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The phonology and morphology of Filomeno Mata Totonac

by

Teresa Ann McFarland

A dissertation submitted in partial satisfaction of the requirements for the degree of

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The phonology and morphology of Filomeno Mata Totonac

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Abstract

The phonology and morphology of Filomeno Mata Totonac

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Teresa Ann McFarland

Doctor of Philosophy in Linguistics

University of California, Berkeley

Professor Sharon Inkelas, Chair

This dissertation constitutes a descriptive grammar of the phonology and morphology of Filomeno Mata Totonac that highlights typologically unusual phenomena of theoretical interest. Filomeno Mata (FM) Totonac is a member of the Totonac-Tepehua family (eastern Mexico), spoken in and around the municipality whose name it borrows in the state of Veracruz. It is a polysynthetic, highly agglutinating, head-marking variety with VSO word order and complex verbal morphology that has not previously been described by linguists. This grammar is based on fieldwork conducted by the author between 2003 and 2009.

Some of the grammatical phenomena described herein which may be of interest to theoreticians and typologists include:

- Glottalization or aspiration and vowel devoicing to mark prosodic boundaries
- Postlexical nasal epenthesis at word-word and clitic-stem boundaries between a vowel and a stop or affricate
- Stress shift as a marker of interrogative utterances, which may occur on the verb or other sentencial elements
- A large set of ideophones marked by reduplication and sound symbolism in the categories of sound and manner of motion adverbials, colors, odors/flavors, and descriptive adjectives
- Complex inflectional combinatorics that feature long distance blocking, compositionality of certain person agreement markers, and glottalization and suppletion to mark second person subjects
- Typologically unusual free variation in the ordering of verbal morphemes in a middle zone of affixes on either side of the root, without scopal or semantic significance; mostly involving derivational affixes, but also including one inflectional prefix

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- A gradient rather than categorical distinction between clitics and affixes, with the four relevant tests often giving conflicting results
- An unusually large number of object-related deverbal nominalization constructions, including agentive, locative, instrumental, purpose, and result nominalizations, as well as an unusual deverbal 'ought to' construction.

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List of Maps and Tables

List of Abbreviations

1exc	First person subject plural exclusive
1OBJ	First person object
1pl	First person plural subject or object
1POSS	First person possessive
1SUB	First person subject
2/1	Prefix marking 2nd subject and 1st plural object
2OBJ	Second person object
2POSS	Second person possessive
2SUB.pl	Second person plural subject
2SUB.sg	Second person singular subject
3OBJ	Third person object
3POSS	Third person possessive
A	Agent
ADJ	Adjective, Adjectivizer
AMB	Ambulative
APT	Apart
ASS	Associative
BACK	Back-related BPP
BELLY	Belly-related BPP
BPP	Body part prefix
C	Consonant
CAUS	Causative
[cg]	Constricted glottis feature
CHEST	Chest-related BPP
CNTR	Counterexpectational
COM	Comitative
DAT	Dative/Benefactive/Malefactive
DES	Desiderative mood
DIST	Distributive
ep.	Epenthetic segment(s)
EYE	Eye-related BPP
FACE	Face-related
FM	Filomeno Mata
FUT	Future tense
HAB	Habitual/Indefinite object
HAND	Hand-related BPP
HEAD	Head-related BPP
HID	Hidden
IMPF	Imperfective aspect
INC	Inceptive/Middle voice
IND.O	Indirect Object/Habitualizer
INST	Instrumental
INT	Negative intensifier
IPA	International Phonetic Alphabet

IRR	Irrealis mood
ITER	Iterative
LEG	Leg-related BPP
LOC	Locative
MEAN	'Meanwhile'
MID	Middle voice/Inceptive
MOUTH	Mouth-related BPP
MV	Middle voice
NC	Numeral classifier
NECK	Neck-related BPP
NEG	Negation
NOM	Nominalizer
NOSE	Nose-related BPP
NP	Noun phrase
O	Object
OBJ.pl	Plural object
OPT	'Having other options'
P	Prefix position
PART	'Partially'
PASS	Pass-by
PAST	Past tense
PFT	Perfect aspect
PFTV	Perfective aspect
PL	Pluralizer
pl	Plural
POINT	'At the point of'
POT	Potential mood
PROG	Progressive aspect
PROG2	Progressive aspect, 2nd person subject allomorph
PROG3	Progressive aspect, 3rd person plural subject allomorph
PURP	Purposive
REAR	Rear-, bottom-, butt-related BPP
REC	Reciprocal
REF	Reflexive/Indefinite subject
RT	Round-trip: Go, do X, return
S	Subject; Suffix position
SHO	Shoulder-related BPP
sg	Singular
TAM	Tense, aspect, mood
TEM	Temple-related BPP
TOT	Totalitive
TRAN	Transitivizer
UR	Underlying representation
V	Vowel
VSO	Verb-subject-object
YA	Already

Chapter 1 Introduction

1.1 Introduction. This dissertation constitutes a descriptive grammar of the phonology and morphology of Filomeno Mata Totonac that highlights typologically unusual phenomena of theoretical interest. Filomeno Mata (FM) Totonac is a member of the Totonac-Tepehua family (eastern Mexico), spoken in and around the municipality whose name it borrows in the state of Veracruz, on the border with Puebla (see Map 1.1). It is a polysynthetic, highly agglutinating, head-marking variety with complex verbal morphology that has not previously been described by linguists. This grammar is based on fieldwork conducted by the author between 2003 and 2009.

Map 1.1 Filomeno Mata, Mexico

1.2 Totonac-Tepehua family. The Totonac-Tepehua language family has the third largest speaker population of the indigenous languages of Mexico, after Uto-Aztecan and Mayan. Languages of this understudied family are currently estimated to be spoken by over 200,000 people in the states of Veracruz, Puebla and Hidalgo in eastern Mexico (Kondrak et al 2007). The Totonac-Tepehua family is now widely considered to have no genetic affiliation with any other language family, although Greenberg (1987) proposed classifying it with Penutian, and it was earlier thought to be related to Mayan (see Campbell & Kaufman 1980 for the history and debunking of this hypothesis). It is divided into two main branches. The Tepehua branch

comprises three languages, Huehuetla, Pisaflores, and Tlachichilco Tepehua. The Totonac branch has been posited to comprise four languages: Misantla, Papantla, Sierra and Northern. However, with the possible exception of Misantla, these divisions are more likely to be sub-branches, each made up of various languages and dialects. The relevance of the Sierra-Northern division to the highlands varieties is unclear, since some highland varieties (e.g., Filomeno Mata) seem to have elements of both branches. More research is needed to determine the genetic affiliations of the dialects in this region and the larger groupings.

Filomeno Mata Totonac is a distinctive highlands variety that exhibits characteristics of both Sierra and Northern. The speakers refer to it as *liisantutumínku[1]*, approximately 'the speech of Santo Domingo', employing the older historical name for the village. The impression of most Totonac-Tepehua scholars (as expressed at a meeting convened by the Mexican Instituto Nacional de Lenguas Indígenas in September 2006), based on the information available, is that FM Totonac differs significantly from other surrounding varieties of Totonac, and it is informally considered by students of Totonac to be likely to be a separate language. Filomeno Mata-Coahuitlán Totonac is listed by Ethnologue as a separate language (www.ethnologue.org/show_language.asp?code=tlp); however the Coahuitlán variety differs enough from that spoken in Filomeno Mata to make this categorization questionable. Whether FM Totonac is a dialect or a language, and which branch it belongs in, are questions to be answered by further comparative research, to which this dissertation will contribute. I will not try to answer the question here, and will alternate between the neutral term 'variety' and the unproven term 'language' to refer to FM Totonac.

1.3 Sociolinguistic sketch. Filomeno Mata is a mountainside village in the state of Veracruz, Mexico that gives its name to the variety of Totonac spoken there. It lies on the border with the state of Puebla, at the end of the road that winds up to the top of the mountain. Filomeno Mata has been quite isolated until recently; it was only about 23 years ago that it was linked to the outside world by a rough dirt road and electrical and phone lines. When I began my fieldwork in 2003, it still appeared cut off from the surrounding majority society. Of the 10-14 thousand inhabitants (per the State of Veracruz government website), approximately a third are monolingual in Totonac, another third are Totonac speakers with limited Spanish skills, and most of the final third of the population are bilingual in Spanish and Totonac (these figures are based on my informal poll and personal observations). Virtually all children learn the language at home. Most men and women wear traditional dress and engage in traditional occupations. On my last visit in 2008, a paved road had finally been completed, and signs of change were suddenly evident everywhere: crates of produce from California and Chile, courtesy of the globalized market; Internet cafes along the main street; and much more Western clothing. In spite of the present robustness of the language community, a tipping point will probably be reached fairly

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[1] Throughout this dissertation I will transcribe Totonac words with the Americanist version of the IPA, which differs from the latter in the symbols *š* instead of *ʃ*; *č* for *tʃ*; and the apostrophe *'* rather than *ʔ*. Except when specifically marked within square brackets ([ ]; for narrow phonetic transcriptions) or within slash marks (/ /; for phonemic transcriptions), my renderings will show an intermediate level of phonetic representation. See §2.1.1 for further detail on notation conventions.

soon, and this language could near extinction within a generation or two (compare with Lam 2009 and Beck & Lam 2008 on a nearby case of language loss).

According to the mayor of Filomeno Mata in 2003, Elías Vásquez López (personal communication, 2003), his was the third poorest municipality in Mexico. The town still has no running water or sewage services, only intermittent electricity and phone service, very limited medical care, and no banks or grocery stores. Coffee-growing provided the main livelihood until recent decades, but since the collapse of that market in the 1980s, most adults survive by subsistence farming. Most children work gathering firewood or carrying water from the wells, or help their fathers in the fields.

Virtually all the children in the village learn FM Totonac as a native language, and speak it exclusively until they enter school. The town has four elementary schools, one of which is bilingual. In the bilingual school, only some of the teachers are Totonac-speaking; although reading and writing Totonac are taught, the goal seems to be to transition the students to Spanish instead of maintaining bilingualism. Many inhabitants I have spoken to describe sitting in the back of the non-bilingual classroom for the first two or three years, understanding nothing, before they finally began to comprehend and then speak Spanish. Most children do not attend school after the 6th grade, and many girls do not even complete primary school. Secondary and preparatory schooling is available only via teleclasses, and only a small minority participate, although that number seems to be increasing.

As peasant famers, most adults who remain in the village find little need for Spanish after their school years. Young people who have gone on to secondary or preparatory school, or workers who have had some experience outside the village (as maids or laborers in Mexico City, for example) are more solidly bilingual. Since the advent of electricity in the town, more and more people watch Spanish-language TV. The city loudspeakers, used to disseminate information throughout the town, issue all messages in Totonac and Spanish.

Most middle-aged and older adults employ the morphological resources of the language to name new items, and for the most part use only loan words from Spanish that were borrowed in the early years after the Conquest, like *wákaš* 'cow' and *puusikúlan* 'church'. Younger speakers with more education or more knowledge of the outside world incorporate Spanish borrowings into their speech far more frequently than older village inhabitants. Many people spoke with sadness and some anger of young adults who leave the village to work and return pretending to no longer understand the speech of their parents, communicating only in Spanish. It is unknown how often this situation actually arises. I never met anyone in whose family it had happened, but it is a widely believed anecdote that captures the town's fears of the trend toward language loss.

1.4 FM Totonac morphosyntactic sketch. As noted, FM Totonac is an agglutinating, polysynthetic, mostly head-marking language, with pro-drop and zero-copula. Its word order is flexible, but generally VSO, with Adjective-Noun and Possessed-Possessor. It has no case marking (with the possible exception of a locative case; see §3.3.5.1). The verb structure is position class, with evidence of an (apparently nascent) hierarchical order. There are 19 preverbal and 15 post-verbal slots, with gradient rather than categorical distinctions of strength

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of attachment to the stem (i.e., no clear affix-clitic boundaries). Tense, aspect, mood, subject and object are obligatorily marked on verbs in a complex system of inflection that features realizational morphology to mark 2nd person, long distance blocking (suppression of one morpheme by another with which it is semantically compatible), and multiple exponence. A large number of derivational morphemes exist, many of which may be attached to most stems to give verbs of transparent semantics. Of particular note is the cross-linguistically unusual free order of affixation of many derivational morphemes. Valence-increasing operations are remarkably productive; every verb in the language may be causativized, including the ditransitives, and most may undergo derivation with various applicatives. Part of the genius (to use Sapir's term; Sapir 1921:222) of this language is its requirement of deriving verbs with body part prefixes whenever a body part or a metaphorical extension of a body part is relevant to the action; thus one 'lip-kisses' another, 'back-whips' a burro, 'face-paints' a house, 'belly-washes' a pot. Only about 15% of nouns are monomorphemic, with many of the rest derived from verbs through a large number of different deverbal constructions. FM Totonac has a broad range of numeral classifiers.

Many of the traits proposed as defining the Meso-American linguistic area (Campbell, Kaufman, Smith-Stark 1986) are characteristic of FM Totonac: non-verb-final syntax; lack of switch-reference; nominal possession of the form POSS-NOUN1 NOUN2 (§3.3.2); relational nouns; a vigesimal number system (§3.5.1); certain semantic calques (e.g., *xuukí-luuw'ą* 'deer-snake' for 'boa constrictor'; *maka-pišnį* 'hand-neck' for 'wrist'); incorporation of body part nouns (§5.4.2.5); derivation of a locative from a body part noun (§5.4.2.4); and numeral classifiers (§3.5).

