‘POT.remove.it’	/çtã ^B /	‘POT.be.removed.’
/t ^j ã ^K /	‘POT.arrive.t/here≠base’	/kã ^G /	‘over there’
/nskã ^A /	‘corner’	/skã ^B /	‘his/her mucus’
/tkã ^F /	‘POT.copulate’	/tk ^w ã ^G /	‘tortilla basket’
/ʔã ^G /	‘ahhh’	/ʃã/	‘POT.fill’
/n ^j ã ^K /	‘as; like’	/çã ^E /	‘his/her mother’
/çtã ^G -kye ^G /	‘his/her hair’	/ã ^G /	‘ingredients’
/çã/	‘PRG.come.here≠base’	/tçã ^G /	‘his/her bone’
/jhã ^A /	‘year’	/hã ^G /	‘then; and so’
/ha ^F -hã ^E /	‘yes’	/jã ^G /	‘poison; medicine’
/jã ^G /	‘COM.come.here=base’	/rã ^A /	‘us’ 1INCL
/rã ^C /	‘thing’		

Like the vowels /ẽ/ and /ĩ/ the low central unrounded nasal vowel /ã/ does not occur after the voiceless stop /p/, after the palatal velar /k^j/, after the laterals /l/ and /l^j/, or the nasal series /m/, /n/ and /n^j/. This sound does not occur after /k^w/, the sibilant /s/ or the labiovelar glide /w/. This sound occurs only once in the database after the alveopalatal /t^j/, the affricate /tʃ/, the alveopalatal /ʃ/, the glottal /h/ and the palatal glide /j/. There is just one instance of this vowel occurring after the voiceless affricate /tʃ/, /tsã^A n^ji^G kõ/ ‘dry season’ and /tsã^A n^ji^G t^jo/ ‘rainy season.’ Table 2.30 provides examples of minimal pairs for the low central unrounded nasal vowel.

Table 2.30: Minimal and Near Minimal Pairs for /a/ and /ã/

/ã/ ≠ /ĩ/	/skã/	‘community guard’	/skĩ ^B /	‘POT.burn’
/ã/ ≠ /ĩ/	/tk ^w ã ^G /	‘tortilla basket’	/tk ^w ĩ/	‘long’
/ã/ ≠ /ĩ/	/tʲʔã/	‘POT.walk.around’	/tʲʔĩ ^G /	‘around’
/ã/ ≠ /ẽ/	/sʔã ^E /	‘casserole’	/sʔẽ ^A /	‘place’
/ã/ ≠ /ẽ/	/fã ^A /	‘ingredients’	/fẽ ^G /	‘wide’
/ã/ ≠ /ẽ/	/ʃʔẽ ^A /	‘scorpion’	/ʃʔã/	‘full’
/ã/ ≠ /a/	/tã ^G /	‘lard’	/ta ^G /	‘shrimp’
/ã/ ≠ /a/	/yja ^A /	‘year’	/yja/	‘tortilla’
/ã/ ≠ /a/	/tʲʔã/	‘POT.walk’	/tʲʔa ^A /	‘water’
/ã/ ≠ /a/	/tʲk ^w ã ^F /	‘steel’	/tʲk ^w a ^B /	‘POT.sit’
/ã/ ≠ /õ/	/çtã ^F /	‘hammock’	/çtõ ^F /	‘rifle’
/ã/ ≠ /õ/	/çʔã ^E /	‘his/her mother’	/çʔõ ^B /	‘much’
/ã/ ≠ /õ/	/skã/	‘community guard’	/skõ ^G /	‘corn dough’
/ã/ ≠ /õ/	/tsã ^A /	‘day’	/tsõ ^B /	‘lukewarm’
/ã/ ≠ /ũ/	/ʔã ^G /	‘ahh’	/ʔũ/	‘you’ (HON)

2.4.2.4 Mid back rounded nasal vowel /õ/

The following outlines the mid back rounded nasal vowel /õ/. The mid back nasal vowel /õ/ does not present any height difference between its oral and nasalized counterparts this vowel is realized as [õ] of the IPA. Table 2.31 presents the different contexts in which /õ/ can occur.

Table 2.31: Mid Back Rounded Nasal Vowel /õ/

/tõ ^B /	‘POT.pour’	/ʃtõ/	‘POT.pull’
/çtõ ^F /	‘arm’	/çtõʔ ^A /	‘pot’
/ktõ ^A /	‘bee’	/mtõ ^B /	‘COM.pour’
/ntõ ^G /	‘PRG.stand’	/ʃtõ/	‘POT.pull.off’
/tʲõ ^C /	‘various’	/tʲõ ^B /	‘POT.stand’
/stʲõ ^E /	‘purple dove’	/ʃtʲõ ^C /	‘Tiltepec’
/kõ/	‘sun ray’	/kõ ^B /	‘turtle’
/kõ ^C /	‘tall’	/kõ ^G /	‘tuber’
/kʲõʔ ^B /	‘wart’	/tk ^w ã ^G /	‘tortilla basket’
/çʔõ ^B /	‘much’	/ndʲʔõ ^I /	‘early corn’

$/\widehat{ts}\tilde{o}^B/$	‘lukewarm’	$/\zeta\widehat{ts}\tilde{o}\gamma^G/$	‘corn at flowering’
$/\mathfrak{t}\tilde{o}^G/$	‘a while’	$/\mathfrak{t}\tilde{o}\gamma^G/$	‘his/her back’
$/s\tilde{o}^G/$	‘beneath’	$/ks\tilde{o}^E/$	‘war’
$/\mathfrak{f}\tilde{o}^H/$	‘POT.fight’	$/\mathfrak{f}\tilde{o}\gamma^B/$	‘tasty’
$/\zeta\tilde{o}^E/$	‘corn field’		

Like the vowel $/\tilde{e}/$, $/\tilde{i}/$ and $/\tilde{a}/$ the mid back unrounded nasal vowel $/\tilde{o}/$ does not occur after the voiceless stop $/p/$, after the laterals $/l/$ and $/l^j/$, or the nasal sounds $/m/$, $/n/$ and $/n^j/$. This sound does not occur after the glottal fricative $/h/$, after the labial velar $/k^w/$, the palatal fricative $/ç/$, the bilabial glide $/w/$ and the tap $/ɾ/$. This sound occurs only once in the database after the palatal fricative $/ç/$, once after the palatal velar $/k^j/$ and once after the bilabial nasal $/m/$ in a Spanish name $/m\tilde{o}^E/$ ‘Filemon.’ Table 2.32 provides examples of minimal pairs for the mid central unrounded nasal vowel.

Table 2.32: Minimal and Near Minimal Pairs for $/\tilde{o}/$

$/\tilde{o}/ \neq /i/$	$/sk\tilde{o}^C/$	‘his/her arm’	$/ski^B/$	‘POT.burn’
$/\tilde{o}/ \neq /i/$	$/st^j\tilde{o}^E/$	‘purple dove’	$/st^j\tilde{i}/$	‘feather’
$/\tilde{o}/ \neq /i/$	$/\mathfrak{f}\tilde{o}^H/$	‘POT.fight’	$/\mathfrak{f}\tilde{i}^A/$	‘sugarcane chaff’
$/\tilde{o}/ \neq /e/$	$/\mathfrak{f}\tilde{o}^H/$	‘POT.fight’	$/\mathfrak{f}\tilde{e}^G/$	‘wide’
$/\tilde{o}/ \neq /e/$	$/\mathfrak{f}\tilde{o}^H/$	‘POT.fight’	$/\mathfrak{f}\tilde{a}^G/$	‘ingredients’
$/\tilde{o}/ \neq /a/$	$/\zeta\tilde{o}^F/$	‘rifle’	$/\zeta\tilde{a}^F/$	‘hammock’
$/\tilde{o}/ \neq /a/$	$/\zeta\gamma\tilde{o}^B/$	‘much’	$/\zeta\gamma\tilde{a}^E/$	‘his/her mother’
$/\tilde{o}/ \neq /a/$	$/sk\tilde{o}^G/$	‘corn dough’	$/sk\tilde{a}/$	‘community guard’
$/\tilde{o}/ \neq /a/$	$/\widehat{ts}\tilde{o}^B/$	‘lukewarm’	$/\widehat{ts}\tilde{a}^A/$	‘day’
$/\tilde{o}/ \neq /o/$	$/\mathfrak{f}\tilde{o}^H/$	‘POT.fight’	$/\mathfrak{f}\tilde{o}^K/$	‘cheese’
$/\tilde{o}/ \neq /o/$	$/k\tilde{o}^{Bi}/$	‘POT.grind.1SG’	$/ko^B/$	‘POT.grind’
$/\tilde{o}/ \neq /u/$	$/\gamma\tilde{o}^{Bi}/$	‘with.me’	$/\gamma\tilde{u}/$	‘you’ (HON)

In TEO the $/u/$ vowel has almost completely merged with $/\tilde{o}/$. This is demonstrated morphophonologically in the inflectional category for 1SG for verbs, alienable nouns, and non-verbal predicates. If a particular stem does not already have a nasal vowel the vowel becomes nasal when inflected for 1SG. Stems that have the $/o/$ or $/u/$ vowel become $/\tilde{o}/$ when inflected for first person. In this case the $/u/$ vowel lowers to $/\tilde{o}/$ e.g., $/ku/$ ‘POT.eat,’

/kõ^{Bi}/ ‘POT.eat.1SG.’

There is a small set of the lexicon where the allophone [ũ] of /õ/ vowel occurs. In this case the high back rounded nasal vowel is realized as [ũ] of the IPA. This sound may occur word initially or when preceded by the glottal consonants /h/ or /ʔ/ e.g., /hũ:^E/ [hũ:^E] ‘thread,’ /hũ^A/ [hũ^A] ‘them’ or /ʔũ/ [ʔũ] ‘you’ (HON).

2.5 Vowel length

One of the two suprasegmental features associated with vowels includes vowel length. Campbell (2014) notes that vowel length was not contrastive in Proto-Chatino because it was predicable based on word class. In TEO it appears that long vowels come from historic bimoraic monosyllables. Table 2.33 presents contrastive monosyllabic cognate examples in TEO and the varieties of ZEN (Campbell and Carleton, in press), TAT (Sullivant, p.c.), ZAC (Villard, p.c), SJQ (E. Cruz, p.c) and YAI (Rasch, in press).

Table 2.33: Monosyllabic Long Vowels (phonemic)

ZEN	TAT	ZAC	SJQ	YAI	TEO	Gloss
laa	laa	laa ^G	la ^G	la ¹²	laa ^G	‘church’
kàá	kaá	kaa ^J	ka ^J	ka ¹	kaa ^J	‘nine’
jàà	jaà	jaa ^E	ja ^F	ja ¹	jaa ^E	‘nopal’
kjee	kee	kee ^A	ke ^A	ke ³	kee ^A	‘rock’
tíi	tií	tii ^J	ti ^J	ti ¹	tii ^J	‘ten’
hii	hiì	hii ^G	hi ^G	hi ¹²	hii ^G	‘ashes’
kiiʔ	kiiʔ	kiiʔ ^A	kiʔ ^A	kiʔ ³	kiiʔ ^A	‘fire’
juu	juu	joo	ju	ju ³	juu	‘earth’

Vowel length is contrastive in Teotepec Chatino in only a small set of the lexicon. Table 2.34 presents some near minimal pairs of long and simple vowels.

Table 2.34: Long and Simple Vowel Near Minimal Pairs

Contrast	long	Gloss	simple	Gloss
/a:/ ≠ /a/	/ka: ^J /	‘nine’	/ka ^F /	‘yesterday’
/a:/ ≠ /a/	/na:/	‘us’ 1INCL	/na ^C /	‘soot’
/a:/ ≠ /a/	/nkā: ^E /	‘coconut’	/nkã? ^B /	‘his/her mucus’
/a:/ ≠ /a/	/la: ^G /	‘church’	/la ^E /	‘open’
/i:/ ≠ /i/	/ti: ^J /	‘ten’	/ti ^F /	‘rope’
/i:/ ≠ /i/	/k ^w i: ^E /	‘star’	/k ^w i ^B /	‘tepache’
/i:/ ≠ /i/	/ki: ^{ʔA} /	‘fire’	/k ^w i: ^{ʔC} /	‘baby’
/o:/ ≠ /o/	/t ^j o: ^E /	‘adobe’	/t ^j o/	‘rain’
/u:/ ≠ /u/	/ju: ^A /	‘earth’	/ju/	‘him’

2.6 Consonants

Teotepec Chatino has an inventory of twenty-two consonant phonemes distributed across seven places and seven manners of articulation (Table 2.4). There are labial, laryngeal, palatal, and velar consonants, and a concentration of apico-dental and alveo-palatal consonants. There is a broad distribution of voiceless stops with some conditioned allophonic voiced counterparts. The following section outlines these consonants and their distribution. Each phoneme is be considered with regard to its place of articulation instead of the more common manner of articulation. This mode of grouping leads to more generalizations about the consonant system. For example, the apico-dental and alveo-palatal sounds group together well as a class of sounds. This is particularly so because the palatalized alveolars /t^j/, /l^j/, /n^j/ are historical allophones of /t/, /l/ and /n/ and the sibilants /tʃ/ and /ʃ/ have risen from palatalized allophones of /ts/ and /s/ (Campbell, 2013:203-4). Similarly, grouping the bilabial and glottal sounds allows for more generalizations to be made about them. The following discussion will cover any conditioned variations in the sound system and provide minimal pairs with contextual examples.

To facilitate simplified reference for conditioned allophonic variations of the consonant phonemes, table 2.35 outlines all of the rules detailed under each phoneme throughout the following section. It is important to point out that the stops and affricate sounds do not pattern alike with regard to voicing after nasals.

Table 2.35: Rules for Conditioned Allophonic Phoneme Variations

Phoneme	Allophonic variation
/m/	/m/ → [m̥] / — /tʰ, t̪s, tʃ, ʧ, k, kʷ/ /m/ → [m] elsewhere
/w/	/w/ → [β] / # — V _[−nasal] , ʳ /w/ → [b] / m — /w/ → [w̥] / — ʃ /w/ → [w] elsewhere
/n/	/n/ → [ŋ] / # — [+velar] /n/ → [n] elsewhere
/tʃ/	/tʃ/ → [tʃ̥] / n — /tʃ/ → [tʃ] elsewhere
/k/	/k/ → [g] / n — /k/ → [k] elsewhere
/kʷ/	/kʷ/ → [gʷ] / n — /kʷ/ → [kʷ] elsewhere

2.6.1 Bilabials

Bilabial consonants do not occur frequently in Chatino; however, they do exist in TEO. These sounds include the bilabial stop /p/, nasal /m/, and the glide /w/. The following outlines these phonemes.

2.6.1.1 Voiceless bilabial stop /p/

The phoneme /p/ is a bilabial voiceless stop. In TEO this sound has a limited distribution where it is found principally in Spanish names, Spanish borrowings; *lapi^K* ‘pencil’ *‘lapiz’* (SPN) and onomatopoeic words like *pi^B* ‘baby turkey’. This sound can occur as C₁ in the syllable onset preceding the vowels /i/, /e/ and /a/ and as C₁ following

/s/. It is also found as C₂ preceding /j/. In TEO /p/ is always [p] and never precedes /n/.

Figure 2.3: Voiceless bilabial stop /p/

/pi ^H /	‘baby turkey’		/pi ^F -na/	‘Agripina’
/pa ^K /	‘father’		/pa-sk ^w a ^K /	‘Easter’
/pa ^B -ɬu ^K /	‘Pablo’		/põ ^F -tʃo/	‘Poncho’
/lu ^F -pe/	‘Guadalupe’		/li ^F -pa/	‘Felipa’
/spe ^B -ra ^F -nsa/	‘Esperanza’		/pjõ ^K /	‘shawl’ (<i>pañõ</i> SPN)

Table 2.36: Near Minimal Pairs for /p/

/p/ ≠ /t/	/pi ^H /	‘baby turkey’		/ti ^F /	‘rope’
/p/ ≠ /w/	/pa ^K /	‘father’		/wa ^B /	‘us’ 1PL.EXCL
/p/ ≠ /m/	/pa ^K /	‘father’		/ma ^B /	‘mother’
/p/ ≠ /k ^w /	/pa ^K /	‘father’		/k ^w a ^F /	‘that’ DEM.DST

2.6.1.2 Voiced bilabial nasal /m/

The phoneme /m/ is a bilabial nasal and is found more frequently in TEO than the other more documented Chatino varieties. It appears in the completive aspect of the verbal system and has some distribution in nominal lexemes. Rasch (2002) analyzes these cases of phonetic [m] as the rendering of a cluster /mw/ and /ngw/.

Table 2.37 presents examples from the Eastern Chatino varieties of ZAC and SJQ and in order to show how this sound is an innovation in TEO. Where the full penultimate syllable is retained in Zacatepec Chatino we can see how the clusters /nkw/ and /nku/ have gone to /m/ in TEO. In SJQ we can see how this reduction has caused the penultimate syllable to disappear completely possibly demonstrating that the reduction of the syllable in TEO is one step from zero.

This sound is made by completely opening the vocal folds, lowering the velum, a complete closure of the lips, and egressive airflow through the nose. In Teotepec Chatino /m/ occurs in borrowed as well as native words. It occurs at the beginning of monosyllabic

Table 2.37: /nk(w)/ and /nku/ → ∅ in SJQ → /m(w)/ in TEO

ZAC	SJQ	YAI	TEO	Gloss
nkusi ^G	sẽ ^G	si: ³	msi ^G	‘afternoon’
nkwiʔ ^B	wjuʔ ^C	wjuʔ ³	mwjoʔ ^B	‘spider’
nkwiʔ ^D	ʃi ^B	nwʃi ²⁴	mʃi ^D	‘tomato’

words and in historical disyllabic dimoraic words that have lost the penultimate syllable.

As mentioned above the voiced bilabial /m/ is also uncommon in the Chatino languages; however, it is particular to verbs in completive aspect. It is in these examples that this sound appears with greater frequency.

The phoneme /m/ undergoes a process of partial and in some instances complete devoicing in a restricted environment in TEO. Typologically rare in the world languages, the allophone [m̥] of the phoneme /m/ is devoiced when it precedes the voiceless palatal sounds of /tʃ/ /tʃ/, and /ç/, and the voiceless velar /k/ and labio-velar /k^w/ and the affricate /tʃ̃/. Because the /m/ phoneme does occur preceding the sound /t/ the following rule illustrates the environment where the allophone [m̥] of the phoneme /m/ is realized. Otherwise the rule could just be written with the features -continuant and -voiced.

$$/m/ \rightarrow [m̥] \ / _ /tʃ, tʃ̃, ç, k, k^w/$$

$$/m/ \rightarrow [m] \text{ elsewhere.}$$

The phoneme /m/ occurs as a pre-nasal preceding the sounds /p/, /w/, /t/, /d/, /s/, /ʃ/, /tʃ/, /k/, /ç/, /k/, /k^w/, and as C₁ following /ʔ/.

Table 2.38: Bilabial Nasal /m/

/mti/	[mti]	‘seed’		/mti ^B /	[mti ^B]	‘rubbish’
/mta ^F /	[mta ^F]	‘black’		/mda ^E /	[mda ^E]	‘COM.give’
/msa ^B /	[msa ^B]	‘weevil’		/mxa ^K /	[mʃa ^K]	‘mass’
/msĩ ^G /	[msĩ ^G]	‘afternoon’		/mtẽ ^F /	[mtẽ ^F]	‘white’
/mtsoʔ ^B /	[m̩tsoʔ ^B]	‘mud’		/m̩tsaʔ ^G /	[m̩tsaʔ ^G]	‘COM.moisten’
/m̩tʃoʔ/	[m̩tʃoʔ]	‘COM.defecate’		/m̩tyi/	[m̩tʃi]	‘COM.dry’
/mkĩʔ ^G /	[m̩kĩʔ ^G]	‘COM.hammer’		/mkãʔ ^F /	[m̩kãʔ ^F]	‘COM.fornicate’
/m̩çka ^F /	[m̩çka ^F]	‘COM.heal’		/m̩çwi ^E /	[m̩çwi ^E]	‘COM.shimmer’
/msʔa ^r /	[msʔã ^r]	‘s/he filled it’		/mnʔa ^G /	[mnʔã ^G]	‘s/he saw it’
/mk ^w i ^F /	[m̩k ^w i ^F]	‘COM.break’		/mk ^w a ^F /	[m̩k ^w a ^F]	‘COM.be’
/mn ^j i ^B /	[m̩n ^j i ^B]	‘COM.dig’		/mn ^j a ^E /	[m̩n ^j a ^E]	‘COM.ask’
/mtʃi/	[m̩tʃi]	‘COM.dry’		/m̩çk ^w iʔ ^E /	[m̩çk ^w iʔ ^E]	‘COM.swallow’
/mwʔya ^G /	[mbʔja ^G]	‘COM.lower it’		/ʔmi/	[ʔmi]	‘you’

Table 2.39: Near Minimal Pairs for /m/

/m/ ≠ /p/	/ma ^B /	‘mother’		/pa ^K /	‘father’
/m/ ≠ /n/	/ma ^B /	‘mother’		/na ^C /	‘charcoal’
/m/ ≠ /n/	/mtẽ ^F /	‘white’		/ntẽ ^B /	‘people’

2.6.1.3 Voiced labio velar glide /w/

This sound has a particular distribution in the language, it can occur as C₁ in the onset of a syllable, as C₂ preceding the sound /ʃ/, and as C₂ following a pre-nasal preceding the sounds /l/, /j/, and /ʔ/. Otherwise it can be C₁ following the sounds /s/, /l/, /ʃ/, /h/, and /ʔ/ or it can be (S) following the /ʔ/.

The phoneme /w/ produces the following phonetic realizations:

This sound is pronounced as a bilabial fricative [β] word initially in an open syllable before a non-nasal vowel or /r/: /w/ → [β] / # — V_[-nasal], /r/

/wa ^B /	[βa ^B]	‘=us’ 1PL.EXCL
/wra ^K /	[βra ^K]	‘hour’

/w/ is pronounced as a bilabial [b] stop when preceded by /m/:

/w/ → [b] / /m/ —

/mwle ^K /	[mble ^K]	‘serving cloth’
/mwjuʔ/	[mbjuʔ]	‘spider’
/mwʔja ^E /	[mbʔja ^E]	‘COM.lower it’
/kje ^C -mwlo/	[kje ^C -mblo]	‘Angel’s Trumpet’

/w/ is devoiced before the voiceless fricative /ʃ/: /w/ → [w̥] / — /ʃ/:

/wʃo ^K /	[w̥ʃo ^K]	‘peso’ (SPN)
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/w/ → [w] elsewhere:

Table 2.40: Voiced Labio-velar Glide /w/

/waʔ ^C /	[waʔ ^C]	‘already’
/swe ^C /	[swe ^C]	‘his/her chin’
/lwi: ^E /	[lwi: ^E]	‘clean’
/ʃwe ^A /	[ʃwe ^A]	‘small’
/hwi ^H /	[hwi ^H]	whistle
/hwĩ/	[hwĩ]	‘COM.say’
/ʔwẽ/	[ʔwẽ]	‘you’
/tʔwa ^A /	[tʔwa ^A]	‘his/her mouth’
/sʔwe ^C /	[sʔwe ^C]	‘good’
/hʔwa ^B /	[hʔwa ^B]	‘banana’
/hʔwa ^G /	[hʔwa ^G]	‘granary’
/ʃa ^E -ndwi ^H /	[ʃa ^E -ndwi ^H]	‘lightning’

Table 2.41: Minimal and Near Minimal Pairs for /w/

/w/ ≠ /p/	/wa ^B /	‘us’ 1PL.EXCL		/pa ^K /	‘father’
/w/ ≠ /j/	/waʔ ^C /	‘already’		/jaʔ ^C /	‘his/her hand’
/w/ ≠ /m/	/ʔwẽ/	‘you’		/ʔmi/	‘you’

2.6.2 Apico-dentals

The Apico-dentals are /t/, /d/, /t̃s/, /s/, /n/, /r/ and /l/. These sounds are produced by putting the tongue just above the back of the teeth below the alveolar ridge.

2.6.2.1 Voiceless apico-dentals stop /t/

This sound has a wide distribution. /t/ may occur as C₁ in first position preceding vowels /i/, /ẽ/, /a/, /ã/, and /o/. As C₁ following a pre-nasal or the consonants /s/, /ʃ/, /ç/, /k/ and /k^w/ preceding the vowels /i/, /e/, /ẽ/, /a/, /ã/, /o/ and /õ/. /t/ may also be in C₁ position following a prenasal preceding the consonants /s/, /ʃ/, and /ç/. /t/ may be in the C₂ preceding the consonants /n/, /n^j/, /l/, /l^j/, /ç/, /k/, /k^w/, /h/ and /ʔ/. /t/ may also be in the C₂ position of the shape C₂ C₁(S) preceding the clusters /ʔw/ and /ʔj/. And lastly, this sounds may be in the C₂ position of the pre-nasal shape NC₂ C₁(S) preceding the clusters /hw/ and /hl^j/. Table 2.42 presents these contexts.

Table 2.42: Voiceless Apico-dental Stop /t/

/ti ^F /	‘rope’	/ti ^{ʔF} /	‘still; yet’
/tẽ ^E /	‘mosquito’	/ta ^H /	‘POT.give’
/ta ^G /	‘shrimp’	/tã ^G /	‘lard’
/to ^{ʔF} /	‘middle; center’	/to ^{ʔE} /	‘water trap’
/mti ^B /	‘rubbish’	/mti/	‘seed’
/mta ^F /	‘black’	/mtẽ ^F /	‘white’
/sti/	‘his/her father’	/sta ^H /	‘POT.break.it’
/ʃti ^{ʔB} /	‘POT.untie’	/ʃtã ^B /	‘POT.remove.it’
/ntẽ ^B /	‘people’	/ntẽ ^{ʔF} /	‘plane’
/çta ^F /	‘edible greens’	/çtã ^E /	‘hammock’
/çtã ^ʔ /	‘pot’	/çtõ ^F /	‘rifle’
/kti ^J /	‘seven’	/kti ^E /	‘soft’
/ktẽ/	‘sprout’	/ktẽ ^{ʔG} /	‘opossum’
/kta ^C /	‘dust’	/kta ^{ʔF} /	‘fox’
/kto ^G /	‘chicken’	/ktõ/	‘bee’
/k ^w tĩ ^{ʔB} /	‘louse’	/tne ^G /	‘his/her blood’

/tnu ^A /	‘big’	/tn̄i ^B /	‘money’
/tn̄ja ^A /	‘clay griddle’	/tn̄jaʔ/	‘rat’
/tla ^G /	‘night’	/tlo ^E /	‘his/her face’
/t̄l̄jaʔ ^B /	‘cold’	/t̄l̄ja ^F /	‘food’
/t̄ɕu ^F /	‘lock’	/tka ^B /	‘just.now’
/tkō/	‘bucket’	/tk ^w i ^G /	‘every two’
/tk ^w ē ^E /	‘road’	/tk ^w a ^J /	‘two’
/thi/	‘hard’	/theʔ/	‘salt’
/tʔa ^A /	‘fiesta’	/tʔa ^G /	‘his/her relative’
/tʔwe ^C /	‘half’	/tʔwa ^G /	‘his/her mouth’
/tʔja ^B /	‘Cuixtla’	/tʔju ^F /	‘ray’
/nt̄ɕa ^B /	‘HAB.play’	/nt̄ɕoʔ ^H /	‘HAB.serve.self’
/nt̄ɕoʔ ^I /	‘PRG.sting’	/nt̄ɕu ^H /	‘HAB.pierce’
/nt̄k̄aʔ ^F /	‘PRG.copulate’	/nt̄kōʔ/	‘fist’
/nt̄k ^w i ^C /	‘duty; obligation’	/nt̄k ^w iʔ ^E /	‘PRG.peel’
/nt̄k ^w ē ^B /	‘HAB.vomit’	/nt̄k ^w a ^F /	‘PRG.sweep’
/ntha ^E /	‘PRG.empty’	/ntha ^H /	‘lazy’
/nthwi ^B /	‘HAB.kill’	/nthwiʔ ^B /	‘HAB.sell’
/nthl̄o ^E /	‘PRG.destroy/finish’	/nsti ^E /	‘PRG.throw’
/nsti ^A /	‘plum’	/nsta ^E /	‘PRG.break’ INTR
/nstō ^I /	‘PRG.tear’	/n̄ftiʔ ^D /	‘PRG.untie’
/n̄ft̄a ^D /	‘PRG.remove’	/n̄ftō/	‘PRG.tear’
/n̄ɕtiʔ ^D /	‘PRG.release’	/n̄ɕt̄a ^D /	‘PRG.remove’ INTR

Table 2.43 presents minimal and near minimal pairs for /t/.

Table 2.43: Minimal and Near Minimal Pairs for /t/

/t/ ≠/p/	/ti ^A /	‘thin’	/pi ^B /	‘baby turkey’
/t/ ≠/m/	/ta ^H /	‘POT.give’	/ma ^B /	‘mother’
/t/ ≠/d/	/mta ^F /	‘black’	/mda ^E /	‘COM.give’
/t/ ≠/d/	/nt̄ē ^B /	‘people’	/nde ^C /	‘here’
/t/ ≠/ts/	/t̄ã ^G /	‘lard’	/ts̄ã ^A /	‘day’
/t/ ≠/s/	/ti ^F /	‘rope’	/si ^F /	‘butterfly’
/t/ ≠/n/	/ti/	‘only’	/ni ^C /	‘now’
/t/ ≠/t̄j/	/ta ^G /	‘shrimp’	/t̄ja ^E /	‘squirrel’
/t/ ≠/h/	/ta ^H /	‘POT.give’	/ha/	‘no’
/t/ ≠/h/	/tn̄i ^B /	‘money’	/hn̄ji ^C /	‘bird’

2.6.2.2 Voiced apico-dental stop /d/

The phoneme /d/ is historically an allophone of /t/ and therefore only occurs in the restricted environments following the apico-dental nasal /n/ and the bilabial nasal /m/. However, because now /t/ also follows /n/ and /m/ it is difficult to predict where one sound will occur based on the adjacent consonants, thus the sounds /t/ and /d/ are analyzed as distinct phonemes in TEO.

This is due to historical segment loss and vowel syncopation that occurred before the assimilatory process was complete in a given lexical item. Both Cruz, E. (2011) and Rasch (2002) discuss this phenomenon in their dissertations on San Juan Quiahije and Yaitepec Eastern Chatino respectively. Rasch differentiates the two sounds by utilizing the double grapheme <tt> for the /t/ sounds that do not assimilate the nasality of the preceding nasal consonant and writes the phoneme /t/ everywhere else. Cruz distinguishes the two as separate phonemes for Quiahije Chatino. For TEO it is clearer to analyze the sounds as separate phonemes in order to not confuse the difference between the voiced and voiceless counterparts of the apico-dental stops /t/ and /d/.

This process can be seen at work is in the verbal system in the completive, progressive and habitual aspects. In some verbs the apico-dental /t/ appear to assimilate to the pre-nasal sound and in other instances they do not. Table 2.44 compares the forms of ‘to give’ and ‘to wait’ in TEO and ZEN (Campbell and Carleton, in press).

Table 2.44: Verbs ‘to give’ and ‘to wait’

LG	COM	PRG	POT	HAB	Gloss
ZEN	nka-tàá	nte-k-tàá	k-tàá	nka-tàá	‘to give’
TEO	mda: ^E	nda: ^E	ta ^H	nda: ^H	
ZEN	nkw-eta	nte-k-eta	k-eta	tala-nt-eta	‘to wait’
TEO	mta	ynta ^I	çta	ynta	

Based on the potential aspect forms the basic stems for TEO could be analyzed

as /-ta^H/ ‘to give’ and /-ta/ ‘to wait.’ These synchronic forms in TEO do not illuminate why this process may occur in one item and not the other; however, comparing the ZEN and TEO forms clarifies how the process of vowel syncopation and segmental loss may have taken place. The initial sound of the stem for ‘to wait’ is the vowel /e/ and the initial sound for the stem ‘to give’ is the consonant /t/. Initial /t/ consonants of historic monosyllables appear to assimilate to nasal prefix consonants while this is not the case in the historic disyllables.

It appears that the vowel loss in the aspect prefixes that preceded monosyllabic stems occurred before the apico-dental consonants underwent the process of assimilation and that disyllabic stems may have lost their penultimate vowels after this process had already occurred. Similarly this appears to be the case in the in the consonant /t^j/ and in a limited number of examples of /t̃s/.

Table 2.45 compares non-verbal lexemes from historic disyllables in the EC varieties of ZAC (Villard, 2008), SJQ (Cruz, E., 2011) and YAI (Rasch, in press) and TEO compared with ZEN (Campbell and Carleton, in press) to illustrate how historic disyllables with vowels preceding the /t/ consonant in TEO allows for voiceless apico-dental consonants /t/ after the nasal consonants /n/ and /m/ and /t̃s/ after /n/.

Table 2.45: /t/ Phoneme Status in TEO

ZEN	ZAC	SJQ	YAI	TEO	Gloss
nyatɛ̀	nat̃ ^B	ntɛ ^B	ntt̃ ²⁴	nt̃ ^B	‘people’
nkutì	nkoti ^B	nti ^B	nwt̃ti ²⁴	mti ^B	‘rubbish’
kàtɛ̀	mkat̃ ^E	ntɛ ^F	nkt̃ ³²	mt̃ ^F	‘white’
n-kàtá	mkata ^E	nta ^F	nkta ³²	mta ^F	‘black’
ntachi	ntatsi ^B	ntsi ^B	nttzi ²⁴	nt̃si ^B	‘nanche’

Table 2.46 presents some of the contexts in which /d/ may occur.

Table 2.46: Voiced Apico-dental Stop /d/

/mda: ^E /	[mda: ^E]	‘COM.give’	/mdaʔ ^F /	[mdaʔ ^F]	‘COM.split’
/mdē ^E /	[mdē ^E]	‘COM.marry’	/mdō ^B /	[mdō ^B]	‘COM.pour’
/mdwi ^E /	[mdwi ^E]	‘COM.flash’	/mdwiʔ ^f /	[mdwiʔ ^f]	‘COM.go.out’
/nde ^C /	[nde ^C]	‘here’	/nde ^A /	[nde ^A]	‘until like this’
/nda: ^A /	[nda: ^A]	‘bean’	/ndaʔ ^B /	[ndaʔ ^B]	‘cujinicuil’ SPN
/ndō ^G /	[ndō ^G]	‘PRG.stand.up’	/ndō ^D /	[ndō ^D]	‘PRG.pour’
/ndla ^B /	[ndla ^B]	‘cloud’	/ndla ^F /	[ndla ^F]	‘quickly’
/ndla ^G /	[ndla ^G]	‘PRG.rescue’	/ndl ^l a ^B /	[ndl ^l a ^B]	‘HAB.escape’
/ndʔi ^E /	[ndʔi ^E]	‘PRG.marry’	/ndʔē ^E /	[ndʔē ^E]	‘PRG.mix’
/ndʔā ^E /	[ndʔā ^E]	‘PRG.write’	/ndʔo ^E /	[ndʔo ^E]	‘PRG.go.out’
/ndʔā ^A /	[ndʔā ^A]	‘ear of corn’	/ndʔja ^E /	[ndʔja ^E]	‘pretty; fancy’
/nda ^H -khi ^F /	[nda ^H -khi ^F]	‘onion’	/ja ^E -ndwi ^H /	[ja ^E -ndwi ^H]	‘lightning’

Table 2.47 presents near minimal pairs for /d/.

Table 2.47: Near Minimal Pairs for /d/

/d/ ≠ /t/	/mda: ^E /	‘COM.give’	/mta ^F /	‘black’
/d/ ≠ /t/	/mdē ^E /	‘COM.marry’	/mtē ^F /	‘white’
/d/ ≠ /t/	/nde ^C /	‘here’	/ntē ^A /	‘people’

2.6.2.3 Voiceless apico-dental affricate /t͡s/

The sound is a single integral affricate. Analyzing it this way allows us to state this rule in an exception-less way - a simpler cleaner analysis. If /t͡s/ were a cluster then the lexeme /çt͡siʔ/ ‘POT.burly.it’ would violate phonotactics of Teotepéc Chatino by having /s/ in the S(onorant) slot of the syllable. This phoneme is found at the onset of a syllable as C₁ preceding vowels /a/, /e/ and /o/. This sound is also found as C₁ following consonants /m/, /n/, /k/ and /ç/ and preceding vowels /i/, /e/, /a/, and /o/. There are two examples of this sound as C₂ preceding the consonants the palatal glide /j/ in /t͡sjō/ ‘Temaxcaltepec’

and the velar stop /k/ in /ntsko^A/ ‘papinal’ a kind of local fruit. Table 2.48 presents a list of examples illustrating where the sound is found.

Table 2.48: Voiceless Apico-dental Affricate /t̥s/

/t̥seʔ/	‘tongue’		/t̥sa ^E /	‘POT.go’
/t̥sã ^A /	‘day’		/t̥sõ ^B /	‘lukewarm’
/t̥soʔ ^A /	‘side’		/t̥sjõ/	‘Temaxcaltepec’
/mt̥sẽ ^G /	‘speckled’		/mt̥soʔ ^B /	‘mud’
/nt̥si ^K /	‘nanche’		/çt̥siʔ ^B /	‘POT.bury it’
/çt̥soʔ ^F /	‘grain’		/çt̥sõʔ ^B /	‘flowering corn’
/kt̥si ^C /	‘yellow’		/kt̥sẽ ^B /	‘POT.scare’
/kt̥seʔ ^F /	‘puss’		/kt̥saʔ/	‘POT.get.wet’
/kt̥so/	‘POT.explode’		/kt̥soʔ ^B /	‘POT.rot’

Table 2.49, presents minimal and near minimal pairs for /t̥s/.

Table 2.49: Minimal and Near Minimal Pairs for /t̥s/

/t̥s/ ≠ /t/	/t̥sã ^A /	‘day’		/tã ^G /	‘lard’
/t̥s/ ≠ /t/	/kt̥si ^C /	‘yellow’		/kti ^J /	‘seven’
/t̥s/ ≠ /s/	/kt̥si ^C /	‘yellow’		/ksi ^K /	‘cross’
/t̥s/ ≠ /tʲ/	/kt̥siʔ ^F /	‘iguana’		/ktʲiʔ ^F /	‘frog’

2.6.2.4 Voiceless apico-dental fricative /s/

This sound can occur in the onset of a syllable as C₁ preceding vowels /a/ and /i/. It can occur as the first consonant of a cluster as C₂ preceding: /n/, /l/, /k/, /k^w/, /tʲ/, /nʲ/, /lʲ, and /ʔ/ and it can also occur as C₂ in the second position of a cluster following /m/, /n/, /k/ and /ç/. This sound can never occur in the (S)onorant position of the syllable. Table 2.50 presents a list of examples illustrating where /s/ is found.

Table 2.50: Voiceless Apico-dental fricative /s/

/si ^F /	‘butterfly’	/sa ^K /	‘cup’
/sne ^E /	‘toad’	/sna ^J /	‘three’
/sla ^F /	‘sleepy’	/stjĩ/	‘feather’
/sn̩eʔ/	‘his/her child’	/sl̩aʔ ^E /	‘cotton’
/ska/	‘one’	/skã ^G /	‘corn dough’
/skõ ^C /	‘his/her arm’	/skoʔ ^H /	‘grasshopper’
/sk ^w a ^E /	‘soup’	/sk ^w aʔ ^B /	‘cockroach’
/sʔwe ^F /	‘good’	/sʔju ^H /	‘POT.cut’
/msa(ʔ) ^B /	‘weevil’	/ksi ^K /	‘cross’
/çsẽ ^A /	‘sand’	/çso ^C /	‘avocado’
/nskã ^A /	‘corner’	/nsk ^w a ^A /	‘chayote’
/nsk ^w aʔ ^B /	‘maize’	/ksja ^A /	‘heart’

Table 2.51 presents minimal and near minimal pairs for /s/.

Table 2.51: Near Minimal Pairs for /s/

/s/ ≠ /p/	/si ^F /	‘butterfly’	/pi ^H /	‘baby turkey’
/s/ ≠ /t/	/sla ^F /	‘sleepy’	/tla ^I /	‘hard’
/s/ ≠ /n/	/si ^F /	‘butterfly’	/ni ^C /	‘now’
/s/ ≠ /ʃ/	/sa ^K /	‘cup’	/ʃa ^B /	‘orange’
/s/ ≠ /k/	/sl̩aʔ ^H /	‘sheep’	/kl̩aʔ ^G /	‘bitter’
/s/ ≠ /ç/	/slo ^A /	‘thorn’	/çlo/	‘his/her eye’
/s/ ≠ /t̩s/	/ksi ^K /	‘cross’	/kt̩si ^C /	‘yellow’

2.6.2.5 Voiced apico-dental lateral /l/

This sound is found as a single consonant in the onset of a word, as the first consonant in a cluster, as the second consonant in a cluster and as the third consonant in a cluster thus, /l/ can be C₁, C₂ or (S) in (N)(C₂)C₁(S)V^T(ʔ). Table 2.52 presents a list of examples illustrating where /l/ is found.

Table 2.52: Voiced Apico-dental Lateral /l/

/la ^E /	‘open’		/la: ^G /	‘church’
/lo/	‘in; on’		/la-kʔja ^I /	‘eagle’
/la-k ^w soʔ ^C /	‘turkey’		/la-fu ^I /	‘buzzard’
/la-kʔna ^B /	‘caiman’		/lo-ntē ^G /	‘on the knoll’
/lo-juu/	‘on the ground’		/lwi: ^E /	‘clean’
/lʔo ^F /	‘corral’		/çlo/	‘his/her eye’
/çla ^C /	‘puddle’		/çlaʔ ^B /	‘red mamey’
/kla ^A /	‘fish’		/kla ^B /	‘twenty’
/kla ^G /	‘bamboo’		/kʔla ^F /	‘POT.dissolve’

Table 2.53, presents minimal and near minimal pairs for /l/.

Table 2.53: Near Minimal Pairs for /l/

/l/ ≠ /n/	/la: ^G /	‘church’		/na:/	‘us’ 1INCL
/l/ ≠ /r/	/la: ^G /	‘church’		/ra: ^E /	‘scratched’
/l/ ≠ /h/	/lʔo ^F /	‘corral’		/hʔo ^C /	‘saint’
/l/ ≠ /n/	/kla ^A /	‘fish’		/kna/	‘mirror’

2.6.2.6 Voiced apico-dental nasal /n/

This sound can occur as the first or last consonant in a cluster; /n/ can be C₂ or (S) in (N)(C₂)C₁(S)V^T(ʔ) and it can be C₁ if there is no (S).

The allophone [ŋ] of /n/ is realized as part of a process of place assimilation.

$$/n/ \rightarrow [ŋ] / \# \text{ — } [+velar]$$

$$/n/ \rightarrow [n] \text{ elsewhere}$$

The following examples illustrate this point:

/nkʔa ^G /	[ŋgʔa ^G]	‘green’
/nkã: ^E /	[ŋga: ^E]	‘coconut’

Table 2.54 presents a list of examples illustrating where /n/ is found.

Table 2.54: Voiced Apico-dental Nasal /n/

/ni ^C /	‘now’		/ni ^{ʔC} /	‘inside’
/ne ^ʔ /	‘people’		/na/	‘soot’
/na:/	‘us’ 1INCL		/na ^{ʔG} /	‘I’
/nu/	‘that/the’		/hwa ^F -na ^E /	‘Juana’
/ntē ^G /	‘knoll’		/ntē ^B /	‘people’
/nti ^{ʔF} /	‘flat/plane’		/nkā: ^E /	‘coconut’
/nɪã ^A /	‘house’		/ntha ^H /	‘lazy’
/nkʔa ^G /	‘green’		/nkʔa ^E /	‘red’
/nskā ^A /	‘corner’		/nsk ^w a ^A /	‘chayote’
/nsk ^w a ^{ʔB} /	‘maize’		/nda ^H -khi ^F /	‘onion’
/ntkō ^{ʔA} /	‘fist’		/ntk ^w i ^E /	‘PRG.hang’ INTR
/tnu/	‘big’		/sna ^J /	‘three’
/kne ^{ʔE} /	‘young’		/kna ^E /	‘snake’
/kna ^{ʔE} /	‘meat’		/kno ^{ʔC} /	‘worm’
/jni ^G /	‘his/her neck’		/jno ^E /	‘COM.stay’
/çne ^B /	‘POT.hear’		/ʔni/	‘animal’
/çʔna ^C /	‘his/her plate’		/la-kʔna ^I /	‘gecko’
/fa ^E -ndwi ^H /	‘lightning’		/tʃa ^{ʔF} -tn ^j ã/	‘Chatino’

Table 2.55 presents minimal and near minimal pairs for /n/.

Table 2.55: Minimal and Near Minimal Pairs for /n/

/n/ ≠ /p/	/na/	‘soot’		/pa ^G /	‘father’
/n/ ≠ /t/	/ni ^C /	‘now’		/ti ^F /	‘rope’
/n/ ≠ /s/	/ni ^C /	‘now’		/si ^F /	‘butterfly’
/n/ ≠ /m/	/ʔni/	‘animal’		/ʔmi/	‘you’

2.6.2.7 Voiced apico-dental tap /r/

The sound /r/ is found in loans and a few native words. It can occur as a single consonant in the onset of a syllable as C₁ preceding the vowels /i/, /e/, /a/, /ã/, and /ẽ/, or it can appear as the second consonant in a cluster as C₂ preceded by the sound /w/. In a couple Spanish loans it appears to be able to close the syllable as in /ʔor^Bnu^G/ ‘oven.’

Table 2.56 presents a list of examples illustrating where /r/ is found.

Table 2.56: Voiced Apico-dental tap /r/

/la ^{-G} -ri ^B -ja ^K /	‘Hilaria’
/be ^F -re/	‘Berenice’
/re ^F -hi ^E /	‘Reginaldo’
/wa ^B -reʔ ^C /	‘us’ 1PL.EXCL
/ra: ^E /	‘scratched’
/rã ^C /	‘it’
/wra ^K /	‘hour’
/rẽʔ ^B /	‘people’
/kar-me ^K /	‘Carmen’

Table 2.57 presents one near minimal pair for /r/.

Table 2.57: Near Minimal Pairs for /r/

/r/ ≠ /l/	/ra: ^E /	‘scratched’	/la: ^G /	‘church’
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2.6.3 Alveopalatal and palatal consonants

The alveopalatal and palatal consonants in TEO consist of four alveopalatal sounds, /tʲ/, /dʲ/, /lʲ/, /nʲ/, two sibilants /tʃ/ and /ʃ/ and two palatal sounds /j/ /ç/. These sounds are produced by placing the blade of the tongue against or just behind the alveolar ridge.

This section begins with a description of the palatalized alveolars and then goes on to describe the sibilants /tʃ/ and /ʃ/; after that, the section finishes up with a description of the two palatal sounds /j/ /ç/. Campbell (2013:203-4), reconstructs the palatalized alveolars /tʲ/, /lʲ/, /nʲ/, as historical allophones of /t/, /l/ and /n/ respectively. He also reconstructs the sibilants /tʃ/ and /ʃ/ as having arisen from palatalized allophones of /ts/ and /s/.

2.6.3.1 Voiceless alveopalatal stop /tʃ/

This sound is found in initial position as C₁ preceding vowels /o/ and /a/, it can be in the first position of a cluster as C₂ preceding the consonants /k^w/, /ʔ/, and /h/. It can occur with a prenasal and it can appear in the second position of a cluster as C₁ following /s/, /ʃ/, /n/ and /k/, preceding the vowels /i/, /ĩ/, /e/, /o/.

Table 2.58 presents a list of examples illustrating where /tʃ/ is found.

Table 2.58: Voiceless Alveopalatal stop /tʃ/

/tʃo/	‘rain’	/tʃo: ^E /	‘adobe’
/tʃõ ^C /	‘some’	/tʃoɪ ^C /	‘century plant’
/tʃa ^E /	‘squirrel’	/tʃk ^w iʔ/	‘POT.speak’
/tʃk ^w a ^B /	‘POT.sit’	/ti ^B -tʃk ^w a ^H /	‘twelve’
/tʃʔa ^A /	‘water’	/tʃʔã/	‘POT.walk’
/tʃhi ^B /	‘POT.pass’	/stʃĩ/	‘feather’
/stʃõ ^B /	‘purple dove’	/ʃtʃo ^E /	‘cat’
/ktʃi ^E /	‘weave; fabric’	/ktʃeɪ ^G /	‘ant’
/mtʃi/	‘COM.dry’	/ntʃi ^I /	‘PRG.dry’
/mtʃi ^C /	‘COM.get.burnt’	/ntʃi ^C /	‘PRG.get.burnt’
/mtʃiʔ ^E /	‘COM.crush’	/ntʃiʔ ^H /	‘PRG.crush’
/ntʃhi ^F /	‘PRG.obtain’	/ntʃha ^I /	‘PRG.spend’
/ntʃhoʔ ^I /	‘PRG.inject’	/ntʃki ^C /	‘PRG.burn.it
/ntʃka ^C /	‘PRG.be’	/ntʃkãɪ ^C /	‘PRG.be.tied.up’
/mtʃkõ ^F /	‘COM.be.closed’	/ntʃkõ ^F /	‘PRG.be.closed’
/ntʃkõʔ ^C /	‘PRG.get.dressed’	/ntʃku ^I /	‘PRG.eat’
/ntʃk ^w i ^F /	‘PRG.rot’	/ntʃk ^w ĩ ^E /	‘PRG.be.shaken’
/ntʃk ^w iʔ ^I /	‘PRG.speak’	/ntʃk ^w eɪ ^F /	‘PRG.cook’
/ntʃk ^w a ^F /	‘PRG.sprout’	/ntʃk ^w aʔ ^I /	‘PRG.to.drip’
/mtʃʔi/	‘COM.get.toasted’	/ntʃʔi ^I /	PRG.get.toasted
/ntʃhwi ^E /	‘PRG.whistle’	/ntʃhnjã ^E /	‘PRG.ask.for’

Table 2.59 presents minimal and near minimal pairs for /t^j/.

Table 2.59: Near Minimal Pairs for /t^j/

/t ^j / ≠ /t/	/t ^j a ^E /	‘squirrel’		/ta ^G /	‘shrimp’
/t ^j / ≠ /t/	/t ^j h ^B /	‘POT.pass’		/th ^B /	‘leather’
/t ^j / ≠ /d ^j /	/nt ^j a/	‘HAB.sow’		/nd ^j a: ^D /	‘PRG.go.there=base’
/t ^j / ≠ /d ^j /	/mt ^j i/	‘COM.to.dry’		/md ^j i/	‘COM.finish’
/t ^j / ≠ /tʃ/	/t ^j oʔ ^C /	‘century plant’		/tʃoʔ ^F /	‘badger’

2.6.3.2 Voiced alveopalatal stop /d^j/

The phoneme /d^j/ like that of /d/ for the sound /t/ is a historical allophone of /t^j/ and is found in the restricted environment occurring only after the voiced bilabial nasal /m/ and apico-dental nasal /n/ preceding the vowels /i/, /e/, /a/, /o/ and /u/. Because /t^j/ is also found after the nasal sounds /m/ and /n/ preceding sonorant sounds /d^j/ is analyzed as a phoneme in TEO.

Table 2.60 presents examples illustrating where /d^j/ is found.

Table 2.60: Voiced Alveopalatal stop /d^j/

/md ^j i/	‘COM.finish’		/nd ^j i/	‘HAB.finish’
/md ^j e: ^B /	‘COM.endure’		/nd ^j e: ^D /	‘PRG.endure’
/nd ^j a: ^D /	‘PRG.go.there=base’		/nd ^j aʔ ^I /	‘PRG.fall.behind’
/nd ^j o ^C /	‘PRG.grind’		/nd ^j oʔ ^G /	‘PRG.get.shrunk’
/md ^j u ^C /	‘COM.fall’		/nd ^j u ^C /	‘COM.fall’
/nd ^j wi ^E /	‘PRG.flash’		/nd ^j wi ^F /	‘PRG.extinguish’
/nd ^j we ^D /	‘PRG.divide’		/nd ^j wē ^I /	‘PRG.get.ripe’
/nd ^j weʔ ^D /	‘PRG.get.scraped’		/nd ^j ha ^I /	‘PRG.die’
/md ^j ?i ^E /	‘COM.toast’		/nd ^j ?i ^E /	‘PRG.toast’
/md ^j ?o ^E /	‘COM.go.out’		/nd ^j ?o ^C /	‘PRG.live’
/md ^j ?we ^B /	‘COM.divide’		/nd ^j ?wa ^I /	‘PRG.get.cold’

Table 2.61 presents minimal and near minimal pairs for /dʲ/.

Table 2.61: Near Minimal Pairs for /dʲ/

/dʲ/ ≠ /tʲ/	/ndʲaː ^E /	‘PRG.turn.in’		/ntʲa/	‘HAB.sow’
/dʲ/ ≠ /tʲ/	/mdʲi/	COM.finish’		/mtʲi/	‘COM.to.dry’
/dʲ/ ≠ /tʲ/	/ndʲha ^I /	PRG.die’		/ntʲha ^I /	PRG.pierce’

2.6.3.3 Voiced alveopalatal lateral /lʲ/

This sound can be found in the onset of a word as C₁ preceding only high vowels /u/ and /i/ or as the second consonant in a cluster as C₂ following the consonants /s/, /ʃ/ and /k/. Table 2.62 present a list of examples illustrating where /lʲ/ is found.

Table 2.62: Voiced Alveopalatal Lateral /lʲ/

/lʲi ^I /	‘piece’		/lʲiʔ ^H /	‘parrot’
/lʲe ^G /	‘much’		/lʲa ^B /	‘POT.escape’
/lʲo ^B /	‘POT.take.out’		/lʲoʔ ^F /	‘little’
/lʲu/	‘floor’		/lʲʔe ^B /	‘POT.lick’
/ndlʲʔe ^B /	‘HAB.lick’		/slʲe ^A /	‘beetle’
/slʲaʔ ^D /	‘cotton’		/ʃlʲu ^K /	‘knife’
/tlʲa ^F /	‘food’		/tlʲaʔ ^A /	‘cold’
/çko ^E -tlʲu ^B /	‘river’		/ti ^F -slʲiʔ ^H /	‘swing’
/klʲaʔ ^G /	‘bitter’		/hlʲa ^E /	‘Ixpantepec’
/hlʲa ^B /	‘POT.fart’		/hlʲu ^G /	‘POT.spin’
/mwɫʲi ^G /	‘godsister’		/mwɫʲa ^K /	‘mule’
/ndlʲa ^B /	‘HAB.escape’		/ndlʲaʔ/	‘HAB.touch’
/ndlʲo ^D /	‘PRG.take.out’		/ndlʲu ^I /	‘PRG.walk.around’
/ndlʲʔe ^B /	‘HAB.lick’		/nhlʲa ^B /	‘HAB.fart’
/nthlʲo ^H /	‘HAB.destroy; finish’		/mphlʲo ^E /	‘COM.destroy; finish’

Table 2.63 presents a minimal pair for /lʲ/.

Table 2.63: Near Minimal Pairs for /lʲ/

/lʲ/ ≠ /nʲ/	/klʲaʔ ^G /		/knʲaʔ ^G /	‘honey’
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2.6.3.4 Voiced alveopalatal nasal /n^j/

This sound can occur in the onset of a word as C₁ preceding the high front vowel /i/ and the low mid vowel /a/ or following the consonants /t/, /s/, /ʃ/, /ç/, /k/ and /h/, it can appear as C₂ in the onset of a word preceding the glottal stop /ʔ/ and it can appear as (S) following /ʃ/, /ç/, /h/ and /ʔ/, preceding the high front vowel /i/ or the low vowel /a/. Table 2.64 presents a list of examples illustrating where /n^j/ is found.

Table 2.64: Voiced Alveopalatal Nasal /n^j/

/n ^j i/	‘straight’	/n ^j a:/	‘PRG.burn’
/n ^j a ^D /	‘PRG.build’	/n ^j aʔ ^B /	‘POT.wash.hands’
/n ^j o ^B /	‘HAB.move’ INTR	/n ^j ʔa ^K /	‘how’
/n ^j ʔo/	‘HAB.waste’	/sn ^j eʔ/	‘his/her child’
/ʃn ^j i ^F /	‘trade; occupation’	/ʃn ^j i/	‘POT.grab’
/ʃn ^j aʔ ^H /	‘POT.tighten’	/ʃn ^j aʔ ^H /	‘HAB.tighten’
/tn ^j i ^B /	‘money’	/tn ^j a ^F /	‘work’
/tn ^j a ^A /	‘griddle’	/tn ^j aʔ/	‘rat’
/çn ^j i ^B /	‘POT.dig’	/çn ^j a ^B /	‘bouquet’
/çn ^j a ^H /	‘POT.ask.for’	/çn ^j o ^H /	‘POT.borrow’
/kn ^j i ^H /	‘POT.lie’	/kn ^j aʔ ^E /	‘deer’
/kn ^j aʔ ^G /	‘honey’	/hn ^j iʔ ^C /	‘bird’
/hn ^j o ^H /	‘HAB.borrow’	/hn ^j oʔ ^F /	‘chili’
/hn ^j aʔ ^G /	‘strongbox’	/hn ^j oʔ ^B /	‘wax’
/nʃn ^j i ^E /	‘PRG.straighten’	/nʃn ^j aʔ ^H /	‘HAB.tighten’
/nçn ^j i ^D /	‘PRG.dig’	/çʔn ^j a ^G /	‘bed’
/nt ^j hn ^j a ^H /	‘HAB.ask.for’		

Table 2.65 presents minimal and near minimal pairs for /n^j/.

Table 2.65: Minimal and Near Minimal Pairs for /n^j/

/n ^j / ≠ /n/	/n ^j i/	‘straight’	/ni/	‘3SG.RSP’
/n ^j / ≠ /n/	/kn ^j aʔ ^E /	‘deer’	/knaʔ ^E /	‘meat’
/n ^j / ≠ /n/	/çʔn ^j a ^G /	‘bed’	/çʔna ^C /	‘plate’
/n ^j / ≠ /l ^j /	/kn ^j aʔ ^G /	‘honey’	/klyaʔ ^G /	‘bitter’

2.6.3.5 Voiceless alveopalatal affricate /tʃ/

This phoneme is a single integrated sound found in the onset of a word or in C₁ following a stop or a palatal. This consonant is treated as a single integrated sound rather than a cluster. Analyzing it this way allows us to state this rule in an exception-less way - a simpler cleaner analysis. When it occurs in position C₁ following /ç/. If /tʃ/ were a cluster, that would create a sequence where the sound in the (S)onorant position would be a fricative /ʃ/. This violates the phonotactic structure of the Teotepéc Chatino basic word template (N)(C₂)C₁(S)V(:)^T(?).

This sound is found in initial position as C₁ preceding the vowels /i/, /ĩ/, /e/, /ẽ/, /a/, /ã/, /o/, and /õ/ and as cluster in the C₁ position following the consonant phonemes /m/, /n/, /ç/ and /k/. Table 2.66 presents a list of examples where /tʃ/ is found.

Table 2.66: Voiceless Alveopalatal Affricate /tʃ/

/tʃi ^B /	‘gizzard’	/tʃi ^A /	‘baby chick’
/tʃĩ ^F /	‘little bit’	/tʃẽ ^H /	‘POT.breed’
/tʃa/	‘young female’	/tʃa ^F /	‘word’
/tʃõ ^G /	‘a while’	/tʃo ^G /	‘badger’
/tʃõ ^B /	‘pineapple’	/tʃõ ^G /	‘at.back.of’
/tʃa-k ^w tʃi ^H /	‘rabbit’	/çtʃi/	‘mealing stone’
/çtʃẽ/	‘village’	/çtʃe ^B /	‘thorn’
/mtʃẽ ^E /	‘COM.breed’	/ntʃẽ ^E /	‘PRG.breed’
/mtʃa ^E /	‘COM.fold; break’	/ntʃa ^E /	‘PRG.fold; break’
/mtʃa ^G /	‘COM.to.moisten’	/ntʃa ^I /	‘PRG.moisten’
/mtʃo ^G /	‘COM.shoot’	/ntʃa ^I /	‘PRG.shoot’
/çtʃa/	‘day after tomorrow’	/çtʃã ^G -ke ^G /	‘his/her hair’
/ktʃi ^F -msẽ ^G /	‘bobcat’	/ktʃa ^G /	‘sun’
/ktʃa ^B /	‘POT.to.moisten’	/ktʃo ^B /	‘POT.shoot’

There are two examples in the database that reflect an exception for the voicing of the phoneme /tʃ/. For the words /ntʃka/ [nçga] ‘all’ and /mtʃĩ^B/ [mçĩ^B] ‘monkey’ this sound becomes voiced [ç]. The process reflects the following rule: /tʃ/ → [ç] / +nasal —.

However, in all of the other cases this sound /tʃ/ never becomes voiced following a nasal.

Table 2.67 presents minimal and near minimal pairs for /tʃ/.

Table 2.67: Minimal and Near Minimal Pairs for /tʃ/

/tʃ/ ≠ /tʃ ^j /	/tʃa/	‘young female’		/tʃ ^j a ^E /	‘squirrel’
/tʃ/ ≠ /tʃ ^j /	/tʃoʔ ^F /	‘badger’		/tʃ ^j oʔ ^C /	‘century plant’
/tʃ/ ≠ /tʃ ^s /	/tʃa/	‘young female’		/tʃ ^s a ^B /	‘POT.go’
/tʃ/ ≠ /tʃ/	/tʃi/	‘grinding stone’		/tʃi ^A /	‘sweet’
/tʃ/ ≠ /k/	/tʃoʔ ^F /	‘badger’		/koʔ ^E /	‘moon’
/tʃ/ ≠ /s/	/tʃtʃē/	‘village’		/tʃsi ^A /	‘sand’

2.6.3.6 Voiceless alveopalatal fricative /tʃ/

This sound has a wide distribution in Teotepéc Chatino. Considering the syllable template (N)(C₂)C₁(S)V(:)^T(?) presented in §2.3.1, this sound is found in the onset of a word as C₁ where it precedes the high front vowels /i/ and /ĩ/ the mid front nasal vowel /ẽ/, the mid low vowels /a/ and /ã/, the mid back vowel /u/ and the high back vowels /o/ and /õ/. /tʃ/ is also found in C₁ as the second consonant of a cluster following /m/, /n/, /k/, /k^w/ and /w/ and preceding the vowels /i/, /ĩ/, /ẽ/, /a/, /o/ and /u/. This phoneme can be the first consonant of a cluster as C₂ preceding /n/, /n^j/, /t/, /t^j/, /j/, /k/, /k^w/, /w/ and /ʔ/. /tʃ/ may also be found at the onset of a word as C₂ where it precedes C₁ and the (S) sonorant consonant. In this position it may be preceded by the nasals /m/ and /n/. Table 2.68 presents a list of examples illustrating where /tʃ/ is found.

Table 2.68: Voiceless Alveopalatal Fricative /tʃ/

/tʃi ^A /	‘sweet; candy’		/tʃĩ ^A /	‘sugarcane chaff’
/tʃĩ ^C /	‘bush’		/tʃē ^G /	‘wide’
/tʃa ^B /	‘orange’		/tʃã ^C /	‘ingredients’
/tʃo ^K /	‘cheese’		/tʃõ ^H /	‘POT.fight’
/tʃoʔ ^F /	‘POT.gather up’		/tʃõ ^B /	‘tasty’
/la-tʃu ^A /	‘buzzard’		/tʃuʔ ^F /	‘sir’ HON
/m-tʃi ^D /	‘tomato’		/n-tʃĩ ^E /	‘Yaitepec’
/n-tʃĩ ^H /	‘HAB.get.wrung.out’		/m-tʃē ^E /	‘COM.widen’
/n-tʃē ^E /	‘PRG.widen’		/m-tʃa ^K /	‘mass’

/mfoʔ ^C /	‘COM.rejoin’	/nfoʔ ^C /	‘PRG.rejoin’
/mfu ^E /	‘COM.pinch’	/nfu ^E /	‘PRG.pinch’
/kfi ^E /	‘weak’	/kfe: ^G /	‘raccoon’
/k ^w fi ^E /	‘simple’	/wfo ^K /	‘peso’ SPN
/fniʔ ^C /	‘dog’	/fna ^B /	‘POT.run’
/ti ^J -fna ^H /	‘thirteen’	/fno ^H /	‘POT.leave.it’
/fn ^j i ^H /	‘POT.stretch.it’	/fn ^j a/	‘trade; occupation’
/fn ^j aʔ ^H /	‘POT.tighten’	/ftiʔ ^B /	‘POT.untie’
/ftã/	‘POT.cut/tear’	/ftõ ^B /	‘POT.remove’
/ft ^j i ^K /	‘machete’	/ft ^j i ^H /	‘POT.smile’
/ft ^j o ^E /	‘cat’	/ft ^j õ ^C /	‘Tiltepec’
/fla ^F /	‘POT.melt.it’	/fl ^j a ^D /	‘POT.accept’
/fl ^j u ^K /	‘knife’	/flka-l ^j u ^K /	‘mezcal’
/ljeʔ ^K /	‘lime’	/ljaʔ ^I /	‘again’
/jka ^I /	‘another.one’	/jkõ ^C /	‘POT.throw’
/jk ^w i ^K /	‘basket’	/jk ^w ĩ ^I /	‘POT.disconcert’
/jk ^w ẽ ^B /	‘POT.answer’	/jk ^w a ^B /	‘POT.lie.down’
/jk ^w aʔ ^F /	‘root’	/fʔi ^F /	‘little time’
/fwe ^A /	‘small’	/fwa ^F /	‘Juan’
/fʔẽ ^I /	‘scorpion’	/fʔã/	‘POT.get.filled’
/mftiʔ ^B /	‘COM.untie’	/nftiʔ ^D /	‘PRG.untie’
/mftã ^B /	‘COM.remove.it’	/nftã ^D /	‘PRG.remove.it’
/mft ^j aʔ ^F /	‘COM.mix’	/nft ^j aʔ ^F /	‘PRG.mix’
/mfno ^E /	‘COM.leave.it’	/nfno ^E /	‘PRG.leave.it’
/mf ⁿ i ^E /	‘COM.stretch.it’	/nf ⁿ i ^E /	‘PRG.stretch.it’
/mfla ^F /	‘COM.melt.it’	/nfla ^F /	‘PRG.melt.it’
/nfl ^j a ^D /	‘HAB.accept’	/nfn ^j aʔ ^H /	‘HAB.tighten’
/mfno ^E /	‘COM.leave.it’	/nfno ^E /	‘PRG.leave.it’
/mfyaʔ ^F /	‘COM.become.small’	/nfyaʔ ^F /	‘PRG.become.small’
/mfka ^B /	‘COM.undo’	/nfka ^D /	‘PRG.undo’
/mfkõ ^B /	‘COM.sew’	/nfkõ ^D /	‘PRG.sew’
/mfkõʔ ^B /	‘COM.roll’	/nfkõʔ ^D /	‘PRG.roll’
/mfk ^w ĩ ^I /	‘COM.disconcert’	/nfk ^w ĩ ^I /	‘PRG.disconcert’
/mfk ^w ẽ ^B /	‘COM.answer’	/nfk ^w ẽ ^D /	‘PRG.answer’
/mfk ^w aʔ ^E /	‘COM.degrain’	/nfk ^w aʔ ^E /	‘PRG.degrain’
/mfʔã ^E /	‘COM.change.it’	/nfʔã ^E /	‘PRG.change.it’
/fkla ^K /	‘school’	/fʔja ^C /	‘POT.yell’
/fʔwa ^B /	‘POT.turn.in’	/fʔwu ^H /	‘POT.trim; cut’
/mfʔwa ^B /	‘COM.turn.in’	/mfʔwu ^E /	‘COM.trim; cut’
/nfʔwa ^D /	‘PRG.turn.in’	/nfʔwu ^E /	‘PRG.trim; cut’

Table 2.69 presents minimal and near minimal pairs for /ʃ/.

Table 2.69: Minimal and Near Minimal Pairs for /ʃ/

/ʃ/ ≠ /t/	/ʃa ^E /	‘brilliance/radiance’		/ta ^G /	‘shrimp’
/ʃ/ ≠ /t/	/mʃa ^K /	‘mass’		/mta ^F /	‘black’
/ʃ/ ≠ /s/	/ʃa ^E /	‘luminescence’		/sa ^K /	‘cup’
/ʃ/ ≠ /s/	/mʃa ^K /	‘mass’		/msa ^K /	‘table’
/ʃ/ ≠ /s/	/ʃt ^j ō ^C /	‘Tiltepec’		/st ^j ō ^E /	‘purple dove’
/ʃ/ ≠ /ts/	/ʃa ^B /	‘orange’		/t̃sa ^B /	‘POT.go’
/ʃ/ ≠ /ts/	/nʃi ^E /	‘Yaitepec’		/nt̃si ^A /	‘plastic’
/ʃ/ ≠ /ç/	/ʃʔya ^K /	‘POT.yell’		/çʔya ^C /	‘mountain’
/ʃ/ ≠ /k/	/ʃoʔ ^F /	‘POT.join’		/ko:ʔ ^E /	‘moon’
/ʃ/ ≠ /h/	/ʃa ^B /	‘orange’		/ha/	‘no’

2.6.3.7 Voiced palatal glide /j/

Considering the syllable template (N)(C₂)C₁(S)V(:)^T(ʔ), the phoneme /j/ can occur as a single consonant in the onset of a word as C₁ preceding the vowels /e/, /a/, /ã/, and /u/. This sound can also appear as the second consonant of a cluster, in the C₁ position, following the consonants /s/, /ʃ/, /t̃s/ and /r/ preceding the vowels /a/, /e/, /o/ and /u/. /j/ can be found as the first consonant in a cluster as C₂ preceding the sounds /s/, /l/, /m/, /n/, /h/, /w/ and /ʔ/. /j/ appears as (S) in a cluster preceded by complex consonant clusters directly following /s/, /w/ and /ʔ/. lastly, /j/ may be found in the (S) position of a pre-nasalized syllable preceded by a set of complex consonant clusters. Table 2.70 presents examples of these environments.

Table 2.70: Voiced Palatal Glide /j/

/re ^F -je ^E /	‘Reyes’		/jeʔ ^D /	‘bet’
/ja: ^E /	‘nopal’		/jã ^G /	‘poison; venom’
/jaʔ ^C /	‘his/her hand’		/ju:/	‘earth’
/sjaʔ ^H	‘once’		/sjẽʔ/	‘his/her nose’
/t̃sjō/	‘Temaxcaltepec’		/ʃjaʔ ^I /	‘again’
/sa ^B -rju ^K /	‘rosary’		/ta ^B -rya ^K /	‘homework’
/jsi ^F /	‘sea turtle’		/jla ^B /	‘pool’
/jla ^F /	‘COM.sing/bark’		/jlaʔ/	‘COM.touch.it’

/jlo ^F /	‘COM.grow’	/jma ^K /	‘lime’
/jni ^G /	‘his/her neck’	/jne ^D /	‘PRG.water’ INTR
/jna ^F /	‘corncob’	/jna ^I /	‘PRG.thicken’
/jno ^E /	‘COM.stay’	/jha/	‘tortilla’
/jhã ^A /	‘year’	/jho ^G /	‘squash’
/jho [?] /	‘COM.inject’	/jwẽ ^G /	‘COM.ripen’
/jʔa ^A /	‘green; unripe’	/jʔo ^C /	‘COM.drink’
/jntʔi ^I /	‘PRG.to.dry’	/jʔni ^E /	‘PRG.be.touched’
/jʔni ^G /	‘PRG.do/make’	/jʔwi/	‘COM.exist’
/jʔwe ^C /	‘piece’	/jʔwe ^F /	‘PRG.copulate’
/sʔje ^B /	‘tree core’	/ʃʔja ^H /	‘POT.yell’
/sʔja ^G /	‘for/because’	/sʔju ^H /	‘POT.cut’
/lʔja/	‘his/her tooth’	/mwjo [?] ^A /	‘spider’
/çʔja ^C /	‘mountain’	/çʔju ^E /	‘man’
/ksja ^K /	‘heart’	/kʔya ^C /	‘gopher’
/kʔju ^J /	‘five’	/kʔju ^C /	‘flea’
/ksja ^K /	‘heart’	/kʔju ^J /	‘five’
/ʃʔja ^C /	‘POT.yell’	/ndʔja/	‘pretty/fancy’
/msʔja ^E /	‘COM.yell’	/nsʔja ^E /	‘PRG.yell’
/msʔju ^E /	‘COM.cut’	/nsʔju ^E /	‘PRG.cut’
/mʃʔju ^E /	‘COM.recut’	/nʃʔju ^E /	‘PRG.recut’
/mdʔja ^E /	‘COM.lower’ TRN	/ndʔja ^E /	‘PRG.lower’ TRN
/mwʔja ^G /	‘COM.lower’ INTR	/ndʔja ^E /	‘PRG.lower’ INTR
/mwʔja ^F /	‘COM.carry’	/ndʔja ^F /	‘PRG.carry’

Table 2.71 presents minimal and near minimal pairs for /j/.

Table 2.71: Minimal and Near Minimal Pairs for /j/

/j/ ≠ /j̃/	/ju:/	‘earth’	/ɽu ^B /	‘floor’
/j/ ≠ /h/	/ja [?] ^C /	‘his/her hand’	/ha:ʔ ^G /	‘sleeping mat’
/j/ ≠ /ç/	/ja [?] ^C /	‘his/her hand’	/ça [?] /	‘his/her foot’
/j/ ≠ /ç/	/jla ^B /	‘pool’	/çla ^B /	‘POT.arrive’

The phoneme /j/ presents one of the two exceptions to the syllable template (N)(C₂)C₁(S)V(:)^T(ʔ) introduced in §2.3.1. In the morphological category for the progressive and habitual forms there are verbs that present the preposing of the phoneme /j/ before the nasal sound in the Teotepic syllable template. This is due to a process of metathesis that occurs in the historic prefix of these items (§2.3.2).

2.6.3.8 Voiceless palatal fricative /ç/

Taking into account the syllable template (N)(C₂)C₁(S)V(:)^T(ʔ), /ç/ has a broad distribution. This sound can occur in the onset of a word as C₁, preceding the low mid vowels /a/ and /ã/. In this position it may also be preceded by the nasal /m/. /ç/ can also occur in the C₁ position as the second consonant of a cluster preceded by /t/ and /k/. Here /ç/ may be preceded by the prenasal /n/ and the consonant /t/ in a cluster. /ç/ may occur as the onset of a cluster in C₂. In this position this sound has the greatest distribution preceding the sounds /t/, /tʰ/, /s/, /l/, /n/, /n^j/, /t^j/, /tʃ/, /k/, /k^w/, /w/ and /ʔ/. In the C₂ position /ç/ may be preceded by the prenasal /n/ or /m/. There is one instance where /ç/ is found in the C₁ preceding the sonorant sound /w/. And there are two instances where this sound is found in the C₂ of a prenasalized syllable with a C₁ consonant preceding a sonorant (S) sound. Table 2.72 presents a list of examples illustrating where /ç/ is found.

Table 2.72: Voiceless Palatal Fricative /ç/

/ça ^A /	‘sugar cane’	/çã ^E /	‘cornfield’
/çaʔ/	‘his/her foot’	/çaʔ ^F /	‘plaza’
/tçã ^G /	‘his/her bone’	/tço ^A /	‘far’
/kçu ^A /	‘lock’	/kçja ^B /	‘POT.play’
/kçju ^H /	‘POT.perforate’	/çta ^A /	‘tobacco’
/çtã ^F /	‘hammock’	/çtãʔ ^A /	‘his/her nail’
/çto ^B -ju:/	‘earthen hole’	/çtsoʔ ^C /	‘pimple’
/çsĩ ^A /	‘sand’	/çso ^C /	‘avocado’
/çla ^B /	‘POT.arrive’	/çlaʔ ^B /	‘red mamey’
/çlo/	‘his/her eye’	/çne ^B /	‘POT.sound’
/çna ^A /	‘huarache’	/çno ^E /	‘POT.stay’
/çn ^j i ^C /	‘bird’	/çn ^j a ^B /	‘bouquet’
/çn ^j aʔ ^G /	‘trunk’	/çn ^j ãʔ ^F /	‘chili’
/çtj ⁱ ^C /	‘paper’	/çt ^j e ^C /	‘pitch pine’
/çtʃi/	‘grinding stone’	/çtʃe/	‘maguey fiber’
/çtʃe ^A /	‘village’	/çtʃeʔ ^B /	‘thorn; spine’
/çtʃa/	‘illness’	/çtʃãʔ ^G -kje ^G /	‘his/her hair’

/çka ^C /	‘tree’	/çkaʔ ^H /	‘POT.jump’
/çko/	‘comb’	/çkõʔ ^H /	‘POT.punch’
/çk ^w i ^H /	‘POT.boil’	/çk ^w i ^H /	‘POT.swallow.1SG’
/çk ^w ẽ ^E /	‘drawing/image’	/çk ^w a ^F /	‘cornmeal porridge’
/çk ^w aʔ ^A /	‘marsh’	/çwĩ/	‘POT.say’
/çwiʔ ^B /	‘POT.extinguish’ INTR	/çʔa ^E /	‘bean field’
/çʔã ^G /	‘POT.wash’	/çʔõ ^B /	‘much’
/çʔna ^C /	‘his/her plate’	/çʔn ^j ã ^G /	‘bed’
/çʔja/	‘mountain’	/çʔju ^E /	‘man’
/çʔwe ^B /	‘POT.break.up’ INTR	/çʔwa ^G /	‘POT.get.cold’
/mçã ^C /	‘COM.play’	/mçõʔ ^E /	‘COM.help.oneself’
/mçu ^E /	‘COM.perforate’	/ntçã ^C /	‘PRG.play’
/ntçõʔ ^E /	‘PRG.help.oneself’	/ntçu ^E /	‘PRG.perforate’
/mçtiʔ ^B /	‘COM.release’	/nçtiʔ ^B /	‘PRG.release’
/mçta ^B /	‘COM.take.off’	/nçta ^D /	‘PRG.take.off’
/mçkaʔ ^E /	‘COM.jump’	/nçkaʔ ^E /	‘PRG.jump’
/mçkõʔ ^E /	‘COM.punch’	/nçkõʔ ^E /	‘PRG.punch’
/mçk ^w i ^E /	‘COM.massage’	/nçk ^w i ^E /	‘PRG.massage’
/mçk ^w ĩ ^E /	‘COM.shake.out’	/nçk ^w ĩ ^E /	‘PRG.shake.out’
/mçk ^w ĩʔ ^B /	‘COM.smell’	/nçk ^w ĩʔ ^D /	‘PRG.smell’
/mçn ^j o ^I /	‘COM.borrow’	/ntçwi ^C /	‘PRG.sell’
/mçʔna ^E /	‘COM.swing’	/nçʔna ^E /	‘PRG.swing’

Table 2.73 presents minimal and near minimal pairs for /ç/.

Table 2.73: Minimal and Near Minimal Pairs for /ç/

/ç/ ≠ /k/	/çta ^F /	‘chepil’ (SPN)	/kta ^K /	‘cow’
/ç/ ≠ /j/	/çʔã ^B i/	‘my mother’	/jʔã ^B /	‘COM.go.1SG’
/ç/ ≠ /j/	/çãʔ/	‘his/her foot’	/jaʔ ^C /	‘his/her hand’
/ç/ ≠ /j/	/çla ^B /	‘POT.arrive’	/jla ^B /	‘pool’

The reason there is a minimal pair for /ç/ and /j/ is because when /ç/ is C₂, it often comes from Proto Eastern Chatino */ki/. This explains why in TEO there are almost no clusters of /j/ plus a voiceless consonant. In those cases, the /j/ automatically devoiced to /ç/ historically. In Teotepec Chatino this sound is written < jy > and not considered a cluster or affricate because it is a single integrated phoneme. Table 2.74

presents comparative data for ZAC (Villard, p.c) , YAI (Rasch, in press), and TEO for how this sound corresponds with sound /ki/ in segmentally conservative ZAC chatino. In Yaitepec Chatino the only vowel that has not completely reduced in penultimate syllables is the /i/ vowel (Rasch, 2002:09). These examples show that in TEO the sound */ki/ has gone to /ç/ and that /i/ in YAI is an intermediate stage of vowel reduction.

Table 2.74: */ki/ → /ç/ in TEO

ZAC	YAI	TEO	Gloss
kiyaʔ ³	kyaʔ ³	çaʔ ^A	‘his/her foot’
kiʔeʔ ³⁻⁴	k ⁱ ʔeʔ ²⁴	çʔeʔ ^B	‘thorn’
kiʔi ³⁻⁴	k ⁱ ʔi ³	çʔi	‘grinding stone’
kite ³²	k ⁱ tje ²³	çt ^j e ^C	‘pitch pine’
kila ³²	k ⁱ la ²³	çla ^C	‘pool’
kiso ³²	k ⁱ su ³	çso ^C	‘avocado’
kita ³	k ⁱ ta ³²	çta ^F	‘chepil’ SPN
kitsoʔ ⁴⁻²¹	k ⁱ tzuʔ ³²	çtsoʔ ^F	‘grain’
kiʔna ³²	k ⁱ ʔna ²³	çʔna ^C	‘plate’
kiʔja ³²	k ⁱ ʔja ²³	çʔja ^C	‘mountain’
kiʔju ²¹	k ⁱ ʔju ¹	çʔju ^E	‘man’

Because the sound is represented with two graphemes < jy > in the practical orthography does not mean that this sound is a cluster. If it were analyzed that way it would create two consonants in the C₂ position. This sound is treated as a single consonant rather than a cluster because a cluster in the C₂ position violates the basic syllable shape of (N)(C₂)C₁(S)V(:)^T(ʔ) (§2.3.1).

2.6.4 Velar Consonants

The velar consonants of Teotepec Chatino are /k/ and /k^w/.

2.6.4.1 Voiceless velar stop /k/

The voiceless velar /k/ is found as the single consonant in the onset of a syllable preceding the vowels /i/, /e/, /a/, /o/, /õ/, and /u/. This sound can also be C₁ as the second consonant of a cluster as preceded by the consonants /s/, /ʃ/, and /ç/. /k/ can also be found in the C₁ position. /k/ can be preceded by the prenasal clusters /nt/, /ns/, and /nç/ and /mt/, /ms/ and /mç/. /k/ can also be C₂ as the first consonant of a cluster in C₂C₁. In this setting /k/ has the greatest distribution preceding the sounds /t/, /t̃s/, /s/, /ʃ/, /n/, /l/, /tʲ/, /nʲ/, /lʲ/, /y/, /ʔ/ and /h/. /k/ may also be C₂ in the onset of C₂C₁(S) preceding /s/, /ʔ/ and /h/. There is one instance in the database where /k/ occupies the C₂ position in a pre-nasalized syllable that includes a consonant in the (S)onorant of the Teotepec syllable template (N)(C₂)C₁(S)V(:)^T(?) - /mkhwi^G/ ‘COM.die.’

The allophone [g] of /k/ occurs only after the nasal /n/:

/k/ → [g] / /n/ —; /k/ → [k] elsewhere

/nkaã ^E /	[ŋgaã ^E]	‘coconut’
/nkʔa ^E /	[ŋgʔa ^E]	‘red’
/nkʔa ^G /	[ŋgʔa ^G]	‘green’

Table 2.75 presents a list of examples illustrating where /k/ is found.