Although nothing has previously been published on Filomeno Mata Totonac, many works on other varieties of Totonac-Tepehua languages are helpful in understanding its grammar. Among these are recent articles on the vocabulary, morphosyntax and acquisition of the nearby dialect of Upper Necaxa Totonac (Beck 2008, Beck 2007a, Beck 2007b, Beck 2007c, Varela 2007, Beck 2006a, Beck 2006b, Varela & Klimt 2006, Beck 2004, Beck 2003, Beck 2001, Beck 2000); on the morphosyntax of Misantla Totonac (MacKay & Treschel 2008a, MacKay & Treschel 2005, Treschel & MacKay 2003); a grammatical sketch of Huehuetla, Puebla Totonac (Troiani 2004); a vocabulary and texts of El Tajín Totonac (Williams García & García Ramos 2001, García Ramos 2000); a grammar of Huehuetla Tepehua (Kung 2007); and a grammar of Pisaflores Tepehua (MacKay & Treschel forthcoming). MacKay & Treschel have also published works on the Totonac-Tepehua family (MacKay & Treschel 2008b, MacKay & Treschel 2006), and a series of bilingual texts for children in Totonac-Spanish and Tepehua-Spanish (Treschel & MacKay 2009, Treschel & MacKay 2007, Treschel & MacKay 2006a, Treschel & MacKay 2006b, Treschel & MacKay 2005). Important earlier publications are cited throughout the dissertation.

1.5 Topics of theoretical and typological interest. The phonology and morphology of FM Totonac are eminently worthy of study for their own beauty and complexity, as well as for the light their analysis may shed on matters of typological and theoretical significance. Some of the more interesting and unusual grammatical aspects to be described in this dissertation are highlighted in the following sub-sections.

1.5.1 Glottalization/laryngealization. The phonemic inventories of the Totonac-Tepehua languages vary in interesting ways in their inclusion of the glottal stop, ejective stops, and laryngealized sonorants and vowels (Levy 1987:59-65). Glottalization and/or laryngealization are also morphological markers of 2nd person subject in these languages. FM Totonac has its own unique place in the range of possibilities available in the family: it seems to be in the process of losing the glottal stop and glottalized consonants word-internally and relegating them to the role of prosodic boundary markers (§2.6.5.3). Even morphological glottalization marking a 2nd person subject fails to be realized unless it occurs at a prosodic boundary (e.g. word-finally), thus for example, *laaqtsiníit'ą* 'you have seen it' vs. *laaqtsiníita xúuk'i* 'you have seen the deer'.

1.5.2 Nasal epenthesis. At clitic-stem and word-word boundaries in FM Totonac that bring together a vowel and an oral stop or affricate, a nasal homorganic with the stop (or stop portion of the affricate) is regularly inserted, for example *tii* 'who' + *taqałtawaqá* 'they study' becomes *tíi n taqałtawaqá* 'those who study' (§2.6.5.2). The phenomenon may also be analyzed as the appearance of prenasalized segments in particular contexts (see McQuown 1940: §2.2.2, 4.1, 4.2, 4.6 for such an interpretation for Coatepec Totonac); in either case, it is rather unusual.

1.5.3 Sound symbolism and ideophones. FM Totonac has a large number of ideophones in four categories: sound and manner of motion adverbials (such as *łqonqł łqonqł* 'sound of snoring', *šun šun* 'something rushes by quickly'); colors (e.g., *snapápą* 'white', *tsutsóqo̦* 'red'); odors/flavors (e.g., *skunk* 'odor of egg, fish, dog, or blood'; *łqonq* 'odor of beef or mutton'); and descriptive adjectives (such as *slamáma* 'shiny', *lasása* 'thin')(§2.5). Many ideophones feature sound symbolic phonemes that occur in three intensity series: a fricative series: *s, š, ł*; a mostly affricate series: *t, ts, tl, č*; and a velar-uvular stop series: *k, q* (all common series cross-linguistically; see Nichols 1971) (§2.8). The sound symbolic series are also found in sections of the normal lexicon, and have an augmentative/diminutive function. However, synchronically there is no clear directionality in intensity in any of these series (see McFarland, to appear).

1.5.4 Inflectional combinatorics. The inflectional system of FM Totonac is quite complex; modeling it presents difficulties of approximately the same level as the Georgian system (Gurevich 2009). Phenomena of interest include the presence of both subject and object affixes on either side of the root (thus *kaa-* object plural and *ta-* 3rd subject plural prefixes, *–ni* 2nd object and *–wą* 1st plural suffixes); marking of 2nd person singular subject by the glottalization of the final consonant of the stem and suppletion of certain roots and derivational morphemes; long distance blocking of all second person subject morphology (affixes, suppletion and glottalization) by a first person plural marker; the compositionality of certain person agreement markers, such as the first person object plural, which requires *kin-* 1OBJ, *kaa-* OBJ.pl, and *–ni̦* 2OBJ with a third person subject, and *kin-* 1OBJ, *laa-* 2/1, and *–wą* 1pl when the subject is second person.

1.5.5 Variable affix order. Another very unusual phenomenon cross-linguistically is the robust ability of certain verbal affixes in FM Totonac to occur in variable order with no scopal or semantic difference (§6.2). For example, *kii-kaa-lakakiɬníi* (RT-OBJ.pl-scold) 'he goes to scold them and returns' is grammatical and semantically identical with *kaa-kii-lakakiɬníi* (OBJ.pl-RT-scold), the latter with the morphemes in the expected order. Both prefixes and suffixes are divided into three zones based on ordering possibilities: a fixed order zone adjacent to the root, a middle zone of variable ordering, and another outermost fixed zone. The variably orderable affixes in the middle zones on either side of the verb root are mostly derivational, but include one person agreement prefix, as in the example above. Adjacent pairs of affixes may occur in reversed order, and some affixes farther apart may be reordered. For all affixes there is a most frequent order, which is the 'standard' order displayed in Appendix B and in all verb structure charts in this dissertation.

1.5.6 Clitics vs. affixes. In FM Totonac it is often difficult to claim a meaningful distinction between clitics and affixes. There are four diagnostics relevant to the language for determining the status of a morpheme: whether it is selective in the part of speech to which it attaches; whether it can carry primary stress; whether it is separated from the stem by a regular process of nasal epenthesis, which occurs at word-word and clitic-stem boundaries; and whether it occurs outside all affixes. Several morphemes are diagnosed inconsistently by these tests (§6.5.3.2). For example, the aspectual morpheme *–ku'ų* appears to be an enclitic since it can attach to verbs, nouns and adjectives, is subject to nasal epenthesis, and always takes final position, but it also always takes primary stress. A set of deictic morphemes are separated from the stem by nasal epenthesis, but can be stressed and occur inside person and aspect markers that meet all the tests for affixes. This situation supports recent research by Bickel (2009), who concludes that "Typologies based on 'affixes' or 'clitics' systematically underestimate true diversity." It is more sensible in FM Totonac to use a gradient scale of separability from the root to evaluate verbal morphemes, rather than forcing them into the 'clitic' and 'affix' categories. The large number of affixes and clitics are listed in Appendix A.

1.6 Archiving of materials. All materials relating to FM Totonac collected during my fieldwork will be permanently archived at the University of California, Berkeley. The ten notebooks transcribing elicitation sessions and narratives will be held by the Survey of California and Other Indian Languages, and the approximately 200 microdisks of recordings by the Berkeley Language Center. Access will be unrestricted.

1.7 Structure of dissertation. The rest of this dissertation is structured as follows: Chapter 2 describes the phonology and morphophonology of FM Totonac; Chapter 3, the nominal morphology, covering nouns, pronouns, demonstratives and adjectives; Chapter 4, the inflectional verbal morphology; Chapter 5, the derivational verbal morphology; and Chapter 6, the position class and hierarchical structure of the verb.

Chapter 2 The phonology of Filomeno Mata Totonac

2.1 Introduction. This chapter presents an overview of the phonology of Filomeno Mata Totonac, including the phoneme inventory of the language; the allomorphs and distribution of each phoneme; phonotactics and syllable structure; general phonological constraints; the stress system; sound symbolism; and Spanish loanwords. A large number of phonological processes are morphologically conditioned. While it is difficult to separate the interactions of the two components of the grammar, the phonological aspects of each are briefly covered in this chapter, with further discussion of the morphological details provided in Chapters 4 (inflection) and 5 (derivation). First, I will describe the notation conventions used and define the word in this language.

2.1.1 Notation conventions. Throughout this dissertation I will transcribe Totonac words with the Americanist version of the IPA, which differs from the latter in the symbols *š* instead of *ʃ*; *č* for *tʃ*; and the apostrophe *'* rather than *ʔ*. I have chosen to represent long vowels by repeating the vowel symbol, for example, *aa*. Except when specifically marked within square brackets [ ] for narrow phonetic transcriptions, or within slash marks / / for phonemic transcriptions, my renderings will show an intermediate level of phonetic representation. This level of transcription generally fails to note: vowel centralization; velar and uvular nasal place assimilation; optional voicing of obstruents intervocalically; and aspiration of consonants. Note that the *ʒ* allophone cannot take an accent mark because of computer limitations. Since it only occurs under stress, its presence indicates the location of primary stress in the word.

Some of the examples include the source of the information cited, with the notebook number, page number and speaker's initials within parentheses, e.g., (9,160 jsf). The notebooks are chronologically numbered from 1 to 10, most of them having 160 pages.

2.1.2 Word definition. FM Totonac is a big-verb language, with verbal forms often containing five to seven morphemes, and sometimes several more. Because of the complexity of words in the language, a definition of the concept 'word' is in order. I will use a simple definition: a word is a unit of speech with only a single primary stress e.g., *ka-lii-taa-qaɬ-čiwíi-nan-ṭi* 'talk to her about it' (9,40 jsf).

2.2 Phoneme Inventory. The phoneme inventory of FM Totonac is a fairly standard one for a Totonaco-Tepehua language (see Levy's (1987:14-17) summary of Totonaco-Tepehua phonemic inventories). FM Totonac has 17 native consonants and three native vowel qualities, with a length distinction bringing the number of vowels to six. The phonemes are displayed in Tables

2.1 and 2.2. In FMT the feature [+voice] is limited to sonorants; all native obstruents are voiceless.

Table 2.1 Consonant inventory

	Labial	**Coronal**	**Dorsal**	**Glottal**
Stops	p	t	k q	ʔ
Affricates		ts č tl		
Fricatives		s š ɬ	x	
Nasals	m	n		
Oral sonorants		l	y w	
Taps		(ɾ)		

Table 2.2 Vowel inventory

i ii		u uu
(e)		(o)
	a aa	

Besides the core phonemes, several marginal phonemes found primarily in loanwords (those enclosed in parentheses in Tables 2.1 and 2.2), occur with a very limited distribution. The tap *ɾ* is found only in loan words borrowed from Spanish, a few ideophones, and in the verbal ITERATIVE suffix *–paɾa*. Mid-vowels *e* and *o* occur as phonemes only in loan words borrowed from Spanish and from other indigenous languages. More recent loans from Spanish make use of additional consonant phonemes not noted in the tables: *b, d, f.* Such loans are rare in the speech of my primary consultants. The phonology of loanwords is discussed in §2.9.

2.2.1 Distinctive features. The distinctive features required to define the phonological processes of the language are given in Tables 2.3 and 2.4. Voicing is non-distinctive; all obstruents are [-voice].

Table 2.3 Consonant features

	p	t	ts	s	č	š	tl	ł	k	x	q	m	n	l	w	y	ʔ
Root																	
+consonantal	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
+sonorant												x	x	x	x	x	
+continuant			+/-	x	+/-	x	+/-	x		x		x	x	x	x	x	
+nasal												x	x				
Place																	
Labial	x											x			x		
Coronal		x	x	x	x	x	x	x					x	x		x	
+anterior		x	x	x				x									
+lateral							x	x						x			
Dorsal									x	x	x				x		
+back											x						
Glottal																	x

Table 2.4 Vowel features

	i	a	u
Root			
+syllabic	x	x	x
+high	x		x
+back			x
+round			x
+low		x	

2.2.2 Typological comparison. The FM Totonac phoneme inventory departs in several ways from what is typical for Middle American languages. According to Yasugi's (1995) survey of the phonological systems of 174 languages spoken from the US-Mexico border to the south of Panama, the preferred set of consonants in this area is *p, t, ts, č, k, ʔ, s, š, h, m, n, l, r, w* and *y* (Yasugi 1995:57). FM Totonac substitutes *x* for *h* and adds the lateral fricative *ł*, the lateral affricate *tl*, otherwise found only in Nahuatl and Tequistlatec (Yasugi 1995:62), and *q*, found in

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only five languages outside the Totonaco-Tepehua family (Yasugi 1995:60). Only 21% of the languages in Yasugi's sample limited stops to voiceless only. Totonaco is the only Meso-American family to have a three-vowel system, although in the larger area covered by his survey Yasugi noted two other families, Yuman and Chibchan, with a similarly limited vowel system.

2.2.3 Final consonants, glottal features, and devoiced vowels. Before any discussion of phonemes can take place, an interesting set of phenomena in FM Totonac must be noted. Across the Totonaco-Tepehua family, the various varieties show differences in the retention of final unstressed vowels. Some of the languages tend to retain final vowels, others have lost many of them. Filomeno Mata shows an intermediate tendency, with many words ending in voiceless vowels or in consonants that contain voiceless vowel features in their release. This is heard in citation forms and when the preceding consonants are by regular rule prosodically aspirated or glottalized pre-pausally. These vowel features in the consonant release become fully vocalized in connected speech, e.g. *lakastáp^hu̯* 'eyes', but *lakastapu škayíw'a̯* 'green eyes'. This describes the majority of reflexes of words ending in final unstressed vowels. However, a relatively small number of words, such as *kúyu* 'armadillo' and *túwa* 'difficult', have final unstressed vowels which do not reduce in the same prosodic contexts. *stay'a̯* 'squirrel' and *kiw'i̯* 'tree'.