Table 2.75: Voiceless Velar Stop /k/

/ki: ^C /	‘grass’	/ki:ʔ ^A /	‘flame’
/ke ^G /	‘his/her head’	/ka ^F /	‘yesterday’
/ka: ^J /	‘nine’	/kaʔ/	‘leaf’
/ka:ʔ ^E /	‘plank’	/ko ^G /	‘fog’
/kõ ^C /	‘tall’	/kõ ^H /	‘POT.eat.1S’
/kõ ^B /	‘land turtle’	/koʔ ^E /	‘moon’
/ku/	‘POT.eat’	/ska/	‘one’
/ska ^K /	‘sugar’	/skã/	‘community guard’
/skã ^I /	‘POT.tie’	/sko ^B /	‘minnow’
/skõ ^C /	‘his/her arm’	/skoʔ ^H /	‘grasshopper’

/ʃkō/	‘POT.sew’	/çka/	‘tree’
/çko ^r /	‘comb’	/çko ^E /	‘well/pool’
/kti ^J /	‘seven’	/ktẽ/	‘sprout’
/kta ^K /	‘cow’	/ktõ ^A /	‘bee’
/ktsi ^C /	‘yellow’	/ktsi ^F /	‘iguana’
/ktsẽ ^B /	‘POT.fear’	/ktse ^G /	‘pus’
/ktsa [?] /	‘POT.get wet’	/ktso ^B /	‘POT.rot’
/ksi ^K /	‘cross’	/ksi ^E /	‘POT.wring.out’
/ksa [?] ^B /	‘weevil’	/kso/	‘toasted’
/kʃi ^E /	‘weak’	/kʃe ^G /	‘raccoon’
/kna/	‘mirror’	/kna ^E /	‘snake’
/kna [?] ^E /	‘meat’	/kno ^C /	‘worm’
/kle ^K /	‘mayor’	/kla ^A /	‘fish’
/kla ^B /	‘twenty’	/kla: ^G /	‘bamboo’
/klo ^B /	‘POT.grow’	/ktʃi ^C /	‘knitted’
/ktʃi ^F /	‘frog’	/ktʃe ^G /	‘ant’
/knʃa [?] ^G /	‘honey’	/knʃa: [?] ^E /	‘deer’
/klʃa [?] ^G /	‘bitter’	/kja ^H /	‘tomorrow’
/kja [?] ^C /	‘soap’	/kja ^F /	‘measuring tape’
/kjõ [?] ^B /	‘wart’	/kʃi ^H /	‘POT.toast’
/kʃõ ^H /	‘POT.drink.1SG’	/khi ^F /	‘fox’
/kha/	‘POT.die’	/kho [?] /	‘POT.sting’
/la-kʃna ^B /	‘lizard’	/kʃja ^C /	‘gopher’
/la-kʃja ^I /	‘eagle’	/kʃju ^J /	‘five’
/kʃju ^C /	‘flea’	/ksja ^K /	‘heart’
/khwi ^I /	‘POT.kill’	/khwi ^B /	‘POT.sell’
/mkõ ^C /	‘COM.bless’	/mkye ^F /	‘COM.cook’
/mkʃo ^B /	‘COM.show’	/mkʃo ^E /	‘COM.paint’
/mtkã [?] ^F /	‘COM.sew’	/ntkã [?] ^F /	‘PRG.sew’
/mskã [?] ^F /	‘COM.tie’	/nskã [?] ^F /	‘PRG.tie’
/mskõ ^F /	‘COM.cover’	/nskõ ^F /	‘PRG.cover’
/mçka ^C /	‘COM.errase’	/nçka ^C /	‘PRG.errase’
/mçka [?] ^E /	‘COM.jump’	/nçka [?] ^E /	‘PRG.jump’
/mçkõ [?] ^B /	‘COM.roll.up’	/nçkõ [?] ^D /	‘PRG.roll.up’

Table 2.76 presents near minimal pairs for /k/.

Table 2.76: Near Minimal Pairs for /k/

/k/ ≠ /k ^w /	/ki: ^C /	‘grass’	/k ^w i: ^E /	‘star’
/k/ ≠ /k ^w /	/ki:ʔ ^A /	‘flame’	/k ^w i:ʔ ^C /	‘baby’

2.6.4.2 Voiceless labio-velar stop /k^w/

This sound can be found in the onset of a syllable C₁ preceding the vowels /i/, /ẽ/ and /a/ or as the second consonant in a cluster in C₁ preceded by /t/, /t^j/, /s/, /n/ and /ç/. It can also be found as the first consonant of a cluster as in C₂ preceding the sounds /t/, /l/ and /h/. The data shows at least one example of /kw/ as a cluster. The word for ‘swine’ in ZAC Chatino is *kowe*ʔ^G, the cognate in Teotepec Chatino is *kwe*ʔ^G. Because of the vowel loss in the penultimate syllable this form contrasts diachronically with the word for *k^we:ʔ^B* ‘crab’ in Teotepec Chatino. Because this cluster does not contrast synchronically both are represented in the same way.

The allophone [g^w] of /kw/ occurs only after the voiced nasal alveolar consonant /n/:

/k^w/ → [g^w] / /n/ —

/k^w/ → [k^w] elsewhere

/nk ^w ẽ ^G /	[ŋg ^w ẽ ^G]	‘ripe’
/nk ^w he/	[ŋg ^w he]	‘goose foot’

Table 2.77, below, presents a list of examples illustrating where /k^w/ is found. Table 2.76, above, presents near minimal pairs for this phoneme.

Table 2.77: Voiceless Labio-velar Stop /k^w/

/k ^w i ^C /	‘liquor’		/k ^w i: ^A /	‘star’
/k ^w iʔ ^r /	‘baby’		/k ^w ĩʔ ^G /	‘armadillo’
/k ^w ẽ ^C /	‘bat’		/k ^w ẽ: ^G /	‘noisy’
/k ^w e:ʔ ^I /	‘crab’		/k ^w a ^F /	‘broom’
/k ^w aʔ/	‘dew’		/k ^w la ^A /	‘old’
/k ^w hi ^H /	‘POT.waste’		/k ^w hi ^G /	‘bag’
/k ^w tĩʔ ^B /	‘louse’		/tʰk ^w i ^E /	‘difficult’
/tʰk ^w iʔ/	‘POT.speak’		/tk ^w a ^J /	‘two’
/tʰk ^w a ^B /	‘POT.sit’		/tʰk ^w ã ^F /	‘machine; iron’
/sk ^w a ^J /	‘six’		/sk ^w a ^E /	‘soup’
/sk ^w aʔ ^B /	‘cockroach’		/çk ^w i ^G /	‘POT.boil’
/çk ^w iʔ/	‘COM.spoke’		/çk ^w a ^F /	‘cornmeal porridge’
/nsk ^w a ^A /	‘chayote’		/nsk ^w aʔ ^B /	‘maize’
/mçk ^w i ^E /	‘COM.massage’		/nçk ^w i ^E /	‘PRG.massage’
/mçk ^w ĩ ^E /	‘COM.shake.out’		/nçk ^w ĩ ^E /	‘PRG.shake.out’
/mçk ^w ĩʔ ^B /	‘COM.smell’		/nçk ^w ĩʔ ^D /	‘PRG.smell’

2.6.5 Laryngeals

The laryngeal consonants of Teotepec Chatino are /ʔ/ and /h/.

2.6.5.1 Voiceless laryngeal stop /ʔ/

This sound can be found in the onset of a syllable preceding the vowels /i/, /ĩ/, /a/, /ã/, /o/ and /ũ/. /ʔ/ can also be C₁ as the second consonant in a cluster preceded by /t/, /s/, /ʃ/, /ç/, /j/ and /h/. This sound can be found in the C₁ position as part of a complex onset nestled between C₂ and the sonorant sound in C₂C₁(S). /ʔ/ can occur as C₁ in as the complex onset with a prenasal /m/ or /n/ as in NC₂C₁(S). /ʔ/ can occur as the first consonant of a cluster as in C₂ preceding the consonants /w/, /m/ and /n/. The laryngeal stop /ʔ/ occurs only once per syllable and it is the only consonant that can occur in coda position in native lexical items. Table 2.78 presents a list of examples illustrating the environments where /ʔ/ is found.

Table 2.78: Voiceless Laryngeal Stop /ʔ/

/ʔi ^B /	‘no?’	/ʔi ^E /	‘to; of’
/ʔa ^E /	‘much’	/ʔã ^G /	‘ahh’
/ʔo ^E /	‘with’	/ʔũ/	‘you’ HON
/ʔwẽ/	‘you’	/ʔmi/	‘you’
/ʔni/	‘animal’	/tʔa ^A /	‘fiesta’
/tʔi ^H /	‘POT.grind.finely’	/tʔa ^G /	‘his/her relative’
/tʔã ^H /	‘POT.write’	/sʔi ^B /	‘no’
/nʔi/	‘PRG.be’	/nʔã ^E /	‘PRG.loosen’
/nʔõ ^I /	‘PRG.waste’	/ʃʔi ^B /	‘POT.buy’
/ʃʔã ^H /	‘POT.change’	/çʔi ^H /	POT.fuck.with’
/çʔa ^E /	‘bean field’	/çʔã ^E /	his/her mother’
/jʔa ^A /	‘green; unripe’	/jʔã ^H /	‘change’
/hʔo ^I /	‘smooth; weak’	/hʔo ^C /	‘saint’
/sʔwe ^F /	‘good’	/sʔwe ^B /	‘POT.separate’
/tʔwa ^A /	‘his/her mouth’	/sʔju ^H /	‘POT.cut’
/ʃʔja ^H /	‘POT.yell’	/kʔju ^J /	‘five’
/çʔja ^C /	‘mountain’	/çʔju ^E /	‘man’
/hʔwa ^B /	‘banana’	/hʔwa ^G /	‘granary’
/ndʔi ^I /	‘PRG.live’	/ndʔa ^D /	‘PRG.negate’
/ndʔã ^A /	‘corn’	/ndʔo ^D /	‘PRG.show’
/ndʔja ^E /	‘pretty; fancy’	/ndʔja ^F /	‘PRG.carry’
/ndʔwi ^I /	‘PRG.exist’	/ndʔwe ^B /	‘HAB.copulate’
/mwʔja ^F /	‘COM.carry’	/mwʔja ^G /	‘COM.lower it’
/tʃi ^A /	‘chick’	/tʃi ^F /	‘a.little’
/tʃa ^F /	‘word’	/tʃo ^F /	‘badger’
/tʃo ^B /	‘pineapple’	/tʃõ ^G /	‘his/her back’
/çaʔ/	‘his/her foot’	/ça ^F /	‘plaza’
/ki:ʔ ^A /	‘fire; flame’	/ko ^E /	‘moon’
/kaʔ/	‘leaf’	/ka ^E /	‘plank’
/k ^w iʔ ^C /	‘baby’	/k ^w iʔ ^B /	‘same’
/k ^w e:ʔ ^I /	‘crab’	/k ^w aʔ ^A /	‘dew’
/ha:ʔ ^G /	‘sleeping mat’	/hãʔ ^G /	‘and.so’
/hn ^j aʔ ^G /	‘chest’	/hn ^j aʔ ^F /	‘chili’
/sn ^j eʔ/	‘his/her child’	/sl ^j aʔ ^E /	‘cotton’
/skoʔ ^H /	‘grasshopper’	/sk ^w aʔ ^B /	‘cockroach’

/ksoʔ ^B /	‘POT.gather.up’	/ktẽʔ ^G /	‘opossum’
/ktaʔ ^F /	‘fox’	/ktjʔ ^F /	‘frog’
/ktʲeʔ ^G /	‘ant’	/ktsiʔ ^F /	‘iguana’
/kt̃seʔ ^F /	‘puss’	/ktsaʔ/	‘POT.get wet’
/kt̃soʔ ^B /	‘POT.rot’	/knaʔ ^E /	‘meat’
/knoʔ ^C /	‘worm’	/knʲaʔ ^G /	‘honey’
/knʲaʔ ^E /	‘deer’	/klʲaʔ ^G /	‘bitter’
/kjaʔ ^E /	‘soap’	/khoʔ/	‘POT.sting’
/çtsiʔ ^B /	‘POT.bury’	/çlaʔ ^B /	‘red mamey’
/çtʃiʔ ^A /	‘raw coffee’	/çtʃeʔ ^B /	‘thorn; spine’
/çk ^w iʔ/	‘COM.speak’	/çk ^w aʔ ^F /	‘cornmeal porridge’
/khwiʔ ^B /	‘POT.sell’		

Table 2.79 presents near minimal pairs for /ʔ/.

Table 2.79: Near Minimal Pairs for /ʔ/

/ʔ/ ≠ /h/	/ʔa ^E /	[ʔa ^E]	‘much/very’	/ha/	[ha]	‘no’
/ʔ/ ≠ /h/	/ʔũ/	[ʔũ]	‘you’ HON’	/hũ: ^A /	[hũ: ^A]	‘them’
/ʔ/ ≠ /h/	/jʔa ^A /	[jʔa ^A]	‘green; immature’	/jha/	[jha]	‘tortilla’
/ʔ/ ≠ /h/	/jʔã ^H /	[jʔã ^H]	‘COM.change’	/jhã/	[jhã]	‘year’
/ʔ/ ≠ /k/	/ʔo ^E /	[ʔo ^E]	‘with’	/ko ^G /	[ko ^G]	‘fog’

2.6.5.2 Voiceless laryngeal fricative /h/

The voiceless laryngeal fricative can occur as a single consonant in the onset of a word (C₁) preceding /i/, /a/, and /õ/ or as (C₂) preceding /n/, /nʲ/, /lʲ/, /h/, and /ʔ/, and as (S) in (N)(C₂)C₁(S)V^T(ʔ). Table 2.80 presents a list of examples illustrating where /h/ is found.

Table 2.80: Voiceless Laryngeal Fricative /h/

/hi: ^G /	‘ash’	/ha/	‘no’
/ha:ʔ ^G /	‘woven mat’	/hũ: ^E /	‘thread’
/hwi ^H /	‘whistle’	/hwĩ/	‘COM.say’
/hni ^B /	‘money’	/hne ^B /	‘POT.hear’
/hʔo ^C /	‘saint’	/hnʲi ^C /	‘bird’
/hnʲaʔ ^F /	‘chili’	/hlʲa ^E /	‘Ixpantepec’
/hlʲaʔ/	‘bedbug’	/jha/	‘tortilla’
/hʔwa ^G /	‘granary’	/hʔwa ^B /	‘banana’

/jhã ^A /	‘year’		/jho ^G /	‘squash’
/khi ^F /	‘fox’		/khi ^F /	‘skin’
/kha/	‘POT.die’		/khoʔ/	‘POT.sting’
/k ^(w) hi ^G /	‘bag’		/nk ^w he/	‘goose foot’

Table 2.81 presents minimal and near minimal pairs for /h/.

Table 2.81: Near Minimal Pairs for /h/

/h/ ≠ /t/	/ha/	‘no’		/ta ^G /	‘shrimp’
/h/ ≠ /l/	/hʔo ^C /	‘saint’		/lʔo ^F /	‘corral’
/h/ ≠ /ʃ/	/ha/	‘no’		/ʃa ^B /	‘orange’
/h/ ≠ /j/	/ha:ʔ ^G /	‘sleeping mat’		/jaʔ ^C /	‘his/her hand’

2.6.6 A few generalizations on the segmental inventory of Teotepec Chatino

Teotepec Chatino consists of twenty-two consonants, five oral vowels and five nasal vowels. In addition to have the stops /p/, /t/ and /k/, this system is made up of a broad range of stop consonants that range from bilabial to glottal sounds. There is a full set of apico-dental and palatal and alveopalatal sounds that make the sound system of Chatino distinct. As a result of vowel syncope and segmental reduction consonant clusters tend to stack up at the left edge of many syllables in the lexicon making for complex onsets. As a result the synchronic system is often opaque for understanding these historical changes. A good example is the historic allophones of the stops /t/ and /t^j/, /d/ and /d^j/. In Teotepec Chatino these sounds are analyzed as phonemes. The voiceless /ç/ counterpart of the voiced palatal /y/ has arisen in the TEO sound system by way of a unique sound change that comes from the Proto-Chatino sound of */ki/. TEO has a typologically rare devoiced allophone of the phoneme /m/, [m̥], that occurs when the /m/ precedes the voiceless palatal sounds of /t^j/ /tʃ/, and /ç/, and the voiceless velar /k/, labio-velar /k^w/ and the affricate /tʃs/.

Chatino is a nasal sounding language due to the prenasal consonant clusters and the nasal vowels. Unique to this language is the frequent use of the bilabial nasal /m/ in

the verbs of the completive aspect. Oral vowels become nasalized through progressive nasal assimilation when they follow the nasal sounds /n/, /n^j/ and /m/. The frequent use of nasal vowels coupled with the nasal assimilation on oral vowels characterizes the sound system of the language as having a high degree of nasality often noted by outsiders when hearing Chatino for the first time. The nasal vowels are also used as a means for marking 1SG possessors in alienably possessed nouns and inflecting 1SG subjects in verbs and non-verbal predicates.

Two of the suprasegmental features that are part of the Teotepec sound system are vowel length and tone. Along with the palatal and nasal sounds of the language the rising and falling pitch of the tones is readily apparent when the language is spoken by native speakers. The following Chapter 3 outlines the elements of the tone system and the subsequent Chapters 4 and 5 discuss the phonetics of this rich and fascinating sound system. Before this chapter ends; however, the following section outlines the practical phonemic orthography used throughout the remainder of this work.

2.7 Practical phonemic orthography

The orthography used in this grammar is a practical phonemic orthography based on the phonological analysis in this chapter. Each phoneme has a unique orthographic representation and is represented by either a single graph (e.g., < *p* >, < *t* >, < *d* >, < *k* >, < *a* >, < *e* >), a digraph (e.g., < *ch* >, < *ts* >, < *ty* >, < *dy* >, < *kw* >), a diacritic that modifies a given grapheme (< *˘* >), or a superscript that denotes the tone of a given lexeme, (e.g., ^{*A*}, ^{*B*}, ^{*C*}). Vowel length is represented by doubling the graph of a given vowel. Up to the end of this chapter phonemic forms have been represented in plain Roman type between slashes (/jha/ ‘tortilla’). Phonemic representations are a subset of the IPA symbols used in the phonetic orthography. Elsewhere, and throughout the rest of the dissertation, orthographic representations are given in italics with no surrounding slashes or brackets (*yja* ‘tortilla’). All phonetic representations are presented within square brackets.

The orthographic system includes symbols that represent the voiced allophones of the labiovelar /w/ and the velar /k/ for a system that can be easily written phonetically. The practical phonemic orthography deviates from the IPA in the following areas: the series of palatal and alveopalatal consonants < *ty, dy, ch, x, ly, ny, y, jy* >, the labiovelar < *kw* >, and the glottal < *j* >. The development of this orthography is based the phonemic analysis of this chapter and on the writing system proposed by Rasch (2002) and further elaborated on by E. Cruz (2004).

Table 2.82: Orthographic Writing System of Teotepec Chatino

	Bilabial	Apico- dentals	Alveo- palatal	Palatal	Velar	Labio- velar	Glottal
Occlusive	p	t, d	ty, dy		k (g)	kw	ʔ
Affricate		ts	ch				
Fricative		s	x	jy			j
Lateral		l	ly				
Nasal	m	n	ny				
Glide				y		w (b)	
Tap		r					

Previously, the basic symbols for the oral vowels < *a, e, i, o, u* > and a simple modification for the nasal vowels < *an, en, in, on, un* > had been used for the writing system. Here, the ogonek < *ą* > will be employed in place of the IPA tilde (*ã*) to represent nasal vowels.

Table 2.83: Oral and Nasal Vowels of Teotepec Chatino

	oral vowels			nasal vowels		
	front	central	back	front	central	back
high	i		u	ĩ		ũ
mid	e		o	ẽ		õ
low		a			ą	

Chapter 3

Tone

Tone is one of the most extraordinary features of Teotepec Chatino. This language reflects one of the most elaborate tone systems of any of the most documented Chatino languages. Because of this, the presentation of Teotepec tone requires three chapters to completely describe the system. Chatino tone received its first significant attention in the Prides' (1963) study of Yaitepec Chatino (see §1.4.2.1). Since 2003 the study of tone in Chatino languages has become both broader and more in-depth including work on the three varieties of Chatino: Zenzontepec, Tataltepec and Eastern. Previous work on TEO tone includes several papers by McIntosh (2009a, 2011, 2012a) and a collaborative work on the phonetics of TEO tone Kelly and McIntosh (2013). This chapter and the two that follow it expand on that work by presenting a full account of the lexical tones and tone sandhi of Teotepec Chatino.

3.1 Introduction

This chapter presents the lexical tones of Teotepec Chatino and serves as a means to prepare the reader for the discussion in the following Chapters 4 and 5. In these chapters the phonetics and phonology of the tone sandhi system is presented. This chapter begins with a discussion of the parameters for analysis. Then the tone inventory is presented. After that, a description of each of the lexical tones is given; with a presentation of the level tones, the descending tones and the ascending and the complex tones. At the end of the

chapter I present a graph of all the lexical tone sequences in isolation, make some concluding remarks and present a bit about the history of marking tone in Teotepec Chatino.

3.2 Tone analysis

The realization of tone is the fundamental frequency (f_0) of the pitch of the vowel of the syllable to which the tone is linked. Pitch levels vary across speakers and can be influenced by the context and style of speech. In connected speech, pitch levels vary depending on coarticulatory effects and phonetic rules conditioned by preceding and following tones. These factors can cause the phonetic realization of a given phoneme to vary.

The tone bearing unit in Teotepec Chatino is the syllable. The Teotepec Chatino tone system can be characterized by what Pike (1948:12) describes as a mixed register and contour tone system. A language where every vowel or syllable has only one level tone associated with it is a register tone language. A language where a phonological contour appears on the syllable as a singular contour rather than being made up of two independent level tones is considered a contour tone language (Yip, 2002:28). In TEO there are four basic auditory presentations: level, ascending, descending and complex. TEO exhibits a four level system, H=High M=Mid L=Low 0=Super high and \emptyset =toneless. Combinations of these levels represent ascending and descending tone values.

Throughout this chapter and Chapters 4 and 5 spectrograms are used to represent examples of tones from elicited speech. As a means to formalize this representation, autosegmental phonological representations (Goldsmith, 1976) are also used to present the fourteen tone classes and the different processes of sandhi. Figure 3.1 (repeated in §3.3.1.1) presents an autosegmental representation of the super high tones of set H /0-(L-H)/ and set Bi /0/. In this representation there is one super high [0] linked tone associated with each stem. Example 3.1(a) shows an unlinked ascending tone sequence /-(L-H)/ associated with the super high tone of set H /0-(L-H)/ and 3.1(b) has no unlinked tone associated with the tone of the stem.

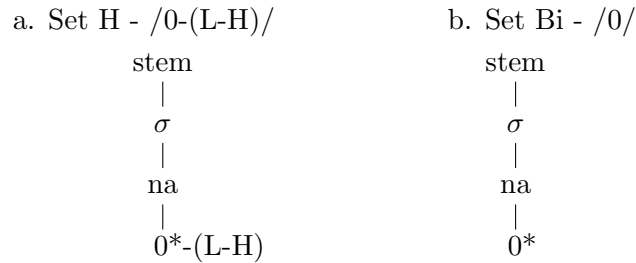


Figure 3.1: Autosegmental representation of Tone Sets H and B

Figure 3.2 (repeated in §3.5.1) presents the structure of the sequences rooted with ascending tones for sets I /MH/, E /L-H/ and D /L-H-(0)/. In 3.2(a) there is a one-linked ascending tone sequence associated with the stem, in 3.2(b) there is a two-linked tone sequence associated with the stem and in 3.2(c) there is a two-linked tone sequence associated with the stem and one super high /-(0)/ unlinked tone associated with the linked /-H/ tone.

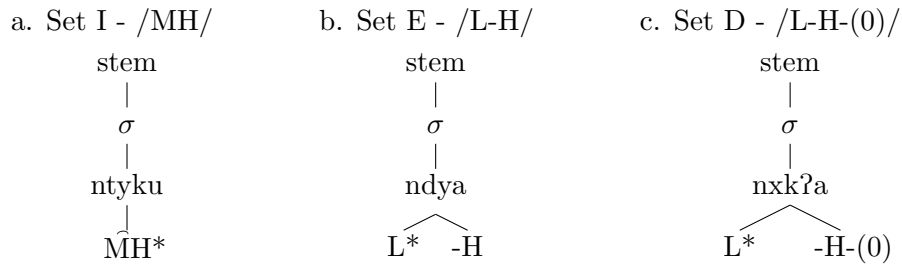


Figure 3.2: Autosegmental representation of Tone Sets I, E and D

Following Liberman and Prince (1977) and Pierrehumbert (1981), tone strength or prominence is shown with the use of the asterisk <*>. In this model we can see that prominent tone is linked to the stem. In 3.2(a) this includes the entire one-linked ascending tone sequence /MH/ and for 3.2(b) and (c) this includes the first linked tone of the two-linked tone sequence. This representation is important for sets E /L-H/ and D /L-H-(0)/ because, as described in §§3.5.3, 4.2.1 and 4.3.2, the linked /-H/ tone of the two-linked

sequences delinks and may move rightward in specific sandhi contexts.¹

The Autosegmental representations in Chapters 4 and 5 are used to model sandhi processes of the linking of delinked and unlinked tones. Figure 3.3 presents such an example (repeated in Fig. 4.4 §4.2.1). In this configuration the solid lines represent linked tones, the $< = >$ over a solid line represents the delinking of a linked tone and the dotted lines represent the linking or re-association of the delinked or unlinked tone on a neighboring toneless stem.

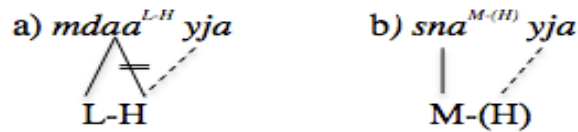


Figure 3.3: Delinking and linking /-H/ of Sets E and J

3.2.1 Tone inventory

In Teotepec Chatino there are nine basic tone sequences that link to stems. Based on the existence of three different underlying unlinked tone sequences, these nine basic tones further divide to form fourteen different tonal classes. The nine basic tone sequences include: /0/, /M/, /MH/, /L-H/, /HL/, /HM/, /ML/, /MLM/ and the toneless set /Ø/. These basic tones link to stems and are realized superficially on isolated words. The unlinked sequences consist of /-(L-H)/, /-(H)/ and /-(0). These tones follow the linked tone sequences and operate underlyingly, realized only in specific sandhi contexts of connected speech in relation to adjacent and non-adjacent tone sequences (Chapters 4 and 5).

Table 3.1, presents these sequences listed under the headings *One-linked* and *Two-linked* and are subdivided by whether they have an *unlinked* tone as part of their sequence.² The inventory of tone sequences in Teotepec Chatino consists of six one-linked tone se-

¹This model is offered for all of the tone sets throughout this chapter.

²Also presented in Table 2.1 of §2.1.2

quences: /0/, /M/, /MH/, /HM/, /ML/ and /MLM/; one two-linked tone sequence /L-H/ realized on a single syllable; two one-linked plus one-unlinked sequences /M-(H), /M-(0)/; three one-linked plus two-unlinked sequences /0-(L-H)/, /HL-(L-H)/ and /ML-(L-H); and a single case of one two-linked tones followed by one-unlinked tone /L-H-(0)/. And lastly, the toneless set /Ø/ which is not associated with any tone sequence.

Table 3.1: Teotepec Tone Sequences

Sequence Features	One-Linked			Two-Linked	
		One-Unlinked	Two-Unlinked		One-Unlinked
Level:	0 M	M-(H), M-(0)	0-(L-H)		
Ascending:	MH			L-H	L-H-(0)
Descending:	HM ML		HL-(L-H) ML-(L-H)		
Complex:	MLM				
Toneless:	Ø				

Unlinked tones may separate from their host, move to the right and cause an array of phonetic changes on adjacent and non-adjacent lexical items (§§4.2.2 and 4.2.3). The linked tone /-H/ of the two-linked sequences /L-H/ and /L-H-(0)/ is analyzed as a linked tone that can become delinked. This is because the /-H/ of /L-H/ is realized superficially and, like the unlinked tones, may separate from the base (delink) and move rightward in specific sandhi environments (§4.2.1). Toneless syllables can be transparent to effects of adjacent tones. Delinked and unlinked tones realize sandhi changes and the toneless set allows these tones to move along to other lexemes. The phonetic properties of all the tones are outlined in Chapters 4 and 5.

A few arguments for the existence of 14 tonal classes: 1) Each sequence has distinct phonetic properties and sandhi behavior based on unlinked sequences, 2) each tone follows a particular set of phonetic rules and, 3) there is a correspondence between the other Eastern

Chatino dialects where the tone sequences of TEO fit easily as cognate with the rest of Eastern Chatino (Cruz, H. and Woodbury, 2006; Campbell and Woodbury, 2010).

In Eastern Chatino, unless a recent historical relationship exists between given Chatino communities, the lexical tones of a given cognate group are distinct between Chatino localities and the language spoken there can be considered unique. Each Eastern Chatino dialect has a unique tone inventory, particular sandhi rules and specific phonetic behavior (Rasch, 2002; Pride and Pride, 2004; Cruz, E., 2011; McIntosh, 2011; Villard and Woodbury, 2012). The commonalities of the tone behavior between cognate groups have been an important diagnostic tool in the analysis of the TEO tone system.

3.2.2 Tone marking

Throughout the remainder of this chapter tones are marked with slanted brackets to denote their underlying lexical tone. This includes representations for the toneless Set X / \emptyset /, the one-linked set /T/, the one-linked one-unlinked set /T-(T)/, the one-linked two-unlinked set /T-(T-T)/, the two-linked set /T-T/ and the two-linked one-unlinked set /T-T-(T)/. In this system the parentheses mark the unlinked floating tone sequences. Tones marked with square brackets, [T], reference the phonetic quality of a given tone and are used to represent the result of a given sandhi or phonetic change. Reference is also made to the letter tone set notations (Fig. 2.2).

3.3 Level tone sequences

Teotepec Chatino exhibits two distinct level or nearly level tones in isolation. In the Figure 3.3 I present averaged f_0 pitch shapes for the level super high tone and mid tone sequences on isolated monosyllabic words. Each averaged pitch track is based on ten tokens. Each tone is measured in Hertz at eleven equally distant intervals over the duration of the vowel. The table includes the tone set notations and phonemic tone representations

on the right.³

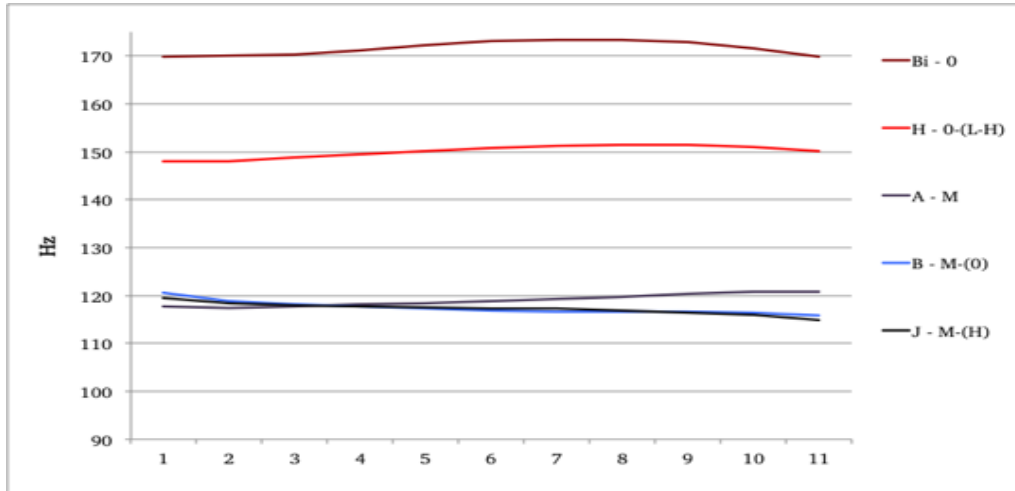


Figure 3.4: Level tone sequences

Table 3.2 presents the tokens used for the averaged pitch tracks in Figure 3.3.

Table 3.2: Level Tone Tokens

TEO	Gloss	N	Syl	Tone
<i>mškq^{Bi}</i>	COM.throw.1s	5	2	0
<i>mblq^{Bi}</i>	COM.take.out.1s	5	1	0
<i>kla^H</i>	POT.release	4	2	0-(L-H)
<i>sla^H</i>	COM.open	3	2	0-(L-H)
<i>tya^H</i>	tomorrow	3	1	0-(L-H)
<i>ke^A</i>	stone	5	2	M
<i>kla^A</i>	fish	5	1	M
<i>tla^B</i>	night	5	2	M-(0)
<i>ndla^B</i>	peach	5	1	M-(0)
<i>sna^J</i>	three	4	2	M-(H)
<i>skwa^J</i>	six	3	2	M-(H)
<i>kaa^J</i>	nine	3	1	M-(H)

³All examples of averaged pitch tracks throughout this chapter were recorded with Hugo Reyes Velasco, a 19 year old male consultant of the CLDP from the community of Santa Lucia Teotepec.

3.3.1 Super High tones [0]

There are two sets that show up as a single super high tone [0] when they occur in isolation, Sets Bi /0/ and H /0-(L-H)/. Set Bi /0/ tones are particular to 1SG inflectional categories for alienably possessed nouns, non-verbal predicates and verbs outlined in §§7.2.2.1, 9.7 and 9.3 respectively. Set H /0-(L-H)/ tone sequences are found in different verbal aspects, different persons and in non-verbs. Both super high Sets, /0/ and /0-(L-H)/, sound the same in isolation but their floating tones and sandhi behavior differentiates them in connected speech. In Figure 3.5 these tones appear to be nearly identical; what distinguishes these two tones is the underlying floating tone /-(L-H)/ of the word $na^{0-(L-H)}$ ‘HAB.search.’ In this lexeme there is an underlying unlinked tone sequence that is realized in particular sandhi contexts. These processes are described in §4.7. Figure 3.5, below, shows an example pitch track of a perfect minimal pair of the super high tones.

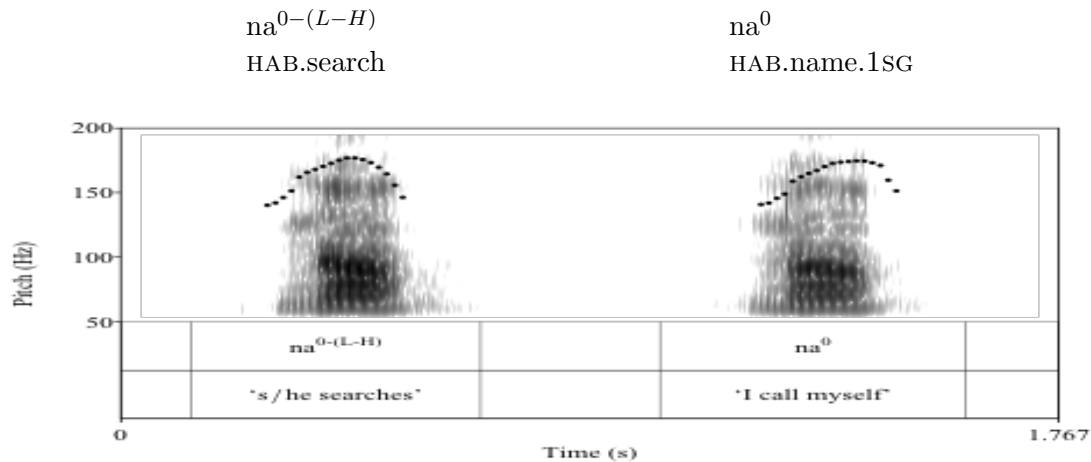


Figure 3.5: Super high tone sequences

Example 3.1 outlines the structure of the super high tone sequences of Sets H /0-(L-H)/ and Bi /0/. In (3.1)a the unlinked underlying tone is associated with the given lexical tone set.

(3.1)	a. Set H - /0-(L-H)/	b. Set Bi - /0/
	stem	stem
	σ	σ
	na	na
	0*-(L-H)	0*

3.3.1.1 Properties of sequences /0/ - Set Bi

Set Bi is marked by a single linked super high tone /0/. Table 3.3 presents minimal pairs for tone /0/.

Table 3.3: Minimal Pairs for Tone /0/ - Set Bi

/0/ \neq /0-(L-H)/	na ⁰	‘HAB.name.1SG’	na ^{0-(L-H)}	‘HAB.search’
/0/ \neq /HL-(L-H)/	nskwa ⁰	‘HAB.lie.1SG’	nskwa ^{HL-(L-H)}	‘PRG.lie.1SG’
/0/ \neq /HL-(L-H)/	yna ⁰	‘POT.cry.1SG’	yna ^{HL-(L-H)}	‘PRG.cry.1SG’
/0/ \neq /Ø/	ntkwa ⁰	‘HAB.sweep.1SG’	ntkwa	‘PRG.sweep.1SG’

3.3.1.2 Properties of sequence /0-(L-H)/ - Set H

Set H is marked by a single linked super high tone /0/ and a two-unlinked ascending tone sequence /-(L-H)/. The linked tone shows up as super high and the unlinked sequence as an ascending tone in sandhi contexts. Table 3.4 presents minimal pairs for tone /0-(L-H)/.

Table 3.4: Minimal Pairs for Tone /0-(L-H)/ - Set H

/0-(L-H)/ \neq /HM/	ta ^{0-(L-H)}	‘POT.give’	ta ^{HM}	‘shrimp’
/0-(L-H)/ \neq /M-(0)/	kʔo ^{0-(L-H)}	‘POT.show’	kʔo ^{M-(0)}	‘POT.drink’
/0-(L-H)/ \neq /L-H/	tya ^{0-(L-H)}	‘tomorrow’	tya ^{L-H}	‘squirrel’

3.3.2 Mid tones [M]

There are three tonal sequences that show up as a single mid tone when they occur in isolation, Sets A /M/, B /M-(0)/ and J /M-(H)/. Figure 3.6, below, presents example pitch tracks of these tones. In isolation these tones sound the same. Apart from the lexical domains these tones occupy they are also distinguished by their different phonetic behavior. The following section outlines the features for each tone. Detailed sandhi rules and phonetic behavior are discussed in §4.6.

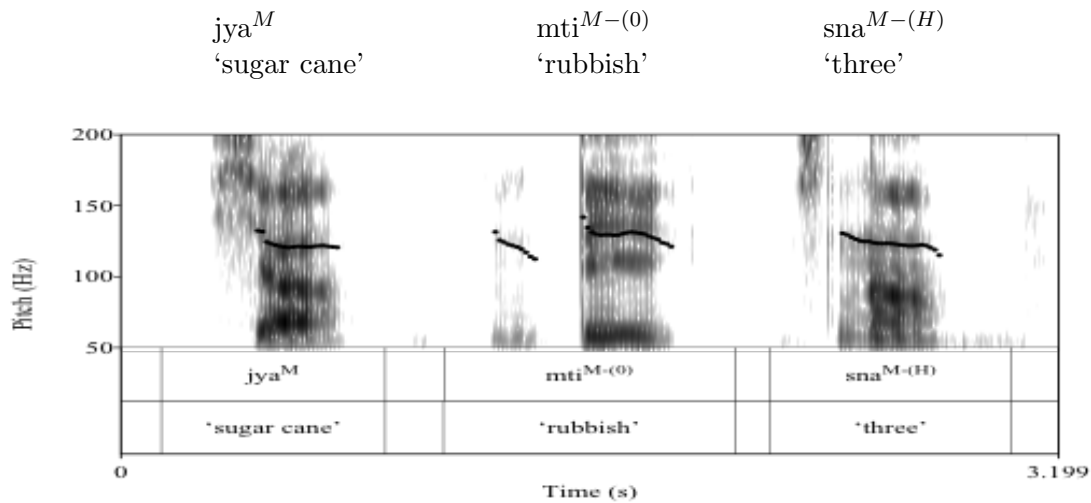


Figure 3.6: Level mid tones

Example 3.2 outlines the structure of the mid tone sequences /M/, /M-(0)/ and /M-(H)/.

- (3.2) a. Set A - /M/ b. Set B - /M-(0)/ c. Set J - /M-(H)/
- | | | |
|--|--|--|
| stem

σ

jya

M* | stem

σ

mti

M*-(0) | stem

σ

sna

M*-(H) |
|--|--|--|

3.3.2.1 Properties of Sequence /M/ - Set A

Set A is marked by a single linked /M/ tone and consequently shows up as a mid tone. Table 3.5 presents a set of minimal and near minimal pairs for the /M/ tone. In the second and third examples of Table 3.5, the lexemes $kwi\eta^M$ ‘hiccup’ and $kwi\eta^{M-(0)}$ ‘same’ and kla^M ‘fish’ and $kla^{M-(0)}$ ‘POT.dance’ all have mid tone sequences and sound the same when presented in isolation.

Table 3.5: Minimal and Near Pairs for Sequence /M/ - Set A

/M/ \neq /Ø/	jya^M	‘sugarcane’	$jya\eta$	‘his/her foot’
/M/ \neq /M-(0)/	$kwi\eta^M$	‘hiccup’	$kwi\eta^{M-(0)}$	‘same’
/M/ \neq /M-(0)/	kla^M	‘fish’	$kla^{M-(0)}$	‘POT.dance’
/M/ \neq /ML-(L-H)/	ka^M	‘PRG.be’	$ka^{ML-(L-H)}$	‘POT.be’
/M/ \neq /ML-(L-H)/	kee^M	‘stone’	$kyee^{ML-(L-H)}$	‘flower’

3.3.2.2 Properties of Sequence /M-(0)/ - Set B

Set B is marked by a single linked M tone and one-unlinked super high tone /M-(0)/. The linked tone shows up as a mid tone and the unlinked tone is revealed in sandhi contexts. As noted above for Set A, the minimal pair of the lexemes $kwi\eta^M$ ‘hiccup’ and $kwi\eta^{M-(0)}$ ‘same’ and $kwa^{M-(0)}$ ‘POT.count’ and $kwa^{M-(H)}$ ‘there’ exhibit mid tone sequences and sound the same when presented in isolation. Table 3.6 presents minimal and near minimal pairs for this sequence.

Table 3.6: Minimal Pairs for Sequence /M-(0)/ - Set B

/M-(0)/ \neq /Ø/	$mti^{M-(0)}$	‘rubbish’	mti	‘seed’
/M-(0)/ \neq /M/	$kwi\eta^{M-(0)}$	‘same’	$kwi\eta^M$	‘hiccup’
/M-(0)/ \neq /M-(H)/	$kwa^{M-(0)}$	‘POT.count’	$kwa^{M-(H)}$	‘there’
/M-(0)/ \neq /HM/	$kla^{M-(0)}$	‘twenty’	kla^{HM}	‘bamboo’
/M-(0)/ \neq /HM/	$tla^{M-(0)}$	‘hard’	tla^{HM}	‘night’
/M-(0)/ \neq /HM/	$cho\eta^{M-(0)}$	‘pineapple’	$cho\eta^{HM}$	‘badger’
/M-(0)/ \neq /ML-(L-H)/	$j\eta o^{M-(0)}$	‘soft’	$j\eta o^{ML-(L-H)}$	‘saint’
/M-(0)/ \neq /L-H/	$xa^{M-(0)}$	‘orange’	xaa^{L-H}	‘brilliance/radiance’
/M-(0)/ \neq /L-H/	$ndya^{M-(0)}$	‘all of them’	$ndya^{L-H}$	‘everything’

3.3.2.3 Properties of Sequence /M-(H)/ - Set J

Set J is lexically specialized mostly for numerals. This sequence is marked by a single linked M tone and one unlinked H tone /M-(H)/. The linked tone shows up as a mid tone and the unlinked tone is revealed in specific sandhi contexts. Phrase initially this tone sequence behaves like a simple mid tone; however, when preceded by any lexeme or followed by any toneless lexemes this tone behaves exactly like the ascending tone sequence /L-H/ of Set E. The full range of sandhi behaviors for this tone set are outlined in §4.6. Table 3.7 presents minimal and near minimal pairs for the /M-(H)/ tone sequence.

Table 3.7: Minimal Pairs for Sequence /M-(H)/ - Set J

/M-(H)/ \neq /M-(0)/	sna ^{M-(H)}	‘three’	sna ^{M-(0)}	‘week’
/M-(H)/ \neq /M-(0)/	kwa ^{M-(H)}	‘there’	kwa ^{M-(0)}	‘POT.count’
/M-(H)/ \neq /L-H/	skwa ^{M-(H)}	‘six’	skwa ^{L-H}	‘mole’ SPN
/M-(H)/ \neq /HL-(L-H)/	ti ^{M-(H)}	‘ten’	ti ^{HL-(L-H)}	‘rope’
/M-(H)/ \neq /ML-(L-H)/	kʔyu ^{M-(H)}	‘five’	kʔyu ^{ML-(L-H)}	‘flea’

3.4 Sequences rooted by descending tones

There are four descending tone sequences. Two of these are one-linked tone sequences - Set G /HM/ and Set K /ML/ and two of these are one-linked tone sequences with a two-unlinked tone sequence - Set C /ML-(L-H)/ and Set F /HL-(L-H)/. Because the tonal signature of toneless simplex words of Set X /Ø/ is very much like that of the descending tone [ML], this category is included in this section (§3.4.5). Figure 3.7 presents averaged f_0 pitch shapes for the four descending tones and the toneless category on isolated monosyllabic words. Each average pitch track is based on ten tokens of a given lexeme.

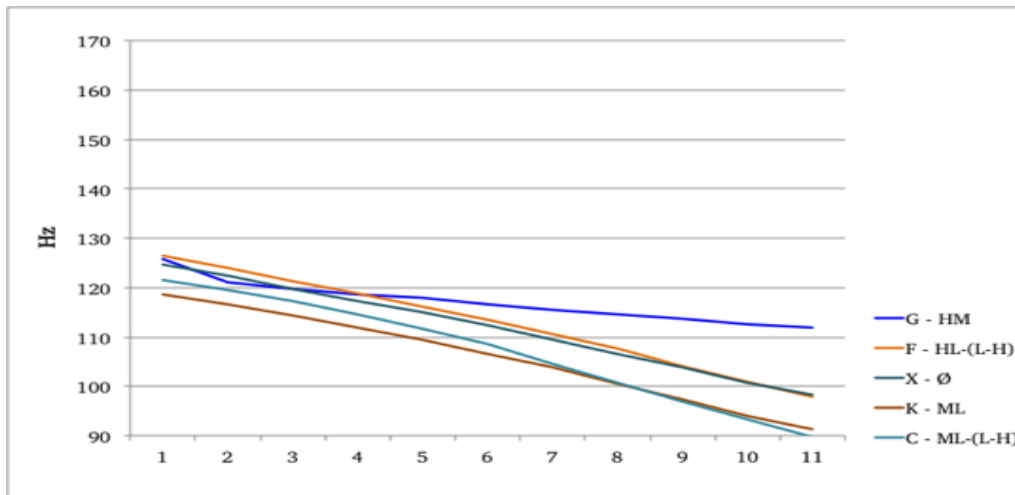


Figure 3.7: Descending tones

Table 3.8 presents the tokens used for the averaged pitch tracks in Figure 3.7.

Table 3.8: Descending Tone Tokens

TEO	Gloss	N	Syl	Tone
kto ^G	hen	4	2	HM
ke ^G	his/her head	3	1	HM
koq ^G	tuber	3	1	HM
sna ^K	apple	5	2	ML
mbly ^K	mule	5	2	ML
kna ^C	thief	5	2	ML-(L-H)
kyee ^C	flower	5	1	ML-(L-H)
jyta ^F	<i>chepil</i> SPN	5	2	HL-(L-H)
na ^F	thing/DIR.OBJ	5	1	HL-(L-H)
yja	tortilla	3	2	Ø
jyku	COM.eat	3	2	Ø
ska	one	4	1	Ø

Figure 3.8 presents annotated pitch tracks of individual token examples of the four descending tones and the toneless set. This provides the reader with the opportunity to see the length of the descending tones in real time.

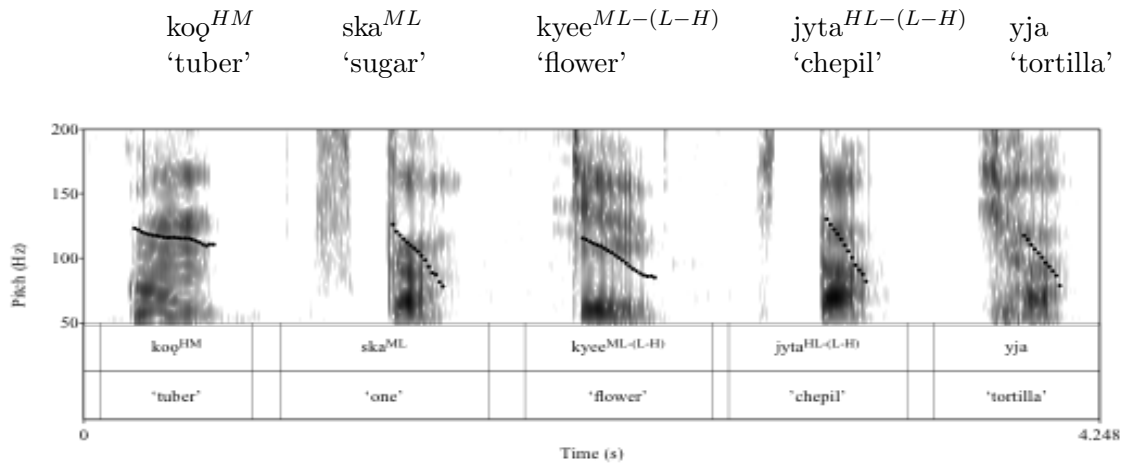
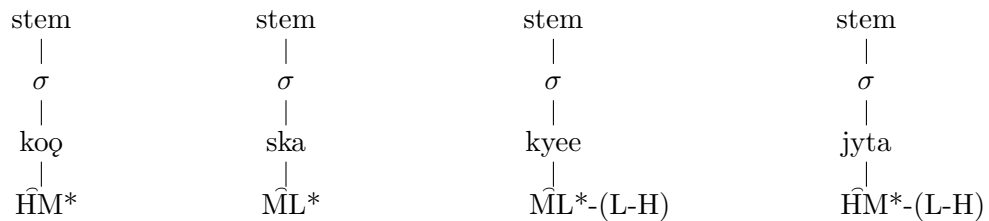


Figure 3.8: Descending tones

Example 3.3 outlines the structures of the sequences rooted by descending tones /HM/, /ML/, /ML-(L-H)/ and /HL-(L-H)/. The toneless set is not represented.

(3.3) a. Set G - /HM/ b. Set K - /ML/ c. Set C - /ML-(L-H)/ d. Set F - /HL-(L-H)/



As noted in the Figure 3.7, above, four of the five tone categories outlined in this section sound very similar in isolation. However, these tones are quite different in their underlying sandhi behavior and lexical specialization. The following outlines each of the sequences rooted by descending tones. In Chapter 4, the details regarding the phonetic properties of these sets are described.

3.4.1 Properties of Sequence /HM/ - Set G

Set G is marked by a single linked /HM/ tone sequence and consequently manifests as a high-mid descending contour tone that begins around [H] and falls slightly to [M] on its right edge.

Table 3.9: Minimal and Near Pairs for Tone /HM/ - Set G

/HM/ ≠ /0-(L-H)/	ta ^{HM}	‘shrimp’	ta ^{0-(L-H)}	‘POT.give’
/HM/ ≠ /M/	jʔwa ^{HM}	‘barn’	jʔwa ^M	‘banana’
/HM/ ≠ /M/	choʔ ^{HM}	‘badger’	choʔ ^M	‘pineapple’
/HM/ ≠ /L-H/	ngʔa ^{HM}	‘green’	ngʔa ^{L-H}	‘red’
/HM/ ≠ /L-H/	knyaʔ ^{HM}	‘honey’	knyaʔ ^{L-H}	‘deer’
/HM/ ≠ /HL-(L-H)/	jnyaʔ ^{HM}	‘strongbox’	jnyaʔ ^{HL-(L-H)}	‘chile’
/HM/ ≠ /HL-(L-H)/	ka ^{HM}	‘left’	ka ^{HL-(L-H)}	‘yesterday’
/HM/ ≠ /ML-(L-H)/	ke ^{HM}	‘his/her head’	kyee ^{ML-(L-H)}	‘flower’

3.4.2 Properties of Sequence /ML/ - Set K

Set K is marked by a single linked /ML/ tone. This tone is largely associated lexically with Spanish loanwords; however, it does appear in a small set of native verbal lexemes. /ML/ manifests as a mid-low descending tone that begins at the level of tone [M] and descends to [L]. Table 3.10 present some minimal pairs for the K set.

Table 3.10: Minimal Pairs for Tone /ML/ - Set K

/ML/ ≠ /Ø/	ska ^{ML}	‘sugar’	ska	‘one’
/ML/ ≠ /Ø/	ndya ^{ML}	‘HAB.arrive’	ndya	‘COM.go’
/ML/ ≠ /M-(0)/	ka ^{ML}	‘STAT.to be’	ka ^{M-(0)}	‘POT.to be’
/ML/ ≠ /HL-(L-H)/	ka ^{ML}	‘STAT.to be’	ka ^{HL-(L-H)}	‘yesterday’
/ML/ ≠ /MLM/	tya ^{ML}	‘POT.arrive’	tya ^{(0)-MLM}	‘POT.arrive.2SG’
/ML/ ≠ /MLM/	tyʔa ^{ML}	‘POT.arrive.1SG’	tyʔa ^{MLM}	‘POT.arrive.2SG’

It is important to note that Spanish loans for names and other multisyllabic loan words have a different pattern, where one or more syllables get a sequence that is often from Set B or a pattering of sets. For example, Spanish tri- and disyllabic names commonly

exhibit the following patterns: Sets B, F and X, Sets B and E, Sets B and K, Sets F and X and Sets X and B. Similarly, Set B /M-(0)/ is a good source for monosyllabic, non-name loanwords i.e. *kyu*^{M-(0)} ‘horse’, *ka*^{M-(0)} ‘cow’, *pyq*^{M-(0)} ‘shawl’, *ntsi*^{M-(0)} ‘*nanche*’ SPN. Table 3.11 presents a set of examples that represent Set K /ML/ in Spanish loanwords.

Table 3.11: Tone /ML/ - Spanish Loanwords

CHAT	ENG	SPN	CHAT	ENG	SPN
axo ^{ML}	‘garlic’	‘ajo’	bra ^{ML}	‘hour’	‘hora’
pyq ^{ML}	‘shawl’	‘pano’	mx ^{ML}	‘mass’	‘misa’
mble ^{ML}	‘tortilla cloth’	‘sirvieta’	mblya ^{ML}	‘mule’	‘mula’
sa ^{ML}	‘cup’	‘taza’	ska ^{ML}	‘sugar’	‘azúcar’
xo ^{ML}	‘cheese’	‘queso’	xyi ^{ML}	‘machete’	‘machete’
xlyu ^{ML}	‘knife’	‘cuchillo’	yma ^{ML}	‘lime’	‘lima’
ksi ^{ML}	‘cross’	‘cruz’	kle ^{ML}	‘mayor’	‘alcalde’
ksya ^{ML}	‘heart’	‘corazón’	wxo ^{ML}	‘peso’	‘peso’

3.4.3 Properties of Sequence /ML-(L-H)/ - Set C

Set C is marked by a single linked descending ML tone sequence and one two-unlinked ascending -(L-H) tone sequence - /ML-(L-H)/. The linked sequence shows up as a mid-low descending tone and the ascending two-unlinked sequence is revealed in sandhi contexts. This tone set has a wide distribution. It is found in a fair number of COM/PRG verb stems as well as non-verbal lexemes throughout the language.

Table 3.12: Minimal and Near Minimal Pairs for Tone /ML-(L-H)/ - Set C

/ML-(L-H)/ ≠ /Ø/	yja ^{ML-(L-H)}	‘POT.find’	yja	‘tortilla’
/ML-(L-H)/ ≠ /Ø/	jyta ^{ML-(L-H)}	‘flour’	jyta	‘COM.sow’
/ML-(L-H)/ ≠ /Ø/	jyso ^{ML-(L-H)}	‘avocado’	jyso	‘net’
/ML-(L-H)/ ≠ /M/	jyta ^{ML-(L-H)}	‘flour’	jyta ^M	‘tobacco’
/ML-(L-H)/ ≠ /M-(0)/	jnyi ^{ML-(L-H)}	‘bird’	jni ^{M-(0)}	‘money’
/ML-(L-H)/ ≠ /M-(H)/	kʔyu ^{ML-(L-H)}	‘flea’	kʔyu ^{M-(H)}	‘five’
/ML-(L-H)/ ≠ /HM/	kwe ^{ML-(L-H)}	‘bat’	kwe ^{HM}	‘noisy’
/ML-(L-H)/ ≠ /HL-(L-H)/	jyta ^{ML-(L-H)}	‘flour’	jyta ^{HL-(L-H)}	‘chepil’ SPN
/ML-(L-H)/ ≠ /HL-(L-H)/	kya ^{?ML-(L-H)}	‘soap’	kya ^{?HL-(L-H)}	‘measuring tape’
/ML-(L-H)/ ≠ /HL-(L-H)/	mtykq ^{ML-(L-H)}	‘COM.lift’	mtykq ^{HL-(L-H)}	‘COM.cover’

3.4.4 Properties of Sequence /HL-(L-H)/ - Set F

Set F is marked by a single linked HL tone and one two-unlinked ascending -(L-H) tone sequence - /HL-(L-H)/. The linked tone comes out as a high-low descending tone and the unlinked ascending tone is revealed in sandhi contexts. Table 3.13 presents minimal pairs for this tone sequence.

Table 3.13: Minimal Pairs for Tone /HL-(L-H)/ - Set F

/HL-(L-H)/ ≠ /M-(0)/	ktsiʔ ^{HL-(L-H)}	‘iguana’	ktsiʔ ^{M-(0)}	‘POT.enter’
/HL-(L-H)/ ≠ /M-(0)/	sʔwe ^{HL-(L-H)}	‘good’	sʔwe ^{M-(0)}	‘POT.separate’
/HL-(L-H)/ ≠ /M-(0)/	kwa ^{HL-(L-H)}	‘broom’	kwa ^{M-(0)}	‘POT.sweep’
/HL-(L-H)/ ≠ /HM/	jnyaʔ ^{HL-(L-H)}	‘chile’	jnyaʔ ^{HM}	‘strongbox’
/HL-(L-H)/ ≠ /HM/	ka ^{HL-(L-H)}	‘yesterday’	ka ^{HM}	‘left’
/HL-(L-H)/ ≠ /ML-(L-H)/	jyta ^{HL-(L-H)}	‘chepil’ SPN	jyta ^{ML-(L-H)}	‘flour’
/HL-(L-H)/ ≠ /ML-(L-H)/	kyaʔ ^{HL-(L-H)}	‘measuring tape’	kyaʔ ^{ML-(L-H)}	‘soap’
/HL-(L-H)/ ≠ /ML-(L-H)/	mtykq ^{HL-(L-H)}	‘COM.cover’	mtykq ^{ML-(L-H)}	‘COM.lift’
/HL-(L-H)/ ≠ /ML-(L-H)/	ntyka ^{HL-(L-H)}	‘PRG.to be’	ntyka ^{ML-(L-H)}	‘PRG.heal’

This tone sequence is very similar to that of /ML-(L-H)/ - Set C (noted above). In Eastern Nopala Chatino these tones have merged and in TEO they appear to be in a near merger. As first reported for Amuzgo (Bauernschmit, 1965) and later noted in Comaltepec Chinantec (Silverman, 1997; Anderson et al., 1990; Pace, 1990), Lealao Chinantec (Rupp, 1990; Rensch, 1990) and Quiotepec Chinantec (Gardner and Merrifield, 1990) ballistic syllables or vowels are articulated more forcefully, can shorten the length of a given vowel and create post vocalic aspiration. In TEO two things that differentiate tone Sets C and F is that the tone of the F set has a more forcefully articulated ballistic quality in its descent and it is never associated with long vowels.

3.4.5 Properties of toneless lexemes /Ø/ - Set X

The toneless lexemes make up a large part of the TEO lexicon and consist of both verbal and non-verbal stems. The simplex words in this group are phonemically *toneless*; however, in isolation and other contexts they behave phonetically like a descending [ML]

tone (similar to Set K). Toneless lexemes have no particular target and a very *relaxed* quality to their descent; however, their pitch can change completely depending on particular tone sets that precede them (see §4.2.1). This toneless category is very similar to the *b type* underspecified tones described in Yip (2002:63-64). Table 3.14 presents a set of minimal and near minimal pairs of lexemes from the toneless set.

Table 3.14: Minimal and Near Minimal Pairs for Toneless Tone /Ø/ - Group (X)

/Ø/ ≠ /M-(0)/	tʔwa	‘his/her mouth’	tʔwa ^{M-(0)}	‘cold’
/Ø/ ≠ /L-H/	kna	‘mirror’	kna ^{L-H}	‘snake’
/Ø/ ≠ /L-H/	tyoo	‘rain’	tyoo ^{L-H}	‘adobe’ SPN
/Ø/ ≠ /HM/	skə	‘community guard’ SPN	skə ^{HM}	‘corn dough’
/Ø/ ≠ /ML/	ska	‘one’	ska ^{ML}	‘sugar’
/Ø/ ≠ /ML/	ndya	‘COM.go’	ndya ^{ML}	‘HAB.arrive’
/Ø/ ≠ /ML-(L-H)/	yja	‘tortilla’	yja ^{ML-(L-H)}	‘POT.find’
/Ø/ ≠ /ML-(L-H)/	jyta	‘COM.sow’	jyta ^{ML-(L-H)}	‘flour’
/Ø/ ≠ /ML-(L-H)/	kiiʔ	‘flames’	kii ^{ML-(L-H)}	‘grass’
/Ø/ ≠ /ML-(L-H)/	jyso	‘net’	jyso ^{ML-(L-H)}	‘avocado’
/Ø/ ≠ /HL-(L-H)/	la	‘where’	la ^{HL-(L-H)}	‘spirited’
/Ø/ ≠ /HL-(L-H)/	kla	‘old’	kla ^{HL-(L-H)}	‘sleep’
/Ø/ ≠ /HL-(L-H)/	jyta	‘COM.sow’	jyta ^{HL-(L-H)}	‘chepil’ SPN

Because of the lack of specification this lexically toneless category serves as an excellent diagnostic for the identification of the delinked and underlying floating tone sequences and a way to differentiate linked sequences that sound nearly the same in isolation. The details about the sandhi behavior of this toneless set are outlined in §4.2.

3.5 Sequences rooted with ascending and complex tones

There are three ascending tones /MH/, /L-H/ and /L-H(0)/ and one complex tone /((0)-MLM/ in TEO. Figure 3.9 presents averaged f_0 pitch shapes for the ascending and complex tones on isolated monosyllabic words. Each average pitch track is based on ten

tokens of a given lexeme.

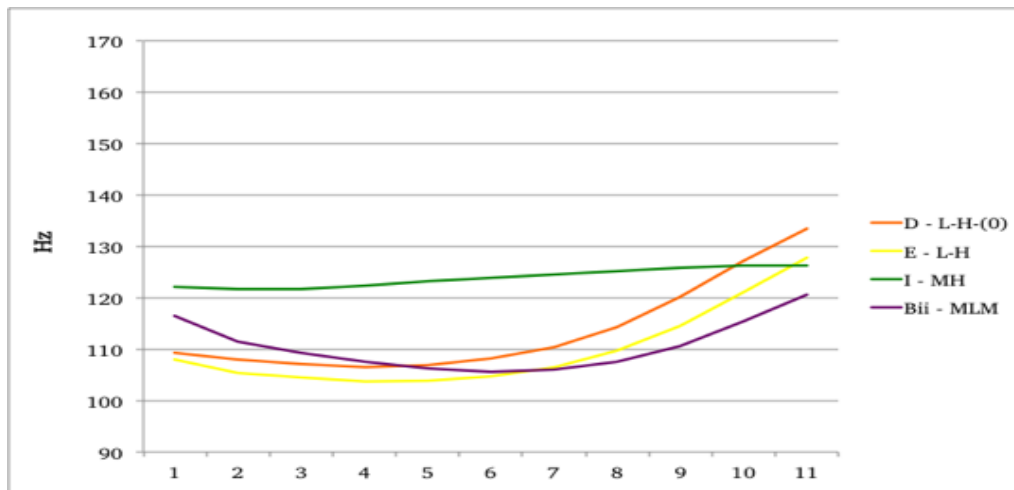


Figure 3.9: Ascending and complex tones

Table 3.15 presents the tokens used for the averaged pitch tracks in Figure 3.9.

Table 3.15: Ascending and Complex Tone Tokens

TEO	Gloss	N	Syl	Tone
<i>ndya^I</i>	all	4	3	MH
<i>ntyku^I</i>	PRG.eat	3	2	MH
<i>ke^I</i>	your head	3	1	MH
<i>kna^E</i>	snake	4	2	L-H
<i>skwa^E</i>	food	3	2	L-H
<i>xa^E</i>	luminescence	3	2	L-H
<i>ntlya^D</i>	PRG.peal	5	2	L-H-(0)
<i>nsne^D</i>	PRG.water	5	2	L-H-(0)
<i>jyku^{Bii}</i>	COM.eat.2s	5	2	MLM
<i>ko^{Bii}</i>	POT.grind.2s	5	1	MLM

3.5.1 Sequences rooted with ascending tones

The sequences rooted with ascending tones are presented first as a group then the sequence rooted with complex tones will be presented. Figure 3.10 presents annotated pitch

tracks of individual token examples of the ascending tones.

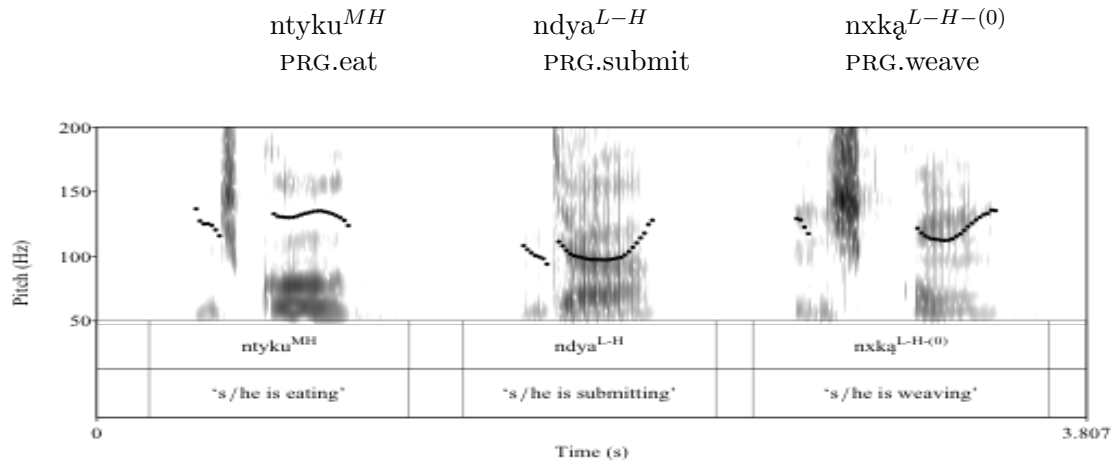
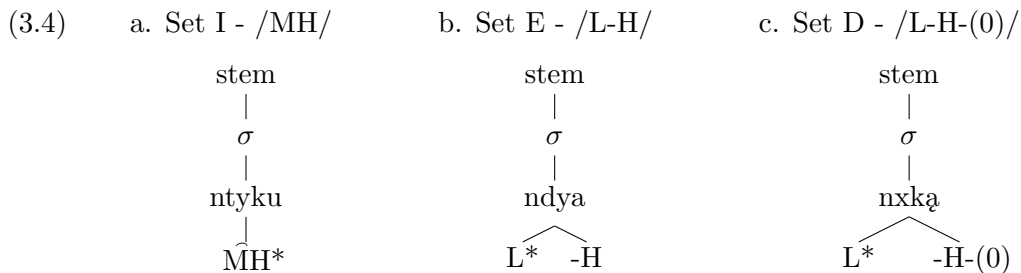


Figure 3.10: Ascending tones

Example 3.4 outlines the structure of the sequences rooted with ascending tones /MH/, /L-H/ and /L-H-(0)/.



3.5.2 Properties of Sequence /MH/ - Set I

Set I is unique when compared with Sets E and D. This sequence is marked by a single linked MH tone composed of two phonemic tone levels /M/ and /H/. This tone has no sandhi properties and is found principally in verbal lexemes and a small number of adverbs and nouns. Many of the cognates of this tone set in other Eastern Chatino dialects appear to be migrating to tone Set B. Table 3.16 presents minimal pairs of the tone sequence /MH/.

Table 3.16: Minimal Pairs for Tone /MH/

/MH/ ≠ /M/	na ^{MH}	‘HAB.name’	na ^M	‘us-INCL’
/MH/ ≠ /M/	jyta ^{MH}	‘PRG.sow’	jyta ^M	‘tobacco’
/MH/ ≠ /M/	ndʔa ^{MH}	‘PRG.go around’	ndʔa ^M	‘corncob’
/MH/ ≠ /L-H/	ndlyu ^{MH}	‘PRG.go around’	ndlyu ^{L-H}	‘PRG.fall’
/MH/ ≠ /L-H/	mdya ^{MH}	‘COM.arrive’	mdya ^{L-H}	‘COM.hand in’
/MH/ ≠ /L-H-(0)/	ndya ^{MH}	‘everyone’	ndya ^{L-H-(0)}	‘PRG.hand in’
/MH/ ≠ /HL-(L-H)/	jyta ^{MH}	‘PRG.sow’	jyta ^{HL-(L-H)}	‘chepil’ SPN
/MH/ ≠ /HM/	ke ^{MH}	‘your head’	ke ^{HM}	‘his/her head’
/MH/ ≠ /HM/	ya ^{MH}	‘COM.go.2SG’	ya ^{HM}	‘COM.go’
/MH/ ≠ /HM/	ndla ^{MH}	‘PRG.arrive.2SG’	ndla ^{HM}	‘PRG.arrive’

3.5.3 Properties of Sequence /L-H/ - Set E

Set E is marked by two-linked tone sequence of the tones /L/ and /H/. In connected speech the [-H] tone of /L-H/ delinks from its base and moves rightward. This tone sequence is the most frequently found in the verbal systems of COM/PRG stems and it is commonly found in non-verbal lexemes throughout the language.

Table 3.17: Minimal Pairs for Tone /L-H/

/L-H/ ≠ /Ø/	kaʔ ^{L-H}	‘plank’	kaʔ	‘leaf’
/L-H/ ≠ /HM/	la ^{L-H}	‘open’	laa ^{HM}	‘church’
/L-H/ ≠ /HM/	ngʔa ^{L-H}	‘red’	ngʔa ^{HM}	‘green’
/L-H/ ≠ /HM/	knyaʔ ^{L-H}	‘poison’	knyaʔ ^{HM}	‘honey’
/L-H/ ≠ /M-(H)/	skwa ^{L-H}	‘mole’ SPN	skwa ^{M-(H)}	‘six’
/L-H/ ≠ /M-(0)/	xaa ^{L-H}	‘brilliance; radiance’	xa ^{M-(0)}	‘orange’
/L-H/ ≠ /MH/	kye ^{L-H}	‘his/her chest’	ke ^{MH}	‘your head’
/L-H/ ≠ /MH/	mdya ^{L-H}	‘COM.hand in’	mdya ^{MH}	‘COM.arrive’
/L-H/ ≠ /L-H-(0)/	nxɛ ^{L-H}	‘PRG.widen’	nxɛ ^{L-H-(0)}	‘PRG.wrap’
/L-H/ ≠ /L-H-(0)/	ndʔo ^{L-H}	‘PRG.go out’	ndʔo ^{L-H-(0)}	‘PRG.show’

3.5.4 Properties of Sequence /L-H-(0)/ - Set D

Set D is marked by two linked tone sequence of the tones /L/ and /H/ one-unlinked super high tone -(0). In certain sandhi contexts this sequence realizes the super high floating tone /-(0)/. This tone sequence exhibits the same phonetic behavior as the sequence /M-(0)/ of Set B. This tone is found in Progressive Aspect verbs and some nominal lexemes.

Table 3.18: Minimal Pairs for Tone /L-H-(0)/

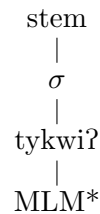
/L-H-(0)/ ≠ /L-H/	nxɛ ^{L-H-(0)}	‘PRG.wrap’	nxɛ ^{L-H}	‘PRG.widen’
/L-H-(0)/ ≠ /L-H/	ndʔo ^{L-H-(0)}	‘PRG.show’	ndʔo ^{L-H}	‘PRG.go out’
/L-H-(0)/ ≠ /MH/	ndya ^{L-H-(0)}	‘PRG.hand in’	ndya ^{MH}	‘everyone’
/L-H-(0)/ ≠ /MLM/	nstɔ ^{LH-(0)}	‘PRG.heat’	nstɔ ^{MLM}	‘PRG.heat.2SG’
/L-H-(0)/ ≠ /MLM/	ntkwa ^{LH-(0)}	‘PRG.strain’	ntkwa ^{MLM}	‘PRG.strain.2SG’
/L-H-(0)/ ≠ /MLM/	ndlo ^{LH-(0)}	‘PRG.remove’	ndlo ^{MLM}	‘PRG.remove.2SG’

3.5.5 Complex sequence /MLM/ - Set Bii

Set Bii is marked by the complex sequence [MLM] that begins at [M], descends to [L] and then rises to [M]. This tone is particular to the 2SG verbs that come from 3SG verbs of Set B /M-(0)/ in the completive aspect. Figure 3.11 presents annotated pitch tracks of the /MLM/ tone sequence.

Example 3.5 outlines the structure of the sequences rooted by the complex tone /MLM/.

(3.5) a. Set Bii - /MLM/



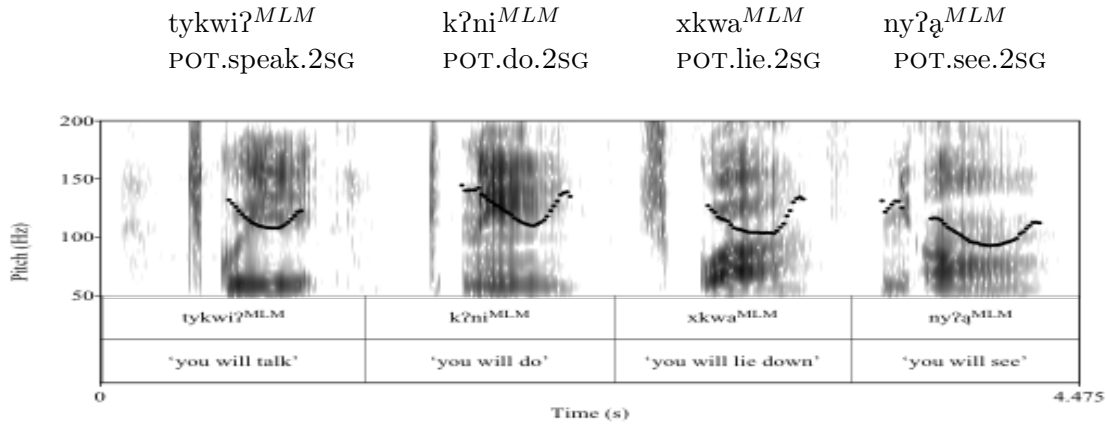


Figure 3.11: Complex tone sequence

Table 3.19 presents minimal and near minimal pairs for /MLM/.

Table 3.19: Minimal and Near Minimal Pairs for Tone /MLM/

/MLM/ ≠ /Ø/	tykwi? ^{MLM}	‘POT.speak.2SG’	tykwi?	‘POT.speak’
/MLM/ ≠ /Ø/	ntykwi? ^{MLM}	‘HAB.speak.2SG’	ntykwi?	‘HAB.speak’
/MLM/ ≠ /Ø/	xkwa ^{MLM}	‘POT.lie.2SG’	xkwa	‘POT.lie’
/MLM/ ≠ /Ø/	nskwa ^{MLM}	‘HAB.lie.2SG’	nskwa	‘HAB.lie’
/MLM/ ≠ /0-(L-H)/	ndʔya ^{MLM}	‘POT.lower.it.2SG’	ndʔya ^{0-(L-H)}	‘POT.lower.it’
/MLM/ ≠ /0-(L-H)/	nyʔa ^{MLM}	‘POT.see.2SG’	nyʔa ^{M-(0)}	‘POT.see’
/MLM/ ≠ /M-(0)/	kʔni ^{MLM}	‘POT.do.2SG’	kʔni ^{M-(0)}	‘POT.do’
/MLM/ ≠ /M-(0)/	ʔni ^{MLM}	‘HAB.do.2SG’	ʔni ^{M-(0)}	‘HAB.do’
/MLM/ ≠ /M-(0)/	tʃa ^{MLM}	‘PRG.go.2SG’	tʃa ^{M-(0)}	‘PRG.go’
/MLM/ ≠ /M-(0)/	jyʎa ^{MLM}	‘PRG.arrive.2SG’	jyʎa ^{M-(0)}	‘PRG.arrive’
/MLM/ ≠ /M-(0)/	nʔa ^{MLM}	‘HAB.see.2SG’	nʔa ^{M-(0)}	‘HAB.see’

3.6 Summary of lexical tones

This chapter has outlined the fourteen sequences of the nine tones of Teotepéc Chatino. Because the sequences exhibit unique sets of unlinked and underlying floating sequences that produce an array of sandhi interactions further distinguishing each set, the

tones of this language cannot be analyzed in isolation. The discussion in the following Chapters 4 and 5 delve into the details regarding the array of phonetic and phonological sandhi interactions that are part of tone system of this language. Distinguishing the TEO tone sequences further are their lexical representations which denote a particular grammatical functionality or weight. Chapters 7 and 8 present how tones are specialized for marking verbal aspect and person on verbs, person marking on alienable and inalienable nouns and non-verbal predicates and are specialized for numerals, loanwords and other lexical categories in the language.

Figure 3.12 presents all fourteen sequences of the nine tones of Teotepéc Chatino.

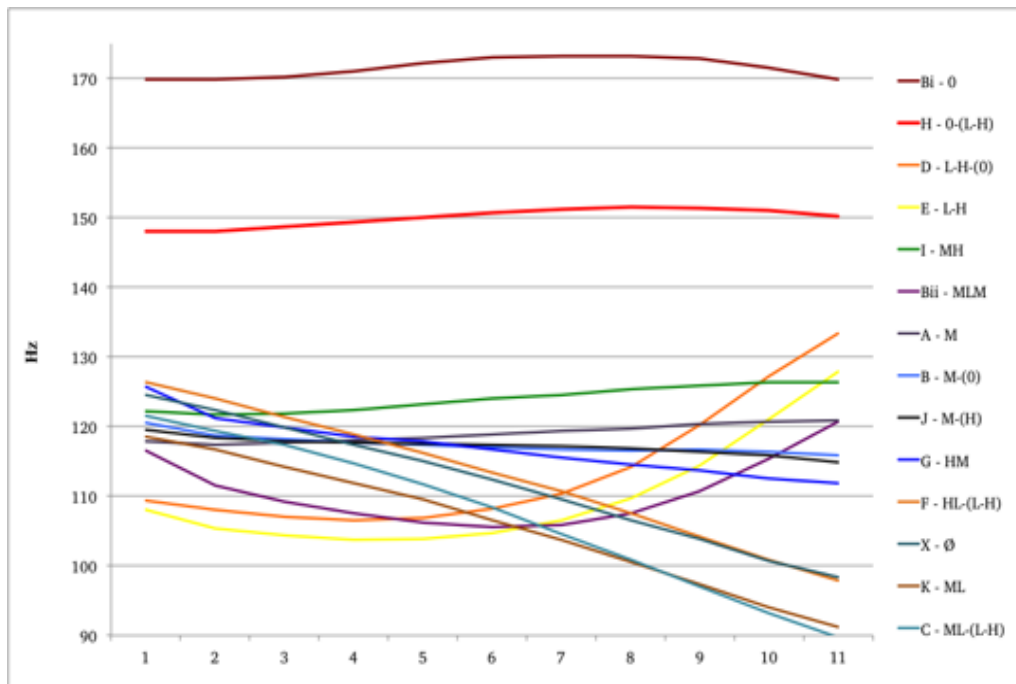


Figure 3.12: All tones (in isolation)

The right side of the graph presents the different tone sets with their respective phonetic values. This graph is one way to visually compare the different behaviors of the tones spoken in isolation. These representations are made from ten randomly ordered tokens

spoken three times each. In almost all cases the middle token was used for this graph in order to take the *least* marked tone for each sequence.⁴

3.7 Tone marking proposals

Tone marking in TEO has evolved along with the analysis of the tone system. One of the main goals, like that of the segmental phonology, has been to use a system that is transparent and easily understood. The use of diacritics has been attractive for aesthetic reasons; however, to adequately represent a system of nine tones that presents fourteen sequence categories which include linked and delinked tone sequences, this proposal has never been practical. Likewise, diacritics are not easily accessed on all computers.

#	Sequence Analysis	Set	Num	Chao	Dia-critics	Set Super-script	Gloss
1	∅	X	<i>rd</i>	↘	a	yja	'tortilla'
2	M	A	<i>rf</i>	↗	ā	jya ^A	'sugar cane'
3	M-(0)	B	2	↗	ā''	mti ^B	'rubbish'
4	ML-(L-H)	C	34	↘	à~	kyee ^C	'flower'
5	L-H-(0)	D	3-1	↗	ǎ''	mxi ^D	'tomato'
6	L-H	E	3-1	↗	ǎ	ngaa ^E	'coconut'
7	HL-(L-H)	F	13	↘	â~	jyta ^F	'chepil'
8	HM	G	3	↘	á ⁻	koq ^G	'tuber'
9	0-(L-H)	H	0	↗	á~	sko? ^H	'grasshopper'
10	MH	I	21	↗	ǎ	ke ^I	'your head'
11	M-(H)	J	2	↗	ā'	sna ^J	'three'
12	ML	K	23	↘	à or â	ska ^K	'sugar'
13	0	Bi	0	↗	á	yǎ? ^{Bi}	'my hand'
14	MLM	Bii	232	↘	ǎ	nda ^{Bii}	'your leg'

I began by following the Americanist tradition (1 = high and 4 = low). This system works well for a language with many distinctions like TEO. Later, I began to use letters in

⁴The graph is a composite of the smaller versions that have been presented throughout this chapter. In all cases except for the mid tone sequences the details regarding the tokens used are summarized in each given section.

an attempt to create greater transparency and to avoid confusion with the Asian system which is the inverse of the Americanist tradition. The above table presents the reader with my sequence analysis and shows how the tones were represented in the Americanist system. It presents how this relates to a proposal for Chao tone symbols, a system of diacritics that includes floating tones and the set superscript notation that is used throughout and relates back to the cognate tone sets outlined in this dissertation.

As the tone notation system has evolved it has been utilized by the speaker consultants Reginaldo Quintas and Hugo Reyes Velasco. Hugo Reyes has been quite adept at utilizing the most current version of the system for marking tones. When he transcribes texts or does his own writing in Teotepéc Chatino he uses the set notation. This works well for him because he has a very intimate understanding of this system and is able to apply it well to a given text.

Chapter 4

Tone Sandhi

The previous chapter presented the tone inventory of Teotepec Chatino. This chapter outlines the description of the elements that make this tone system unique. Typologically, Teotepec Chatino has a high number of tones and because many of the sequences are extremely similar superficially this analysis requires a description of their underlying expression. The existence of particular sandhi processes in the language and the interactions produced by these processes has made the analysis of the lexical tones possible. The sandhi processes show deep differences in pitch that every child seems to learn precisely, making it essential to account for these differences. What follows includes a description of the phonetics and phonology of tone sandhi in TEO. This analysis is part and parcel of the lexical tone description and will continue to argue for the existence of fourteen tone sequences in the language.

4.1 Introduction

Teotepec Chatino is among the Eastern Chatino dialects that present a very high inventory of tone sequences and it has one of the more elaborate systems of tone sandhi. Generally speaking, the Chatino languages present robust tone systems that include unique phonetics and sandhi patterns which express a wide range of phonetic difference regarding

the quantity and behavior of tone in each language (Woodbury, 2012). ZEN, for example, is described as having two tones and one set of lexemes unspecified for tone - H(igh), M(id) and \emptyset ; and then it has five sequence-defined lexical sets (Campbell, 2014) and TAT is described as having four tones - H(igh), L(ow) 0 (super high) and a HL contour, combining to form eight lexical tone sequences (Sullivant, 2015). Some of the Eastern Chatino varieties (ZAC, SJQ and TEO) have inventories of up to fourteen lexical tone sequences (E. Cruz et al., 2012a; E. Cruz et al.; E. Cruz, 2012b; Kelly and McIntosh, 2013; McIntosh, 2012a; Villard, 2015; Villard and Woodbury, 2012).

Chapter 3 presented an inventory of nine tones that make up fourteen sequences in a typology that includes: six one-linked sequences, two one-linked and one-unlinked tone sequences, three one-linked and two-unlinked tone sequences, one two-linked tone sequence and one two-linked and one-unlinked tone sequence. These sequences were presented together as the following sets based on their relative superficial phonetic similarities.

1. Super high [0] - Sets: Bi /0/ and H /0-(L-H)/

2. Mid [M] - Sets: A /M/, B /M-(0)/ and J /M-(H)/

3. Sequences rooted by descending tones -

Sets: G /HM/, K /ML/, C /ML-(L-H)/, F /HL-(L-H)/, and toneless set X [ML]

4. Sequences rooted by ascending and complex tones -

Sets: I /MH/, D /L-H-(0)/ E /L-H/ and Bii /MLM/.

In isolation many tone sequences demonstrate an extremely similar realization of f_0 , i.e.; the super high sets - Bi /0/ and H /0-(L-H)/, the mid sets - A /M/, B /M-(0)/ and J /M-(H)/, the descending sequence sets F /HL-(L-H)/ and C /ML-(L-H) and the ascending sequence sets E /L-H/ and D /L-H-(0)/. Many of these sequences merge or have nearly

merged. This near merger presents a situation ...“where a speaker consistently makes a small articulatory difference between items of two lexical sets but cannot distinguish these auditively...” (Hickey, 2004). Because some very similar lexical tone sets are sometimes marginally distinguishable by speakers, near mergers may account for the very similar nature of some tones and speakers’ abilities to differentiate them in isolation (Labov et al., 1972,9; Hickey, 2004; Yu, 2007). Distinctions may be made based on intensity and duration; however, possible differences in duration or intensity will not be explored in this work. Because tone sandhi absolutely confirms that all 14 sequences are distinct, the present chapter engages in a lengthy discussion about tone sandhi. The Teotepec Chatino sandhi patterns are definitive and serve to distinguish each of the 14 sequences. For this analysis I have opted to split rather than lump the putative categories as presented in order to give a full account of the TEO tone system and its sandhi processes.

The analysis of the sandhi patterns has been essential to the understanding of the lexical tones, their phonetics, and tonology of Teotepec Chatino. To arrive at an analysis of 14 distinct categories in the face of superficially similar sounding tone sequences has been possible through the knowledge of cognate groups and the creation and discovery of methods to evaluate the underlying tone sequence patterns (E. Cruz and Woodbury, 2014b). Tone sandhi in TEO is external, partially driven by processes of delinking of linked tones and underlying unlinked tones relinking to a given stem. Processes of assimilation, dissimilation, tone repulsion, and the movement of unlinked tones over long distances across word boundaries also account for many of the phonetic and phonologic sandhi changes that occur in the language. The following description assumes all of the basic elements of the lexical tones put forth in the previous chapter and outlines the difference between tones that appear extremely similar superficially and the similarity of tones that appear superficially dissimilar, arguing for relationships between tones that may not be readily apparent. To understand the intrinsic nature of the lexical tones of Teotepec Chatino it is necessary to

examine their finer characteristics in context.

The chapter begins with a presentation of the toneless simplex stems to show how these items aid in the analysis of the lexical tones and their phonetics. Next, the unlinked tone sequences of tones that are partially underspecified are presented. The underlying nature of these tones is important to this analysis. The linking of unlinked tones can change the pitch of toneless lexical items and realize a type of tonal clash creating a different output realization on a given lexeme that may already be specified. As part of the discussion of the delinking tone behavior *in situ* tone sandhi is presented. At the end of this chapter there is a table that summarizes the sandhi rules for second position simplex words, a chart that outlines the different tonal elements for each tone class and a table that presents cognate relationships between the most studied topolects of Eastern Chatino, ZEN and TAT.

4.2 Toneless syllables

As mentioned in §3.4.5 a large part of the lexicon in TEO is unspecified for tone. The phonetic behavior of this null tonal class of simplex stems has been essential in the discovery and identification and realization of the delinked and unlinked tone sequences. The pitch of the toneless stem may change to reflect the tone of the delinked or unlinked tone that anchors to that stem. To set the stage for the description that follows, the following examples present toneless tones in connected speech preceded by tone sets that do not have any phonetic effect on the toneless lexemes.

The following set of annotated pitch tracks illustrate the behavior of the toneless lexemes in isolation and in the context of connected speech. Phonetically, unspecified simplex words realize a mid-low [ML] pitch that presents an impressionistically *relaxed* descent when uttered in isolation. Figure 4.1 presents the toneless lexeme *yja* ‘tortilla’ first in isolation and then preceded by lexemes of tone set X /Ø/ and A /M/. In both examples the preceding simplex words do not present any floating tone properties.

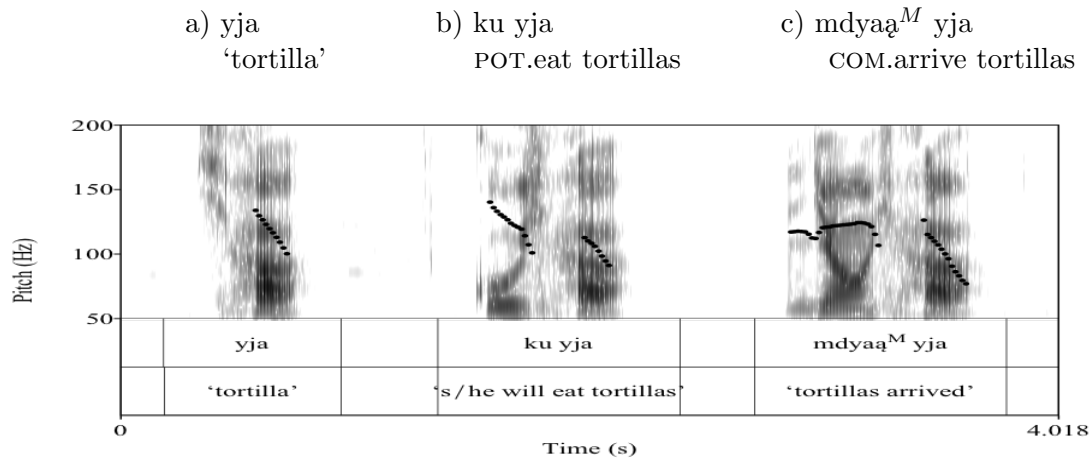


Figure 4.1: Toneless lexemes

Figure 4.2 demonstrates how the preceding tones of sets K /ML/, I /MH/ and Bii /MLM/ respectively do not have any effect on the toneless stem.¹

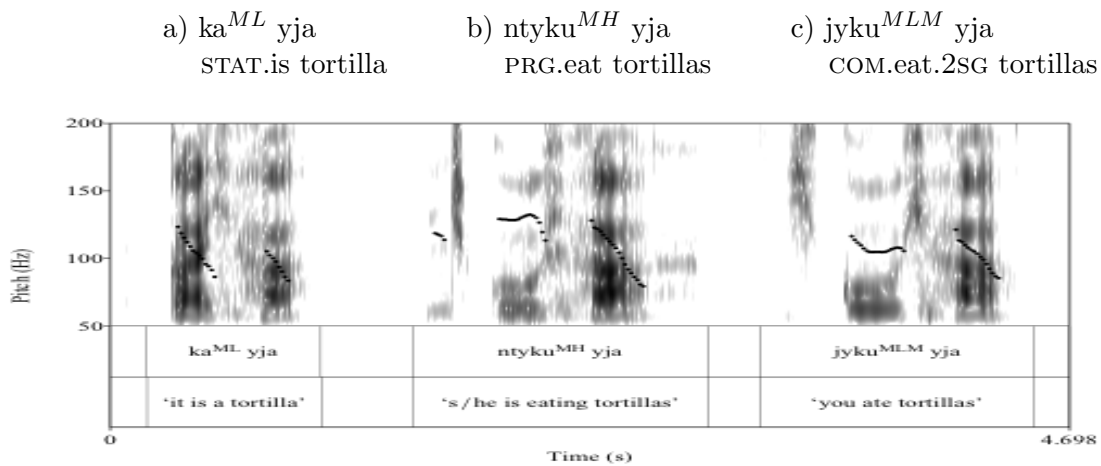


Figure 4.2: Toneless lexemes

Figures 4.1 and 4.2 both present how simplex words from tone sets X, A, K, I and Bii have no rightward floating tone properties because they effectively do not change the pitch

¹The lexeme *yja* 'tortilla' will be used for all of the following examples that outline floating tone behavior on toneless lexemes throughout the remainder of this section §4.8.

of set X. Example 4.1(b) does demonstrate a basic process of declination in the following toneless word (§5.7.2), otherwise the preceding tones in this figure do not create any change on *yja* ‘tortilla’. Also, in example 4.2(b) *yja* begins higher when it follows tone /MH/ of *ntyku^L* ‘PRG.eat’ than when it follows the tone of the copula *ka^K* ‘STAT.be’ of example 4.2(a). This reflects a very simple assimilation effect based on height of the preceding tone. The following presents how the pitch of toneless stem can change to reflect the phonetic changes of a preceding word’s delinked and unlinked tone sequence.

4.2.1 Linking of a high tone /-H/ to a toneless stem

The annotated pitch tracks in Figure 4.3 present tone sets E /L-H/ and J /M-(H)/. These examples show how the linked tone /-H/ of set E and unlinked tone /(-H)/ of set J raise the pitch of *yja* ‘tortilla’ to [M].² Example 4.3(a_i) presents *mdaa^{L-H}* in isolation. Example 4.3(a_{ii}) shows how the /-H/ tone of /L-H/ delinks from its lexical host *mdaa^{L-H}* and moves rightward causing the pitch of *yja* to raise to [M]. Example 4.3(b_i) presents

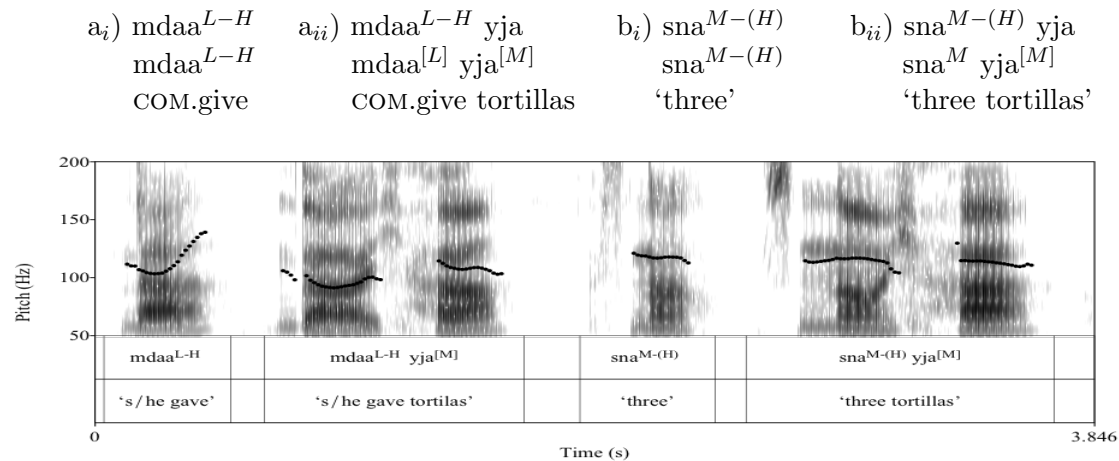


Figure 4.3: Linking of /-H/ tones of Sets E /L-H/ and J /M-(H)/

²Figure 4.3 presents two tier representations. The top tier presents underlying tone sequences, the second tier represents the phonetic and phonologic output realizations in brackets [] and the third line provides a gloss. This order continues throughout the remainder of this chapter and Chapter 5.

$sna^{M-(H)}$ in isolation. Although it is not obvious, in example 4.3(b_{ii}), the underlying floating tone of set B /M-(H)/ moves rightward and raises the pitch of the toneless word *yja* ‘tortilla’ to [M]. This is the same basic process presented in Example 4.3(a_{ii}); however, because the /-(H)/ tone of $sna^{M-(H)}$ operates underlyingly there is no change in pitch on the first position lexeme as seen in Example 4.3(a_{ii}).

Figure 4.4 provides an autosegmental representation for the examples in Figure 4.3. In 1(a) we can see how the /-H/ tone delinks from its base and relinks to the adjacent toneless word. The same process occurs in 1(b) with the unlinked /-(H)/ tone. Examples 2(a) and (b) show how the delinked /-H/ and unlinked /-(H)/ tones are slightly attenuated in their first instance as they move rightward and attach to a toneless host. The output in 3(a) and (b) results in the attenuated /-H/ tones linking to the toneless stems as [M] and the linked /L/ and /M/ tones remaining attached to their bases.

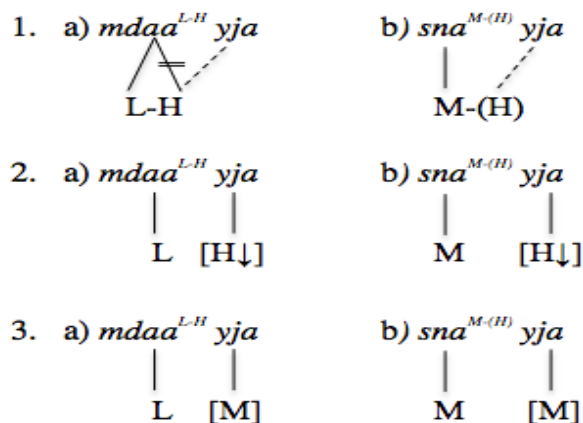


Figure 4.4: Linking of /-H/ of Sets E and J

When the /-H/ or /-(H)/ tones of sets E /L-H/ and J /M-(H)/ move rightward over toneless lexemes, the [H] tone goes to the last word. If the last word is an adjacent toneless stem then the [H] is attenuated resulting in a mid-tone [M] output, as seen in Figure 4.3. If the last word of a sequence of toneless stems occurs in third+ position the [H] tone

interpolates across the toneless set, raising the pitch of each toneless stem in turn, realizing itself on the final toneless lexeme as [H] (§5.5.1, Figures 5.28 and 5.29). This rule can be stated: /-H/ or /-(H)/ before a toneless stem goes to the last word, if the last toneless word is adjacent, attenuate; if not, interpolate and be realized on the final toneless stem.

Tone sequences /L-H/ and /M-(H)/ are probably related historically. In ZEN Chatino /H-M/ and some of /H-X/ corresponds to TEO set E /L-H/. The rest of ZEN /H-X/ particularly numbers corresponds to TEO set J /M-(H)/. Although, in TEO, set E belongs to a larger set of lexical items and J is largely functionally specialized for numbers, both tone sequences have an /-H/ tone that moves rightward from its base in specific contexts and both sets exhibit an identical set of sandhi behaviors that point to this underlying relationship. Further details relating to the sandhi behavior of these tones are elaborated on in §§4.3 and 4.3.3.

4.2.2 Linking of the super high unlinked tone /-(0)/ to a toneless stem

The tone sets that have unlinked super high tones are B /M-(0)/ and D /L-H-(0)/. These tones result in a realization of a super high pitch [0] on a toneless stem. The following annotated pitch tracks show the realization of the unlinked super high tone on the toneless words. These tones also exhibit other phonetic processes outlined in §4.5 Table 4.5.

4.2.3 Linking of the unlinked ascending sequence /-(L-H)/ to a toneless stem

The tone sets whose tonal sequences include the two-unlinked ascending sequence are C /ML-(L-H)/, F /HL-(L-H)/ and H /0-(L-H)/. Examples in Figure 4.7 show that the pitch of the second position toneless word *yja* 'tortilla' is changed to an ascending concave shaped tone [L-H] when the ascending unlinked sequence of sets C, F, or H links to the following toneless stem.

- | | | |
|--|--|---|
| a) $yoo^{ML-(L-H)}$ <i>yja</i>
$yoo^{ML-(L-H)}$ $yja^{[LH]}$
COM.grind tortillas | b) $mkwa^{HL-(L-H)}$ <i>yja</i>
$mkwa^{HL-(L-H)}$ $yja^{[LH]}$
COM.sweep tortillas | c) $ta^{0-(L-H)}$ <i>yja</i>
$ta^{0-(L-H)}$ $yja^{[LH]}$
POT.give tortillas |
|--|--|---|

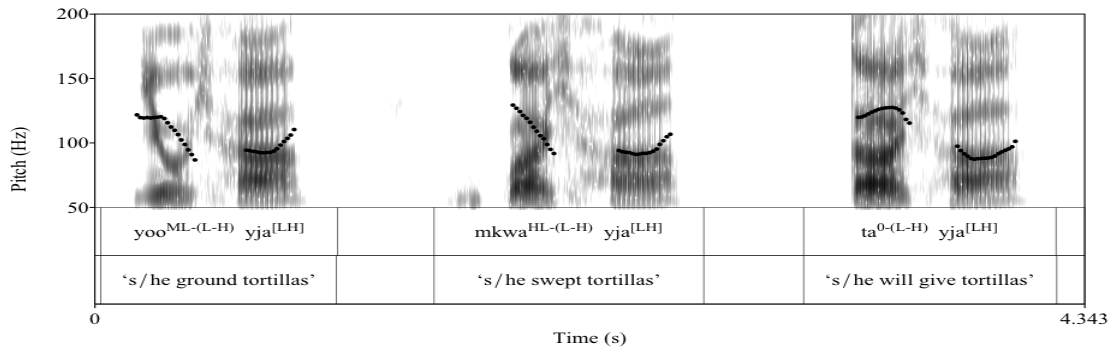


Figure 4.7: Linking of /-(L-H)/ of Sets C, F and H

Figure 4.8 presents the autosegmental rendering for the linking of the unlinked ascending (L-H) sequence when operating on a toneless stem.

- | | | |
|--|--|--|
| 1. a) $yoo^{ML-(L-H)}$ <i>yja</i>
 / \
ML-(L-H) | b) $mkwa^{HL-(L-H)}$ <i>yja</i>
 / \
HL-(L-H) | c) $ta^{0-(L-H)}$ <i>yja</i>
 / \
0-(L-H) |
| 2. a) $yoo^{ML-(L-H)}$ <i>yja</i>

ML L-H | b) $mkwa^{HL-(L-H)}$ <i>yja</i>

HL L-H | c) $ta^{0-(L-H)}$ <i>yja</i>

0 L-H |

Figure 4.8: Linking of /-(L-H)/ of Sets C, F and H

In 1(a), (b) and (c) the process is the same, the /-(L-H)/ tone sequence links to the adjacent toneless lexeme. This linking turns the pitch of the toneless word into the ascending /L-H/ tone of set E. Although in this example the /L-H/ tone sequence appears to move as a unit it can also move as two separate tones (a cluster) when followed by more than one contiguous toneless stem (§4.4 Figs. 4.28 and 4.29).

The previous examples in this section demonstrate the nature of the putative floating tones by showing how they appear when linked to a following toneless stem. Likewise the existence of the /-H/ tones present in /L-H/ and /M-(H)/ is shown in the same context raising the pitch of toneless stems to [M]. The tone sandhi that takes place in these examples shows how toneless words are transparent and can operate as a type of tone conduit. These stems provide an important window into the fundamentals of the TEO tone system allowing us to see the difference between tone sets that could otherwise be perceived as exceedingly similar. The following table summarizes sandhi effects of the linking of unlinked and floating tone sequences on toneless lexemes.

Table 4.1: Linking of a Floating Tone on a Toneless Word

Set	$1^{st} \rightarrow$	B	D	E	J	C	F	H
$2^{nd} \downarrow$	tone	/M-(0)/	/L-H-(0)/	/L-H/	/M-(H)/	/ML-(L-H)/	/HL-(L-H)/	/0-(L-H)/
X	/∅/	[0]	[0]	[M]	[M]	/L-H/	/L-H/	/L-H/

Table 4.1 expresses the end result of the autosegmental linking rules proposed for the tone sequences of sets E /L-H/, J /M-(H)/, B /M-(0)/, D /L-H-(0)/, C /ML-(L-H)/, F /HL-(L-H)/ and H /0-(L-H)/ on the toneless set. These autosegmental rules for linking of delinked and unlinked tones are the basis for much of the sandhi effects that occur in Teotepéc Chatino and will be utilized throughout the remainder of this chapter and Chapter 5 where the phonetics and phonology of long distance tone sandhi are described.

4.3 Ascending unlinked tone /-(L-H)/ and the linked high tone /-H/

With the unlinked /-(0)/, /-(L-H)/ and linked /-H/ tones outlined in the context of their realization on toneless stems the description of the remaining sandhi patterns can continue. The interaction of tone sets with the same underlying floating tone sequences and the identification of sets that are dissimilar superficially but present the same underlying tone behavior demonstrates the relationship between lexical tones and helps to identify specific sandhi patterns. The following includes a description of the major sandhi changes that occur in Teotepec Chatino ordered in a way to present the cohesion of the phonetic and phonological pitch changes as they operate in the language. As the description unfolds, rules and autosegmental representations, like those above, are identified to represent the structure of the phonetic and phonologic tone sandhi processes that exist in the language.

The Obligatory Contour Principle (OCP) (Leben, 1979) formulated by McCarthy (1986) states that “At the melodic level, adjacent identical elements are prohibited.” As the description of the phonetics of the tone sandhi in TEO moves forward this will be an important mechanism in determining tone class or membership.

4.3.1 Ascending unlinked tone sequence /-(L-H)/ - Sets C, F and H

The ascending unlinked tone /-(L-H)/ of sets C /ML-(L-H)/, F /HL-(L-H)/, and H /0-(L-H)/ creates a tone clash when it occurs on adjacent contiguous stems. The following presents these tone sets in turn and outlines the sandhi interactions that occur between these sets.

Figure ??, presents *kyee*^{ML-(L-H)} ‘flower’ of set C in isolation then preceded by lexemes from tone sets C /ML-(L-H)/, F /HL-(L-H)/, and H /0-(L-H)/.

In examples (b), (c), and (d) of Fig. ??, the ascending floating tone sequence /-(L-H)/ clashes with the same ascending floating tone in the second position lexeme creating an OCP clash that changes the pitch of the second position tone to an upstepped super high

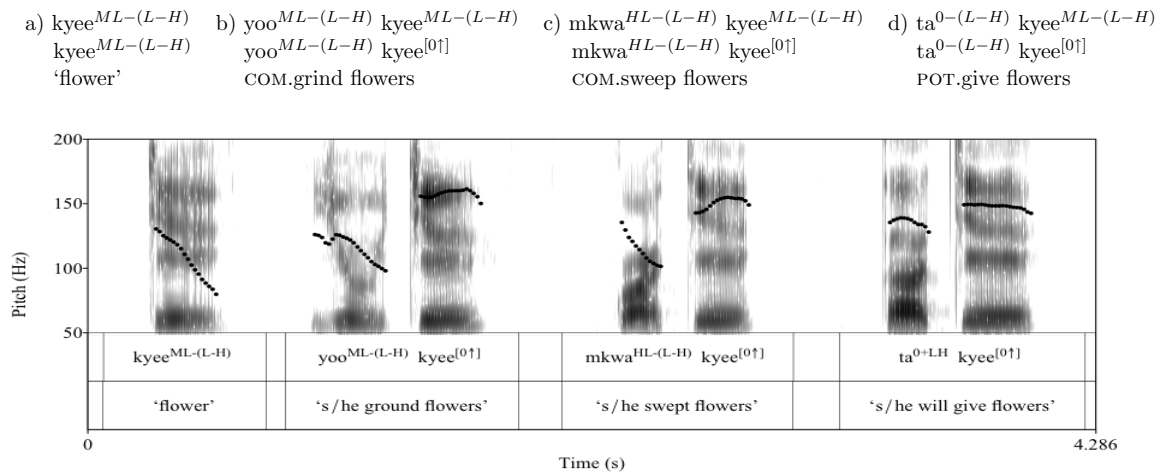


Figure 4.9: Floating tone clash - Set C with C, F and H

$[0\uparrow]$ tone. Figure 4.10 presents the same process with $jyta^{HL-(L-H)}$ ‘chepil’ of set F.

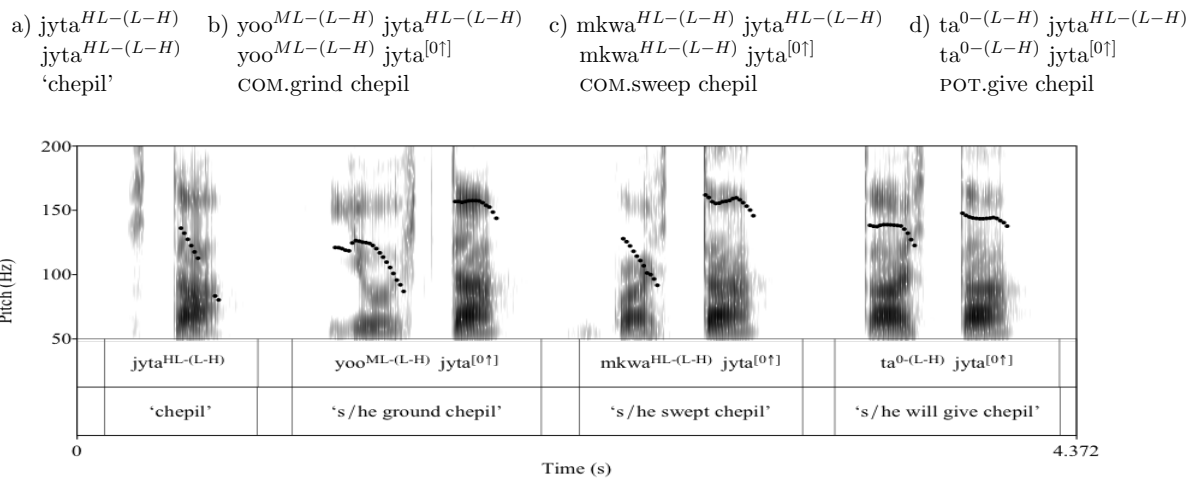


Figure 4.10: Floating tone clash - Set F with C, F and H

The ascending floating tones $/-(L-H)/$ generate a super high tone clash when confronted with the same sequence. In the case of set H $/0-(L-H)/$, the linked tone sequence is already considered super high $[0]$; examples (b), (c) and (d) of Figure 4.11 present how the derived output tone $[0\uparrow]$ compares with that of the super high $/0-(L-H)/$ on $sko^{0-(L-H)}$

‘grasshopper’ in (a), presenting the upstepped output as the result of the OCP clash.

Although the super high tone of set H /0-(L-H)/ may appear to realize the same pitch as that of the resulting sandhi tone that occurs from the OCP clash described above, what happens is that the resulting sandhi tone is realized at a higher pitch particularly when it exists in relation to the lexical tone of set H. In examples 4.11-b and c, the lexeme $sko\gamma^H$ is higher than the isolation form in 4.11-a. Likewise, in example 4.11-d the same form occurs at a higher pitch than the preceding lexeme ta^H which is from the same tone set.

- a) $sko\gamma^{0-(L-H)}$ $sko\gamma^{0-(L-H)}$ ‘grasshopper’
 b) $yoo^{ML-(L-H)}$ $sko\gamma^{0-(L-H)}$ $sko\gamma^{[0\uparrow]}$ COM.grind grasshopper
 c) $mkwa^{HL-(L-H)}$ $sko\gamma^{0-(L-H)}$ $sko\gamma^{[0\uparrow]}$ COM.sweep grasshopper
 d) $ta^{0-(L-H)}$ $sko\gamma^{0-(L-H)}$ $sko\gamma^{[0\uparrow]}$ POT.give grasshopper

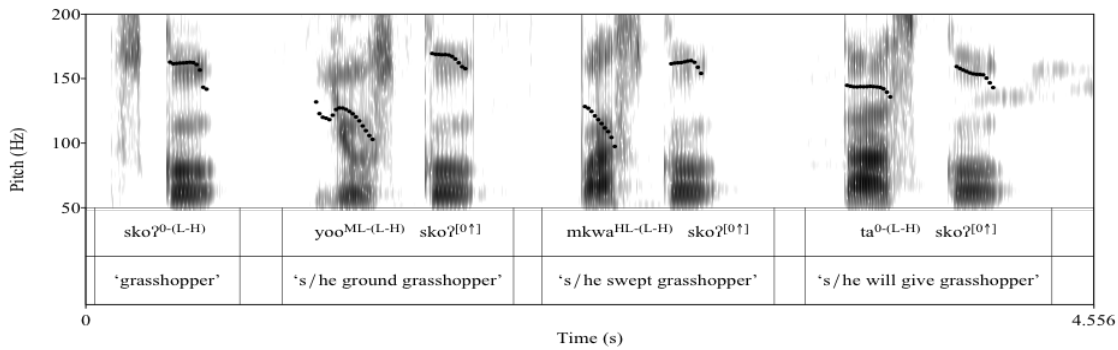


Figure 4.11: Floating tone clash - Set H with C, F and H

The following table outlines the phonetic sandhi realizations of the tone sets C, F, and H. The tone clash of these items provides evidence of the mechanism of the OCP clash between the ascending floating tone sequences. An example of the toneless stem is included to remind the reader of the effect of the delinked floating on this toneless class of the lexicon.

Table 4.2: Sandhi Outcomes for Sets C, F, and H

Set	$2^{nd} \rightarrow$	X	C	F	H
$1^{st} \downarrow$	tone	\emptyset	/ML-(L-H)/	/HL-(L-H)/	/0-(L-H)/
C	/ML-(L-H)/	/L-H/	[0↑]	[0↑]	[0↑]
F	/HL-(L-H)/	/L-H/	[0↑]	[0↑]	[0↑]
H	/0-(L-H)/	/L-H/	[0↑]	[0↑]	[0↑]

Figure 4.12 is an autosegmental representation of the annotated pitch track in Figure ?? and outlines the sandhi processes that occur when sets C, F and H are preceded by C, F and H also presented in Figs. ?? and 4.11. This example shows the process with sets C, F and H operating on set C.

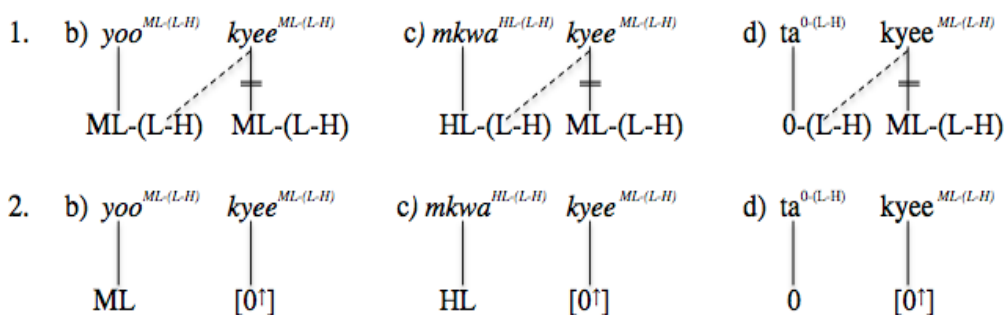


Figure 4.12: Floating tone clash - Sets C, F and H on Set C

In Figure 4.12(1) the floating tone /-(L-H)/ of word₁ links to word₂. The /ML/ tone of $kyee^{ML-(L-H)}$ delinks from the stem. The two unlinked ascending /-(L-H)/ tones create an OCP clash that causes the pitch of $kyee^{ML-(L-H)}$ to become an upstepped super high tone [0↑]. The autosegmental rendering of Figure 4.12 and the rules presented in Table 4.2, above, can be summarized with rule 1.

1. T-(L-H) \rightarrow [0↑] / T-(L-H) —

4.3.2 High tone /-H/ of Sets E /L-H/ and J /M-(H)/ on Sets C, F, and H

The following presents the interactions of the tone set E and J with the tone sequences of sets C /ML-(L-H)/, F /HL-(L-H)/ and H /0-(L-H)/; however, a few more facts about the underlying nature of set J need to be established in order to proceed. As mentioned in §3.3.2.3 the tone sequence /M-(H)/ of set J only appears as a mid tone phrase initially or in isolation and always becomes /L-H/ when preceded by any lexeme except for set J /M-(H)/ or E /L-H/. This is captured by rule (2) where T = tone.

2. M-(H) → /L-H/ / T __ (except M-(H) or L-H)

In Figure 4.13, the tones that precede set J /M-(H)/ are from sets X /Ø/, I /MH/, K /ML/ and Bii /MLM/ respectively. These tones do not have any right-edge underlying floating tone sequences and never exhibit any rightward sandhi effect on any other tones.

- a) ku sna^{M-(H)} b) ntyku^{MH} sna^{M-(H)} c) ka^{ML} sna^{M-(H)} d) jykuu^{MLM} sna^{M-(H)}
 ku sna^[LH] ntyku^{MH} sna^[LH] ka^{ML} sna^[LH] jykuu^{MLM} sna^[LH]
 POT.eat three PRG.eat three STAT.is three COM.eat.2SG

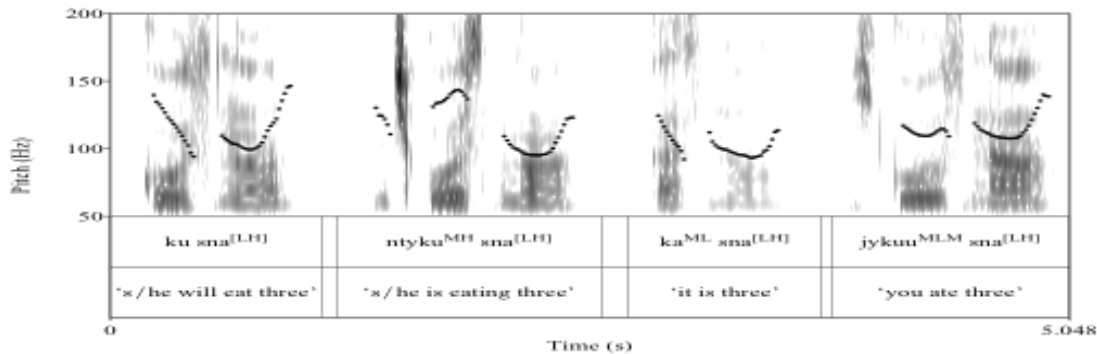


Figure 4.13: Underlying form of tone /M-(H)/ - Set J

The evidence presented in 4.13 serves to show how the underlying nature of set J /M-(H)/ is revealed when preceded by any tone sequence except sets E /L-H/ and J /M-(H)/. In this case both sets J and E suffer a process of dissimilation (Fig. 4.19 below).³

³Set J is presented as mid tone in initial position as *sna*^{M-(H)} ‘three’ in Fig.4.3 of §4.2.1 preceding a toneless stem and below, in Fig. 4.14(c), preceding a lexeme from tone set C /ML-(L-H)/.

4.3.2.1 The linking of tone /-H/ of Sets E and J

The following examples show the linking behavior of the /-H/ tone from sets E /L-H/ and J /M-(H)/ and provide further evidence that these tones are related. Figure 4.14 presents *kyee*^{ML-(L-H)} ‘flower’ from set C in isolation and then in context, preceded by *mdaa*^{L-H} ‘COM.give’ (set E) and *sna*^{M-(H)} ‘three’ (set J). Example (b) shows the linking of the high /-H/ linked tone of /L-H/ on to *kyee*^{ML-(L-H)} and Example (c) shows the linking of the high /-(H)/ unlinked tone of /M-(H)/ on to *kyee*^{ML-(L-H)}.

Similar to the process in Figure 4.3 of §4.2.1 the /-H/ tones of sets E and J move rightward creating sandhi changes on the adjacent lexemes. In example 4.14(b), the linked /-H/ tone of set E /L-H/ delinks from its host and moves rightward onto the following word clashing with the underlying unlinked ascending -(L-H) tone of that stem resulting in a super high pitch [0↑]. Example 4.14(c) shows the linking of the unlinked /-(H)/ tone of set J /M-(H)/ linking to the same stem and producing the same output as in (b). This exact process occurs on sets F /HL-(L-H)/, and H /0-(L-H)/ when preceded by tone sets E /L-H/ and J /M-(H)/.

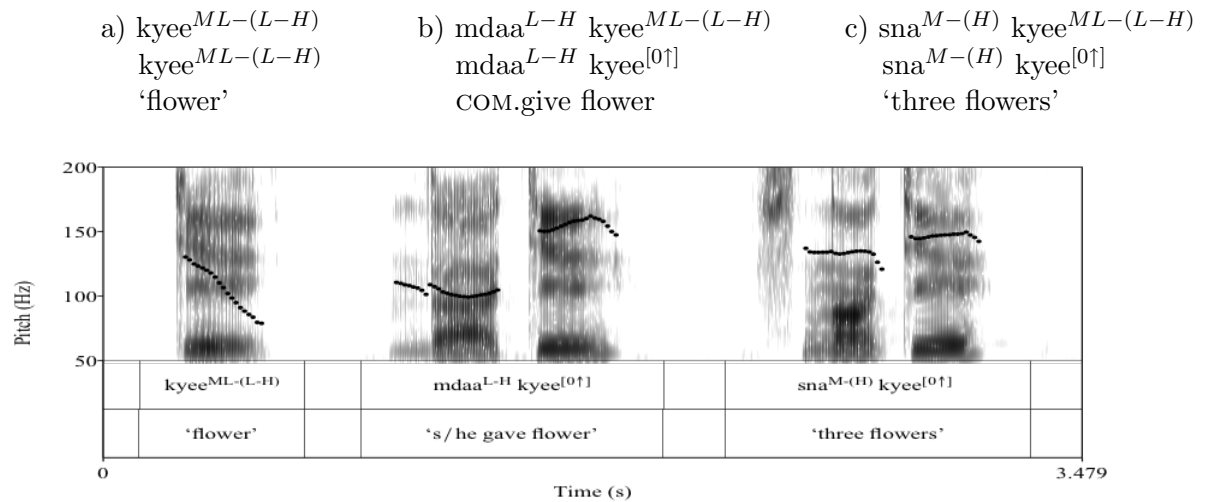


Figure 4.14: Tone clash - Sets E and J on C

Figure 4.15 is an autosegmental representation of my analysis of the linked /-H/ tone of set E /L-H/ and the unlinked /-(H)/ tone of set J /M-(H)/ linking to $kyee^{ML-(L-H)}$.

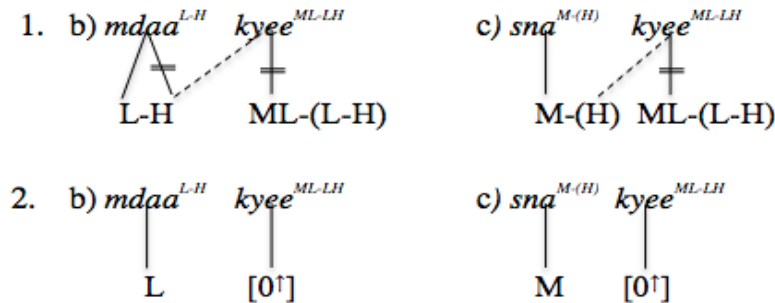


Figure 4.15: Linking of tone /-H/ of Sets E and J

In 4.15(1.b) the linked /-H/ tone of /L-H/ delinks from word₁ links to word₂. In 4.15(1.c) the unlinked /-(H)/ tone of /M-(H)/ from word₁ links to word₂. In 4.15(1.a) and (1.b) the /ML/ tone of $kyee^{ML-(L-H)}$ delinks from the stem. The [H] tone of Sets E /L-H/ and J /M-(H)/ create an OCP clash with the underlying floating tone of $kyee^{ML-(L-H)}$ raising the pitch of this word to an upstepped super high tone [0↑].

This interaction of sets E /L-H/ and J /M-(H)/ preceding C creates the same OCP tone clash as described with the sets C, F, and H in §4.3.1. This provides *prima facie* evidence that sets E and J are underlyingly the same tone and that sets E and J and C, F, and H contain tonal elements considered identical in the TEO tone system. Although sets E /L-H/ and J /M-(H)/ are being considered the same underlyingly they are given different notations because of their different tone realizations in isolation. Figures ?? and 4.17 present the same sandhi effect of the /-H/ tone linking to stems from sets F /HL-(L-H)/ and H /0-(L-H)/.

Figure ?? presents the /-H/ linking tone clash with set F /HL-(L-H)/.

- a) $jyta^{HL-(L-H)}$ b) $m\text{daa}^{L-H} jyta^{HL-(L-H)}$ c) $sna^{M-(H)} jyta^{HL-(L-H)}$
 $jyta^{HL-(L-H)}$ $m\text{daa}^{L-H} jyta^{[0\uparrow]}$ $sna^{M-(H)} jyta^{[0\uparrow]}$
 ‘chepil’ COM.give chepil ‘three chepiles’

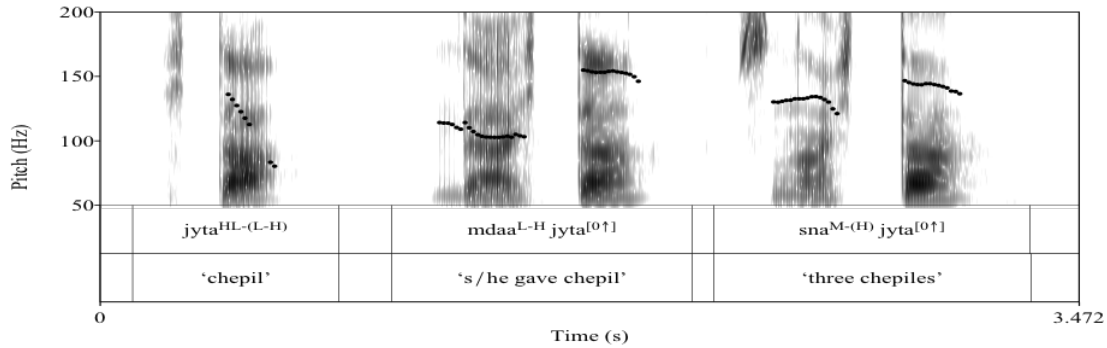


Figure 4.16: Tone clash - Sets E and J on F

Figure 4.17 presents the /-H/ linking tone clash with set H /0-(L-H)/.

- a) $sko\uparrow^{0-(L-H)}$ b) $m\text{daa}^{L-H} sko\uparrow^{0-(L-H)}$ c) $sna^{M-(H)} sko\uparrow^{0-(L-H)}$
 $sko\uparrow^{0-(L-H)}$ $m\text{daa}^{L-H} sko\uparrow^{[0\uparrow]}$ $sna^{M-(H)} sko\uparrow^{[0\uparrow]}$
 ‘grasshopper’ COM.give grasshopper ‘three grasshoppers’

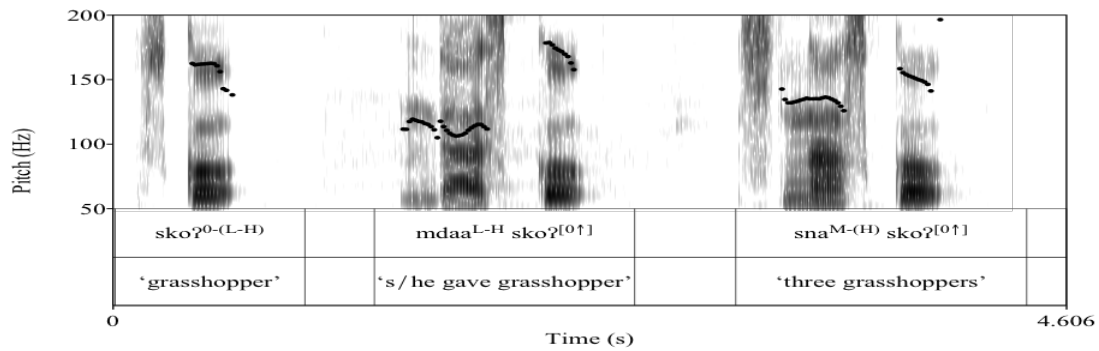


Figure 4.17: Tone clash - Sets E and J on H

In the previous three pitch tracks we can see that $sn\bar{a}^{M-(H)}$ maintains its mid level tone demonstrating nothing of its underlying nature; however, because of set J's /-(H)/ tone sandhi effect on sets C, F and H it is clear that this set is related to E. Because sets E and J are analyzed as /L-H/ tones it appears that the mechanism that causes the OCP clash is the interaction of the delinked /-H/ tone of the ascending tones of sets E and J and the ascending floating tone sequence /-(L-H)/ of C, F and H. Table 4.3, below, summarizes the phonetic sandhi outcomes of sets C, F, H, E and J on sets C, F and H. An example of the toneless stem is included to remind the reader of the effect of the delinked floating tones on this toneless class of the lexicon.

Table 4.3: Sandhi Outcomes for Sets C, F, H, E and J

Set	$2^{nd} \rightarrow$	X	C	F	H
$1^{st} \downarrow$	tone	\emptyset	/ML-(L-H)/	/HL-(L-H)/	/0-(L-H)/
C	/ML-(L-H)/	/L-H/	[0↑]	[0↑]	[0↑]
F	/HL-(L-H)/	/L-H/	[0↑]	[0↑]	[0↑]
H	/0-(L-H)/	/L-H/	[0↑]	[0↑]	[0↑]
E	/L-H/	[M]	[0↑]	[0↑]	[0↑]
J	/M-(H)/	[M]	[0↑]	[0↑]	[0↑]

Given the above analysis and considering the interaction between the ascending floating tones of sets C, F and H with that of the ascending lexical tones of sets E and J, sandhi rule (1), above, should be expanded to include the interactions of sets E and J on C, F and H. Rule (3) replaces rule (1) and captures the output effects from Table 4.3.

1. T-(L-H) \rightarrow [0↑] / T-(L-H) —
3. T-(L-H) \rightarrow [0↑] / -(H) or -H —

4.3.3 Contour tone inversion - sets E /L-H/ and J /M-(H)/

The sandhi patterns of sets E /L-H/ and J /M-(H)/ provide more evidence for how these tones derive from the same underlying set and present an analysis of one facet of

how the ascending lexical tone sequences of sets E and J are distinct from the ascending unlinked tone sequences of Sets C /ML-(L-H)/, F /HL-(L-H)/, and H /0-(L-H)/.

Figure 4.18 presents *ngaa*^{L-H} ‘coconut’ (set E) first in isolation and then in context preceded by *mdaa*^{L-H} ‘COM.give’ (set E), and *sna*^{M-(H)} ‘three’ (set J) /M-(H)/. Examples 4.18(b) and (c) both demonstrate the dissimilation effect that occurs when tones from sets E and J precede set E. Also, in (b), we can see how the [-H] tone of /L-H/ does not separate from its base maintaining its concave shape when preceding a tone of its own class.

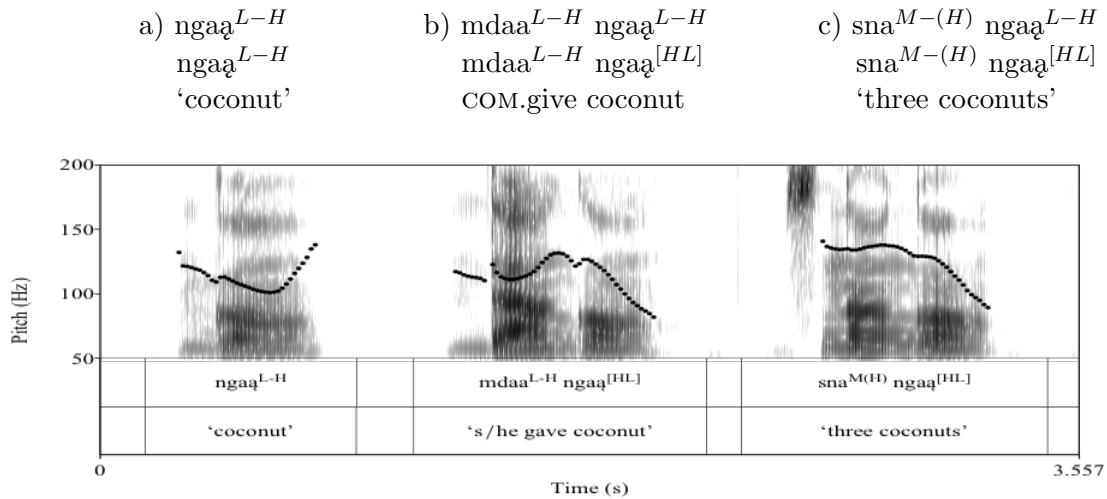


Figure 4.18: Dissimilation of tone /L-H/ - Set E

Both of the tones from sets E and J exhibit the same dissimilation when preceded by tones of their own class and that of each other. This provides more evidence of the underlying relationship of these tones despite their superficial difference. Figure 4.19 presents *sna*^{M-(H)} ‘three’ first in isolation. In 4.19(b) and (c) *sna*^{M-(H)} is presented in a two-word window following *mdaa*^{L-H} ‘s/he gave’ of set E and *sna*^{M-(H)} of set J where the pitch of *sna*^{M-(H)} becomes [HL].

- a) $\text{sna}^{M-(H)}$
 $\text{sna}^{M-(H)}$
 ‘three’
- b) mdaa^{L-H} $\text{sna}^{M-(H)}$
 mdaa^{L-H} $\text{sna}^{[HL]}$
 COM.give three
- c) $\text{sna}^{M-(H)}$ $\text{sna}^{M-(H)}$
 $\text{sna}^{M-(H)}$ $\text{sna}^{[HL]}$
 ‘three, threes’

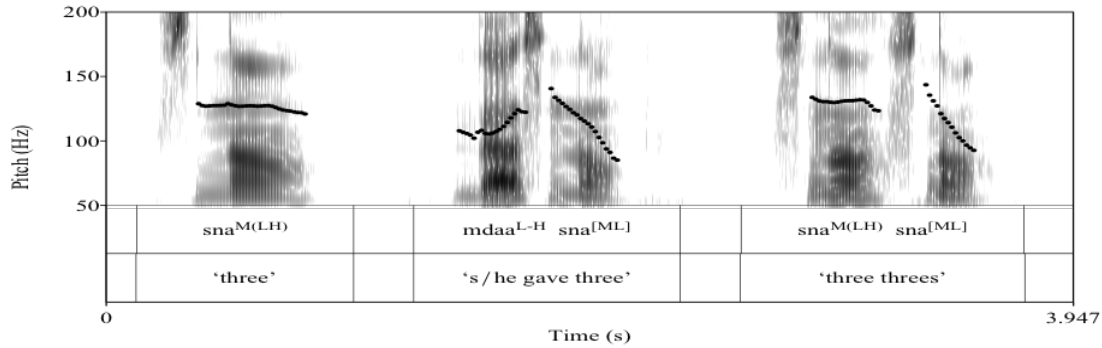


Figure 4.19: Dissimilation of tone /M-(H)/ - Set J

Rules (4) and (5) capture the above sandhi changes.

4. $L-H \rightarrow HL / L-H$ or $M-(H) \text{ —}$
5. $M-(H) \rightarrow HL / L-H$ or $M-(H) \text{ —}$

However, if we assume that set E and J are both underlyingly /L-H/ the above tone rules can be conflated and expressed a bit more simply with rule (6).

6. $L-H \rightarrow HL / L-H \text{ —}$

In the Chinese dialects of Danyang and Pingyao this type of OCP contour tone change is referred to as *contour metathesis* (Bao, 1999). Danyang exhibits the exact type of sandhi change presented above where the base tone [24] of monosyllabic words changes according to the following rule: $24 \rightarrow 42 / \text{ — } 24$. This change occurs leftward on contiguous syllables leaving the base tone unchanged. As each word increases in its number of syllables the metathesis continues as long as the underlying tone is the same. Figure 4.20, taken from Bao (1999:57), presents this tone sandhi configuration.

Base	24
Bisyllabic	42-24
Trisyllabic	42-42-24
Quadrisyllabic	42-42-42-24

Figure 4.20: Contour metathesis

In TEO the direction of the sandhi is rightward on contiguous simplex monosyllabic words leaving the initial tone unchanged. This tone *metathesis* continues as long as the string of tones is the same. Figure 4.21 demonstrates this sandhi effect in TEO. In addition to the metathesis it is important to point out that this sandhi pattern also exhibits declination as the effect moves rightward. In §5.7.2 Figure 5.47, this effect is demonstrated on toneless stems when they are in a contiguous line of two or more simplex words.

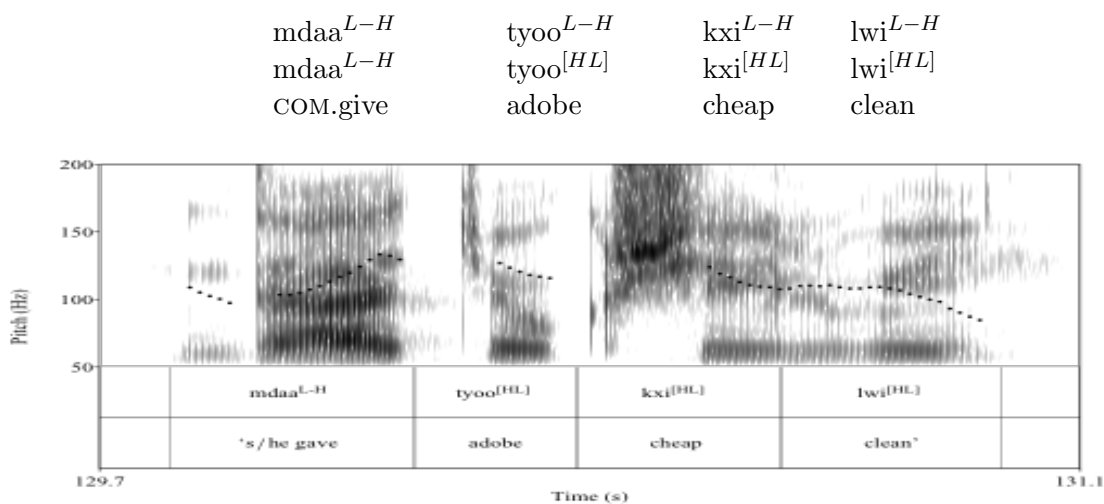


Figure 4.21: Tone metathesis - Set E /L-H/

Figure 4.22 presents this process for set J; however, the sentence begins with a toneless word invoking rule (2) $M-(H) \rightarrow L-H / T \text{ — except } /M-(H)/ \text{ or } /L-H/$ on $kwi^?M-(H)$, then invoking rule (6) $L-H \rightarrow HL / L-H \text{ —}$ on $sna^{M-(H)}$. The final toneless word, *yja* ‘tortilla,’ shows no sandhi change.

jyku	kwiʔ ^{M-(H)}	sna ^{M-(H)}	yja
jyku	kwiʔ ^[LH]	sna ^[HL]	yja
COM.eat	same	three	tortillas

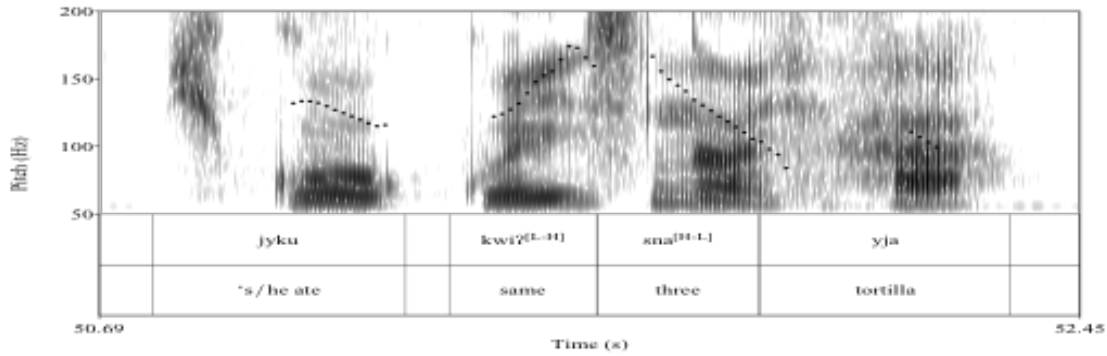


Figure 4.22: Tone metathesis - Sets X, J, J and X

To demonstrate the role of the toneless tone, Figure 4.23 presents the same data as above; however, the final word in the phrase, *ngʔa^{L-H}* ‘red,’ is from set E /L-H/.

jyku	kwiʔ ^{M-(H)}	sna ^{M-(H)}	yja	ngʔa ^{L-H}
jyku	kwiʔ ^[LH]	sna ^[HL]	yja ^[M]	ngʔa ^[HL]
COM.eat	same	three	tortillas	red

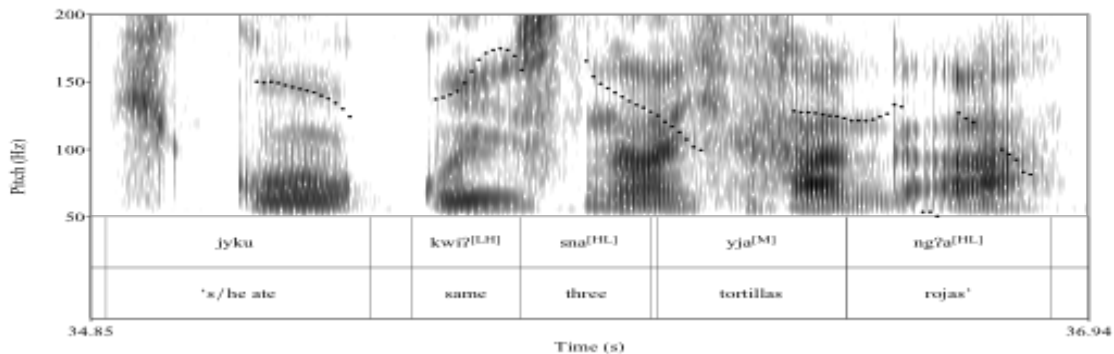


Figure 4.23: Tone metathesis - Sets X, J, J, X and E

The above configuration of Set Sequence XXJJXE shows how the toneless penultimate word, *yja* ‘tortilla,’ allows the derived /L-H/ of *sna^{L-H}* ‘three’ to contribute its linked /-H/ tone to a further process which inverts the pitch of *ngʔa^{L-H}* ‘red’ and raises the pitch of the toneless word *yja* ‘tortilla’ through a coarticulatory effect.

The sandhi rules of this phrase operate in the following order where rule (2) feeds rule (6) by creating an environment where (6) can apply.

(2) M-(H) → L-H / T ___ except /M-(H)/ or /L-H/ on $kwi\uparrow^{M-(H)}$ and $sna^{M-(H)}$

(6) L-H → HL / L-H ___ on $sna^{M-(H)}$ and again on $ng\uparrow a^{L-H}$

The final pitch track of this section further demonstrates how the toneless tone allows the antepenultimate tone to affect the final word by crossing over the word *yja* ‘tortilla’; however, in this example the final word is from set F /HL-(L-H)/.

jyku	$kwi\uparrow^{M-(H)}$	$sna^{M-(H)}$	yja	$mt\epsilon^{HL-(L-H)}$
jyku	$kwi\uparrow^{[LH]}$	$sna^{[HL]}$	yja	$mt\epsilon^{[0\uparrow]}$
COM.eat	same	three	tortillas	white

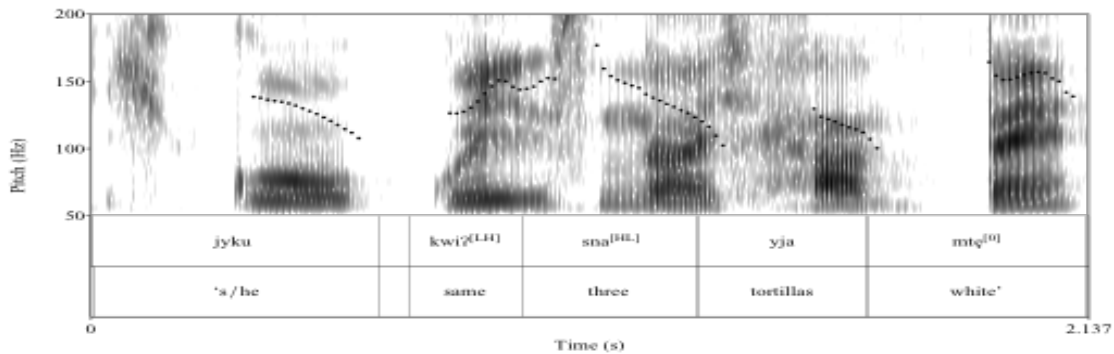


Figure 4.24: Tone metathesis - Sets X, J, J, X and F

The sandhi rules of this phrase operate in the following order:

(2) M-(H) → L-H / T ___ except /M-(H)/ or /L-H/ on $kwi\uparrow^{M-(H)}$ and $sna^{M-(H)}$

(6) L-H → HL / L-H ___ on $sna^{M-(H)}$

(3) T-(L-H) → $[0\uparrow]$ / -(H) or -H ___ on $mt\epsilon^{HL-(L-H)}$

4.3.4 Dissimilation effect of sets E and J on tone set D /L-H-(0)/

Before the section is concluded there is one more sandhi rule that needs to be described. Tone set D /L-H-(0)/ presented in §3.5.4 is an ascending tone that sounds the same as set E /L-H/ in isolation; however, this tone has one-unlinked super high /-(0)/ tone. Because this tone is an ascending tone like set E it seems that it would behave in the same manner as sets E and J; however, this is not the case. Because of the contoured shape of set D it appears that unique tone sandhi operations exist between sets D and E and J. Sets E and J invoke the OCP dissimilation on set D /L-H-(0)/ thereby lowering its pitch. Figure 4.25 presents this interaction.

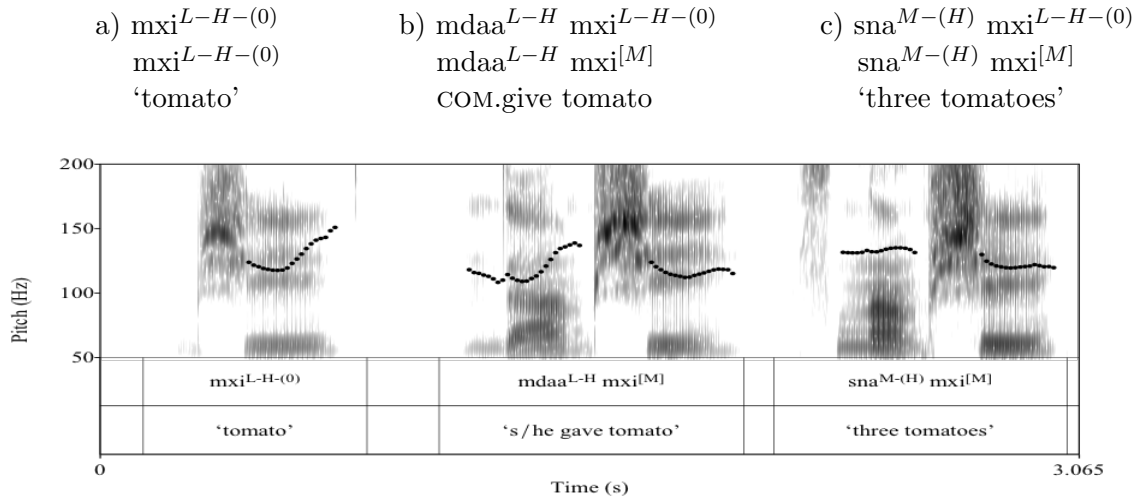


Figure 4.25: Tone set D with Sets E and J

Sets E and J lower the pitch of set D to the mid tone sequence of set B /M-(0)/. The set D tone sequence does not invert completely like J and E when they are preceded by their own sets. This is because when the tone sequences of sets E and J precede set D they convert the tone sequence /L-H-(0)/ to /M-(0)/ of set B which has no sandhi effect on sets J or E, which is also the reason prohibiting the tone sequence of set D from realizing the OCP inversion operation on the tones of sets E and J. As described in §4.5, tone set D

/L-H-(0)/ is more closely related to set B /M-(0)/ than that to that of E or J. Because it is an ascending tone and it suffers changes provoked by sets E and J it is included here. The sandhi effect of sets J and E on D presented in Figure 4.25 are expressed with rule (7).

$$7. \text{L-H-(0)} \rightarrow \text{/M-(0)/ / L-H} \text{ —}$$

4.3.5 Summary of the sandhi effects of sets E /L-H/ and J /M-(H)/

The /-H/ tone of sets E and J links on to the toneless stem raising the pitch of these lexemes to an attenuated [M] tone (§4.2.1). This same /-H/ tone of sets E and J creates a tone clash with the sets C, F and H producing a super high pitch [0↑] when sets E and J precede these tones (§4.3.2.1). The tone sequences of sets E and J realize an OCP tone inversion on the sequences of the same sets (E and J) when they interact with each other inverting their ascending contour tone shapes into a descending [HL] pitch (§4.3.3). The sequences of sets E and J lower the pitch of the sequence of set D changing its to [M] while retaining the unlinked super high floating tone thus converting this sequence to /M-(0)/ of set B (§4.3.4). Table 4.4 summarizes these sandhi effects of tone sets E /L-H/ and J /M-(H)/ on sets X, D, C, F, H, E and J.

Table 4.4: Sandhi Rules for Sets E and J

Set	$2^{nd} \rightarrow$	X	D	C	F	H	E	J
$1^{st} \downarrow$	tone	\emptyset	/L-H-(0)/	/ML-(L-H)/	/HL-(L-H)/	/0-(L-H)/	/L-H/	/M-(H)/
E	/L-H/	[M]	/M-(0)/	[0↑]	[0↑]	[0↑]	[HL]	[HL]
J	/M-(H)/	[M]	/M-(0)/	[0↑]	[0↑]	[0↑]	[HL]	[HL]

4.4 Status of the two-unlinked ascending tone /-(L-H)/ and ascending lexical tone /L-H/

Given the typology of contour tones in the world's languages it has been a long held assumption that Asian languages tend to have contour tones that act as a unit while African languages tend to have register tones that may combine to form rising and falling

values. And there are languages that overlap having a combination of both types of systems operating at the same time (Hyman, 2007; Pike, 1948:12). Teotepec Chatino appears to be of the type that represents a system that overlaps in some aspects of its behavior. TEO has level tone sequences that combine to form contours that can act as unitary melodic units. Figure 4.26 reproduces a model, proposed by Yip (1989), that represents these two types of contour tones. 4.26(a) represents contour tones on monosyllabic words which are attached to the mora by way of two tonal nodes and 4.26(b) represents contour tones that act as a single melodic unit and attach to the TBU via a single root node.



Figure 4.26: Cluster vs. unit contour tone structure

Considering the above models for the ascending tone sequences of sets E, J and D helps to provide compelling arguments in favor of this analysis for ascending tone sequences in TEO. The ascending floating tone sequence /-(L-H)/ of sets C, F, and H and the delinking high tone /L-H/ of set E and J behave differently regarding the kinds of changes they realize on toneless simplex words.

The present analysis demonstrates that when one instance of the ascending lexical tone /L-H/ precedes a toneless stem, only the attenuated /-H/ of this sequence moves rightward, raising the pitch on the immediate toneless stem to [M] (Figure (4.3), §4.2.1). Likewise, in Figures (4.14), (??), and (4.17), above, this same /-H/ of /L-H/ delinks when it precedes sets C, F, and H causing the pitch of those tones to raise to super high [0↑]. In both cases it is clear that the right side of the tone sequence /L-H/ delinks and moves rightward.

When the ascending floating tone /-(L-H)/ precedes one toneless stems, the entire

unlinked sequence moves rightward as a complete unit (§4.2.3, Fig. 4.7). Figure 4.27 shows one toneless stem preceded by a word from set F /HL-(L-H)/. In this example we can see how the unlinked ascending tone sequence moves rightward on the toneless word as a complete melodic unit raising the pitch of /Ø/ to [LH].

yoo^{ML-(L-H)} ska COM.grind one
yoo^{ML-(L-H)} ska^[LH] COM.grind one

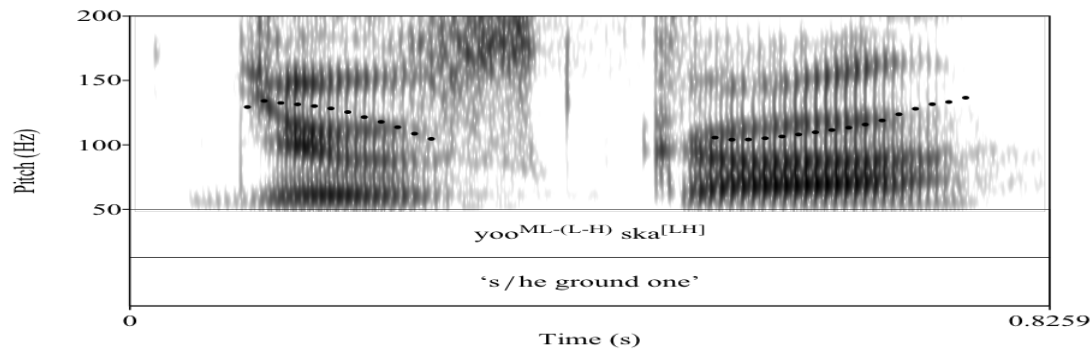


Figure 4.27: Linking of unlinked ascending tone /-(L-H)/ on Set X

However, if the floating tone precedes two or more contiguous toneless stems the ascending tone spreads over each lexeme, in effect, breaking up and linking its low and high tones across the toneless lexemes.

yoo^{ML-(L-H)} ska yja COM.grind one tortilla
yoo^{ML-(L-H)} ska^[L] yja^[H] COM.grind one tortilla

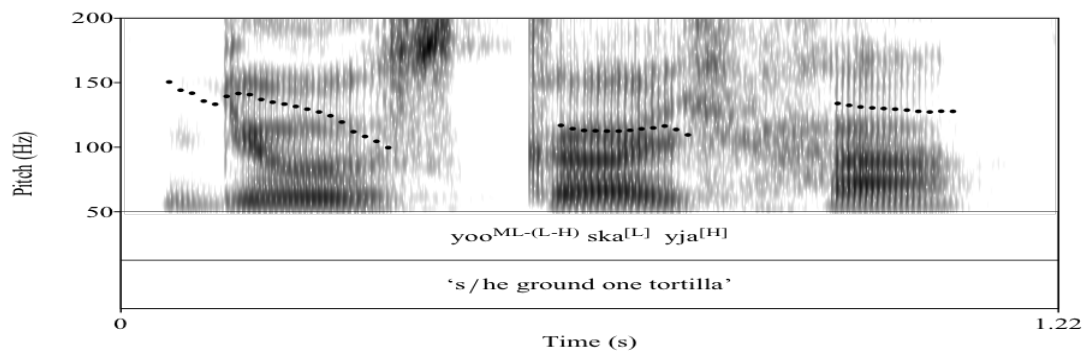


Figure 4.28: Linking of unlinked ascending tone /-(L-H)/ on Sets X & X

The following presents the ordering of the rules of Figure 4.30.

- (a) /-(LH)/ Linking Rule is realized on *ska* ‘one’ converting the tone of the toneless stem to /L-H/ of set E
- (b) /-H/ Linking Rule where the high /-H/ tone of set E moves over *yja* ‘tortilla’ raising the pitch of this toneless stem to [M]
- (c) Because this the second toneless stem *yja* ‘tortilla’ is not phrase final the /-H/ tone continues onto the target - *mtɛ^F* ‘white’
 - Rule (3) T-(L-H) → [0↑] / -(H) or -H — is realized on the sequence /HL-(L-H)/ by the preceding /-H/ floating tone
- (d) The pitch of *mtɛ^F* to an upstepped super high tone [0↑]

Figure 4.27 shows how the ascending floating tone /-(L-H)/ of sets C, F and H moves as a unit when followed by one instance of a toneless stem. In Fig. 4.28 because the first toneless stem has been converted to /L-H/ the ascending floating tone behaves as a cluster spreading across two toneless stems. In Fig. 4.29 we can see how the /-H/ tone of the unlinked ascending floating tone sequence realizes itself on the final target of the set F /HL-(L-H)/ where rule (3) is carried out.

The ascending lexical tone /L-H/ likewise acts like a cluster and in some instances behaves as a unit depending on the tone it precedes. As noted above in §§4.3.3 and 4.3.4, the OCP effect of this tone on tones from its own class (E and J) results in contour metathesis. When this tone precedes sets C, F and H it creates the same effect that C, F and H create in the realization of the OCP tone clash sandhi rule (3).

Because the clash of sets C, F and H with their own sets is based on the linking of the /-H/ tone the underlying ascending floating tone sequence /-(L-H)/ preceding these floating tones, then, in this way the /-H/ tone of the ascending lexical tone /L-H/ is analyzed having the same melodic characteristics involved in creating this sandhi. Although the ascending floating and lexical tones overlap in some sandhi behaviors they present an asymmetry in

their patterning. Figure 4.31 presets how the three simplex words that precede *ngaa*^{L-H} (Sets C, F and H respectively) have no sandhi affect whatsoever on the following word of set E /L-H/.

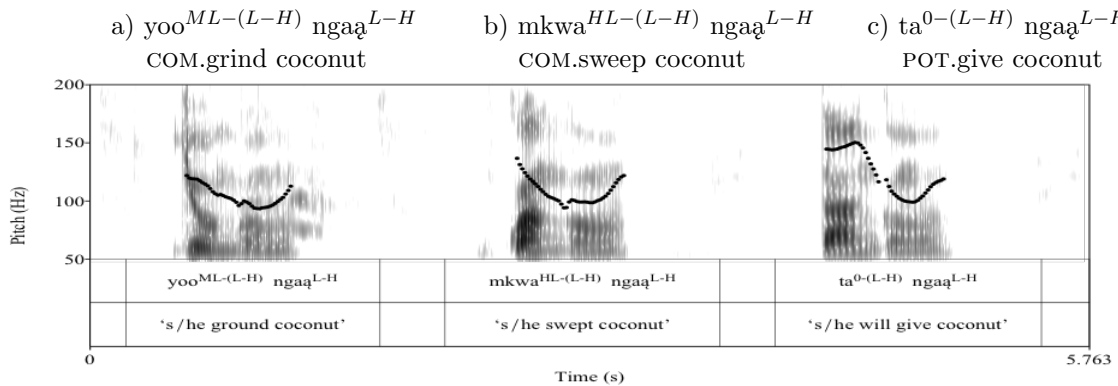


Figure 4.31: Tone non-clash - Sets C, F and H on Set E

Tone sets C, F, H, E and J have the same OCP effect on sets C, F, and H, converting them into super high tones [0↑]; however, sets E and J are not affected by C, F and H. Sets E and J create contour metathesis when they preceded their own sets and a partial metathesis when they precede set D. The ascending floating tones are affected by preceding lexical ascending tones but not the other way around; if the ascending floating tones of sets C, F and H were identical to sets E and J then there would be symmetry of tone sandhi in both directions and sets E and J would invert following the ascending floating tone sequences. Based on the above it appears that E and J consist of a sequence of two register tones (L + H) like that of the floating ascending sequence; however, the ascending floating tone sequence /-(L-H)/ behaves as contour tone in that it has to move as a melodic unit whereas the /-(H)/ of sets E and J does not, creating a minor asymmetry between two very similar tone sequences.

And finally, there are five tone sets considered unit contour tones in Teotepéc Chatino. These are the one-linked rising tone sequence of set I /MH/ and the one-linked descending sequences of sets F /HL-(L-H)/, G /HM/, K /ML/ and C /ML-(L-H)/.

4.5 Tone sets B /M-(0)/ and D /L-H-(0)/

The following section outlines the sandhi rules for tone sets B /M-(0)/ and D /L-H-(0)/. Although I have already discussed set D's dissimilatory effects in §4.3.4, here I discuss its unlinked super high floating tone /-(0)/. Like sets E and J, sets B and D exhibit different behavior on the surface; however, underlyingly both tone sequences realize the same sandhi outcomes. The behavior of the super high floating tone /-(0)/ shared between these two sets demonstrates that these tones are related. Figure 4.5 of §4.2.2 presented that the super high floating tone of these sets creates a super high [0] pitch on the toneless lexemes. The following outlines examples of the OCP effect of these two tones on the mid tone sequences of sets A /M/ and B /M-(0)/ and the super high sequence of set H /0-(L-H)/ and Bi /0/.

Examples (a) and (b) of Figure 4.32 show how the mid tones of *jya*^M ‘sugarcane’ (set A) and *mti*^{M-(0)} ‘rubbish’ (set B) become [ML] when they are preceded by *koo*^{M-(0)} ‘s/he will grind’ (set B). Likewise, in (c) and (d), the tones of *skoʔ*^{0-(L-H)} ‘grasshopper’ (set H) and *yqʔ*⁰ ‘my hand’ (set Bi) also become [ML] when preceded by *koo*^{M-(0)}.

- | | | | |
|--|--|---|--|
| a) <i>koo</i> ^{M-(0)} <i>jya</i> ^M | b) <i>koo</i> ^{M-(0)} <i>mti</i> ^{M-(0)} | c) <i>koo</i> ^{M-(0)} <i>skoʔ</i> ^{0-(L-H)} | d) <i>koo</i> ^{M-(0)} <i>yqʔ</i> ⁰ |
| <i>koo</i> ^{M-(0)} <i>jya</i> ^[ML] | <i>koo</i> ^{M-(0)} <i>mti</i> ^[ML] | <i>koo</i> ^{M-(0)} <i>skoʔ</i> ^[ML] | <i>koo</i> ^{M-(0)} <i>yqʔ</i> ^[ML] |
| POT.grind | POT.grind | POT.grind | ‘POT.grind |
| sugar cane | rubbish | grasshopper | my hand |

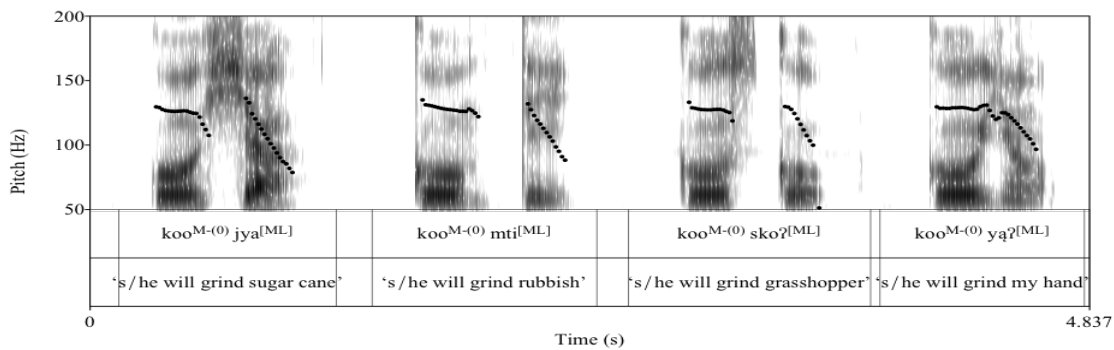


Figure 4.32: Dissimilation effect of tone /M-(0)/ - Set B

This dissimilation effect operates for two reasons. In examples 4.32(a) and (b) the interaction of the lexical mid tone /M-(0)/ (set B) *lowers* the tones of sets A /M/ and B /M-(0)/ in an OCP dissimilation of adjacent mid tones. The motivation for the second dissimilation process in examples 4.32(c) and (d) is also the result of OCP prohibition of adjacent super high tones caused by the floating tone /-(0)/ of /M-(0)/ on the two linked super high tones of sets H /0-(L-H)/ and Bi /0/ similarly lowering the pitch of these tones in second position.

Figure 4.33 shows how this same process occurs with tone set D /L-H-(0)/. This example demonstrates the same dissimilation process as noted in Figure 4.32, above; however, in this example the sandhi generating tone is the super high floating tone of the ascending tone /L-H-(0)/. It appears that the resulting dissimilation pitch change on the second position lexeme is a descending [HL] as opposed to the [ML] noted above. This is probably due to an assimilation effect of the rise of the preceding /L-H-(0)/ tone. Despite the difference in the lexical tones between sets B and D the relationship of the same sandhi dissimilation processes demonstrates tight morphological relationship between these tone groups.⁴

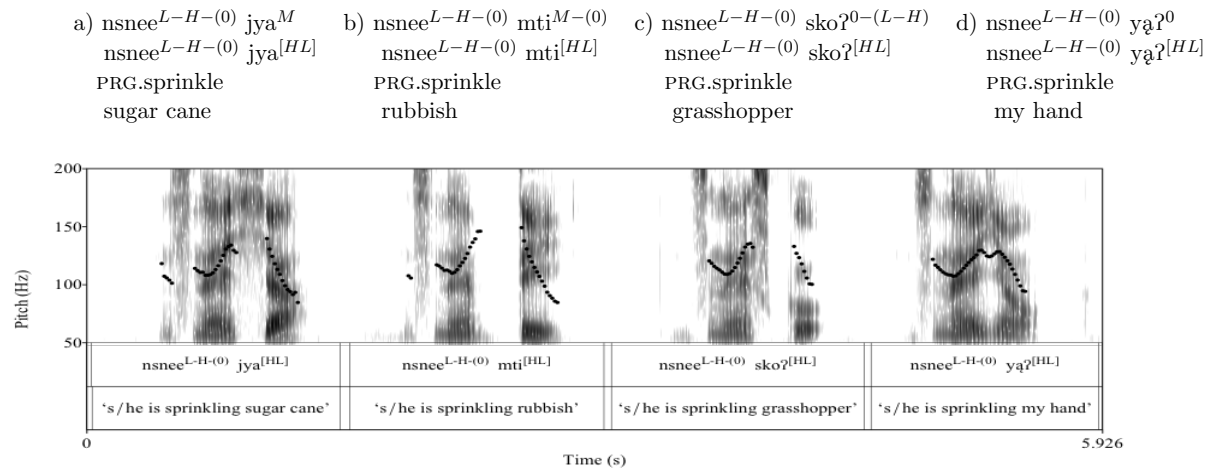


Figure 4.33: Dissimilation effect of tone /L-H-(0)/ - Set D

⁴Both tone sets come from the aspect tone class - Set B /M-0/ described in §9.3.1.2 Chapter 9.

Table 4.5 summarizes the OCP effects of tone sets B and D.

Table 4.5: Sandhi Rules for Sets B and D

Set	$\varrho^{nd} \rightarrow$	X	A	B	H	Bi
$1^{st} \downarrow$	tone	\emptyset	/M/	/M-(0)/	/0-(L-H)/	/0/
B	/M-(0)/	[0]	[ML]	[ML]	[ML]	[ML]
D	/L-H-(0)/	[0]	[HL]	[HL]	[HL]	[HL]

The sandhi rules for sets B and D can be summarized with rule (8).

8. M, M-(0), 0-(L-H), 0 \rightarrow +DES / -(0) —

4.6 Mid tone dissimilation - Sets A /M/ and B /M-(0)/

The two mid tones of sets A and B sound the same on the surface; however, as mentioned in §3.3.2 these tone sets are different because they exhibit underlying tone behavior that only presents itself in connected speech.⁵

4.6.1 Mid tone /M/ - Set A

- | | | | |
|--|---|--|---|
| a) jya^M
jya^M
'sugar
cane' | b) $mdya^M jya^M$
$mdya^M jya^{[ML]}$
COM.arrive
sugarcane | c) $koo^{M-(0)} jya^M$
$koo^{M-(0)} jya^{[ML]}$
POT.grind
sugarcane | d) $nsnee^{L-H-(0)} jya^M$
$nsnee^{L-H-(0)} jya^{[ML]}$
PRG.sprinkle
sugarcane |
|--|---|--|---|

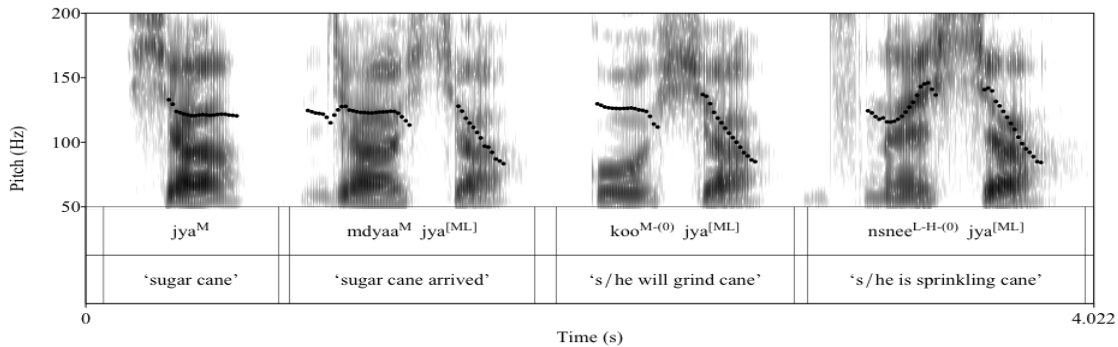


Figure 4.34: Dissimilation of tone /M/ - Set A

⁵Tone set J /M-(H)/ is not considered in this section because, as established previously, this tone is much more closely related to the ascending tone of set E /L-H/.

The above pitch track (Fig. 4.34) shows the mid tone /M/ of *jya*^M ‘sugarcane’ (set A), becomes a descending tone [ML] when preceded by tones from its own set A /M/, set B /M-(0)/ and set D /L-H-(0)/.

4.6.2 Mid tone /M-(0)/ - Set B

Figure 4.35 presents a similar process of tone dissimilation seen in Figure 4.34 (above). The main difference between the two examples is that the mid tone from set A does not affect the tone sequence of set B. Although this process was demonstrated in the previous section (Figs. 4.33 and 4.32), the following pitch tracks emphasize again the dissimilation of the mid tone /M-(0)/ when preceded by simplex words of the same set and those from set D /L-H-(0)/.

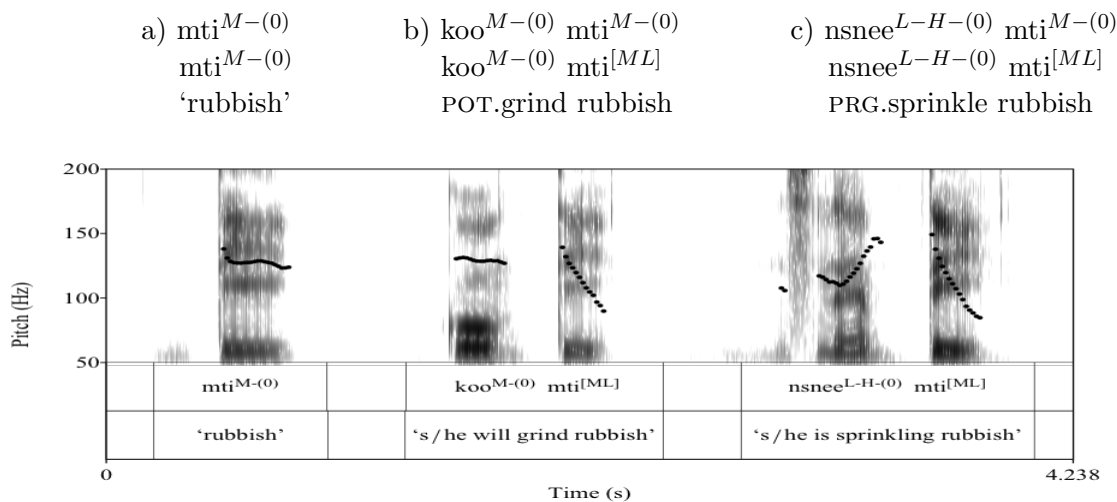


Figure 4.35: Dissimilation of tone /M-(0)/ - Set B

4.6.3 Linking of the ascending floating tone on set B

The ascending floating tones of sets C, F, and H have the same effect on the mid tones of set B /M-(0)/ as on toneless simplex words. Introduced in §3.3.2, the mid tone is presented below on the word *mti*^B ‘rubbish’ preceded by the same three words from sets C,

F and H of Figure 4.7 (above). The result is that the ascending tone of sets C, F, and H affect the pitch of the word mti^B changing it from /M-(0)/ to an ascending /L-H-(0)/ tone of set D.