An analysis is necessary to explain the differing behavior in FM Totonac of the two types of finaI vowels: those which are voiceless, often delete completely under suffixation and in rapid speech (especially following fricatives and sonorants), and allow the postlexical prosodic process of prepausal aspiration or glottalization of the preceding 'final' consonant (see §2.6.5.3); and full, voiced vowels that do not reduce in any context and protect the preeeding consonant from prepausal prosodic phenomena. It would be possible to call the words with non-reducing final vowels lexical exceptions to the vowel reduction and prosodic spread/constricted glottis processes. I prefer to analyze these vocalic release features or voiceless vowels as latent segments in the sense of Zoll (1994), that is, as lacking a root node.

> "The term "latent segment" should be considered to mean floating features which
> materialize as full segments in contexts determined by the grammar." (Zoll 1994:7).

The notation convention used in this dissertation will be to transcribe such latent vowels as voiceless both phonetically and underlyingly to distinguish them from the fully voiced final vowels. Again, postlexically, these latent vowels appear as fully voiced vowels in connected speech when they do not occur at a prosodic boundary (see §2.6.5.1 on postlexical vowel node epenthesis).

Synchronically in FM Totonac, all final consonants must have associated floating V features, except nasals, and sonorants in sonorant-vowel suffixes and in clitics whose vowel completely deletes in certain contexts, specifically –*ni̯* and –*wa̯* (see §2.6.4.4.3.1). It is lexically determined whether nasal-final words release into latent vowels. The constraint against full vowels following consonants with associated spread or constricted glottis features is seen in the fact that only consonants followed by latent vowels may be phonetically aspirated or glottalized at prosodic boundaries and in citation form. At the same time, latent vowels only appear following a consonant with glottal features or aspiration. Latent vowels and aspirated/glottalized consonants

seem to be mutually necessary for perceptibility. The process of prosodic boundary marking is discussed in §2.6.5.3, and is the basis of the spread or contricted glottal features marked on final consonants in the citation forms given throughout this thesis.

2.3 Consonant phonemes and allophones. This section provides information on the consonant phonemes of FM Totonac, their allophones, and their distribution within words and syllables. It begins with the various categories of obstruent—stops, affricates and fricatives, followed by the nasal and approximant sonorants. It should be noted that the obstruent and sonorant classes differ systematically in two ways not associated with [±sonorant]. First, the obstruents are all [-voice], the sonorants [+voice]. Also, the obstruents have a much greater ability to form initial and final consonant clusters, while the sonorants have a more limited occurrence, especially in coda clusters.

2.3.1 Stops. All the plain supralaryngeal stops in FM Totonaco can occur syllable-initially. They also occur syllable-finally, with the caveat that in this position they are followed by voiceless vowel features in their release when they are prosodically aspirated or glottalized (see §2.2.3). Final stops are generally aspirated in citation form and prepausally (see §2.6.5.3 for details). The plain supralaryngeal stops can appear with fricatives in initial and final consonant clusters as detailed in §2.5.1-2. Optionally, all are occasionally voiced between voiced segments. The phoneme ʔ behaves differently from any of the other stops and is described at the end of this sub-section. The dorsal stops, along with the coronal fricatives, are the primary sound symbolic segments in the language (see §2.8). The following sections decribe each phoneme and provide examples showing the phoneme in different possible positions within the syllable and word. These examples show full phonetic detail.

2.3.1.1 /p/. The phoneme /p/ is a voiceless bilabial stop that is lightly aspirated word-initially, and optionally voiced between voiced segments. It is prosodically glottalized or heavily aspirated prepausally.

1) Examples of /p/

[pʰášn̥i̥]	'pig'	[pʰišlóqotʰi̥]	'throat'
[pʰuskáatʰi̥]	'woman'	[nípši̥]	'squash'
[snapápʰḁ]	'white'	[kápsnatʰi]	'paper'
[spun]	'bird'	[špatá]	's/he mashes it'
[ɬpaw']	'type of avocado'	[čimpš]	's/he blinks'
[maqlíbn̥i̥]	'lightning'	[katap'ḁ]	'lie down!'

2.3.1.2 /t/. The voiceless dental stop, /t/, is lightly aspirated word-initially, optionally voiced between voiced segments. It is prosodically glottalized or heavily aspirated prepausally. It occasionally participates in sound symbolic series (see §2.8).

2) Examples of /t/

[tʰamaawá]	's/he buys it'	[tʰíyatʰi̥]	'land'
[tʰúloqʰe̥]	'rooster'	['aqsiitni'i̥]	'barber'
[skátkutʰu̥]	'dragonfly'	[škúutni̥]	'acidic plant'
[stipíŋkʰi̥]	'soft'	[štútʰu̥]	'scar'
[ɬtatá]	's/he sleeps'	[waayánts'ḁ]	's/he already eats'
[šwaditatsán]	'molar'	[katlaqtʰi̥]	'play!'

2.3.1.3 /k/. /k/ is a voiceless velar stop that is lightly aspirated word-initially and optionally voiced between voiced segments. It is prosodically glottalized or heavily aspirated prepausally. The dorsal stops can form codas with nasals as well as with fricatives. Because the first person subject is marked by prefix *k-*, the segment *k* can also combine tautosyllabically with any consonant in the language. See §2.5.1-2 for all possible consonant clusters with *k*. See §2.8 for the role of *k* in sound symbolism.

3) Examples of /k/

[kʰáatʰḁ]	'year'	[kʰíw'i̥]	'tree'
[kʰúčʰu̥]	'brandy'	[číkʰi̥]	'house'
[ɬkaakná'ḁ]	'heat'	[pʰuksnú'u̥]	'bad odor'
[skawáw']	'dry'	[škitʰḁ]	'bat'
[kʰkʰiɬtɬí]	'I sing'	[kʰtlawá]	'I do it'
[kʰmiškí]	'I give it to him/her'	[pʰukɬni̥]	'cloud'
[stuŋkʰ]	's/he straightens it'	[liŋkš]	's/he jumps'
[k'an]	'I go'	[čáagan]	'woodpecker'

2.3.1.4 /q/. The voiceless uvular stop, /q/, is lightly aspirated word-initially, and optionally voiced between voiced segments. Syllable-finally it optionally affricates to [qˣ]. Like *k*, it can form final consonant clusters with nasals as well as with fricatives. See §2.5.1-2 for all possible consonant clusters with *q*. See §2.8 for the role of *q* in sound symbolism.

4) Examples of /q/

[qʰawáač]	boy	[qʰeel'ḁ]	'type of atole'
[qʰoolú'u̥]	'old man'	[sɛæqnḁ]	'banana'
['aqtsú'u̥]	'short'	[kʰačéq'e̥]	'wash it!'
[sqon]	'it glows'	[ɬqeetʰ]	's/he burps'
['aqčéqš]	's/he trips'	[muyóqɬ]	's/he wiggles it loose'
[móɴqsɴu̥]	'owl'	[ɬapóqˣ o̥]	'fat'
[máqˣwi]	'guest'	[paats3ɴGa]	's/he forgot it

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2.3.1.5 /ʔ/. The glottal stop is a problematic segment in the Totonaco-Tepehua family. The existence of phonemic glottal features is posited by Araña (1953:124) in the proto-language in the form of laryngealized vowels. The writers of published grammars of all varieties have struggled with the analysis of glottal features, which are variously accounted for as the phoneme /ʔ/, ejection on stops, laryngealization of vowels, and/or part of the vocalic nuclei, (either Vʔ, ʔV or ʔVʔ) (see Levy 1987:62-65 for an overview of vowel-related glottals). In Filomeno Mata Totonac, the glottal stop exists primarily as an epenthetic segment at prosodic boundaries, but is underlying in a very small number of lexical items. Glottal stop is inserted preceding all vowel-initial roots and prefixes. This dissertation uses an apostrophe for transcribing glottal stops.

5) /aaksan/	6) /lii-an/	7) /kin-aqonqš/
oak	INSTR-go	1OBJ-braid
['aaksán]	[lee'en]	[ki'aqóɴqš]
'oak'	's/he takes it'	's/he braids my hair'

An epenthetic glottal stop also appears in citation form and pre-pausally, separating the two mora of a final long vowel. §2.6.5.3 describes glottal stop epenthesis at word and phrase edges in detail.

8) /quuluu/	9) /čaawilaa/	10) /aq-siit-nii/
old man	turkey	HEAD-cut-AGNT
[qʰoolú'ṵ]	[čaawilá'a̰]	['aqsiitní'ḭ]
'old man'	'turkey'	'barber'

Morpheme-internally, glottal stop is extremely rare; it occurs in only four forms in my database:

11) Examples of morpheme-internal ʔ

      [sa'in]   [čaa'án]
      'rain'   'ant'

      [-qe'e]   [-qo'o]
      MEANWHILE   TOTALITIVE

It appears that the glottal stop is being relegated to the primary role of prosodic boundary marker in FM Totonac. Of the four forms with morpheme-internal *ʔ*, one, *sa'in*, is pronounced by many speakers as *sayín*. It is possible that *čaa'án* 'ant' is actually a bimorphemic word (*čaa* 'leg' and *'án* 'go'), in which case there are no content words with a robust morpheme-internal *ʔ*. The glottal stop internal to the two suffixes -*qe'e* and -*qo'o* is not heard unless these morphemes occur prepausally, or is heard only as creaky voice on the surrounding vowels; its presence is historical and is inferred synchronically by the stress behavior of words containing these morphemes (see §2.7.2).

2.3.2 Affricates. Following Sagey (1986), I analyze each of the three affricates as single segments with a sequence of +continuant/-continuant features, specifically coronal stop-coronal fricative. They pattern with the stops in terms of processes affecting the left edge, for example, homorganic nasal assimilation and postlexical nasal epenthesis, which occur only preceding word-initial stops and affricates (see §2.6.1.1.2 and §2.6.5.2). The affricates pattern with the fricatives in observing the fricative harmony constraint, which disallows different fricatives within a single morpheme (although there are four exceptions--see §2.5.3).

The affricates do not enter into tautomorphemic initial consonant clusters, although like all other segments, they can combine with the prefixes *k*- and *š*-, as in *kčux* 'I spit', or *štsiits'i̡* 'his/her rash'. In final clusters, only the nasal-affricate -*nts* and –*nč* are possible, with the exception of the unusual cluster ending *paqɬčạ* 'tomato'. Sections 2.5.1 and 2.5.2 provide more details on affricates in consonanant clusters. All of the affricates have roles in sound symbolism (see §2.8).

2.3.2.1 /ts/. /ts/ is a voiceless coronal affricate whose closure portion is a dental stop and whose release portion is an alveolar fricative. It is likely that this phoneme can only appear morpheme-initially; since all the morpheme-final examples of *ts* are glottalized, they may be related to the enclitic =*ts'* 'YA'.

12) Examples of /ts/

[tsaaɫ]	'net'	[tsaqts']	'corn on the cob'
[tʰaaɫts']	'seed'	[tsumuxáatʰi̡]	'girl'
[kʰtsukú]	'I begin'	['aqtsú'u̡]	'short'
[štsiits'i̥]	'his/her rash'	[waayants']	's/he eats already'

2.3.2.2 /č/. The voiceless coronal affricate, /č/, has a dental stop in the closure portion is and an alveopalatal fricative in the release portion.

13) Examples of /č/

[čan]	's/he sows'	['aqačóqʰẹ]	'shrimp'
[čiič]	'warm'	[kʰucʰų]	'brandy'
[kʰčux]	'I spit'	[qʰawáač]	'boy'
[ščíwiš]	'his/her stone'	['aqčiinč]	'mare'

2.3.2.3 /tl/. The phoneme /tl/ is a coronal affricate whose closure portion is a dental stop and whose release portion is a coronal lateral. Although the segment releases into a sonorant, the lateral is more often than not unvoiced or only partially voiced, and is also frequently spiranticized. The devoicing and spirantization occur most commonly preceding *i* with retention of (partial) voicing most likely preceding *a*. I have found only one word in which *tl* is followed by *u* tautosyllabically. *tl* is the only segment in FM Totonac that cannot occur as a coda.

14) Examples of /tl/

[kʰtlawá]	'I do it'	[mátlukʰį]	'bamboo'
[kʰtatatlá]	'I become sick'	[pʰuutántlin]	'dance'
[pʰatɬaanɜn]	's/he vomits'	[pʰuutɬeqé]	's/he counts'
[tɬitɬéqʰẹ]	'black'	[tʰantɬí]	's/he dances'

2.3.3 Fricatives. Of the four fricatives, three are coronal and correspond to those found in the release portions of the affricates (*s, š, ɬ*) and the fourth is velar (*x*). All the coronal fricatives may occur syllable-initially and –finally; they may form initial clusters with all supralaryngeal stops and with some sonorants, and can follow dorsal stops in codas. The uvular fricative appears in no tautosyllabic clusters, but like all other segments, can combine with the prefixes *k-* and *š-* (see §2.5.1 and 2.5.2 for details on consonant clusters). Fricatives are subject to root harmony constraints, such that a fricative is banned within morphemes containing a fricative of another place or manner (see §2.5.3). The coronal fricatives, along with the dorsal stops, are the primary sound symbolic segments in the language (see §2.8).

2.3.3.1 /s/. /s/ is a voiceless alveolar sibilant that can occur syllable-initially or –finally. It can precede any supralaryngeal stop or any native sonorant except *y* in an initial cluster, and can follow a dorsal stop or a nasal-dorsal stop sequence in a coda. Like all fricatives it fails to occur within morphemes containing another fricative. It alternates with the other two coronal fricatives in sound symbolic diminutive-augmentative series (see §2.8).