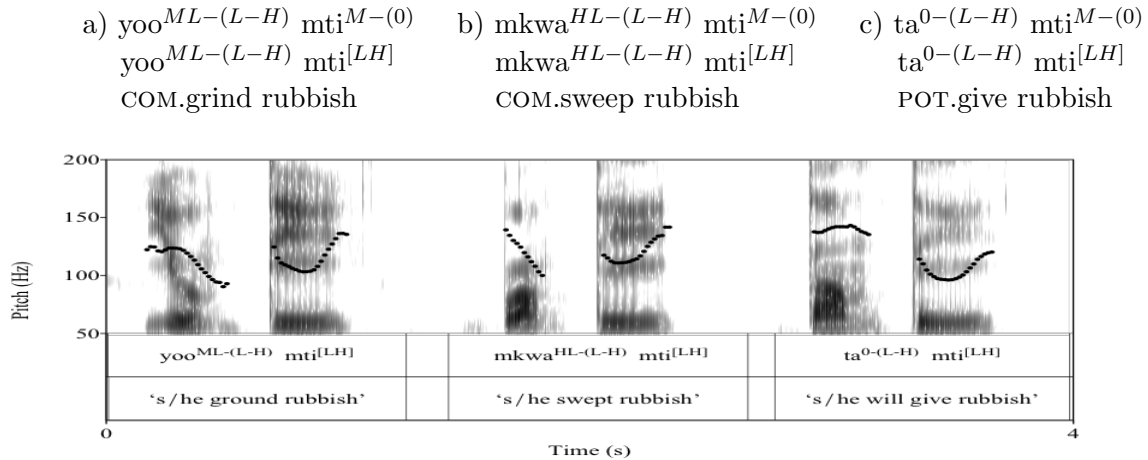


Figure 4.36: Floating ascending tones

Table 4.6: Sandhi Rules for Sets A and B

Set	$2^{nd} \rightarrow$	A	B
$1^{st} \downarrow$	tone	/M/	/M-(0)/
A	/M/	[ML]	-
B	/M-(0)/	[ML]	[ML]
D	/L-H-(0)/	[ML]	[ML]
C	/ML-(L-H)/	-	/L-H-(0)/
F	/HL-(L-H)/	-	/L-H-(0)/
H	/0-(L-H)/	-	/L-H-(0)/

Part of the above sandhi behavior is already captured by rule (8) proposed above.

(8) M, M-(0), 0-(L-H), 0, L-H-(0) \rightarrow +DES / -(0) —

Rule (9) captures the interaction of sets A /M/ and B /M-(0)/.

9. M \rightarrow ML / M —

Figure 4.37 presents an autosegmental rendering of the linking of the floating /-(L-H)/ sequence of sets C, F, and H on set B from Figure 4.36. This is the same process that takes place when the /-(L-H)/ links to a toneless stem (§4.2.3 Figs. 4.7 and 4.8); however, in this case the stem of the B set maintains the super high floating tone /-(0)/.

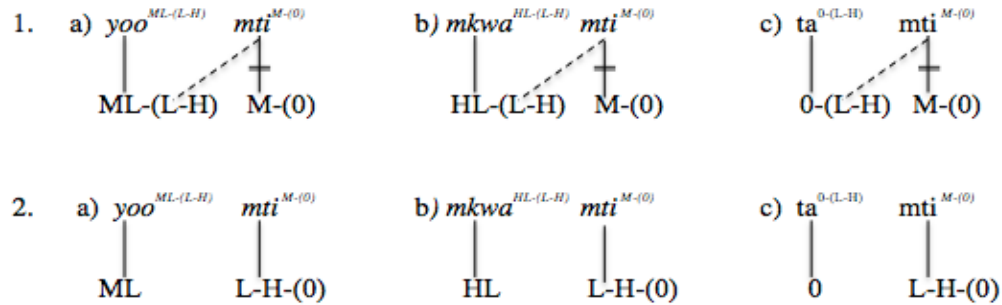


Figure 4.37: Linking of the /-(L-H)/ sequence on set B /M-(0)/

The following steps occur in Figure 4.37 1(a), (b) and (c); The floating /-(L-H)/ tone sequence of word₁ links to word₂ and the lexical tone sequence of word₂ delinks. In 2(a), (b) and (c) the tone sequence of word₂ becomes /L-H-(0)/ of set D.

4.7 Tone sets H /0-(L-H)/ and Bi /0/

The tones of the sets H /0-(L-H)/ and Bi /0/ contain super high tones and they are different in many ways. Set H is found in potential and habitual verbal aspects and many non-verbal lexemes. Set Bi /0/ is specialized for the inflectional category of 1SG with verbs, inalienable nouns and non-verbal predicates. Set Bi does not have any floating tone; however, it does cause the toneless set (X) to raise to [M] as an assimilation effect. Set H /0-(L-H)/ exhibits an ascending floating tone that generates an array of sandhi effects that includes the linking of /-(L-H)/ to toneless stems and words of set B /M-(0)/ and the realization of the OCP tone classes with sets C, F and H that results in the generation of the upstepped super high tone [0↑]. These two tones generate different sandhi outcomes but because they are both super high tones they suffer similar sandhi changes when preceded

by the same lexical tone sets. The following examples demonstrate these facts.

Figure 4.38 shows how $sko\uparrow^{0-(L-H)}$ ‘grasshopper’ (set H) suffers dissimilation when preceded by sets B /M-(0)/, D /L-H-(0)/ and K /ML/.

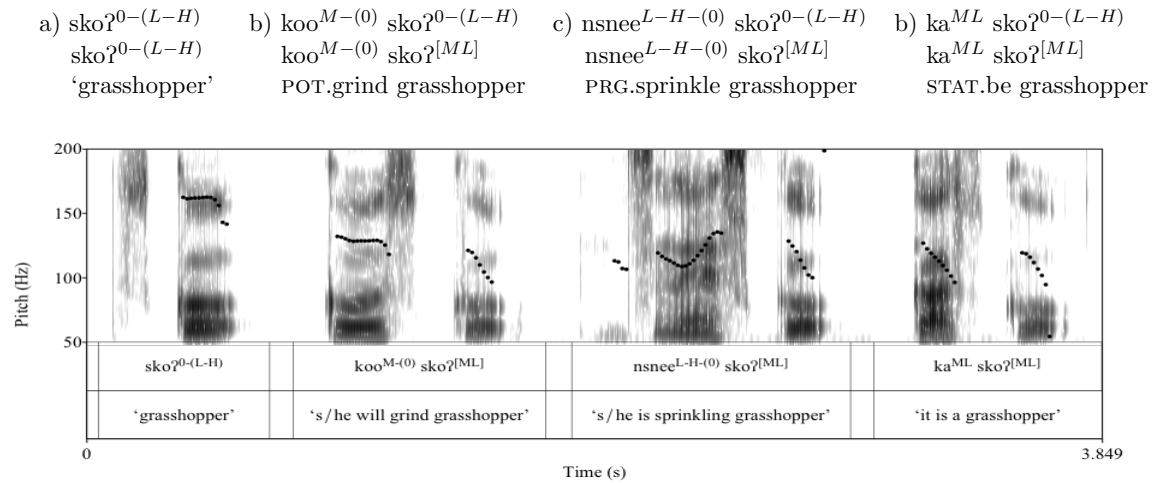


Figure 4.38: Dissimilation of tone Set H with B, D and K

Figure 4.39 demonstrates a similar sandhi effect with the other super high tone on $ya\uparrow^{0}$ ‘my hand’ of set Bi.

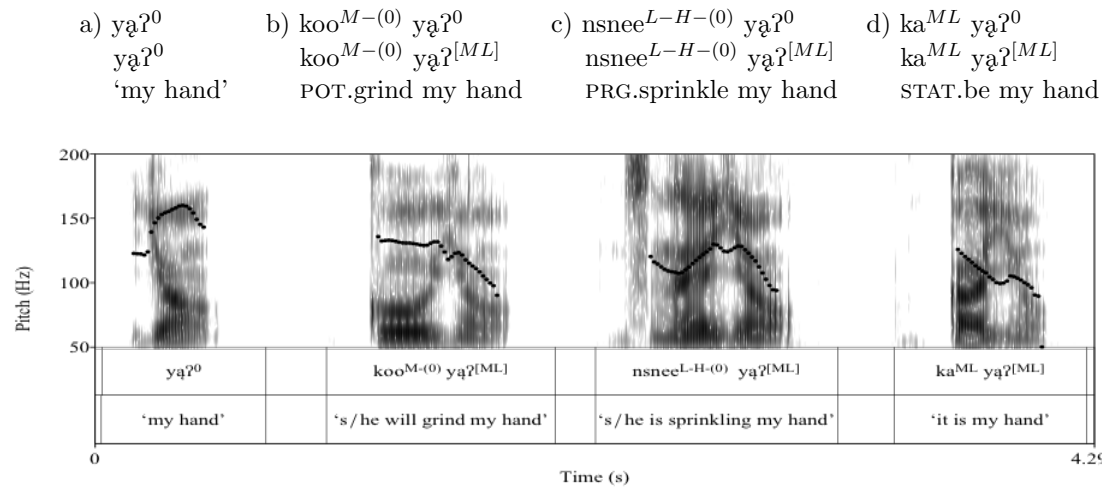


Figure 4.39: Dissimilation of tone Set Bi with B, D and K

Sets Bi and H both have high pitch registers that are lowered by sets B, D and K. Table 4.7 outlines the sandhi effects on the two super high tones of TEO.

Table 4.7: Sandhi Rules for Sets H and Bi

Set	$2^{nd} \rightarrow$	H	Bi
$1^{st} \downarrow$	tone	/0-(L-H)/	/0/
B	/M-(0)/	[ML]	[ML]
D	/L-H-(0)/	[ML]	[ML]
K	/ML/	[ML]	[ML]

The following single rule can account for the OCP sandhi effect described for the sets H and Bi preceded by B, D and K.

10. $0 \rightarrow ML / -(0) \text{ or } ML _$

4.8 *In situ* tone sandhi

Phonetic changes in TEO generally propagate from left to right, manifesting their sandhi effect on the adjacent lexeme or further along in the speech stream. A type of sandhi exists in TEO that in certain contexts blocks the ascending floating tone sequence from moving rightward causing it to partially realize itself *in situ*.

- | | | |
|---|---|--|
| <p>a) $yoo^{ML-(L-H)}$
 $yoo^{ML-(L-H)}$
 COM.grind</p> | <p>b) $yoo^{ML-(L-H)} ska^{ML}$
 $yoo^{[MH]} ska^{ML}$
 COM.grind sugar</p> | <p>c) $yoo^{ML-(L-H)} ndq^{MLM}$
 $yoo^{[MH]} ndq^{MLM}$
 COM.grind your leg</p> |
|---|---|--|

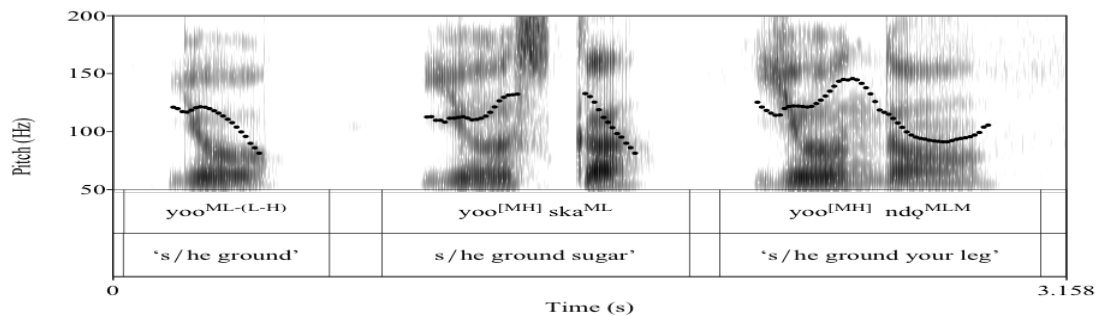


Figure 4.40: *In situ* tone sandhi with tone /ML-(L-H)/ - Set C

As previously noted the ascending floating tone sequence /-(L-H)/ links to toneless stems (§4.2.3) and stems of set B /M-(0)/ (§4.6.2) or creates OCP clashes with preceding ascending /-H/ tones of set E and J and floating /-(L-H)/ tone sequence of sets C, F, and H resulting in the production of an upstepped super high [0↑] pitch on the following word (§4.3). *In situ* sandhi appears to be created by the tone sequences of sets K /ML/ and Bii /MLM/ which block the ascending unlinked tone /-(L-H)/ of sets C, F and H as they attempt to move rightward forcing them to partially realize themselves on their base stem. Figure 4.41 is an autosegmental representation of the sandhi changes that occur in Figure 4.40.

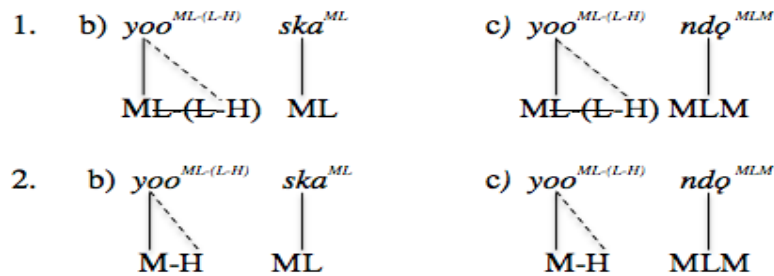


Figure 4.41: *In situ* sandhi on Set C /ML-(LH)/

In Figure 4.41, above, the tone of word₂ in 1(b) and (c) blocks the floating tone sequence /-(L-H)/ of word₁ and the adjacent /L/ tones of word₁ delink. In 2(b) and (c) the tone sequence of word₁ becomes [M-H].

In both instances, above, we can see that the ascending floating tone suffers a kind of tone repulsion. This causes the adjacent /L/ tones to delink in an OCP no adjacency rule resulting in the remaining unlinked /-H/ tone linking on its own stem producing an ascending [MH] pitch. Figure 4.42 shows this same phenomenon with lexemes from tone set F /HL-(L-H)/. However in this configuration the remaining /H/ tone on the left edge of word one is lowered to a linked [M] tone. Figure 4.42 presents this process with *mkwa*^{HL-(L-H)} of set F.

- a) $mkwa^{HL-(L-H)}$ b) $mkwa^{HL-(L-H)}$ ska^{ML} c) $mkwa^{HL-(L-H)}$ ndq^{MLM}
 $mkwa^{HL-(L-H)}$ $mkwa^{[MH]}$ ska^{ML} $mkwa^{[MH]}$ ndq^{MLM}
COM.sweep COM.sweep sugar COM.sweep your leg

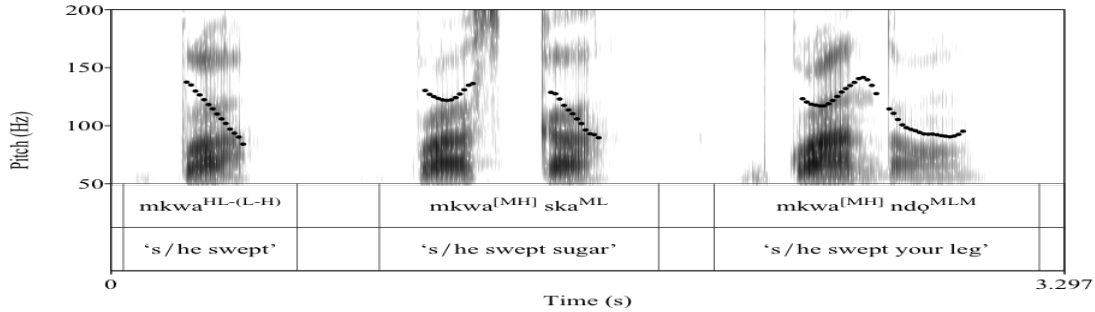


Figure 4.42: *In situ* tone sandhi with tone /ML-(L-H)/ - Set F

Figure 4.43 is an autosegmental rendering of the sandhi changes that occur in Figure 4.42.

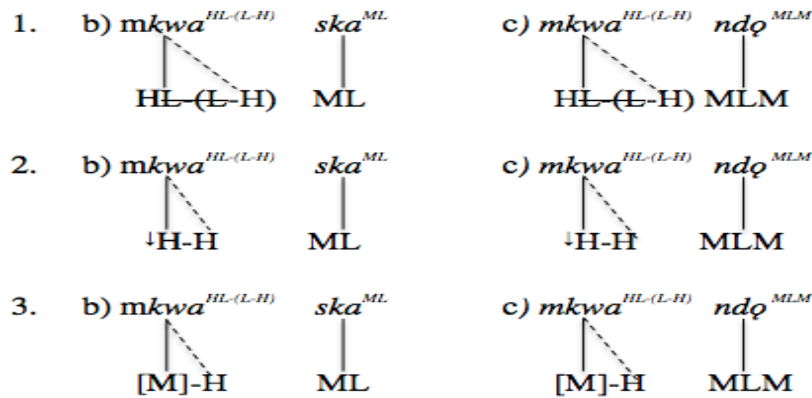


Figure 4.43: *In situ* sandhi on Set F /HL-(LH)/

The autosegmental representation in 4.43 produces the same outcome as in Figure 4.41 with the addition of one step. in 1(b) and (c) the tone of word₂ blocks the floating tone sequence /-(L-H)/ of word₁ and the adjacent /L/ tones of word₁ delink in an OCP no adjacency rule, in 2(b) and (c) the linked /H/ tone of $mkwa^{HL-(L-H)}$ is lowered to [M] in an OCP no adjacency rule on the two /H/ tones, in 3(b) and (c) the output tone sequence of word₁ becomes [M-H]. The above sandhi changes can be expressed with simplified rule (11). 11. T-(L-H) → [MH] / — ML or MLM.

4.9 Summary

Sandhi changes of Teotepéc Chatino involve a combination of OCP restrictions and a set of rules to achieve a given output represented by autosegmental processes. Autosegmental changes are produced with the interaction of the linking of the unlinked tones. These include the super high tone /-(0)/ of sets B /M-(0)/ and D /L-H-(0)/, the unlinked high tone /-H/ of sets E /L-H/ and J /M-(H)/ and the unlinked ascending sequences /-(L-H)/ of sets C /ML-(L-H)/, F /HL-(L-H)/ and H /0-(L-H)/. Further changes brought about by OCP prohibitions on identical adjacent sequences are based on the adjacency of contiguous lexical tones or are the result of the linking of the unlinked underlying floating tones which produce prohibited sequences like: [L, L], [M, M], [H, H] and [LH, LH]. It appears that a hierarchy may exist in the ordering of elimination of such sequences; the lowest adjacent tones are eliminated first from the inside of a given sequence following the rule of thumb “inside out, low to high.” The results of these prohibitions produces an array of the phonetic outputs outlined in this chapter. Rules of the format: $T \rightarrow T / T _$ (T=tone) illustrate superficial phonetic changes and do not capture the underlying linking and delinking patterns that exist in the language. Thus the autosegmental representations of the OCP prohibitions and the use of the rules outlined here work together to produce a given output. As Chapter 5 unfolds these processes continue to be essential to the analysis of the long distance sandhi.

The following list outlines the relevant sandhi rules from this chapter. Because some rules were modified as the analysis developed only the relevant rules are listed.

- 2) $M-(H) \rightarrow /L-H/ / T _$ except /M-H/ or /L-H/
- to account for set J /M-(0)/ becoming /L-H/
- 3) $T-(LH) \rightarrow 0\uparrow / -H$ or $-(H) _$
- for sets C, F and H preceded by the /-H/ tone of sets C, F, H, J and E
- 6) $L-H \rightarrow HL / L-H _$
- OCP tone clash between sets J and E with J and E

- 7) L-H-(0) → /M-(0)/ / L-H ___
 - phonemic rule changing the set of tone D to set B
- 8) M, M-(0), 0-(L-H), 0 → +DES / -(0) ___
 - phonetic OCP dissimilation rule operating on sets A, B, H and Bi
- 9) M → ML / M ___
 - phonetic OCP dissimilation rule operating between set A and A
- 10) 0 → ML / -(0) or ML ___
 - phonetic rule of sets B, D and K operating on sets B and D
- 11) T-(L-H) → MH / ___ ML or MLM
 - phonetic *in situ* sandhi rule pushing the ascending tone sequence /-(L-H)/ back on its base of sets C and F
- Last rule: ∅ → ML - Phonetic rule where all toneless words go to [ML] by default

4.9.1 Phonetic and phonemic rules

Table 4.8 presents a summary of the second position phonetic and phonologic outputs for simplex words in Teotepec Chatino. The first column, on the left, presents the first tone in a given set and the top row presents the second tone; where they cross represents a given sandhi change. The first column (X) shows all the effects on the toneless words. From left to right one can observe how tone sets (B) and (D), (C), (F) and (H), and (E) and (J) generate similar sandhi effects. In almost all instances tone changes operate from left to right; however, there are four examples (highlighted gray) where the change occurs on the first lexeme, representing *in situ* sandhi. All of the changes marked in brackets [T] are phonetic and changes marked in slashes /T/ are phonemic representing stem changes that include changing to another tone set.

Table 4.8: Tone Sandhi for Second Position Simplex Words

Set	2^{nd} tone \rightarrow 1^{st} tone \downarrow	Phon. Rep.	X	A	B	D	C	F	H	E	J	G	Bi	I	Bä	K
			/Ø/ /M/ [ML]	/M/ [ML] [ML]	/M-(0)/ [ML] [ML]	/L-H-(0)/ - -	/ML-(L-H)/ - [0†] [0†] [0†]	/HL-(L-H)/ - [0†] [0†] [0†]	/0-(L-H)/ - [0†] [0†] [0†]	/L-H/ - [ML] [ML]	/M-(H)/ - -	/HM/ - -	/0/ - -	/MH/ - -	/MLM/ - -	/ML/ - -
X	/Ø/	[ML]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	/M/	[M]	-	[ML]	-	-	-	-	-	-	-	-	-	-	-	-
B	/M-(0)/	[M]	[0]	[ML]	[ML]	-	-	-	[ML]	-	-	-	[ML]	-	[M]	-
D	/L-H-(0)/	[MH]	[0]	[ML]	[ML]	-	-	-	[ML]	-	-	-	[ML]	-	[M]	-
C	/ML-(L-H)/	[ML]	/L-H/	-	/L-H-(0)/	-	[0†]	[0†]	[0†]	-	-	-	-	-	[MH]	[MH]
F	/HL-(L-H)/	[HL]	/L-H/	-	/L-H-(0)/	-	[0†]	[0†]	[0†]	-	-	-	-	-	[MH]	[MH]
H	/0-(L-H)/	[H]	/L-H/	-	/L-H-(0)/	-	[0†]	[0†]	[0†]	-	-	-	-	-	-	-
E	/L-H/	/LH/	[M]	-	/M-(0)/	[0†]	[0†]	[0†]	[0†]	[ML]	[ML]	-	-	-	-	-
J	/M-(H)/	[M]	[M]	-	/M-(0)/	[0†]	[0†]	[0†]	[0†]	[ML]	[ML]	-	-	-	-	-
G	/HM/	[HM]	[M]	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi	/0/	[H]	[M]	-	-	-	-	-	-	-	-	-	-	-	-	-
I	/MH/	[MH]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bä	/MLM/	[MLM]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	/ML/	[ML]	-	-	-	-	-	-	[ML]	-	-	-	[ML]	-	-	-

Chapter 5

Long Distance Tone Sandhi

Up to this point, we have discussed sandhi only in terms of a two-word window. Let us call that ‘local sandhi.’ In this chapter I consider sandhi that must be discussed within a window or domain of three or more words. I will call that ‘long distance sandhi.’ In particular, this involves effects between tone-bearing words that are separated by one or more toneless stems. This chapter describes these processes and distinguishes the difference between LD sandhi, local sandhi and changes based on the linking of linked and unlinked tones and tone sequences. The sandhi patterns of third+ position lexemes are outlined and contrasted with that of second position changes in order to describe the *outer limits* of the sandhi system. Processes of tone up-step, declination and catathesis are presented at the end of this chapter, followed by a table that outlines the Chatino cognate tone sets and a table that identifies the typology of the tonal elements of TEO outlining tone specialization and lexical provenance of tone in the grammar.

5.1 Introduction

The beginning of the previous chapter started with a presentation of the toneless words and their interaction with the linked and unlinked tone sequences in order to demonstrate their role as a diagnostic tool in this analysis. Toneless words are not just subject to the linking effects of floating and delinked tones but can be transparent to these changes

as given delinked or unlinked tone sequences pass over as many lexemes necessary until the sandhi tone encounters a recipient. A recipient can be defined as a tone that will receive a delinked or unlinked tone sequence in a given context. Generally, tone recipients are the same tone sequences that generate tone sandhi through the linking of the unlinked tone sequences associated with given lexical stems; they include Sets C, F, H, E, J, B and D. Set X also behaves as a quasi-recipient in certain situations; however, because toneless lexemes do not generate any sandhi changes they shall continue to be considered simply toneless.

5.2 Ascending /-(L-H)/ tone spread on 2nd+ position toneless stems

Figure 5.1 presents data to set up the phenomena of floating tones applied over the distance of two toneless words before reaching a sandhi target. In 5.1(a) the verb *jyku* ‘s/he ate,’ from Set X /Ø/, precedes the lexeme *yja* ‘tortilla,’ of the same set. In examples 5.1(b) and (c) the toneless words are followed by demonstrative pronouns from Set F, /HL-(L-H)/ *re*^{HL-(L-H)} ‘this’ and *kwa*^{HL-(L-H)} ‘that,’ respectively. As expected, the two adjacent toneless words, in (a), show declination (§5.7.2); however, because these sentences begin with toneless words there is no change in pitch on the final lexemes of (b) and (c).

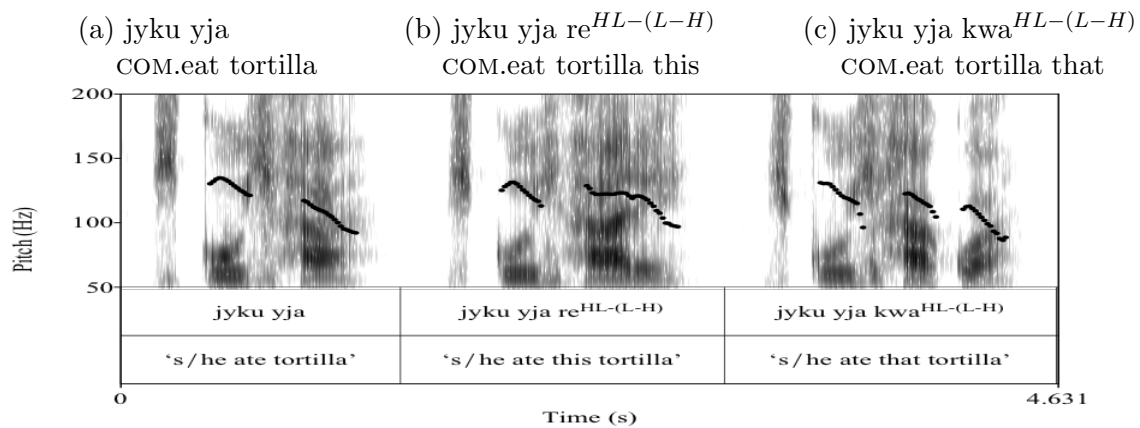


Figure 5.1: Long distance tone sandhi - Sets XX and XXF

To continue the set up for the long distance sandhi effect, Figure 5.2 presents the linking of the unlinked ascending tone /-(L-H)/ on the same base sentence as above in 5.1(a); however, this example begins with the demonstrative pronoun *nu-kwa*^{HL-(L-H)} ‘he/she’ (NOM-DEM.3SG) of tone set F /HL-(L-H)/.

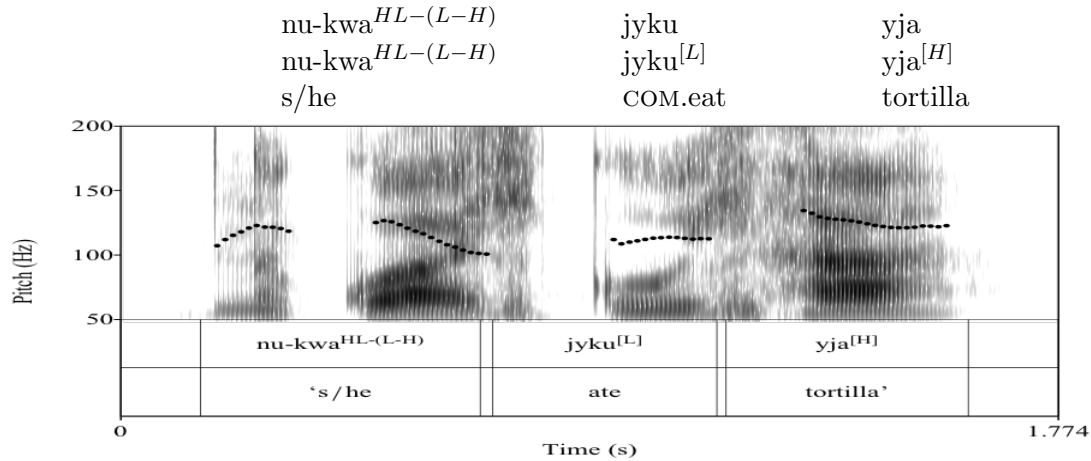


Figure 5.2: Long distance tone sandhi - Set F on X

This process is first presented in §4.2.3 and outlines the linking of the /-(L-H)/ tone on a toneless lexeme where the ascending floating tone sequence is realized over the two toneless lexemes. First the pitch of *jyku* ‘s/he ate’ is changed to /L-H/ of set E and then the pitch of *yja* ‘tortilla’ is changed to [H] through the linking of the delinked /-H/ tone of /L-H/. This is demonstrated in the autosegmental rendering of Figure 5.3.

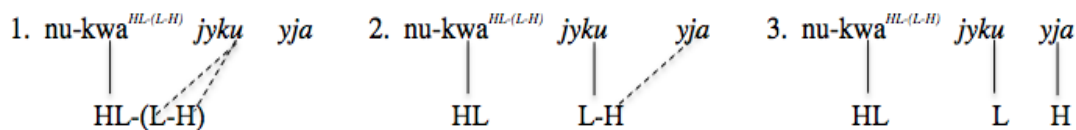


Figure 5.3: Linking of the ascending sequence /-(L-H)/

In Figure 5.4, the ascending floating tone /-(L-H)/ links to *jyku* ‘s/he ate’ and the /-H/ tone is delinked and moves rightward thereby raising the tone of *yja* ‘tortilla’ and the being realized on the final demonstrative pronoun *re*^{HL-(L-H)} of set F through the use of

rule (3) T-(LH) \rightarrow 0 \uparrow / -H or -(H) ____ . This process was first presented in §4.4 in Figs. 4.29 and 4.30.

nu-kwa ^{HL-(L-H)}	jyku	yja	re ^{HL-(L-H)}
nu-kwa ^{HL-(L-H)}	jyku ^[L]	yja ^[H]	re ^[0\uparrow]
s/he	COM.eat	tortilla	this

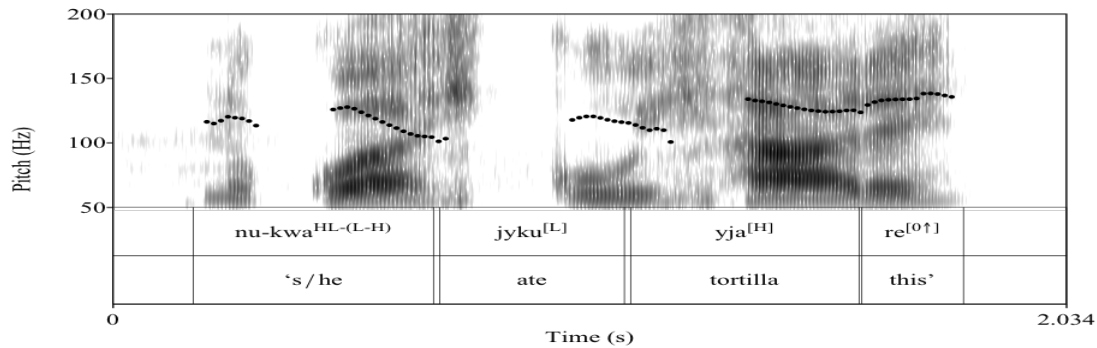


Figure 5.4: Long distance tone sandhi - Set F on F

Figure 5.5 is an autosegmental breakdown of the sandhi changes depicted in Fig. 5.4.

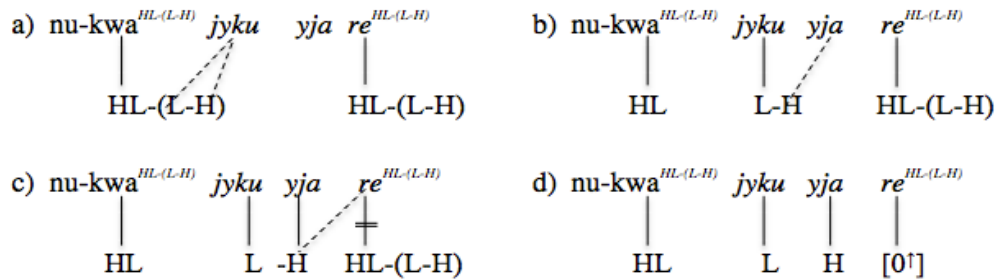


Figure 5.5: Linking of the ascending sequence /-(L-H)/

In 5.5(a) the ascending unlinked tone moves rightward linking onto *jyku* converting its pitch to /L-H/ of set E. In 5.5(b) the /-H/ tone is delinked and linked to *yja* raising its pitch to [H]. In 5.5(c) the /-H/ tone of /L-H/ continues moving rightward. The base tone of *re*^{HL-(L-H)} delinks and the delinked /-H/ and the ascending /-(L-H)/ sequences clash realizing the upstepped super high [0 \uparrow] tone per the OCP sandhi rule (3) T-(LH) \rightarrow 0 \uparrow / -(H) or -H ____ .

Figure 5.6 presents the same process as above in a four-word window beginning with set C /ML-(L-H)/ and ending with F /HL-(L-H)/ framing two medial toneless words.

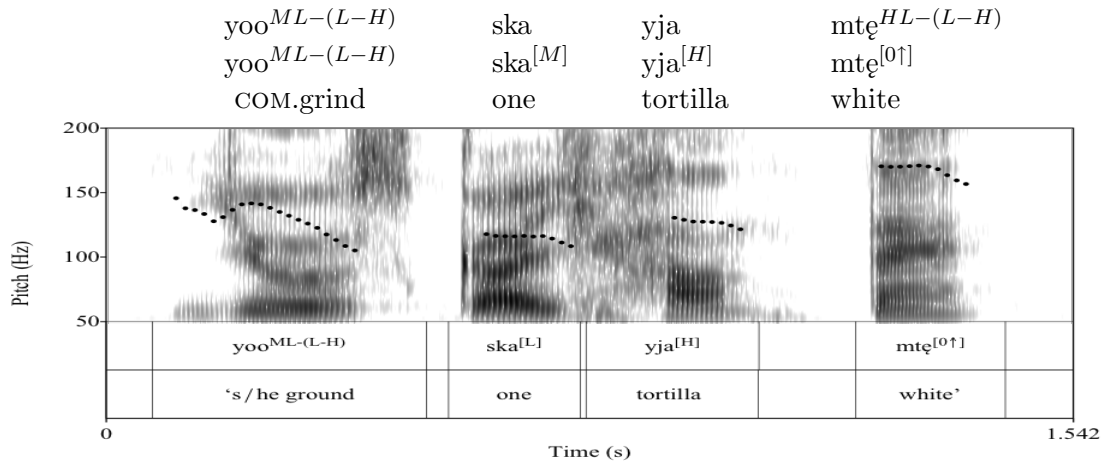


Figure 5.6: Long distance tone sandhi - Set C on F

Figure 5.7 presents the same process as above with sets H /0-(L-H)/ and H /0-(L-H)/ framing the two medial toneless words.

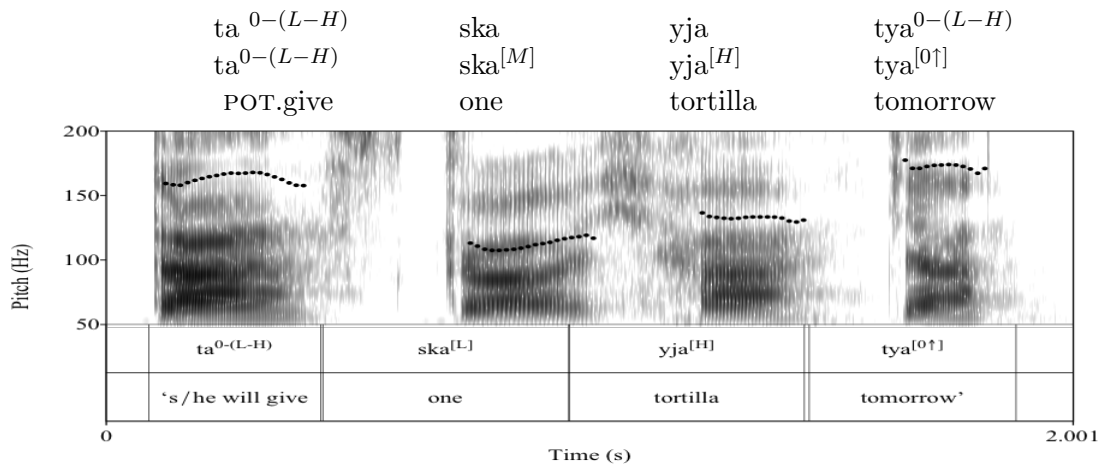


Figure 5.7: Long distance tone sandhi - Set H on H

If there is one or more contiguous toneless lexemes following one instance of a sandhi propagating tone sequence then the ascending floating tone will *overtly* link on the first tone-

across the following toneless stems until it lands on the final word realizing the OCP tone clash. In 5.9(c) the spreading of the /-H/ tone leaves an assimilatory [M] tone pitch on *nu* ‘that’ as it moves rightward before linking on the final word where it creates the upstepped super high tone [0↑].

Because the first instance of the ascending unlinked tone /-(L-H)/ on the toneless set converts the pitch of the second position toneless word to tone set E /L-H/ the propagation of the linked /-H/ tone across more than one toneless lexical item adheres to a property of overtly spreading only the delinked /-H/ across the toneless lexemes until it finds the end of the phrase or a tone recipient. Overt spreading only occurs when two or more toneless simplex words follow one instance of the propagating tone sequences C, F or H.

Copying or spreading of whole lexical tones is reported in Lalana Chinantec, the Chinese dialects of Changzhi and Danyang, and with contour tones of Zhenhai (Yip, 2002:54-55). As presented in Figure 4.8 of §4.2.3, Figs. 5.3, 5.5 and 5.9 and again here in Figure 5.10, in TEO, the copying of a whole unlinked tone /-(L-H)/ occurs in the first instance of a toneless stem following a word from set C /ML-(L-H)/, F /HL-(L-H)/ and H /0-(L-H)/.

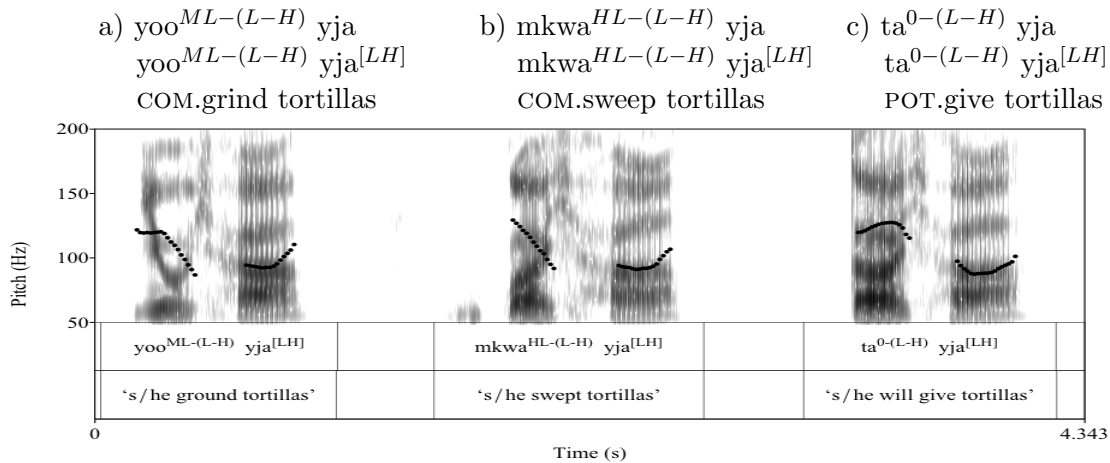


Figure 5.10: Linking of unlinked ascending tones

The final example of this section, Figure 5.11, presents an example of an unbound OCP tone clash of rule (3) $T-(L-H) \rightarrow 0\uparrow / -(H)$ or $-H _$ applied to two ascending floating tones $-(L-H)/$ adjacent on the tonal tier in phrase final position.

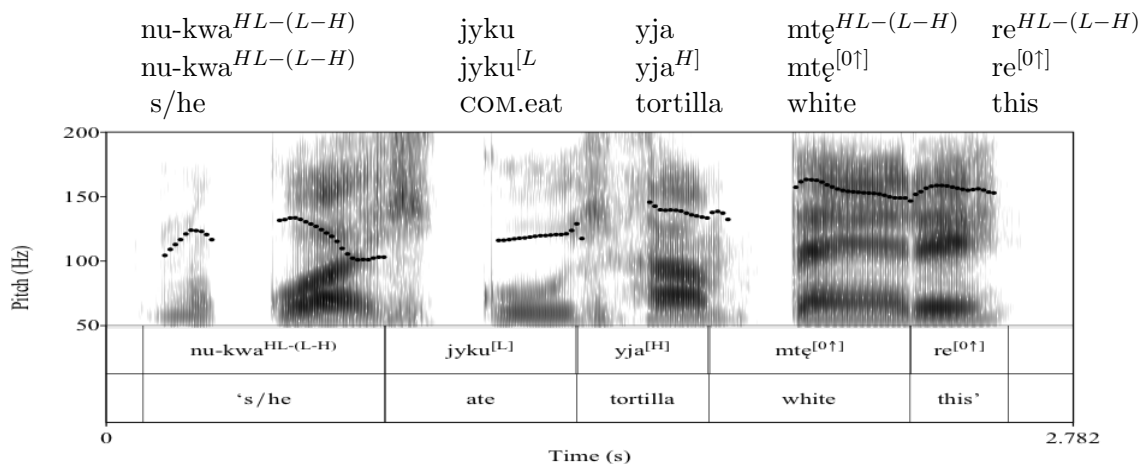


Figure 5.11: Long distance tone sandhi - Set F on F + F

Figure 5.12 presents an autosegmental rendering of Fig. 5.11.

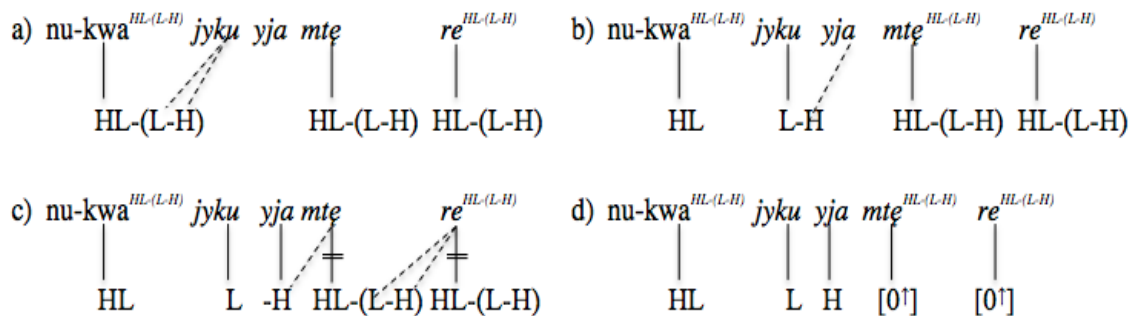


Figure 5.12: Linking of $-(L-H)/$ on Set Sequence FXXFF

Figure 5.12 presents the expected linking process of the ascending $-(L-H)/$ tone and subsequent spreading of the $-H/$ tone on the toneless stems as established throughout this section. In 5.12(c) the interaction of two the adjacent lexemes with the tone sequences $/HL-(L-H)/$ presents the accumulation of the sequence tones $/-H, HL-(L-H), HL-(L-H)/$

which produce to upstepped super high [0↑]. In this example the first /-H/ tone in this grouping comes from the delinking of the /-H/ tone from the ascending tone /-(L-H)/ at the onset of the phrase and the following two HL-(L-H) tone sequences are lexical tones linked to the stem.

The upstepped super high tone [0↑] is the result of the OCP prohibition on identical adjacent items which has been expressed in Chapter 4 with rule (3) T-(L-H) → 0↑ / -(H) or -H __. This is presented here to outline this process and because in the following §§5.3 and 5.4 I present this same interaction of unbound tones at the onset of the phrases to outline a restriction of the rightward movement of the ascending tone /-(L-H)/ on the third position toneless stems referred to as *covert* spreading.

5.3 Ascending /-(L-H)/ tone spread on 3rd+ position toneless stems

Up to this point in the tone description I have presented second position tone sandhi that is essentially a *local* interaction between adjacent first and second position simplex words. The examples above show that intervening toneless words overtly reflect the autosegmental process of linking and spreading of the ascending floating tone /-(L-H)/ when in second position after sets C, F and H. Because the toneless simplex words are transparent, the effect of a floating tone on a phrase final sandhi recipient with intervening toneless stems is as if the final stem was realizing a second position sandhi change. *Overt* tone spreading always occurs when there is one or more toneless simplex word in second position after a single instance of a sandhi propagating tone set word.

What happens when the toneless lexemes are in third position after a given sandhi change has already taken place? Certain configurations of spreading onto adjacent toneless simplex words *disappear*, becoming *covert*, when two contiguous sandhi propagating lexemes that possess a sandhi creating linked tone sequence or a floating tone sequences occur before the toneless simplex word. In many of these cases the OCP tone changes still continue. In

the following material I outline the restrictions of LD sandhi and discuss the parameters of the role of toneless simplex words in third+ position.

5.3.1 Third+ position sandhi with sets X and C

As outlined in the previous section and seen in §4.2.3 (Fig.4.7) the ascending floating tone /-(L-H)/ links to the first instance of a toneless stem and when two tones from sets C /ML-(L-H)/, F /HL-(L-H)/ or H /0-(L-H)/ occur together the output is an upstepped super high [0↑] pitch on the second position lexeme. Figure 5.13 presents both of these outcomes. Figure 5.13(a) presents a two-word window with sets C /ML-(L-H)/ and X /Ø/ where the ascending floating tone of $yoo^{ML-(L-H)}$ changes the pitch of the toneless word yja to /L-H/.

- | | |
|--|---|
| <p>a) $yoo^{ML-(L-H)}$ yja
 $yoo^{ML-(L-H)}$ $yja^{[LH]}$
 COM.grind tortillas</p> | <p>b) $waʔ^{ML-(L-H)}$ $yoo^{ML-(L-H)}$ yja
 $waʔ^{ML-(L-H)}$ $yoo^{[0↑]}$ yja
 already COM.grind tortillas</p> |
|--|---|

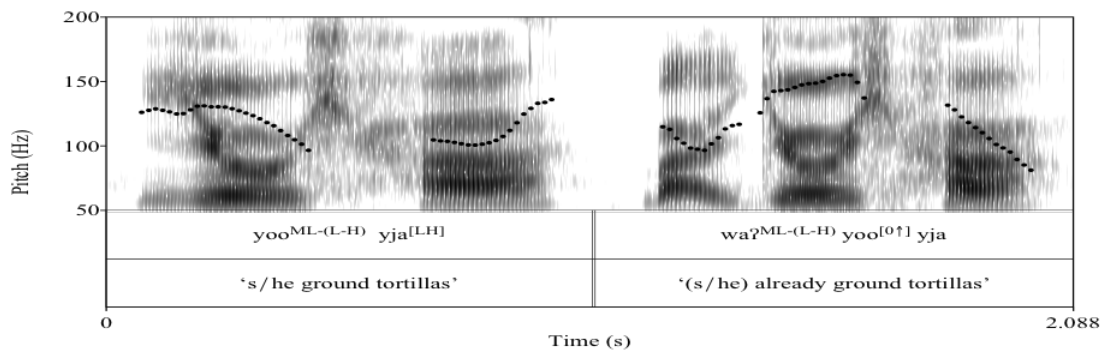


Figure 5.13: Second and third position sandhi - Sets CX and CCX

5.13(b) shows a three-word window where the unlinked ascending floating tone of the first word $waʔ^{ML-(L-H)}$ ‘already’ creates the OCP tone clash on $yoo^{ML-(L-H)}$, in second position, where the resulting pitch is [0↑] per rule (3) T-(L-H) → [0↑] / -(H) or -H __. The toneless word (yja ‘tortilla’) in final position is not affected whatsoever.

In §5.2 I showed that through overt spreading the ascending floating tone spreads rightward when followed by a toneless simplex word changing the pitch of the first toneless stem to /L-H/ of set E and if there are more toneless lexemes the /-H/ of that tone spreads rightward until it finds a recipient or the end of the phrase. In the above example it appears that there is a restriction for this kind of spread to occur only when the toneless word is contiguous with one instance of a word that possesses unlinked tone. Figure 5.14 presents a four word window, building on the above examples, to show what occurs when a toneless simplex word is in third position and there is a floating tone recipient at the end of a given phrase.

c) $wa\uparrow^{ML-(L-H)}$ $yoo^{ML-(L-H)}$ yja $kt\text{si}^{ML-(L-H)}$
 $wa\uparrow^{ML-(L-H)}$ $yoo^{[0\uparrow]}$ yja $kt\text{si}^{[0\uparrow]}$
 already COM.grind tortilla yellow

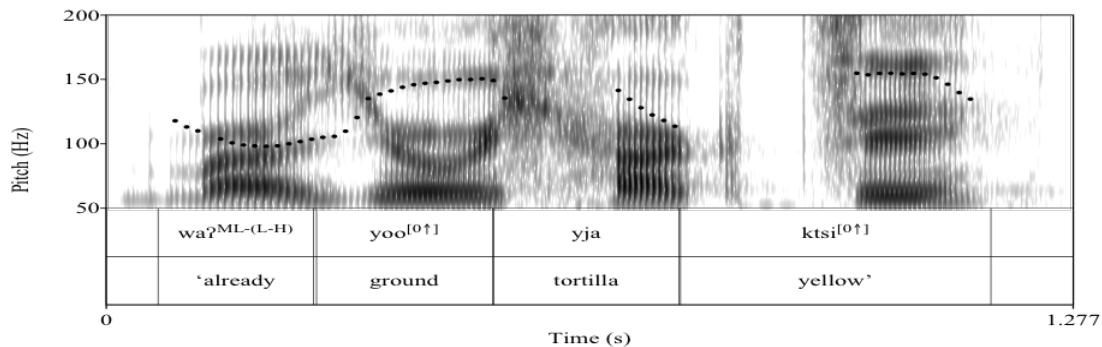


Figure 5.14: Third position sandhi - Sets CCXC

In Figure 5.14 we can see that an unbound sequence of adjacent tones from set C /ML-(L-H)/ creates the upstepped super high pitch on the second word and the toneless stem does not exhibit any change in pitch; however, the ascending floating tone of $yoo^{ML-(L-H)}$ does pass over the toneless stem without any spreading effect and links itself on the word in final position where it realizes the OCP tone clash from rule (3) T-(L-H) \rightarrow $[0\uparrow]$ / -(H) or -H __. Figure 5.15 presents an autosegmental representation of this process.

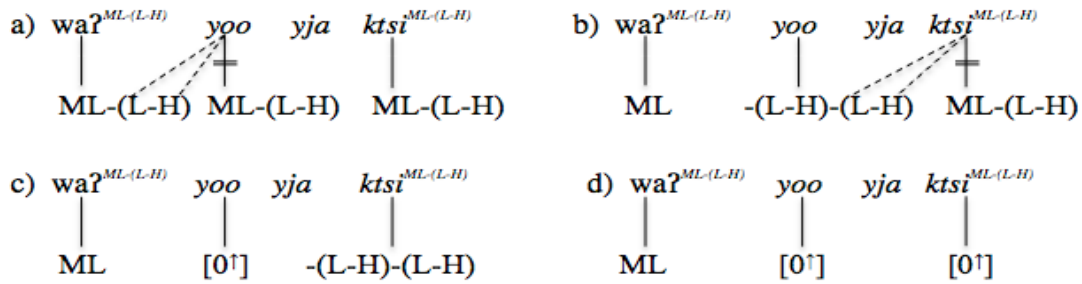


Figure 5.15: Covert linking of the unlinked ascending tone /-(L-H)/

5.3.2 Third+ position sandhi with sets X and F

This same process also exists for the ascending floating tone of set F /HL-(L-H)/. Figure 5.16(a) presents a two-word window with tones from sets F /HL-(L-H)/ and X /Ø/ and (b) presents a three-word window with two contiguous tones of set F and one from X.

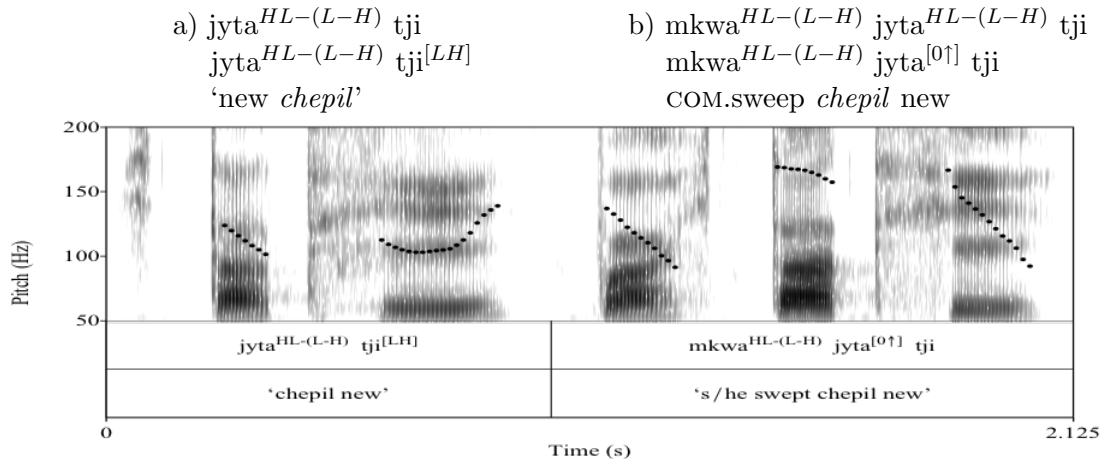


Figure 5.16: Second and third position sandhi - Sets FX and FFX

And as noted in Figure 5.14, the ascending floating tone sequence that originates from the second position lexeme also makes its way to the final lexeme without changing the pitch of the toneless stem. Figure 5.17 presents a four-word window with two contiguous F set tones at the onset, one X set stem and a final F set word.

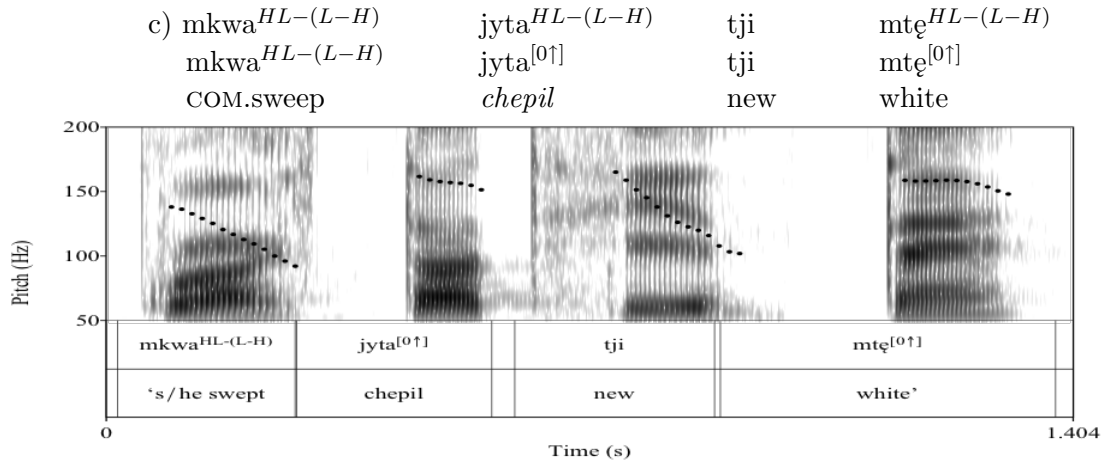


Figure 5.17: Third position sandhi - Sets FFXF

When sets C and F have already realized the OCP sandhi tone clash rule (3) T-(L-H) \rightarrow $[0\uparrow]$ / -(H) or -H $___$ at the onset of a phrase there is no change on the third position toneless stem. This configuration demonstrates a type of restriction for overt spreading of the ascending floating tone sequence onto toneless stems.

5.3.3 Third+ position sandhi with sets X and H

Because tone set H /0-(L-H)/ also has the same ascending floating tone sequence it makes sense to conclude that the overt spread of the floating tone becomes *covert* following two contiguous H set tones preceding toneless words; however, this is not the case.

Figure 5.18 shows that the overt spread of the floating tone sequence continues to occur on toneless lexemes after the OCP rule (3) has operated on two contiguous H set stems preceding a toneless simplex word. 5.18(a) presents a two-word window with words from tone sets H /0-(L-H)/ and X / \emptyset /. And as expected the derived tone of the second position toneless word *tji* 'new' becomes /L-H/ from set E. Building on (a) 5.18(b) presents a three-word window with two adjacent H set tones and one toneless word. Contrary to

what has been presented for sets C and F, in this context, the overt sandhi of the ascending floating tone of the second position word does link to the toneless word *tji* 'new' in the final position changing the pitch of the final word to /L-H/ from set E.

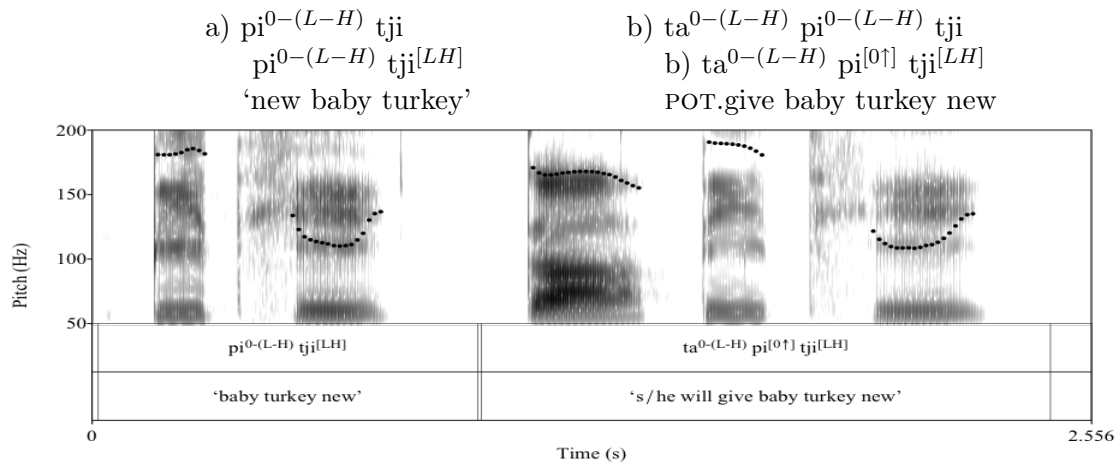


Figure 5.18: Second and third position sandhi - Sets HX and HHX

Figure 5.19 presents a four-word window that shows how the OCP tone clash does operate on the final word for the tone Set Sequence HHXH. And we can see that the third position toneless simplex word, *tji* 'new,' does rise before $tya^{0-(L-H)}$ 'tomorrow.'

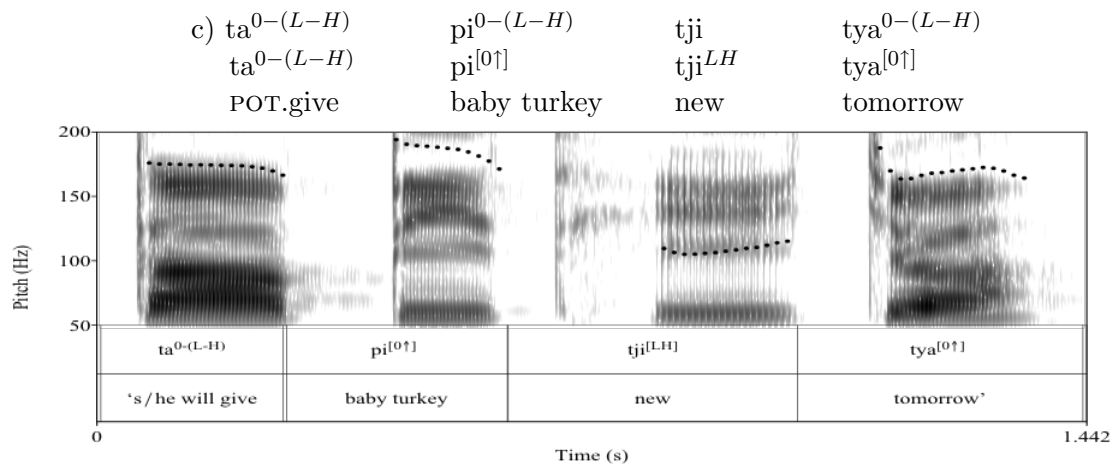


Figure 5.19: Third position sandhi - Sets HHXH

5.4 Overt versus covert floating tone sequence spread

The following pitch tracks present the difference between overt and covert floating tone sequence spread. Figure 5.20 shows the overt floating tone on a sentence with the following tone Set Sequence CXXXCC.

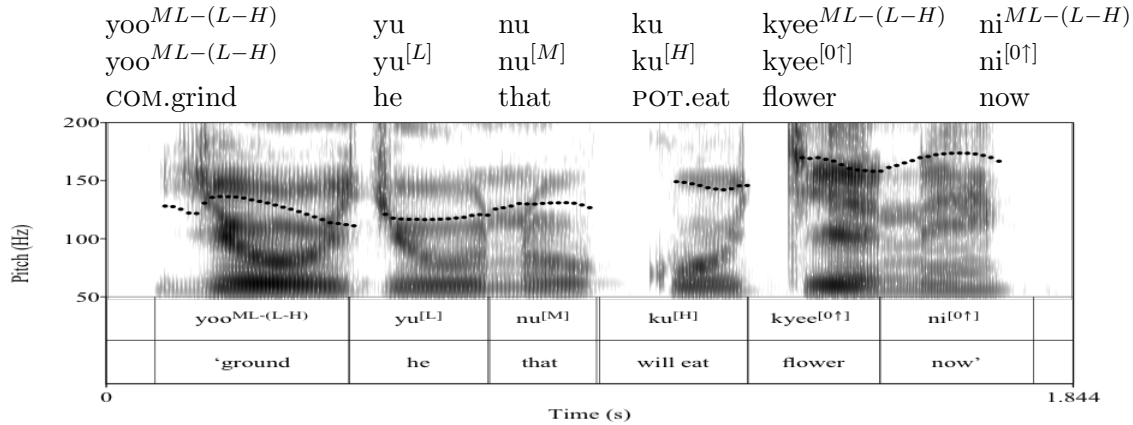


Figure 5.20: Overt linking of /-(L-H)/ on Set Sequence CXXXCC

Figure 5.21 presents an autosegmental rendering of Figure 5.20. In this configuration the /-H/ of the unlinked ascending floating tone /-(L-H)/ of set C overtly spreads across the toneless simplex words raising their pitch and then realizes a tone clash on the penultimate word. Then unbound adjacent ascending floating tones /-(L-H)/ of the penultimate and final lexemes realize the OCP clash of rule (3) T-(L-H) → [0↑] / -(H) or -H __.

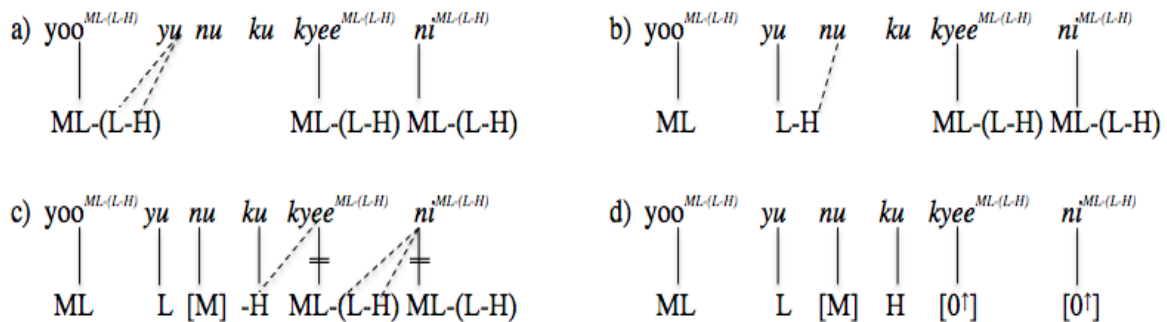


Figure 5.21: Overt linking of /-(L-H)/ on Set Sequence CXXXCC

Figure 5.22 presents covert floating tone spread on a sentence with the following tone Set Sequence FCXXXC.

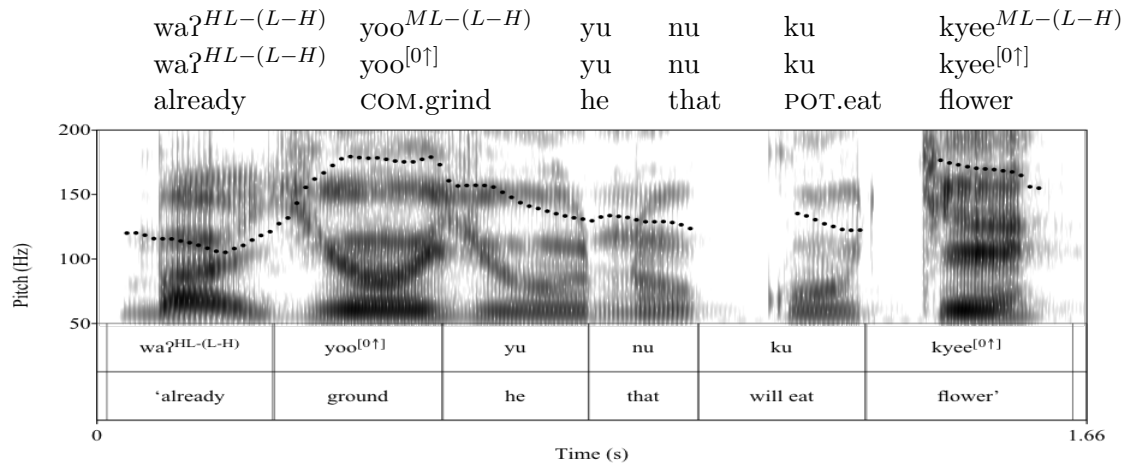


Figure 5.22: Covert Linking of /-(L-H)/ on Set Sequence FCXXXC

Figure 5.23 presents an autosegmental rendering of Figure 5.22. In (a) of this configuration,

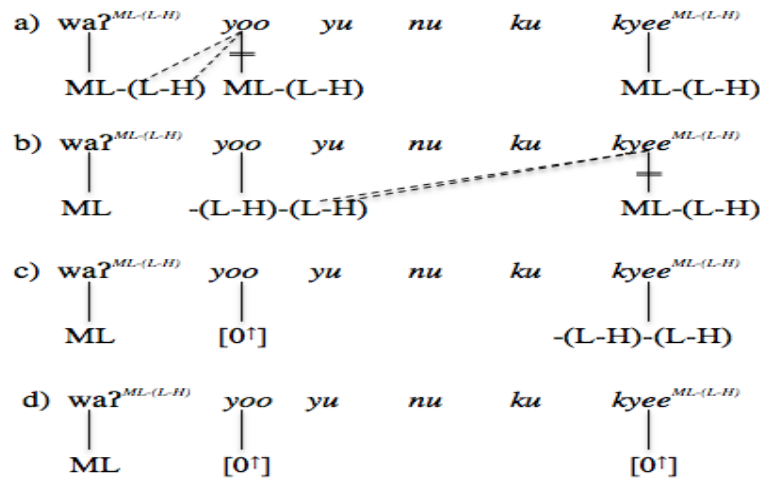


Figure 5.23: Covert Linking of /-(L-H)/ on Set Sequence FCXXXC

the unbound adjacent tones of the first two words create an OCP tone clash, in (b) the underlying ascending floating tone /-(L-H)/ of set C *covertly* spreads across the toneless simplex words, realizing no overt affect in (c). In (d) the OCP tone clash is realized on the

final word raising its pitch to [0↑].

Overt spread occurs when there is a sandhi propagating tone in the first position of a given phrase followed by two or more toneless words thereby creating an overt spreading effect of the -(L-H) floating tone sequence on the toneless lexemes (example 5.20). *Covert* spread occurs when a sandhi change that invokes rule (3) has been realized on the first two words of a given phrase followed by two or more contiguous toneless words thereby realizing no apparent *overt* spread on the toneless lexemes only to be realized when the floating tone sequence encounters a later recipient (Fig. 5.22).

Tables 5.1 and 5.2 model long distance sandhi and tone spreading patterns for tone Set Sequence C, F and H. The first column is the first tone in a given sandhi scenario. The following columns, after the double lines, are the tone sets that follow the first tone and the phonetic realization of their interaction. Table 5.1 shows that sets C and F have the same mechanisms for spreading. We get covert spread after a super high [0] (which is inert) but overt spread when a /-(L-H)/ floating tone is let loose over a stretch of toneless stems.

Table 5.1: Sandhi Spread Patterns - Sets C /ML-(L-H)/ and F /HL-(L-H)/

Overt spread - C				
1st tone	X	XX	XXC	XXXC
C - ML-(L-H)	LH	L, H	L, H, 0	L, M, H, 0
Covert spread - C				
1st tone	CX	CXX	CXXC	CXXCC
C - ML-(L-H)	0, Ø	0, Ø, Ø	0, Ø, Ø, 0	0, Ø, Ø, 0, 0
Overt spread - F				
1st tone	X	XX	XXF	XXXF
F - HL-(L-H)	LH	L, H	L, H, 0	L, M, H, 0
Covert spread - F				
1st tone	FX	FXX	FXXC	FXXCC
F - HL-(L-H)	0, Ø	0, Ø, Ø	0, Ø, Ø, 0	0, Ø, Ø, 0, 0

Table 5.2 shows that the *covert* spread does not operate in set H despite the similarity of the underlying ascending floating tone in sets C, F and H. In this case the sandhi

pattern stays overt because when you have the sequence two H set tones /0-(L-H)/ the second tone does not just turn into an inert [0] but rather keeps its floating ascending tone /-(L-H)/.

Table 5.2: Sandhi Spread Patterns- Set H /0-(L-H)/

Overt spread - H				
1st tone	X	XX	XXH	XXXH
H - 0-(L-H)	LH	L, H	L, H, 0	L, M, H, 0
Overt spread - H				
1st tone	HX	HXX	HXXH	HXXHH
H - 0-(L-H)	0, LH	0, L, H	0, L, H, 0	0, L, H, 0, 0

Figures 5.24 and 5.25 present the difference between overt versus covert spread with respect to sets F and H. In 5.24 we can see that the basic shape of the pitch on the toneless words *ska* ‘one’ and *tji* ‘new’ is not changed following the sequence of two tone set F words. Although the shape does not change, the register does. The basic shape of the toneless word is intact but the entire pitch register of the toneless lexemes is raised following the OCP tone clash of rule (3) T-(L-H) → [0↑ /] __T-(H) or -H.

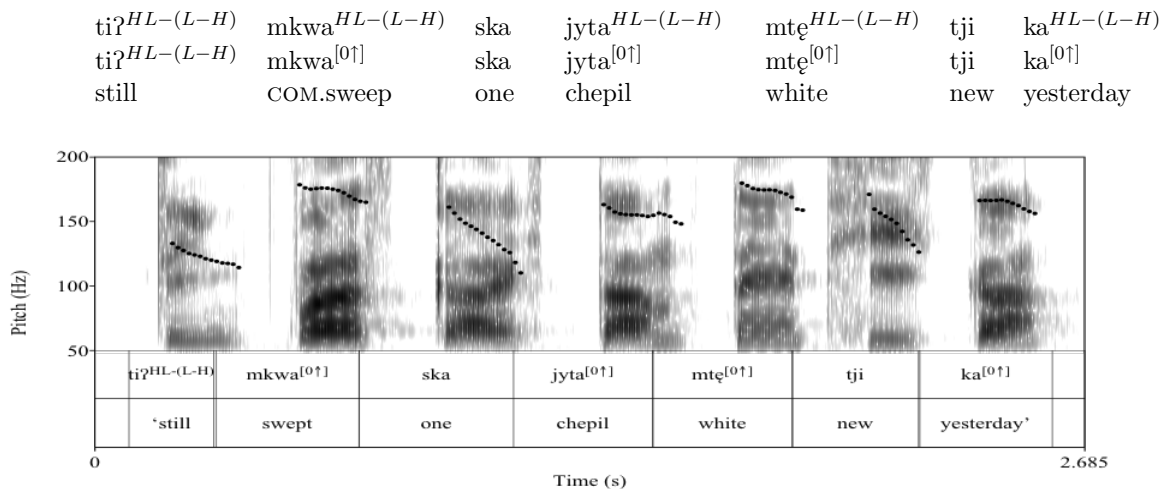


Figure 5.24: Covert floating tone spread - Set Sequence FFXFFXF

Figure 5.25 shows that covert sandhi does not occur following the realization of OCP tone clash (3) T-(L-H) → [0] / T-(L-H) or L-H — between the first two adjacent H set lexemes; contrary to the examples above for sets C (Fig. 5.22) and F (Fig. 5.24).

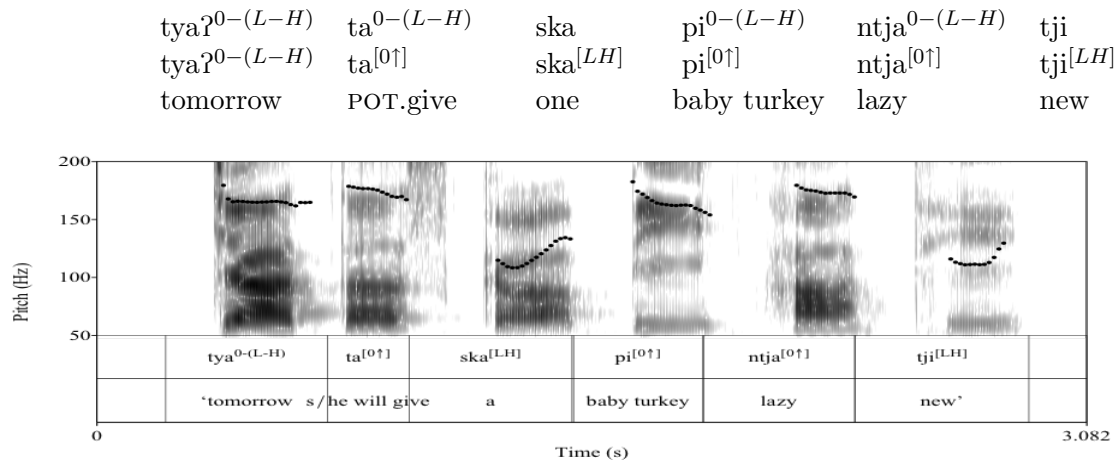


Figure 5.25: Overt floating tone spread - Set Sequence HHXHHX

In Figure 5.25 the toneless simplex words *ska* ‘one’ and *tji* ‘new’ do reflect the underlying ascending /-(L-H)/ tone of of set H after the realization of the OCP tone clash between two H set lexemes. The pitch of the toneless words is changed just as it does when one instance of set H precedes set X.

5.5 Delinked tone spread on 3rd+ position X with sets E and B

The process of tone spread seen with unlinked ascending /-(L-H)/ sequence of sets C and F also occurs with the /-H/ tone of the /L-H/ sequence of set E and the derived /L-H/ that occurs in non-phrase initial set J stems. This is also the case with the unlinked super high tone /-(0)/ of the set B /M-(0)/ tone sequence. The long distance sandhi rules and spreading behavior for these sets are described below.

5.5.1 Third+ position sandhi with sets X and E

Figure 5.26 presents the sandhi effects Set E /L-H/ has on second and third position toneless lexemes. 5.26(a) presents a two-word window with sets E /L-H/ and X /Ø/. As seen in §4.2.3 (Figs. 4.7 and 4.8) and in this example, the delinked /-H/ tone of set E links to the toneless stem raising the pitch of the word *tji* to [M] or an attenuated [H]. 5.26(b) presents a three-word window with two adjacent E set tones followed by one toneless word. As presented in §4.3.3 here the two adjacent E set tones produce an OCP inversion effect where the pitch of the second ascending /L-H/ tone is inverted to a [HL]. The pitch of the third position toneless stem does not change.

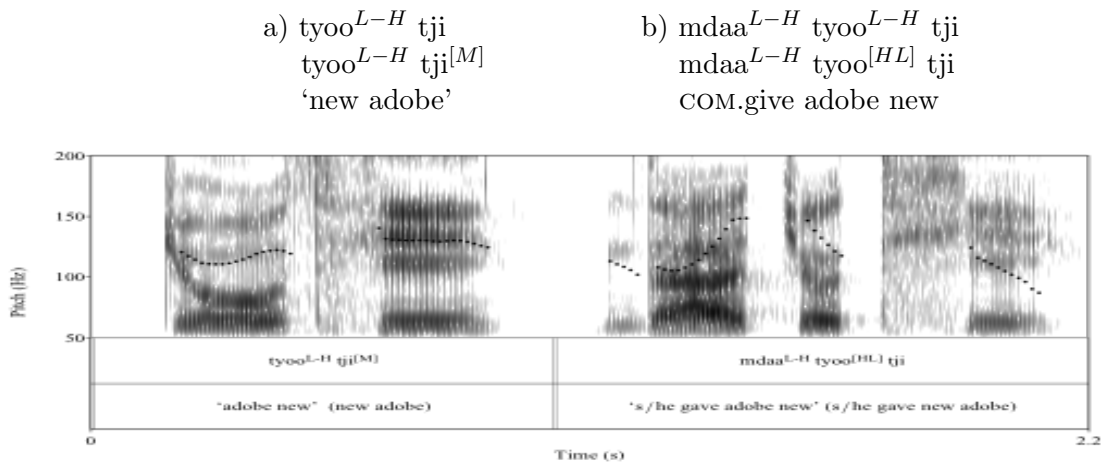


Figure 5.26: Second and third position sandhi - Sequence Sets EX and EEX

Figure 5.27 shows a four-word window with two adjacent ascending E set tones followed by the toneless word *tji* ‘new’ and an E set word phrase final. This example presents how the rightward covert spread of the /-H/ tone of /L-H/ inverts the /L-H/ tone of the final position lexeme to [HL] following rule (6) L-H → HL / L-H — (presented in §4.3.3). Although the toneless stem is not changes it is raised slightly through interpolation between sets EE and E.

c) mdaa^{L-H} tyoo^{L-H} tji ngʔa^{L-H}
mdaa^{L-H} tyoo^[HL] tji ngʔa^[HL]
COM.give adobe new red

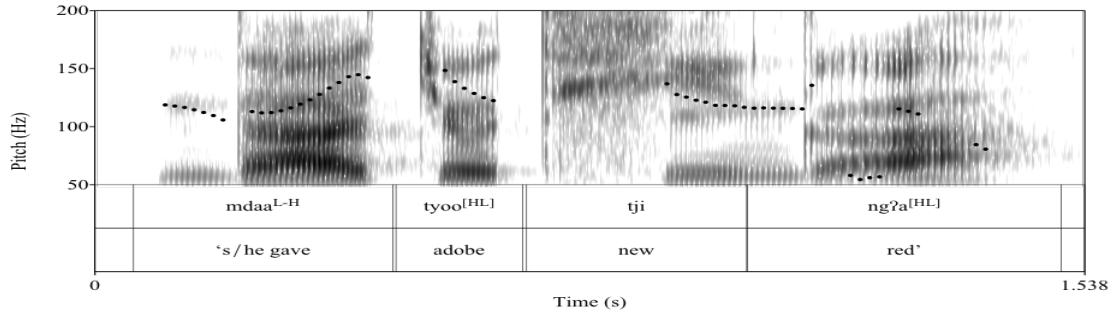


Figure 5.27: Third position sandhi - Set Sequence EEXE

Figure 5.28 presents more evidence regarding the overt versus covert spreading that occurs in tone set E /L-H/. 5.28(a) presents a three-word window where there is one E tone followed by two toneless lexemes. In this case the /-H/ tone of /L-H/ delinks from *mdaa*^{L-H} and moves rightward successively raising the pitch of *ska* 'one' and *yja* 'tortilla.'

a) mdaa^{L-H} ska yja
mdaa^{L-H} ska^[M] yja^[H]
COM.give a tortilla

b) mdaa^{L-H} ska yja ngʔa^{L-H}
mdaa^{L-H} ska^[M] yja^[H] ngʔa^[HL]
COM.give a tortilla red

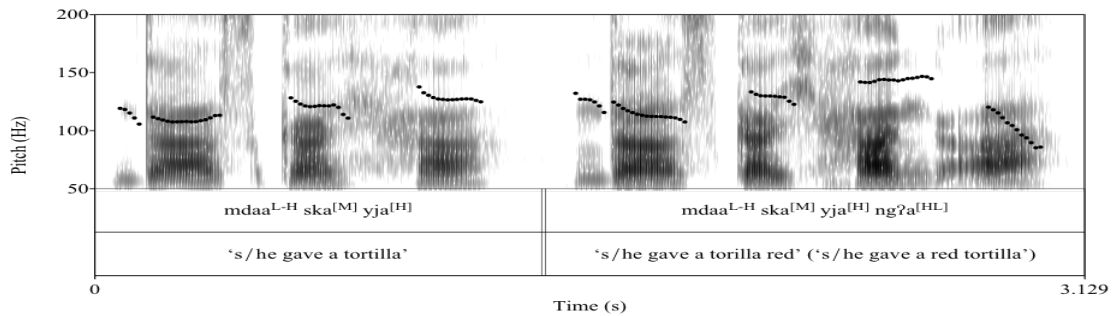


Figure 5.28: Second and third position sandhi - Sequence Sets EXX and EXXE

5.28(b) presents a four-word window where there is one E set tone followed by two toneless stems and another E set word phrase finally. In this example we can see how the /-H/ tone continues rightward until it reaches the final E set lexeme *ngʔa^{L-H}* ‘red,’ inverting the pitch of its tone per rule (6) L-H → HL / L-H —. Figure 5.29 presents an autosegmental representation of 5.28(b).

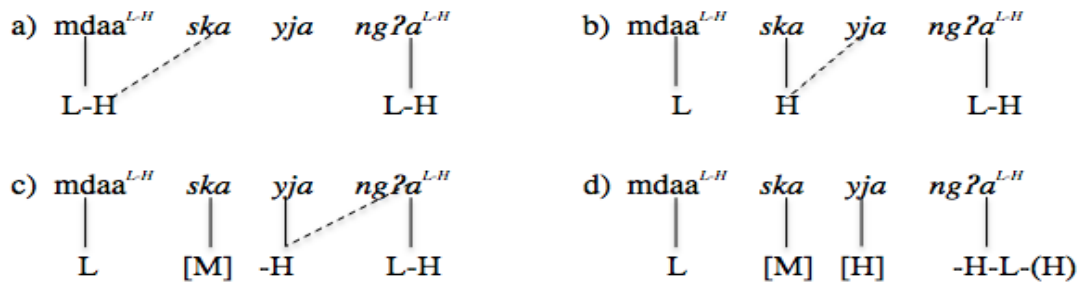


Figure 5.29: Covert linking of the linked /-H/ of Set E /L-H/

Figure 5.29 presents the rightward movement of the linked /-H/ tone of Set E /L-H/. In this representation the /-H/ delinks and migrates as far to the right as it can go, crossing *ska* ‘one’ in (a) and *yja* ‘tortilla’ in (b), before hitting the next tone where it links. The pitch then gradually climbs from the original /L/ to the newly transplanted /-H/. In (d) the /-H/ links to the final word by anchoring to the left side of the stem of the E set /L-H/ tone. The rightmost /-H/ does not have any place to link to so it stays attached to the base.

To contrast with the above example Figure 5.30 presents how the toneless simplex words are unaffected when preceded by two instances of the delinked [-H] tone of /L-H/ (set E). This example shows that *tji* ‘new’ is raised slightly through interpolation between the sets EE and E and that *lo* ‘in’ and *jyka* ‘tree’ are unaffected by the preceding tone of *ntkwi^{L-H}* ‘is hanging.’