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15) Examples of /s/

[sásan]	'skunk'	[sunú]	's/he blows'
[sipʰį̥]	'hill'	[tsalíis]	'type of shrimp'
[pʰaš]	's/he bathes'	[slúlukʰį̥]	'lizard'
[smalɜl']	'dark-skinned'	[staxɜn]	'tail'
[skun'į̥]	'smoked chile'	[kʰswat]	'I drag it'
[lóqs lóqs]	'sound of slapping'	[taŋks]	'correct'

2.3.3.2 /š/. /š/ is a voiceless alveopalatal sibilant that can occur syllable-initially or –finally, and can follow a dorsal stop or a nasal-dorsal stop sequence in a coda. It can precede any consonant in the language except itself in an onset, because of the existence of two *š*- prefixes, one marking the past tense, and the other the third person possessive. (Both of these prefixes dissimilate to *k*- preceding *š*,) It alternates with *s* and *ɬ* in sound symbolic diminutive-augmentative series (see §2.8).

16) Examples of /š/

[šánatʰį̥]	'flower'	[šúšutʰį̥]	'mold'
[šin]	'it itches'	[kʰíišiš]	'leaf-cutter ant'
[wákaš]	'cow'	[múušn̥į̥]	'monkey'
[špatá]	's/he grinds it'	[šqaam'ą̥]	'corn leaf'
[štlaawɜn]	's/he was walking'	[šsqatʰą̥]	'his/her son'
[šnúxutʰį̥]	'vein'	[šyaa]	's/he was standing'
['aqoɴqš]	's/he braids it'	[xaqš]	'smell of rotten cornmeal'

2.3.3.3 /ɬ/. The voiceless alveolar lateral fricative, /ɬ/, can occur syllable-initially or –finally. It can precede any supralaryngeal stop or any native sonorant except *l* and *y* in an initial cluster, and can follow a dorsal stop or a nasal-dorsal stop sequence in a coda. Because *l* optionally but frequently neutralizes to *ɬ* syllable-finally, it is difficult to determine the underlying phoneme in this context; the example provided below of a syllable-final *ɬ*, *čiiɬ čiiɬ* 'sound of frying', is an ideophone in which the fricative is much more likely to be underlying. /ɬ/ alternates with the other two coronal fricatives in sound symbolic diminutive-augmentative series (see §2.8).

17) Examples of /ɬ/

[ɬáqʰaatʰi̥]	'clothes'	[ɬúuk'u̥]	'hole, cave'
[kʰukʰáɬitʰi̥]	'avocado'	[čiɬ čiɬ]	'sound of frying'
[ɬkúyaatʰi̥]	'fever, fire'	[ɬmumóqo̥]	'fair-skinned'
[ɬpátaaqʰḁ]	'chachalaca bird'	[šɬqónaan]	'his/her red corn'
[kʰɬweeqʰ]	'I scratch it'	[pʰukɬni̥]	'cloud'
[čeqɬ]	'puddle'	[tʰóɴqɬwḁ]	'clumsy'
[ɬqóoɴqɬ ɬqóoɴqɬ]	'sound of snoring'		

2.3.3.4 /x/. /x/ is a voiceless velar fricative that can occur syllable-initially or –finally, but does not appear in consonant clusters (except following prefixes *k-* or *š-*). When it co-occurs with a uvular stop within a morpheme, it is realized as [χ] (see Uvular Harmony §2.6.2.1).

18) Examples of /x/

[xín'i̥]	'smoke'	[xaakʰḁ]	'sapote fruit'
[xuuk'o̥]	'deer'	[spuxúx]	'straight'
[šlax]	'loose'	[šxalʒnatʰi̥]	'his/her coal'
[kʰxaš]	'I rest'	[χaláqʰḁ]	'rickety, weak'
[tʰaqoχóonatʰi̥]	'cough'		

2.3.4 Nasals. Phonemically there are two nasals in FM Totonac, labial *m* and coronal *n*. Both can appear syllable-initially or –finally. Nasals can follow coronal fricatives in initial clusters, and can precede homorganic stops and affricates in codas. Like all other consonants they can also follow the prefix *k-* word-initially. Nasals are the only stops that do not necessarily release into a latent vowel prepausally (see §2.2.3). However, as with other sonorants, many lexical items end in nasals that are glottalized prepausally, showing that vowel features are present in their release. The nasals are subject to a variety of constraints that are discussed in §2.5.5 and §2.6.1.1.

2.3.4.1 /m/. The phoneme /m/ is a voiced labial nasal that occurs syllable-initially or –finally. Syllable-initially it can follow any coronal fricative, and in codas it may precede *p*, but does so in only one lexical item, *čǐmpš* 's/he blinks'. Within words, *m* cannot precede a non-homorganic consonant even across a morpheme boundary, which limits it to preceeding only *p* and *w*.

19) Examples of /m/

[makɜn]	'hand'	[míistun]	'cat'
[muštíin]	'forehead'	[slamɜm'a̯]	'shiny'
['aqtím]	'one'	[laqašúum]	'thin layer of tortilla'
[smukʰúkʰu̯]	'yellow'	[šmití]	's/he spins (yarn)'
[ɬmumóqʰo̯]	'fair-skinned'	[čimpš]	's/he blinks'
[kʰmin]	'I come'	[spímw̯a̯]	'agile'

2.3.4.2 /n/. /n/ is a voiced alveolar nasal that occurs syllable-initially or –finally. Syllable-initially it can follow any coronal fricative, and in tautomorphemic codas it may precede only the homorganic affricate *č*, and only in two forms, *'aaqčiínč* 'mare', and *laqčiinč* 'diaper'. Across a morpheme boundary *n* can also precede the other homorganic stop and affricate *t* and *ts* syllable-finally (not *tl* because it cannot appear in a coda). *n* assimilates in place to a following stop or affricate, and deletes preceding any consonant to which it cannot assimilate in place and manner (see §2.6.1.1.2). Degemination of *n-n* sequences at morphological junctures is exceptionless.

20) Examples of /n/

[nakʰú]	'heart'	[nipšį̥]	'winter squash'
[nuu]	's/he is in'	[snuun]	'grave, extreme
[štíilan]	'hen'	[špinín]	'intense red'
[ɬnapápʰa̯]	'pallid'	[šneeqʰ]	'it withers'
[kʰnii]	'I die'	['aqčíinč]	'mare'
[qʰóšnunt'į̥]	'run!'	[kʰwaayánts']	'I already eat'

2.3.5 Approximants. Besides the nasals, Filomeno Mata Totonac has three other sonorant consonants, the lateral *l* and glides *w* and *y*. All occur syllable-initially and –finally, and often undergo postlexical glottalization pre-pausally. These phonemes differ in their ability to form initial clusters, and none combine with other consonants in tautomorphemic codas.

2.3.5.1 /l/. /l/ is a voiced alveolar lateral approximant that can appear syllable-initially and –finally, although in syllable-final position it optionally but frequently spirantizes to *ɬ*. It can occur following *s* or *š* in an initial consonant cluster (or after the *k-* prefix), but is not found in coda clusters. It cannot occur adjacent to the lateral fricative due to a constraint on approximants preceding featurally similar segments.

21) Examples of /l/

[laaqtsín]	's/he sees it'	[lipš̥ị]	'tobacco'
[luuwạ]	'snake'	[ɬtantɜl'ạ]	'naked'
[spilíl'ị̥]	'multi-colored'	[qʰolúɬ'ụ]	'spherical'
[slaxáx]	'sharp'	[šláwatʰị̥]	'drool'
[kʰláma]	'I am living'		

In a single derived verb, /l/ is realized as a tap:

22) /ta-la-mii/

INCH-live-DOWN

[taɾamíɬ̥ị̥]

's/he lays him/her down'

2.3.5.2 /w/. /w/ is a voiced labio-velar approximant that can appear syllable-initially and –finally, and can follow any coronal fricative in an onset. Except for the compound *skawawáwuun* (<*skawaw'ạ* 'dry' and *'uun* 'wind') 'dry wind' with its epenthetic *w*, my database includes no examples of *w* preceding *u*, due to a dissimilation constraint.

23) Examples of /w/

[wáɬtin]	'glass, mirror'	[wíitɬam]	'edible caterpillar'
[čaw'ạ]	'tortilla'	[skawawáwuun]	'dry wind'
[laaqtsíw]	'we saw it'	[swɜɴqel'ị̥]	'bony'
[ɬwakák'ạ]	'liver'	[tʰašwík̥ʰị̥]	'gizzards'
[kʰwɜn]	'I say it'		

2.3.5.3 /y/. /y/ is a voiced palatal approximant that can appear syllable-initially and –finally. It does not occur in any consonant clusters except following prefixes *k-* or *š-*. Similar to the situation with *w* and *u*, *y* is generally disallowed preceding *i*. *yi* sequences do occur however, in two words: *sayín* 'rain' which is historically *sa'in*, and *škayíw'ạ* 'green'. *y* is used as an epenthetic consonant to prevent hiatus between root and suffix or suffix and suffix.

24) Examples of /y/

[yaastá'a̠]	'sister-in-law'	[yux]	'it falls from above'
[stay'a̠]	'squirrel'	[šuy'i̠]	'mosquito'
[looqóy'i̠]	'crane'	[škayíw'a̠]	'green'
[kʰyaa]	'I am standing'	[šyaawá]	's/he was standing him up'

2.3.6 Tap /ɾ/. /ɾ/ is a voiced alveolar tap that usually occurs intervocalically or word-initially. It was borrowed from Spanish and is now used in a very small number of morphemes, most of them Spanish loanwords, but also in ideophonic sound adverbials and one verbal suffix. It is included in the subsection on sonorants because it has replaced or alternates with *l* in some cases, for example in the iterative suffix *–paɾa*, which is still *–pala* in other Totonac varieties such as Coatepec (McQuown 1990:183).

25) Examples of /ɾ/

[kʰaɾastiánu]	(< Sp. cristiano 'christian')	'person'
[saɾapésa]	(<Sp. cerveza 'beer')	'beer'
[séɾa]	(<Sp. cera 'wax')	'bee'
[šakwéɾs]	(Sp. a fuerzas 'by force')	'necessarily'
[ɾentarli]	(Sp. rentar 'rent')	's/he rents it'
[kʰonfesaɾli]	(Sp. confesar 'confess')	's/he confesses'
[siɾínton]		'type of cricket'
[pʰiɾéɴqš]		'sound of gum popping'
[tʰoɾóɴq tʰoɾóɴq tʰoɾóɴq]		'sound of bells ringing'
[ɾás ɾás]		'sound of raindrops'
[ɾápʰa ɾápʰa]		'sound of clothes flapping in the wind'
[kʰwaayampaɾá]		'I eat again'

2.4 Vowel phonemes and allophones. Filomeno Mata Totonac has a native vowel system consisting of /a/, /i/, and /u/, with length distinctions bringing the total to six vowel phonemes. In addition, a small number of words borrowed from Spanish and from other indigenous languages have mid-vowels *e* and *o*. Like other Totonaco-Tepehua languages, FM Totonac has laryngealized vowels, but these bear a light lexical load, distinguishing only a small number of minimal pairs. Due to uncertainty in the transcriptions, I have only marked vowel laryngealization in members of minimal pairs.

Vowels never occur word-initially; a glottal stop is always epenthesized preceding the vowel. Vowel hiatus is never found, so that phonemes with different qualities never occur adjacent to one another. Prepausally, long vowels are glottalized, becoming V'V. These processes are discussed in §2.6.5.2 and §2.6.5.3.

As noted in §2.2.3, final short unstressed vowels are in the process of being lost in FM Totonac. I analyze many lexical items as ending in a consonant with a voiceless latent vowel (i.e., lacking a root node) in the release. In fact, <u>all</u> final oral stops release into latent vowel features, as do most oral sonorants. These latent vowels can be distinguished from full vowels by their inability to protect a final consonant from prepausal aspiration or glottalization (see §2.6.5.3 for a discussion of the marking of prosodic boundaries with glottal features). Thus, there are minimal and near minimal pairs that differ only in having a final latent vowel rather than a full vowel, such as *kúkʰu̥* 'uncle' and *kúku* 'white sand'; *štúy'u̥* 'type of plant' and *kúyu* armadillo; *luuw'ḁ* 'snake' and *túwa* 'difficult'. In connected speech, root node epenthesis allows the full voicing of these latent vowels, while prepausally they remain devoiced or are optionally deleted entirely. Vowel epenthesis is covered in §2.6.5.1.

Variation in vowel quality is found in certain lexical items, both between speakers and within a single speaker's utterances. A striking example is the word for the pronoun 'I', which three of my main consultants (all at least second generation natives of Filomeno Mata) pronounce with a different initial vowel: *'íkiti, 'ákiti, 'ékiti*. While it does occur in non-final syllables, the variation is especially common with final latent vowels, and in this context usually involves *a~i or u~i*. This is probably due to the process of postlexical *i* epenthesis to separate consonants at a word boundary (for details, see §2.6.5.1). If the historical quality of a final vowel is forgotten, this epenthetic *i* may be reanalyzed as the underlying latent vowel. §2.4.6 provides some examples of this variation.

2.4.1 /a/, /aa/. /a/ and /aa/ are low central vowels that can be plain or laryngealized. A stressed short *a* is realized as mid-central *ɜ* when in a syllable closed by a non-glide consonant (see §2.6.3.2 for low vowel centralization).