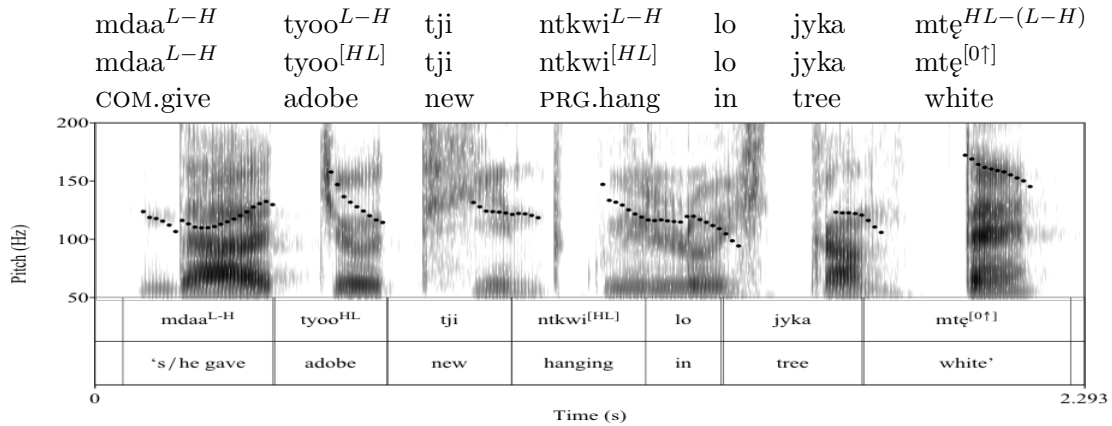


Figure 5.30: Second and third position sandhi - Set Sequence EEXEXXF

Figure 5.31 presents an autosegmental rendering of Figure 5.30. 5.31(a) presents rule (6) $L-H \rightarrow HL / L-H _$ applied to a sequence of contiguous $/L-H/$ tone sequences. In (b), when all of the $/-H/$ tones have delinked and relinked on the adjacent $/L-H/$ tone bearing stems the final word $mt\epsilon^{HL-(L-H)}$ receives the $/-H/$ tone from $ntkwi^{L-H}$ where rule (3) $T-(L-H) \rightarrow [0\uparrow] / -(H) \text{ or } -H _$ is realized. Because the tone sequence $/HL-(L-H)/$

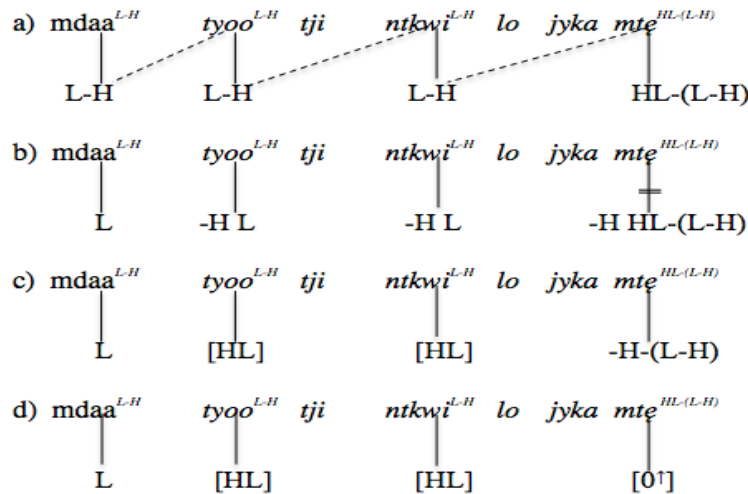


Figure 5.31: Covert Linking of $/-(L-H)/$ on Set Sequence EEXEXXF

of $mt\epsilon^{HL-(L-H)}$ is available the preceding delinked $/-H/$ tone of $ntkwi^{L-H}$ is able to link to the following tone bearing stem. This analysis supports the analysis in Figure 5.29(d),

above, where the /-H/ essentially stays linked if there is no tone bearing stem to link to after the delinking and relinking of the /-H/ tone is complete.

Table 5.3 outlines the long-distance tone spreading patterns on toneless stems following either one or two instances of set E /L-H/.

Table 5.3: Sandhi Spread Patterns - Set E /L-H/

Overt spread				
1st tone	X	XX	XXE	XXXE
E - L-H	M	M, H	M, H, HL	M, M, H, HL
Covert spread				
1st tone	EX	EXX	EXXE	EXXEE
E - L-H	HL, Ø	HL, Ø, Ø	HL, Ø, Ø, HL,	HL, Ø, Ø, HL, HL

In covert sandhi spread Set E /L-H/ we see the same pattern presented in Table 5.1 for Sets C /ML-(L-H)/ and F /HL-(L-H)/. When two adjacent tone bearing /L-H/ stems precede a toneless stem the sandhi interaction is realized between the first two E set words affecting any any subsequent tone bearing stems essentially ignoring intervening toneless words (Fig. 5.31). In overt spreading when a single instance of a stem with a delinked /-H/ or floating tone /-(L-H)/ precedes a toneless stem the sandhi tone is overtly realized on the first adjacent toneless and any subsequent toneless stem until the sandhi tone encounters a tone bearing stem (Fig. 5.28).

5.5.2 Third+ position sandhi with sets X and B

Figure 5.32 presents the interaction of the super high floating tone of set B /M-(0)/ with toneless simplex words in second and third position. Example 5.32(a) presents a two-word window with tone sets B /M-(0)/ and X /Ø/. This example presents the expected pitch change on the toneless stem where the super high floating tone links to *yja* ‘tortilla’ raising the pitch of this word to [0]. 5.32(b) presents a three-word window of two adjacent B set lexemes followed by one toneless word. In this example the expected dissimilation

between the two B set words as defined by rule (8) M, M-(0), 0-(L-H), 0 → +DES / -(0) — takes place. The third position toneless word *yja* is not affected by the preceding super high /-(0)/ floating tone of set B.

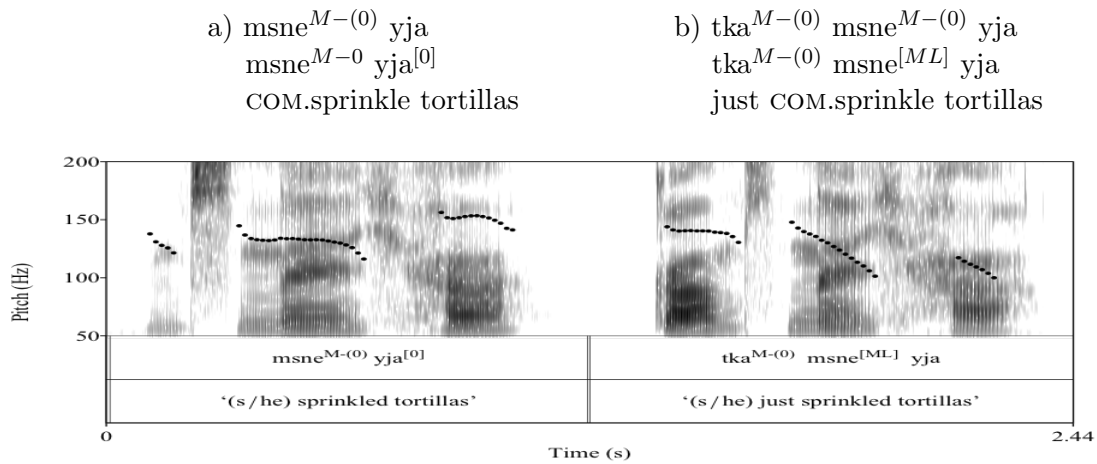


Figure 5.32: Second and third position sandhi - Sequence Sets BX and BBX

Figure 5.33 presents an autosegmental rendering of Figure 5.32. In 5.33(a) we can see how the super high tone moves rightward linking to the toneless stem leaving the tone of the first word as simply [M]. In 5.33(b) the super high tone /-(0)/ stays linked but the following B set lexeme is lowered by dissimilation and the toneless word stays relaxed.

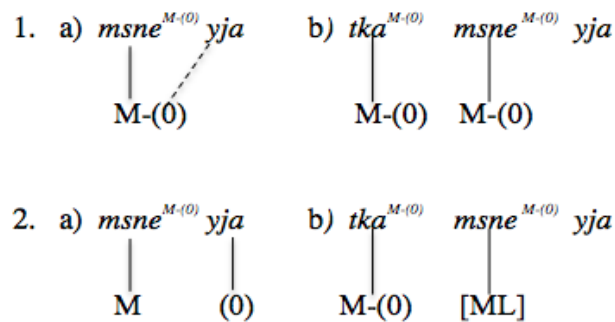


Figure 5.33: Second and third position B set sandhi on X

Figure 5.34 demonstrates the long-distance dissimilation of the underlying super

high floating tone [0] of set B. The first three words of the phrase exhibit the exact same behavior as example 5.32(b), above, and the final word is lowered per rule (9) M, M-(0), 0-(L-H), 0 → +DES / -(0) ____.

c) tka^{M-(0)} msne^{M-(0)} yja xqʔ^{M-(0)}
 tka^{M-(0)} msne^[ML] yja xqʔ^[L]
 just COM.sprinkle tortillas delicious

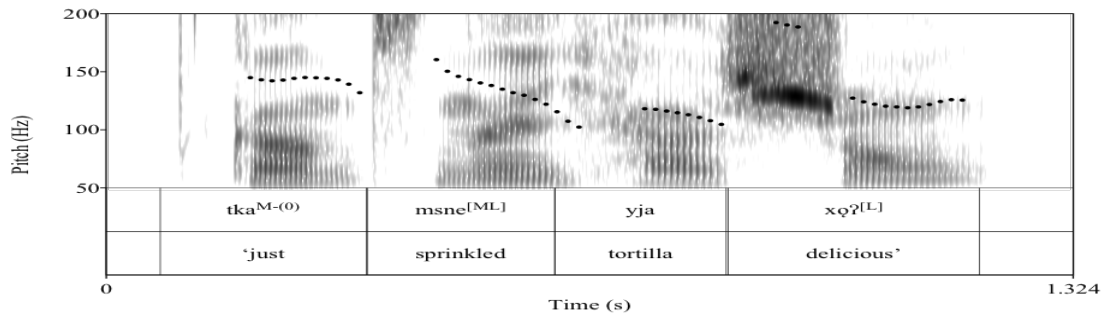


Figure 5.34: Third position sandhi - Set Sequence BBXB

The following table outlines the long-distance sandhi patterns on toneless simplex words following either one or two instances of set B /M-(0)/ and long-distance dissimilation effect of sequences of set B tones interrupted by toneless stems.

Table 5.4: Sandhi Spread Patterns - Set B /M-(0)/

Overt spread				
1st tone	X	XX	XXB	XXXB
B - M-(0)	0	0, 0	0, 0, HL	0, 0, 0, HL
Covert spread				
1st tone	BX	BXX	BXXB	BXXBB
B - M-(0)	HL, Ø	HL, Ø, Ø	HL, Ø, Ø, HL,	HL, Ø, Ø, HL, HL

Restrictions on tone spreading and long-distance sandhi patterns involve the interaction of two tone bearing stems that realize a given sandhi rule before a toneless simplex word occurs. In this case the spread of the delinked or underlying floating tone is *covertly* realized, or as in the case of set B, a long distance type of dissimilation occurs. Aside

from phonetic interpolation seen with set E (Figs. 5.30 and 5.27) toneless simplex words following already realized sandhi change on sets C, F, E, or B demonstrate no change on the following third+ position lexical item. If there is a sandhi tone recipient following a given toneless lexeme, or at the end of a phrase, then the floating tone sequence is realized on that next available tone bearing recipient. Conversely, when there is only one instance of a lexeme that contains a given delinked or underlying floating tone sequence then overt tone spread operates on the following toneless lexemes until confronted with another sandhi tone bearing recipient. The length and duration of the overt spread is determined and evidenced by the number of intervening toneless words.

5.5.3 Second and third position sandhi with sets X and D

Because there is no sandhi interaction between set D acting on set D (L-H-(0)) the changes between set D tones and toneless words is one of a *local* nature. Figure 5.35(a) presents the expected change on *yja* ‘tortilla’ to [0] and the right side of the lexical tone of *nyq*^{L-H-(0)}, /-H/ delinks from its host. In example (b) there is no change between the two D sets.

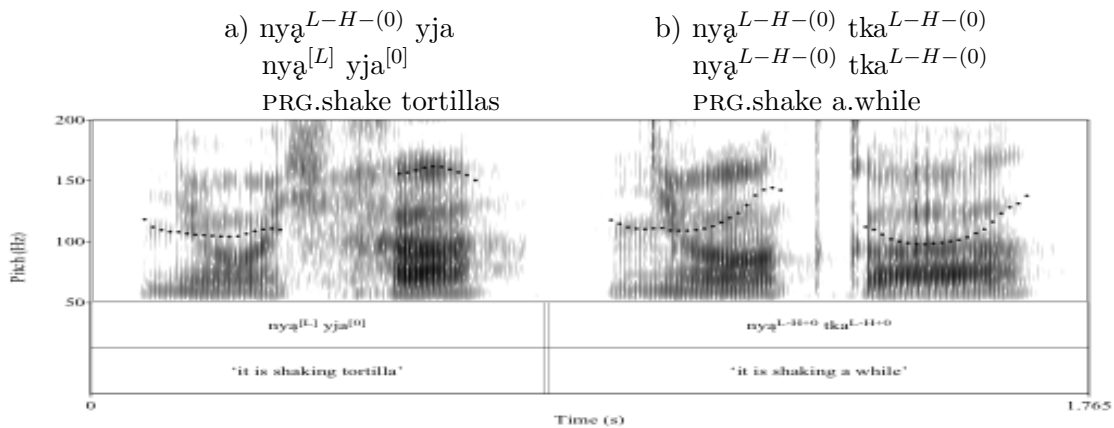


Figure 5.35: Second position sandhi - Sequence Sets DX and DD

Figure 5.36 presents the interactions for the X /Ø/ and D /L-H-(0)/ sets in second and third position.

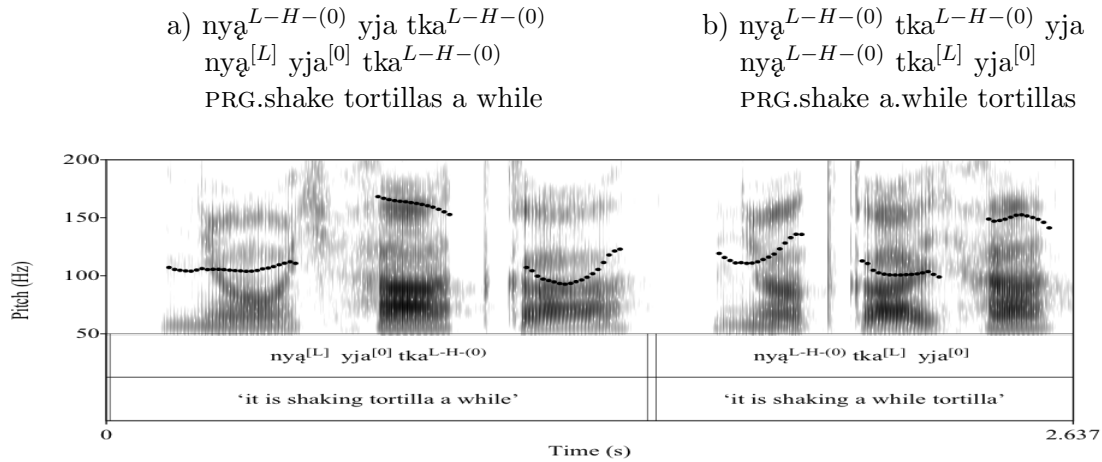


Figure 5.36: Second and third position sandhi - Sequence Sets DXD and DDX

Figure 5.37 presents an autosegmental representation of Fig. 5.36

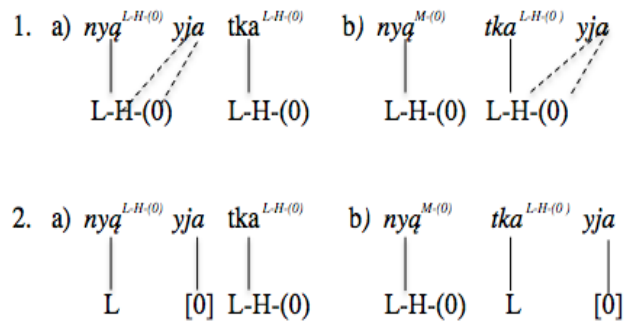


Figure 5.37: Second and third position D set sandhi on X

Figure 5.37 1(a) and 1(b) show that in both instances of set D preceding the toneless lexeme the linked and unlinked /-H-(0)/ sequence links to the following toneless stem raising the pitch of *yja* ‘tortilla’ to the super high pitch [0]. In 1(a) the third position word $tka^{L-H-(0)}$ ‘a while’ does not undergo any change whatsoever and in 1(b) the initial D set word does not affect any change on the adjacent D set lexeme.

5.6 Third position sandhi with the sets C, F, H and E

Up to now I have outlined the majority of the basic local and long distance sandhi interactions of sandhi propagating tone sets C /ML-(L-H)/, F /HL-(L-H)/, H /0-(L-H)/, E /L-H/, J /M-(H)/, B /M-(0) and D /L-H-(0) and the use of the toneless simplex words of set X /Ø/ as a diagnostic tool for determining the parameters of many sandhi interactions. The mechanisms involved in the different sandhi interactions are partially determined by a given lexical tone sequence and their linked and unlinked tone sequences. Local sandhi is based on simple interactions between two contiguous lexical items and LD sandhi is an interaction of the simple local sandhi interactions separated by toneless lexical items. Following is a description of what occurs when third+ position interactions that involve the sandhi propagating sets C, F, and H and E (J) occur and demonstrates more extended sandhi interactions with a focus on the propagating tone bearing sets as a means of analysis.

5.6.1 Third position sandhi of the sets F, E and X

Figure 5.38 presents the interaction of sets F /HL-(L-H)/, E /L-H/ and X.

- | | |
|---|---|
| <p>a) mkwa^{HL-(L-H)} tyoo^{L-H} tji
 mkwa^{HL-(L-H)} tyoo^[L] tji^[H]
 COM.sweep adobe new</p> | <p>b) mkwa^{HL-(L-H)} tyoo^{L-H} tji ka^{HL-(L-H)}
 mkwa^{HL-(L-H)} tyoo^[L] tji^[H] ka^[0↑]
 COM.sweep adobe new yesterday</p> |
|---|---|

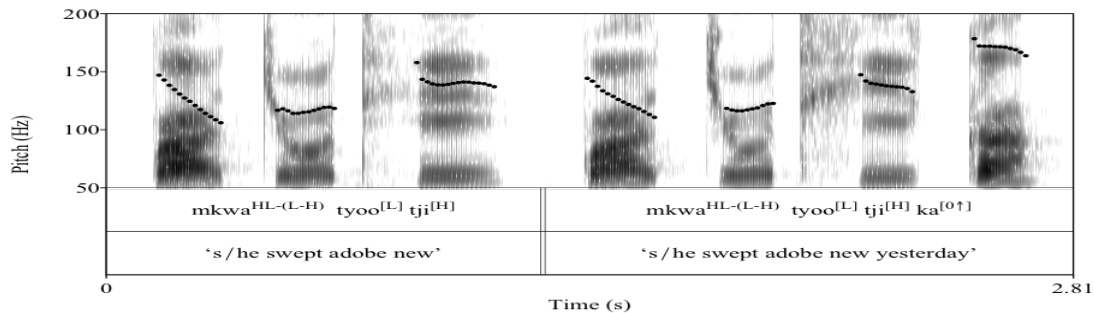


Figure 5.38: Third+ position sandhi - Sequence Sets FEX and FEXF

Figure 5.38(a) presents a three-word window with words with tones from sets F

/HL-(L-H)/, E /L-H/ and X /Ø/ and 5.38(b) presents a four-word window with words tone sets F /HL-(L-H)/, E /L-H/, X /Ø/ and F /HL-(L-H)/. Figure 5.39 presents an autosegmental rendering of figure 5.38.

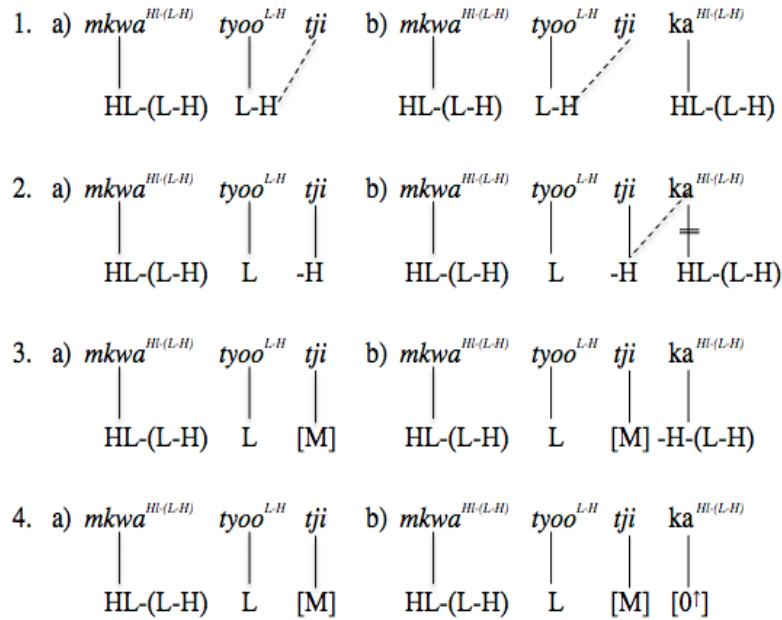


Figure 5.39: Third+ position sandhi - Sequence Sets FEX and FEXF

In examples 1(a) and 1(b) the /-H/ tone of set E on the word $tyoo^{[L]}$ ‘adobe’ delinks and links to the following toneless stem $tji^{[M]}$ ‘new.’ In 2(a) the /-H/ tone stops on the final toneless lexeme tji where the output, in 3(a), is an attenuated /-H/ tone surfacing as [M]. In 2(b) the /-H/ tone continues rightward, the linked /HL/ tone of $ka^{HL-(L-H)}$ delinks leaving a space for the /-H/ tone. In 3(b) the /-H/ tone links to the final word where it clashes with the ascending /-(L-H)/ floating tone. In 4(b) we can see the output pitch of the final word is raised to [0↑] due to OCP tone clash rule (3) T-(L-H) → [0↑] / -(H) or -H —.

Figure 5.40 shows essentially the same sandhi changes as above; however, in this example lexemes from set H /0-(L-H)/ begin and end the phrase.

- a) $taa^{0-(L-H)}$ $tyoo^{L-H}$ tji b) $ta^{0-(L-H)}$ $tyoo^{L-H}$ tji $tya^{HL-(L-H)}$
 $ta^{0-(L-H)}$ $tyoo^{[L]}$ tji $ta^{0-(L-H)}$ $tyoo^{[L]}$ $tji^{[M]}$ $tya^{[0\uparrow]}$
POT.give adobe new POT.give adobe new tomorrow

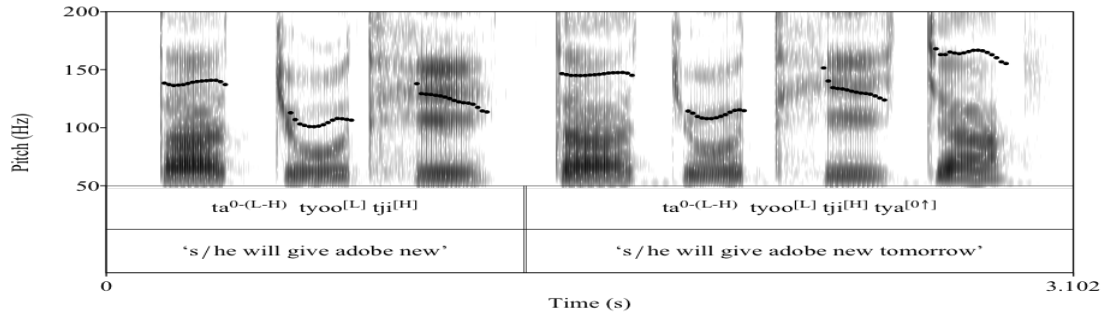


Figure 5.40: Third+ position sandhi - Sequence Sets HEX and HEXH

Although the above sandhi changes for 5.40(a) were already noted in §4.2.1 Figure 4.3 and that of 5.40(b) in §4.3.2.1, Figure 4.14, they are presented here with sets F and H to demonstrate how one instance of sets F and H before set E /L-H/ have no rightward sandhi effect on set E. Likewise, as noted in §4.3.2.1 figures 4.14, ?? and 4.17 I present how set E creates an OCP tone clash when it precedes sets C, F and H. This directional sandhi asymmetry between the ascending floating tone sequence /-(L-H)/ and the ascending lexical tone of set E /L-H/ was one of the arguments for why these two tones are analyzed as partially different.

Figure 5.41 presents an example where the lexical ascending tone /L-H/ is like the ascending floating tone /-(L-H)/. In this pitch track Set E /L-H/ is preceded by two instances of sets C /ML-(L-H)/ and F /HL-(L-H)/. Examples (a) and (b) show the expected OCP tone clash of rule (3) ($T-(L-H) \rightarrow 0\uparrow / (-H) \text{ or } -H \text{ __}$) on the first two lexemes of each example, but it also presents something surprising. Following the realization of the OCP tone clash instigated by adjacent sequence Sets of CC and FF, tone /L-H/ (set E) inverts in response to the underlying ascending floating tone acting in accordance with rule (6) $L-H \rightarrow HL / L-H \text{ __}$. This is a very different outcome than seen in the second position tone Set E tone sequence interactions exhibited in §4.4 Figure 4.31 and above in figures 5.38 and

As always, set H exhibits its own set of unique constraints. Figure 5.43 presents an example just like the preceding set; however, the ascending lexical tone /L-H/ is preceded by two adjacent H set tones /0-(L-H)/. In this example there is no apparent sandhi effect on the final ascending tone of set E /L-H/. This is the opposite seen with toneless stems in this third position (§5.3.3).

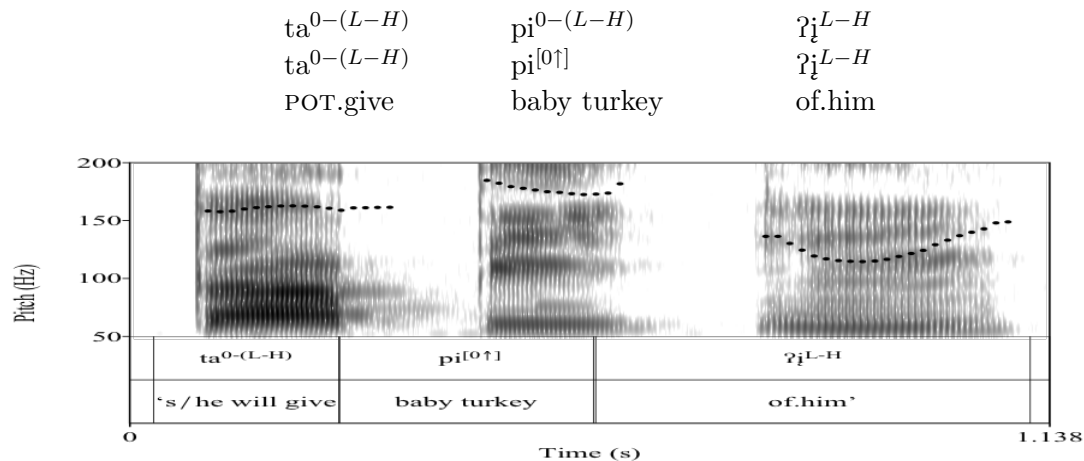


Figure 5.43: Third position sandhi - Sequence Sets H on E

5.7 Up-step and declination

Teotepéc Chatino exhibits processes of tonal up-step and declination or down-step. The following sections outline the up-step behavior of sets C, F and H, the declination of set X and down-step of sets B and E.

5.7.1 Up-step - sets C, F, and H

The tone Sets C, F, or H exhibit the underlying ascending floating tone /-(L-H)/ create the OCP clash of rule (3) $T-(L-H) \rightarrow [0\uparrow] / -(H) \text{ or } -H \text{ ___}$. As a result of this clash, when there is more than one consecutive tone from sets C, F, or H tonal up-step occurs on each consecutive lexeme. The underlying ascending floating tone is the mechanism that continues to interact with the following ascending floating tones creating the up-step effect.

Figures 5.44, 5.45 and 5.46 demonstrate this phenomenon on contiguous tone sequence sets of C, F and H respectively.

Up step on contiguous C set tones /ML-(L-H)/:

$wa^?^{ML-(L-H)}$	$yoo^{ML-(L-H)}$	$kyee^{ML-(L-H)}$	$ksi^{ML-(L-H)}$
$wa^?^{ML-(L-H)}$	$yoo^{[0\uparrow]}$	$kyee^{[0\uparrow]}$	$ksi^{[0\uparrow]}$
already	COM.grind	flowers	yellow

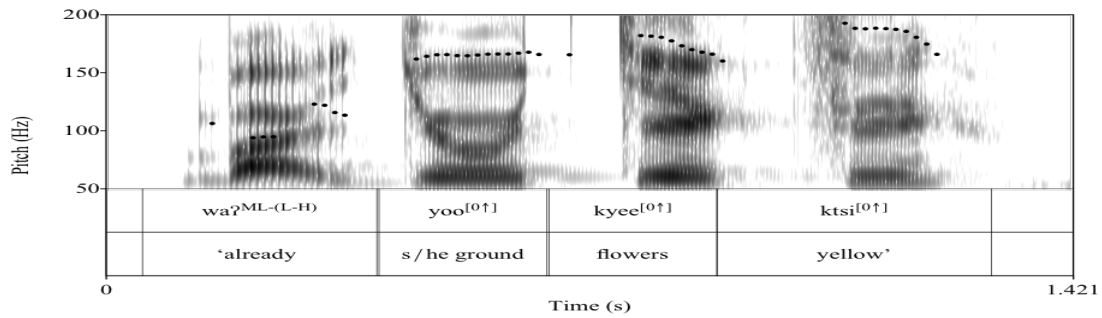


Figure 5.44: Tone up-step - Set Sequence CCCC

Up step on contiguous F set tones /FL-(L-H)/:

$ti^?^{HL-(L-H)}$	$mkwa^{HL-(L-H)}$	$kyta^{HL-(L-H)}$	$mt\epsilon^{HL-(L-H)}$	$ka^{HL-(L-H)}$
$ti^?^{HL-(L-H)}$	$mkwa^{[0\uparrow]}$	$kyta^{[0\uparrow]}$	$mt\epsilon^{[0\uparrow]}$	$ka^{[0\uparrow]}$
still	COM.sweep	chepil	white	yesterday

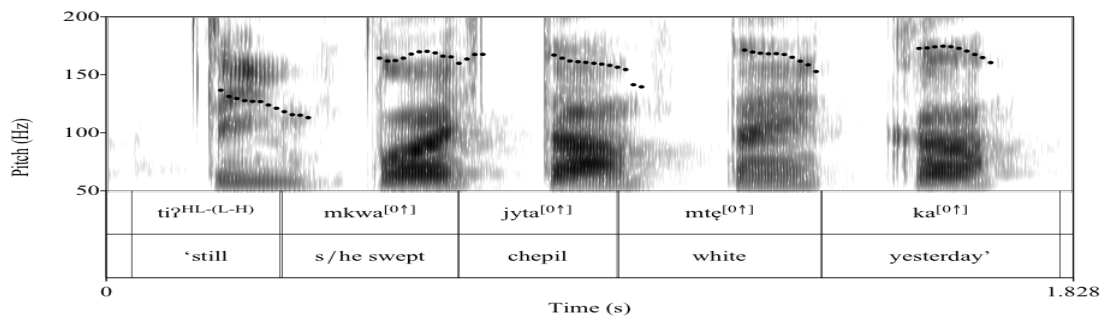


Figure 5.45: Tone up-step - Set Sequence FFFFF

Up step on contiguous H set tones /0-(L-H)/:

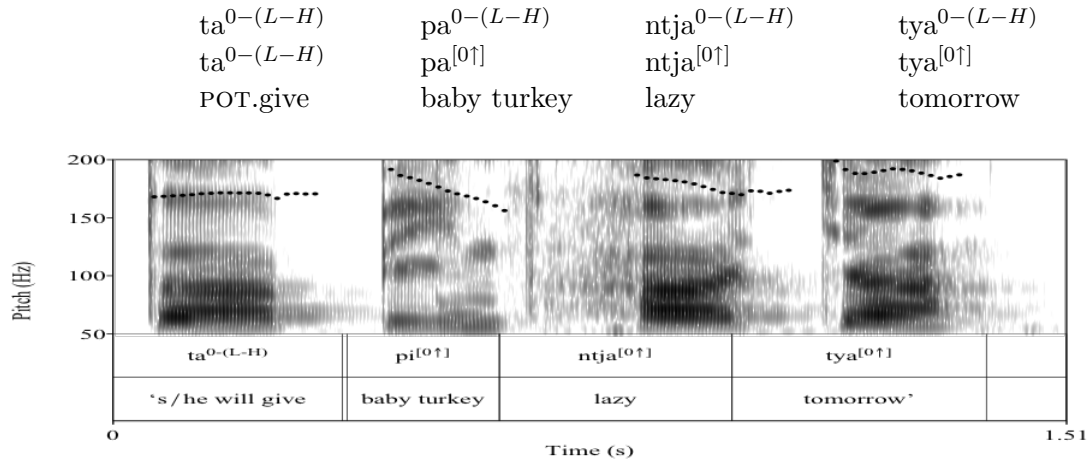


Figure 5.46: Tone up-step - Set Sequence HHHH

The above sets are presented with only one given tone set; however, any combination of contiguous tones from sets C, F or H creates the same effect. For example, CFHC would also create the same up-step pattern. Likewise, as seen in Figures 5.25 and 5.24 of §5.4 toneless lexemes may intervene after two contiguous C, F or H set tones and the same up-step pattern will occur. The OCP tone clash of the underlying ascending floating tones is the mechanism for iterative up-step pattern.

5.7.2 Declination and Catathesis - sets X, B, and E

The following examples exhibit declination or downdrift and catathesis also known as down-step. Declination is a process of natural floating downward of pitch over the time course of the utterance. Catathesis is based a systematic lowering of the pitch based on an interaction among tones. Each of these processes are outlined in turn below.

Figure 5.47 demonstrates declination on a set of five toneless simplex words. This figure shows that for a toneless word the first item starts high in anticipation of the tone declination; however, the basic descending shape of the toneless pitch is maintained. Fol-

lowing the first item each consecutive word lowers its pitch beginning where the previous word ends.

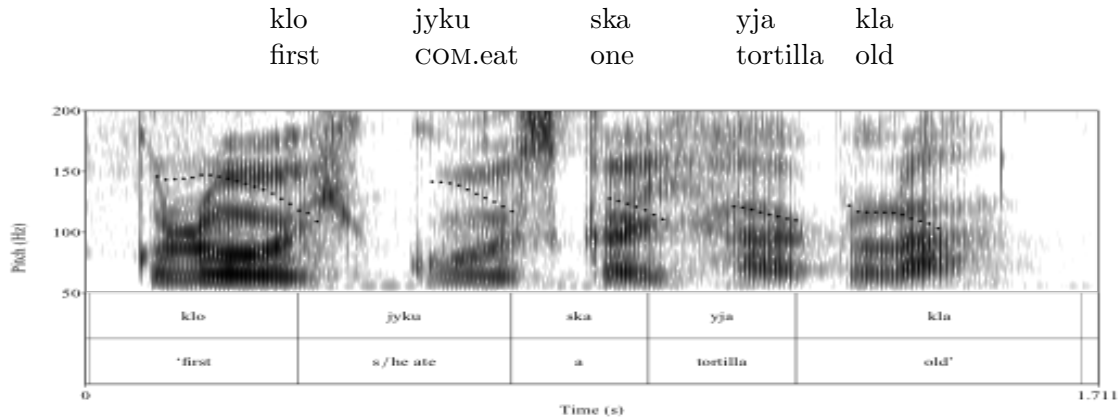


Figure 5.47: Tone declination - Set Sequence XXXXX

Figure 5.48 presents catathesis of consecutive B set /M-(0)/ tone sequences. The mechanism that causes the down-step for this tone sequence is based on rule (9) M, M-(0), 0-(L-H), $0 \rightarrow +DES / -(0) _$ where the interaction of contiguous B set tones systematically lowers each consecutive tone.

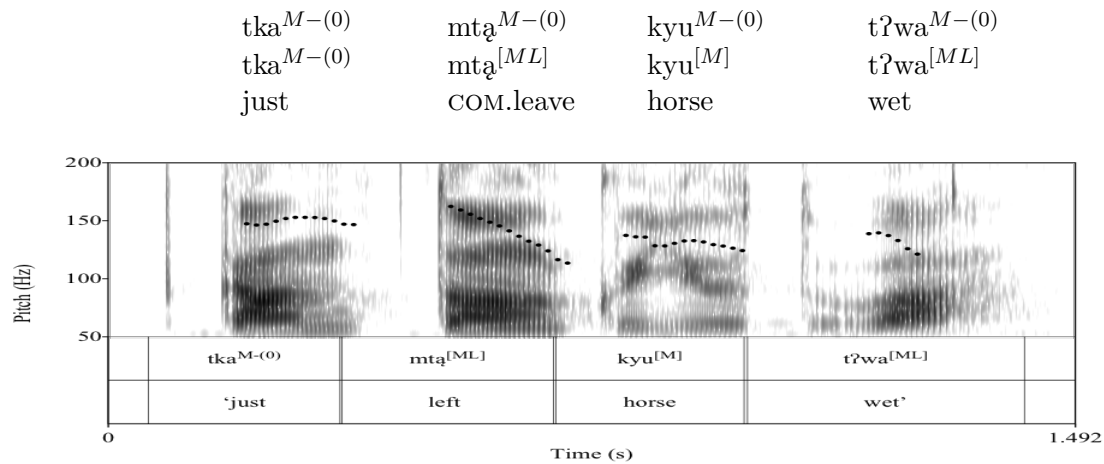


Figure 5.48: Catathesis - Set Sequence BBBB

As outlined in §4.3.3 the ascending tone sequence /L-H/ inverts when preceded by a tone of its own set or set J. Invoked by the sandhi rule (6) L-H \rightarrow HL / L-H $_$

each consecutive tone is lowered. Figure 5.49 presents catathesis with a line of consecutive set E tones. As the phrase continues the interaction of the E set ascending tones invert, systematically lowering the pitch of each consecutive stem.

xa^{L-H}	$mdaa^{L-H}$	$tyoo^{L-H}$	kxi^{L-H}	lwi^{L-H}
xa^{L-H}	$mdaa^{[HL]}$	$tyoo^{[HL]}$	$kxi^{[HL]}$	$lwi^{[HL]}$
when	COM.give	adobe	cheap	clean

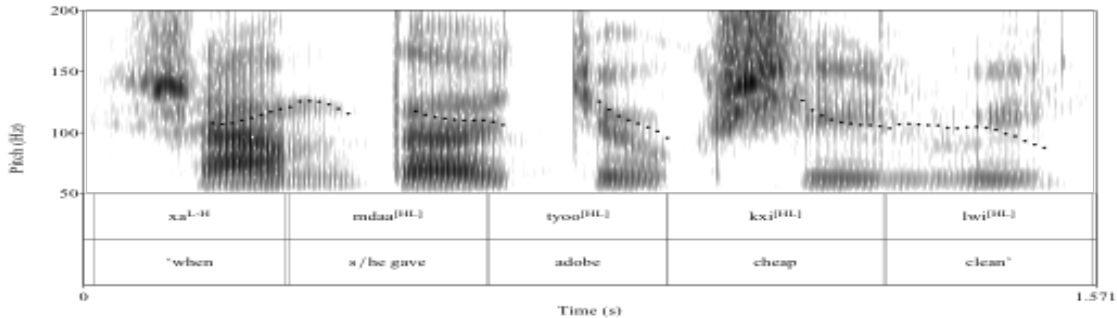


Figure 5.49: Catathesis - Set Sequence EEEEE

5.8 Summary

This chapter outlined the long distance sandhi features of Teotepec Chatino. What was presented in a two-word window in Chapter 4 was described in a three+ word window in this chapter. Many of the two-word sandhi processes in many cases are able to be expanded here in the three + window; however, some surprises do occur after the realization of certain sandhi operations are completed on a two-word set of tones that in many cases changes the realization of pitch on the third position toneless lexemes. Lexical specialization and tone sandhi distinguish discrete categories and allow for a fine grained analysis that differentiates tone groups that appear exceedingly similar. Among the similarities and differences of the sometimes complicated tone interactions an order emerges that is sophisticated and elegant. Because of this elegance I have been able arrive at a description of the tones of this variety of Eastern Chatino. This system is not that different from SJQ, YAI or ZAC; however, its system of tone sandhi is one of the features that distinguishes this language from the other Eastern Chatino varieties.

This description of the phonemics and phonetics of Teotepec Chatino tone adds an original and new contribution to the study and theory of tone and tone languages. It also addresses some of the misconceptions about tone identified by Hyman (2011), which are:

- a) tone cannot be studied the same way as other phonological phenomena
- b) tone cannot mark certain things
- c) tone is expendable

The description of tone in this dissertation has shown that it can be studied like other phonological phenomena through the identification of contrasts, phonological and phonetic rules and the autosegmental representations of these rules. As the following grammatical description unfolds I demonstrate how the TEO tone system is essential to the marking of aspect and person in the inflectional verbal morphology and other areas of the grammar. Teotepec Chatino tone is not any more expendable than the segmental phonemes of the language. Indeed, knowing the subtle distinctions of tone in this language is essential to becoming a speaker. It is amazing how a language learner of Teotepec Chatino masters these distinctions in both production and perception. Although this question goes beyond the scope of this work, understanding the acquisition of tone is important and something to consider.

In Table 5.5 I present a summary of the Teotepec Chatino tone sets. I outline some of the core characteristics associated with each tone and highlight their functional specialization in the language.

Table 5.5: Summary of the Teotepec Chatino Tone Sets

Set	Tone	Tone Characteristics and Functional Specializations
X	/Ø/	Unspecified, phonetically [ML] and has an impressionistically relaxed descending quality. Is transparent to floating tones and subject to changes through the linking of linked and floating tones. Found in the COM, POT, HAB verbal aspects and non-verbal lexemes.
A	M	Dissimilates with its own set and set B. Specific to nominal lexemes.
B	M-(0)	Generates the same sandhi changes as set D Becomes /L-H/ of set E following ascending floating tones of sets C, F, and H. Dissimilates with its own set and set D. Found in the COM, POT, HAB verbal aspects and non-verbal lexemes.
Bi	0	Syllables unspecified for tone are raised to [M] following this tone. Specialized for the inflectional category of 1SG verbs, inalienable nouns, and non-verbal predicates.
Bii	MLM	This tone blocks the rightward propagation of the ascending floating tones of sets C and F. Specialized for the inflectional category of 2SG verbs.
C	ML-(L-H)	The floating tone generates the same second position sandhi changes as F and H. Sets K and Bii repel the ascending floating tone of this set. Found in all verbal aspects and non-verbal lexemes.
D	L-H-(0)	Generates the same sandhi changes as set B. Becomes /M-(0)/ of set B following sets E and J. Specialized for the inflectional category of 3SG verbs in PROG aspect.
E	L-H	Generates the same sandhi changes as set J. Becomes [HL] following its own set and set J. Exhibits a delinked [-H] tone that dissociates from its base. Found in the COM and PRG verbal aspects and non-verbal lexemes.
F	HL-(L-H)	The floating tone generates the same second position sandhi changes as C and H. Sets K and Bii repel the ascending floating tone of this set. Found in all verbal aspects and non-verbal lexemes.
G	HM	Syllables unspecified for tone are raised to [M] following this tone. Found in all verbal aspects and in non-verbal lexemes.
H	0-(L-H)	The floating tone generates the same second position sandhi changes as F and C. Found in POT and HAB verbal aspects and non-verbal lexemes.
I	MH	Present in verbal and non-verbal lexemes
J	M-(H)	Appears as a /M-(H)/ tone in isolation and /L-H/ in second position Becomes [HL] following its own set and set E. Specialized for numbers.
K	ML	This tone blocks the rightward propagation of the ascending floating tones of sets C and F. Specialized for Spanish loans and a small number of verbal lexemes.

Table 5.6 provides a typology of the cognate tone sets of the most studied Chatino languages. The table is organized with the cognate set notations in the left column and is separated into the three languages: Zenzontepec (ZEN), Tataltepec (TAT) and Eastern Chatino. Eastern Chatino is subdivided into the respective varieties of Eastern Zacatepec, San Juan Quiahije, Yaitepec, Teotepec, Nopala and Panixtlahuaca Chatino. The analysis of Nopala tone is preliminary, ongoing and still needs to be explored.

Table 5.6: Chatino Cognate Tone Sequences

Set/Variety	Coastal Chatino									
	ZEN	TAT	Eastern Chatino						NOP	PAN
			*pEC	ZAC	SJQ	YAI	TEO			
X	X	X	*X	X	X	3	X	-	M	
A	X	X	*X	X	L	3	M	L	M	
B1	X, XM or MH	-(0)X	*L-(0)	L-(0) (+nouns), L-(L) (-nouns)	HL-(0)	24	M-(0)	L	M'-(0) (+nouns), M' (-nouns)	
B2	X, XM or MH	(0)-L	*HL-(0)	L-(0) (+nouns), L-(L) (-nouns)	HL-(0)	24	M-(0)	L	M'-(0) (+nouns), M' (-nouns)	
Bi	-	0-X?	-	M	L-0	21	0	-	M0	
Bii	MM, XH	0-X?	-	L-M	LH	32	MLM	-	-	
C	XM	L	*M-(H)	M-(H)	M-(H)	23	ML-(L-H)	ML	ML-(H) (+nouns), ML (-nouns)	
D	? XM	0-X	*M-0-L-(L)	M-0-L-(L)	H-(0)	14	L-H-(0)	LM	0'	
D2	? XM	0-L	*M-0-L-(L)	M-0-L-(L)	H-(0)	14	L-H-(0)	LM	0'	
E	HM	H	*M-H	M-H	H	1	L-H	LM	H	
F	MH	H	*LH	LH	LM	32	HL-(L-H)	-	LM	
G-short	X	L	*M-M	M-M	LH	12	HM	HM	M0	
G-long	X	L	*M-M	M-M	LH	12	HM	HM	ML-(0)(+nouns), ML (-nouns)	
H-short	HM	0-L?	*L-0	L-0	M0	21	0-(L-H)	MH	LH	
H-long	HM	0-L?	*L-0	L-0	M0	21	0-(L-H)	MH	LH	
I	X	M	*M-M-L	M-M-L	MH	2	MH	L	0	
J-strong	HX	-	*HL	X	ML	1	M-(H)	L	H	
J-weak	X, XM or MH	-	*L-L	L-(0) (+nouns), L-(L) (-nouns)	ML ^{MH}	24	M-(H)	L	M'-(0) (+nouns), M' (-nouns)	
K	XM	(0)-L	-	L-M-(0)	H-(0)	23	ML	-	ML-(0)	

Chapter 6

The Word

The preceding chapters have discussed the sound patterns of Teotepec Chatino; covering the segmental phonology and the phonetics and phonemics of the tone system. Later chapters cover nominal constituents and verbal inflectional morphology. The purpose of this chapter is to outline what defines a word, to present the major parts of speech of Teotepec Chatino and to bridge the preceding and following chapters. The discussion begins by defining the root and the stem, proceeds to present the criteria for the phonological and grammatical word and finishes by outlining the major parts of speech for Teotepec Chatino.

6.1 Roots and stems and particles

A root is a morphologically simplex base which cannot be further analyzed without a loss of lexical identity. A stem is an uninflected form, which may be a simple root or a root with prefixes, to which inflections may be applied. In Teotepec Chatino these processes may include compounding, affixation, encliticization, or tone change. Thus, the root may be the stem if the root is the element on which a morphological process operates. In Teotepec Chatino, a simple stem, which can be Nouns, Verbs and Adjectives, Numbers, Adverbs and other constituents, which can be inflected and which cannot be analyzed into subparts are always one syllable. A simple stem contrasts with a complex one.

Example 6.1 is a simple clause used to illustrate the concept of a root and a stem.

- (6.1) $jy-ta^B =ba \quad ndaa^A$
 COM-sow=1PL.EXCL bean
 ‘we sowed beans’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm-06 07:33-07:35)

The first form $jy-ta^B$ ‘s/he sowed’ is built on a transitive verb root $-ta^B$ ‘to sow.’ In this case this transitive root is also the stem which is inflected for the Completive Aspect with the prefix $jy-$. The inflected stem is the host for the first person exclusive plural pronoun enclitic $=ba$, a bound form, which functions as the verb’s subject. The form $ndaa^A$ ‘bean’ is a unbound free-form noun root that functions as a direct object of the verb.

A particle is a morphologically unbound element that contains no root, is not inflected and serves a grammatical or discursive purpose. Example 6.2 presents the use of the particle ti^C . This form is used as kind of *light* adverbial head whose complement is a type of location. This form is often used as a means of describing direction away from something. In 6.2 it follows the existential predicate $ngw?a$ ‘to get stuck,’ used to describe the place where the speakers father lived, and precedes the locational complement kq^C ‘above.’

- (6.2) $to?^F \quad stj^{Bi} \quad ngw?a \quad ti^C \quad kq^C$
 and father1SG COM.get.stuck up above
 ‘and my father lived up above’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-07 01:45-01:46)

6.2 The word

The definition of *the word*, fundamental to the study of language, is a concept that has been greatly debated while at the same time neglected. It seems odd that a concept so central to the study of language and linguistics is often overlooked. Perhaps this is because

the word is something that has not been easily defined as a universal concept (Haspelmath, 2011). Sapir posited that, “The best we can do is to say that the word is one of the smallest, completely satisfying bits of isolated “meaning” into which the sentence resolves itself.” (1921:34). Bloomfield later argued that, “forms which occur as sentences are *free forms*.” stating that not every language, like Chinese, uses bound forms. He continued, “A word, then, is a free form which does not consist entirely of (two or more) lesser free forms; in brief, a word is a *minimum free form*” (1933:178). These two concepts of the “minimum free form” and the “smallest completely *satisfying* bit of meaning” do not render this discussion complete for Chatino. In Teotepec Chatino the best way to handle this is to posit the inflected stem as the basic word. Bound forms are affixes and clitics and independent free forms may include Particles, Nouns, Verbs and Adjectives.

Based on morphophonological characteristics, inflectional evidence and productivity the word can be either phonological or grammatical and in some cases may involve the use of one inflected stem in a simplex word or the use of two roots to form a complex word. Both forms may demonstrate an inflectional processes as a means of subject marking. Lexical compounds are used as a means to create idioms and or lexical semantic collocations. In these instances roots may become reduced or simplified and tones may change internally on inflected stems or across syllable boundaries through external tone sandhi.

6.2.1 Phonological word

The phonological word in Teotepec Chatino can be defined in terms of 1) segmental features 2) prosodic features and 3) phonological rules (Dixon and Aikhenvald, 2003).

Segmental features are defined in the chapter on phonology. The parameters for the syllable template presented in Figure 2.2 of §2.3.1 defines a set of constraints on the legal syllable shape. As defined, the TEO syllable minimally consists of a consonant, a vowel, and some kind of specified or unspecified tone: CV^T . Maximally, the syllable consists of a complex set of consonants that precede the vowel, can be closed by a glottal stop or is

otherwise open: (N)(C₂)C₁(S)V(:)^T(?).

This formula stipulates that (N) is a nasal /n/ or /m/; C₂ can be a stop, a nasal, sibilant, an alveopalatal, a palatal fricative, a glide or a glottal ; C₁ can be a stop, a nasal, a sibilant, a laminal, or a glide; (S) is a sonorant consonant that can either be a nasal /m/, /n/, /n^j/, a glide /j/, /w/, or a liquid /l^j/ (Table 2.9). The superscript above the vowel V^T is tone. Prosodically, each syllable is assigned one distinct tone set (see §3.2). The glottal stop is the only consonant that can occur in coda position and only one glottal stop is allowed per word. All simple stems in the language conform to this patterns. This schema coincides with what is the phonological and grammatical word in Teotepéc Chatino.

There are some lexemes in TEO that do violate this principle of one syllable per phonological word. For example Spanish names e.g., /li^Fpa/ ‘Felipa,’ /li^Fno/ ‘Aquilino,’ /ri^Fke/ ‘Enrique,’ and /kri^B-fto^K/ ‘Cristo,’ some compounds e.g., /ti^G-sli^H/ ‘swing’ and a handful of rouge disyllables e.g., *jakwa* ‘four’.

Regarding prosodic features, syllable stress in monosyllabic varieties of Chatino occurs on the syllable. Tone in Teotepéc Chatino is accounted for by positing nine tones that form fourteen tone sequences which link to stems and further divide into fourteen groups (Ch.3). Phonological rules defined by tone sandhi between tone bearing words produce a range of tone changes within the fourteen tone sequences which further define the parameters of a phonological word (Ch.4). Words in isolation may present one type of phonetic realization but when spoken in context often manifest a range of different phonetic and phonemic outputs. OCP restrictions create further prohibitions on the adjacency of identical elements resulting in a set of constraints that govern tone behavior (Ch.5).

6.2.2 Grammatical word

The grammatical word in TEO is defined in morphological and syntactic terms and not on phonological grounds. Structurally, a grammatical word may be and or include a

phonological word. Adding to the parameters proposed above, from Dixon and Aikhenvald (2003), the morphological/grammatical word in TEO consists of a number of grammatical elements which occur together, are in a fixed order, and have a conventionalized coherence or meaning. The grammatical word in Teotepéc Chatino may consist of an uninflected particle, a free root, a derived stem, or a compound stem. Figure 6.1 presents examples of these elements.

ni	‘well’	particle
ndaa ^A	‘bean’	free root
lyuu ^A	‘on the floor’	derived stem
yni ^G -yaʔ ^F	‘wrist’ (<i>lit.</i>) ‘neck of hand’	compound stem

Figure 6.1: Grammatical Word

In Teotepéc Chatino:

- Verbs are marked for aspect, and aspect is marked by prefixation of one or more consonants and/or initial consonant mutation i.e:

m-jyʔq^G ‘COM.wash,’ *nt-jyʔq^G* ‘PRG.wash,’ *-jyʔq^G* ‘POT.wash,’ and *nt-jyʔq^G* ‘HAB.wash.’

- Verb stems may be inflected for person, e.g.:

ku ‘POT.eat.,’ *ku^{Bii}* ‘POT.eat.2SG,’ and *kq^{Bi}* ‘POT.eat.1SG.’

- Inalienable nouns are inflected to denote a possessed relationship e.g.:

tseʔ ‘his/her tongue,’ *tseʔ^{Bii}* ‘your tongue,’ and *tseʔ^{Bi}* ‘my tongue.’

- Attributive or predicate adjectives may be inflected for person but may not take aspect markers e.g.:

xtaʔ^H ‘s/he is short,’ *xtaʔ^E* ‘you are short,’ and *xtaʔ^{Bi}* ‘I am short.’

- The grammatical word may also exhibit other derivational processes for creating causative forms from intransitive verbs e.g.:

mtiʔ^B ‘COM.liberate’ and *mɔtiʔ^B* ‘COM.CAUS.liberate.’

Person inflection in compound verbs usually occurs on the second stem while aspect marking occurs on the first. Because of this, a complex grammatical word cannot be divided without changing the intended meaning or making the phrase ungrammatical. Under this criterion grammatical compounds exhibit a conventionalized meaning, a fixed word order and always occur together.

Emotional and cognitive verbs have a marker that follows a given root, *tiʔ^C*, representing the ‘essence’ of an individual, i.e. *ka^B-tiʔ^C* ‘POT.want’ or *mjlyo^E-tiʔ^C* ‘COM.know.’ The second root of these verbs may be inflected for person with tone changes for second person and tone changes and nasalization of the vowel for first person singular subjects. Because the two roots of those words are elements that occur together, are in a fixed order and have a conventionalized meaning they are analyzed as a grammatical word made-up of two phonological words.

In Teotepec Chatino there are examples of grammatical words that fit together as idioms or lexical semantic collocations. The verb *jykwɪʔ-chaʔ* ‘COM.greet’ is made up of two parts - the verbal root *jykwɪʔ* ‘to speak’ and the nominal root *chaʔ* ‘word.’ This compound form has a lexical meaning that is not the sum meaning of its parts but the composition of these parts. This particular form presents a kind of derivational noun incorporation. Example 6.3 presents how the Potential Aspect is marked on the first stem and the second stem of this compound is inflected for 1SG.

(6.3) *ty-kwiʔ-chaʔ^{Bi}*
 POT-speak-word.1SG
 ‘I will greet’

(6.4) *ty-kwiʔ^{Bi} chaʔ^F*
 POT-speak.1SG word
 ‘I will speak words’

Example 6.4 presents the same set of words but broken up into two independent free stems. In this example, the first stem is inflected with the Potential Aspect preceding the verbal stem and is inflected for 1SG on the right side of the stem with a nasal vowel and the super high tone /0/ of set Bi. The second stem is an unbound lexeme, that depending on the context, signifies ‘word’ or ‘thing.’ The two meanings are related; however, under this configuration, example 6.3 is one grammatical word and 6.4 is two.

Though certain collocated forms may convey a conventionalized meaning, if person inflection takes place on the first syllable of these forms they are not considered compounds due to a lack of phonological characteristics that represent the expected inflectional bracketing that would render them as such. Rasch (2002:77) refers to non-compound collocations as *lexical phrases* in Yaitepec Chatino. The verb ‘to swim’ i.e. *m-skwa^{Bi}-ty?a^A* COM-lie.1SG-water’ is a good example of a verb+noun conventionalized lexical phrase that includes aspect and person marking on the verbal stem and not the nominal stem.

Teotepec Chatino exhibits productive noun compound formation which consist of a head-complement structure where the lexical head is often times a semantically and phonologically reduced version of itself. A good example of this in TEO is for the word *ja-slya^K* ‘bread,’ composed of the stems *yja* ‘tortilla’ and *slya^K* ‘castilian’. In this collocation the head, *yja* ‘tortilla’, is phonologically reduced with the elision of the voiced palatal glide /j/. This head-complement formation is seen in Teotepec grammar through the formation of light-headed noun compounds and, more recent, emergent noun compound formation.

In Teotepec Chatino ‘light-nouns’¹ function as heads of nouns where the lexical content of the light-noun is the complement of that construction. These include the noun heads *neʔ* ‘person,’ *la* ‘old,’ *to^F* ‘cavity/space’ and *nu*. Table 6.1 presents a few examples of these formations, for a greater discussion see §8.4.1.

Table 6.1: Light-noun Headed Compounds

Chatino	Gloss	English
neʔ-chaʔ ^F -tnyo	person-thing-work?	‘Chatino’
neʔ-nkwa ^F -kyi	people-seated-grass	‘locals’
neʔ-yta ^E	person-outside	‘outsider’
neʔ-chi ^B -yaʔ ^B	person-mexico	‘Mexican’
neʔ-kwla	person-elder	‘elder’
to ^F -nskə ^G	hole-ear	‘ear canal’
to ^F -syəʔ	hole-nose	‘nostril’
to ^F -yni ^G	hole-neck	‘throat’
la-kwsoʔ ^C	old-turkey	‘turkey’
la-kʔna ^I	old-lizard	‘crocodile’
la-kʔya ^A	old-eagle	‘eagle’

Another kind of productive compounding consists of collocations analyzed as compound words because of their idiomatic or single lexical item meaning. Some of the nouns in these constructions are inalienably possessed. There are also constructions where only the modifier, the noun in second position, is inalienably possessed and other constructions consist of two juxtaposed nouns where the second position form may have more of an adjectival function. Nouns such as *tyʔa^A-skwe^G* ‘egg white’ *lit.* ‘water’ + ‘egg’ and *nʔq-kiiʔ* ‘kitchen’ *lit.* ‘house’ + ‘fire’ represent conventionalized lexical compounds that form an idiomatic meaning based on noun+noun compounds. The example *teʔ^B-jychaʔ* ‘blanket’ *lit.* ‘cloth-its.hair’ is an example of a construction that consists of a noun that is inalienably

¹Coined by Woodbury based on analogy to the term ‘light verb,’ where, in some languages, a nearly contentless verb (have, make, cause, do, etc.) acts as head of a compound verb do running, = run; make food = cook; etc. For more examples see §8.4.1.

possessed. Figure 6.2 presents some examples of these forms. For a more examples see §8.4.2.

Table 6.2: Noun + Noun and Noun + Adjective Compounds

Chatino	Gloss	English
tyʔa ^A -skwe	water-egg	‘egg white’
tyʔa ^A -syeʔ ^E	water-toad	‘saliva’
yni ^G -yaʔ ^F	neck-hand	‘wrist’
teʔ-jychaʔ ^A	cloth-hair	‘blanket’
ke ^G -nʔa ^r	head-house	‘roof’
tyoo-kye ^G	rain-rock	‘hail’
chaʔ ^F -xʔa ^B	word-problem	‘heavy word’
chaʔ ^F -xʔa ^K	word-bad	‘curse word’
chaʔ ^F -slya	word-Castilian	‘Spanish’
nʔa-kiiʔ ^r	house-fire	‘kitchen’
nʔa-xkla ^K	house-school	‘school’

6.3 Lexical classes

The lexical classes, commonly known as parts of speech, of Teotepec Chatino can be grouped into several lexical categories based on their semantics, morphological and syntactic behavior. This section provides a brief overview of the major lexical grammatical categories in the language. The presentation here is brief so the reader is encouraged to read Chapters 7, 8 and 9 for more complete examples of the lexical classes and treatments of the inflection of nouns and verbs. The following treats some of the most common lexical categories in TEO. These include verbs, nouns, adjectives, and quantifiers.

6.3.1 Verbs

Verbs in Teotepec Chatino are a large open class of lexemes used to describe and action, state or an occurrence and they form the main part of the predicate of a sentence. They are often clause initial and are the only lexemes that inflect for aspect, setting this

lexical class apart from others like nouns and adjectives. There are four main aspectual categories in TEO which include the Potential (POT), Completive (COM), Progressive (PRG) and Habitual (HAB) aspects. There is also a fifth, Stative (STAT) form, found only in a small set of verbs §9.7.

Aspect morphology in TEO is realized by segmental prefixes that fuse to the left edge of the verbal stem, which may be realized as \emptyset . There is also a set of paradigmatic tone alternations based on the aspect tone of the third person completive stem. Verbs may be inflected for person by a set of paradigmatic tone alternations and vowel nasalization for first person singular forms (9.2). In the plural forms there is a set of segmental clitics that follow a given verb stem for marking person (9.3.3). Table 6.3 presents a complete paradigm of the four main verbal aspects and all persons for the verb *kyku* ‘to eat’.

Table 6.3: Complete Paradigm of the Verb *kyku* ‘to eat’

NUM/PER	COM	PRG	HAB	POT
1SG	jy-kɔ ^E	nty-kɔ ^I	nty-kɔ ^{Bi}	∅-ku ^{Bi}
2SG	jy-ku ^{Bii}	nty-ku ^I	nty-ku ^{Bii}	∅-ku ^{Bii}
3SG	jy-ku	nty-ku ^I	nty-ku	∅-ku
1PL.EXCL	jy-ku=ra ^A	nty-ku ^I =ra ^A	nty-ku=ra ^A	∅-ku=ra ^A
1PL.INCL	jy-ku=ba	nty-ku ^I =ba	nty-ku=ba	∅-ku=ba
2PL	jy-ku=ɥ	nty-ku ^I =ɥ	nty-ku=ɥ	∅-ku=ɥ
3PL	jy-ku=ju ^A	nty-ku ^I =ju ^A	nty-ku=ju ^A	∅-ku=ju ^A

Teotepec Chatino verbs can be grouped by argument structure. There are transitive, intransitive, stative and causative verbs. Intransitive verbs may become transitive through derivational morphology (§9.5). One way this is accomplished is through equipollent alterations on the stem for intransitive (6.5) and transitive (6.6) forms (§9.5.1).

- (6.5) *jynya^H=neʔ chaʔ^F-kwyaʔ^F si^F jy^Hla^H toʔ^F-nʔa^E*
 POT=3PL permission yes POT.open door
 ‘they will ask permission, yes the door will open’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-04 10:38-10:39)

- (6.6) *ntyka^B-tiʔ^F=yu* *sla^H=yu* *ʔi^E=rɔ^C* *nu-nga^K,*
 HAB.want-ESN=3PL.MASC POT.open=3PL.MASC DAT=3SG.INAN well,
nda^K skwi^E xwe^A-ti *ni^C*
 for circle little-just well
 ‘if they want to open it, well with little circles then’
 (TEO-2011-09-22-txt-MZF-RQF-HRV-jdm-08 05:45-05:48)

Teotepec Chatino also utilizes a similar process for the creation of morphological causative forms. There is a set of verbs that present causative stem alternations to form morphological causatives with the use of the consonant /s/ <*x*> which replaces the palatal consonants of /ç/ <*jy*> and /tʃ/ <*ty*> of the intransitive form in the POT, COM, PRG and HAB aspects (§9.5.2).

There are two other ways of creating causative verbs in TEO. One is constructed with a causative prefix *xi^F*- (6.7) and the other is through a periphrastic construction that utilizes the predicate *mʔni^G* ‘to make/do’ in conjunction with intransitive verbs, nouns or adjectives (6.8).

- (6.7) *ni-chaʔ^F n-xi^F-kta^{Bii}* *snyeʔ^{Bii} jyko^E loʔ^F y-na^E*
 INT-word PRG-CAUS-bathe.2SG child.2SG river and PRG-cry.2SG
 ‘why are you bathing your child and crying?’
 (TEO-2008-07-29-txt-WVM-HRV-jdm 01:53-01:57)

- (6.8) *ja^B jy-lyo^H-tjʔ^{Bi}* *ni-chaʔ^F m-ʔni^G-tyi^I* *yu-stro^K kwa^F*
 no HAB-know-ESN.1SG INT-word COM-make-finish teachers DEM
ʔi^E=rɔ^C
 DAT=3SG.INAN
 ‘I don’t know why the teachers had finished that’
 (TEO-2010-07-22-txt-PQ-RQL-HRV-jdm-02 012:43-12:45)

Existential verbs share special syntactic and semantic properties and form a special sub-class of verbs. Clauses with locative predicates as a clause type overlap, in part, with

existential clauses. These expressions include location (6.9), possession (6.10), position and existence (6.11). These predicates can take all four Aspects and in some instances select the Stative (STAT) Aspect. The Stative Aspect is often a simple and semantically bleached form of the verbs stem (§9.7).

(6.9) $ja^F-?a^E$, *nu* ***ns?wi*** $ny?a^E$
 yes NOM STAT.exist in.the.house
 ‘yes, the ones that were in the house’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-06 09:31-09:32)

(6.10) ja^B ***y?wi*** $sna^G=r\epsilon?$
 no COM.exist *huaraches*=3PL
 ‘they did not have *huaraches*’
 (TEO-2011-08-24-txt-JV-RQF-HRV-jdm-02 04:53-04:53)

(6.11) $ch\phi?^G$ $ty\phi^C-?a^E$ *lo jycha* ***ns?wi*** ja^E-ni^C
 because various-EMPH in illness STAT.exist then
 ‘because there are various kinds of illnesses’
 (TEO-2011-08-23-txt-HRM-RQF-HRV-jdm-05 02:54-02:56)

6.3.2 Nouns

Nouns are a large open class that can denote humans and non-humans, animate things, inanimate things, proper names of people and proper names of places and of things. Two criteria that set lexical nouns apart from other major word classes are that nouns may be function as arguments of predicates and nouns may enter in to a relationship of possessor or possessum (§7.2.2). Nouns may be alienably or inalienably possessed. Nouns mark a possessor through either juxtaposition or through tone changes on the noun stem. Inalienably possessed nouns are inflected for their possessor through tone changes on the stem for second person and tone changes and vowel nasalization for first person. Possessors of alienably possessed nouns, which can be another noun, a person clitic or zero are preceded

by the relational noun ʔi^E . There is also a small set of alienable nouns that require a possessor, deriving inalienably possessed nouns through the addition of an s- or through a stem alternation of the onset consonant of the alienable form with x- /ʃ/ or s- (§7.2.3.5).

6.3.2.1 Relational nouns

In Teotepec Chatino relational nouns derived from body parts cover a broader semantic field for expressions of location (§8.1). In TEO, like other Meso-American languages, spatial location relative to the object is expressed through inalienably possessed noun constructions. Relational nouns in TEO are the head and their NP possessors are their explicit complements. Example 6.12 presents the use of $\text{ch}\text{q}\text{ʔ}^G$ ‘behind’ functioning as a grammaticalized form of the body part ‘back.’

- (6.12) $\text{jykw}\text{a}\text{ʔ}$ $\text{n}\text{ʔi}$ $\text{ch}\text{q}\text{ʔ}^G$ re^C
 swamp STAT.be (at)back.of here
 ‘There is a swamp behind here (Teotepec).’
 (TEO-2008-07-29-txt-WVM-HRV-jdm 00:06 - 00:08)

6.3.2.2 Pronouns

Pronouns are a small closed class of words that may take the place of a noun phrase whose referent can be a participant in the discourse or someone or something recoverable elsewhere in the discourse. Teotepec Chatino clitic subject pronouns may function as subjects of verbs and possessors of nouns. The clitic subject pronouns are enclitic; they follow their hosts, which may be verbs, adjectives or nouns. All of the forms except for the 1SG and 2SG pronouns are really enclitics. The 1SG and 2SG enclitic pronouns show up as stem a mutation of either tonal ablaut and or vowel nasalization. These forms attach directly to the stem of their host and tone selection is determined by the unmarked base tone of the tone set of the completive 3SG form of the verbal root. The 3SG subjects are unmarked and carry the lexical tone of a given word as default. The segmental enclitics also attach

directly on to their hosts often exhibiting a phonologically reduced form of the independent pronoun.

In 6.13 the nasal vowel and the tone from set E /L-H/ do the work of marking the first person on the verb $y\varrho^E$ ‘COM.grind.1SG.’

- (6.13) $ju^E ju^F xa^E ndi^E -sna^C y\varrho^E$
 yes when PRG.begin COM.grind.1SG
 ‘yes, when I began to grind (maize)’
 (SMC-2010-06-29-txt-AM-jdm 6:11-6:14)

Independent subject pronouns are unbound phonological words. They function as subjects or can be focused arguments of the verb. Non-subject pronouns function as objects and possessors of nouns and are always introduced with the dative $?i^E$. Example 6.14 presents the second person singular independent honorific pronoun $?u^A$ preceding the verb. These forms are often accompanied by the reduced enclitic form $=u$ attached to the right side of the predicate. This example also presents the third singular inanimate object pronoun ra^C introduced by the relational noun $?i^E$.

- (6.14) $?u^A nx?i^B =u ?i^E =ra^C$
 2SG.HON HAB.buy=2SG.HON DAT=3SG.INAN
 ‘you buy it?’
 (TEO-2011-09-01-txt-BRZ-RQF-jdm-04 05:16-05:17)

6.3.3 Adjectives

Adjectives are a class of words that modify nouns. They follow the noun they modify and assign some property or index a characteristic of the referent of the noun (6.15).

- (6.15) $lo yuu^A mtyi ns?wa^B =yu ?i^E =ra^C$
 in earth dry HAB.put=3PL.MASC DAT=3SG.INAN
 ‘in the dry earth they put it’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-02 03:05-03:07)

Adjectives may not stand alone as arguments of a clause, which differentiates them from nouns. Examples 6.16 and 6.17 present the adjectives *xwe^A* ‘little’ and *kwla* ‘old’ preceded by the nominalizer *nu*. In these constructions the *nu* is a light-noun head which makes the adjective a noun phrase that can act as the subject of the predicate.

(6.16) *nsɽwi nu xwe^A-ti*
 STAT.exist NOM little-just
 ‘there are just the little ones (iguanas)’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-03 08:14-08:15)

(6.17) *ja^B, ja^B nsɽwi-ɽa^E nu kwla ka^B ni^C*
 ‘no, no STAT.exist-EMPH NOM old POT.be well’
 ‘well, no there aren’t the really old ones anymore (iguanas)’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-03 08:16-08:18)

Adjectives may also be used predicatively where they precede the noun they modify; however, they may not take aspect inflection which distinguishes them verbs (6.18).

(6.18) *kjoɽ^E=ɽi jywi=rq^B*
 fat=DAT POT.say=1P.INCL
 ‘it is fat we would say’
 (TEO-2011-09-22-txt-MZF-RQF-HRV-jdm-06 06:39-06:40)

6.3.4 Quantifiers

Quantifiers, which include numerals, are a distinct closed lexical class in Teotepec Chatino. These lexemes may occur as part of the noun phrase modifying the noun by specifying a particular number or quantity related to the noun. Unlike adjectives these forms precede the noun they modify, as in Examples 6.19 and 6.20. For more details regarding the Teotepec numeral system see §8.5.1.

(6.19) *kʔyʷ^J wxo^K ska tsq^A*
 five pesos one day
 ‘five pesos a day’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm 01:54-01:55)

(6.20) *nsʔwɨ^{Bi} kla^B-tyi^C nsʔwi snoʔ yjg^A*
 STAT.exist.1SG twenty-ten STAT.exist eight year
 ‘I am thirty-eight years old.’
 (TEO-2011-09-22-txt-MZF-RQF-HRV-jdm 00:16-00:17)

In Teotepec Chatino there are number-like quantifiers, *nʔq^J* ‘much, many,’ *chiʔ^B* ‘a little bit,’ *tʔwe^B* ‘half’ and *ndya^A* ‘all.’ Except for *tʔwe^B* ‘half’, these forms may precede the noun they are modifying (§8.5.2).

6.3.5 Adverbs

Adverbs in Teotepec Chatino consist of an assortment of lexical items that do not form one coherent class. some adverbs; however, share similar functions and distribution within the language. These include: temporal adverbs, degree adverbs, demonstrative adverbs and manner adverbs. Adverbs are not inflected for aspect or person and do not function as predicates and thus cannot take arguments. Adverbs tend to have scope over a clause or modify some element within it.

Temporal adverbs give information about when an event occurs. Example 6.21 presents the temporal adverb *tiʔ^F* to describe a durative time period.

(6.21) *tiʔ^F nʔɨ tiʔ^F nde^C tiʔ^F-nyi^C*
 still STAT.be still here still-now
 ‘they are still here now’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-08 00:07-00:10)

Example 6.22 presents the quantifier *ndya^A* and noun root *tsq^A* used to describe the time period of when an event occurred.

- (6.22) *ndya*^A *tsq*^A *ntyʔi* *mqo*^C *tʔa*^G=*yu*
 all day HAB.be COM.throw companion=3PL.MASC
 ‘every day they were firing at each other.’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-01 08:59-09:00)

The adverb *chiʔ*^F ‘little bit’ is used to describe the degree of an action. Example 6.23 presents this form cliticized to the verb with the first person plural exclusive pronoun =*ba* attached to the right edge of the adverb.

- (6.23) *nsʔyu*^H=*chiʔ*^F=*ba* *ʔyq*^E *nsʔyu*^H=*chiʔ*^F=*ba*
 HAB.cut=a.little=1PL.EXCL cornfield HAB.cut=a.little=1PL.EXCL
 ‘we cut a little bit of the field, we cut a little bit.’
 (TEO-2011-06-21-txt-RLQ-RQF-HRV-jdm 04:58-04:59)

Locational adverbs provide information about the location of an event. Example 6.24 presents the locational adverb *kwiʔ*^G.

- (6.24) *ʔq*^F-*ʔq*^E *kwiʔ*^G-*ti* *sʔe*^A *mdq*^B*i*, *ʔy*^F-*ʔy*^E
 yes close-just where COM.stand.1SG yes
 ‘yes, close to where I was standing, yes.’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm 05:59-06:01)

Demonstrative adverbs are deictic in nature and specify the location where an event occurs (8.3.2). Example 6.25 presents the use of the demonstrative adverb *nde*^C ‘here.’

- (6.25) *lo*^F *nde*^C *ngwla*^I=*y*
 and here COM.born=2SG.HON
 ‘and you were born here’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-13 00:19-00:20)

The purpose of this chapter was to define the grammatical and phonological word, to outline the basic major word classes and to cross reference the sections where these elements

occur in this dissertation. The examples outlined here are covered briefly thus the reader is encouraged to read the following chapters in order to know more details about the different lexical classes in the language. As the following chapter unfolds, nominal constituents are described with examples to illustrate a each point. This discussion includes a deeper description of independent subject nouns, clitic pronouns, oblique pronouns, lexical nouns, and possession. Chapter 8 covers topics regarding relational nouns, forms that modify nouns and a description of the inflectional and derivational processes for nouns. Many examples of lexical compounds and emergent lexical compounds can be found in §8.4. A discussion on verbal Aspect and inflectional morphology and other verbal constituents is outlined in Chapter 9.

Chapter 7

Nominal Constituents - Pronouns, Lexical Nouns and Possessed Nouns

This chapter outlines lexical nouns and pronouns of Teotepec Chatino. This analysis is based on both morphological and syntactic criteria taken from organized elicited data and the text database. The following includes a description of pronouns, secondary pronouns, lexical nouns which include human versus non-human nouns, alienable versus inalienable possession, and noun forms that require a possessor. Chapter 8 continues with the description of the nominal constituents outlining relational nouns, nouns that refer to places, compound nouns and the different elements that modify nouns; i.e. lexical adjectives, demonstrative adjectives and adverbs, light nouns, quantifiers, numerals and adjectives.

7.1 Nominal constituents

Nouns in Teotepec Chatino may be divided into two different types; lexical nouns and pronouns. The following section begins with a description of the independent subject pronouns, the clitic subject pronouns, the oblique marked pronouns, and secondary pronouns. After that the discussion of lexical nouns outlines human versus non-human nouns and presents the opposition between inalienable and alienable possessed nouns.

7.1.1 Pronouns

Pronouns in Zapotecan languages are described by Butler (1976), Marlett (1993) and Operstein (2003) as having bound and free forms. Marlett describes a difference between the set of prosodically and syntactically dependent pronouns and prosodically independent pronouns while Butler and Operstein stay with a functional description of bound and free forms. There are similar descriptions of the Chatino languages of ZEN (Carleton and Waksler, 2000) and YAI (Rasch, 2002). Carlton and Waksler describe long and short forms for the free and bound pronouns while Rasch describes clitic pronouns, free forms and secondary pronouns.

Teotepec Chatino has four kinds of personal pronouns: Independent subject pronouns, clitic subject pronouns, non-subject pronouns (oblique marked pronouns) and secondary pronouns. The independent subject pronouns can stand alone, function as subjects or be focused arguments of verbs. The clitic pronouns may function as subjects of verbs and as possessors of nouns and are etymologically a part of the independent object pronouns. The non-subject pronouns function as objects and possessors of nouns and are always introduced with the dative $?i^E$. The class of secondary pronouns gives as referents humans of a particular category.

7.1.1.1 Independent subject pronouns

In TEO there are two sets of independent pronouns - oblique marked and unmarked. The unmarked set are complete grammatical words. They function as subject pronouns, may stand alone and may precede or follow a given verbal lexeme. All of the independent subject pronouns have corresponding enclitic pronouns; these are outlined in §7.1.1.2. The following section outlines the unmarked independent subject pronouns beginning with examples of singular and then plural forms. Table 7.1 presents the set of independent subject pronouns.

Table 7.1: Independent Subject Pronouns

Element	Independent
Person/Number	Subject Pronoun
1SG	naʔ ^{Bi}
1SG <i>humble</i>	ba ^A -reʔ ^C
2SG <i>familiar</i>	ʔmi ^A ~ ʔwe ^A
2SG <i>honorific</i>	ʔu ^A
3SG DEF [+HUM]	∅; (nu-kwa ^F) ni ‘respect’
1PL.INCL	naa ^A
1PL.EXCL	ba ^A -reʔ ^C
2PL	ʔu ^A
3PL	∅; ju ^A ‘adults’ ngwiʔ ‘youth’
3SG INDEF [+HUM]	neʔ
3SG [+ANIM -HUM]	ʔni ~ ʔi
3SG [-ANIM]	ra ^C

Example 7.1 presents the independent 1SG pronoun $naʔ^{Bi}$ preceding an intransitive verb.

- (7.1) $naʔ^{Bi}$ $yjʔ^{E}$
 I COM.sleep.1SG
 ‘I slept.’ (elicited)

In example 7.2 the pronoun is in the initial position of the clause preceding the light headed noun phrase $nu\ kwɪʔ^J$ ‘the one’ and the transitive verb $ndyʔ^{Bi}$ ‘I grind’ inflected for first person.

- (7.2) $naʔ^{Bi}$ $nu\ kwɪʔ^J$ $ndyʔ^{Bi}$ $xa^B-kqʔ^G$
 I the same.one HAB.grind.1SG time-DEM
 ‘It was me, the one who would grind then (maize)’
 (SMC-2010-06-29-txt-AM-HRV-jdm 03:21-03:22)

Example 7.3 shows the first person singular pronoun following the uninflected verb *ne^G* ‘say.’

- (7.3) *kə^F cha^F ne^G na^{Bi} ni^C nʔə*
 DEM that HAB.say I well much
 ‘because of that I say, well, a lot’
 (TEO-2010-07-15-txt-ZFV-RQF-jdm-06 00:00.72-00:02.69)

Example 7.4 presents the independent 1SG pronoun following the inflected verb *ntyʔə^{Bi}* ‘POT.go.1SG.’

- (7.4) *ntyʔə^{Bi} na^{Bi} ti^C wya^H re^C*
 POT.go.1SG 1SG just Nopala DEM
 ‘I would go just to Nopala’
 (TEO-2011-09-22-txt-MZF-RQF-HRV-jdm-01 3:46-3:48)

The following examples show the second person singular independent pronoun *ʔmi*. Example 7.5 shows how this pronoun in a question preceding the verb and example 7.6 shows how it follows the verb.

- (7.5) *lʔi^J ʔo^I ʔmi^A yʔni^E-xʔə^{Bi} wa^C-ny^C*
 INT also you PRG-CAUS.learn2SG already-now
 ‘aren’t you also practicing (music) now?’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-05 5:22-5:24)

- (7.6) *ja^B nʔə^G ʔa^E ʔmi^A*
 no PRG.see EMPH you
 ‘you are not seeing’
 (TEO-2011-07-24-txt-RRS-RQF-jdm-07 3:39-3:40)

The independent pronoun $?u^A$ may be used as an honorific to indicate second person singular and second person plural subjects. When the independent pronoun is used it is common to have the enclitic following the verb. Examples 7.17 and 7.8 present the use of this pronoun as a second person singular honorific.

(7.7) $?u^A$ $nx?i^B=u$ $?i^E=rq^C$
 2SG.HON HAB.buy=2SG DAT=3SG.INAN
 ‘you buy it?’
 (TEO-2011-09-01-txt-BRZ-RQF-jdm-04 05:16-05:17)

(7.8) $?u^A$ $wa?^C$ $mtj^F=u$ $tnya^F$ kwa^F nyi^C ja^E-ni^C
 2SG.HON already COM.pass=2SG work DEM now then
 ‘you already advanced from that post now then’
 (TEO-2010-07-13-txt-GZM-RLQ-jdm-02-A 0:29-0:30)

Kaufman (2007) reconstructs the form $*tye?u$ to mean ‘you all’ in Proto-Zapotecan. In TEO when $?u^A$ is used as a second person plural familiar pronoun it is likely to be from this reconstructed form. The following example shows $?u^A$ as a second person plural pronoun.

(7.9) $ni-nkwa$ $ka^B=u$ nu $?u^A$ $wa?^C-ni^C$ nu $y?ni^E-x?o^B=u$
 how-many HAB.be=2PL NOM 2PL already-now that PRG.make-music=2PL
 ‘how many are there of you now that are practicing’
 (TEO-2011-09-21-txt-ASS-RQF-jdm-04 07:34-07:37)

The independent definite pronoun for the third person singular human subjects is composed of the light head noun/nominalizer nu and the demonstrative pronoun kwa^F . This pronoun may index either male or female referents, precede or follow a verb and stand alone. In 7.10 it precedes and in 7.11 it follows the verb.

(7.10) *ja^B la^F ?a^E ne? cha?F ny?g^A nu-kwa^F jwi*
 no more EMPH 3SG that HAB.see NOM-DEM COM.say
 ‘he did not see all of that, he said’
 (TEO-2011-07-24-txt-RRS-RQF-jdm-10 2:58-3:00)

(7.11) *ka?G ?ni^B na^C ka nu-kwa^F xa^F ty?o^H xkla^K*
 then, HAB.make OBJ POT.come NOM-DEM when POT.leave school
 ‘and so, he said that he will come when he gets out of school’
 (TEO-2011-08-31-txt-SS-RQF-jdm-07 6:30-6:32)

Examples 7.12 and 7.13 show the independent pronouns for third person singular animate non-human subjects - *?ni*. Example 7.12 shows *?ni* used in a demonstrative phrase.