   26) Examples of /a/ and /aa/

[la]	's/he lives'	[kʰaa]	's/he cuts it'
[pʰaašawá]	'happy'	[sáastʰi̥]	'new'
['aqšáaqʰḁ]	'head'	[čaawilá'ḁ]	'turkey'
[tlaawɜn]	's/he walks'	[sqalɜɬ']	'intelligent'
[ɬkɜkʰ]	's/he scratches it'	[wɜɴqen]	'frog'
[qʰa'ɬn̥i]	'blood'	[qʰaɬn̥i]	'upon'

2.4.2 /i/, /ii/. The phonemes /i/ and /ii/ are high front vowels that can be plain or laryngealized. Both have mid-vowel allophones adjacent to a uvular segment and optionally adjacent to a

glottal stop. When *ii* precedes a *q*, (often in the instrumental prefix *lii-*) the two moras of the vowel are sometimes differentially lowered to ɛæ (see §2.6.3.1 for vowel lowering). The high front vowel, whether short or long, rarely occurs following the glide of α roundness, *y*, with only two exceptions, *škayíw'ạ* 'green', and *sayín* 'rain', which is historically *sa'in*.

27) Examples of /i/ and /ii/

['íị]	's/he harvests it'	[xin'ị]	'smoke'
[číšitʰị]	'hair, feather'	[pʰíipʰị̥]	'older sister'
[čiwiinɜn]	's/he speaks'	[líičiin]	'rope'
[siléeɴqʰẹ]	'type of cricket'	[séqeɫ]	'king vulture'
[lɛæqápin]	'key'	[šte'án]	's/he should have gone'
['aqpipeeqš]	'dandruff'		

2.4.3 /u/, /uu/. /u/ and /uu/ are high back vowels that can be plain or laryngealized. Both have mid-vowel allophones adjacent to a uvular segment and optionally adjacent to a glottal stop (see vowel lowering in §2.6.3.2). This phoneme, whether short or long, does not occur following a glide of α roundness, with the exception of the epenthetic [w] in the compound *skawawáwuun* 'dry wind'.

28) Examples of /u/ and /uu/

[kʰuštú]	's/he weeds'	['u'ụ]	'he, she, it'
[kʰúyu]	'armadillo'	[ɬkuyúuma]	's/he is burning it'
[číškú'ụ]	'man'	[kʰúkʰụ]	'uncle'
[tsutsóqʰọ]	'red'	[looqóy'ị]	'crane'
[móoɴqsɴụ]	'owl'	[too'án]	's/he who goes'
[škuutʰạ]	'acidic plant'	[škụụtʰạ]	'acidic, bitter'

2.4.4 /e/. /e/ is a mid-front vowel that appears only in words borrowed from Spanish or from other indigenous languages.

29) Examples of /e/

[tʰéko]	'father'	[kʰuyém]	'jicama'
[čeč]	'pitahaya fruit'	[luméte]	'bottle'
[kʰapé]	'coffee'	[séra]	'bee'
[buréko]	'sheep'	[šakwés]	'necessarily'
[kʰonfesárli]	's/he confesses'	[rentárli]	's/he rents it'

2.4.5 /o/. /o/ is a mid-back vowel that appears only in words borrowed from Spanish or from other indigenous languages.

30) Examples of /o/

[tʰéko]	'father'	[buréko]	'sheep'
[pʰiritóra]	'candle'	[sirínton]	'type of cricket'
[tyósko]	'kiosk'	[tóyum]	'roadrunner'

2.4.6 Vowel variation. As noted in §2.4.6, certain lexical items show variation in the quality of a vowel, either from speaker to speaker or within the grammar of a single speaker. It is especially common with the voiceless latent vowels that follow word-final consonants.

31) Examples of vowel variation

[čiin'ḁ]	'pus'	[čiin'i̥]	'pus'
[ɬtukítʰḁ]	'corn gruel'	[ɬtukítʰi̥]	'corn gruel'
['aqačóqʰe̥]	'type of shrimp'	['aqačóqʰo̥]	'type of shrimp'
[šiipʰḁ]	'type of plum'	[šiipʰi̥]	'type of plum'
[tʰílooqʰe̥]	'rooster'	[tʰúlooqʰe̥]	'rooster'
[tsitsóqʰo̥]	'red'	[tsutsóqo̥]	'red'
[čutoqɬ]	'pull off'	[čitoqɬ]	'pull off'
['ákitʰi̥]	'I'	['íkitʰi̥] 'I'	
['ékitʰi̥]	'I'		

2.5 Phonotactics and syllable structure. As previously noted, onsets are required in all syllables, and vowel hiatus is disallowed. There are no geminate consonants underlyingly. All single consonants may appear word-initially. In word final position any single consonant except the affricate *tl* is allowed. Consonant clusters occur morpheme-initially and –finally, but not in morpheme-internal syllables. The maximal syllable in FM Totonac is CCCVVCCC. A sample of syllable types is displayed in Table 2.5:

Table 2.5 Syllable types

CV	*la*	's/he lives'
CVV	*čaa*	's/he cooks it'
CVC	*tan'*	'you go'
CCV	*štu*	'be out'
CCVV	*staa*	's/he sells it'
CCVC	*spun*	'bird'
CCVCC	*stunk*	's/he straightens it'
CVCCC	*čimpš*	's/he blinks'
CCCVC	*kstak*	'I grow'
CVVC	*qawáačą*	'boy'
CVVCC	*lóonąni*	'cold'
CCCVVCCC	*kɫqoonqɫ*	'I snore'

2.5.1 Initial consonant clusters. The consonant clusters that occur in monomorphemes in the word-initial position are any coronal fricative followed by any oral or nasal stop, or *l* or *w*, with the exception of the cluster *ɫl*.

Table 2.6 Legal initial consonant clusters (monomorphemes)

sp	st	sk	sq	sm	sn	sl	sw
šp	št	šk	šq	šm	šn	šl	šw
ɫp	ɫt	ɫk	ɫq	ɫm	ɫn	----	ɫw

32) Examples of word intial monomorphemic consonant clusters

spun	'bird'	*stak*	'it grows'
skáatʰį	'flea'	*sqaam'ą*	'corn plant leaf'
smukúkʰų	'yellow'	*snat*	's/he embraces it'
slamám'ą	'shiny'	*swaká*	's/he grinds (coffee)'
špipiléeqʰę	'butterfly'	*štíilan*	'chicken'
škitʰą	'bat'	*šqaqá*	'it dawns'
šmití	's/he spins (yarn)'	*šnúxutʰį*	'vein'
šláwatʰį'	drool'	*šwatá*	's/he drags it'

ɫpanóqʰo̧	'loose-fitting'			ɫtantál'ą	'naked'		
ɫkákʰą	'ashes'			ɫqónaan	'red corn'		
ɫmaan	'long'			ɫnapápʰą	'pale'		
ɫwakák'ą	'liver'						

FM Totonac has a verbal prefix and a nominal prefix of the form *k-*, the first person singular subject and the locative case markers. Two prefixes *š-* also exist, the past tense and the third person possessive morphemes. Both *š-* prefixes dissimilate to *k* preceeding *š*. When any of these C- prefixes attach to a consonant-initial stem, they create additional legal consonant clusters. Derived geminates do not usually degeminate in this context.

Table 2.7 Legal initial consonant clusters (multimorphemes)

kp	kt	kk	kq	kts	kč	ktl	ks
kš	kɫ	kx	km	kn	kl	ky	kw
ksp	kst	ksk	ksq	ksm	ksn	ksl	ksw
kšp	kšt	kšk	kšq	kšm	kšn	kšl	kšw
kɫp	kɫt	kɫk	kɫq	kɫm	kɫn	----	kɫw
šts	štl	šč	šy				

33) Examples of word-intial multimorphemic consonant clusters

kpaš	'I bathe'	*ktamaawá*	'I buy it'
kkanahlá	'I believe'	*kqaɫí*	'I have it'
ktsapá	'I sew it'	*kčii*	'I tie it'
ktlawá	'I make it'	*ksarapésa*	'in the beer'
kšamá	'I touch it'	*kɫaqaanán*	'I dress'
kxaš	'I rest'	*kmĩštatʰi̧*	'in the steam'
knii	'I die'	*klaqatí*	'I like it'
kyaa	'I stand'	*kwáɫtin*	'in the mirror'
kspaɫ	'I caress him'	*kstak*	'I grow'
kskin	'I ask for it'	*ksqonó'o̧*	'in the fire'
ksmaní	'I become used to'	*ksnat*	'I embrace him'
kslúlukʰi̧	'in the lizard'	*kswaká*	'I grind (coffee)'

kšpatá	'I mash it'	*kštiit*	'I tear it'		
kška	'I bite it'	*kšqaanán*	'I shell (corn)'		
kšmití	'I spin (yarn)'	*kšnúxutʰi̥*	'in the vein'		
kšlit	'I slip'	*kšwatitátsan'*	'in the molar'		
kɬputuunún	'in the fog'	*kɬtúkitʰi̥*	'in the corn meal drink'		
kɬkákʰḁ	'in the ashes'	*kɬqooNqɬ*	'I snore'		
kɬnapú	'I cover it'	*kɬwakák'ḁ*	'in the liver'		
štsaalaníi	'he had fled'	*štlaawáma*	'he was walking'		
ščík'i̥	'his house'	*šyúxma*	'it was falling'		

2.5.2 Final consonant clusters. As noted in §2.3.2.3, the only single consonant that may <u>not</u> occur in word final position is the affricate *tl*. Final tautosyllabic clusters permitted include only the uvular and velar stops followed by a coronal fricative, and any such (pos)velar-fricative clusters preceded by a nasal. There are also four exceptional clusters *-mp, -mpš, -nč*, and *-qɬč*, found only in *lakašúmpi̥* 'aggressive-looking'; *kčimpš* 'I blink'; *laqčíinč* 'diaper', '*aqčíiinč* 'mare'; and *paqɬči̥* 'tomato'. Additionally, in bimorphemic syllables, *-nt, -nts,* and *–mp* are possible.

All final clusters in monomorphemes are relatively rare outside of the ideophonic stratum of the lexicon; only about 5% of all words in my database with a final consonant cluster are non-ideophonic.

Table 2.8 Legal final clusters (bolded found in multimorphemic words only)

ks	kš	kɬ	qs	qš	qɬ
nks	nkš	nkɬ	nqs	nqš	nqɬ
mp	mpš	nč	qɬč		
mp	**nt**	**nts**			

34) Examples of word-final consonant clusters

takáks	'he quiets down'	*laktúkš*	'I break it'
tamákɬ	'what is found'	*peeqs*	'sound of slapping'
'aqčéqš	'he trips'	*toqɬ*	's/he pushes him'
ktsinks	'I am hungry'	*linkš*	's/he jumps'
kponqsnún	'I wash (clothes)'	*činkɬ*	'sound of hammering nails'

'aqoɴqš	'he braids it'	*łqooɴqł*	'sound of snoring'
lakašúmpʰi̯	'aggressive-looking'	*kčimpš*	'I blink'
'aqčíinč	'mare'	*paqłčą̌*	'tomato'
wayáamp'i̯	'you ate over there'	*kačiwíinant'i̯*	'speak!'
miškiniitánts'	'he already gave it to you'		

2.5.3 Root harmony constraints. Roots in FM Totonac are governed by three constraints on the co-occurrence of consonants, one of which, uvular harmony, continues to be active within certain morphological contexts (see §2.6.2.1). Uvular harmony requires that dorsal stops within a root be underlyingly either all [+back] or all [-back], thus /k/ and /q/ never co-occur within a root, e.g., *qooqʰo̯* 'mute' and *łwakák'ą̌* 'liver'.

Fricative harmony disallows coronal fricatives of more than one place/manner within a root, that is /s/, /š/, and /ł/ cannot co-occur within a morpheme. This generalization is not always surface true because of the spirantization of syllable-final *l* (see §2.6.1.2). The fricative harmony process is generally not synchronically active in FM Totonac, unlike in other varieties of Totonac, such as Misantla (McKay 1999:36). (However, see §2.6.2.2.2.3 for a *š-š constraint that causes dissimilation of adjacent alveopalatal fricatives across a morpheme boundary.) Examples of words with internal fricative harmony are *séqsi* 'sweet' and *šéqši* 'salty-sweet'.

Similarly, affricate harmony prevents more than one of the (coronal) affricates--*ts, č, tl*-- within a single morpheme (*tsiitsi̯* 'rash', *čeč* 'pitahaya fruit'), but no synchronic constraints enforce this harmony in larger domains.

Since affricates may be analyzed as having a sequence of +continuant/-continuant features (Sagey 1986), affricate harmony may be seen as simply the response of the fricative portion of the segments to the fricative harmony constraint. If this were the case, we would expect fricatives to combine only with affricates with a matching release. This is generally true; however four exceptional morphemes in the non-ideophonic lexicon (shown below) and several ideophones contain a fricative and an affricate with a different fricative release:

35) Examples of non-harmonic words

čeqł	'puddle'	*čutóqł*	's/he pulls it off'
paqłčą̌	'tomato'	*tałts'*	'seed'

2.5.4 Approximant restrictions. The three approximants—*l, y,* and *w*—cannot precede segments that are featurally too similar to them. This means that *l* cannot precede the lateral fricative (nor follow it), *y* cannot precede *i,* and *w* cannot precede *u* within a word. There are two exceptions to the *yi constraint: *sayín* 'rain' which is historically *sa'in*, and *škayíw'ą̌* 'green'. An

epenthetic *w* appears before *u* in the compound *skawawáwuun* 'dry wind'. No other exceptions are found in my database.

2.5.5 Nasal restrictions. Nasals are restricted in their distribution within roots. Both nasal phonemes *n* and *m* are found only preceding vowels, preceding homorganic plosives (see consonant cluster discussion in §2.5.1 and §2.5.2) and word-finally. §2.6.1.1 covers the synchronic constraints that limit the distribution of nasals within derived words.