(7.12) *ka?G ?ni nu ns?wi re^C*
 mentioned animal that PRG.exist here
 ‘those animals that exist here’
 (SMC-2010-06-29-txt-GC-RQL-jdm-03 05:01-05:02)

(7.13) *?wi s?e^A j?B-ya?C xyo? ?ni ja^E-ni^C*
 PRG.exist place too.much troublesome animal then
 ‘there are places where the animals are very troublesome’
 (TEO-2010-07-14-txt-RQL-RQF-jdm-04 04:16-04:18)

Like many languages of Mesoamerica, Teotepec Chatino makes the distinction between inclusive and exclusive first person plural pronouns (Kaufman, 2006:121 and Campbell, L. et al, 1986:552). The independent plural subject pronouns of TEO make this distinction. In the case of the plural first person subjects, if the independent pronoun precedes a given verb it is common to have the enclitic attached to the end of a given verb phrase. Examples 7.14 and 7.15 are of the 1st person plural inclusive pronoun.

(7.14) *por-que si^F naa^A ns?wi-lyo-la^B=ra^B*
 because yes 1PL.INCL PRG.exist-worth-more=1PL.INCL
 ‘because indeed we are worth more’
 (TEO-2011-07-16-txt-LZV-RQF-jdm-01 16:08-16:10)

- (7.15) *naa*^A *nsʔwi-lyo*^B=*rq*^B *sʔya*^G *naa*^A *nda*^I=*rq*^B
 1PL.INCL PRG.exist-worth=1PL.INCL because 1PL.INCL PRG.give=1PL.INCL
ser-vi^F-*syo*^E *jychε*^F *tyi*^B=*rq*^B
 service community local=1PL.INCL
 ‘we are valuable because we give service in our community’
 (TEO-2011-07-16-txt-LZV-RQF-jdm-01 16:10-16:13)

Depending on the context, the 1st person plural exclusive pronoun subject can be interpreted as either singular or plural. Example 7.16 presents a singular use and 7.17 present a plural use.

- (7.16) *ba*^G=*reʔ*^C *wa*^r^C *ndyla*^G=*ba* *tnya*^F *skə* *xqʔ*^G
 1PL.EXCL already COM.arrive=1PL.EXCL work *topil* then
 ‘I already arrived at the post of *topil*¹ then’
 (TEO-2010-07-13-txt-GZM-RLQ-jdm-02-B 5:11-16:16)

- (7.17) *ba*^G=*reʔ*^C *nxʔi*^B=*ba* *ʔi*^E=*ra*^C *ʔi*^F=*reʔ*^C, *ja*^F-*ja*^F*ʔ*^E
 1PL.EXCL HAB.buy=1PL.EXCL DAT=3SG.INAN DAT=3PL yes
 ‘us, we bought it from them, yes’
 (TEO-2011-09-01-txt-BRZ-RQF-jdm-04 05:16-05:17)

In example 7.18 the use of the 1PL.EXCL pronoun *ba*^G-*reʔ*^C indexes a singular subject. In this case the speaker is responding to an elder member of the community who is telling a story about when he worked in the local government. The speaker is using a respectful form of speech marked with the use of the 1PL.EXCL independent pronoun and also with the 2SG enclitic pronoun =*y* ‘you’ as a form of respectful reference to the listener. This is used to demonstrate speaker humility and an iconic distancing of the speaker when addressing people considered of higher social rank.

¹*topil* is a post in the *cargo* system. The *topiles* act as community guards, and stewards of the *agencia* building, always available for any kind of activity or errand related to the local government.

- (7.18) xa^E $mkwa^F=y$ $ma-yo^B$ $si?$ $xa^B-kq?$ mdo^G **$ba^G-re?$** ni^C
 when COM.be=2SG major side time-DEM COM.stand 1PL.EXCL well
 ‘when you were second (lieutenant) mayor then, well, I was there’
 (TEO-2010-07-13-txt-GZM-RLQ-jdm-02-B 0:02:27-0:02:61)

The plural independent pronoun ju^A may reference either singular or plural subjects. This pronoun may stand alone or be used with the demonstrative pronoun kwa^F . Example 7.19 shows this pronoun preceding the verb and 7.20 presents ju^A with the demonstrative pronoun kwa^F both being utilized to index a plural subject.

- (7.19) **ju^A** $n?q^G$
 3PL COM.see
 ‘those who saw’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 25:39-25:39)

- (7.20) klo la^E **ju^A-kwa^F** $mdyq^A=ju^A$ la^A re^C
 first more 3PL-DEM COM.arrive=3PL up.to here
 ‘at first they arrived up to here’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-02 00:37-00:39)

7.1.1.2 Clitic subject pronouns

The clitic subject pronouns are enclitic; they follow their hosts, which may be verbs, adjectives or nouns. In TEO, all of the forms except for the 1SG and 2SG pronouns are really enclitics. The 1SG and 2SG pronouns may have started out historically as enclitics but now they show up as stem mutations of either tonal ablaut and or vowel nasalization. These forms attach directly to the stem of their host and tone selection is determined by the unmarked base tone set of the completive 3SG form of the verbal root (see §9.3). The 3SG subjects are unmarked and carry the lexical tone of a given word as default. The segmental enclitics also attach directly on to their hosts often exhibiting a phonologically reduced form of the independent pronoun. Table 7.2 presents the clitic subject pronouns.

Table 7.2: Enclitic Subject Pronouns of Teotepec Chatino

Element	Enclitic
Person/Number	Subject Pronoun
1SG	=[y] + Tone Sets: Bi - I
1SG <i>humble</i>	=ba
2SG <i>familiar</i>	=[M] Tone; Tone Sets B /MLM/ or I - /MH/
2SG <i>honorific</i>	=u
3SG DEF [+HUM]	∅; =yu ‘he,’ =cha ‘she,’ =ni ‘respect’
1PL.INCL	=ra ^B
1PL.EXCL	=ba
2PL	=u
3PL	=ju ^A , =yu, =cha, =neʔ
3SG INDEF [+HUM]	∅; =reʔ ~ =neʔ
3SG [+ANIM -HUM]	=i ~ =ʔi
3SG [-ANIM]	∅; =ra ^C

Examples, 7.21 and 7.22, present the tone clitic and nasalization of the vowel for the first person singular inflection. In example 7.21 the tone /0/ from set Bi is attached to the verb *nsʔwi^{Bi}* ‘PRG.exist.1SG’ and the inalienably possessed noun *sti^{Bi}* ‘my father.’

- (7.21) *loʔ^F snoʔ ti yjg^A nsʔwi^{Bi} xa^E nkjwi^G sti^{Bi}*
 and eight just year PRG.exist.1SG when COM.die father.1SG
 ‘and I was just eight years old when my father died’
 (SMC-2010-06-29-txt-AM-jdm 2:37-2:39)

In 7.22 the nasal vowel and the tone from set E /L-H/ do the work of marking the first person on the verb *yɔ^E* ‘COM.grind.1SG.’

- (7.22) *ju^E jyuʔ^F xa^E ndi^E-sna^C yɔ^E*
 yes when PRG.begin COM.grind.1SG
 ‘yes, when I began to grind (maize)’
 (SMC-2010-06-29-txt-AM-jdm 6:11-6:14)

In 7.23 a similar process of person inflection on the verb is presented. The tone from set Bii /MLM/ marks the second person *familiar* form on the verb $x\text{?wi}^{Bii}$ ‘POT.exist.2SG.’ This example also shows how the dative ?i is inflected for 3SG and the ?yq^E is inflected for 1SG in order to sort out the different subjects and non-subjects in the discourse.

- (7.23) $t\text{?we}^B$ la^A $x\text{?wi}^{Bii}$, $jw\text{?}$?yq^E , $s\text{?we}^F$ mne $na\text{?}^{Bi}$
 half place POT.exist.2SG COM.say DAT.1SG, good COM.say I
 ?i^E
 DAT.3SG
 ‘ “in the middle you will be”, he said to me. “Fine’, I said to him’
 (TEO-2010-07-16-ZFV-jdm 6:36-6:40)

Examples 7.24 and 7.25 show the use of the 2SG honorific enclitic = u . The enclitic is a reduced form of the independent pronoun ?u^A ; the glotal stop is elided and although the tone appears to superficially sound like an [M] tone of set A its sandhi behavior is like that of the toneless set X.

- (7.24) xa^E $md\text{?}^E$ - sna^C yoo^C = u
 when COM.begin COM.grind=2SG.HON
 ‘when you began to grind (maize)’
 (SMC-2010-06-29-txt-AM-jdm 6:11-6:14)

- (7.25) xa^B - $kq\text{?}^G$ na^C , na^C xka^I yjq^A $kq\text{?}^G$ yjq^A $ntyka^B$ = u skq
 time-then but but other year that year HAB.be=2SG.HON *topil*
 ‘and so but, but, the next year, that year you became a *topil*’
 (TEO-2010-07-13-txt-GZM-RQL-jdm-2b 2:43-2:46)

This enclitic may also be used to mark 2PL subjects. Example 7.26 presents the enclitic marking a second person plural argument.

- (7.26) ?wi $tkwa^J$ - $y\text{?}la^C$?wi $tkwa^J$ yjq^A $mdy\text{?}^I$ = u re^C
 PRG.exist two-twenty PRG.exist two year COM.arrive=2PL here
 ‘it has been forty-two years since you all arrived here’
 (SMC-2010-06-29-txt-GC-RQL-jdm 0:13-0:15)

Example 7.27 is of the 3SG indefinite human enclitics =*rɛʔ* and =*neʔ*. These appear to be used interchangeably, can index a male or female referent, and appear to have either a singular meaning for an individual or a singular group i.e. ‘people.’

- (7.27) *jyta=rɛʔ* *jya^A* *nsʔyu^H=neʔ* *jyq^E* *nsʔyu^H=neʔ*
 COM.sow=3SG sugarcane HAB.cut=3SG field HAB.cut=3SG
 ‘he planted sugarcane, he prepared the land, he cut the weeds’
 (SMC-2010-06-29-txt-AM-RQL-jdm 04:28-04:32)

Examples 7.28 and 7.29 present the enclitic =*rq^C* used for indefinite inanimate singular subjects and objects.

- (7.28) *loʔ^F* *ni* *ni* *nkwa* *lo* *jya^A* *kwa^F* *nsʔwi=rq^C*
 and INT INT many face sugarcane DEM PRG.exist=3SG.INDEF
 ‘and how, how many kinds of that sugarcane exist?’
 (TEO-2010-07-14-txt-RQL-RQF-jdm-02-A 00:03.02-00:05.2)

- (7.29) *ntykqʔ^B=rq^C* *skqʔ^F=rɛʔ*, *tnu* *ʔa^E* *tʔwa^A* *kqʔ^C*
 HAB.weave=3SG.INAN shirts=3PL big EMPH thick mentioned
 ‘they would weave their shirts, of very thick cloth’
 (TEO-2010-07-22-txt-PQL-RQL-jdm 19:30-19:32)

Like the independent subject pronouns, the enclitic subject pronouns also make the distinction for inclusive and exclusive plural subjects. The following two examples show the use of the inclusive enclitic pronoun =*rq^B*. In example 7.30 this pronoun is attached to the verb *jylyo^H-tiʔ^C=rq^B* ‘POT.know-ESN=1PL.INCL.’

- (7.30) *ja^B* *jylyo^H-tiʔ^C=rq^B* *tkwi*
 no POT.know-ESN=1PL.INCL who
 ‘we do not know who’
 (SMC-2010-06-29-txt-GC-jdm 7:10-7:12)

In 7.31 $=r\mathbf{q}^B$ is encliticized to the verb $jy\mathbf{la}^B=r\mathbf{q}^B$ ‘POT.arrive=1PL.INCL.’ This example also demonstrates the use of the enclitic $=r\mathbf{q}^C$, used to refer to inanimate referents. The tones distinguish between the inclusive form with that of the inanimate object pronoun.

- (7.31) $tye\mathbf{r}^B=r\mathbf{q}^C$ $xa^B-k\mathbf{q}^G$ xa^E nu $jy\mathbf{la}^B=r\mathbf{q}^B$
 POT.cook=3SG.INAN time-that when REL POT.arrive=1PL.INCL
 $\mathbf{r}o^E=r\mathbf{q}^C$
 with=3SG.INAN
 ‘it will be cooked then when we arrive with it (maize)’
 (SMC-2010-06-29-txt-AM-jdm 1:30-1:32)

The following two examples present the exclusive enclitic pronoun $=ba$. Operstein (2003) reconstructs this pronoun as $*=ya$ in Proto-Zapotec which is the synchronic form in ZEN (Carleton and Waksler, 2000:385). Kaufman (2006:121) notes that in Otomanguean languages there is a humble versus prideful distinction in certain pronouns. In TEO the exclusive enclitic pronoun $=ba$ is also used for first person singular subjects in what is considered polite speech. For example when one leaves a given place it is considered polite to say $wa\mathbf{r}^F$ $tya=b\mathbf{a}$ ‘I am going to leave’ (humbly/politely). This use in general is also strongly associated with female speech. In 7.32 the enclitic is attached to a numeral marker. In 7.33 it is part of the verb $m\mathbf{r}ni^G=b\mathbf{a}$ ‘COM.make=1PL.EXCL.’

- (7.32) $k\mathbf{la}^B$ $w\mathbf{x}o^K$ $s\mathbf{k}a^G=b\mathbf{a}$
 twenty *peso* each=1PL.EXCL
 ‘twenty pesos each of us’
 (TEO-2010-07-13-GZM-RQL-jdm 9:43-9:44)

- (7.33) $m\mathbf{r}ni^G=b\mathbf{a}$ $tnya^F$ $s\mathbf{k}a$ $\mathbf{r}o^E$ Be^F-ndyu^E nu $snye\mathbf{r}^F-la^F$ $xu\mathbf{r}^F$
 COM.make=1PL.EXCL work *topil* with Juevencio NOM son-strong mister
 $Xtya^E$ re^C
 Sebastian here
 ‘We did the work of *topil* with Juevencio the son-in-law of mister Sebastian’
 (TEO-2010-07-13-txt-GZM-RQL-jdm-2b 11:37-11:39)

The enclitic $=ju^A$ is used for third person plural subjects and in some instances appears to be used for third person singular subjects. Examples 7.34 and 7.35 present its use as a plural.

- (7.34) *yja ntyku=jju^A*
 tortilla HAB.eat=3PL
 ‘the tortilla that they ate’
 (SMC-2010-06-29-txt-AM-jdm 3:23-3:24)

- (7.35) *nskwa^{Bi} yja xwe^A ti ku=jju^A*
 PRG.lie.1SG tortilla little just POT.eat=3PL
 ‘I made small tortillas so that they would eat’
 (SMC-2010-06-29-txt-AM-jdm 3:33-3:35)

Example 7.36 shows the use of $=ju^A$ for a singular subject.

- (7.36) *kaa^B yjga^A yaa^G=jju^A mkwa^C=jju^A wsya^K cha^{2F}-yuu^A*
 nine years COM.go=3SG COM.be=3SG president communal-assets
 ‘for nine years he was president of communal assets’
 (TEO-2011-07-16-txt-LZV-RQF-jdm-01 11:26-11:28)

7.1.1.3 Oblique marked pronouns

The oblique marked set are almost identical to the enclitic pronouns; however, they are non-subject pronouns on alienable nouns introduced by the dative marker $?i$.² The dative is important in Teotepéc Chatino syntax and refers to a general oblique case. It indicates alienable possession and introduces pronominal objects, animate objects and indirect objects in relative clauses. Dative markers typically express indirect object relationships and a range of meanings similar to that covered by the preposition ‘to’ or ‘of’ in English. The following presents examples of the oblique marked pronouns and outlines their distribution.

²The dative is discussed in §§7.1.1.3 Marked independent pronouns, 7.2 and Lexical nouns.

Person inflection for the singular non-subject oblique pronouns, like that of the clitic pronouns, is indicated with tone changes on the dative stem ʔi^E . The third and second person forms are differentiated by tone alone. The first person singular is formed from the conjunction of the dative and the first person singular independent pronoun $\text{ʔi} + \text{naʔ}^{Bi} \rightarrow \text{ʔyq}^E$. Plural forms employ a combination of the dative ʔi^E with the use of the same set of subject enclitic pronouns presented in §7.1.1.2. Table 7.3 outlines the oblique marked pronouns.

Table 7.3: Oblique Non-subject Pronouns of Teotepec Chatino

Element	Oblique
Person/Number	Non-subject
1SG	ʔyq^E ($< \text{ʔi} + \text{naʔ}^{Bi}$)
1SG <i>humble</i>	$\text{ʔi}^A = \text{ba}$
2SG <i>familiar</i>	ʔi^{Bi} ($< \text{ʔi} + /\text{MLM}/$)
2SG <i>honorific</i>	$\text{ʔi}^E = \text{u}$
3SG DEF [+HUM]	$\text{ʔi}^E \emptyset$; =yu ‘him’ =cha ‘her,’ =ni ‘respect’
1PL.INCL	$\text{ʔi}^A = \text{raq}^B$
1PL.EXCL	$\text{ʔi}^A = \text{ba}$
2PL	$\text{ʔi}^A = \text{u}$
3PL	$\text{ʔi}^A = \text{ju}^A$, =yu $\text{ʔi}^A = \text{cha}$, neʔ
3SG INDEF [+HUM]	$\text{ʔi}^E = \text{reʔ}$ ~ =neʔ
3SG [+ANIM -HUM]	$\text{ʔi}^E = \text{ni}$
3SG [-ANIM]	$\text{ʔi}^E = \text{raq}^C$

Examples 7.37 and 7.38 present the first person singular form of this pronoun construction as a direct object. In 7.37 this form is used as a malefactive and in 7.38 as a recipient.

- (7.37) $\text{mkwa}^F - \text{ti}^F = \text{yu}$ $\text{kjwi}^B = \text{yu}$ ʔyq^E xq^G
 COM.want-ESN=3PL.MASC POT.kill=3PL.MASC DAT.1SG then
 ‘and so they wanted to kill me’
 (SMC-2010-06-29-txt-GC-RQL-jdm-01 10:14-10:15)

- (7.38) *kqɔ^G mdaa^E=yu kafe^B ʔyq^E*
 and.so COM.give=3PL.MASC coffee DAT.1SG
 ‘and so they gave me coffee’
 (SMC-2010-06-29-txt-GC-RQL-jdm-01 14:16-14:17)

Examples 7.39 and 7.40 present examples of the oblique second person singular pronoun ʔi^{Bii}. Tone /MLM/ of set Bii indicates the second person subject.

- (7.39) *kqɔ^G tnya^F mɔni^I mdjɔ^C-yɔwi ʔi^{Bii}*
 DEM work COM.do.2SG COM.pass-COM.exist DAT.2SG
 ‘that is the work that you did to maintain yourself’
 (TEO-2010-07-13-txt-CZM-RQL-jdm-01 08:16-08:18)

Example (7.40) presents the oblique second singular pronoun as the direct object, preceding the first person singular pronoun in the dative case indexing an agentive subject.

- (7.40) *tya^H ta jycha tyq sya^F ʔi^{Bii} ʔyq^E*
 tomorrow or day.after.tomorrow POT.turn.in.1SG pay DAT.2SG DAT.1SG
 ‘tomorrow or the day after tomorrow I will pay you’
 (TEO-2011-07-24-txt-RRS-RQF-jdm 03:10-03:11)

The following examples present third person singular oblique pronouns. These unmarked pronouns exhibit the ascending tone /L-H/ of set E. They may stand alone or be inflected with a third person singular enclitic following the dative. Example 7.41 shows the unmarked dative indirect object pronoun without an enclitic.

- (7.41) *nyʔq^B-nu-ti msq^E xa^B-kqɔ^G ne naɔ^{Bii} ʔi^E*
 like-NOM-only fight time-then HAB.say I DAT
 ‘any fight then, I say to him’
 (SMC-2010-06-29-txt-AM-RQL-jdm 16:39-16:41)

Examples 7.42 and 7.43 are third person dative constructions that utilize the definite human pronoun enclitic =*yu* to express indirect object constructions.

- (7.42) *ji^B-ya^C lye^G ka^K ?i^E=yu jy^oH Ta^Bsyu^K ka^oG*
 ambitious much STAT.be DAT=3SG.MASC *Indian* Anastasio mentioned
 ‘The Indian Anastasio was very ambitious’³
 (SMC-2010-06-29-txt-GC-RQL-jdm-01 12:54-12:56)

- (7.43) *ka^K cha^oF ?i^E=yu*
 STAT.be word DAT=3PL.MASC
 ‘according to them’
 (SMC-2010-06-29-txt-GC-RQL-jdm-01 13:22-13:23)

The following examples show the third person oblique pronoun constructions with the indefinite human pronoun enclitic =*re?*. In 7.44 we can see the pronoun being used for the subject of an alienably possessed noun. In 7.45 we can see that =*re?* is being used for plural subject.

- (7.44) *kwa^F nu ntyka^B-ka^B jy^oE ?i^E=re?*
 DEM NOM HAB.make-POT.be field DAT=his
 ‘that is where he would make his field’
 (TEO-2010-07-13-txt-GZM-RQL-jdm-01 05:23-05:24)

- (7.45) *kwa^F-(ny)?a^B ka^K n?i cha^oF ?i^E=re?*
 DEM-like STAT.be PRG.live thing DAT=them
 ‘that is how things are for them’
 (TEO-2010-07-13-txt-GZM-RQL-jdm-A 12:48-12:49)

³*ji^B-ya^C* derives from *ntyji^B* ‘HAB.pass’ *kya^C* ‘measuring tape,’ which when used as an adverb signifies ‘to be ambitious’ or to emphasize one’s actions passing a kind of *measure*.

Example 7.46 presents the third person animate non-human pronoun.

- (7.46) *ɟyku* $\text{ʔi}^E = \text{ʔni}$
 COM.eat DAT=animal
 ‘he ate the animals’
 (SMC-2010-06-29-txt-AM-RQL-jdm 12:39-12:40)

The following examples present the oblique pronoun enclitic $=r\text{q}^C$ for the third person singular inanimate object. Example 7.47 shows the enclitic attached directly to the verb where the speaker is making reference to the month in an interrogative phrase.

- (7.47) *ni* *kooʔ^E* *ka^K = r^q^C*
 INT month STAT.be=3SG.INAN
 ‘what month is it?’
 (SMC-2010-06-29-txt-CC-RQL-jdm-01 00:27-00:27)

In 7.48 the speaker makes reference to a previously mentioned topic. The construction is part of an alienable possessed noun construction where $\text{ʔi}^E = r\text{q}^C$ expresses a possessed relationship of the information related to the topic.

- (7.48) $\text{ʔq}^B - \text{ʔq}^B$ *ja^B* *la^F* *ne^B* *chaʔ^F* $\text{ʔi}^E = r\text{q}^C$
 NEG no place HAB.hear word DAT=3SG.INAN
 ‘they did not hear news of that’
 (SMC-2010-06-29-txt-AM-RQL-jdm 05:36-05:38)

The following examples present the oblique plural enclitic pronouns. As seen in the previous examples of the independent and enclitic pronouns, here too, the language makes the distinction between inclusive and exclusive arguments. Example 7.49 shows the marked first person plural inclusive enclitic pronoun.

- (7.49) *ja^B ska chaʔ^F-ti ʔi^A=rɔ^B*
 not one word-just DAT=1PL.INCL
 ‘we do not agree’
 (TEO-2011-08-21-txt-ACM-RQF-jdm-06 00:19-00:20)

Example 7.50 presents the oblique first person plural exclusive enclitic pronoun. In this sentence the pronoun is used for marking the direct object. The same enclitic is also attached to the verb *yoo^C* ‘COM.grind.’

- (7.50) *nɔlʔo^B ni ʔi^A=ba yoo^C=ba, nɔlʔo^B ni*
 COM.teach 3SG DAT=1PL.EXCL COM.grind=1PL.EXCL COM.teach 3SG
ʔi^A=ba
 DAT=1PL.EXCL
 ‘she taught us to grind, she taught us’
 (SMC-2010-06-29-txt-AM-RQL-jdm 02:44-02:46)

As presented in §§7.1.1.1 and 7.1.1.2 for independent subject and subject clitic pronouns, the enclitic pronoun =*y* is used as a second person singular honorific and as a second person plural argument. Example 7.51 shows the oblique form used as an honorific.

- (7.51) *tiʔ^F jla^B waʔ^C-ni^C ka^B rmi^B yu^K ʔi^A=y*
 still POT.obtain already-now HAB.be remedy DAT=2SG.HON
 ‘there is already still time to cure you’
 (TEO-2010-07-13-txt-GZM-RQL-jdm-A 03:39-03:41)

Example 7.52 shows the use of the marked enclitic =*y* for a 2PL inalienably possessed argument.

- (7.52) *ni ji^A tnya^F mʔni^G=y ʔo^E neʔ-kla ʔi^A=y sʔni*
 INT kind work COM.do=2PL with people-elder DAT=2PL before
 ‘what kind of work did you all do with your parents before?’
 (TEO-2011-07-24-txt-RRS-RQF-jdm-06 00:09-00:10)

The oblique enclitic pronoun for third person plural arguments is =*ju*^A. In 7.53 this form is used for an inalienably possessed noun.

- (7.53) *ch*ɔʔ^G *k*ɔʔ^G *nt*ɛ^B ʔ*i*^E=*j*u^A *ni*^C
because DEM people DAT=3PL well
‘well, because they were their people then’
(TEO-2011-07-16-txt-LZV-RQF-jdm-02 02:41-02:42)

Table 7.4 provides a complete set of the personal pronouns.

Table 7.4: Personal Pronouns of Teotepec Chatino

Element Person/Number	Subject		Non-subject
	Independent	Clitic	Independent
1SG	naʔ ^{Bi}	=[Y] + Tone Sets: Bi - H	ʔyɔ ^E (< ʔi + naʔ ^{Bi})
1SG <i>humble</i>	ba ^A -reʔ ^C	=ba	ʔi ^A =ba
2SG <i>familiar</i>	ʔmi ^A ~ ʔwe ^A	=[M] Tone; Tone Sets B /MLM/ or I - /MH/	ʔi ^{Bii} (< ʔi + /MLM/)
2SG <i>honorific</i>	ʔu ^A	=u	ʔi ^E =u
3SG DEF [+HUM]	∅; (nu-kwa ^F) ni ‘respect’	∅; =yu ‘he,’ =cha ‘she,’ =ni ‘respect’	ʔi ^E ∅; =yu ‘him’ =cha ‘her,’ =ni ‘respect’
1PL.INCL	naa ^A	=ra ^B	ʔi ^A =ra ^B
1PL.EXCL	ba ^A -reʔ ^C	=ba	ʔi ^A =ba
2PL	ʔu ^A	=u	ʔi ^A =u
3PL	∅; ju ^A ‘adults’ ngwiʔ ‘youth’	=ju ^A , =yu, =cha, =neʔ	ʔi ^A =ju ^A , =yu ʔi ^A =cha, neʔ
3SG INDEF [+HUM]	neʔ	∅; =reʔ ~ =neʔ	ʔi ^E =reʔ ~ =neʔ
3SG [+ANIM -HUM]	ʔni ~ ʔi	=i ~ =ʔi	ʔi ^E =ʔni
3SG [-ANIM]	ra ^C	∅; =ra ^C	ʔi ^E =ra ^C

7.1.1.4 Secondary pronouns

Part of the lexicon in Teotepec Chatino gives as referents humans of a particular category. In Yaitepec Eastern Chatino, Rasch (2002) refers to these as secondary pronouns. In TEO these are unique pronominal elements like *cha* ‘her’ or a kind of *light* noun like *neʔ* ‘person’ and *yu* ‘man.’ Below, I outline the use of the secondary pronouns in examples taken from the text corpus.

Examples 7.54 and 7.55 present *neʔ*, used for third person indefinite human subjects.

- (7.54) *neʔ* *mdʔo^E* *la^A* *tsʔe^E* *kwa^F*
 people COM.leave place Yolotepec DEM
 ‘those that left Yolotepec’
 (SMC-2010-06-29-txt-AM-RQL-jdm 08:27-08:28)

The fact that in example 7.55, *neʔ* ‘person’ collocates with *ska* ‘one’ is evidence that this *neʔ* is a noun and not a pronoun. Syntactically a pronoun is an NP not and N. Only an N and not an NP will collocate with a numeral.

- (7.55) *ska neʔ* *yʔwi* *ntʔ^F* *kwa^F*
 one person COM.exist peak DEM
 ‘a person that lived on that hill’ (San Jose Atotonilco)
 (SMC-2010-06-29-txt-GC-RQL-jdm-03 00:31-00:33)

This also occurs with the forms *yu* ‘man’ and *ni* ‘respected person.’ In 7.56 these forms are used as the 3SG definite human pronoun to refer to a male subject; however, in both instances they are preceded by *ska* ‘one.’

- (7.56) *ska ni* *nʔi* *ti^C-kwa^F*, *ska yu* *na^I* *Mɔ^B*
 a 3SG HAB.to.be just-there, a man PRG.name Filemon
 ‘a respected person who lives up there, the man named Filemon’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm 10:25-10:27)

The form *yu* is a reduced version of the lexical noun *ʔyʔyu^E* ‘man.’ In example 7.56 this form is used to express definite third person singular. Example 7.57 demonstrates the use of *yu* to refer to plural subjects.

- (7.57) *yu* *nu* *ndya* *ʔytsiʔ^F* *ʔi^E=reʔ* *kaʔ^G*
 3PL.MASC that COM.go POT.bury DAT=3SG.INDEF mentioned
 ‘those that went to bury that person’
 (SMC-2010-06-29-txt-AM-RQL-jdm 07:23-07:24)

The following examples (7.58, 7.59 and 7.60) illustrate the 3SG definite pronoun *ni*. This form is used to refer to a respected person. It is often used to refer to elders, gods and people of great veneration. Kaufman (2007) reconstructs this form in Proto-Zapotecan as **ne(?)*. In examples 7.58 and 7.59 the antecedent occurs at an earlier stage in the discourse.

(7.58) *jyta ni nʔq^B jya^A ni^C*
 COM.sow 3SG.RSP much sugarcane well
 ‘well, she sowed a lot of sugarcane...’
 (SMC-2010-06-29-txt-AM-jdm 7:33-7:35)

(7.59) *nʔq^B kqʔ^G nsʔwa^B ni ndaa^A*
 all there HAB.put 3SG.RSP bean
 ‘she put everything there, beans...’
 (SMC-2010-06-29-txt-AM-jdm 7:21-7:22)

In 7.60 the pronoun precedes the referent.

(7.60) *mdʔo^E ni xuʔ^F Tyo^B tkwɛ^E kwa^F ni^C*
 COM.leave 3SG.RSP mister Pedro path DEM well
 ‘well he left, mister Pedro, that path (where he lived)’
 (TEO-2010-07-13-txt-GZM-RQL-jdm-2-B 02:35-02:37)

The pronoun *cha* indexes third person non-adult female referents. This contrasts with the pronoun *ju^A*, above, which usually indexes referents who are adults. In example 7.61 we can see the pronoun followed by the adjective *ngwiʔ^E* ‘young’ which makes reference to the girl’s age. This lexeme indexes third person plural subjects that are also considered minors of the community.

(7.61) *ni-chaʔ^F msnyi^{Bii} kwiʔ^A ʔi^E=cha ngwiʔ^E nʔq^E ndʔq^I*
 why COM.grab.2SG hiccup DAT=3SG.FEM young woman PRG.walk
tkwɛ^E re^C
 trail DEM

‘why did you get hiccups from the young girls walking on this trail?’
 (TEO-2011-08-23-txt-HRM-RQF-jdm-07 01:07-01:12)

The last example of secondary pronouns is for the lexeme *kwiʔ* ‘baby.’

(7.62) *nu=nxi^E kwa^F ni^C, chqʔ^G kwa^F ngʔa kwiʔ^C nso^I ka-fe^B*
 NOM=Yaitepec DEM well, back.of DEM fastened baby PRG.pick coffee
 ‘well those Yaitepecans, they would have their baby on their back picking coffee’
 (TEO-2010-07-22-txt-PQL-RQL-jdm-03 06:34-06:37)

7.2 Lexical nouns

Lexical nouns are a large open class and can denote humans and non-humans, animate and inanimate things, proper names of people and proper names of places and of things that exist in the world. Lexical nouns may be marked with the dative *ʔi^E* and inalienably possessed nouns may be marked with the possessor on the noun. Two criteria that set lexical nouns apart from other major word classes are that NP’s may be function as arguments of predicates and nouns may enter in to a relationship of possessor or possessum in a possessed relationship (§7.2.2).

Example 7.63 has two nouns. The enclitic for the third person plural *yu* functions as the subject of the verb ‘open’ and the last word *nʔa* ‘house’ functions as the direct object of the verb.

(7.63) *msla^E=yu nʔa*
 COM.open=3PL.MASC house
 ‘they opened the house’
 (TEO-2010-06-29-txt-GC-RQL-HRV-jdm-01 16:12-16:13)

Example 7.64 presents two nouns in a relationship of possessor and possessum. In this example the relationship between the alienably possessed noun *tykq^F-jyka* ‘hatchet’

whose possessor is the late Ri^F-ke^B ‘Enrique’ is identified with the use of the dative $?i^E$ ‘of.’ Alienable and inalienable nouns are described in detail in §7.2.2.

- (7.64) $tyk\varnothing^F-jyka$ $?i^E$ $ne?-jylyo^A$ Ri^F-ke^B
 steel-stick of person-deceased Enrique
 ‘the hatchet of the deceased Enrique...’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-01 07:24-07:25)

A couple of distinctions for for determining noun class membership are oppositions between human, non-human and animate versus inanimate nouns. Another important classification can be made between alienable and inalienably possessed nouns. There are several sets of lexical nouns that can be distinguished by their distribution and grammatical function these include relational nouns, body part nouns and other nouns that refer to locations. The following sections outline different types of of lexical nouns.

7.2.1 Human, non-human nouns, animate and inanimate nouns

Human nouns include proper names of people i.e.: $Jwa^F na$ ‘Juana,’ $Jo^B se^E$ ‘Jose,’ Tyo^B ‘Pedro’ and, Xwa^F ‘Juan,’ and common nouns referring to individual humans or types of humans i.e. $n?a\varnothing^E$ ‘woman,’ $jy?a$ ‘his/her mother,’ $jy?yu^E$ ‘man,’ sti ‘his/her father’ $ne?$ ‘person’ and $nt\varnothing$ ‘people.’ Animate non-human nouns include the name for animals in general $?ni$ ‘animal’ and specific names for animate creatures i.e.: $xni?^F$ ‘dog,’ kto^K ‘hen,’ $kchi^C$ ‘tiger,’ $yo?^H$ ‘hummingbird,’ si^F ‘butterfly,’ $nt\varnothing^E$ ‘mosquito,’ $ktye?^G$ ‘ant,’ kla^A ‘minnow,’ $knaa^E$ ‘snake.’

One of the differences between animate and inanimate nouns is that animate nouns may be marked by $?i^E$ when in the object position of a transitive clause.

- (7.65) $ka?^G$ $mtsa?^F=r\varnothing?$ $?i^E$ $ne?$ $jy?yu^E$ $ka?^G$ $x\varnothing?^G$ ni^E
 there COM.advise=3PL to person man mentioned then well
 ‘well, they advised that man then...’
 (TEO-2010-08-04-txt-MCJ-HRV-jdm-03 00:40.38-00:45.13)

- (7.66) *pe-ro^K xa^B-kq^{ʔG} ti ja^B na^C ʔi^E ntɛ^B nʔa^E, na^C nu ka^K*
 but then only no thing for people woman, thing that STAT.be
pyq^B
 shawl
 ‘but then they would get things for the women, the thing that is a shawl...’
 (TEO-2011-08-04-txt-JV-RQF-jdm-05 00:24.62-00:27.33)

Human and non human animate nouns are treated the same in that they can both be optionally marked by *ʔi^E* when in the object position.

- (7.67) *si^F nu nʔa^E ja^B ntyka^B-ʔa^G=ti^F (ʔi^E) nu=jyʔyu^E kq^{ʔG}*
 if NOM woman no HAB.want-EMPH=ESN (DAT) NOM=man mentioned
 ‘if the woman does not want that man...’
 (TEO-2011-07-24-txt-RRS-RQF-jdm-03 18:55-18:57)

- (7.68) *yjwi^{ʔC} Jwa^F na (ʔi^E) xni^{ʔC}*
 COM.sell Juana (DAT) dog
 ‘Juana sold the dog.’
 (RQF’s example sentence)

Inanimate nouns are never marked in transitive clauses when in object position. Example 7.70, marked by asterisk, illustrates how the use of *ʔi^E* is ungrammatical when it precedes a full fledged inanimate noun.

- | | |
|---|---|
| <p>(7.69) <i>kyku Nda^Enye nsna^K</i>
 COM.eat Daniel apple
 ‘Daniel ate an apple.’
 (RQF’s example sentence)</p> | <p>(7.70) <i>*kyku Nda^Enye ʔi^E nsna^K</i>
 COM.eat Daniel DAT apple
 ‘Daniel ate an apple.’
 (RQF’s example sentence)</p> |
|---|---|

Animate and inanimate pronouns may all be marked with *ʔi^E* when in the object position. The first example shows the pronoun *ra^C* whose antecedent is a car mentioned earlier in the narration. The second example illustrates the use of the pronoun *yu* to refer to a group of men previously introduced.

(7.71) *mɔkka^B-rɛʔ* *ʔi^E=rɔq^C*
 COM.take.apart=3PL DAT=3SG.INAN
 ‘they took it apart’ (the car)
 (SMC-2010-06-29-txt-GC-RQL-jdm-01 01:09-01:11)

(7.72) *ja^B ngwla^C* *ʔa^E kɔ^B* *ʔi^E=yu*
 no COM.give.time EMPH POT.shoot DAT=3PL.MASC
 ‘he didn’t have time to shoot them’
 (SMC-2010-06-29-txt-GC-RQL-jdm-01 08:18-08:19)

7.2.2 Alienably vs. inalienably possessed nouns

The opposition between alienable and inalienable possession is an areal feature of the Mesoamerican languages (Campbell, L. et al 1986:549). This opposition is common in Zapotecan languages and is attested cross-linguistically in other North American, Pacific, Russian and African languages (Nichols, 1988; Claudi and Heine, 1989). Following Nichols (1988), it is considered nearly a linguistic universal that the inalienable set of nouns is a closed small class of nouns, whereas the alienable set is a large open class. In Chatino, alienable possessed nouns are dependent marked and inalienable possessed nouns are head-marked. Inalienable possessed nouns the possessor and possessum are fused together in a single element for singular possessors and closely linked with enclitics for plural possessors. Alienable possessed nouns are expressed with a relational noun construction and possessors that follows the possessed noun.

7.2.2.1 Inalienably possessed nouns

Inalienably possessed nouns in Teotepéc Chatino constitute a small closed class of nouns denoting internal and external body parts nouns, body fluids, kin terminology and other nouns considered intimately associated with the possessor i.e; *tyʔi^E* ‘your voice’ and *kyʔi^E* ‘your scent.’ This is true in the other EC varieties of YAI (Rasch, 2002), SJQ (Cruz, E., 2007), PAN (Pride and Pride, 2004), and ZAC (Villard, 2008).

The inflectional patterns for inalienably possessed nouns is based on the tone of the unmarked 3SG form. In these forms the possessor is expressed as an affixation on the possessum. Examples 7.73 and 7.74 illustrate this point. The first person singular possessor is indicated on the noun with the super high tone /0/ of tone Bi and the nasal vowel as seen in (7.73). In the plural forms the possessor is an enclitic juxtaposed with the possessor following the noun (7.74).

(7.73) *snyeŋʔ^{Bi}*
 child.1SG
 ‘my child’

(7.74) *snyeŋʔ=rɔ^B*
 child=1PL.INCL
 ‘our child’

Inalienably possessed nouns show a productive pattern of tone marking for person based on the lexical tone of the noun stem of each given lexeme. The singular forms use the same set of enclitic pronouns presented in §7.1.1 Table 7.4. This is a similar type of patterning found in the inflection of verbs for subject person and number presented in §9.3.

If the base tone is from sets *X*, *A*, *B* or *C* the second person possessed noun is marked with the /MLM/ tone of the set Bii and the first person nouns are marked with the super high tone /0/ of set Bi. For the sets *E*, *G*, and *I* the second person possessed noun is marked with the tone sequence /MH/ of set I and the super high tone /0/ of set Bi.

Table 7.5: Tone Patterns on Singular Inalienable Nouns

Gloss	Stem	Set	2SG	Set	1SG	Set
‘tongue’	tseŋʔ	<i>X</i>	tseŋʔ ^{Bii}	<i>Bii</i>	tseŋʔ ^{Bi}	<i>Bi</i>
‘mouth’	tʔwa ^A	<i>A</i>	tʔwa ^{Bii}	<i>Bii</i>	tʔwɔ ^{Bi}	<i>Bi</i>
‘mucus’	skɔŋʔ ^B	<i>B</i>	skɔŋʔ ^{Bii}	<i>Bii</i>	skɔŋʔ ^{Bi}	<i>Bi</i>
‘arm’	skɔ ^C	<i>C</i>	skɔ ^{Bii}	<i>Bii</i>	skɔ ^{Bi}	<i>Bi</i>
‘reflection’	xnyi ^E	<i>E</i>	xnyi ^I	<i>I</i>	xnyi ^{Bi}	<i>Bi</i>
‘blood’	tne ^G	<i>G</i>	tne ^I	<i>I</i>	tne ^{Bi}	<i>Bi</i>
‘liver’	loo ^I	<i>I</i>	loo ^I	<i>I</i>	loo ^{Bi}	<i>Bi</i>

The plural forms of inalienable possessed nouns follow the same pattern for marking person as the singular examples present; however, inalienable noun stems from sets use the

base lexical tone plus a given person clitic to demonstrate the possessed relationship. There is one exception, the plural inalienable possessed nouns from set *E* use the second person singular tone from set I /MH/ for marking the plural forms of 1PL.INCL, 1PL.EXCL and 2PL. The 3PL form takes the stem tone. This is exactly the same pattern seen in the inflectional patterns for the plural verb forms presented in §9.3.3. Table 7.6 presents these facts.

Table 7.6: Tone Patterns on Plural Inalienable Nouns

Gloss	Stem	1PL.INCL	1PL.EXCL	2PL	3PL
‘tongue’	tseʔ	tseʔ=r̩ ^B	tseʔ=ba	tseʔ=ɥ	tseʔ=jɥ ^A
‘mouth’	tʔwa ^A	tʔwa ^A =r̩ ^B	tʔwa ^A =ba	tʔwa ^A =ɥ	tʔwa ^A =jɥ ^A
‘mucus’	skɔʔ ^B	skɔʔ ^B =r̩ ^B	skɔʔ ^B =ba	skɔʔ ^B =ɥ	skɔʔ ^B =jɥ ^A
‘arm’	skɔ ^C	skɔ ^C =r̩ ^B	skɔ ^C =ba	skɔ ^C =ɥ	skɔ ^C =jɥ ^A
‘reflection’	xnyi ^E	xnyi ^I =r̩ ^B	xnyi ^I =ba	xnyi ^I =ɥ	xnyi ^E =jɥ ^A
‘blood’	tne ^G	tne ^G =r̩ ^B	tne ^G =ba	tne ^G =ɥ	tne ^G =jɥ ^A
‘liver’	loo ^I	loo ^I =r̩ ^B	loo ^I =ba	loo ^I =ɥ	loo ^I =jɥ ^A

7.2.2.2 Alienable possessed nouns

Alienable nouns in Chatino are a large open class that includes personal items such as tools and household possessions, property, and things in the world that can belong to a person but are not considered to be intimately associated with the possessor. Alienable possession of nouns in TEO is dependent marked. The possessor may be marked with a tone enclitic on the dative ʔi^E or with a full lexical noun following the dative, expressed with the following structure: [possessum + dative + possessor]. Described as a relational noun in Zenzontepec Chatino, the dative form is expressed as $ji\text{ʔi}^{(tone)}$ and in monosyllabic Eastern Chatino it looks like $\text{ʔi}^{(tone)}$. This lexeme has been described as signifying ‘of’ or ‘property of’ (Carleton and Waksler, 2000; Cruz, E., 2007; Pride and Pride, 2004, 1970; Rasch, 2002). Examples 7.75 and 7.76 present the operation of the dative with a pronominal possessor and a lexical noun possessor in TEO.

- (7.75) *ɟyka-xlyɑ^K* *ʔɟ^{Bi}* (7.76) *nʔɑ* *ʔɟ^E* *xuʔ^F* *wilebaldo*
 stick-castillian DAT.2SG house DAT.3SG señor wilebaldo
 ‘your chair’ - (elicited) ‘Wilebaldo’s house’ - (elicited)

In TEO the singular forms are expressed with *ʔɟ^E*, in the same manner that the oblique marked pronouns are formed (§7.1.1.3). The 2SG and 3SG forms are created through tonal ablaut on the stem and the 1SG form is created with the conjunction of the 1SG independent pronoun and the base form of the RN, *naʔ^{Bi} + ʔɟ^E → ʔyɑ^E*. Likewise, personal pronouns may be used in conjunctions with the relational noun stem to provide emphasis or disambiguate who the possessor is in a given possessed relationship. The plural forms are expressed with the relational noun and the independent pronoun separately i.e. *ʔɟ^E + nu-kwa^F*. It is not unusual to find the relational noun acting as a possessive marker since the possessor can be analyzed as a recipient.

There are examples of alienable nouns possessing other nouns. These constructions allow for inanimate and animate objects to be possessed by other inanimate objects or concepts. Example 7.77 illustrates this point.

- (7.77) *yaa^G* *ti^A* *chaʔ^F* *ʔɟ^E* *ɟya^A* *kwa^F* *ni^C*
 COM.go.there≠base just that of sugarcane DEM well
 ‘well, that’s it about the sugarcane.’
 (*lit.* ‘well, it went just to there, that of the sugarcane’)
 (TEO-2010-07-14-RQL-RQF-jdm-02 05:08 - 05:09)

Table 7.7 presents a full paradigm of three alienably possessed nouns. Names can be placed after *ʔɟ^E* in order to identify a specific possessor i.e.: *xniʔ^C ʔɟ^E ɟwa^F na* ‘Juana’s dog’ *lit.* ‘dog of Juana.’

Table 7.7: Person Marking on Alienable Nouns

1SG	ka-xlya ^K ʔya ^E stick-castilian of.1SG 'my chair'	nʔa ʔya ^E house of.1SG 'my house'	xniʔ ^C ʔya ^E dog of.1SG 'my dog'
2SG	ka-xlya ^K ʔi ^{Bii} stick-castilian of.2S 'your chair'	nʔa ʔi ^{Bii} house of.2SG 'your house'	xniʔ ^C ʔi ^{Bii} dog of.2SG 'your dog'
3SG	ka-xlya ^K ʔi ^E stick-castilian of 'his/her chair'	nʔa ʔi ^E house of 'his/her house'	xniʔ ^C ʔi ^E dog of 'his/her dog'
1PL.INCL	ka-xlya ^K ʔi ^E naa ^A stick-castilian of 1PL.INCL 'our chair'	nʔa ʔi ^E naa ^A house of 1PL.INCL 'our house'	xniʔ ^C ʔi ^E naa ^A dog of 1PL.INCL 'our dog'
1PL.EXCL	ka-xlya ^K ʔi ^E ba stick-castilian of 1PL.EXCL 'our chair'	nʔa ʔi ^E ba house of 1PL.EXCL 'our house'	xniʔ ^C ʔi ^E ba dog of 1PL.EXCL 'our dog'
2PL	ka-xlya ^K ʔi ^E u stick-castilian of 2PL 'you all's chair'	nʔa ʔi ^E u house of 2PL 'you all's house'	xniʔ ^C ʔi ^E u dog of 2PL 'you all's dog'
3PL	ka-xlya ^K ʔi ^E ju ^A stick-castilian of 3PL 'their chair'	nʔa ʔi ^E ju ^A house of 3PL 'their house'	xniʔ ^C ʔi ^E ju ^A dog of 3PL 'their dog'

Adopted from McIntosh (2011)

Chatino appears to fit within what Heine (1997) describes as goal schema. This is where the possessor is introduced by means of a directional marker, allative, dative or benefactive, adposition, or case inflection. Depending on the analyses of the situation, this lexeme is a relational noun, a dative, a benefactive or an adposition that introduces the possessor.

This fits the dative analysis as ʔi^E makes reference to non-subject obliques (§7.1.1.3). ʔi^E fits with the benefactive analysis where the marker is syntactically used as a way of marking the beneficiary as in example 7.38 repeated below in 7.78. ʔi^E fits with the adposition analysis since often this particle is found in a construction where it is easily interpreted to signify 'of.' Lastly, this goal criterion is noted to be a frequent source of predicative possession cross linguistically.

(7.78) $k\alpha\gamma^G$ $mdaa^E=yu$ $kafe^B$ γyq^E
 and.so COM.give=3PL coffee to.me
 ‘and so they gave me coffee’
 (SMC-2010-06-29-txt-GC-RQL-jdm-01 14:16-14:17)

Table 7.8 outlines the mechanisms of possessive constructions in Teotepéc Chatino.

Table 7.8: Inalienable and Alienable Possession Mechanisms

Person	Inalienable	Alienable
1SG	N + tone contrast + / \tilde{V} /	N + γyq^E
2SG	N + tone contrast	N + γ_i^{Bii} (γmi)
3SG	N (stem)	N + γ_i^E ($nu-kwa^F$)
1PL.INCL	N + $=r\alpha^B$	N + $\gamma_i^I=r\alpha^B$
1PL.EXCL	N + $=ba$	N + $\gamma_i^I=ba$
2PL	N + $=u$	N + $\gamma_i^I=u$
3PL	N + $=ju^A$	N + $\gamma_i^I=ju^A$

Alternately, the mechanisms of possessive constructions can be summarized in this way.

Inalienable = noun + formative

Alienable = noun + RN/DAT (+NP/formative)

7.2.3 Semantics of inalienably possessed nouns

Chatino fits within Nichols’ implicational hierarchy for possessed nouns. This hierarchy fulfills different semantic categories with a greater breadth and depth at the top, including kin terms and body part nouns, while making special distinctions as one moves towards part/whole relationships and the culturally basic items that relate to one’s survival and or livelihood. This can be seen with the relationship of noun forms that require a possessor and the nouns that are considered either alienable or inalienable based upon a temporal or iconic motivation of closeness. Nichols’ (1988) implicational hierarchy for possessed nouns cross-linguistically is presented in Table 7.9.

Table 7.9: Nichols' Implicational Hierarchy for Possessed Nouns

kin terms	>	part/whole	>	culturally basic possessed items
body parts		spatial relations		

If a language makes a distinction for inalienably possessed nouns it will minimally cover kin terms and then body part terminology. The next basic type is the part/whole distinction. Clothing is considered an extension of one's person to inanimate objects - making up a part of the whole. In TEO this occurs because the possessed status of a piece of clothing is often determined by whether it is being worn by the possessor or not. If the possessor is not wearing a piece of clothing the possessed relationship can be denoted with the use of the dative \mathcal{P}_i^E , as seen in alienable possessed nouns (§7.2.3.4). If the possessor is wearing the item the relationship is expressed through the inalienable possession mechanisms. The next category of the hierarchy is spatial relations and the last category includes culturally basic possessed items. Of course, it is not always the case that a given language follows the above schema exactly; there are always exceptions to each group which is true in TEO. Chappell and McGregor (1996), take the position that the "predictions for each language can be made on the basis of cultural and pragmatic knowledge" with regards to the semantic parameters for inalienability.

The following section outlines several sets of nouns considering Nichols' hierarchy beginning with body part nouns. After that, body fluids, kin terminology, clothing as a metaphorical extension of a person's body and other inalienable categories that could be considered culturally basic possessed items are discussed. Finally, noun forms that require a possessor are discussed.

7.2.3.1 Body part nouns

Example 7.79 from the text data base that shows the inalienable possession of the word *jychaʔ^G-ke^C* ‘his/her hair’ with a first person singular possessor. Note the nasalized vowel and the tone change for 1SG on the the second syllable of the word for hair.

- (7.79) *kaʔ^G nu waʔ^C ndya=yu xnyi=yu jychaʔ^G-ke^{Bi}*
 then NOM already PRG.go.there≠base=3PL POT.grab=3PL hair-head.1SG
 ‘then they were going to grab my hair’
 (SMC-2010-06-29-GC-RQL-HRV-jdm-01 16:22-16:24)

Table 7.10 presents a list of body part nouns demonstrating whether they are considered alienable or inalienably possessed.

Table 7.10: Body Part Nouns

Chatino	Gloss	Alienable	Inalienable
<i>jychaʔ^G=ke^G</i>	‘his/her hair’	-	✓
<i>tyka^G</i>	‘his/her forehead’	-	✓
<i>tlo^E</i>	‘his/her face’	-	✓
<i>tʔwa^A</i>	‘his/her mouth’	-	✓
<i>tseʔ</i>	‘his/her tongue’	-	✓
<i>lʔya</i>	‘his/her tooth’	-	✓
<i>choʔ^G</i>	‘his/her back’	-	✓
<i>skq^C</i>	‘his/her arm’	-	✓
<i>yaʔ^C</i>	‘his/her hand’	-	✓
<i>lo^I</i>	‘his/her liver’	-	✓
<i>ksya^K ʔi^E</i>	‘his/her heart’	✓	-
<i>skwe</i>	‘her vagina’	-	✓
<i>mti-skwe^G</i>	‘his testicles’	-	✓

(McIntosh, 2009b), Adopted from Cruz, E. (2007)

Note that the word for *ksya^K* ‘heart’ is considered alienable. This is a Spanish loanword and is similarly alienable in YAI and SJQ. I have encountered two body part nouns that are not considered inalienable in TEO; *cha-kweʔ^A* ‘vagina’ and *ti^G-ksti* ‘penis.’ This is probably because the lexemes for these examples are considered to be euphemisms.

7.2.3.2 Body fluids

Most nouns for body fluids are considered to be intimately connected to a person and function like body part nouns. These nouns are considered inalienably possessed since they always belong to the person who created them.

Table 7.11: Body Fluid Nouns

Chatino	Gloss	Alienable	Inalienable
tyʔa ^A -jlo	‘his/her tear’	-	✓
styɪ ^A	‘her breast milk’	-	✓
tyʔa ^A -ta ^A	‘his/her perspiration’	-	✓
tyʔa ^A -syɛ ^D	‘his/her saliva’	-	✓
kweɛ ^B	‘his/her vomit’	-	✓
sʔɛ ^C	‘his/her excrement’	-	✓
tyʔa ^A -xe ^B	‘his/her urine’	-	✓
tne ^G	‘his/her blood’	-	✓
ngə ^B	‘his/her mucus’	-	✓

(McIntosh, 2009b), Adopted from Cruz, E. (2007)

7.2.3.3 Kin terminology

Kin terminology inflects for possession like body part nouns; the majority of these nouns are considered inalienably possessed; the possessor is marked by an affix on the possessum stem. Example 7.80 presents how the word *sti-kla* ‘his/her grandfather’ is inalienably possessed with the second person singular tone enclitic of set Bii /MLM/ on the second syllable of the stem.

- (7.80) xa^E $nkwa^C$ ***sti-kla***^{Bii} $pre-xe^B-nte^K$ $kəʔ^G$
 when COM.to.be father-elder.2SG president mentioned
 ‘when your grandfather was president (of Teotepec)’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-03 06:48-06:49)

Table 7.12 presents a list of kin terms. It is interesting to note that the Spanish calques of $jyʔyu^E-ʔj^E$ ‘her husband’ and $jyʔq^E-ʔj^E$ ‘his wife’ *su hombre* and *su mujer* re-

spectively function as alienably possessed nouns which contrasts with the inalienable noun *kwlyo?* ‘his/her spouse.’

Table 7.12: Kin Terminology

Chatino	Gloss	Alienable	Inalienable
tʔa ^G	‘his/her relative’	-	✓
jʔa ^E	‘his/her mother’	-	✓
sti	‘his/her father’	-	✓
snyeʔ	‘his/her child’	-	✓
sti-kla	‘his/her grandfather’	-	✓
jyʔa ^F -kla	‘his/her grandmother’	-	✓
snyeʔ-kla	‘his/her grandchild’	-	✓
klya ^C	‘his/her sister/brother in-law’	-	✓
kwlyo?	‘his/her spouse’	-	✓
tʔa ^G -nʔi	‘realative’	-	✓
jyʔyu ^E -ʔi ^E	‘her husband’	✓	-
jyʔa ^E -ʔi ^E	‘his wife’	✓	-

(McIntosh, 2009b), Adopted from Cruz, E. (2007)

7.2.3.4 Clothing and other personal items

Items such as clothing or a plate of food can be inalienably possessed. These items appear to form an intermediate class between alienable and inalienably possessed nouns. These items seem to fall under the part/whole and spatial relations and *culturally basic possessed items* of Nichols’ hierarchy. Necessary to one’s survival is food. If the plate of food is not in the possession of the possessor then it is not considered intimately possessed. Oddly, a person’s house is not considered an inalienable possession; however, te^E ‘nest’ can function as both an alienable and inalienable. If a person encounters a bird’s nest and they possess it then it is considered an alienable possession; however, if the word nest is used to refer to one’s home then it is considered an inalienable possession. Degree of closeness to the possessor determines the nature of the possessed relationship. For clothing, if the item is not being worn it is not considered intimately possessed or as a part of the whole.

Haiman (1983) notes physical distance as a metaphor for social distance both referential and instrumental, whereby distance signals a lack of intimacy. Table 7.13 presents a set of clothing and other personal item nouns.

Table 7.13: Clothing Nouns

Chatino	Gloss	Alienable	Inalienable
slyi ^B	‘his/her pants’ (<i>manta</i>) SPN	-	✓
xkqʔ ^C	‘his/her shirt’	-	✓
yni ^G xkqʔ ^C	‘her embroidered shirt’	-	✓
teʔ ndʔwi jyaʔ	‘his/her socks’	-	✓
sna ^G	‘his/her <i>huaraches</i> ’	-	✓
jykaʔ ^E yni ^G ʔi ^E	‘his/her necklace’	✓	-
jykaʔ ^E nskʔ ^A ʔi ^E	‘her earrings’	✓	-
kna ntykwa ^B jylo	‘his/her glasses’	-	✓

(TEO) - (McIntosh, 2009b), Adopted from Cruz, E. (2007)

Although the nouns for necklace and earrings could fall under the part/whole grouping they are not considered intimate possessions. These possessions are probably alienable because they are adornments or not necessary to one’s survival.

Example 7.81 shows the inalienable possession of *xkqʔ^F* ‘his/her shirt.’ The stem is inflected with the super high tone /0/ of set Bi for first person singular on the stem.

- (7.81) *loʔ^G waʔ^C msʔwq^{Bi}-tʔwi^{Bi} xkqʔ^{Bi} waʔ^C tʔu^{Bi}*
 and already COM.put.on shirt.1SG already POT.leave.1SG
tyq^{Bi}
 POT.come.to=base.1SG
 ‘I already put on my shirt, and was about to return’
 (TEO-2010-07-15-ZFV-RQF-HRV-jdm-11 01:02-01:05)

Other nouns in Teotepéc Chatino fall under the part/whole and spatial relations category of Nichols’ hierarchy. The word *tʔi^C* ‘pain’ can function as alienable and inalienable. For example, *tʔi^C ʔyq^E* ‘my pain,’ is alienable; however, as one says *tʔi^{Bi}* ‘I have pain’

this form is inalienable. Similarly, a picture or drawing can also be alienable or inalienable. This is the case in the Melanesian language of Aroma as noted by Lynch in Heine (1997). In TEO, if one has a picture that belongs to them and they appear in the photo then it is inalienably possessed. Likewise, if someone else has a photo and you appear in the photo then it may also be inalienably possessed by you. Drawings of people function in the same manner.

- | | |
|--|--|
| <p>(7.82) <i>kwɛ^{Bi}</i>
 photo.1SG
 ‘photo of me’ (where I appear)
 McIntosh (2009b)</p> | <p>(7.83) <i>kwɛ^E ʔyq^E</i>
 photo DAT.1SG
 ‘my photo’ (my property - where I do not appear) McIntosh (2009b)</p> |
|--|--|

Table 7.14 presents examples of other part/whole inalienable nouns.

Table 7.14: Other Inalienably Possessed Nouns

Chatino	Gloss	alienable	inalienable
(jy)kwɛ ^E	‘his/her photo/drawing’	-	✓
ndlaʔ ^G	‘his/her shadow’	-	✓
xnyi ^E	‘his/her reflection’	-	✓
tyʔi ^C	‘his/her voice’	-	✓
kyʔi ^C	‘his/her odor/smell’	-	✓
sʔɛ ^C	‘his/her excrement’	✓	✓
tɛ ^E	‘his/her nest’	✓	✓
nʔa ʔi ^E	‘his/her house’	✓	-
sʔya ^G	‘his/her fault’	-	✓

(TEO) - (McIntosh, 2009b), Adopted from Cruz, E. (2007)

7.2.3.5 Noun forms that require a possessor

Chatino has a sub-class of nouns that are considered obligatorily possessed. These nouns become inalienable through a derivational process. In these items the initial consonant of the stem is changed or an additional consonant is added to the onset consonant of the stem. Kaufman (2007) notes that the possessive prefix/proclitic is **xi=* in Proto-

Zapotecan. In TEO the derived consonant change is a reduced form of this marker resulting in either [s] or [ʃ]. Betaza and Zoogocho Zapotec exhibit this form for items that are alienable but become inalienably possessed (Teodocio, 2007; Sonnenschein, 2004). Coatlán-Loxicha Zapotec has reanalyzed this process where the semantic meaning has shifted for the alienable marker and it is used to mark inalienable nouns (Beam de Azcona, 2004). Some of these nouns fall under Nichols’ part/whole category and others are part of the *culturally basic possessed items* essential for livelihood or survival.

The following table shows examples of the inalienable noun forms that require a possessor for TEO and the Eastern Chatino dialects of SJQ and YAI:

Table 7.15: Noun Forms that Require a Possessor - Eastern Chatino

Language	Unpossessed	Gloss	Possessed	Gloss
TEO	teʔ	‘clothes’	steʔ	‘clothes of’
SJQ	teʔ ^A	‘clothes’	steʔ ^A	‘clothes of’
YAI	teʔ ³	‘clothes’	steʔ ³	‘clothes of’
TEO	jykaʔ ^F	‘shirt’	xkaʔ ^F	‘shirt of’
SJQ	ykaʔ ^F	‘shirt’	xkaʔ ^F	‘shirt of’
YAI	ykaʔ ³²	‘shirt’	xkaʔ ³²	‘shirt of’
TEO	jyʔwa ^F	‘load’	sʔwa ^F	‘load of’
SJQ	yʔwa ^F	‘load’	sʔwa ^F	‘load of’
TEO	jyka	‘wood’	xka	‘wood of’
YAI	yka ³	‘wood’	xka ³	‘wood of’

(Cruz, E., 2007; McIntosh, 2009b; Rasch, 2002, in press)

Jyʔna^C ‘plate’ → *sʔna^C* ‘his/her plate of food’ and *jyna^A* ‘huarache’ → *sna^G* ‘his/her huarache’ and *kla^F* ‘sleep’ → *sla^F* ‘his/her sleep’ are also part of this derivational stem change for inalienable possession in Teotepic Chatino.

Examples 7.84 - 7.87 illustrate how certain nouns may be used as both alienably and inalienably possessed nouns. The inalienably possessed forms 7.84 and 7.86 demonstrate the derivational change.

(7.84) *stɛʔ^{Bi}*
 clothes.1SG
 ‘my clothes’ (McIntosh, 2009b)

(7.85) *tɛʔ* *ʔyɔ^{Bi}* (*kwa^F*)
 clothes DAT.1SG DEM
 ‘my clothes’ (McIntosh, 2009b)

(7.86) *sna^{Bi}*
huaraches.1SG
 ‘my shoes’ (McIntosh, 2009b)

(7.87) *yna^G* *ʔyɔ^{Bi}* (*kwa^F*)
huaraches DAT.1SG DEM
 ‘my shoes’ (McIntosh, 2009b)

Examples 7.85 and 7.87 demonstrate how when used alienably the demonstrative noun *kwa^F* may be used to denote the distance between the possessor and possessum.

7.3 Conclusion

This chapter began the description of the nominal constituents. It outlined the pronominal system in the language by outlining the independent subject pronouns, the subject clitic pronouns the oblique non-subject pronouns. A class of secondary nouns that make reference to a specific type of human referents was outlined. Lexical nouns were introduced and outlined briefly and a distinction for how human, non-human and animate versus inanimate nouns are marked in a given clause was presented. The remainder of the chapter outlined the opposition between alienable versus inalienable nouns and the derivational processes for marking noun forms that require a possessor was presented. The following chapter continues the discussion of the nominal constituents outlining relational nouns, and nouns referring to place, demonstrative pronouns, numbers and quantifiers and forms that modify nouns.

Chapter 8

Relational nouns, Nouns of place, Adjectives, and Demonstratives

This chapter continues with description of the nominal constituents. It outlines relational nouns, nouns that refer to places, compound nouns and the different elements that modify nouns; e.g.: demonstrative pronouns, demonstrative adverbs, a set of light-headed nouns, quantifiers, numerals and adjectives.

The chapter begins by outlining how spatial location is described in the language. This includes a description of relational nouns which includes body-part locatives and the relational nouns *lo* ‘in/on,’ *niʔ* ‘inside,’ *ʔo^I* ‘with,’ *ʔi^E* ‘of/to’ and derived nouns used to express *interiority*. A set of regional and local names, toponyms and other nouns that relate to place are outlined. After this, demonstratives are presented. Then the remainder of the chapter is devoted to forms that modify nouns. This includes a presentation of the *head-complement* type word formation which includes noun + noun and noun + adjective compounds and forms headed by what Woodbury has coined as light-nouns (§8.4.1) e.g.: *nu*, *neʔ*, *la* and *to*. The remainder of chapter includes a description of numerals, quantifiers, the reflexive form *kwiʔ^B* ‘same’ and a short section on adjectives.

8.1 Relational Nouns

In Teotepéc Chatino, like other Meso-American languages, spatial location relative to the object is expressed through inalienably possessed noun constructions. Relational nouns in TEO are the head and their NP possessors are their explicit complements. Starosta (1985) notes this cross-linguistically in Chinese where “...relator nouns, with kinship terms, constitute a class of inalienably possessed nouns, grammatically marked by the ability to occur as NP heads without an intervening covert marker of attribution.” In Chinese, Austronesian, Munda and Amerindian languages is a class of inalienable nouns that includes kinship terms, body part terms and relator nouns which are characterized by an especially close bonding of syntactic attributes. In these languages relator nouns are able to “serve the syntactic function of allowing non-location nouns to appear in syntactic slots for which they would otherwise not be eligible. In addition, they serve the semantic function of adding various local components of meaning to the semantic reading of the object of the verb or preposition as a whole.” (1985:116). In TEO, relational nouns derived from body parts cover a broader semantic field for expressions of location.

8.1.1 Body-part locatives

Locative expressions have been documented in Otomanguean generally by Kaufman 2006:122 and specifically in Mixtecan by Hollenbach (1995) and in Zapotec by Lillehaugen and Sonnenschein (2012); Lillehaugen (2006); MacLaury (1989). Rasch describes locative expressions in Yaitepec Chatino as *relator nouns* (2002:69). This terminology is adopted from Delancy’s description of the grammaticalization of prepositions and relator nouns in Tibetan and Burmese (1997:58). In TEO these kinds of relational nouns derive mostly from body part terms which function as spatial referents. Relational nouns are inalienably possessed but because they function as locational complements within the sentence they are considered locational nouns.

Table 8.1 presents a list of some elicited examples that illustrate body-part locative relational nouns in Teotepec Chatino.

Table 8.1: Relational Nouns in Teotepec Chatino

Noun	Body part	Spatial reference	Example phrase	Gloss
niʔ ^C	‘intestines of’	inside of	niʔ ^C nyʔa	‘in the house’
tʔwa ^A	‘mouth of’	edge of	tʔwa ^A nʔa	‘edge of the house’
siʔ	‘rib of’	side of	siʔ nʔa	‘side of the house’
chɔʔ ^G	‘back of’	back of	chɔʔ ^G nʔa	‘behind of the house’
ke ^G	‘head of’	head of	ke ^G jyʔnyʔa ^G	‘head of the bed’
lja ^G	‘space of’	space of	to ^F lja ^G ndɔ	‘space of the legs’
jyaʔ	‘foot of’	foot of	jyaʔ jyʔnyʔa ^G	‘foot of the bed’
jyaʔ	‘foot of’	foot of	jyaʔ nʔa	‘foundation of the house’
yaʔ ^C	‘hand of’	hand of	yaʔ ^C nʔa	‘doorknob/lock’
lo	‘face of?’	face of	lo msa ^K	‘on the table’

Example 8.1 illustrates the use of the relational noun *chɔʔ^G* ‘back.of’ as a locational complement within the sentence.

- (8.1) *jykwaʔ nʔi chɔʔ^G re^C*
 swamp STAT.live back.of here
 ‘There is a swamp behind here (Teotepec).’
 (TEO-2008-07-29-txt-la-cienega-de-metate-WVM-HRV-jdm 00:06 - 00:08)

The complement is used to specify a spatial location of an event that took place in the swamp behind Teotepec. The demonstrative pronoun *re^C* ‘here’ follows the relational noun indicating the locational proximity of the event to the speaker. This relational noun can also be used in a way that functions like a preposition in English.

- (8.2) *chɔʔ^G kyʊ^K ti, ta^B ni^C kqʔ^G chaʔ^F la^A jyche^A-jʔo^A*
 back.of horse just ahh well, mentioned reason until Miahuatlan
 ‘well, just on horseback, that’s why until *Miahuatlan*...’
 (TEO-2011-08-31-SS-RQF-jdm-05 01:40 - 01:42)

Examples 8.3 and 8.4 present *siʔ* ‘rib of’ for ‘side of.’

- (8.3) *jyʔiʰ=rq^C siʔ jyaʔ=rq re^C chqʔ^G yaʔ^C=rq re^C*
 POT.stick=it side.of foot=1PL.INCL here back.of hand=1PL.INCL here
 ‘it would stick here on the sides of our feet, here on the back of our hands... (the boiling grease)’
 (TEO-2011-09-22-MZF-RQF-jdm-11 02:16-02:19)

- (8.4) *njwi^G=rɛʔ kqʔ^G nu jywi^G=rɛʔ siʔ nʔa-tnya^F nu kla*
 COM.die=3PL mentioned one COM.kill=3PL side.of house-work NOM elder
ntkwa^B
 PRG.sit
 ‘he died that one, they killed him on the side of the municipal building, the elder one that was...’
 (TEO-2011-07-16-txt-LZV-RQF-jdm-01 05:19-05:22)

Example 8.5 presents *tʔwa^A* ‘mouth of’ to signify ‘edge.’

- (8.5) *jyta^E ʔi^E=rq^C la^A tʔwa^A jyka la^A kqʔ^G*
 COM.sow.1SG DAT=it from mouth tree up.to there
 ‘I planted it from the edge of the trees up to there.’
 (TEO-2011-07-14-txt-RQL-RQF-jdm-01 09:14-09:15)

8.1.2 Relational noun *lo* ‘on’

The following examples illustrate different uses of the relational noun *lo*. This particular noun probably comes from the word *tlo^E* ‘face.’ It can have the meaning of the ‘face’ of something, e.g., *lo fo^B ko^E* ‘face of the light/flashlight’ and it can signify to be ‘in front of’ something, e.g., *lo kna* ‘in front of the mirror’ or ‘on top of’ something, e.g., *lo msa^K* ‘on the table.’ Examples 8.6 and 8.7 present *lo* being used for spatial location

- (8.6) *lo jychi xa^B-kqʔ^G lo jychi ti*
 on grinding.stone then on grinding.stone just
 ‘on the grinding stone then, just on the grinding stone...’
 (SMC-2010-06-29-txt-AM-RQL-JRV-jdm-01 01:48-01:51)

- (8.7) *la^A lo ?ya^F jnkwa^C jychɛ^A kqɪ^G*
 up.to on mountain COM.be village mentioned
 ‘up on the hill that was the community’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm-01 03:15-03:17)

8.8 shows the semantic field of this relational noun expanded to a referential meaning.

- (8.8) *s?ya^G tyq^C lo knyi kwa^F ns?wi=rq^C*
 because various face kind DEM PRG.exist=thing
 ‘because there are various kinds of this class.’ (of sugarcane)
 (TEO-2010-07-14-txt-RQL-RQF-HRV-jdm-03 10:18-10:20)

8.1.3 Relational noun *niɪ^F* ‘inside’

The relational noun *niɪ^F* signifies ‘inside.’ Example 8.9 describes a spatial cooking location where the relational nouns precedes the locational complement *jytq^A* ‘pot.’

- (8.9) *niɪ^F jytq^A ntykeɪ^B=rq^C jqɪ^G*
 inside pot HAB.cook=it then
 ‘inside the pot it was cooked then’
 (TEO-2010-07-13-txt-GZM-RQL-jdm-01 12:18-12:18)

Example 8.10 illustrates spatial location with the anaphoric use of the inanimate clitic pronoun *rq^C*.

- (8.10) *waɪ^C s?wa^B=yu kta^B niɪ^F=rq^C*
 already POT.put=3PL.MASC bull inside=it
 ‘they already put the bull in it (the cornfield)’
 (TEO-2010-17-14-txt-RQL-RQF-HRV-jdm-03 08:19-08:20)

The final example (8.11) uses $ni^{?F}$ to express a temporal space.

- (8.11) *tsa ni^{?F} sna^J yjg^A*
 up.to inside three years
 ‘in three years...’ (*lit.* ‘it will be in three years’)
 (SMC-2010-06-29-txt-GC-RQF-jdm-01 09:26-09:27)

8.1.4 Relational nouns $?o^I$ and $?i^E$

There is a set of relational nouns that are not based on body parts. These nouns act more like prepositions in English. They may refer to a goal, benefactive, malefactive or an indirect object in a given construction. Example 8.12 presents the use of $?o$ ‘to’ to refer to a malefactive.

- (8.12) *po-ro^K ska jy?yu^E ti nu m?ni^G t?i^A ?o^I=rq^B*
 but one man only NOM COM.make pain to=1PL.INCL
 ‘but only one man caused us pain.’
 (TEO-2011-07-16-LZV-RQF-HRV-jdm-02 02:23-02:24)

As noted in §7.2.2.2, the dative $?i^E$ is used to index possessors of alienable nouns. This form functions as a relational noun to reference a goal.

- (8.13) *jyku ?i^E ?ni*
 COM.eat RN animal
 ‘they ate the animals.’ (*lit.* ‘eat to/of the animals’)
 (SMC-2010-06-29-AM-RQL-HRV-jdm-03 12:39-12:40)

The following example demonstrates the use of the $?i^E$ to index a benefactive, referencing a community that was included in the municipality of TEO before the civil war of the 1950’s.

- (8.14) kwa^F $ndlo^B$ - $tnyq^F$ $?i^E$ wya^H kwa^F ni^C
 DEM HAB.take-work RN Nopala DEM well
 ‘well, those (Teotepec) governed Nopala.’
 (*lit.* well, those commanded to/over Nopala.)
 (SMC-2010-06-29-GC-RQL-HRV-jdm-03 02:51-02:53)

The final example (8.15) demonstrates the use $?i^E$ with the enclitic form of the honorific second person marked pronoun $=u$ for a person oriented goal where project consultant Rufino Quintas is describing to the speaker that I am there with him to interview the gentleman for the documentation of Teotepec Chatino.

- (8.15) $ntyka^B$ - $ti?^B$ $=yu$ re^C kni^H - $cha?^F$ $=yu$ $?i^G$ $=u$ ni na^C - $ny?a^B$
 PRG.want=3SG.MASC this POT.ask=3SG.MASC RN=2HON INT how
 ‘This man wants to ask you how...’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-01 00:24.26-00:26.29)

8.1.5 Laminal expressions of interior

Teotepec Chatino utilizes a derivational process of laminalization to create locational nouns that spatially refer to the interior. As noted by E. Campbell and E. Cruz (2009), this laminalization probably came from the historical prefix $*li$. The following table presents elicited examples that undergo this derivational process.

Table 8.2: Laminalization of Nouns - ‘interior of’

Chatino	English	+LAM	Gloss
$n?a$	‘house’	$ny?a^E$	‘in the house’
yuu^A	‘earth’	$lyuu^A$	‘in the earth’
$l?o^C$	‘corral’	$ly?o^C$	‘in the corral’

The following are text-based examples of nouns that undergo this process.

- (8.16) *kcho^B-sʔwa^B=rɛʔ* *nyʔq^E* *xqʔ^G*
 POT.shoot-POT.get.into=3SG inside.the.house then
 ‘they would shoot inside the house then.’
 (SMC-2010-06-29-AM-RQL-HRV-jdm-01 10:20-10:21)

- (8.17) *ntkwa^B* *nyi* *la^A* *lyuu^A* *tsa^B* *kqʔ^G*
 PRG.sit straight place on.the.floor POT.go mentioned
 ‘right on the floor they would go.’ (as a result of being shot)
 (TEO-2011-07-12-LZV-RQF-HRV-jdm-02 18:33-18:34)

- (8.18) *niʔ^F* *lyʔo^C* *ʔi^E* *ni* *tyo^B-syu^K* *re^C* *waʔ^C-ni^C*
 inside in.the.coral of 3SG.RSP Tiburcio this already-now
 ‘inside the coral of this mister Tiburcio now’
 (TEO-2011-08-31-SS-RQF-HRV-jdm-05 07:56-07:57)

Up to this point the many examples of body-part locatives and relational present a pervasive structure of word/clause formation of head+complement. In almost all cases the examples above, present the head first followed by the locational complement which can be a full noun or a pronoun. Even in the derivational processes of laminalized interior expressions the complement is still preceded the head in examples 8.17 and 8.18.

8.2 Other nouns that refer to place

Relational nouns can be used to refer to the location of an event. Likewise, other nouns function in the same way. In TEO there are place names that refer to towns or cities, nouns that can refer to a given place in the countryside. The following presents nouns that refer to place presenting proper names of particular places in the community and around Oaxaca and Mexico.

8.2.1 Regional place names

Nouns that include names of towns regionally, throughout the state of Oaxaca and Mexico make references to a given location. The following examples illustrate the use of these nouns.

- (8.19) *ntykwɪʔ=jy^A lye^G-ʔa^E mdʔa=jy^A txyaʔ^B*
 HAB.say=3PL much COM.go.around=3PL Mexico
 ‘they said that they went to Mexico a lot.’
 (TEO-2011-07-16-LZV-RQF-HRV-jdm-01 11:37-11:38)

- (8.20) *ya^G=y ya^G yla^F=y lo-ndʔa^B*
 COM.go=2SG COM.go COM.play=2SG Oaxaca
 ‘you went to play in ... Oaxaca?’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm-03 00:23.92-00:26.47)

The adverb *la^A* ‘toward/up.to’ may be used in conjunction with place name nouns to express the distance and directionality ‘towards’ or ‘up to’ something. These forms follow the verb and precede the place name.

- (8.21) *mʔya^F skɔ^C ti ntɛ^B ʔi^E=rɔ^C yndla^G=rɔ^C la^A*
 COM.carry his/her.arm just people DAT=it COM.arrive.base=it to
jychɛ^A
 village
 ‘the people just carried it until it arrived to the community.’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm 01:12-01:13)

- (8.22) *mtjɪ^{Bi} ʔo^E=yu yʔɔ^I la^A yjɔ^A xa^B-kqʔ^G*
 COM.pass.1SG with=them COM.go.1SG to San.Gabriel then
 ‘I went with them to San Gabriel then’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-01 13:26-13:28)

La^A may also be used to express a durative temporal space. In example (8.23) la^A is used to express a distance relationship of how far the subject is from its goal.

- (8.23) $y\?q^I$ la^A lo ft^F $-nga$
 COM.go \neq base.1SG to on finca
 ‘I went up to the finca’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-02-C 05:07-05:08)

The adverb ti^C is used to express nearness to something. It often found following the verb and is used as the head of an adverbial phrase in conjunction with a kind of locational complement. Example 8.58 presents the adverb ti^F used in conjunction with the existential verb $md\?i$ ‘live’ and the locational complement $\?ya$ ‘below.’

- (8.24) lo $jych\epsilon^A$ re^C $md\?i=ba$ ti^C $\?ya$ $md\?i=ba$
 in village here COM.live=1PL.EXCL down beneath COM.live=1PL.EXCL
 ‘in this community here we lived, down below we lived’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-01 07:52-07:54)

Example 8.25 presents the use of ti^C with $k\phi^C$ ‘above’ to show location.

- (8.25) $to\?^F$ stj^Bi $ngw\?a$ ti^C $k\phi^C$
 and father1SG COM.get.stuck up above
 ‘and my father lived up above’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-07 01:45-01:46)

8.2.2 Countryside place names

Because Chatino communities are situated in the southern Sierra Madre del Sur mountains, and the majority of Chatino people have lived and worked on the land surrounding their given locality. Interaction with the natural world is something that takes place on a daily basis. Places frequented for work and other reasons relate closely to the

daily life of people in the community. It is common for people to leave the center of town and spend their day working in the countryside. Nouns that relate to places in the surrounding local area include $xj\text{?}^F$ ‘woods’ or ‘bush,’ $jy\text{?}^E$ ‘field,’ $nt\text{?}^A$ ‘knoll’ or ‘bank’ and $jyko^E$ ‘creek’ or ‘stream.’ These countryside place names are non-specific or indefinite nouns; however, they may be used to denote specific places in the community. These nouns can stand alone as independent locational nouns in a given discourse or they can be preceded or followed by the relational nouns *lo* ‘in/on’ and $ni\text{?}^F$ ‘inside’ and other locational complements in order to specify a given location.

8.2.2.1 $xj\text{?}^F$ ‘wilderness/bush’

The location $xj\text{?}^F$ ‘wilderness’ or ‘bush’ acts as an independent locational noun. This noun refers to the forest in a traditional sense or to being in the wilds or the bush. Examples 8.26 and 8.27 are preceded by the relational noun *lo*.

- (8.26) $\text{?}u$ $nu\text{-}nga^K$ *lo* $xj\text{?}^F$ $mt\text{?}i=yu$ $s\text{?}ni$ *ta* $jyche^A$
 2SG.HON well in woods COM.live=2HON before, or village
 ‘you well, did you live in the ranch¹ before, or the community?’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm-02 02:40-02:43)

- (8.27) *lo* $xj\text{?}^F$ $x\text{?}^G$
 in forest then
 ‘in the forest then’
 (TEO-2011-06-21-txt-RLQ-RQF-HRV-02 03:20-03:20)

Example 8.28 presents the relational noun $ni\text{?}^F$ preceding the location $xj\text{?}^F$.

- (8.28) $m\text{?}ni^G$ $kya\text{?}^F=yu$ $tnya^F$, $ni\text{?}^F$ $xj\text{?}^F$ $m\text{?}ni^G$
 COM.make measure=3PL.MASC work inside woods COM.make
 $kya\text{?}^F=yu$ $tnya^F$
 measure=3PL.MASC work

¹In rural Oaxaca *rancho* refers to plots of land outside the village center where people live seasonally, plant crops, hunt, gather firewood, ect.

‘they made a meeting, in the woods they made a meeting’
 (SMC-2010-06-29-txt-GC-RLQ-HRV-jdm-01 10:25-10:27)

8.2.2.2 *jyɔ^E* ‘cornfield’

Jyɔ^E refers to a cornfield or a *rozo* or *milpa* in Spanish. This is a place where men typically go to prepare the land to plant corn and other staple crops, like beans and squash. The act of ‘cutting the field’ is an act of cleaning up a given plot of land to prepare it to be sown. Example 8.29 shows *jyɔ^E* as a direct object of the verb *msʔyu^I* ‘s/he cut.’

- (8.29) *msʔyu^I=ba* *jyɔ^E* *ni^C*
 COM.cut.1PL.EXCL field well
 ‘well, we cut the field’
 (SMC-2010-06-29-GC-RQL-HRV-jdm 01:07-01:08)

In example 8.30 *jyɔ^E* follows the relational noun *lo*.

- (8.30) *nu-nga^K* *tʔwe^B* *lo* *jyɔ^E* *ja^F-jɔ^I*
 well middle in field yes
 ‘well in the middle of the (corn)field, yes.’
 (TEO-2012-07-20-txt-SQS-RQF-HRV-jdm-01 00:49-00:51)

8.2.2.3 *ntɛ^A* ‘knoll’

Ntɛ^A ‘knoll’ is a toponym where a given family or person may live. The following examples from the text database reflects this fact. Examples 8.31 and 8.32 show the form followed by demonstrative nouns to denote a specific area on the given knoll. Example 8.31 presents *ntɛ^A* preceded by the locational complement *la^A* to show the orientation of said knoll.

- (8.31) *neʔ* *Ja^B-ntro^K* *nu* *sti* *ni* *To^B-ma^B* *nʔi* *la^A* *ntɛ^A*
 person Alejandro NOM father 3SG.RSP Tomas STAT.live up.to knoll
kwa^F
 that

‘Mr. Alejandro, the father of sir Tomas who lived up on that knoll.’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm-01 04:47-04:50)

Both example 8.31 and 8.32 show $nt\epsilon^A$ ‘knoll’ followed by the demonstrative kwa^F .