2.5.6 Glottal stop restrictions. Glottal stops are found only in a limited range of environments, a range much more restricted than many other Totonaco-Tepehua varieties. As epenthetic segments, they appear preceding any vowel-initial prefix or root and prepausally separating the moras of a long vowel (see §2.6.5.3 for the role of glottal stop in demarcating prosodic boundaries). Morpheme-internally, they are extremely rare, occurring in only a handful of forms: *sa'in* 'rain', *ča'áan* 'ant', and the suffixes *-qe'e* MEANWHILE and *-qo'o* TOTALITIVE. Unlike other stop phonemes, they cannot form clusters with fricatives or nasals. I speculate that the glottal stop is being lost as a phoneme in FM Totonac, and is being relegated to a role primarily as a marker of prosodic boundaries.

2.5.7 Root vs. affix structure. Roots, prefixes and suffixes differ only slightly in their phonemic make-up and structure. Roots and suffixes are much more likely to be disyllabic than prefixes. Only the special use causative *maqa-* and several of the body part prefixes (BPPs), such as *laka-* 'face-related' and *maka-* 'hand-related', have more than one syllable among the prefixes, whereas many suffixes do, including ambulative *–tiiɬa,* 3rd plural subject progressive *–maana,* iterative *–para*, desiderative *-kutun*, totalitive *-qo'o*, MEANWHILE *-qe'e,* perfect aspect *–niitạ,* deictics *–čitạ* and *–ča'ạ,* and 2SUB.pl *–titị* (all described in Chapters 4 and 5).

Also, affixes are far less likely than roots to contain fricatives. Only past tense *š-* and several BPPs (e.g., *kiɬ-* 'mouth-related' and *piš-* 'neck-related') among the prefixes, and the ambulative *–tiiɬa* among suffixes, have fricatives. The negative and several negative polarity pro-clitics also contain fricative segments: negative *ɬaa=*, NOT YET *aɬ=* and negative intensifier *ɬaa=*. Fricatives are very common segments in roots.

2.6 Phonological processes. In this section, phonological processes that result in synchronic alternations are discussed, first those targeting consonants, followed by those relating to vowels. General phonological constraints that are active across all contexts are discussed first in each section, then those constraints limited to particular morphological contexts are covered briefly. Further discussion of morphologically conditioned phonology is found in Chapter 6. The final subsection provides an analysis of postlexical prosodic constraints.

2.6.1 General constraints on consonants. Only two processes related to consonants are active in all morphological contexts in FM Totonac, nasal deletion and lateral spirantization.

2.6.1.1 Nasal deletion and assimilation. Nasals delete or assimilate in three contexts within words: in the case of false geminates (identical nasals brought together at morpheme boundaries); preceding a consonant that differs from it in place or manner of articulation; in the case of leftward stress shift when *n* is word-final.

2.6.1.1.1 Nasal degemination. Whenever morphological constructions bring two *n* segments together at a boundary, a regular process causes the deletion of one of the nasals. Many verb roots end in *n*, as do four common suffixes, and degemination of false *n* geminates occurs with all of them, as well as in all other cases of *n-n* at morphemic junctures. This contrasts with other degemination processes, which are limited to particular morphemes only (see §2.6.2.2.2).

2.6.1.1.2 Nasal-consonant constraints. Within words, the only consonants that nasals may precede are homorganic plosives, with a few exceptions to be discussed. Since *m* rarely occurs syllable-finally, all alternations involve *n*. More specifically, *n* is deleted preceding sonorant consonants, fricatives or glottal stop, that is, it is found only preceding a vowel or a homorganic oral stop or affricate, or word-finally.

36) /skin-lḭ/   37)/min-sqat̥ą/   38)/qoot-nan-wą/

   request-PRFTV   2POSS-child   drink-HAB-1pl

   [skiɬ]   [misqátą̥]   [qootnúw]

   'he requested it'   'your child'   'we drank'

The deletion of *n* also occurs preceding an epenthetic glottal stop inserted before a word-initial vowel:

39) /kin-aqunqš-lḭ/   40) /min-asiwiṭḭ/

   1OBJ-braid-PFTV   2POSS-guayaba

   [ki'áqoNqšɬ]   [mi'asíwitʰḭ̥]

   'she braided my hair'   'your guayaba fruit'

Preceding oral stops and affricates that differ in place of articulation, rather than delete, *n* undergoes homorganic nasal assimilation:

41) /tan-paa-ṭḭ/   42)/k-waayan-kutun/   43) /kin-qáwiṭḭ/

   come-PROG-PFTV   1SUB-eat-DES   1POSS-nixtamal

[támpaatʰi̥]	[kwaayaŋkutún]	[keɴqáwitʰi̥]
'you are coming'	'I want to eat'	'my nixtamal'

As noted in §2.5.5, *m* is limited in its distribution within morphemes, able to precede only a vowel, a labial stop, or a word boundary. Given the inventory of morphemes in FM Totonac, morpheme-final *m* comes into contact with a consonant-initial morpheme in only one case, with the adjectivizing clitic =*wḁ*, as in *spim'wḁ* 'agile' and *pam'wḁ* 'thick'. This acceptance of a nasal-(homorganic) sonorant sequence may be permissible because of the clitic boundary that intervenes, or it may be that *m* is allowed preceding homorganic sonorants. No other language-internal evidence allows us to decide between these options.

2.6.1.1.3 Final nasal deletion. Lexically stressed words may end in unstressed *n*-final syllables such as *túmin* 'money', and *tsulúlun* 'spring, water source'. But *n*-final words that undergo a construction associated with a leftward stress shift lose the final *n*. These processes include the perfective aspect construction and interrogative stress shift, which are discussed in greater detail in §2.7.2.1.4 and §2.7.3.

44) /čiwii-nan/
speak-HAB
[čiwiinán]
's/he speaks'

45) /čiwii-nan/
speak-HAB
[čiwíina]
's/he spoke'

46) /kii-skin/
RT-request
[kiiskín]
's/he goes to request it'

47) /kii-skin/
RT-request
[kíiski]
's/he went to request it'

48) /wiš-nan/
you-PL
[wiši-nán]
'you plural' (declarative)

49) /wiš-nan/
you-PL
[wiší-na]
'you plural' (interrogative)

50) /ča-'an/
THERE-go
[ča'án]
's/he arrives there'

51) /ča-'an/
THERE-go
[čá'a]
's/he arrived there'

2.6.1.2 Lateral spirantization. Syllable-finally preceding a consonant and word-finally *l* is optionally but usually spirantized, becoming *ɬ*.

52) */ɬtantal'/*   53) */an-li/*   54) */ɬtulul/*

    naked   go-PFTV   thick

    [ɬtantáɬ]/[ɬtantál']   ['aɬ]   [ɬtulúɬ/ɬtulúl']

    'naked'   's/he went'   'thick'

In a prepausal position, most final sonorants are marked by an epenthetic constricted glottal feature (see §2.6.5.3.2). When a prepausal *l* undergoes optional spirantization, it is no longer eligible for glottalization. Thus the final segment of *l*-final lexical items at prosodic boundaries can alternate between *l'* and *ɬ*, as shown above for */ɬtantal/* 'naked' and */ɬtulul/* 'thick'.

2.6.2 Morphologically conditioned constraints on consonants. Included in this subsection are phonological processes that apply only to a particular morpheme or range of morphemes. They include uvular harmony; consonant degemination; and vowel epenthesis in illegal consonant clusters.

2.6.2.1 Uvular harmony. The grammar of FM Totonac disallows the co-occurrence of *k* and *q* within roots (§2.6.2.1), and also motivates a phonetic fricative-stop harmony process within morphemes, as well as *k-q* harmony between certain prefixes and a root.

Within roots, the dorsal fricative *x* must assimilate phonetically in [±back] with a dorsal stop, even at a distance:

55) Examples of dorsal assimilation

    xaks   'smell of burnt chile'

    xóokon   'type of mushroom'

    qoχoonún   's/he coughs'

    χaaláqʰǫ   'rickety, weak'

In addition, an underlying /k/ in certain prefixes harmonizes with a /q/ in the root, with adjacency again not required. The prefixes involved are the nominal pluralizer *lak-* and the related verbal prefix distributive *lak-*, as well as eight of the 35+ body part prefixes (BPP), as shown in Table 2.9. Unusually, the BPP *tan-* 'rear, bottom' from *tan'* sometimes appears as *tank-* or *tanq-*,

inserting a harmonic dorsal to replace the glottalization of the final sonorant which cannot occur word-internally.

Table 2.9 Harmonic BPPs

'ak-/'aq-	HEAD
kił-/qał-	MOUTH
kinka-/qanqa-	NOSE
lak-/laq-	LOWER LEG
laka-/laqa-	FACE/EYE
mak-/maq-	BODY
maka-/maqa-	HAND
tan-, tank-/tanq-	REAR, BOTTOM

56) /lak-škayiw mi-laka-stapy̆/
    PL-green 2POSS-FACE-bean
    [lakškayíw milakastáp^hy̆]
    'your eyes are green'

57) /lak-tsutsuqu mi-laka-stapy̆/
    PL-red 2POSS-FACE-bean
    [laqtsutsóqo milakastáp^hy̆]
    'your eyes are red'

58) /k-ak-skit/
    1SUB-HEAD-comb
    [k'akskít^h]
    'I comb my hair'

59) /k-ak-čiqii/
    1SUB-HEAD-wash
    [k'aqčeqée]
    'I wash my hair'

60) /kin-maka-šama/
    1OBJ-HAND-touch
    [kimakašamá]
    'he touches my face'

61) /maka-tawaqa piolin/
    HAND-practice violin
    [maqatawaqá m piolín]
    'she practices violin'

When the harmonic BPPs form compounds to label other body parts, the derived prefixes do not always display uvular harmony. For example, *lakpi-* 'cheek' ('face+edge') does not harmonize with roots with *q*, and *makapiš-* 'wrist ('hand+neck') does so only optionally. Other body part prefixes, '*aqa-* 'ear', *peeqe-* 'arm', *qaapi-* 'thigh' and *qee-* 'back', have an underlying *q* that does not harmonize with root *k*, that is, the direction of harmony is always prefix to root and *k* to *q*.

There are a number of roots with underlying *x* that may be reflexes of Proto-Totonac *q*. These roots combine with the *q*-containing allomorphs of the harmonic prefixes.

62) /kin-lak=pi-qaši/
1OBJ-CHEEK-punch
[kilakpiqáši]
's/he punched me in the cheek'

63) /kin-maka=piš-qaši/
1OBJ-WRIST-punch
[kimakapišqáši]/[kimaqapišqáši]
's/he punched me in the wrist'

64) /piiqi-čiqii/
ARM-wash
[peeqečeqée]
's/he washes her/his arm'

65) /ki-maa-laka-stax-ii/
1OBJ-CAUS-FACE-water-TRANS
[kimaalaqastaχáa]
'it makes my eyes water'

The uvular harmony process is not only limited to particular prefixes, but is also sometimes lexicalized, as in the forms *lakača'án* ('face+there+go') 's/he sees from a distance' vs. *laqača'aní* (face+there+go+DATIVE) 's/he gets bored'. This uvular harmony constraint is related to a constraint against high vowels adjacent to uvulars, which is discussed in §2.6.3.1.

2.6.2.2 Consonant degemination. No underlying geminates exist in FM Totonac. Consonant degemination occurs only related to a small number of affixes, while generally, false geminates are tolerated.

2.6.2.2.1 False geminates. False geminates, i.e. identical consonants brought together at morpheme boundaries, are very common. In most cases, degemination does not occur, unlike in other Totonac varieties (McKay 1999:53-54) (but see §2.6.1.1.1 for the systematic exception of nasal degemination). In FM Totonac, generally each of the identical consonants is retained; geminate plosives are released phonetically, with the possibility of a very brief schwa-like vowel intervening between the two segments, and geminate fricatives are audibly lengthened.

66) /piš-šin/
NECK-itch
[piššín]
'his neck itches'

67) /stunk-kutun/
straighten-DES
[stunkʰkutún]
'he wants to straighten it'

68) /š-qašmat-tiiła/	69) /łaa = ał = łka/
PAST-hear-AMB	NEG-YET-measure
[šqašmatʰtiiłá]	[łaałłká]
'she was walking	'she doesn't measure it anymore'
around listening'	

2.6.2.2.2 Degemination. In spite of the general tolerance of identical CC consonant clusters, gemination is banned in limited morphological contexts related to a small number of affixes. Depending on the affix involved, the false geminates are resolved through deletion, dissimilation, or by preaspiration.

2.6.2.2.2.1 Degemination through deletion. In FM Totonac, deletion of one of two identical adjacent segments is obligatory only when the second person plural subject suffix –*titi̜* follows a [t]-final root;

70) /maa-spit-titi̜/	71) /qašpat-titi̜/
CAUS-turn-2SUB.pl	hear2-2SUB.pl
[maaspítitʰi̥]	[qašpátitʰi̥]
'you pl. turned it over'	'you pl. heard it'

Optional deletion of one consonant of a geminate is also possible in very rapid speech or with certain speakers.

2.6.2.2.2.2 Degemination through preaspiration. Another cross-linguistically common geminate simplification process occurs only with the two *k-* prefixes, which optionally become *h* preceding another *k*. These prefixes are the 1st person subject and the locative markers. Since these are the only prefixes that consist of a single stop, it could be argued that this optional preaspiration process occurs universally with geminate stops in the word-initial position, and is not morphologically conditioned.

72) /k-kiłtłi/	73) /k-kaa-tiyati̜/
1SUB-sing	LOC-LOC-earth
[kkiłtłí]/[hkiłtłí]	[kkaatíyatʰi̥]/[hkaatíyatʰi̥]
'I sing'	'in the earth'

2.6.2.2.2.3 Degemination through dissimilation. Two other homophonous single-consonant prefixes exist, š- 3POSSESSIVE and š̌- PAST. When either of these precedes an š̌- initial word, the prefix is realized as *k*.

74) /š-štiilan/   75) /š-špiiq-maa/

  3POSS-hen   PAST-whistle-PROG

  [kštíilan]   [kšpéeqma]

  'his/her hen'   's/he was whistling'

This process is optional but possible when either of these prefixes precedes a word beginning with *s* or *ɬ* also.

76) /š-sqaṭa̱/   77) /š-ɬku-maa xalanaṭi̱/

  3POSS-baby   PAST-burn-PROG coal

  [šsqatʰa̱]/[ksqatʰa̱]   [šɬkúmaa/kɬkúma xalánatʰi̱]

  'his baby'   'the coal was burning'

This optional dissimilation is avoided when the *k*- possessive prefix would be likely to be confused with the *k*- locative prefix, for example, *š-simáaqati̱* 'his/her tongue', *k-simáaqati̱* 'on the tongue'/*'his/her tongue'.

2.6.2.3 Vowel epenthesis in CCCC consonant clusters. Consonant clusters of more than three tautosyllabic consonants are prohibited in FM Totonac. Only one morphological context could potentially create a four consonant cluster, when a verb root beginning with a CC cluster is prefixed by both of the single consonant prefixes, PAST *š*- and 1st person subject *k*-, as in *š-k-snat* 'I was embracing him/her'. In all such cases, the *ša*- allomorph of the PAST morpheme is selected to prevent the illegal cluster: *šaksnát*. Other examples are *šakskaak* 'I was drying myself', *šakɬtatá* 'I was sleeping', *šakšwatá* 'I was dragging it'.

2.6.3 General constraints on vowels. Two phonological processes affecting vowels are active across all morphological environments, high vowel lowering and low vowel centralization.

2.6.3.1 High vowel lowering. High vowels may not occur adjacent to a uvular segment; they are lowered to a mid-vowel, whether the vowel involved is long or short. Adjacent to a glottal stop,

high-vowel lowering is also common, but not absolutely regular as it is with uvulars; this phenomenon will be dealt with later in this section. Examples of lowering adjacent to uvular *q* are provided below:

78) /piš-luquti/   79) /qiila̖/   80) /tsitsiqi̖/

 neck-bone   atole   black

 [pišlóqotʰi]   [qeel'a̖]   [tsitséqʰe̖]

 'throat'   'type of atole'   'black'

With the instrumental prefix *lii-*, the vowel, and especially the mora closest to the uvular, may be lowered further, with a phonetic realization close to *εœ-*:

81) /lii-quut-ni̥/   82) /lii-quqa/

 INSTR-drink-NOM   INSTR-carry

 [léeqootn̥i̥]/[lɛæqotn̥i̥]   [leeqóqʰa̖]/[lɛæqóqʰa̖]

 'beverage'   'carrying cloth (for babies)'

High vowels lower not only adjacent to the underlying uvular *q* but also adjacent to an *χ* or *N* that has assimilated to uvular place preceding a *q* (see §2.6.2.1 for uvular harmony, §2.6.1.1.2 for homorganic nasal assimilation).

83) /spupunqu̥/   84) /siliinqi/   85) /quxuu-nan/

 blue   cricket   cough-IND.OBJ

 [spupóNqʰo̥]   [síleeNqʰe̖]   [qoχoonún]

 'blue'   'cricket'   's/he coughs'

In one lexical item only, *ɬtoxóx* 'backpack', vowel lowering is found adjacent to *x*. It is possible that this *x* derives from *q* diachronically; this is suggested by the fact that some Totonac varieties show *x* allophones of *q* (Levy 1987:27). Other very similar words such as *spuxúx* 'straight' and *yux* 'it falls from a height' do not show lowering.

High vowel lowering adjacent to a glottal stop is regularly found only with certain affixes and a small number of function words. These include the prefixes *ti-* COUNTEREXPECTATIONAL and *tuu=* 'who'; suffixes *-qe'e* MEANWHILE and *-qo'o* TOTALITIVE; and *no'o* 'now' and *čo'o* 'and' (all with high vowels underlyingly). Vowel lowering adjacent to glottal stops is also occasionally found across all contexts. Very few morphemes have underlying *ʔ* in FM Totonac

(including *-qe'e* and *-qo'o*). In the other cases, the glottal stop is epenthentic at an utterance boundary (see §2.6.5.3).

86) /lii-an/	87) /tuu=an/	88) /š-ti-an/
INSTR-go	who-go	PAST-CNTR-go
[lee'ɛn]	[too'án]	[šte'án]
's/he takes it'	'he who goes'	'she should have gone'

Exceptionally, the low vowel of the extremely common root *'an* 'go' becomes [ɛ] when preceded by the instrumental prefix *lii-*, whose vowels undergo lowering in this context. This is seen in derived verbs such as *lee'ɛn* 'take' and *liiliitsee'ɛn* 'smile'.

2.6.3.2 Low vowel centralization. Short *a* is disallowed in closed syllables if it carries either primary or secondary stress. This is true even if the syllable is closed by a stop that releases into vowel features prepausally. The repair is a change of quality to a mid centralized vowel that I transcribe as *ɜ*.

89) Examples of /a/ lowering

tlaawɜn	's/he walks'	*sqalɜɬ*	'intelligent'
lɜnk'a̰	'tall'	*ɬwakɜk'a̰*	'liver'
škɜm'	'his/her son'	*kɜkʰa̰*	'greens'

2.6.4 Morphologically-conditioned constraints on vowels. Several processes affect vowels only in certain affixes. Each of these is detailed in the following subsections.

2.6.4.1 No hiatus. Vowel hiatus is disallowed in all cases in FM Totonac, with the grammatical response varying according to the prosodic boundary and the morpheme involved. On the left edge of the word, glottal stop epenthesis prevents hiatus at *all* word-word, prefix-root and prefix-prefix junctures, with three exceptions discussed below. For further discussion of glottal stop insertion at prosodic boundaries, see §2.6.5.3.

90) /kin-taa-aqonqš/	91) /ta-an/
1OBJ-COM-braid	3SUB.pl-go
[kintaa'aqónqš]	[ta'án]
'she braids my hair'	'they go'

37

92) /ama anilo/   93) /aqsqawini esu makatlaxanaa/

    this ring   demon o devil

    ['amá 'anílo]   ['aqsqawiní 'ésu makatlaxaná'a]

    'this ring'   'a devil or a demon'

In two exceptional cases, vowel deletion or shortening occurs instead of glottal stop epenthesis. When negative polarity =*ał* follows NEG *łaa=*, the result is the loss of one mora: *łaał=* NOT YET. Also, one lexicalized exception exists, *čin* 's/he arrives here' (< *či* 'here' + *'an* 'go'; cf. *ča'an* 's/he arrives there' < *ča* 'there' + *'an* 'go'). Finally, with the verb *'i'į* 's/he harvests it/buys it/gives it as a gift', glide insertion optionally separates the verb root from any vowel-final prefix: *tiiyí'į/tii'í'į* 'she passes by to harvest it'.

Unusually, glottal stop insertion is strictly unavailable at the root-suffix boundary. Either glide epenthesis or vowel coalescence prevents hiatus in the right side of the root, depending on the morpheme and the prosodic shape of the root. Only two suffixes are vowel-initial, the transitivizer –*ii* (sometimes vowel harmonic –*VV*) and the imperfective aspect marker –*aa*.

In most Totonac varieties the imperfective is analyzed as underlyingly –*yaa*, homophonous with the positional root meaning 'standing' from which it derives historically. In FM Totonac, several pieces of evidence point to an underlying form without the initial glide: First, the –*yaa* allomorph appears only after a vowel-final stem, (e.g., *munu-yáa* 'we water'), with –*aa* following all consonants, including *n*, (*skin-áa* 'we request'). Since *n* deletion is exceptionless preceding all sonorants and continuants in FM Totonac (see §2.6.1.1.1), if an -*n* final stem combined with an imperfective suffix of the form -*yaa*, the expectation would be loss of the *n*, not the *y*. Instead, the final *n* is retained and the –*aa* allomorph appears. Also, as will be seen, *y* epenthesis is found with another suffix, the transitivizer.

Returning to the repair of vowel hiatus, at the stem-imperfective suffix boundary, glide insertion is always the response.

94) /paati-aa/   95) /čipa-aa/

    suffer-IMPF   grasp-IMPF

    [paatiyá]   [čipayá]

    'we suffer'   'we grasp it'

At the boundary between the root and the transitivizer morpheme, vowel coalescence is most frequently found, with the final root vowel being deleted.

96) /maa-čuku-ii/   97) /maa-ɬtata-ii/

  CAUS-cut-TRAN   CAUS-sleep-TRAN

  [maačukí]   [maaɬtatí]

  's/he makes him/her cut it' 's/he makes him/her sleep'

98) /maa-puupu-ii/   99) /maa-qaɬ-tawaqa-ii/

  CAUS-boil-TRAN   CAUS-mouth-practice-TRAN

  [maapuupí]   [maaqaɬtawaqé]

  's/he boils it'   's/he makes him/her study'

However, in one-syllable roots a sole root vowel cannot be deleted, and in these cases, *y* epenthesis is found (see §2.6.4.2 for a description of vowel harmony in the transitivizer suffix):

100)/ɬku-ii/   101)/sqo-ii/

  burn-TRAN   radiate-TRAN

  [ɬkuyúu]   [sqoyúu]

  's/he burns it'   's/he bewitches him/her'

2.6.4.2 Vowel harmony. Vowel harmony is found only in the two verbal suffixes closest to the root, the transitivizer –*ii* or –*VV* and the indefinite object marker –*nan* or –*nVn*, and in the agentive suffix, -*na'ą* or -*nV'V* in deverbal nouns. Harmony is always in the root-to-affix direction. It seems that vowel harmony is being lost as a productive process, with certain, perhaps lexicalized, forms retaining it, and optionality in its use in other forms.

The transitivizer by itself can transitivize a small number of intransitive roots, but usually comprises the second half of a causativizing circumfix with causative *maa-*. For all speakers, it takes the allomorph –*ii* when attached to multisyllabic verb roots ending in vowels or with root vowel [i] (see §2.6.4.1 for the vowel coalescence facts).

102)/katsa-ii/   103) /maa-šniiq-ii/

  feel-TRAN   CAUS-wilt-TRAN

  [katsíi]   [maašneeqée]

  'she knows'   'it makes it wilt'

For some speakers, the –*ii* form is used productively with most roots, but for others, consonant-final verbs with *a* or *u* in the root take the vowel harmonic form of the transitivizer.

104)/maa-xaš-ii/   105) /maa-skux-ii/

     CAUS-rest-TRAN   CAUS-work-TRAN

     [maaxašáa]   [maaskuxúu]

     'he makes him rest'   'he makes her work'

For all speakers, monosyllabic vowel-final verb roots that undergo glide epenthesis rather than vowel coalescence (see §2.6.4.1) when suffixed with the transitivizer, show vowel harmony.

106) /ɬku-ii/

     burn-TRAN

     [ɬkuyúu]

     'she burns it'

The other vowel harmonic affix is the indefinite object suffix. It is a valence-decreasing morpheme that detransitivizes transitive roots and often adds a habitual meaning (see §5.4.4.1), e.g. *staa* 's/he sells it', *staanán* 's/he sells (for a living)'. Some verb roots are lexicalized to appear with this suffix, except when causitivized. For some speakers, the usual form of the INDEFINITE OBJECT is –*nan*, with vowel harmony only with certain roots with final *i* or *u*. The vowel harmonic allomorphs below seem to be frozen, lexicalized forms rather than the result of a productive constraint for these speakers.

107) Examples of vowel harmony in -*nan*

     čaxa-nan   *tsoq-nun*   *čiči-nín*   *qoxoo-nún*

     'it hails'   'he writes'   'it's hot'   'he coughs'

     paɬ-nán   *poɴqš-nún*   *siit-nín*

     'she sweeps'   'she washes (clothes)'   'he cuts (w/ scissors)

Common lexicalized non-harmonic forms for all speakers are:

108) Non-harmonic examples in -*nan*

     čiwii-nán   *loonq-nán*   *lukʉx-nán*   *qaɬti-nán*

     's/he speaks'   'it's cold'   's/he fights'   's/he responds'

For other speakers, vowel harmony continues to be a much more productive process, with most roots taking the harmonic form of the indefinite object.

The indefinite object suffix with its 'habitual' semantics appears to be the origin of the agentive suffix, *-nV'V*, in deverbal nouns (*tlaq-nán* 's/he plays (an instrument) habitually/for a living' and *tlaq-ná'a* 'musician'). The agentive usually takes the form *–na'ạ*, and shows vowel harmony with the same set of verbs as the indefinite object suffix, in other words, the same lexicalization seems to be at work.

109) Examples of vowel harmony in *–na'a*

staa-ná'ạ	*tsoq-nú'ụ*	*'aq-siit-ní'ị*
'seller'	'writer'	'barber'

Finally, a single lexicalized form exists in which a prefix, the causative *maa-*, shows vowel harmony with the root *xuu* 'in vertically': *kmuuxúu kɬtoxóx* 'I put it in the backpack'.

2.6.4.3 Pre-clitic aspiration. Preceding clitics and bound roots, stem-final vowels become aspirated. More specifically, aspiration is inserted after a short vowel, and with long vowels, the second mora of the vowel is devoiced and is heard as *h*. The clitics involved are *=ku'ụ* STILL, *=ts'ạ* YA, and *=wạ* ADJECTIVIZER, and the bound root is *–tsuu* 'short'.