(8.32) $ne\text{?}$ $mkwa^F$ $sti-klq^{Bi}$ $na\text{?}^{Bi}$ na^I $mkwa^F$ na^I $la-yu^K$
 person COM.be father-elder 1SG PRG.name COM.be PRG.name Hilario
 ni^C , $nt\epsilon^A$ kwa^F $mt\text{?}i=ne\text{?}$
 well knoll that COM.live=person
 ‘the person that was my grandfather whose name was Hilario, well, he lived on that
 knoll’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

This last example (9.47) shows $nt\epsilon^A$ as a complement to the adverbial clause ti^C
 jyq^G ‘just behind.’ This form precedes another adverb clause ti^C-re^C formed with demon-
 strative re^C to indicate the relative closeness of a house to the knoll.

(8.33) ti^C jyq^G $nt\epsilon^A$ ti^C-re^C $ntkwa^B$ $n\text{?}q-kq$ $ju\text{?}$
 close behind knoll close-here PRG.sit house-irrigation COM.say
 $ne\text{?}-jylyo^A$ Be^F-to Yu^F-so $kq\text{?}^G$
 person-deceased Alberto Ayuzo mentioned
 ‘close behind the knoll, just here is a house of refuge, said the late Alberto Ayuzo’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

8.2.2.4 $jyko^E$ ‘river/stream’

The various rivers and streams in the community have important significance for many local customs and provide important markers for direction and spatial orientation. The following example was taken from a text that describes the long foot trail that one would take from Santa Lucía Teotepec to arrive at Oaxaca city. In example 8.34 $jyko^E$ ‘river’ is preceded by the compound $ja-yuu$ ‘canyon’ *lit.* ‘no-land’ to denote a particular canyon. Also, the river has a particular given name $jyko^E$ kaa^B ‘river nine.’

- (8.34) *ja-yuu jyko^E kaa^B ntykwi?^I=re?^F re^C*
 between-earth river nine HAB.say=3PL here
 ‘between canyons, river nine they say’
 (TEO-2010-06-25-txt-caminata-WVM-HRV-HRV-jdm 02:45-02:48)

Example 8.35 presents the form *jyko^E* followed by the locational complement *?ya^F* ‘below’ to denote a specific river that sits below a stand of pines making an important reference to a known place representing local place-based knowledge.

- (8.35) *?aa^G jyko^E ?ya^F ntkwa^F jyka-jytye^F*
 aah river below STAT.sit tree-pine
 ‘aah, the river below, where the pines are’
 (TEO-2010-07-13-txt-GZM-RQF-HRV-jdm-01 06:55-06:57)

8.2.3 *s?e* ‘place’

The lexeme *s?e* signifies place generally in a given discourse. It can function as a generic noun for place that functions as the head of locational phrases and it can also function as a type of locational adverb. Example (8.36) presents *s?e*, in a possessed relationship with the subject.

- (8.36) *s?e^A ?i^E ne?-jylyo^A ja^B-ntro^K*
 place of person-deceased Alejandro
 ‘the place of the deceased Alejandro’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm-01 04:45-04:46)

Examples 8.37 and 8.38 present *s?e* preceding copular and existential predicates functioning like an adverb.

- (8.37) *s?e^A n?i ne?-jylyo ra-mo ni s?e^A md?i*
 place STAT.live person-deceased Ramon well, place COM.live
ne?-jylyo ra-mo ni
 person-deceased Ramon well

‘well, the place of late Ramon, well, where the late Ramon lived.’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-06 05:55-05:59)

- (8.38) *nu-nga^K nu tyʔo^I=rq sʔe^A nʔi=rq*
 well, that POT.come.out=1PL.INCL place STAT.live.1PL.INCL
 ‘well, that we are going to leave the place where we live?’
 (TEO-2012-07-20-txt-SQS-RQF-HRV-jdm-02 00:21.87-00:23.71)

Likewise example 8.39 presents *sʔe* preceding the verb, *yʔni^H* ‘HAB.touch,’ indexing a part of ones body again acting adverbial.

- (8.39) *lye^G tʔi^A ti ntyʔo^H maxi^D sʔe^A yʔni^H*
 enough POT.hurt just HAB.come.out tomato place HAB.touch
 ‘it hurts so much that blisters come out wherever one touches’
 (TEO-2011-09-22-txt-MZF-RQF-HRV-jdm-11 02:19-02:20)

8.3 Demonstratives

In Teotepec Chatino there are two kinds of demonstratives that denote a given location in relation to a verbal argument - demonstrative pronouns and demonstrative adverbs. These forms are deictic in nature and have an anaphoric function.

8.3.1 Demonstrative pronouns

Three lexemes make up demonstrative pronouns in Teotepec Chatino. The NP’s these forms occur in are right-headed; following the noun they modify: *re^C* ‘this(one),’ *kwa^F* ‘that(one),’ and *kaʔ^G* ‘mentioned.’ Because of their anaphoric function they are like pronouns; however, because they occur as heads with nominal complements I do not treat them as full-fledged pronouns but rather light-noun heads of demonstrative phrases. The following examples illustrate the use of demonstrative pronouns.

re^C refers to something that is in close spatial or temporal proximity to the environment of the speech act that is taking place. Examples 8.41, 8.41 and 8.42 present the use of re^C

(8.40) $koo\gamma^E \quad ju^F\text{-}lyo \quad re^C$
 month July this
 ‘this month of July’
 (SMC-2010-06-29-txt-AM-RLQ-HRV-jdm- 26:44-26:45)

(8.41) $nu \quad jyg^E \quad tyo \quad re^C$
 NOM field rain this
 ‘the field of this rain’
 (SMC-2010-06-29-txt-AM-RLQ-HRV-jdm- 26:44-26:45)

(8.42) $ny\gamma^K \quad ntyka^B\text{-}ti\gamma^F \quad tsq^A\text{-}nyi^G\text{-}tyo \quad re^C, \quad ka^F$
 like HAB.want-ESN rainy.season this POT.be
 ‘like for example, in this rainy season, it could be...’
 (TEO-2010-07-14-txt-RQL-RQF-jdm-02 03:41-03:42)

The demonstrative noun kwa^F makes reference to something that has been previously mentioned but is not physically present. This demonstrative noun may follow a pronoun or a full-fledged noun. Examples 8.43, 8.44 and 8.45 provide examples of kwa^F and make reference to both human and non-human nouns.

(8.43) $jwi \quad xq\gamma^G \quad ja^B \quad ty\gamma^i\text{-}\gamma^E=yu \quad kwa^F \quad nu\text{-}nga^K$
 COM.say then no POT.live-ENF=3SG.MASC that NOM-COP
 ‘they said then: he’s not going to live that one, well...’
 (SMC-2010-06-29-txt-GC-RLQ-jdm-01 10:29-10:30)

(8.44) $j\ddot{i}^H\text{-}ya\gamma^C \quad koo\gamma^G=yu \quad kwa^F\text{-}\gamma^B \quad jwi$
 very dirty=3S.MASC that.one-like COM.say
 ‘very dirty like that one, they said’
 (SMC-2010-06-29-txt-GC-RLQ-jdm-01 10:35-10:36)

- (8.45) *ntyɑ=rɛʔ jyɔ^E kwa^F*
 HAB.sow=3PL field that
 ‘they cultivated that field’
 (SMC-2010-06-29-txt-AM-RQL-jdm 07:07-07:08)

The demonstrative pronoun *kɑʔ^G* indexes a noun that has already been introduced but is not identified in the speech act. The following examples make reference to both human and non-human previously mentioned nouns.

- (8.46) *jaaʔ^G, tyjɿ-ʔa^E-tiʔ^E kɑʔ^G*
 no, itch-much-ESN mentioned
 ‘no, very annoying was that one (the one who fought)’
 (SMC-2010-06-29-txt-GC-RLQ-jdm-01 10:42-10:43)

- (8.47) *kɑʔ^G nu ka^K ynu^E lo ywu^A kɑʔ^G*
 mentioned NOM EST.be COM.stay on land mentioned
 ‘that was the one who stayed there on that land’
 (SMC-2010-06-29-txt-AM-RQL-jdm 05:12-05:14)

- (8.48) *la^A lo ʔya^F mkwa^F jyche^A kɑʔ^G*
 up on mountain COM.be village mentioned
 ‘up on the mountain was the village’
 (SMC-2010-06-29-txt-AM-RQL-jdm 03:15-03:17)

Example 8.49 shows the use of *kɑʔ^G* following the dative *ʔi^E* as an indirect object of the verb *mdaa^E-yaʔ^C* marked with the 1PL.INCL pronoun clitic =*ba* used by the speaker to reference himself in a polite manner.

- (8.49) *sʔya^G chaʔ^F ntkwi^I=ba jyʔya^A mdaa^E-yaʔ^C=ba ʔi^E*
 because reason PRG.hang=1PL.INCL sin COM.give-hand=1PL.INCL DAT
kɑʔ^G chaʔ^F xi^C-tʔi^E kjwi^B xa^B-kɑʔ^G
 mentioned reason CAUSE.return POT.kill then
 ‘It was my fault because I helped him, that’s why he returned to kill (me)’
 (SMC-2010-06-29-txt-GC-RLQ-jdm-01 10:49-10:52)

8.3.2 Demonstrative adverbs

Demonstrative adverbs contrast with demonstrative pronouns (§8.3.1). These forms denote a given location in relation to a verbal argument. There are three demonstrative adverbs: *nde^C* and *re^C*, *kwa^F* and *kqʔ*. *Re^C* is a conventionally reduced form of *nde^C*, and both refer to nearby locations and *kwa^F* refers to locations that are medial or far from the speaker. *kqʔ* refers to things that have already been mentioned or are out of the speaker's physical point of view.

Examples 8.50 and 8.51 present the use of *nde^C* to denote a given location.

- (8.50) *loʔ^F nde^C ngwla^I=u*
 and here COM.born=2SG.HON
 ‘and you were born here’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-13 00:19-00:20)

- (8.51) *kqʔ^G chaʔ^F nde^C ntkwa^B=ni*
 for that here PRG.sit=3SG.RSP
 ‘that’s why she is here’
 (TEO-2010-07-30-txt-LQL-HRV-jdm-02 07:04-07:05)

Example 8.52 presents *re^C* used to denote a particular space where they grow lots of watermelon in San Martín Caballero, a Teotepéc Chatino speaking community on the Oaxacan coast.

- (8.52) *xa^B-kqʔ^G ndʔwi yjo^G re^C, ja^F-jaʔ^E*
 and.so STAT.exist watermelon here, yes
 ‘and so, there are watermelon here, yes’
 (SMC-2010-07-13-txt-GC-RQL-HRV-jdm-02 03:29-03:31)

Example 8.53 presents the use of *re^C* as a demonstrative pronouns and *kwa^F* as a demonstrative adverb where *kwa^F* refers back to *Nxi^E* ‘Yaitepec.’

- (8.53) ***Nxi^E*** ***re^C*** *kwa^F-nyʔa^B* *tyo^C* *yja^A* *ya^G=ba* ***kwa^F***
 Yaitepec here and.so various years COM.go≠base=1PL.INCL there
 ‘in Yaitepec, thus during many years we went there.’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm-03 00:17-00:19)

The following example 8.54 shows how the demonstrative *nde^C* precedes the copula verb *mkwa^F* ‘was.’

- (8.54) ***nde^C*** *mkwa^F=ro^C* *pa-rro^F-kya^E*
 here COM.be=it parochiality
 ‘here (Teotepec) was a parochiality’
 (TEO-2011-07-16-txt-LZV-RQF-HRV-jdm-02 07:56-07:58)

Examples 8.55 and 8.56 present *nde^C* following the temporal adverb *tiʔ^F* ‘still’ preceded by the copular verbs *nʔi* ‘live’ and *ntyka^B* ‘be.’

- (8.55) *tiʔ^F* *nʔi* ***tiʔ^F*** ***nde^C*** *tiʔ^F-nyi^C*
 still STAT.be still here still-now
 ‘they are still here now’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-08 00:07-00:10)

- (8.56) *nyʔa^K* *ntyka^B* ***tiʔ^F*** ***nde^C*** *ni^C* *nʔa^B-ʔa^E* *nu* *xwe^A* *ndʔa^I* *xkla^K*
 as HAB.be still here, well many-EMPH NOM youth PRG.walk school
ni^C
 well
 ‘as is the case here, well very many youth are studying’
 (TEO-2011-07-16-txt-LZV-RQF-HRV-jdm-01 14:46-14:48)

Example 8.57 demonstrates the use of *kwa^F* in reference where a local band had a musician who was from Juquila.

- (8.57) *kwa^F mdq^G=rq^C ?j^E ne?-sk?we^C*
 there COM.stand=1PL.INCL DAT person-juquila
 ‘There they had a Juquilan’
 (TEO-201-07-24-txt-RRS-RQF-HRV-jdm-07 05:46-05:47)

Examples 8.58, 8.59 and 8.60 show how *ti^C* may be used in conjunction with the *re^C* to express a trajectory across an area,

- (8.58) *ti^C re^C jyta(r)-chi?^B-ba^B jya^A*
 over here COM.sow-a.little=1PL.EXCL sugarcane
 ‘over here we planted a little bit of sugarcane’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-01 07:52-07:54)

to denote distance from,

- (8.59) *ti^C kwa^F md?i=ba*
 over there COM.live=1PL.EXCL
 ‘over there we lived’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-06 01:51-01:52)

and to denote proximity.

- (8.60) *md?o^I=ba jya=ba ti^C re^C*
 COM.leave=1PL.EXCL COM.come≠base=1PL.EXCL to here
 ‘we left and we came to here (San Martín Caballero)’
 (SMC-2010-06-29-txt-GC-RLQ-HRV-jdm-01 10:10-10:11)

Examples 8.61 and 8.62 present the use of the demonstrative adverb *re^C* and *kwa^C* used in conjunction with the locational complement *la^A* ‘up.to’ to denote distance away from a particular point of reference.

(8.61) $\text{?}q^G$, $wa\text{?}^C$ $ntyka^F=r\text{e}\text{?}$ la^A re^C $xa^B-kq\text{?}^G$
 aah already PRG.be=3PL up.to here then
 ‘aah, they were already up to here then’
 (SMC-2010-2010-06-29-txt-AM-RQL-HRV-jdm 11:48-11:51)

(8.62) la^A kwa^F $ndy\text{?}q=ba$
 up.to there HAB.to.go \neq base=1PL.INCL
 ‘up to there we would go’
 (TEO-2012-07-20-SQS-RQF-HRV-jdm-02 02:40 - 02:40)

8.4 Modification of nouns

As described in §6.2.2 Teotepec Chatino exhibits compounding for the creation of lexical semantic collocations. Likewise, in §§8.1, 8.2.2 and 8.3.1 I present different kinds of NP’s and demonstrative noun phrases which define a type of attribute or property that is part and parcel of what a noun is in TEO. In the compound noun constructions the modifier comes after the head noun. The head can be a light-noun or a lexical noun where the modifier may be an alienably or inalienably possessed noun or an adjective like constituent. The following presents nominal compound constructions made up of light-noun and full-fledged noun heads which includes noun+noun and noun+adjective compound constructions.

8.4.1 Light-noun headed compounds

Based on analogy to the term ‘light verb’ described in Butt (2003) and Spencer (2013) where nearly contentless verbs; e.g.: have, make, cause and do, act as the head of a compound verb in which the “lexical content of the light-verb construction is expressed by the complement of the light-verb.” (Spencer, 2013:45) In Teotepec Chatino there is a set of ‘light-nouns’ that function as heads of nouns where the lexical content of the light-noun is the complement of that construction. These include the noun heads $ne\text{?}$ ‘person,’ la ‘old,’ to^F ‘cavity/space’ and nu . The following outlines some of these constructions.

8.4.1.1 *neʔ*-headed compounds

This first set presents nouns headed by the light-noun *neʔ*. These have been referred to as classifiers; however, *neʔ* is a superordinate noun e.g., like ‘thing’ and ‘person’ in English. In these constructions the part that follows *neʔ* modifies the head expressing something to the effect of: *the person who is* _____. This form, also presented in §7.1.1 shows how it may be used productively in the following kinds of nominal constructions.

Table 8.3 presents a short list of elicited examples of *neʔ* headed compounds.

Table 8.3: *neʔ*-headed Compounds

Chatino	Gloss	English
neʔ-chaʔ ^F -tnyo	person-thing-work?	‘Chatino’
neʔ-nkwa ^F -kyi	people-seated-grass	‘locals’
neʔ-yta ^E	person-outside	‘outsider’
neʔ-ta ^A	person-lard	‘ <i>mestizo</i> ’ SPN
neʔ-xaʔ ^F	person-other	‘valley person’
neʔ-chi ^B -yaʔ ^B	person-mexico	‘Mexican’
neʔ-pi ^H	person-turkey	‘foreigner/gringo’
neʔ-jʔo ^E	person-doctor	‘doctor’
neʔ-kwla	person-elder	‘elder’
neʔ-kna ^C	person-robbery	‘thief’
neʔ-ndyoʔ	person-crazy	‘loony/goofy’

The following examples, from the text database, present some of the uses of *neʔ*.

(8.63) *loʔ^F mkjwi^G xa^B-kqʔ^G neʔ-nʔa^E xa^B-kqʔ^G*

and COM.die then the-women then

‘...and then the women died then.’

(SMC-2010-06-29-txt-AM-RQL-HRV-jdm 18:33-18:35)

(8.64) *neʔ-ta^A ntʔa^I ti kqʔ^G*
mestizo PRG.walk.around just mentioned

‘the *mestizo* that was just around, that one.’

(TEO-2011-07-24-txt-RRS-RQF-HRV-jdm 03:44-03:45)

Examples 8.65 and 8.66 show the person marker *neʔ* followed by the lexeme *kla*. This construction indexes elders or old people in general.

- (8.65) *mkjwi^G neʔ-kla mkjwi^G nu-swe^A mkjwi^G nu*
 COM.die person.elders COM.die the.children, COM.die those
 ‘elders died, children died, died those...’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 16:46-16:49)

The construction in example 8.66 indexes the parents of the addressee.

- (8.66) *xa^E nu-nga^K, xa^E yʔo^F=y ʔo^E neʔ-kla*
 when NOM-PRG.be, when COM.live=2SG.HON with person-elder
ʔi=y sʔni
 DAT=2SG.HON before
 ‘well when, when you lived with your parents before...’
 (TEO-2011-08-31-txt-SS-RQF-HRV-jdm-01 11:37-11:39)

Example 8.67 shows how other nouns may be stacked upon one another for greater descriptive specification.

- (8.67) *neʔ-xaʔ^F-kwla kqʔ^G*
 person-other-old mentioned
 ‘those the old *vallistos/mestizos*.’
 (used in reference to soldiers of the 1950s conflict)
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 07:57-07:58)

In 8.68 the construction is used as a title for the police in *Nopala*.

- (8.68) *neʔ-wsya^K wya^H*
 people-police nopala
 ‘the police of Nopala.’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 16:03-16:02)

The same structure of the light-headed nouns may also include the forms *ni* ‘respected person,’ *xuʔ^F*, ‘sir’ and *yu* ‘he.’ These appositive type constructions function a little bit like titles further defining the referent.

Examples 8.69 and 8.70 show the light-noun *neʔ* followed by the lexeme *jylyo* ‘deceased.’ This construction precedes the referent *Acasio*.

- (8.69) *snyeʔ neʔ-jylyo^A Ka^F syu ntykwiʔ^I=rg*
 son.of person-deceased Acasio PRG.hablar=1PL.INCL
 ‘the son of the late Acasio we are talking about’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm 7:53-7:54)

Example 8.70 presents a construction like that in 8.69 and includes the use of *xuʔ^F* ‘sir’ preceding the name of the subject *ndyo^K* ‘Antonio.’ This particular example shows the use of a light-headed noun *neʔ-jylyo^A* with an adjacent demonstrative phrase *xuʔ^F Ndyo^K kwa^F*. The heads are on opposite ends of each collocation; the light-headed noun builds from left to right and the demonstrative builds right to left.

- (8.70) *mdʔo^E neʔ-jylyo^A xuʔ^F Ndyo^K kwa^F xa^B-kqʔ^G*
 COM.leave person.deceased sir Antonio this then
 ‘the late mister Antonio came out then.’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

Example 8.71 shows how the independent pronoun *yu* can function as a head in a similar type of collocation.

- (8.71) *ta^H yu-skq tsa^B*
 POT.give 3SG.MASC-*topil* POT.go
 ‘he (the president) will give (the order) to the *topil* guy who will go’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-04 01:21-01:23)

The full lexical noun can function in a similar manner.

- (8.72) *chaʔ^F jykwɪʔ jyʔyu^E-kwla*
 word COM.say man-elder
 ‘thing, that elders would say’
 (SMC-2010-06-29-GC-RQL-HRV-jdm-03 02:23-02:24)

8.4.1.2 *neʔ*-headed toponyms

In addition to countryside place names there is a rich set of local place names used to identify the different places within the community of Teotepec. The names in Chatino are associated with physical markers in the community which include names of particular knolls, trees, streams and buildings. There are two names that exist in Spanish for describing the neighborhoods in the community: *Barrio del Centro* ‘Neighborhood of the Center’ and *Barrio San José* ‘Neighborhood of San Jose.’ These contrast with a set of thirty-seven toponyms (not exhaustive). The names can function like gentilics where the place names are often associated with extended families that have lived in these places for generations.

Table 8.4: Light Head Toponyms

Chatino	Gloss
neʔ la ^A kq ^C	‘those above’
neʔ lo kye ^A	‘those of the rock’
neʔ lo kye ^A kwɛ ^G	‘those of the noisy rock’
neʔ ntɛ ^A kwa ^F	‘those of the knoll’
neʔ toʔ ^A ntɛ ^A	‘those of the flat land’
neʔ ja jyʔya ^C	‘those of the mountain’
neʔ niʔ ^F xiʔ ^F	‘those of the woods/monte’
neʔ chqʔ ^G nʔa-tnya ^F	‘those behind the <i>agencia</i> ’ SPN
neʔ chqʔ ^G laa ^G	‘those behind the church’
neʔ toʔ ^A laa ^G	‘those of the plaza’
neʔ jyko ^E xyeʔ ^K	‘those of lemon creek’

neʔ jyko ^E ka ^G	‘those of southpaw creek’
neʔ kye ^G jyko ^E	‘those of above the creek’
neʔ kye ^G jyche ^A	‘those at the head of town’
neʔ kye ^G tkwe ^E	‘those of above the path’
neʔ lo jyka tyii ^A	‘those of the cedar’
neʔ sq ^G jyka ngʔa ^G	‘those below the green tree’
neʔ sq ^G jyka kyii ^G	‘those below the reeds’
neʔ sq ^G jyka mʔya	‘those below the palms’

These are examples of toponyms headed by the light-noun *neʔ* ‘people.’ The entire phrase translates into something equivalent to ‘those of’ or ‘the people of.’ These names also function without the light-noun *neʔ* making reference only to the place itself. Some of these examples include relational nouns and locational complements to specify a given place, e.g.: *la^A* ‘up.to,’ *lo* ‘on,’ *toʔ^A* ‘center of,’ *niʔ^F* ‘in,’ *choʔ^G* ‘back of,’ *kye^G* ‘head of’ and *sq^G* ‘below.’

8.4.1.3 *nu*-headed compounds

Nu-headed collocations are third person noun-like phrases. *Nu* is a form that references something that is itself and introduce information about the referent such as age, gender, number, and spatial location. *Nu* creates a more definite subject; it indexes a specific individual who has a given characteristic. When it is used to index nominal referents it acts like a nominalizer or a definite article signifying ‘the one’ or ‘who.’ *Nu* is quite broad in what it accepts as its complement could be considered the *ultimate* light-noun. It is purely formal and carries no features of animacy or humanness the way *neʔ* ‘person’ or *na* ‘thing’ do. *Nu* also functions as a relativizer in relative clauses. Example 9.12 presents the use of *nu* following the verb *mkjwi^G* ‘died’ in reference to children.

- (8.73) *mkjwi^G* *neʔ-kwla* *mkjwi^G* ***nu-swe^A*** *mkjwi^G* ***nu***
 COM.die person-elder, COM.die NOM.children, COM.die those...
 ‘elder people died, children died, died those who...’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 16:46-16:49)

Example 8.75 presents *nu* referencing male subjects.

- (8.74) *mkjwi^G nu-jyɽyu^E waɽ^C tiɽ^J-lɽykwa^I yjɽ^A nu-tɽnyu^J yjɽ^A nu*
 COM.die NOM-man already fourteen years NOM-fifteen year this
 ‘the men died, those of just fourteen, fifteen years of age’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 19:34-19:39)

Example 8.75 presents *nu* referencing female subjects.

- (8.75) *nu-njɽɽ^E waɽ^C tiɽ^J-lɽykwa^I yjɽ^A ndyɽa^A mkjwi^G lɽo^E-ti*
 NOM-woman already fourteen years all COM.die also-just
 ‘the women of just fourteen years of age, all of them died too.’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 19:40-19:44)

Example 8.76 presents *nu* referencing indefinite human subjects.

- (8.76) *nyɽa^B-nu-ti mkjwi^G xa^B-kqɽ^G ne naɽ^{Bi} ɽi^E*
 how-NOM-just COM.die then COM.say I to.him
 ‘whoever died then, I told him’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 16:50-16:53)

Examples 8.77 and 8.78 presents *nu* indexing inanimate and non-human subjects.

- (8.77) *nu mxa^K, mxa^K swe^A-ti*
 the mass, mass little-just
 ‘the mass, a little mass.’
 (TEO-2010-07-22-txt-PQ-RQL-HRV-jdm 09:30-09:31)

- (8.78) *nu xiɽ^F ngwla*
 the woods mature
 ‘the mature woods’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:25-00:26)

In example 8.79 *nu* is presented introducing a relative clause.

- (8.79) *kwa^F-nyɽa^B nu-nga^K ɽni nu ka^K kwɽya^F kqɽ*
 that’s-how well animal that STAT.be cochineal DEM
 ‘well, that’s how those animals that are (be) cochineal.’
 (TEO-2010-07-15-txt-ZFV-RQL-HRV-jdm-02 01:00-01:02)

8.4.1.4 *la*-headed compounds

There is a group of compound nouns headed by *la*. These forms are lexical compounds found infrequently, restricted to just a handful of examples. *La* is a frozen form that probably comes from proto-Zapotecan **ko:la* ‘old’ noted by Kaufman (2007) with his reconstruction of **ko:la *kwettzi* ‘old buzzard.’ In TEO, *la* refers to items that are, in some sense, old or grotesque. This form is analyzed as [head + modifier] where the light-noun *la* has become the head of these constructions.

Example 8.80 is taken from the text database and presents the use of *la-snee^E* ‘toad,’ which are commonly found around throughout the region during the rainy season.

- (8.80) ?o^E ?ni nu-nga^K nu $\text{ntykwi?}=r\text{e?}$ ***la-snee^E***
 with animal well, the.one HAB.speak=3PL old-toad
 ‘with the animal well, the one they call a toad’
 (TEO-2011-08-26-txt-SQS-RQF-HRV-jdm 03:09-03:10)

Table 8.5 provides a short list of these forms.

Table 8.5: *la*-headed Compounds

la-kwso?^C	‘turkey’
la-k?na^I	‘crocodile’
la-k?ya^A	‘eagle’
la-xu^A	‘buzzard’
la-s?yu^A	‘vulture’
la-kye^A	‘rooster’
la-sne^E	‘toad’
la-x?a^A	‘devil’
la-skwa?^G	‘mask’

8.4.1.5 *to^F*-headed Compounds

Kaufman (2007) reconstructs **ke:?.tyu* as ‘hole’ in proto-Zapotecan. In TEO *to^F* appears to be cognate with the second syllable of this reconstructed form. These examples,

considered lexical compounds because of their kind of conventionalized meanings, contrast with compounds formed with the head to^A ‘center,’ e.g.: to^A-la ‘center of town’ and $to^A-n?a$ ‘door.’ These examples identify a particular location where to^F compounds identify a type of cavity. The following example uses $to^F + lja$ to specify the place where Mr. Miguel lives.

- (8.81) $l?o^E$ xu^F $mdye^E$ **$to^F-lja-kye^A$**
 also mister Miguel cavity-between-rocks
 ‘also mister Miguel from between the rocks’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

Table 8.6 presents a list of to^F -headed compound nouns which identify a particular cavity or opening.

Table 8.6: to^F -headed Compounds

Chatino	Gloss	English
$to^F-nsk\grave{a}^G$	hole-ear	‘ear canal’
$to^F-sye?$	hole-nose	‘nostril’
$to^F-y\grave{n}i^G$	hole-neck	‘throat’
$to^F-ky?i^C$	hole-??	‘chest cavity’
$to^F-sk\grave{o}^C$	hole-arm	‘arm pit’
$to^F-kj\grave{i}^G$	hole-bag	‘pocket’
to^F-kye^A	hole-rock	‘cave’
to^F-tna	hole-house	‘window’
to^F-ti^A	hole-skinny	‘creek’
to^F-yuu	hole-earth	‘hole’ (in the earth)
$to^F-nsk\grave{a}^B-n?a$	hole-corner-house	‘corner’ (internal)

8.4.2 Emergent lexical compounds

The following collocations are analyzed as compound words because of their idiomatic or single lexical item meanings. Some of the nouns in these constructions are inalienably possessed. In these examples either one or both of the nouns may be possessed.

There are constructions where only the modifier, the noun in second position, is inalienably possessed and other constructions consist of two juxtaposed nouns where the second position form may have more of an adjectival function.

Example 8.82 from the text-base presents the compound $chaʔ^F-xʔq^K$ ‘bad word’ in a text that discusses the speaker’s experience of working in a Chinese restaurant in the United States.

- (8.82) $sʔwe^C-tiʔ^C=rq$ $ʔo^E=yu$ $xqʔ^G$ $chaʔ^F$ $tykwʔ=yu$
 good-ESN=1PL.INCL with=3PL.MASC then if POT.speak=3PL.MASC
 $chaʔ^F-xʔq^K$ $ʔi^B=rq$
 word-bad to=1PL.INCL
 ‘we are happy with them, then if they say a mean word to us...’
 (TEO-2011-08-21-txt-ACM-RQF-HRV-jdm 12:48-12:50)

Noun + noun compounds are analyzed as compounds because they are made up of two stems in order to form a single grammatical word. Their compound forms have a lexical meaning that is not sum meaning of the parts it is the composition of these parts that derive the lexical meaning. Table 8.7 presents a list of noun compounds.

Table 8.7: Noun + Noun Compounds

Chatino	Gloss	English
$tyʔa^A-skwe$	water-egg	‘egg white’
$tyʔa^A-syeʔ^E$	water-toad	‘saliva’
$yni^G-yaʔ^F$	neck-hand	‘wrist’
$teʔ-jyçəʔ^A$	cloth-hair	‘blanket’
$ke^G-nʔq$	head-house	‘roof’
$tyoo-kye^G$	rain-rock	‘hail’
ti^F-skwe	rope-egg	‘prostate’
$jyka-skwe$	stick-egg	‘penis’

Table 8.8 presents noun + adjective compounds. Likewise these are considered compounds due to their two stem composition forming a unique single grammatical word. These forms are composed of noun + adjective.

Table 8.8: Noun + Adjective Compounds

Chatino	gloss	English
chaʔ ^F -xʔa ^B	word-problem	‘heavy word’
chaʔ ^F -xʔa ^K	word-bad	‘curse word’
chaʔ ^F -slya	word-Castilian	‘Spanish’
nʔa-tykø ^C	house-iron	‘jail’
nʔa-kiiʔ	house-fire	‘kitchen’
nʔa-xkla ^K	house-school	‘school’
ja-slya	tortilla-castilian	‘bread’ <i>‘tortilla-castilla’</i> (SP)
jyka-xlya	stick-saddle	‘chair’
xniʔ ^C -kneʔ ^E	dog-young	‘puppy’
tyʔa ^A -tʔwa ^B	water-cold	‘soda-pop’
neʔ-kna ^C	person-robbery	‘thief’
neʔ-ndyoʔ	person-crazy	‘loony/goofy’

8.5 Quantifiers

Quantifiers, which include numerals, are a distinct closed lexical class in Teotepéc Chatino. These lexemes may occur as part of the noun phrase modifying the noun by specifying a particular number or quantity related to the noun.

8.5.1 Numerals

The Chatino number system is vigesimal. In this system, like that of other Mesoamerican languages (Campbell, L. et al., 1986), twenty serves as a base that forms numbers from 20 to 100. The numbers eleven to fourteen and sixteen to nineteen demonstrate a system based on the numbers 10 and 15 (Campbell, E. and E. Cruz, 2009). In these cases the numbers are formed with base ten or base fifteen + a primary number.

The *teen* numbers are constructed with the base numbers 10 or 15 followed by one of the primary numbers 1 - 4. When these primary forms are used for higher numbers the initial consonant is palatalized. This palatalization also occurs with the number 20 when

it is multiplied to express 40, 60, and 80 (see below). The palatalization signifies ‘another’ and is probably related to the word *xka^I* ‘other/another’ or the *xi^C* prefix for causative verbs. The numbers eleven *ti^J xka^I* = ‘ten + another one’ and sixteen *tʔyo^J xka^I* ‘fifteen + another one’ are both constructed with 10 + 1 and 15+1 respectively.

Table 8.9: Numerals 01 - 20 of Teotepec Chatino

ska	‘one’	ti ^J xka ^I	‘eleven’
tkwa ^J	‘two’	ti ^J tykwa ^H	‘twelve’
sna ^J	‘three’	ti ^J xna ^H	‘thirteen’
ja-kwa	‘four’	ti ^J jykwa ^I	‘fourteen’
kʔyu ^J	‘five’	tʔyo ^J	‘fifteen’
skwa ^J	‘six’	tʔyo ^J xka ^I	‘sixteen’
k(w)ti ^J	‘seven’	tʔyo ^J tykwa ^H	‘seventeen’
snoʔ	‘eight’	tʔyo ^J xna ^H	‘eighteen’
kaa ^J	‘nine’	tʔyo ^J jykwa ^I	‘nineteen’
tii ^J	‘ten’	kla ^B	‘twenty’

The twenties utilize the progressive form of the positional verb *ntkwa^B* ‘PRG.sit,’ for numbers that count to thirty. The numbers 31 - 40 in TEO utilize the stative form of the predicate *(ns)ʔwi* ‘STAT.exist.’ For example, in the thirties the number 31 is constructed with *kla^B kyi^H ʔwi ska* ‘20 + 10 exists 1.’ This form is also used for the sets up through the nineties.

Table 8.10: Numerals 20 - 39 of Teotepec Chatino

kla ^B	‘twenty’	kla ^B kyi ^H	‘thirty’
kla ^B ntkwa ^B ska	‘twenty one’	kla ^B kyi ^H ʔwi ska	‘thirty one’
kla ^B ntkwa ^B tkwa	‘twenty two’	kla ^B kyi ^H ʔwi tkwa ^J	‘thirty two’
kla ^B ntkwa ^B sna	‘twenty three’	kla ^B kyi ^H ʔwi sna ^J	‘thirty three’
kla ^B ntkwa ^B ja-kwa	‘twenty four’	kla ^B kyi ^H ʔwi ja-kwa	‘thirty four’
kla ^B mʔyu	‘twenty five’	kla ^B kyi ^H ʔwi kʔyu ^J	‘thirty five’
kla ^B ntkwa ^B skwa	‘twenty six’	kla ^B kyi ^H ʔwi skwa ^J	‘thirty six’
kla ^B ntkwa ^B k(w)ti	‘twenty seven’	kla ^B kyi ^H ʔwi k(w)ti ^J	‘thirty seven’
kla ^B ntkwa ^B snoʔ	‘twenty eight’	kla ^B kyi ^H ʔwi snoʔ	‘thirty eight’
kla ^B ntkwa ^B kaa	‘twenty nine’	kla ^B kyi ^H ʔwi kaa ^J	‘thirty nine’

The following set of numbers, 40 to 59, presents the vigesimal system in the number forty with *tkwa^J yla^C* ‘two twenties.’ Fifty is made up of the compound *t?wa^J + kyi^H* ‘40 + 10.’ and continues with the strategy of using the predicate *(ns)?wi* ‘STAT.exist’ to build larger numbers. In the other eastern Chatino varieties of San Juan Quiahije and Yaitepec *t?wa^J* is used to express forty; however, in Teotepec Chatino this form only appears in the number fifty. (Campbell, E. and E. Cruz, 2009; Rasch, 2002).

Table 8.11: Numerals 40 - 59 of Teotepec Chatino

<i>tkwa^J yla^C</i>	‘forty’	<i>t?wa^J kyi^H</i>	‘fifty’
<i>tkwa^J yla^C ?wi ska</i>	‘forty one’	<i>t?wa^J kyi^H ?wi ska</i>	‘fifty one’
<i>tkwa^J yla^C ?wi tkwa^J</i>	‘forty two’	<i>t?wa^J kyi^H ?wi tkwa^J</i>	‘fifty two’
<i>tkwa^J yla^C ?wi sna^J</i>	‘forty three’	<i>t?wa^J kyi^H ?wi sna^J</i>	‘fifty three’
<i>tkwa^J yla^C ?wi ja-kwa</i>	‘forty four’	<i>t?wa^J kyi^H ?wi ja-kwa</i>	‘fifty four’
<i>tkwa^J yla^C ?wi k?yu^J</i>	‘forty five’	<i>t?wa^J ?wi k?yu^J</i>	‘fifty five’
<i>tkwa^J yla^C ?wi skwa^J</i>	‘forty six’	<i>t?wa^J kyi^H ?wi skwa^J</i>	‘fifty six’
<i>tkwa^J yla^C ?wi k(w)ti^J</i>	‘forty seven’	<i>t?wa^J kyi^H ?wi k(w)ti^J</i>	‘fifty seven’
<i>tkwa^J yla^C ?wi sno?</i>	‘forty eight’	<i>t?wa^J kyi^H ?wi sno?</i>	‘fifty eight’
<i>tkwa^J yla^C ?wi kaa^J</i>	‘forty nine’	<i>t?wa^J kyi^H ?wi kaa^J</i>	‘fifty nine’

The number sixty is composed of *sna^J yla^C*, ‘three twenties.’ The numbers 70 -

Table 8.12: Numerals 60 - 79 of Teotepec Chatino

<i>sna^J yla^C</i>	‘sixty’	<i>sna^J yla^C ?wi tii</i>	‘seventy’
<i>sna^J yla^C ?wi ska</i>	‘sixty one’	<i>sna^J yla^C ?wi tii^J xka^I</i>	‘seventy one’
<i>sna^J yla^C ?wi tkwa^J</i>	‘sixty two’	<i>sna^J yla^C ?wi tii^J tykwa^H</i>	‘seventy two’
<i>sna^J yla^C ?wi sna^J</i>	‘sixty three’	<i>sna^J yla^C ?wi tii^J xna^H</i>	‘seventy three’
<i>sna^J yla^C ?wi ja-kwa</i>	‘sixty four’	<i>sna^J yla^C ?wi tii^J jykwa^I</i>	‘seventy four’
<i>sna^J yla^C ?wi k?yu^J</i>	‘sixty five’	<i>sna^J yla^C ?wi t?yo^J</i>	‘seventy five’
<i>sna^J yla^C ?wi skwa</i>	‘sixty six’	<i>sna^J yla^C ?wi t?yo^J xka^I</i>	‘seventy six’
<i>sna^J yla^C ?wi k(w)ti</i>	‘sixty seven’	<i>sna^J yla^C ?wi t?yo^J tykwa^H</i>	‘seventy seven’
<i>sna^J yla^C ?wi sno?</i>	‘sixty eight’	<i>sna^J yla^C ?wi t?yo^J xna^H</i>	‘seventy eight’
<i>sna^J yla^C ?wi kaa</i>	‘sixty nine’	<i>sna^J yla^C ?wi t?yo^J jykwa^I</i>	‘seventy nine’

79 continue with the use of the predicate *(ns)?wi* ‘exists.’ Also as noted for numbers 10 -19 the process of palatalization of the first consonant also occurs here in the same set of

numbers 1-4 and 6-9 and on the number 20 ‘ yla^C .’ Thus we get $sna^J yla^C ?wi tii^J xka =$ ‘seventy-one’ with palatalization on the numbers ‘one’ and ‘twenty.’

In this final set of numbers, below, we can see the vigesimal strategy for eighty - $ja-kwa yla^C$ ‘four twenties.’ The numbers 90 to 99 are expressed with the strategy noted above for the groups 11 to 19 and 70 to 79. This employs the use of the base vigesimal system with the ten and fifteen number systems added to make larger units.

Table 8.13: Numerals 80 - 99 of Teotepec Chatino

$ja-kwa yla$	‘eighty’	$ja-kwa yla^C ?wi tii$	‘ninety’
$ja-kwa yla^C ?wi ska$	‘eighty one’	$ja-kwa yla^C ?wi tii xka^I$	‘ninety one’
$ja-kwa yla^C ?wi tkwa^J$	‘eighty two’	$ja-kwa yla^C ?wi tii tykwa^H$	‘ninety two’
$ja-kwa yla^C ?wi sna^J$	‘eighty three’	$ja-kwa yla^C ?wi tii xna^H$	‘ninety three’
$ja-kwa yla^C ?wi ja-kwa$	‘eighty four’	$ja-kwa yla^C ?wi tii ykwa^I$	‘ninety four’
$ja-kwa yla^C ?wi k?yu^J$	‘eighty five’	$ja-kwa yla^C ?wi t?yq$	‘ninety five’
$ja-kwa yla^C ?wi skwa^J$	‘eighty six’	$ja-kwa yla^C ?wi t?yq xka^I$	‘ninety six’
$ja-kwa yla^C ?wi k(w)ti^J$	‘eighty seven’	$ja-kwa yla^C ?wi t?yq tykwa^H$	‘ninety seven’
$ja-kwa yla^C ?wi sno?$	‘eighty eight’	$ja-kwa yla^C ?wi t?yq xna^H$	‘ninety eight’
$ja-kwa yla^C ?wi kaa^J$	‘eighty nine’	$ja-kwa yla^C ?wi t?yq jykwa^I$	‘ninety nine’

The following are the numbers for one-hundred and above:

Table 8.14: Numerals 100 and Above of Teotepec Chatino

$ska sye^B-nto^K$	‘one-hundred’	$ska mi^B$	‘one-thousand’
$tkwa^J sye^B-nto^K$	‘two-hundred’	$tkwa^J mi^B$	‘two-thousand’
$sna^J sye^B-nto^K$	‘three-hundred’	$sna^J mi^B$	‘three-thousand’
$ja-kwa sye^B-nto^K$	‘four-hundred’	$ja-kwa mi^B$	‘three-thousand’
$k?yu^J sye^B-nto^K$	‘five-hundred’	$k?yu^J mi^B$	‘five-thousand’
$skwa^J sye^B-nto^K$	‘six-hundred’	$skwa^J mi^B$	‘six-thousand’
$k(w)ti^J sye^B-nto^K$	‘seven-hundred’	$k(w)ti^J mi^B$	‘seven-thousand’
$sno? sye^B-nto^K$	‘eight-hundred’	$sno? mi^B$	‘eight-thousand’
$kaa^J sye^B-nto^K$	‘nine-hundred’	$kaa^J mi^B$	‘nine-thousand’

To create larger numbers, the strategy used for the numbers 1 - 99 is simply combined with numbers sye^B-nto^K ‘100’ and mi^B ‘1000’ with the use of the predicate $(ns)?wi$ ‘exists.’ For example, to express the number 465 one would say:

- (8.83) *ja-kwa sye^B-nto^K ?wi sna^J yla^C ?wi k?yu^J*
 four hundred STAT.exist three twenty STAT.exist five
 ‘four-hundred and sixty five’

Given the structure of the vigesimal pattern in TEO it would not be unusual to encounter *k?yu^J yla^C* ‘five twenties’ - for one-hundred. This is probably how Chatino speakers historically expressed the number one-hundred; however, synchronically speakers use the Spanish loan *ciento sye^B-nto^K* to count in the hundreds and *mi^B* for the thousands. There is one piece of evidence that presents the synchronic use of *k?yu^J yla^C* ‘five twenties’ to express 100. When counting by ‘*almud*’, an old Spanish volume measure for dry goods such as grains, which currently in the Chaitno region measures 2 kilograms; when speakers reach 100 they use *k?yu^J yla^C* ‘five twenties.’

8.5.2 Quantifiers

In Teotepec Chatino there are number like quantifiers, *n?a^J* ‘much, many,’ *chi?^B* ‘a little bit,’ *t?we^B* ‘half’ and *ndya^A* ‘all.’ These forms are like numbers in that they quantify different things.

8.5.2.1 *n?a^B* ‘much, many’

The quantifier *n?a^B* ‘much’ precedes the nouns it modifies.

- (8.84) *n?a^B na^C mtji^{Bi} che^E*
 many thing COM.live.through.1SG friend
 ‘I experienced many things friend.’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-11 09:54-09:55)

The emphatic marker *?a^E* ‘very’ may follow this form.

- (8.85) *n?a^B-?a^E yuu^A n?i ?i^E sti-kla=ba ni^C*
 much-EMPH land STAT.live DAT father-elder=IPLEX well

‘well, my grandfather had a lot of land’
 (TEO-2010-06-29-txt-GC-RQL-HRV-jdm 04:25-04:27)

And pronoun clitics may follow the quantifier and emphatic marker.

- (8.86) *nʔa^B-ʔa^E=reʔ* *ʔyta=reʔ* *ʔyɔ^E kɔ,* *ʔa^F-ʔa^E*
 many-EMPH=3S.INDEF COM.sow=3S.INDEF field irrigation, yes
 ‘many sowed irrigation fields, yes’
 (TEO-2012-07-20-txt-SQS-RQF-HRV-jdm-01 10:50-10:52)

8.5.2.2 *chiʔ^B* ‘a little, little bit’

The form *chiʔ^B* ‘a little’ precedes the nouns it modifies.

- (8.87) *ni tsa-la^B chiʔ^B nyʔa^K ʔya^A ntya=y waʔ^C-sʔni*
 INT POT.go-up.to little like sugarcane HAB.sow=2SG already-before
 ‘like up to how much sugarcane did you plant before?’
 (TEO-2010-07-14-txt-RQL-RQF-HRV-jdm-01 06:40-06:42)

And it may be part of a verb phrase.

- (8.88) *ti^F re^C ʔyta-chiʔ^B=ba ʔya^A*
 just here COM.sow-a.bit=1PL.EXCL sugarcane
 over here we planted a little bit of sugarcane
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm 07:52-07:54)

8.5.2.3 *tʔwe^B* ‘half’

The form *tʔwe^B* follows the noun it is modifying. It can be used to signify half of something.

- (8.89) *ska xi^A tʔwe^B ʔywi^B=rɔ*
 one bagazo half POT.say=1PL.INCL

‘one *bagazo* and a half we say.’²
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-07 10:23-10:24)

This form may be used to measure money,

(8.90) *tkwa^J wxo^K tʔwe^B ka^K kaʔ^G*
 two peso half STAT.be DEM
 ‘two and a half *pesos* is that’ (2 *pesos* and 50 *centavos*)
 (TEO-2010-07-22-txt-PQ-RQL-HRV-jdm 15:46-15:48)

to measure time

(8.91) *tkwa^J tsq^A tʔwe^B re^C tsa*
 two day half DEM POT.go
 ‘around two and a half days’
 (TEO-2011-09-01-txt-BRZ-RQF-HRV-jdm 03:44-03:45)

and to measure length.

(8.92) *tkwa^B me^F-tro tʔwe^B*
 two meters half
 ‘two and a half meters’ (2.50 M)
 (TEO-2011-09-01-txt-BRZ-RQF-HRV-jdm 02:57-02:58)

8.5.2.4 *ndya^A* ‘all, every’

The form *ndya^A* precedes the noun it modifies. Examples 8.93 and 8.94 make reference to time.

(8.93) *ndya^A tsq^A ntyʔi mgo^C tʔa^G=yu*
 all day HAB.live COM.throw partner=3PL.MASC
 ‘every day they were firing’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm 08:59-09:00)

²One *bagazo* is 8 heads, 16 molded pieces, of *panela* put together and wrapped in the chaff of the already pressed sugarcane.

- (8.94) *sʔi^J ska (ny)ʔq^B-ti yndla^B tyo ndya^A yjg^A*
 NEG one like-just HAB.arrive≠base rain all year
 ‘the rain does not arrive the same way every year.’
 (TEO-2010-07-14-txt-RQL-RQF-HRV-jdm-04 14:43-14:45)

In example 8.95 *ndya^A* is used to index a group of people.

- (8.95) *ju^E-juʔ^F ndya^A nte^B kla*
 yes all people elder
 ‘yes, all the elderly people.’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 04:08-04:10))

8.5.2.5 *ja^B-ska^C* ‘none’

The form ‘none’ is a compound of the words *ja* ‘no’ and *ska* ‘one’ and expresses ‘not one’ or ‘none.’ Like the quantifiers noted above this form also precedes the noun it modifies, which can be a full-fledged noun.

- (8.96) *ja^B-ska^C nu-tʔi^A ja^B snyeʔ(r)-xe^B=rɔ ni^C*
 not-one NOM-pain no daughter.in.law=1PL.INCL now
 ‘our daughter-in-laws will not suffer now’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm 01:57-01:58)

or a pronoun.

- (8.97) *ja^B-ska^C=rɔ^C ju^B-ʔu^G ja^B-ska^C=rɔ^C ja^B-ʔu^G ja^B-ska^C kaʔ^G*
 not-one=thing, no not-one=thing, no not-one DEM
 ‘none, no none, no none of that’
 (TEO-2010-06-29-txt-GC-RQL-HRV-jdm-02 06:35-06:41)

8.6 *kwiʔ^J* ‘same self’

In TEO the form *kwiʔ^J* signifies ‘same self.’ As seen throughout this section this is a further example of the pervasive *head-complement* structure of noun phrases. This

form precedes the noun it is modifying and is used to construct clauses kind of resumptive meaning. Examples 8.98, 8.99 and 8.100 present the use of *kwiʔ^J* in a sense of the same self.

- (8.98) *kwiʔ^J* *tʔa^G* *skq=ba*
 same companion topil-1PL.INCL
 ‘our same topil companion’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-03 11:54-11:57)

Example 8.99 is an answer to a question about who the current music teacher is in Santa Lucía Teotepec.

- (8.99) *kwiʔ^J* *kqʔ^G-nu* *ndʔo^D* *waʔ^C-nyʔ^C*
 same DEM.NOM PRG.teach already-now
 ‘that same one is teaching now’
 (TEO-2010-07-13-txt-ZFV-RQL-HRV-jdm-03 06:10-06:11)

Example 8.100 presents the use of *kwiʔ^J* inflected for first person to signify ‘my self.’

- (8.100) *tʔna^F-ʔa^E* *ntjʔ^C* *ʔo^E-rʔ^C*, *jʔ^E-ni^E* *kwiʔ^J=tj^{Bi}*
 poor-very PRG.pass.1SG with-it, yes, same=just.1SG
ndlyʔ^G
 HAB.walk.around.1SG
 ‘I suffered a lot with that, yes, I myself carried on...’
 (TEO-2010-07-13-txt-GZM-RQL-HRV-jdm-01 12:33-12:35)

kwiʔ^J is used with *cha^G* to express an emphatic sense of a set of given things.

- (8.101) *ʔa^F-jʔ^E*, *cha^G-kwiʔ^J* *tʔwe^B* *na^C*
 yes, other-same half thing
 ‘yes, the exact middle of the things’
 (TEO-2011-08-26-txt-SQS-RQF-HRV-jdm-02 15:22-15:23)

- (8.102) *cha^G-kwiʔ^J kwi^B*
 other-same *tepache*
 ‘pure *tepache*’³
 (TEO-2011-08-04-txt-JV-RQF-HRV-jdm-05 00:06-00:08)

8.7 Adjectives

8.7.1 Lexical adjectives

Lexical adjectives follow the noun they modify and are used in reference to a particular individual or thing, functioning attributively, indexing a characteristic of the referent of the noun. Adjectives may also be used predicatively where they precede the noun they modify following a more predicative pattern. Examples 8.103 and 8.104 present *mtyi* ‘dry’ and *mta^F* ‘black’ used referentially.

- (8.103) *lo yuu^A mtyi nsʔwa^B=yu ʔi^E=ra^C*
 in earth dry HAB.put=3PL.MASC DAT=it
 ‘in the dry earth they put it’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-02 03:05-03:07)

- (8.104) *ja^F-jqʔ^E, kqʔ^G nu ndlyo^B=yu jynyaʔ^B mta^F*
 yes, DEM NOM HAB.get=3PL.MASC wax black
 ‘yes, that is where they get black wax.’
 (TEO-2012-07-16-txt-JV-RQF-HRV-jdm-05 07:55-07:56)

8.105 presents the form *tnu* ‘big’ used referentially to describe a large woven mat used for drying cochineal.

- (8.105) *tyʔi ʔi lo, lo jaaʔ^G tnu ntyʔwi*
 POT.be DAT in in woven.mat big HAB.be.put
 ‘it’s going to be put on, on a large woven mat.’
 (TEO-2010-07-15-txt-ZVF-RQF-HRV-jdm-02 02:15-02:17)

³*Tepache* is made from fermented sugarcane juice, a common byproduct of grinding sugarcane for the production of *panella* in Santa LucíaTeotepec and its environs.

There are forms that modify the main noun of adjective phrases. Examples 8.106, 8.107 and 8.108 present *jyq^E* ‘cornfield’ modified by *ndy?u^I* ‘early,’ *tyo* ‘rain’ and *kq* ‘irrigation.’ These forms describe different kinds of cornfields that relate to the specific growing seasons or crops.

(8.106) *nu jyq^E ndy?u^I kwa^F*
 NOM, field early DEM
 ‘well this early (corn) field’
 (TEO-2010-07-14-txt-RQL-RQF-HRV-jdm-04 02:45-02:46)

(8.107) *nu jyq^E tyo*
 NOM, field rain
 ‘the rain (corn) field’
 (TEO-2010-07-14-txt-RQL-RQF-HRV-jdm-01 10:00-10:02)

(8.108) *n?a^B-?a^E-re? jyta-re? jyq^E kq, ja^F-jq?^E*
 many COM.sow field irrigation, yes
 ‘many sowed fields of irrigation.’
 (TEO-2012-07-20-txt-SQS-RQF-HRV-jdm 10:50-10:52)

s?we^C ‘good’ may be used attributively or predicatively. Examples 8.109 and 8.110 show that when *s?we^C* precedes the subject it is functioning as a predicate adjective.

(8.109) *cha?^F ni-(ny)?q^B s?we^C yuu^A=rq^C*
 word, INT.like good land=thing
 ‘yes because it is good land.’
 (TEO-2010-07-14-txt-RQL-RQF-HRV-jdm-04 05:26-05:27)

(8.110) *s?we^C jyta^A kwa^F tyki^B=rq^B xa^B-ka?^G*
 good tobacco DEM POT.burn=1PL.INCL then
 ‘it is good this cigarette that we smoke then.’
 (TEO-2011-08-23-txt-HRM-RQF-HRV-jdm-04 03:33-03:35)

Example 8.111 presents *sʔwe^C* is used attributively in contrast with the previous two examples.

- (8.111) *tsq^A sʔwe^C-ti tsa^B kqɿ^G ʔa^E*
 day good-just POT.go DEM EMPH
 ‘just the good days they go then.’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-04 14:31-14:32)

8.8 Conclusion

This chapter has outlined the remainder of the major noun classes and in doing so has shown the strong emphasis on the *head-complement* pattern in both syntax and word (compound) formation, and its apparent longevity in the grammar as indicated by all these degrees of productivity. As part of this emphasis this chapter covered relational nouns, body part locatives, derivational expressions of interior, toponyms, nouns that relate to place, demonstratives and forms that modify nouns. The section on noun modification presented noun + noun constructions, noun + adjective forms and constructions headed by light-nouns. This chapter also covered numbers, outlined some of the quantifiers that exist in the language, looked at the reflexive form *kwiʔ^J* and touched briefly on lexical adjectives. The following chapter outlines verbal constituents and inflectional patterns on verbs.

Chapter 9

Verbal Morphology

This chapter provides an overview of the verbal inflectional and derivational morphology, Aspect, copular and existential verbs, positional verbs and non-verbal predicates. Verbs in Teotepec Chatino express activities carried out in a given time or space. Verbal roots tend to be intransitive and derivational processes exist to increase verb valency.

Teotepec Chatino has four main Aspectual categories which include Potential (POT), Completive (COM), Progressive (PRG) and the Habitual (HAB). A fifth Stative aspect (STAT) exists in a very small set of verbs described in §9.7. In addition to segmental phonemes that occur at the beginning of inflected verbs, Aspect morphology also includes tone contrasts. The base tone of a given verbal root is the tone of the third person Completive verb. For inflectional purposes second and third person contrast by tone alone. The vowel of the first person verb nasalizes if the vowel is not already nasalized due to progressive nasal assimilation (§2.4.1.6). In the instances of the plural forms there is a set of segmental clitics that follow a given verb form for marking person. The remainder of this chapter will discuss the details regarding the verbal Aspectual and inflectional morphology of TEO and outline copular, existential, positional verbs and non-verbal predicates. The following section 9.4, discusses verbal Aspect in TEO.

9.1 Aspect

Because all non-final vowels in all words have been lost, consonant clusters stack up at the left edge of the syllable. This makes clear lines of delineation for identifying segmental Aspect markers chosen by the verbs difficult to identify. Consonant clusters are then reduced and changed due to phonotactic restraints thereby further obscuring the stem consonants, leaving only pieces of the segments of the original Aspectual system. Because the breakdown of the Aspect system and reduction of the verb stems have changed the form of the verbs this may simplify the system on the one hand, while creating more complicated morpho-phonemics on the other. Table 9.7 presents a complete paradigm for the verb *ku* ‘to eat’ and demonstrates the kinds of inflectional morphology that can occur on a verbal root.

Table 9.1: Paradigm for the Verb *ku* ‘to eat’

NUM/PER	COM	PRG	HAB	POT
1SG	jyko ^E	ntyko ^I	ntyko ^{Bi}	ku ^{Bi}
2SG	jyku ^{Bii}	ntyku ^I	ntyku ^{Bii}	ku ^{Bii}
3SG	jyku	ntyku ^I	ntyku	ku
1PL.EXCL	jyku=rə ^A	ntyku ^I =rə ^A	ntyku=rə ^A	ku=rə ^A
1PL.INCL	jyku=ba	ntyku ^I =ba	ntyku=ba	ku=ba
2PL	jyku=ɥ	ntyku ^I =ɥ	ntyku=ɥ	ku=ɥ
3PL	jyku=jɥ ^A	ntyku ^I =jɥ ^A	ntyku=jɥ ^A	ku=jɥ ^A

Campbell analyses the stem of this verb in ZEN as *-aku* (2011). For TEO the stem is *-ku* due to the loss of the mid low vowel /a/. Considering this analysis for the above paradigm in TEO would yield the segmental analysis in Table: 9.2. Here we see: 1) the tones for the Potential and Habitual are identical, 2) the Progressive and the Habitual have the same Aspect prefix allomorphs, 3) the Progressive has the same tone for all persons, 4) the 3SG of the Completive, Potential and Habitual is the least marked, 5) the Potential is the basic stem, 6) tone ablaut and nasal vowels inflect singular forms, and 7) segmental enclitics selected by the the unmarked stem inflect plural forms.

Table 9.2: Segmental Analysis of the Verb ‘to eat’

NUM/PER	COM	PRG	HAB	POT
1SG	jy-kɔ ^E	nty-kɔ ^I	nty-kɔ ^{Bi}	∅-ku ^{Bi}
2SG	jy-ku ^{Bii}	nty-ku ^I	nty-ku ^{Bii}	∅-ku ^{Bii}
3SG	jy-ku	nty-ku ^I	nty-ku	∅-ku
1PL.EXCL	jy-ku=rɔ ^A	nty-ku ^I =rɔ ^A	nty-ku=rɔ ^A	∅-ku=rɔ ^A
1PL.INCL	jy-ku=ba	nty-ku ^I =ba	nty-ku=ba	∅-ku=ba
2PL	jy-ku=ɸ	nty-ku ^I =ɸ	nty-ku=ɸ	∅-ku=ɸ
3PL	jy-ku=jɸ ^A	nty-ku ^I =jɸ ^A	nty-ku=jɸ ^A	∅-ku=jɸ ^A

In TEO segmental morphology is composed of many allomorphs. What appears to be a simple analysis with the verb *ku* ‘to eat’ becomes complicated when many of the historical Aspect morphemes have been eroded. Without the analysis of the more conservative varieties of ZEN and ZAC it would be difficult to arrive at a conclusion that would reveal systematicity in Aspectual allomorphy. In TEO, there are many forms for a given Aspectual category. Table 9.7 presents these facts with examples of several third person singular verbs.

Table 9.3: 3SG Verbs for all Four Aspects

	Gloss	COM	PRG	HAB	POT
a.	‘to eat’	jy-ku	nty-ku ^I	nty-ku	∅-ku
b.	‘to sow it’	jy-ta	yn-ta ^I	yn-tya	k-ta
c.	‘to exist’	m-dʔi	n-ʔi	n-dyʔi	∅-tyʔi
d.	‘to fart’	m-jlya ^B	n-jlya ^D	n-jlya ^B	∅-jyla ^B
e.	‘to vomit’	jy-kwɛ ^C	nty-kwɛ ^C	nt-kwɛ ^B	∅-kwɛ ^B
f.	‘to fall down’	m-dyu ^C	n-dyu ^C	n-dyu ^C	∅-tyu ^C
g.	‘to open’	m-sla ^E	n-sla ^E	n-sla ^H	∅-sla ^H
h.	‘to burry’	m-tsi ^F	yn-tsi ^F	yn-tsi ^B	k-tsi ^B
i.	‘to melt it’	m-xla ^F	n-xla ^F	n-xla ^F	∅-xla ^F
j.	‘to do’	m-ʔni ^G	y-ʔni ^G	∅-ʔni ^B	k-ʔni ^B
k.	‘to fall down’	m-tɛ ^G	yn-tɛ ^I	n-tyɛ	k-tɛ
l.	‘to wash’	m-jyʔɔ ^G	n-jyʔɔ ^I	n-jyʔɔ ^G	∅-jyʔɔ ^G
m.	‘to carry’	m-deɛ ^G	n-deɛ ^I	n-deɛ ^B	∅-tee ^B

9.1.1 Aspectual forms

Because of the many prefixes marking each verbal Aspect, prediction of a given allomorph based on any one form is not easily motivated. In the segmentally conservative varieties of ZEN (Campbell, 2011), ZAC (Villard, 2010) and TAT Sullivant (2011a) there have been systematic analysis of the verb classes and Aspect morphology based on the segmental Aspect forms selected by the verbal stem. Table 9.4, adopted from Villard (2015), presents her analysis of the allophonic Aspect prefixes for the ZAC verb classes based on the classifications of Kaufman (1987) and Campbell (2011).¹

Table 9.4: ZAC Verb Classification Villard (2015)

Class	Stem Characteristics	COM	PRG	HAB	POT
A _u	derived <i>u</i> - causatives	nka-	ntā-	nti-	k-
A _c	unergative or TRNS verbs	nka-	ntā-	nti-	[LAM]
A2	TRNS, derived <i>-ix-</i> causative verbs, <i>i</i> initial	nkwi-	ntā-	nti-	[LAM], k-
B _c	unaccusative verbs	nku-	ntā-	nti-	[LAM]
B _{post}	posture and motion verbs	nku-	ntā-	nti	[LAM]
B _k	k- initial verbs, mostly unaccusative	nku-	ntā-	ntyi-	tyi-
B _y	y- initial verb roots mostly unaccusative	nku-	ntī-k-	nti-k-	k-
C _a	unaccusative, a- initial	nku-	nky-	nti-	k-
C2	unergative or transitive begin with a-, o-, u-	nkay-	nky-	nti-	k-

This system aligns very well with Campbell’s (2011) analysis. To contrast ZAC with TEO, two Eastern Chatino languages, Table 9.5 presents the ZAC verb classes with examples cognate sets from TEO and ZAC to demonstrate how the non-final syllable reduction in TEO has mutated much of the historical Aspect prefixes that remain largely unchanged in the segmentally conservative varieties of ZEN and ZAC.

¹The notation [LAM] is for laminalized consonants that occur at the onset of a stem.

Table 9.5: ZAC Verb Classes with TEO Cognate Forms

Class	Gloss	Lg	Stem	COM	PRG	HAB	POT
A _u	‘to sweep’	TEO	-kwa ^F	m-kwa ^F	nt-kwa ^F	nt-kwa ^B	∅-kwa ^B
		ZAC	u-lukwa ^F	nka-lukwa ^F	nta-lukwa ^{E-m}	nt-u-lukwa ^B	k-u-kwa ^B
A _c	to scream’	TEO	-sʔya ^E	m-sʔya ^E	n-sʔya ^E	n-xʔya ^H	∅-xʔya ^H
		ZAC	-siʔya ^E	nka-siʔya ^E	nta-siʔya ^{M-E}	nti-xiʔya ^H	∅-xiʔya ^H
A2	‘to turn in’	TEO	-tyaa ^E	m-dyaa ^E	n-dyaa ^E	n-dyaa ^E	∅-tyaa ^E
		ZAC	-i-tyaa ^E	nk-w-i-tyaa ^E	nt-i-tyaa ^{M-E}	nt-tyaa ^E	∅-tyaa ^E
B _c	‘to lay down’	TEO	-skwa ^F	m-skwa ^F	n-skwa ^F	n-xkwa ^B	∅-xkwa ^B
		ZAC	-sukwa ^F	nku-sukwa ^F	nku-ta-sukwa ^{M+F}	nti-xukwa ^B	∅-xukwa ^B
B _{post}	‘to get hung’	TEO	-tykwi ^E	m-tykwi ^E	n-tykwi ^E	n-tykwi ^H	∅-tykwi ^H
		ZAC	-tikwi ^E	nku-tikwi ^E	nta-tikwi ^{M-E}	n-tykwi ^H	∅-tykwi ^H
B _k	‘to get toasted’	TEO	-tyʔi	m-tyʔi	n-tyʔi ^I	n-tyʔi	∅-tyʔi
		ZAC	-kiʔi	n-kiʔi ^A	nta-kiʔi ^{M-I}	nty-kiʔi ^A	∅-kiʔi ^A
B _y	‘to get melted’	TEO	-la ^F	ynd-la ^F	ynd-la ^F	ynd-la ^F	jy-la ^F
		ZAC	y-ala ^F	nk-y-ala ^F	nti-k-y-ala ^{M-F}	n-k-y-ala ^F	k-y-ala ^F
C _a	‘to get wet’	TEO	-tsaʔ ^G	m-tsaʔ ^G	yn-tsaʔ ^I	n-chaʔ	k-tsaʔ
		ZAC	-atsaʔ ^G	nku-tsaʔ ^G	nky-atsaʔ ^I	nti-chaʔ ^A	k-atsaʔ ^A
C2	‘to suckle’	TEO	-tiʔ	jy-tiʔ	yn-tiʔ ^I	yn-tyiʔ	k-tiʔ
		ZAC	-atiʔ	nkay-atiʔ ^A	nk-y-atiʔ ^I	nti-tyiʔ ^A	k-atiʔ ^A

The comparison of the TEO forms with the ZAC and ZEN Aspect verbal classification does not reveal a clear synchronic one-to-one alignment. Based on the comparison of 153 verb cognates with that of ZEN the following allomorph prefixes can be posited to make up the Aspectual system of TEO. Table 9.7 presents a set of proposed Aspect allomorphs for TEO.

Table 9.6: Aspect Allomorphs for all Four Aspects

Aspect	Aspect allomorphs
Completive	jy-, m-, ng-, ngw-, y-, yn-, ∅
Progressive	jy-, n-, nt-, nty-, y-, yn-, ∅
Habitual	l-, n-, nt-, nty-, y-, yn-, [LAM], ∅
Potential	jy-, k-, [LAM], ∅

Because the Potential Aspect has the fewest allomorphs it would appear that this would be analyzed as the most basic Aspect morpheme; however, synchronically it is difficult to predict which Aspect allomorph a given verb may select based on this form or any of the other allomorphs listed above. Rasch describes the selection of Aspect by verbs in Yaitepec

Eastern Chatino, “to be largely arbitrary, but is partially restricted by the phonological shape of the root.” (2002:113). The Prides, describe the Aspectual system of Panixtlahuaca Eastern Chatino by saying, “Although it is possible to partially identify the prefixes for verb tense, there are many morphological adjustments that affect the form of a given verb.” (2004:368). Aspect in TEO is formed through a set of simplified Aspect prefix markers and Aspect tones. The different forms are selected as part of a paradigm of a class whose membership is assigned by the lexicon. The following tables, beginning with the Completive Aspect, present proposed Aspect forms based on the comparison of TEO with that of ZEN to provide an analysis of the historic Aspectual prefix for each of the four main verbal Aspects.

9.1.1.1 Completive Aspect

The Completive Aspect includes the forms *jy-*, *m-*, *ng-*, *ngw-*, *y-*, *yn-* and \emptyset .

Table 9.7: Completive Aspect Allomorphs

COM	proposed stem	COM	PRG	HAB	POT
<i>jy-</i>	-ku ‘to eat’	<i>jy-ku</i>	<i>nty-ku^I</i>	<i>nty-ku</i>	\emptyset -ku
<i>jy-</i>	-kwɛ ^C ‘to vomit’	<i>jy-kwɛ^C</i>	<i>nty-kwɛ^C</i>	<i>nt-kwɛ^B</i>	\emptyset -kwɛ ^B
<i>jy-</i>	-ta ‘to bathe’	<i>jy-ta</i>	<i>yn-ta^I</i>	<i>n-tya</i>	<i>k-ta</i>
<i>jy-</i>	-ta ^F ‘to chew’	<i>jy-ta^F</i>	<i>yn-ta^F</i>	<i>n-tya^B</i>	<i>k-ta^B</i>
<i>m-</i>	-sla ^E ‘to open’	<i>m-sla^E</i>	<i>n-sla^E</i>	<i>n-sla^H</i>	\emptyset -sla ^H
<i>m-</i>	-tsi ^F ‘to bury’	<i>m-tsi^F</i>	<i>yn-tsi^F</i>	<i>yn-tsi^B</i>	<i>k-tsi^B</i>
<i>m-</i>	-xla ^F ‘to melt it’	<i>m-xla^F</i>	<i>n-xla^F</i>	<i>n-xla^F</i>	\emptyset -xla ^F
<i>m-</i>	-ʔni ^G ‘to do’	<i>m-ʔni^G</i>	<i>y-ʔni^G</i>	\emptyset -ʔni ^B	<i>k-ʔni^B</i>
<i>m-</i>	-tɛ ^G ‘to fall down’	<i>m-tɛ^G</i>	<i>yn-tɛ^I</i>	<i>n-tyɛ</i>	<i>k-tɛ</i>
<i>m-</i>	-jy ^F ʔa ^G ‘to wash’	<i>m-jy^Fʔa^G</i>	<i>n-jy^Fʔa^I</i>	<i>n-jy^Fʔa^G</i>	\emptyset -jy ^F ʔa ^G
<i>m-</i>	-teɛ ^G ‘to carry’	<i>m-deɛ^G</i>	<i>n-deɛ^I</i>	<i>n-deɛ^B</i>	\emptyset -teɛ ^B
<i>ng-</i>	-ʔwa ^G ‘to get cold’	<i>ng-ʔwa^G</i>	<i>ndy-ʔwa^I</i>	<i>ndy-ʔwa^G</i>	<i>jy-ʔwa^G</i>
<i>ng-</i>	-ʔwa ^E ‘to get washed away’	<i>ng-ʔwa^E</i>	<i>nd-ʔwa^E</i>	<i>nd-ly^Fʔwa^H</i>	\emptyset -ly ^F ʔwa ^H
<i>ngw-</i>	-la ^E ‘to set loose’	<i>ngw-la^E</i>	<i>nd-la^E</i>	<i>nd-la^H</i>	<i>k-la^H</i>
<i>ngw-</i>	-la ^E ‘to get loose’	<i>ngw-la^E</i>	<i>nd-la^E</i>	<i>nd-ly^Fa^H</i>	\emptyset -ly ^F a ^H
<i>y-</i>	-ja ^F ‘to sleep’	<i>y-ja^F</i>	<i>nt-ja^F</i>	<i>nty-ja^B</i>	<i>k-ja^B</i>
<i>y-</i>	-jo ^F ‘to sting’	<i>y-jo^F</i>	<i>nt-jyo^I</i>	<i>nt-jyo^F</i>	<i>k-jo^F</i>
<i>yn-</i>	-ta ^E ‘to get broken’	<i>yn-ta^E</i>	<i>yn-ta^E</i>	<i>yn-ta^H</i>	<i>jy-ta^H</i>
<i>yn-</i>	-ta ^B ‘to unstick’	<i>yn-ta^B</i>	<i>yn-ta^D</i>	<i>yn-ta^B</i>	<i>jy-ta^B</i>
\emptyset , tone	\emptyset -n ^F ʔa ‘to see’	\emptyset -n ^F ʔa ^G	\emptyset -n ^F ʔa ^I	\emptyset -ny ^F ʔa ^B	\emptyset -ny ^F ʔa ^B
\emptyset , tone	\emptyset -ya ‘to return here=base’	\emptyset -ya ^G	\emptyset -ya ^I	\emptyset -ya ^B	<i>t-ya^B</i>

The most common form found in the data base for the Completive Aspect is *m-*. There are very few verbs that do not select Aspect allomorphs marking the stem with just Aspect tone.

9.1.1.2 Progressive Aspect

The Progressive Aspect includes the forms *jy-*, *n-*, *nt-*, *nty-*, *y-*, *yn-* and \emptyset .

Table 9.8: Progressive Aspect allomorphs

PRG	proposed stem	COM	PRG	HAB	POT
<i> jy-</i>	<i>-a^G</i> ‘to come here≠base’	<i>y-a^G</i>	<i> jy-a</i>	<i> ndy-a</i>	<i> k-a</i>
<i> n-</i>	<i>-sla^E</i> ‘to open’	<i>m-sla^E</i>	<i> n-sla^E</i>	<i> n-sla^H</i>	\emptyset - <i>sla^H</i>
<i> n-</i>	<i>-xla^F</i> ‘to melt it’	<i>m-xla^F</i>	<i> n-xla^F</i>	<i> n-xla^F</i>	\emptyset - <i>xla^F</i>
<i> n-</i>	<i>-jy?a^G</i> ‘to wash’	<i>m-jy?a^G</i>	<i> n-jy?a^I</i>	<i> n-jy?a^G</i>	\emptyset - <i>jy?a^G</i>
<i> n-</i>	<i>-teɛ^G</i> ‘to carry’	<i>m-deɛ^G</i>	<i> n-deɛ^I</i>	<i> n-deɛ^B</i>	\emptyset - <i>teɛ^B</i>
<i> n-</i>	<i>-taa^E</i> ‘to give’	<i>m-daa^E</i>	<i> n-daa^E</i>	<i> n-daa^H</i>	\emptyset - <i>taa^H</i>
<i> nt-</i>	<i>-ja?a^F</i> ‘to sleep’	<i>y-ja?a^F</i>	<i> nt-ja?a^F</i>	<i> nty-ja?a^B</i>	<i> k-ja?a^B</i>
<i> nt-</i>	<i>-jo?</i> ‘to sting’	<i>y-jo?</i>	<i> nt-jyo?^I</i>	<i> nt-jyo?</i>	<i> k-jo?</i>
<i> nt-</i>	<i>-?wa^E</i> ‘to get washed away’	<i> ng-?wa^E</i>	<i> nd-?wa^E</i>	<i> nd-ly?wa^H</i>	\emptyset - <i>ly?wa^H</i>
<i> nt-</i>	<i>-la^E</i> ‘to set loose’	<i> ngw-la^E</i>	<i> nd-la^E</i>	<i> nd-la^H</i>	<i> k-la^H</i>
<i> nt-</i>	<i>-la^E</i> ‘to get loose’	<i> ngw-la^E</i>	<i> nd-la^E</i>	<i> nd-lya^H</i>	\emptyset - <i>lya^H</i>
<i> nty-</i>	<i>-ku</i> ‘to eat’	<i> jy-ku</i>	<i> nty-ku^I</i>	<i> nty-ku</i>	\emptyset - <i>ku</i>
<i> nty-</i>	<i>-kwe^C</i> ‘to vomit’	<i> jy-kwe^C</i>	<i> nty-kwe^C</i>	<i> nt-kwe^B</i>	\emptyset - <i>kwe^B</i>
<i> nty-</i>	<i>-?wa^G</i> ‘to get cold’	<i> ng-?wa^G</i>	<i> ndy-?wa^I</i>	<i> ndy-?wa^G</i>	<i> jy-?wa^G</i>
<i> y-</i>	<i>-?ni^G</i> ‘to do’	<i> m-?ni^G</i>	<i> y-?ni^G</i>	\emptyset - <i>?ni^B</i>	<i> k-?ni^B</i>
<i> yn-</i>	<i>-ta^E</i> ‘to get broken’	<i> yn-ta^E</i>	<i> yn-ta^E</i>	<i> yn-ta^H</i>	<i> jy-ta^H</i>
<i> yn-</i>	<i>-ta</i> ‘to bathe’	<i> jy-ta</i>	<i> yn-ta^I</i>	<i> n-tya</i>	<i> k-ta</i>
<i> yn-</i>	<i>-ta^B</i> ‘to unstick’	<i> yn-ta^B</i>	<i> yn-ta^D</i>	<i> yn-ta^B</i>	<i> jy-ta^B</i>
<i> yn-</i>	<i>-ta?a^F</i> ‘to chew’	<i> jy-ta?a^F</i>	<i> yn-ta?a^F</i>	<i> n-tya?a^B</i>	<i> k-ta?a^B</i>
<i> yn-</i>	<i>-tsi?a^F</i> ‘to bury’	<i> m-tsi?a^F</i>	<i> yn-tsi?a^F</i>	<i> yn-tsi?a^B</i>	<i> k-tsi?a^B</i>
\emptyset , tone	<i>-n?a^G</i> ‘to see’	\emptyset - <i>n?a^G</i>	\emptyset - <i>n?a^I</i>	\emptyset - <i>ny?a^B</i>	\emptyset - <i>ny?a^B</i>
\emptyset , tone	<i>-ya^G</i> ‘to return here=base’	\emptyset - <i>ya^G</i>	\emptyset - <i>ya^I</i>	\emptyset - <i>ya^B</i>	<i> t-ya^B</i>

The form for the verb *ya^G* ‘to come here≠base’ is the only example of a verb with the *jy-* prefix. The last form *-ya^G* ‘to return here=base’ only selects a prefix for the Potential Aspect. This form appears to have experienced some kind of analogic leveling while the first verb appears to be irregular. The motion verbs are the one set of verbs in the language that present suppletive forms.

9.1.1.3 Habitual Aspect

Except for the occasional laminalization (LAM) of a given stem, the Habitual and Progressive stems and Aspect allomorphs are nearly identical. The Habitual includes the prefixes, l- ~ n-, nt-, nty-, y-, yn-, LAM and \emptyset .

Table 9.9: Habitual Aspect allomorphs

HAB	proposed stem	COM	PRG	HAB	POT
l-	-ʔo ^C ‘to exist/be’	y-ʔo ^C	ndy-ʔo ^C	l-ʔo ^B	k-ʔo ^B
n-	-sla ^E ‘to open’	m-sla ^E	n-sla ^E	n-sla ^H	\emptyset -sla ^H
n-	-xla ^F ‘to melt it’	m-xla ^F	n-xla ^F	n-xla ^F	\emptyset -xla ^F
n-	-jyʔa ^G ‘to wash’	m-jyʔa ^G	n-jyʔa ^I	n-jyʔa ^G	\emptyset -jyʔa ^G
n-	-ta ‘to bathe’	jy-ta	yn-ta ^I	n-tya	k-ta
n-	-taʔ ^F ‘to chew’	jy-taʔ ^F	yn-taʔ ^F	n-tyaʔ ^B	k-taʔ ^B
n-	-tee ^G ‘to carry’	m-dee ^G	n-dee ^I	n-dee ^B	\emptyset -tee ^B
n-	-taa ^E ‘to give’	m-daa ^E	n-daa ^E	n-daa ^H	\emptyset -taa ^H
nt-	-joʔ ‘to sting’	y-joʔ	nt-jyoʔ ^I	nt-jyoʔ	k-joʔ
nt-	-kwe ^C ‘to vomit’	jy-kwe ^C	nty-kwe ^C	nt-kwe ^B	\emptyset -kwe ^B
nt-	-ʔwa ^E ‘to get washed away’	ng-ʔwa ^E	nd-ʔwa ^E	nd-lyʔwa ^H	\emptyset -lyʔwa ^H
nt-	-la ^E ‘to set loose’	ngw-la ^E	nd-la ^E	nd-la ^H	k-la ^H
nt-	-la ^E ‘to get loose’	ngw-la ^E	nd-la ^E	nd-lya ^H	\emptyset -lya ^H
nty-	-jaʔ ^F ‘to sleep’	y-jaʔ ^F	nt-jaʔ ^F	nty-jaʔ ^B	k-jaʔ ^B
nty-	-ku ‘to eat’	jy-ku	nty-ku ^I	nty-ku	\emptyset -ku
nty-	-a ^G ‘to come here≠base’	y-a ^G	jy-a	ndy-a	k-a
nty-	-ʔwa ^G ‘to get cold’	ng-ʔwa ^G	ndy-ʔwa ^I	ndy-ʔwa ^G	jy-ʔwa ^G
yn-	-ta ^E ‘to get broken’	yn-ta ^E	yn-ta ^E	yn-ta ^H	jy-ta ^H
yn-	-ta ^B ‘to unstick’	yn-ta ^B	yn-ta ^D	yn-ta ^B	jy-ta ^B
yn-	-tsiʔ ^F ‘to bury’	m-tsiʔ ^F	yn-tsiʔ ^F	yn-tsiʔ ^B	k-tsiʔ ^B
\emptyset , tone	-ʔni ^G ‘to do’	m-ʔni ^G	y-ʔni ^G	\emptyset -ʔni ^B	k-ʔni ^B
\emptyset , tone	-nʔa ‘to see’	\emptyset -nʔa ^G	\emptyset -nʔa ^I	\emptyset -nyʔa ^B	\emptyset -nyʔa ^B
\emptyset , tone	-ya ‘to return here=base’	\emptyset -ya ^G	\emptyset -ya ^I	\emptyset -ya ^B	t-ya ^B

Laminalization occurs on the first consonant of the stem of the lexemes: ‘to bathe,’ ‘to chew,’ ‘to get washed away,’ ‘to get loose’ and ‘to see.’ This process also occurs in the Potential Aspect for some of the same stems.

9.1.1.4 Potential Aspect

The Potential Aspect has the fewest number of allomorphs but the greatest amount of verbs with a zero segmental morphemes where the base is only noted with the Aspect tone. The Potential includes the forms jy-, k, LAM and \emptyset .

Table 9.10: Potential Aspect allomorphs

POT	proposed stem	COM	PRG	HAB	POT
jy-	-ta ^B ‘to unstick’	yn-ta ^B	yn-ta ^D	yn-ta ^B	jy-ta ^B
jy-	-ta ^E ‘to get broken’	yn-ta ^E	yn-ta ^E	yn-ta ^H	jy-ta ^H
jy-	-ʔwa ^G ‘to get cold’	ng-ʔwa ^G	ndy-ʔwa ^I	ndy-ʔwa ^G	jy-ʔwa ^G
k-	-ta ‘to bathe’	jy-ta	yn-ta ^I	n-tya	k-ta
k-	-joʔ ‘to sting’	y-joʔ	nt-jyoʔ ^I	nt-jyoʔ	k-joʔ
k-	-ʔo ^C ‘to exist/be’	y-ʔo ^C	ndy-ʔo ^C	l-ʔo ^B	k-ʔo ^B
k-	-jaʔ ^F ‘to sleep’	y-jaʔ ^F	nt-jaʔ ^F	nty-jaʔ ^B	k-jaʔ ^B
k-	-tsiʔ ^F ‘to bury’	m-tsiʔ ^F	yn-tsiʔ ^F	yn-tsiʔ ^B	k-tsiʔ ^B
k-	-taʔ ^F ‘to chew’	jy-taʔ ^F	yn-taʔ ^F	n-tyaʔ ^B	k-taʔ ^B
k-	-la ^E ‘to set loose’	ngw-la ^E	nd-la ^E	nd-la ^H	k-la ^H
k-	-a ^G ‘to come here≠base’	y-a ^G	jy-a	ndy-a	k-a
k-	-ʔni ^G ‘to do’	m-ʔni ^G	y-ʔni ^G	\emptyset -ʔni ^B	k-ʔni ^B
k- ~ t-	-ya ‘to return here=base’	\emptyset -ya ^G	\emptyset -ya ^I	\emptyset -ya ^B	t-ya ^B
\emptyset , tone	-ku ‘to eat’	jy-ku	nty-ku ^I	nty-ku	\emptyset -ku
\emptyset , tone	-kwɛ ^C ‘to vomit’	jy-kwɛ ^C	nty-kwɛ ^C	nt-kwɛ ^B	\emptyset -kwɛ ^B
\emptyset , tone	-xla ^F ‘to melt it’	m-xla ^F	n-xla ^F	n-xla ^F	\emptyset -xla ^F
\emptyset , tone	-taa ^E ‘to give’	m-daa ^E	n-daa ^E	n-daa ^H	\emptyset -taa ^H
\emptyset , tone	-ʔwa ^E ‘to get washed away’	ng-ʔwa ^E	nd-ʔwa ^E	nd-lyʔwa ^H	\emptyset -lyʔwa ^H
\emptyset , tone	-la ^E ‘to get loose’	ngw-la ^E	nd-la ^E	nd-lya ^H	\emptyset -lya ^H
\emptyset , tone	-sla ^E ‘to open’	m-sla ^E	n-sla ^E	n-sla ^H	\emptyset -sla ^H
\emptyset , tone	-jyʔa ^G ‘to wash’	m-jyʔa ^G	n-jyʔa ^I	n-jyʔa ^G	\emptyset -jyʔa ^G
\emptyset , tone	-teɛ ^G ‘to carry’	m-deɛ ^G	n-deɛ ^I	n-deɛ ^B	\emptyset -teɛ ^B
\emptyset , tone	-nʔa ^G ‘to see’	\emptyset -nʔa ^G	\emptyset -nʔa ^I	\emptyset -nyʔa ^B	\emptyset -nyʔa ^B

As noted for the Habitual Aspect in §9.1.1.3 laminalization also occurs on the first consonant of certain stems of the Potential Aspect. This can be seen in: ‘to get washed away,’ ‘to get loose’ and ‘to see.’ Also, although the segmental Aspect prefixes of the Potential and Habitual are very different it is important to note that the tones for these

Aspects are identical.

9.2 Aspect tone

In addition to the historic Aspect segmental allomorph each verb stem is associated with a lexical tone. This tone is analyzed as the third person singular Completive form for all verbal roots. This base can largely predict the tones of second person inflectional categories for many of the TEO verbs.

9.2.1 Aspect tone organization

Teotepec Chatino presents a unique system that relies heavily on tone for its Aspectual and inflectional morphology. Organization of the Aspect categories through their base tones reveals a clear way to identify and organize verbs in the tonally rich Eastern Chatino dialects (McIntosh, 2012b; Villard, 2012; Woodbury, 2008a, 2008b). Tone in TEO identifies verbal Aspect, marks person in inalienably possessed nouns and marks inflectional categories in non-verbal predicates and regular predicates which is linked to and elaborated out of the Aspectual tone sets.

Other languages with grammatical systems that have been documented to use tone for purposes of inflection include: Me'phaa (Wichmann, 2006), Comaltepec Chinantec (Pace, 1990), Sochiapan Chinantec (Foris, 2000), Mazatec, and Mixtec (Pike, 1948), the Shang dialect of Mandarin (Bao, 1999), Chimwiini a Bravanese language of the Bantu family (Kisserberth and Abasheikh, 2011), and in Kalam Kohistani, Dardic language spoken in Pakistan, where verbal Aspect and nouns are marked with tone (Baart, 1999). To illustrate the productivity of this analysis the following table 9.11 contains the same set of verbs from table 9.10; however, organized by tone.

Table 9.11: Aspect Tone Allomorphs

Tone set	Gloss	COM	PRG	HAB	POT
X	‘to eat’	jy-ku	nty-ku ^I	nty-ku	-ku
X	‘to bathe’	jy-ta	yn-ta ^I	n-tya	k-ta
X	‘to sting’	y-joʔ	nt-jyoʔ ^I	nt-jyoʔ	k-joʔ
B	‘to unstick’	yn-ta ^B	yn-ta ^D	yn-ta ^B	jy-ta ^B
C	‘to exist/be’	y-ʔo ^C	ndy-ʔo ^C	l-ʔo ^B	k-ʔo ^B
C	‘to vomit’	jy-kwɛ ^C	nty-kwɛ ^C	nt-kwɛ ^B	-kwɛ ^B
F	‘to sleep’	y-jaʔ ^F	nt-jaʔ ^F	nty-jaʔ ^B	k-jaʔ ^B
F	‘to burry’	m-tsiʔ ^F	yn-tsiʔ ^F	yn-tsiʔ ^B	k-tsiʔ ^B
F	‘to chew’	jy-taʔ ^F	yn-taʔ ^F	n-tyaʔ ^B	k-taʔ ^B
F	‘to melt it’	m-xla ^F	n-xla ^F	n-xla ^F	-xla ^F
E	‘to get broken’	yn-ta ^E	yn-ta ^E	yn-ta ^H	jy-ta ^H
E	‘to set loose’	ngw-la ^E	nd-la ^E	nd-la ^H	k-la ^H
E	‘to give’	m-daa ^E	n-daa ^E	n-daa ^H	-taa ^H
E	‘to get washed away’	ng-ʔwa ^E	nd-ʔwa ^E	nd-lyʔwa ^H	-lyʔwa ^H
E	‘to get loose’	ngw-la ^E	nd-la ^E	nd-lya ^H	-lya ^H
E	‘to open’	m-sla ^E	n-sla ^E	n-sla ^H	-sla ^H
G	‘to return here=base’	-ya ^G	-ya ^I	-ya ^B	t-ya ^B
G	‘to carry’	m-deɛ ^G	n-deɛ ^I	n-deɛ ^B	-teɛ ^B
G	‘to see’	-nʔa ^G	-nʔa ^I	-nyʔa ^B	-nyʔa ^B
G	‘to wash’	m-jyʔa ^G	n-jyʔa ^I	n-jyʔa ^G	-jyʔa ^G
G	‘to get cold’	ng-ʔwa ^G	ndy-ʔwa ^I	ndy-ʔwa ^G	jy-ʔwa ^G
G	‘to do’	m-ʔni ^G	y-ʔni ^G	-ʔni ^B	k-ʔni ^B
G	‘to arrive here≠base’	y-a ^G	jy-a	ndy-a	k-a
I	‘to do’	m-dya ^I	-	n-dya ^K	-tya ^K
I	‘to fall behind’	mdya ^I	ndya ^I	n-dya ^I	tya ^I

Aspect tone is a productive means for Aspect organization that appears to operate independently of the segmental Aspect allomorph system. In contrast to the many forms organized by segmental Aspect prefixes presented in the previous tables, Aspect tones reveal a clear pattern for organizing Aspect and predicting inflectional categories. What is revealed in this analysis is a set of six major category tone sets: X / \emptyset /, B /M⁺/, C /ML⁺LH/, E /M-(H)/, F /HL⁺LH/, G /HM/ and one minor set - I /MH/. The patterns reflected in the above examples present all of the major and minor patterns associated with all Aspects.

Based on an analysis of 280 simplex verb forms the following patterns for Aspect tone have emerged in Teotepec Chatino.

Table 9.12: Aspect Verb Paradigms

Base	COM	PRG	HAB	POT	NUM
X	X	I	X	X	28
	X	X	X	X	3
B	B	D	B	B	55
	B	I	B	B	1
C	C	C	B	B	20
	C	C	C	C	9
E	E	E	H	H	81
	E	E	E	E	4
F	F	F	B	B	39
	F	F	F	F	6
G	G	I	X	X	6
	G	I	G	G	5
	G	I	B	B	6
	G	G	B	B	4
	G	D	B	B	4
I	I	-	K	K	2
	I	I	I	I	2

Table 9.12 shows that sets X, B, C, E and F are found in greater quantity than sets G and I. Set B is a large sets with a single pattern and sets X, C, E, F and I all have minor patterns associated with them. Lastly, set G demonstrates the greatest diversity of patterns which also includes five singleton patterns not listed above.

9.3 Person inflection

Person inflection can be partially predicted by Aspect tone. As presented in §7.1.1.2 and in table 9.2, the inflectional markers for the singular verbs are realized through tonal ablaut changes on the verb stem. Each verb stem is associated with a lexical tone, the second and third person inflectional categories are contrasted with tone alone and the first person singular verb is marked by tone and a nasal vowel, if the vowel is not already nasalized through progressive nasal assimilation (see §2.4.1.6).

9.3.1 Singular subject inflectional patterns

The following section outlines the inflectional patterns for singular verbs organized by the stem tone for each verb. This organization presents an outline for the construction of verbal inflectional categories.

9.3.1.1 Set X inflectional patterns

The following tables present four inflectional patterns for verbs from the X /Ø/ tone set. The first three patterns show a difference only in the first person singular form, the last group presents a pattern that is very regularized. Table 9.13 presents the patterns where the first person singular form of the Completive, Potential and Habitual Aspects is tone set Bi /0/ and the Progressive Aspect base tone is from set I /MH/. There are thirteen verbs in this group made up of transitive and intransitive stems.

Table 9.13: Tone Alterations for Singular X Set Verbs - ‘to rip off’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	mstɔ	X	mstɔ ^{Bi}	Bi	mstɔ ^{Bi}	Bi
PRG	nstɔ ^I	I	nstɔ ^I	I	nstɔ ^I	I
HAB	nxtɔ	X	nxtɔ ^{Bi}	Bi	nxtɔ ^{Bi}	Bi
POT	xtɔ	X	xtɔ ^{Bi}	Bi	xtɔ ^{Bi}	Bi

Table 9.14 presents the patterns where the first person singular form of the Completive Aspect is tone set E /L-(H)/ and the Progressive Aspect base tone is from set I /MH/. There are ten verbs in this group of both transitive and intransitive stems.

Table 9.14: Tone Alterations for Singular X Set Verbs - ‘to speak’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	jykwɪ?	X	jykwɪ? ^{Bi}	Bi	jykwɪ? ^E	E
PRG	ntykwɪ? ^I	I	ntykwɪ? ^I	I	ntykwɪ? ^I	I
HAB	ntykwɪ?	X	ntykwɪ? ^{Bi}	Bi	ntykwɪ? ^{Bi}	Bi
POT	tykwɪ?	X	tykwɪ? ^{Bi}	Bi	tykwɪ? ^{Bi}	Bi

Table 9.15 presents the inflectional pattern for the X based set where the first person Completive, Habitual and Potential Aspects tone is set X /Ø/ and the Progressive is from set I /MH/. This group only consists of five verbs.

Table 9.15: Tone Alterations for Singular X Set Verbs - ‘to wait’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	mta	X	mta ^{Bii}	Bii	mta	X
PRG	ynta ^I	I	ynta ^I	I	ynta ^I	I
HAB	ynta	X	ynta ^{Bii}	Bii	ynta	X
POT	jyta	X	jyta ^{Bii}	Bii	jyta	X

Table 9.16 presents the pattern of inflection for the X based set where all stems are Aspect tone base set X and the second and first persons are all B set based, demonstrating great regularity in their forms. This only occurs in the following verbs: *mdʔi* ‘to be,’ *mtyʔ* ‘to get fried’ and the following - *ngwʔa* ‘to get stuck,’ and is therefore considered a minor inflectional pattern.

Table 9.16: Tone Alterations for Singular X Set Verbs - ‘to get stuck’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	ngwʔa	X	ngwʔa ^{Bii}	Bii	ngwʔa ^{Bi}	Bi
PRG	ngʔa	X	ngʔa ^{Bii}	Bii	ngʔa ^{Bi}	Bi
HAB	ndyʔa	X	ndyʔa ^{Bii}	Bii	ndyʔa ^{Bi}	Bi
POT	tyʔa	X	tyʔa ^{Bii}	Bii	tyʔa ^{Bi}	Bi

An important generalization to be made about the X set based forms is that the second person is formed with tone set Bii /MLM/. In the main inflectional patterns (Tables 9.15, 9.14 and 9.13), the Progressive form is based on set I /MH/. The minor set shows the greatest regularity but in the smallest number of verbs.

9.3.1.2 Set B inflectional patterns

The following presents the pattern for inflection of the B /M-(0)/ based set. This inflectional pattern is the second largest (53 tokens) and is very regular with only three minor irregular inflectional patterns which apply to only on base each. The major B pattern shows that third person singular B always gives set Bii /MLM/, a nasal vowel for the first person and the tone /L-H-(0)/ from set D for the 3SG person of the Progressive Aspect.

Table 9.17: Tone Alterations for Singular B Set Verbs ‘to water’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	msne ^B	B	msne ^{Bii}	Bii	msne ^{Bi}	Bi
PRG	nsne ^D	D	nsne ^{Bii}	Bii	nsne ^{Bi}	Bi
HAB	nsne ^B	B	nsne ^{Bii}	Bii	nsne ^{Bi}	Bi
POT	sne ^B	B	sne ^{Bii}	Bii	sne ^{Bi}	Bi

Table 9.18 presents the three irregular inflectional patterns for set B.

Table 9.18: Tone Alterations for B Set One-off Inflectional Patterns

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
‘to knock’	mkɔɪ ^B	B, I, X	ntkɔɪ ^D	D, I, I	ntkɔɪ ^B	B, Bii, Bi	kɔɪ	B, Bii, Bi
‘to pour’	mdɔ ^B	B, I, Bi	ndɔ ^D	D, I, Bi	ndɔ ^B	B, Bii, Bi	tɔ ^{Bi}	B, Bii, Bi
‘to get thin’	mti ^B	B, Bii, Bi	ynti ^I	I, I, I	ynti ^I	B, Bii, Bi	jyti ^B	B, Bii, Bi

The generalization that set B always gives Bii for second person only holds true in the Habitual and Potential Aspects for the irregular sets. The second and first person forms vary for the Completive and Progressive Aspect forms and would have to be memorized by a language learner.

9.3.1.3 Set C inflectional patterns

Set C presents two inflectional patterns - a major and a minor pattern. The major pattern is made up of 18 tokens and the minor pattern is consists of 7 tokens. Table 9.19 presents the major pattern.

Table 9.19: Tone Alterations for Singular C Set Verbs - ‘to vomit’

Aspect	3SG	<i>Jg</i>	2SG	<i>Jg</i>	1SG	<i>Jg</i>
COM	ɟykwɛ ^C	<i>C</i>	ɟykwɛ ^E	<i>E</i>	ɟykwɛ ^{Bi}	<i>Bi</i>
PRG	ntykwɛ ^C	<i>C</i>	ntykwɛ ^E	<i>E</i>	ntykwɛ ^C	<i>C</i>
HAB	ntkwɛ ^B	<i>B</i>	ntkwɛ ^{Bii}	<i>Bii</i>	ntkwɛ ^{Bi}	<i>Bi</i>
POT	kwɛ ^B	<i>B</i>	kwɛ ^{Bii}	<i>Bii</i>	kwɛ ^{Bi}	<i>Bi</i>

The inflectional pattern in table 9.19 shows that the generalization for set B Aspect verbs holds up in that the third person set B always gives set Bii. And the emerging pattern for the C set is that the third person C verbs always give set E.

Table 9.20 presents the minor set C inflectional pattern found only in the following seven verbs: *mdyʔo*^C ‘to geminate,’ *ynte*^C ‘to get washed,’ *mtɟja*^C ‘to find it,’ *mɟyka*^C ‘to heal,’ *mtɟkɔ* ‘to lift it,’ *mskɔ*^C ‘to throw,’ and *mdyʔo*^C ‘to resuscitate.’

Table 9.20: Tone Alterations for Singular C Set Verbs - ‘to resuscitate’

Aspect	3SG	<i>Jg</i>	2SG	<i>Jg</i>	1SG	<i>Jg</i>
COM	mdyʔo ^C	<i>C</i>	mdyʔo ^E	<i>E</i>	mdyʔo ^{Bi}	<i>Bi</i>
PRG	ndyʔo ^C	<i>C</i>	ndyʔo ^E	<i>E</i>	ndyʔo ^C	<i>C</i>
HAB	ndyʔo ^C	<i>C</i>	ndyʔo ^E	<i>E</i>	ndyʔo ^{Bi}	<i>Bi</i>
POT	yʔo ^C	<i>C</i>	tyʔo ^E	<i>E</i>	yʔo ^{Bi}	<i>Bi</i>

The inflectional pattern of table 9.20 follows the same pattern of Table 9.19 in the Completive and Progressive Aspects; however, it presents a different pattern for the Habitual and Progressive forms. The Aspect tone for all four roots is from set C /ML-(L-H)/. The second person of the Habitual and Potential Aspects show the same pattern as the Completive and Progressive pattern in Table 9.19.

There are three irregular inflectional patterns for C set verbs. Table 9.21 presents the only verbs in the database that represent this patterning. In the first two verbs, *yoo*^C ‘to grind’ and *yʔo*^C, the only difference between this set and the major inflectional pattern

are the tones for the first person singular forms of the Completive and Progressive verbs. These forms are inflected with the tones from set E /L-H/. The verb *mdyu*^C ‘to fall down’ presents a pattern that is similar to the minor inflectional pattern for set C in Table 9.20. In this verb, the tone of set C /ML^{LH}/ is used for the first person singular Potential and Habitual Aspect forms instead of set Bi /0/. All of these forms except the Progressive verb of *nxtya*^C ‘s/he is mixing’ continue to support the generalization that that set C Aspect forms give second person singular forms inflected with set E /L-H/ tones.

Table 9.21: Tone Alterations for C Set Irregular Inflectional Patterns

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
‘to grind’	yoo ^C	C, E, E	ndyoo ^C	C, E, E	ndyoo ^B	B, Bi, Bi	koo ^B	B, Bi, Bi
‘to drink’	yʔo ^C	C, E, E	ndyʔo ^C	C, E, E	ndyʔo ^B	B, Bi, Bi	kʔo ^B	B, Bi, Bi
‘to fall down’	mdyu ^C	C, E, Bi	ndyu ^C	C, E, C	ndyu ^C	C, E, C	jytyu ^C	C, E, C
‘to mix’	mxtya ^C	C, E, C	nxtya ^C	C, C, C	nxtya ^C	C, E, C	xtya ^B	C, E, C

9.3.1.4 Set E inflectional patterns

Set E represents the most common or largest inflectional pattern in the TEO inflectional system. This set comes from the tone base set E /L-H/ and contains 81 tokens. Table 9.22 presents the main inflectional pattern for E set Aspect verbs.

Table 9.22: Tone Alterations for E Set Singular Verbs - ‘to give’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	mdaa ^E	E	mdaa ^I	I	mdaa ^X	X
PRG	ndaa ^E	E	ndaa ^I	I	ndaa ^I	I
HAB	ndaa ^H	H	ndaa ^I	I	ndaa ^X	X
POT	taa ^H	H	taa ^I	I	taa ^X	X

Table 9.23 presents the three minor inflectional patterns for the E set Aspect verbs. The first two verbs, *mɛno*^E ‘to leave it’ and *mɛnyi*^E ‘to stretch it,’ present a pattern that differs only in the first person singular form for the Completive and Habitual Aspects. The tone of these two inflected forms is set Bi /0/, which in the main inflectional pattern are

toneless. The last two verbs of the table, *yno^E* ‘to stay’ and *mdyaa^E* ‘to turn in,’ present an alternate pattern where the Aspect tone of all four Aspects is from set E /L-H/.

Table 9.23: Tone Alterations for E Set Irregular Inflectional Patterns

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
‘to leave it’	<i>mxno^E</i>	<i>E, I, Bi</i>	<i>nxno^E</i>	<i>E, I, I</i>	<i>nxno^H</i>	<i>H, I, Bi</i>	<i>xno^H</i>	<i>H, I, Bi</i>
‘to stretch it’	<i>mxnyi^E</i>	<i>E, I, Bi</i>	<i>nxnyi^E</i>	<i>E, I, I</i>	<i>nxnyi^H</i>	<i>H, I, Bi</i>	<i>xnyi^H</i>	<i>H, I, Bi</i>
‘to stay’	<i>yno^E</i>	<i>E, I, Bi</i>	<i>yno^E</i>	<i>E, I, I</i>	<i>yno^E</i>	<i>E, I, Bi</i>	<i>jyno^E</i>	<i>E, I, Bi</i>
‘to turn in’	<i>mdyaa^E</i>	<i>E, I, X</i>	<i>ndyaa^E</i>	<i>E, I, I</i>	<i>ndyaa^E</i>	<i>E, I, X</i>	<i>tyaa^E</i>	<i>E, I, X</i>

The E set Aspect forms always give second persons singular forms from set I /MH/. This second person, not the unmarked third person, tone provides the base used for the inflectional pattern of the E set plural verbs (§9.3.3).

9.3.1.5 Set F inflectional patterns

The following presents the inflectional pattern based on the set F tone /HL^{LH}/. There are three different inflectional patterns for the F set. The main pattern presents 36 tokens and there are two minor sets are of 3 and 6 tokens each. The F Aspect verbs all give set E for the second person forms which is the same generalization for the C set Aspect verbs. Table 9.24 presents presents the major pattern on *mkwa^F* ‘to sweep.’

Table 9.24: Tone Alterations for Singular F Set Verbs - ‘to sweep’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	<i>mkwa^F</i>	<i>F</i>	<i>mkwa^E</i>	<i>E</i>	<i>mkwa^{Bi}</i>	<i>Bi</i>
PRG	<i>ntkwa^F</i>	<i>F</i>	<i>ntkwa^E</i>	<i>E</i>	<i>ntkwa^F</i>	<i>F</i>
HAB	<i>ntkwa^B</i>	<i>B</i>	<i>ntkwa^{Bii}</i>	<i>Bii</i>	<i>ntkwa^{Bi}</i>	<i>Bi</i>
POT	<i>kwa^B</i>	<i>B</i>	<i>kwa^{Bii}</i>	<i>Bii</i>	<i>kwa^{Bi}</i>	<i>Bi</i>

Example 9.25 presents a pattern that is very similar to the major inflectional pattern for the F set. In this set of three verbs the first person singular of the Completive Aspect does not inflect using the super high tone /0/ of set Bi but use the tones of set E /L-H/.

This includes the verbs *yja?*^F ‘to sleep,’ *jyta?*^F ‘to chew it’ and the following example - *yla?*^F ‘to sing/bark.’

Table 9.25: Tone Alterations for Singular F Set Verbs - ‘to sing’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	<i>yla?</i> ^F	<i>F</i>	<i>yla?</i> ^E	<i>E</i>	<i>yla?</i> ^E	<i>E</i>
PRG	<i>yndla?</i> ^F	<i>F</i>	<i>yndla?</i> ^E	<i>E</i>	<i>yndla?</i> ^F	<i>F</i>
HAB	<i>ndla?</i> ^B	<i>B</i>	<i>ndla?</i> ^{Bi}	<i>Bi</i>	<i>ndla?</i> ^{Bi}	<i>Bi</i>
POT	<i>kla?</i> ^B	<i>B</i>	<i>kla?</i> ^{Bi}	<i>Bi</i>	<i>kla?</i> ^{Bi}	<i>Bi</i>

The following set in Table 9.26 is the other minor inflectional set for the F group. This pattern presents the major pattern for the the Completive and Progressive Aspects seen in 9.24, above. The entire set is the same except for the Habitual and Potential first and second person forms. For these verbs the first person is marked with the descending tone /HL-(L-H)/ of set F and the second person is marked with the ascending tone sequence /L-H/ of set E.

Table 9.26: Tone Alterations for Singular F Set Verbs - ‘to collect it’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	<i>mxo?</i> ^F	<i>F</i>	<i>mxo?</i> ^E	<i>E</i>	<i>mxo?</i> ^{Bi}	<i>Bi</i>
PRG	<i>nxo?</i> ^F	<i>F</i>	<i>nxo?</i> ^E	<i>E</i>	<i>nxo?</i> ^F	<i>F</i>
HAB	<i>nxo?</i> ^F	<i>F</i>	<i>nxo?</i> ^E	<i>E</i>	<i>nxo?</i> ^{Bi}	<i>Bi</i>
POT	<i>xo?</i> ^F	<i>F</i>	<i>xo?</i> ^E	<i>E</i>	<i>xo?</i> ^{Bi}	<i>Bi</i>

The pattern in 9.26 consists of six verbs. Four of these verbs consist of two pairs that present causative derivational morphology (*x-*) for making intransitive forms transitive i.e.: *mdyo?*^F ‘to gather up’ - *mxo?*^F ‘to gather it up’ and *yndla?*^F ‘to melt’ - *mxla?*^F ‘to melt it.’ This inflectional set also includes the verbs - *mxya?*^F ‘to make small’ and *mtykwa?*^F ‘to sprout.’

9.3.1.6 Set G inflectional patterns

Set G presents inflectional patterns that demonstrate the greatest variation within the TEO verbal inflectional system. This set presents five groups that show a kind of regular inflectional patterning based on the 3SG of each Aspect and a group of five singleton forms. The first table presents the pattern for set *GIXX*. This set shows a regular inflectional pattern that consists of six verbs; four of which are inflected for just third person and two are inflected for all persons. The hyphens represent missing forms; these forms are missing because speakers do not accept human subjects for verbs like ‘you were ground’ or ‘you matured’ (referring to a plant).

Table 9.27: Tone Alterations for G Set - *GIXX* Inflectional Patterns

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
‘to carry’	mtsa? ^G	<i>G, I, G</i>	yntsa? ^I	<i>I, I, I</i>	ncha?	<i>X, Bi, Bi</i>	ktsa?	<i>X, Bi, X</i>
‘to die’	mkjwi ^G	<i>G, I, G</i>	ntyja ^I	<i>I, I, I</i>	ndyji	<i>X, Bi, Bi</i>	kja	<i>X, Bi, X</i>
‘to explode’	jytso ^G	<i>G, -, -</i>	yntso ^I	<i>I, -, -</i>	ncho	<i>X, -, -</i>	tkso	<i>X, -, -</i>
‘to to fall’	mtɛ ^G	<i>G, -, -</i>	yntɛ ^I	<i>I, -, -</i>	ntyɛ	<i>X, -, -</i>	ktɛ	<i>X, -, -</i>
‘to be ground’	ngwe ^G	<i>G, -, -</i>	ndywe ^I	<i>I, -, -</i>	ndywe	<i>X, -, -</i>	kwe	<i>X, -, -</i>
‘to mature’	ywe ^G	<i>G, -, -</i>	ndywe ^I	<i>I, -, -</i>	ndwe	<i>X, -, -</i>	kwɛ	<i>X, -, -</i>

The following set *GIGG* consists of five verbs. Three inflect for all singular forms and two inflect for third person only. The verb *mjy?ɔ^G* ‘to wash’ presents the super high tone /0/ of set Bi for the first person singular forms of the Completive, Habitual and Potential.

Table 9.28: Tone Alterations for G Set - *GIGG* Inflectional Patterns

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
‘to turn over’	mblyu ^G	<i>G, I, G</i>	jlyu ^I	<i>I, I, I</i>	ndlyu ^G	<i>G, I, G</i>	ndlyu ^G	<i>G, I, G</i>
‘to get cold’	ng?wa ^G	<i>G, I, G</i>	ndy?wa ^I	<i>I, I, I</i>	ndy?wa ^G	<i>G, I, G</i>	gy?wa ^G	<i>G, I, G</i>
‘to wash’	mjy?ɔ ^G	<i>G, I, Bi</i>	njy?ɔ ^I	<i>I, I, I</i>	njy?ɔ ^G	<i>G, I, Bi</i>	kja ^G	<i>G, I, Bi</i>
‘to wilt’	mna? ^G	<i>G, -, -</i>	yna? ^I	<i>I, -, -</i>	yna? ^G	<i>G, -, -</i>	jyna? ^G	<i>G, -, -</i>
‘to perforate’	mtya ^G	<i>G, -, -</i>	ntyja ^I	<i>I, -, -</i>	ntyja ^G	<i>G, -, -</i>	yja	<i>G, -, -</i>

Table 9.29 presents set *GIBB*, which consists of six verbs that fall into three groups of two based on their first person singular Completive Aspect forms. The Progressive forms

are all made up of set I /MH/ and the Habitual and Potential Aspects show great symmetry across person marking.

Table 9.29: Tone Alterations for G Set - *GIBB* Inflectional Patterns

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
'to carry'	mdeɛ ^G	<i>G, I, Bi</i>	ndeɛ ^I	<i>I, I, I</i>	ndeɛ ^B	<i>B, Bii, Bi</i>	jyɛɔ ^B	<i>B, Bii, Bi</i>
'to see'	nʔa ^G	<i>G, I, Bi</i>	nʔa ^I	<i>I, I, I</i>	ʔa ^B	<i>B, Bii, Bi</i>	ʔa ^B	<i>B, Bii, Bi</i>
'to water'	mchaʔ ^G	<i>G, I, G</i>	nchaʔ ^I	<i>I, I, I</i>	nchaʔ ^B	<i>B, Bii, Bi</i>	kchaʔ ^B	<i>B, Bii, Bi</i>
'to fire'	mcho ^G	<i>G, I, G</i>	ncho ^I	<i>I, I, I</i>	nchoʔ ^B	<i>B, Bii, Bi</i>	kchoʔ ^B	<i>B, Bii, Bi</i>
'to fear'	jytse ^G	<i>G, I, X</i>	yntse ^I	<i>I, I, I</i>	ntse ^B	<i>B, Bii, Bi</i>	ktse ^B	<i>B, Bii, Bi</i>
'to kill'	yjwi ^G	<i>G, I, X</i>	ntyjwi ^I	<i>I, I, I</i>	ntjwi ^B	<i>B, Bii, Bi</i>	kjwi ^B	<i>B, Bii, Bi</i>

Table 9.30 presents set *GGBB*, which consists of four verbs. In this group the Completive and Progressive verbs form one inflectional pattern demonstrating tone variation on the first person singular forms. The Habitual and Potential verbs form another group presenting the inflectional pattern of *B, Bii, Bi* previously presented in the sets *GIBB* above and *GDBB* below.

Table 9.30: Tone Alterations for G Set - *GGBB* Inflectional Pattern Verbs

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
'to stand'	mɔoɔ ^G	<i>G, I, Bi</i>	mɔoɔ ^I	<i>G, I, Bi</i>	ndyoɔ ^B	<i>B, Bii, Bi</i>	tyoɔ ^B	<i>B, Bii, Bi</i>
'to do'	mʔni ^G	<i>G, I, E</i>	yʔni ^I	<i>G, I, E</i>	ʔni ^B	<i>B, Bii, Bi</i>	kʔni ^B	<i>B, Bii, Bi</i>
'to lower'	mbʔya ^G	<i>G, I, G</i>	ndʔya ^G	<i>G, I, I</i>	ndʔya ^B	<i>B, Bii, Bi</i>	jyʔya ^B	<i>B, Bii, Bi</i>
'to be heard'	mne ^G	<i>G, -, -</i>	ne ^G	<i>G, -, -</i>	ne ^B	<i>B, -, -</i>	jyne ^B	<i>B, -, -</i>

The following set *GDBB* consists of three verbs. In this group the Completive and Progressive Aspects demonstrate inflectional variation on the 1SG forms. The Habitual and Potential form the same inflectional group as above presenting the inflectional pattern of *B, Bii, Bi* for 3rd, 2nd and 1st persons.

Table 9.31: Tone Alterations for G Set - *GDBB* Inflectional Pattern Verbs

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
'to arrive t/here=base'	ndla ^G	<i>G, I, G</i>	yndla ^D	<i>D, I, G</i>	yndla ^B	<i>B, Bii, Bi</i>	jlya ^B	<i>B, Bii, Bi</i>
'to go there=base'	mdya ^G	<i>G, I, I</i>	ndya ^D	<i>D, Bii, I</i>	ndya ^B	<i>B, Bii, Bi</i>	tya ^B	<i>B, Bii, Bi</i>
'to hammer'	mkɔʔ ^G	<i>G, I, X</i>	ntkɔʔ ^D	<i>D, I, I</i>	ntkɔʔ ^B	<i>B, Bii, Bi</i>	kɔʔ ^B	<i>B, Bii, Bi</i>

In addition to the nasalized vowel that occurs on the 1SG form of the verb *mdya^G* 'to

go there=base.’ The 1SG has an epenthetic glottal stop that preceded the vowel following the last consonant. This same kind of epenthesis also occurs with the verb ya^G ‘to go there≠base’ in Table 9.33 below. These two *highly* marked forms are given here:

Table 9.32: Epenthetic Glottal Stop

CHAT	Gloss	CHAT	Gloss
mdyʔa ^I	‘COM.go.there=base.1SG’	yʔa ^I	‘COM.go.there≠base.1SG’
ndyʔa ^I	‘PRG.go.there=base.1SG’	yʔa ^I	‘PRG.go.there≠base.1SG’
ndyʔa ^{Bi}	‘HAB.go.there=base.1SG’	ndyʔa ^{Bi}	‘HAB.go.there≠base.1SG’
tyʔa ^{Bi}	‘POT.go.there=base.1SG’	tsʔa ^{Bi}	‘POT.go.there≠base.1SG’

Table 9.33 presents the five singleton inflectional patterns for G set verbs. In addition to the epenthesis mentioned above, the verbs in the following table exhibit suppletive forms for ya^G ‘to come≠base,’ $msti^G$ ‘to lie down’ and ya^G ‘to go there≠base.’

Table 9.33: Tone Alterations for Irregular Singular G Set Verbs

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
‘to come here=base’	ya^G	<i>G, I, E</i>	ya^B	<i>B, Bii, Bi</i>	$ndya^B$	<i>B, Bii, Bi</i>	tya^B	<i>B, Bii, Bi</i>
‘to come here≠base’	ya^G	<i>G, I, E</i>	ja^B	<i>X, Bii, Bi</i>	$ndyʔa$	<i>X, Bii, Bi</i>	ka	<i>X, Bii, Bi</i>
‘to lie down’	$msti^G$	<i>G, I, Bi</i>	su^G	<i>G, I, Bi</i>	$nxyi$	<i>X, Bii, Bi</i>	$xtyi$	<i>X, Bii, Bi</i>
‘to go there≠base’	ya^G	<i>G, I, I</i>	ya^G	<i>G, I, I</i>	$ndyʔa$	<i>X, Bii, Bi</i>	$tsʔya^B$	<i>B, Bii, Bi</i>
‘to get lost’	$ngwji^G$	<i>G, I, G</i>	$ntyji^I$	<i>G, I, G</i>	$ntyji^G$	<i>G, I, G</i>	ji^G	<i>G, I, G</i>

9.3.1.7 Set I inflectional patterns

There are only four verbs in the database for set I /MH/. This group presents two different inflectional patterns that demonstrates three patterns for singular subjects. Three of the four forms are related semantically as verbs of motion. As seen in Tables 9.31 and 9.33 some motion verbs exhibit suppletive forms and unique inflectional patterns. These forms also represent a very uncommon inflectional patterns. Table 9.34 presents the I set verbs.

Table 9.34: Tone Alterations for the Singular I Set Verbs

Verb	COM	3, 2, 1	PRG	3, 2, 1	HAB	3, 2, 1	POT	3, 2, 1
'to arrive here/there'	mdya ^I	I, I, E	-	-	ndya ^K	K, Bii, K	tya ^K	K, Bii, K
'to arrive there'	mdya ^I	I, I, I	-	-	ndya ^K	K, Bii, K	tya ^K	K, Bii, K
'to fall behind'	mdya ^I	I, I, I	ndya ^I	I, I, I	ndya ^I	I, I, I	tya ^I	I, I, I
'to bewilder'	mskw ^I	I, I, I	ntykw ^I	I, I, I	nxkw ^I	I, I, I	xkw ^I	I, I, I

9.3.2 Summary singular subject inflectional patterns

Tables 9.35, 9.36 and 9.37 summarize all of the inflectional patterns for singular subjects introduced in table 9.12. Based on the Aspect tone of the 3SG COM verb form one could predict all the major inflectional patterns for most of the second person verbs. A speaker or language learner would need to memorize the first person patterns and a small set of irregular configurations in the lexicon.

Table 9.35: Inflectional Patterns for Singular Subject Sets X, B, C, E, F and I

Aspect Set/prs.	COM			PRG			HAB			POT			NO
	3SG	2SG	1SG	3SG	2SG	1SG	3SG	2SG	1SG	3SG	2SG	1SG	
X	X	Bii	E	I	I	I	X	Bii	Bi	X	Bii	Bi	13
	X	Bii	E	I	I	I	X	Bii	Bi	X	Bii	Bi	10
	X	Bii	Xi	I	I	I	X	Bii	X	X	Bii	X	5
	X	Bii	Bi	X	Bii	Bi	X	Bii	Bi	X	Bii	Bi	3
B	B	Bii	Bi	D	Bii	Bi	B	Bii	Bi	B	Bii	Bi	53
	B	I	X	D	I	I	B	Bii	Bi	B	Bii	Bi	1
	B	I	Bi	D	I	Bi	B	Bii	Bi	B	Bii	Bi	1
	B	Bii	Bi	I	I	I	B	Bii	Bi	B	Bii	Bi	1
C	C	E	Bi	C	E	C	B	Bii	Bi	B	Bii	Bi	18
	C	E	Bi	C	E	C	C	E	Bi	C	E	Bi	7
	C	E	E	C	E	E	B	Bii	Bi	B	Bii	Bi	2
	C	E	Bi	C	E	C	C	E	C	C	E	C	1
	C	E	C	C	C	C	C	E	C	C	E	C	1
E	E	I	X	E	I	I	H	I	X	H	I	X	81
	E	I	Bi	E	I	I	E	I	Bi	E	I	Bi	2
	E	I	Bi	E	I	I	E	I	Bi	E	I	Bi	1
	E	I	X	E	I	I	E	I	X	E	I	X	1
F	F	E	Bi	F	E	F	B	Bii	Bi	B	Bii	Bi	36
	F	E	E	F	E	F	B	Bii	Bi	B	Bii	Bi	3
	F	E	Bi	F	E	F	F	E	Bi	F	E	Bi	6
I	I	I	E	-	-	-	K	Bii	K	K	Bii	K	1/1
	I	I	I	-	-	-	K	Bii	K	K	Bii	Bi	1/1
	I	I	I	I	I	I	I	I	I	I	I	I	1/2

Because set G has the greatest number of inflectional patterns it is presented separately.

Table 9.36 presents the G set inflectional patterns.

Table 9.36: Inflectional Patterns for Singular Subject Set G

Aspect Set/prs.	COM			PRG			HAB			POT			NO
	3SG	2SG	1SG	3SG	2SG	1SG	3SG	2SG	1SG	3SG	2SG	1SG	
GIXX	G	I	G	I	I	I	X	Bii	Bi	X	Bii	Bi	2/6
GIGG	G	I	G	I	I	I	G	I	G	G	I	G	2/5
	G	I	G	I	I	I	G	I	Bi	G	I	Bi	2/5
	G	I	Bi	I	I	I	G	I	Bi	G	I	Bi	1/5
GIBB	G	I	Bi	I	I	I	B	Bii	Bi	B	Bii	Bi	2/6
	G	I	X	I	I	I	B	Bii	Bi	B	Bii	Bi	2/6
	G	I	G	I	I	I	B	Bii	Bi	B	Bii	Bi	2/6
GGBB	G	I	Bi	G	I	Bi	B	Bii	Bi	B	Bii	Bi	1/4
	G	I	E	G	I	E	B	Bii	Bi	B	Bii	Bi	1/4
	G	I	G	G	I	I	B	Bii	Bi	B	Bii	Bi	1/4
GDBB	G	I	G	D	I	G	B	Bii	Bi	B	Bii	Bi	1/3
	G	I	I	D	Bii	I	B	Bii	Bi	B	Bii	Bi	1/3
	G	I	X	D	I	I	B	Bii	Bi	B	Bii	Bi	1/3

Table 9.36 presents the singleton patterns for set G from Table 9.33 above in a summarized format.

Table 9.37: Singleton Inflectional Patterns for Singular Subject Set G

Aspect Set/prs.	COM			PRG			HAB			POT			NO
	3SG	2SG	1SG	3SG	2SG	1SG	3SG	2SG	1SG	3SG	2SG	1SG	
G BBB	G	I	E	B	Bii	Bi	B	Bii	Bi	B	Bii	Bi	1/1
G XXX	G	I	E	X	Bii	Bi	X	Bii	Bi	X	Bii	Bi	1/1
G GXX	G	I	Bi	G	I	Bi	X	Bii	Bi	X	Bii	Bi	1/1
G GXB	G	I	I	G	I	I	X	Bii	Bi	B	Bii	Bi	1/1
G GGG	G	I	G	G	I	G	G	I	G	G	I	G	1/1

9.3.3 Plural subject inflectional patterns

Plural subject marking in TEO is realized through a combination of the 3SG Aspect tone and the addition of the appropriate person clitic to indicate person (§7.1.1). This pattern is very regular and is utilized in Aspect sets X, B, C, F, G and I. Tables 9.38 and 9.39 present this pattern for the singular and plural forms of set X.

Table 9.38: Tone Alterations for Singular X Set Verbs - ‘to speak’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	jykwi?	<i>X</i>	jykwi? ^{Bii}	<i>Bii</i>	jykwi? ^E	<i>E</i>
PRG	ntykwi? ^I	<i>I</i>	ntykwi? ^I	<i>I</i>	ntykwi? ^I	<i>I</i>
HAB	ntykwi?	<i>X</i>	ntykwi? ^{Bii}	<i>Bii</i>	ntykwi? ^{Bi}	<i>Bi</i>
POT	tykwi?	<i>X</i>	tykwi ^{Bii}	<i>Bii</i>	tykwi ^{Bi}	<i>Bi</i>

Table 9.39: Plural Marking on the Unmarked Set X for the Verb ‘to speak’

Aspect	3PL	Set	2PL	Set	1PL.INCL	Set	1PL.EXCL	Set
COM	jykwi?=ju ^A	<i>X</i>	jykwi?=u	<i>X</i>	jykwi?=ra ^B	<i>X</i>	jykwi?=ba	<i>X</i>
PRG	ntykwi? ^I =ju ^A	<i>I</i>	ntykwi? ^I =u	<i>I</i>	ntykwi? ^I =ra ^B	<i>I</i>	ntykwi? ^I =ba	<i>I</i>
HAB	ntykwi?=ju ^A	<i>X</i>	ntykwi?=u	<i>X</i>	ntykwi?=ra ^B	<i>X</i>	ntykwi?=ba	<i>X</i>
POT	tykwi?=ju ^A	<i>X</i>	tykwi?=u	<i>X</i>	tykwi=ra ^B	<i>X</i>	tykwi=ba	<i>X</i>

The inflectional pattern for set E presents an exception to the formation of plural verbs. In this set only the 3PL form is formed with the 3SG tone. The plural 2PL, 1PL.INCL and 1PL.EXCL inflectional patterns are formed with tone of the 2SG form from set I /MH/. Tables 9.40 and 9.41 present singular and plural forms of set E to demonstrate this exception.

Table 9.40: Singular Tone Alterations for E Set Singular Verbs - ‘to yell’

Aspect	3SG	Set	2SG	Set	1SG	Set
COM	ms?ya ^E	<i>E</i>	ms?ya ^I	<i>I</i>	ms?ya	<i>X</i>
PRG	ns?ya ^E	<i>E</i>	ns?ya ^I	<i>I</i>	ns?ya ^I	<i>I</i>
HAB	nx?ya ^H	<i>H</i>	nx?ya ^I	<i>I</i>	nx?ya	<i>X</i>
POT	x?ya ^H	<i>H</i>	x?ya ^I	<i>I</i>	x?ya	<i>X</i>

Table 9.41: Plural Marking on Set E for the Verb ‘to yell’

Aspect	3PL	Set	2PL	Set	1PL.INCL	Jg	1PL.EXCL	Set
COM	msʔya ^E =ju ^A	E	msʔya ^I =u	I	msʔya ^I =ra ^B	I	msʔya ^I =ba	I
PRG	nsʔya ^E =ju ^A	E	nsʔya ^I =u	I	nsʔya ^I =ra ^B	I	nsʔya ^I =ba	I
HAB	nxʔya ^H =ju ^A	H	nxʔya ^I =u	I	nxʔya ^I =ra ^B	I	nxʔya ^I =ba	I
POT	xʔya ^H =ju ^A	H	xʔya ^I =u	I	xʔya ^I =ra ^B	I	xʔya ^I =ba	I

9.4 The use of Aspect

Now that the major and minor inflectional patterns have been outlined the following section presents how the Aspectual categories are used in the language.

9.4.1 Potential Aspect

The Potential Aspect is used with verbs that denote events that have not yet occurred from a given point of view. This means that verbs can express occurrences of things that presently have not happened and they can also express a given future realization of an event that occurred in the past but was realized in a future time from that particular past moment. Examples 9.1 and 9.2 present potential events from texts that were talking about the past. These examples present events that had not yet been realized at a the given moment in the past from the context that speaker is talking about.

- (9.1) $kqʔ^G$ $jyʔq^G$ - $chjʔ^F$ = ba $steʔ$ = ba $xqʔ^G$
 DEM POT.wash-little=1PL.EXCL cloth=1PL.EXCL then
 ‘there is where we will wash our clothes a little then’
 (TEO-2011-06-21-txt-RQF-HRV-jdm 07:00-07:01)

- (9.2) na^C $jykwɪ^I$ = rq $ʔi^E$ = rq^C xa^B - $kqʔ^G$, ja^F - $jqʔ^E$,
 OBJ POT.message=1PL.INCL DAT=it then, yes,
 $jykwɪ^I$ - ti = rq $ʔi^E$ = rq^C
 POT.message-just=1PL.INCL DAT=it
 ‘we are going to massage it then, yes, we will just massage it’ (his foot)
 (TEO-2011-08-23-txt-HRM-RQF-HRV-jdm-03 00:20-00:23)

Example 9.3 presents a potential activity that may occur in a context of something that has been completed.

- (9.3) *ku neʔ nu ya^G jyta-jyko^E kqʔ^G*
 POT.eat people that COM.go COM.bathe-pool then
 ‘the people that went to bathe will eat’
 (TEO-2011-06-21-txt-RQL-RQF-HRV-jdm 11:26-11:28)

The last example presents a potential that is followed by a completed activity that has not yet occurred as a kind of irrealis mood.

- (9.4) *nu=nga^G tsa^B jyta=ba-jyko^E xqʔ^G la jyko^E=tlyu^C xqʔ^G*
 well, POT.go COM.bathe=1PL.EXCL-pool then up.to river then
 ‘well, we will go up to the river to bathe then’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

9.4.2 Progressive Aspect

The Progressive Aspect is used to denote activities and states that are considered continuing for a certain period of time with a beginning and an end. This form is often used to denote something that is happening at the time of utterance.

- (9.5) *jyuʔ^G, ja^B-ska^C na^C yʔni^G=reʔ*
 NEG, NEG thing PRG.do=3PL
 ‘no, they aren’t doing anything’
 (TEO-2010-06-29-txt-GC-RQL-HRV-jdm-01 08:28-08:29)

Example 9.6 presents an utterance that is talking about a field that is being planted at the time of the speech event.

- (9.6) *ja^F-jqʔ^E, nu ynta^I=reʔ tiʔ^F-ni^C*
 yes, the.one PRG.sow=3PL still-now
 ‘yes, the one that they are sowing now’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm 04:37-04:38)

Example 9.7 presents a Progressive Aspect verb in the context of a habitual activity.

- (9.7) *chaʔ^F ndya^K, ndo^G=ra^B tykwa^G=ra^B, tykwa^G=ra^B*
 if HAB.arrive≠there, PRG.stand=1PL.INCL two=1PL.INCL, two=1PL.INCL
joʔ^G
 then
 ‘if s/he arrives, the two of us are standing there, the two of us then’
 (TEO-2011-09-20-txt-CV-RQF-HRV-jdm 13:11-13:13)

9.4.3 Habitual Aspect

The Habitual Aspect is used for events that are considered as occurring habitually. This Aspect defines a kind of activity that always occurs, a kind of permanence or an attribute of a given thing or person. Different than for an activity that occurs during a particular given time and then stops the Habitual Aspect describes events that are always a certain way.

Example 9.8 presents the use of the Habitual Aspect to describe a particular behavior and attribute of the handheld press for extracting the liquid from sugarcane.

- (9.8) *loʔ^F ndlo^B=ra^C tyʔa^A choʔ^G sʔwe^C ndlyu^G=ra^C*
 and HAB.extract=it water because good HAB.spin=it
 ‘and it extracts the water because of how good it spins... (the handheld press)’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm 04:12-04:15)

Example 9.9 describes the process and materials that people use to embroider.

- (9.9) *swe^A-ti juu^E ngwloʔ ndʔya^B=ra^C*
 little-just thread ball HAB.bring=it
 ‘a little ball of thread they bring’
 (TEO-2010-09-20-txt-JQL-HRV-jdm 01:51-01:52)

Example 9.10 presents a narration of a text where the sound of a noisy door is described with the use of the Habitual Aspect to describe a particular characteristic or state of the given door.

- (9.10) *loʔ^F xqʔ^G ne^B ne^B tʃyo^A yndla^H toʔ^F-nʔq=rq^C*
 and then HAB.be.heard HAB.be.heard far HAB.open door=it
ntykwiʔ-reʔ
 HAB.talk=3PL
 ‘and then it can be heard, it can be heard from far away the opening door, they say’
 (TEO-2011-08-26-txt-SQS-RQF-HRV-jdm-01 18:20-18:23)

9.4.4 Completive Aspect

The Completive Aspect is used to denote an event that has occurred and already taken place, with a clear beginning and end point. It can also describe an event that took place once. And it can also be used to describe how things were in a somewhat general sense. Example 9.11 presents a description from the speaker about the kinds of crops they used to grow when he was young.

- (9.11) *jyta^B=ba ndaa^A*
 COM.sow=1PL.EXCL bean
 ‘we sowed beans’
 (TEO-2011-07-24-txt-RRS-RQF-jdm-06 15:08-16:08)

Example 9.12 describes the deaths that occurred during the 1950s massacre and civil war.

- (9.12) *mkjwi^G neʔ-kwla mkjwi^G nu-swe^A mkjwi^G nu*
 COM.die people-elder COM.die NOM-little, COM.die NOM
 ‘elders died, children died, those died who...’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 16:46-16:49)

Example 9.13 presents the use of the Completive Aspect in the context of the speaker describing the work that his father did. The speaker uses the form *ba^A-reʔ^C* ‘1PL.EXCL’

pronoun to denote the possessed relationship to his father in a form of very respectful speech.

- (9.13) *kqʔ^G nu tnya^F mʔni^G sti ba^A-reʔ^C sʔni*
 DEM NOM work COM.do father 1PL.EXCL before
 ‘that was the work that my father did before’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm 03:18-03:20)

Example 9.14 presents a completed activity placed in the context of something that had not yet occurred presenting a type of irrealis mood.

- (9.14) *kqʔ^G mne naʔ^{Bi} ni-chaʔ^F kjwi^B kwa^F tsa kwa^F*
 then COM.say 1SG INT-word POT.kill DEM until DEM
 ‘and so I said, why are they going to kill like that?’
 (SMC-2010-06-29-txt-AM-RQL-HRV-jdm 16:26-16:27)

The following example (9.15) uses the Completive Aspect to present something that happened but as a way of describing a set of events that occurred over a period of time in a sense of *how things were*.

- (9.15) *ju^F-juʔ^E, kwa^F-ʔq^B, kwa^F-ʔq^B ka^K mdʔq-yʔni^G*
 yes, DEM-EMPH, DEM-EMPH STAT.be COM.walk.around-PRG.do
ba-reʔ^C
 1PL.EXCL
 ‘yes, that, that is how we went around doing’ (playing music)
 (TEO-2011-09-20-txt-CV-RQF-HRV-jdm 13:17-13:19)

9.5 Derivational verb morphology

The following section outlines some of the derivational processes that can occur on the verb stems. These processes include stem alternations that can be used as a valency increasing device to transitive intransitive verbs and create morphological causative verbs.

9.5.1 Valance-Increasing verb stem alternations

There are verb stems in Teotepéc Chatino that present equipollent alternations between intransitive and transitive forms. This type of derivation creates a split between transitive/intransitive verbs which can result in the existence of more transitive and less transitive kinds of meanings. The following presents alternations where the intransitive form can act as a kind of inchoative, used for something that occurs on its own accord. The transitive form increases the number of arguments the verb may take.

The following examples present alternations between the verb ‘to cover’ in the Potential Aspect. The alternation in these examples is a sound change of the initial consonant on the verb stem from /s/ to /t/. Example 9.16 presents the intransitive form of the verb. The speaker is talking about caring for a newborn and how it is important to lay them down to sleep a certain way otherwise, their nose will become covered and the infant could possibly suffocate.

- (9.16) *skʔ^B* *to^F-syɛʔ* *skʔ^B*
 POT.cover nose POT.cover
 ‘it may get smothered’ (*lit.* it’s going to get covered its nose, covered)
 (TEO-2011-08-23-txt-HRM-RQF-HRV-jdm-07 08:34-08:36)

Example 9.17 presents the transitive form of the verb. The speaker is describing how a sugar cane press (*trapiche* SPN) is made; explaining that certain parts will be covered over by other parts of the wood.

- (9.17) *tkʔ^B=yu* *ʔi^E=rɔ^C* *jɔ^Gʔ...*
 POT.cover=3PL.MASC DAT=it then
 ‘they are going to cover it then’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-07 05:09-05:10)

These forms are probably related to the Proto-Zapotecan D verb classes proposed by Kaufman. He describes this class as verbs that present, “transitive:intransitive pairs,

where the transitive member has a causative meaning and the intransitive member has a versive meaning.” (Kaufman, 2007). In Teotepéc Chatino these forms are often marked by consonant stem changes that include, the addition of a palatal sound like /s/ <s> or /ʃ/ <x>, the change of a sound from palatal fricative /ç/ <jy> to a palatal stop /tʃ/ <ty>, or the reverse. This stem alternation acts as a valency increasing device for verbs that would otherwise be intransitive allowing for the verb to take on more arguments. Table 9.42 presents some elicited examples of these stem alternating forms.

Table 9.42: Alternating Verb Stems

Gloss	COM 3SG	Set	PRG 3SG	Set	HAB 3SG	Set	POT 3SG	Set
‘to start’	mtɔ ^I	I	ntɔ ^I	I	njytɔ ^I	I	jytɔ ^I	I
‘to start it’	mstɔ	X	nstɔ ^I	I	nxtɔ	A	xtɔ	A
‘to undo’	mjyka ^B	B	njyka ^D	D	njyka ^B	B	jyka ^B	B
‘to undo it’	mtyka ^B	B	ntyka ^D	D	ntyka ^B	B	tyka ^B	B
‘to divide’	mdyʔwe ^B	B	ndyʔwe ^D	D	ndyʔwe ^B	B	jyʔwe ^B	B
‘to divide it’	msʔwe ^B	B	nsʔwe ^D	D	nsʔwe ^B	B	sʔwe ^B	B
‘to throw’	mgylɔ ^B	B	ndlo ^D	D	yndlo ^B	B	jylo ^B	B
‘to throw it’	mslo ^B	B	nslo ^D	D	nslo ^B	B	slo ^B	B
‘to open’	yndla ^E	E	ngyla ^E	E	yndla ^H	H	jyla ^H	H
‘to open’	mndla ^E	E	ngla ^E	E	ngla ^H	H	jyla ^H	H
‘to open it’	msla ^E	E	nsla ^E	E	nsla ^H	H	sla ^H	H
‘to brake’	mtsa ^E	E	ntsa ^E	E	ntsa	A	ktsa	A
‘to break it’	mcha ^E	E	ncha ^E	E	ncha ^H	H	kcha ^H	H
‘to close’	mtykɔ ^F	F	ntykɔ ^F	F	ntykɔ ^B	B	skɔ ^B	B
‘to close it’	mtkɔ ^F	F	ntkɔ ^F	F	ntkɔ ^B	B	tkɔ ^B	B
‘to wet’	mtsaʔ ^B	G	ntsaʔ ^I	I	ntsaʔ	A	ktsaʔ	A
‘to wet it’	mchaʔ ^B	G	nchaʔ ^I	I	nchaʔ	A	kchaʔ	A

9.5.2 Causative stem alternations

Causative stem alternations form morphological causatives with the use of the consonant /ʃ/ <x> which replaces the palatal consonants of /ç/ <jy> and /tʃ/ <ty> of the intransitive form in the POT, COM, PRG and HAB Aspects. Like the alternating set pre-

sented in Table 9.42, the intransitive form of these verbs produces an inchoative reading and the causative forms produce a meaning that is always transitive. Examples 9.19 and 9.19 present the intransitive and causative form of ‘to remove.’

(9.18) *ni-na^C-nyʔa^B jytq^B=ra^C jyka sna^J staʔ^A nu ka^B tykwa^E=ra^C*
 INT-it-like POT.detach=it tree three branch that POT.be two=it
 ‘as the tree is going to separate into three branches that will be two...’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-08 01:40-01:42)

(9.19) *nu ntyka^B-tiʔ^F=reʔ xtq^B tkwa^J sna^J swaʔ^G ʔya re^C*
 who HAB.want=ESN=3SG POT.remove two three cluster below here
 ‘who wants to remove two or three clusters here below’
 (TEO-2011-09-21-txt-ASS-RQF-HRV-jdm-01 07:59-08:01)

Table 9.43 presents stem alternating causative forms with their non-causative counterpart.

Table 9.43: Stem Alternating Causatives

Glosa	COM 3SG	<i>Jg</i>	PRG 3SG	<i>Jg</i>	HAB 3SG	<i>Jg</i>	POT 3SG	<i>Jg</i>
‘to untie’	mtiʔ ^B	B	yntiʔ ^D	D	yntiʔ ^B	B	jytiʔ ^B	B
‘to untie it’	mxtiʔ ^B	B	nxtiʔ ^D	D	nxtiʔ ^B	B	xtiʔ ^B	B
‘to remove’	mta ^B	B	ynta ^D	D	ynta ^B	B	jyta ^B	B
‘to remove it’	mxta ^B	B	nxta ^D	D	nxta ^B	B	xta ^B	B
‘to desgrain’	mjykwaʔ ^E	E	njykwaʔ ^E	E	njykwaʔ ^H	H	jykwaʔ ^H	H
‘to desgrain it’	mxkwaʔ ^E	E	nzkwaʔ ^E	E	nzkwaʔ ^H	H	xkwaʔ ^H	H
‘to change’	mtyʔa ^E	E	ntyʔa ^E	E	ntyʔa ^H	H	tyʔa ^H	H
‘to change it’	mxʔa ^E	E	nʔa ^E	E	nʔa ^H	H	xʔa ^H	H
‘to join’	mdyoʔ ^F	F	ndyoʔ ^F	F	ndyoʔ ^F	F	tyoʔ ^F	F
‘to join it’	mxoʔ ^F	F	nxoʔ ^F	F	nxoʔ ^F	F	xoʔ ^F	F

9.6 Causative morphology

Teotepéc Chatino presents three different kinds of causative constructions. The form we just saw is derived through a stem alternating pattern described in §9.5.2, above.

The second is constructed with a causative prefix xi^F -. The last one is a periphrastic construction that utilizes the verb $m\eta ni^G$ ‘to make/do.’

9.6.1 xi^F - causatives

xi^F - causatives are formed with the verbal prefix xi^F -. This form attaches to intransitive verbs deriving a causative meaning. Examples 9.20 and 9.21 present the intransitive and causative form of the verb ‘to bathe.’

- (9.20) ja^F - $ja\eta^E$, $kwi\eta^B=r\epsilon\eta$ ka^K nu $xi^F=ka=r\epsilon\eta$ $tyko^E$ η^E
 yes, same=3PL STAT NOM CAUS=POT.bathe=3PL river DAT
 $snye\eta=r\epsilon\eta$
 children=3PL
 ‘yes, they themselves are the ones who will bathe their children’
 (TEO-2011-08-23-txt-HRM-RQF-HRV-jdm-06 11:26-11:30)

- (9.21) nu - nga^K $ka=r\epsilon\eta$ $ty\eta^A$ $l\eta we^B$ $kyko^E$
 well, POT.bathe=3PL water fern river
 ‘well, they are going to bathe with fern water of the river’
 (TEO-2011-08-26-txt-SQS-RQF-HRV-jdm-02 14:51-14:53)

The prefix can take Aspect morphology. Example 9.22 presents the form from the text database where xi^F is marked with the Completive m - Aspect prefix.

- (9.22) m - xi^F - $kt\epsilon^A$ η^i $n\eta^a$
 COM-CAUS-POT.collapse DAT house
 ‘they (the bulls) made the house collapse’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-03 02:16-02:18)

Table 9.44 presents elicited examples of xi^F -causative forms.

Table 9.44: $-xi^F$ - Causatives

Intransitive	Gloss	Causative	Gloss
yja ^{?B}	COM.sleep	xi ^F -kja ^{?B}	'to make sleep'
mnyo ^B	COM.move	xi ^F -jnyo ³¹	'to move'
jyta-jyko ^E	COM.bathe	xi ^F -kta-jyko ^E	'to bathe'
mtɛ ^G	COM.fall/collapse	xi ^F -ktɛ	'to make fall'
mdyu ^C	COM.fall (from above)	xi ^F -tyu ^C	'to make fall' (from above)
mblyu ^E	COM.fall (from standing)	xi ^F -tlyu ^E	'to make fall' (from standing)
ng ^{?wa} ^E	COM.flow	xi ^F -k ^{?wa} ^H	'to cause to flow'
mtɛ	COM.collapse	xi ^F -ktɛ ^A	'to cause collapse'
mxɛ	COM.kneel	xi ^F -xɛ ^C	'to make kneel'

Table 9.45 presents complete paradigms of the $-xi^F$ causatives in alternation with their intransitive counterpart for all four Aspects.

Table 9.45: $-xi^F$ Causatives in All Four Aspects

Gloss	COM 3SG	Set	PRG 3SG	Set	HAB 3SG	Set	POT 3SG	Set
'to bathe'	jyta	X	ynta ^I	I	ntyɑ	X	kta	X
'bathe it'	mxi ^F kta	F, X	nxi ^F kta	F, X	nxi ^F kta	F, X	xi ^F kta	F, X
'widen'	mɛ ^E	E	nɛ ^E	E	nɛ ^H	H	xɛ ^H	H
'to make wide'	mxi ^F ɛ ^E	F, E	nxi ^F ɛ ^E	F, E	nxi ^F ɛ ^E	F, E	xi ^F ɛ ^E	F, E
'kneel'	mɛ ^C	C	nɛ ^C	C	nɛ ^C	C	xɛ ^C	C
'to make kneel'	mxi ^F ɛ ^C	F, C	nxi ^F ɛ ^C	F, C	nxi ^F ɛ ^C	F, C	xi ^F ɛ ^C	F, C

9.6.2 $-?ni^G$ Causatives

The other strategy for forming causatives is with a periphrastic construction that uses the stem of the predicate $-?ni^G$ 'to do/make' in conjunction with intransitive verbs, nouns or adjectives. The causative part of the predicate takes Aspect marking and the second stem is inflected for person.

Example 9.23 presents the causative construction in the Potential Aspect with the

use of the intransitive verb *tyi* ‘to finish,’ to express that the addressee is going to finish being 72 and become 73 years of age.

- (9.23) *waʔ^C kʔni^B-tyi=ɥ sna^J-yla^C ʔwi ti^J-tykwa^H*
 already POT.do-finish=2SG.RSP three-twenty STAT.exist twelve
 ‘you are just about to finish 72... (years)’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm-01 00:32-00:34)

Example 9.24 uses the same verb + verb construction; however, in the Completive Aspect.

- (9.24) *ja^B jylɥo^H-tj^ʔBi ni-cha^ʔF mʔni^G-tyi^I yu-stro^K kwa^F ʔi^E=rɔ^C*
 no HAB.know-ESN.1SG INT-word COM.make-finish teachers DEM DAT=it
 ‘I don’t know why the teachers had finished that’
 (TEO-2010-07-22-txt-PQ-RQL-HRV-jdm-02 012:43-12:45)

The following examples present a causative construction that seems slightly more lexicalized. The verb ‘to raise’ is only found in the causative form. The meaning of the second part of the this construction appears to be related to *kʔo^B* ‘to live’ where the Completive Aspect of this verb is from set F - *ɥʔo^F*. *Mʔni^G-kʔo^F* ‘make live’ uses a slightly *simplified* version of the form *emphyʔo^F*. Example 9.47 presents this form in the Habitual Aspect. The following example (9.26) is in the Completive.

- (9.25) *wa-reʔ^C yɔ^B sʔe^A ʔni^B-kʔo^F ndyo-se^F ʔi^B=ɥ ʔo^E lo-yaʔ^C*
 we PRG.come from HAB.make-live god DAT=2PL with in-hand
lo-jyaʔ=ɥ^I
 in-foot=2PL
 ‘we come from where god raises you with his hands and feet’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

- (9.26) *klo-nkwa^F sti-klɔ^{Bi} naʔ^{Bi} mʔni^G-kʔo^F ʔyɔ^E*
 first-COM.be my.grandparents 1SG COM.make-live DAT.1SG
 ‘first, I was raised by my grandparents’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-06 01:10-01:11)

Example 9.27 is a causative constructed with the use of the adjective *kti^E* ‘soft/bland.’

- (9.27) *xa^B-kqɪ^G waɪ^C kʔni^B-kti^I=ba skɔ^G*
 then already POT.make-soft=1PL.EXCL dough
 ‘then, we make the dough soft’
 (TEO-2010-09-20-txt-JQL-HRV-jdm 01:00-01:02)

Table 9.46 presents some elicited examples of *-ʔni^G*-causative constructions in the Completive Aspect. Given that these collocations are formed with adjective type constituents they create a specific lexicalized meaning.

Table 9.46: *-ʔni^G* - Causatives

Adj/Noun	Gloss	Causative	Gloss
cha	‘sharp’	mʔni ^B cha	‘sharpen’
xtye	‘foolish’	mʔni ^B xtye	‘make a fool of’
koɪ ^B	‘dirty’	mʔni ^B koɪ ^B	‘make dirty’
nʔa ^E =tiɪ ^C	‘weak’	mʔni ^B nʔa ^E =tiɪ ^C	‘weaken’
mtɛ ^F	‘white’	mʔni ^B mtɛ ^F	‘white wash’
mso ^G	‘docile’	mʔni ^B mso ^G	‘make docile’
sʔwa ^I	‘level’	mʔni ^B sʔwa ^I	‘make equal’
mbloʔ	‘round’	mʔni ^B mbloʔ	‘make round’
tkwɛ	‘long’	mʔni ^B tkwɛ	‘lengthen’
tlyu ^C	‘large’	mʔni ^B tlyu ^C	‘enlarge’
tno	‘big(respect)’	mʔni ^B tno	‘to make big’
yʔwe ^C	‘pieces’	mʔni ^B yʔwe ^C	‘to tear up’

9.7 Existential, copula and non-verbal predicates

Teotepéc Chatino uses existential, positional, and copula verbs to express a variety of functions. These expressions include location, possession, position and existence. These verbs can take all four Aspects and in some instances demonstrate a fifth type of Stative (STAT) Aspect that can occur in certain constructions that include existential verbs.

The properties of locational predicates, adjective predicates and nominal predicates vary considerably across languages. For example in English these three kinds of predicates may occur with the auxiliary verb *is*.

(9.28) (a) William **is** in the archive; (b) William **is** short; (c) William **is** a man

Although the form of these non-verbal predicates are similar in English and in other European languages like French and Spanish, there are also languages where these three types of predicates are handled with different strategies. In TEO these constructions are expressed with different kinds of predicates.

Example 9.29 uses the existential predicate, *yʔwi* ‘to exist,’ to express location. In this example the predicate is expressed with the use of the Stative Aspect for plural subjects. The singular of this form is *ʔwi*.

(9.29) *ja^F-ʔq^E, nu nsʔwi nyʔq^E*
 yes NOM STAT.exist in.the.house
 ‘yes, the ones that were in the house’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-06 09:31-09:32)

Example 9.30 presents the predicate adjective *lyo-ti^F* ‘little’ used to describe a physical characteristic of an individual. This form is inflected and precedes the 1SG subject pronoun.

(9.30) *lyoʔ^F=ti^{Bi} naʔ^{Bi} xqʔ^G*
 little-ESN.1SG I then
 ‘I was little then’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

Example 9.31 presents a nominal predicate constructed with the use of the copula, *mkwa^F* ‘to be,’ to describe a post held by an individual in the community government.

- (9.31) *ja^F-ʔa^E, mkwa^F pre-xe^B-nte^K nʔa-tnya^F*
 yes, COM.to.be president house-work
 ‘yes, he was president in the town hall’
 (TEO-2010-06-29-txt-GC-RQL-HRV-jdm-03 01:33-01:34)

9.7.1 Predicate adjectives

In TEO predicate adjectives modify the subject of the sentence. These forms can be used on their own or be accompanied by a copula verb. As presented in example 9.30, predicate adjective constructions precede the subject and take person inflection (like verbs) but they do not take Aspect morphology. The following presents examples of copulaless predicate adjectives.

Example 9.32 presents a predicate adjective with a human subject.

- (9.32) *bwe-no tiʔ^F xa^E tʔi^A ntɛ^B*
 well, still when sick people
 ‘well, since the people are sick’
 (TEO-2011-08-26-txt-SQS-RQF-HRV-jdm-01 00:14-00:15)

Example 9.33 presents an animate non-human subject. In this example the predicate adjective precedes the subject and the attributive adjective follows the noun.

- (9.33) *ntjaa^E la^E kta^B nxyaʔ^F kwa^F*
 lazy more cow swiss DEM
 ‘they are more lazy the swiss cows’
 (TEO-2012-07-12-txt-MZF-RQF-HRV-jdm-03 07:46-07:47)

Example 9.35 presents the predicate adjective with a non-human subject.

- (9.34) *ngʔa^E, ti^F ngʔa^E ti kaʔ=ra^C*
 red, toward red just leaf=it
 ‘red, it is reddish its leaf’
 (TEO-2011-08-26-txt-SQS-RQF-HRV-jdm-03 00:14-00:15)

Example 9.35 presents the predicate adjective with an inanimate subject.

- (9.35) *nu, nu xqʔ^B-la^E=rq^C xeʔ^H-tiʔ^E=rq^B*
 that, that tasty-more=it POT.believe-ESN=1PL.INCL
 ‘that, that it is tastier we think’
 (TEO-2010-09-20-txt-frijol-JQL-HRV-jdm 00:27-00:28)

The use of the copula in these predicate constructions is obligatory when a speaker wants/needs to express aspect with the predicate adjective. The following examples show that the copula is grammatically conditioned; occurring in the aspect suited to its expression. In these constructions the copula acts as a type of receptive for the aspect morphology, a phenomena typologically common in Lealo Chinanteco (Dryer, 2006:228), Chacaltongo Mixteco (Dryer, 2006:237) and other Chatino languages. The following examples, taken from the database, contrast with the above copulaless examples 9.35, 9.33 and 9.32, respectively.

- (9.36) *nu waʔ^C ka^B xqʔ^B ja-jytqʔ^A*
 that already POT.be tasty tamale
 ‘that they would already be tasty the tamales’
 (TEO-2012-07-20-txt-SQS-RQF-HRV-jdm-01 12:37-12:39)

- (9.37) *nu ntjaa^E-ti ka^K=tiʔ^F*
 NOM lazy-just STAT.be=ESN
 ‘he who was a little lazy’
 (TEO-2011-07-30-txt-LQL-RQF-HRV-jdm-03 00:49-00:50)

- (9.38) *kaʔ^G neʔ nu mkwa^C tʔi^A xqʔ^G nu-nga^K loʔ^F*
 DEM person NOM COM.be sick then well and
 ‘...that person who became sick then well and...’
 (TEO-2011-01-10-txt-SQS-RQF-HRV-jdm-03 21:21-21:23)

Table 9.47 presents a full paradigm of the copula verb.

Table 9.47: Copula

Gloss/Aspect	COM	Set	PRG	Set	HAB	Set	POT	Set	STAT 3SG/3PL	Set
‘to be’	mkwa ^C	C	ntyka ^C	C	ntyka ^B	B	ka ^B	B	ka ^K	K

These copula forms in TEO express existence in specific manners which are appear to be partially determined by the kind of subject the verb chooses.

9.7.2 Nominal predicates

Nominal predicates in TEO are constructed with the use of the copula. Typologically it is common that copula forms are optional with predicate adjectives but obligatory with nominal predicates. In the majority of languages where copulas are encountered in predicate adjectives, the same occurs in nominal predicates (Dryer, 2006:230). In TEO the copula that occurs in the predicate adjectives is the same that occurs in the predicate nominals; however, in predicate nominals it is not conditioned grammatically but is obligatory. The following examples present these constructions in different verbal Aspects.

- (9.39) *?wi chaʔ^F ka^B skq ja^B*
 STAT.be thing POT.be *topil* no
 ‘it would have to be a *topil*, no?’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-04 03:07-03:08)

- (9.40) *xa^E mkwa^C sti-kla^{Bii} pre-xe^B-nte^K kaʔ^G*
 when COM.be your.grandfather president DEM
 ‘when your grandfather was community president’
 (TEO-2010-07-13-txt-GZM-RQF-HRV-jdm-03 06:48-06:49)

9.7.3 Predicates of location and position

As presented at the beginning of this section, in example 9.29, one of the ways for expressing location is with the use of the existential *ns?wi* ‘STAT.exist/live.’ The following

examples presents this and other ways of expressing location in TEO.

Example 9.41 presents a locational predicate constructed with the use of the existential *nsʔwi*.

- (9.41) *tlā^B nu nsʔwi ntē^B kla kqʔ^G ni^C*
 night that STAT.exist people elder DEM well
 ‘well the night that the deceased are there’
 (TEO-2011-08-26-txt-SQS-RQF-HRV-jdm 16:34-16:35)

9.42 utilizes the Potential Aspect of the existential verb *mdʔi* ‘to be/live’ to express the location of someone.

- (9.42) *kqʔ^G tyʔi ku xa^B-kqʔ^G ja^F-qʔ^E*
 DEM POT.be/live POT.eat then yes
 ‘yes he will be there eating then’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-02 05:05-05:06)

The following examples use positional verbs to express locational predicate constructions. 9.43 uses the Stative Aspect of the verb *mtkwa^B* ‘to sit’ to express the location of a small mound.

- (9.43) *ska ntʔ^F lyoʔ^F-ti ntkwa^B=rq^C jwʔ=ni*
 one mound little-just STAT.sit=it COM.say=3SG.RSP
 ‘a little mound was there she said’
 (TEO-2011-08-24-txt-JV-RQF-HRV-jdm-07 00:17-00:19)

Similarly, 9.44 uses the same positional verb to express the location of a cross in the countryside where the boundary lies between Teotepec and an adjacent community.

- (9.44) *tyʔo^I=rq sʔē^A ntkwa^B ksi^K ngʔa^G kqʔ^G ni^C*
 POT.come.out=1PL.INCL where STAT.sit cross green DEM well
 ‘well, we came out where there is a green cross’
 (TEO-2008-08-12-txt-puntos-WVM-HRV-jdm 01:54-01:56)

Example 9.45 uses the Completive Aspect form of the verb *mlyu*^G ‘to walk around’ to express the location of the speaker being in the church.

- (9.45) *kwa*^F-*nyʔa*^B *ni* *nskwa*^C=*ni* *xa*^E-*nu* ***mlyo***^G *na*^{ʔBi}
 DEM-like 3SG PRG.lie=3SG.RSP when COM.walk.around.1SG I
ni^{ʔF} *lya*^G
 inside in.church
 ‘that is how he was laying when I was in the church’
 (TEO-2010-07-22-txt-PQ-RQL-HRV-jdm 07:14-07:19)

Example 9.46 presents the use of positional verbs to describe the body of the community’s Christ figure in the church. This example uses the Stative Aspect of the verb *mkwa*^C ‘to be’ which contrasts with the use of the positional verbs in this example not used as existential predicates.

- (9.46) *yndla*^D=*ni* *ntykwa*^B *xkwa*^B, *xkwa*^B=*ni* *sʔe*^A *nskwa*^F
 PRG.arrive=3SG.RSP HAB.sit POT.lie POT.lie=3SG.RSP where PRG.lie
ka^K=*ni* *xo*^{ʔG}
 STAT.be=3SG.RSP then
 ‘he arrives seated laying, to lay where he always is laying then’
 (TEO-2011-06-21-txt-RLQ-RQF-HRV-jdm 12:55-12:57)

The last example (9.47) presents the use of the positional verb *mdo*^G ‘to stand’ to express being in a given location.

- (9.47) *ja*^B ***ndo***^G *na*^C *nyʔa*^E *kwa*^F *lwi*^B
 no PRG.stand ??? in.house DEM Luís
 ‘he is not there in the Luís’ house’
 (TEO-2011-01-10-txt-RQL-RQF-HRV-jdm 00:06-00:08)

The positional verbs are productive in creating predicate locative constructions. Table 9.48 presents a set of commonly used positional predicate forms. The verb selected in a given locational expression reflects the orientation of the object/animal and its form.

Table 9.48: Positional Predicates

Gloss/Aspect	COM	Set	PRG	Set	HAB	Set	POT	Set
‘sit’	mtkwa ^B	B	ntkwa ^B	B	ntyka ^B	B	tykwa ^B	X
‘lie’	mskwa ^C	C	nskwa ^C	C	nzkwa ^B	B	xkwa ^B	B
‘stand’	ndq ^G	G	ndq ^G	G	ndyq ^B	B	tyq ^B	B
‘to be thrown’	msti ^G	G	su ^G	G	xtyi	X	xtyi	X
‘sit cross legged’	mdʔi	X	nʔi	X	ndyʔi	X	tyʔi	X
‘be stuck’	mgʔa	X	ngʔa	X	ndyʔa	X	tyʔa	X

9.7.3.1 Existential predicates

Clauses with locative predicates as a clause type overlap, in part, with a category of clause that is distinct in several different languages, the existential clauses (Dryer, 2006:240). The existential verbs used in these kinds of constructions often include the stative aspect which is a phonologically simple and semantically bleached form of a verb stem.

Table 9.49 presents the existential predicates of Teotepec Chatino.

Table 9.49: Existential Predicates

Gloss/Aspect	COM	Set	PRG	Set	HAB	Set	POT	Set	STAT 3SG/3PL	Set
‘live/be’	mdʔi	X	ndʔi ^I	I	ndyʔi	X	tyʔi	X	nʔi	X
‘live’	ngwʔa	X	ngʔa	X	ndyʔa	X	tyʔa	X	ngʔa	X
‘live’	yʔo ^C	C	ndyʔo ^C	C	lʔo ^B	B	kʔo ^B	B	-	-
‘to exist/have’	yʔwi	B	ndyʔwi ^I	I	ndyʔwi	X	tyʔwi	X	nsʔwi	X
‘to exist/be in’	yʔwi	X	ndʔwi ^I	I	ndyʔwi	X	tyʔwi	X	ʔwi/ ngʔwi	X

Example 9.48 presents the use of the existential predicate *yʔwi* ‘exist’ for a non-human subject. This example uses the stative form - *nsʔwi*.

- (9.48) *chqʔ^G tyq^C-ʔa^E lo jycha nsʔwi ja^E-ni^C*
 because various-EMPH in illness STAT.exist then
 ‘because there are various kinds of illnesses’
 (TEO-2011-08-23-txt-HRM-RQF-HRV-jdm-05 02:54-02:56)

Example 9.49 presents the use of the existential for a singular subject in the Stative Aspect.

- (9.49) *nsʔwi nu tiʔ^F nsʔyu^H ʔin^E=rɔ^C*
 STAT.exist who still HAB.cut DAT=it
 ‘there is someone who can still cut it’
 (TEO-2012-07-16-txt-JV-RQF-HRV-jdm-01 10:14-10:15)

Example 9.50 uses the plural stative form in reference to an non-human subject.

- (9.50) *nu waʔ^C nsʔwi la^E tny^B*
 that already STAT.exist more money
 ‘that there is more money’ (in the community)
 (TEO-2011-08-31-txt-SS-RQF-HRV-jdm 11:46-11:49)

Example 9.51 uses the stative in reference to time.

- (9.51) *ja^B nsʔwi bra^K*
 no STAT.exist hour
 ‘there is no schedule’
 (TEO-2011-07-24-txt-RRS-RQF-HRV-jdm-06 00:27-00:28)

Example 9.52 presents the use of the existential *mdʔi* ‘to live/be’ for a human subject.

- (9.52) *ta neʔ mdʔi toʔ^A-laa^G kɔʔ^G*
 and people COM.live plaza DEM
 ‘a group of families that lived there in the plaza’
 (TEO-2010-07-15-txt-ZFV-RQF-HRV-jdm-09 02:28-02:30)

Example 9.53 presents another existential verb *yʔo^C* ‘to live,’ likewise for a human subject.

- (9.53) xa^E $nu-nga^K$, xa^E $y?o^F=y$ $?o^E$ $ne?-kla$
 when NOM-PRG.be, when COM.live=2SG.HON with person-elder
 $?i=y$ $s?ni$
 DAT=2SG.HON before
 ‘when well, when you lived with your parents before...’
 (TEO-2011-08-31-txt-SS-RQF-jdm-01 11:37-11:39)

9.7.3.2 Existential predicates to express possession

TEO uses existential predicates to express possession. Example 9.54 uses the existential to express that a given person has a son.

- (9.54) $lo?^F$ $n?i$ $snye?=re?$ $wa?^C-ni^C$, nu na^I jlo^B-re^K
 and STAT.exist/live child=3SG already-now that HAB.name Flores
 ‘and he has a son now that is named Flores’
 (SMC-2010-06-29-txt-GC-RQL-HRV-jdm 04:05-04:07)

Example 9.55 uses the existential to express a physical attribute or characteristic of an inanimate object - $n?a$ ‘house,’ expressing that that house possesses wood and is made wood. This is done in conjunction with the use of the copula verb.

- (9.55) $n?a$ $ns?wi$ $ka?^E$ ti $ka^K=rq^C$
 house STAT.exist board just STAT.be=it
 ‘a house that is made only of wood’
 (TEO-2012-07-16-txt-JV-RQF-HRV-jdm-04 00:12-00:13)

Example 9.56 uses the existential verb to express that someone does not possess something.

- (9.56) ja^B $y?wi$ $sna^G=rq?$
 no COM.exist *huaraches*=3PL
 ‘they did not have *huaraches*’
 (TEO-2011-08-24-txt-JV-RQF-HRV-jdm-02 04:53-04:53)

Example 9.57 uses the existential to express age stating how many years a cow has.

- (9.57) *nu nsʔwi sna^J yjə^A nu kjoʔ^E syaʔ-ti jwɨ-rg^B*
the.one STAT.exist three years the.one fat once-just COM.say=1PL.INCL
‘the one that is three years old, the one that is totally fat we say’ (reference to a cow)
(TEO-2011-09-22-txt-MZF-RQF-HRV-jdm-06 07:49-07:51)

9.8 Conclusion

This chapter has outlined the verbal inflectional morphology and described some of the verbal constituents of Teotepec Chatino. It outlined the segmental Aspect allomorph system and the Aspect tone system for organizing verbal Aspect and subject inflectional categories on verbs. These two systems appear to work independently of one another; however, continued work on where and how they do overlap would be useful for understanding historical changes that have occurred in the syllable reducing Eastern Chatino dialects. Aspectual mood was outlined and examples of the different kinds verbal aspects were given. This chapter also outlined some of the stem alternating derivational morphological processes that exist in the language for deriving transitive and causative verbs from intransitive stems. This is a useful valency increasing device for increasing the number of arguments a verb may take. The formation of verbal causatives was also outlined in this chapter, describing the derivational, morphological and periphrastic processes for creating these types of verbs. Existential predicates were outlined and described. This included sections on non-verbal predicates, predicate adjectives, nominal predicates and predicates of location and position. There is much work to be done on the description of the Teotepec Chatino verbal system. I hope that this initial description will serve for continued and future work on the language.

Chapter 10

Conclusion

This dissertation presents an analysis of aspects of the phonology and morphology of Teoteppec Chatino. It was written using carefully chosen elicited examples and examples from naturally occurring recorded speech, which makes this work valuable because it not only documents the language, but in doing so, considers the speechways of a community.

This work answers questions regarding the non-final syllable reduction of nearly all polysyllabic words in this language. Significant differences in the tone and verbal systems and lexical differences in basic grammatical morphemes, like pronouns, creates a situation of varying degrees of intelligibility with Eastern Chatino varieties. This grammatical description informs research on these synchronic differences and historical relationships.

This description makes an important contribution to the study of tone and tone languages, the study of Otomanguean linguistics, Zapotecan languages and linguistic typology. This dissertation includes a comprehensive description of the Teoteppec Chatino tone system through the positing of nine basic tones that constitute fourteen tone sequences based on the linking of delinked tones and the linking of underlying unlinked tone sequences. These tones demonstrate a typologically unusual and extensive set of contextual variations that include long distance sandhi patterns elaborated by the existence of intervening toneless stems. Until recently, there has been no grammatical description that documents a Chatino

language in the context of a full account of its tones. This dissertation joins that work and also makes an important account of the role tone plays in the morphology of the language through the demonstration of the tone changes that occur in inalienably possessed nouns, non-verbal predicates and the verbal system.

The documentation and grammatical description of Teotepec Chatino can also provide insight to native speakers about their language. The publishing of culturally relevant texts and materials related to the grammar provide legitimacy to a language that has long existed in a historically hostile political context. This work is useful to researchers and individuals interested in the Chatino language and culture. This dissertation is by no means the final word on the language and should be considered a step towards a deeper understanding and broader analysis of the language. Much of this dissertation sets the stage for ongoing research. Continued investigation and analysis will expand and fine-tune this work which should be considered as part of an ongoing investigation that will lead to the composition of a full-fledged descriptive grammar of the language.

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Vita

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