110) /tsinks-maa-ts'ạ/
hungry-PROG-ALREADY
[ktsinksmáhts']
'he is hungry already'

111) /la-maa-kuụ k-mayaktị/
live-PROG-STILL LOC-Mecatlán
[lamahkúu kmayáktị]
'she still lives in Mecatlán'

112)/čuta-wạ/
flex-ADJ
[čutáhwạ]
'flexible'

113) /paa-tsuu/
belly-short
[pahtsú'ụ]
'closely planted rows'

2.6.4.4 Final suffix simplification. When verbal suffixes appear word-finally, most of them are simplified phonologically. The suffixes involved are the imperfective and perfect aspect markers *–aa* and *–niitạ* in S12; all suffixes with final latent vowels; all suffixes that end in long vowels; all *n* final suffixes; and iterative *–paɾa*.

The type of simplification depends on the suffix and the preceding segment. It may include deletion of the entire suffix or of its final segment(s); in the latter case resyllabification sometimes occurs. Each suffix is discussed in turn below.

2.6.4.4.1 IMPERFECTIVE –aa. When –*aa* occurs word-finally, it deletes entirely. Only when another suffix or clitic construction follows the one adding –*aa* is it realized on the surface. This analysis requires a degree of abstractness, since –*aa* does appear in verbs with first or second person plural subjects, even though the corresponding suffixes –*wą* 1pl and –*titį* 2SUB.pl are optionally but frequently deleted following –*aa*. (see §4.8.1.1).

114)/k-stiwi-aa/
    1SUB-rock- IMPF
    [kstiwí]
    'I rock him'

115)/š-laaqtsin-aa/
    PAST-see-IMPF
    [šlaaqtsín]
    'she was seeing him'

116)/k-stiwi-aa-čį/
    1SUB-rock-IMPF-HERE
    [kstiwiyáač]
    'I rock him here'

117) /š-laaqtsin-aa-ts'ą/
    PAST-see- IMPF-YA
    [šlaaqtsináats']
    'he was already seeing it'

118)/stiwi-aa-wą/
    rock-IMPF-1pl
    [stiwiyá]/[stiwiyáaw]
    'we rock her'

119) /š-laaqtsin-aa-titį/
    PAST-see-IMPF-2SUB.pl
    [šlaaqtsiná]/[šlaaqtsináatitʰį]
    'you pl. were seeing him'

2.6.4.4.2 PERFECT –niita. When –*niitą* occurs word-finally, it may shorten to -*nii* in verbs with any subject except second person singular. This process is optional but preferred. The person agreement marker of 2SUB.sg is glottalization of the final consonant, in this case –*niit'ą*. It seems that the morphological glottalization of the *t* protects it from optional deletion.

120)/kiłni-niitą/
    scold-PRFT
    [kiłniníi]/[kiłniníitʰą]
    'he has scolded him'

121) /puuti-niitą/
    evaporate-PRFT
    [puutiníi]/[puutiníitʰą]
    'it has evaporated'

122)/waa-nan-niiṭa̧-[cg]²/   123) /puuti-niiṭa̧-ts'a̧/

122)/waa-nan-niiṭa̧-[cg]²/

    eat-IND.O-PRFT-2SUB.sg

    [waayaníit'a̧]

    'you have eaten'

123) /puuti-niiṭa̧-ts'a̧/

    evaporate-PRFT-YA

    [puutiníitats']

    'it has already evaporated'

124)/tsuku-niiṭa̧-wa̧/

    begin-PRFT-1pl

    [tsukuniitáw]

    'we have begun'

125) /snapu-niiṭa̧-titi̧/

    cover-PRFT-2SUB.pl

    [snapuniitátitʰi̧]

    'you pl. have covered it'

2.6.4.4.3 Suffixes ending in latent vowels. Most monosyllabic suffixes ending in latent vowels—person/aspect markers 2OBJ –ni̧, 1pl –wa̧, 2Sub.sg –ti̧, perfective –li̧; and nominal pluralizer and deverbal nominalizers –ni̧ ---simplify, in the ways described below.

2.6.4.4.3.1 Person markers –ni̧ and –wa̧. When –ni̧ 2OBJ or –wa̧ 1pl follow a vowel-final stem, the latent vowel deletes entirely and the sonorant resyllabifies with the final syllable of the stem. Evidence that the latent vowel is deleted comes from the facts of post-lexical vowel epenthesis. When a consonant-final word precedes a consonant-initial word, a constraint requires the insertion of a vowel node that is filled either by the latent vowel following the consonant if present, or by the general epenthetic vowel *i* (see §2.6.5.1). Following a verb ending in resyllabified –wa̧, *i* is inserted, not *a*, demonstrating that the latent vowel has been deleted. When either suffix occurs after an obstruent, the entire suffix devoices.

126)/maqtaqał-ni̧/

    care.for-2OBJ

    [maqtaqáłn̥i̧]

    'she cared for you'

127) /qaps-wa̧/

    fold-1pl

    [qápsw̥a̧]

    'we folded it'

128)/kuču-ii-ni̧/

    cure-TRAN-2OBJ

    [kučíin]

    'she cured him'

129) /skiti-wa̧/

    grind-1pl

    [skitíw]

    'we ground it'

---

² [cg], or constricted glottis, is a floating feature that marks second person subject in some contexts.

130)/waayan-wa lii-waa-ni̥/

    eat-1pl INSTR-eat-NOM

    [waayáw i liiwán]

    'we ate meat'

131)/snat-wḁ/

    embrace-1pl

    [snátwḁ]

    'we embraced him'

2.6.4.4.3.2 Person/aspect suffixes –ti̥ and –li̥. The suffix –ti̥ marks a second person singular subject in the progressive and perfective aspects, and –li̥ marks perfective aspect (and is occasionally found in the progressive aspect) with first and third person subjects. Both are associated with an antepenultimate stress pattern. Following a vowel-final stem with antepenult stress in the perfective, both of these suffixes delete entirely. After an obstruent the lateral of –li̥ optionally spiranticizes to -ɬ. For perfective forms in which –ti̥ is deleted, 2ⁿᵈ singular subject is instead marked by glottalization of the final consonant. In the progressive aspect, -ti̥ exceptionally does not delete.

132)/laqa-pas-ti̥/

    face-radiate-2SUB.sg

    [laqápasti̥]

    'you recognized her'

133) /kin-snat-li̥/

    1OBJ-embrace-PFTV

    [kísnatɬ]

    'he embraced me'

134)/čiki-ti̥/

    shake-2SUB.sg

    [čik'i̥]

    'you shook it'

135) /čiqii-li̥/

    wash- PFTV

    [čéqee]

    'she washed it'

136)/k-ta-wi-li̥/

    1SUB-INC-sit-PFTV

    [ktáwi]

    'I sat down'

137) /maasta-ti̥/

    deliver-2SUB.sg

    [máast'ḁ]

    'you delivered it to him'

138)/pin-paa-ti̥/

    go2-PROG-2SUB.sg

    [pímpaati̥]

    'you are going'

2.6.4.4.3.3 –ni̥ suffixes. Two nominal suffixes *–ni̥* exist in FM Totonac: a nominal pluralizer (§3.3.1.1); and a deverbal nominalizer (see §3.3.11). They simplify exactly as does 2OBJ *–ni̥* described in §2.6.4.4.3.1: whenever they occur word-finally attached to a vowel-final stem, the *i* deletes and the nasal resyllabifies with the preceding syllable. Following an obstruent, both suffixes devoice.

139)/ta-pał-ni̥/
　　PURP-sweep-NOM
　　[tapáłni̥/
　　'broom

140) /laq-sqatạ-ni̥/
　　PL-baby-PL
　　[laqsqatán]
　　'babies'

141)/ta-kiłtłi-ni̥/
　　PURP-sing-NOM
　　[takiłtłín]
　　'song'

142) /ta-qałi-ni̥/
　　PURP-have-NOM
　　[taqałín]
　　'domestic animal'

2.6.4.4.3.4. Suffixal long vowel shortening. All suffixes ending in long vowels undergo vowel shortening when they are unstressed word-finally. These include *–ii* TRANSITIVIZER; *-nii* DATIVE; *-mii* and *–pii* DOWN; *–maa* PROGRESSIVE; *-aa* IMPERFECTIVE. However, when perfect aspect suffix *–niitạ* is optionally shortened to *–nii*, the long final vowel remains at the surface.

143)/maa-paatsanqa-ii-li̥/
　　CAUS-forget-TRAN-PFTV
　　[maapaatsánqe]
　　'she made him forget it'

144) /k-wili-nii/
　　1SUB-hit DAT
　　[kwilíni]
　　'I hit him'

145)/ak-tlawa-mii-li̥/
　　HEAD-do-DOWN-PFTV
　　[aktlawámi]
　　'she mistreated him'

146) /lak-siit-pii-ti̥/
　　DIST-cut-DOWN-2SUB.sg
　　[laksíitpi]
　　'you cut it in pieces'

147)/kaa-tsiis-nan-maa/
　　LOC-night-HAB-PROG
　　[kaatsiisnáma]
　　'night is falling'

148) /na-tantu-munu-aa-[cg]/
　　FUT-FOOT-water-IMPF-2SUB.sg
　　[natantumunúy'ạ]
　　'you're going to water his feet'

2.6.4.4.3.5. Suffixes in final -*n*. When the (final syllable of the) suffixes –*nan* INDEFINITE OBJECT/HABITUALIZER, -*kutun* DESIDERATIVE, and –*kan* REFLEXIVE are unstressed word-finally, they lose their final nasals by regular phonological rule (see §2.6.1.1.3).

149)/ta-kaaštlawa-nan-l̥i̥/   150) /kin-laaqtsin-kan-l̥i̥/
    3SUB.pl-adorn-HAB-PFTV   1OBJ-see-REFL-PFTV
    [takaaštlawána]   [kilaaqtsínkḁ]
    'they adorned it'   'I looked at myself'

151)/ta-tlawa-kutun-l̥i̥/
    3SUB.pl-do-DES-PFTV
    [tatlawakútu]
    'they wanted to do it'

2.3.4.4.6 ITERATIVE –*paɾa*. When stress is non-final, -*paɾa* is truncated to –*paɾ* or -*pa* word-finally.

152)/ɬkaak-nan-maa-para/   153) /pin-paɾa-ti̥/
    heat-HAB-PROG-ITER   go2-ITER-2SUB.sg
    [ɬkaaknamaapá]   [pimpáɾ'ḁ]
    'it's hot again'   'you went again'

2.6.4.5 Post-glottal vowel devoicing. This rule bans the appearance of a full vowel after a glottalized consonant. Many cases of vowels following a consonant with constricted glottis features are underlyingly latent vowels lacking a root node (see §2.2.3). However, underlyingly full vowels also devoice prepausally when morphological glottalization surfaces at a prosodic boundary (see postlexical glottal epenthesis in §2.6.5.3). The construction that causes morphological glottalization of the final consonant of the word is 2nd person singular subject marking (see §4.8.1.2). Note that 2nd person glottalization may affect any consonant phoneme, including sonorants and fricatives (see Beck 2006 for a treatment of ejective fricatives in the Upper Necaxa dialect).

The vowels in these contexts behave identically to the underlying latent vowels: phonetically they are devoiced or optionally deleted, are only perceptible in the noisy release of the

consonant, and don't protect final consonants from prosodic glottalization. They could be analyzed as losing their root node in this context.

154)/kaa-aa-[cg]/   155) /ɬtata-niitą-[cg]/
    cut-IMPF-2SUB.sg   sleep-PRFT-2SUB.sg

    [kaay'ą]   [ɬtataníit'ą]

    'you cut it'   'you have slept'

156)/čimam'ą/   157) /š-laaqtsin-kan-[cg]/
    fuzzy   PAST-see-REFL-2SUB.sg]

    [čimám'ą]   [šlaaqtsínk'ą]

    'fuzzy'   'you saw yourself'

2.6.5 Postlexical constraints at word and phrase boundaries. FM Totonac has three different types of epenthesis that occur only postlexically between words or at prosodic boundaries. These include vowel epenthesis, nasal epenthesis, and glottal epenthesis.

2.6.5.1 Vowel epenthesis. Postlexically, in connected speech at word boundaries, V-C transitions are preferred. When two consonants come together across a word boundary, in most cases an intervening vowel is required, resulting in vowel epenthsis. As discussed in §2.2.3 and §2.4, reduced vowels or vowel features occur in the release of word-final consonants prepausally. Because of the presence of these latent vowels, as I analyze them, I posit the epenthesis of an empty vowel root node at C-C boundaries. If the final consonant of the first word has such associated vowel features in its release, these features attach to the inserted root node, resulting in a fully voiced vowel. When no latent vowel is present in the release of the first C (possible with final nasals), an epenthetic *i* fills the vowel slot between words.

158)/š-laqati qawaačą wanqin/   159)/tan-tim sasan/
    PAST-like boy frog   TAIL-one skunk

    [šlaqatí N qawáača wánqen]   [tantími sásan]

    'the boy liked the frog'   'one skunk'

160)/maa-lii-waa-ii stapų š-kaman'ą/
    CAUS-INSTR-eat-TRAN bean 3POSS-children

    [maaliiwíi stápu škáman'ą]

    'she feeds beans to her children'

A homorganic nasal epenthesis rule also exists at this level, exemplified above in the sentence *šlaqatí N qawáača wánqen* 'the boy liked the frog', where a uvular nasal is inserted. This process is the subject of §2.6.5.2.

2.6.5.2 Nasal epenthesis. A word-initial plosive is dispreferred following a vowel at word boundaries. In the postlexical phonology, a nasal epenthesis sandhi process is active which usually inserts a homorganic nasal following a vowel and preceding a word-initial oral stop or affricate. The preceding vowel may be underlying or epenthetic, inserted by the process described in §2.6.5.1. McQuown (1940: §2.2.2, 4.1, 4.2, 4.6) describing a similar phenomenon in the Coatepec variety, analyzes these as prenasalized allophones.

161)/maqtim kin-lii-čiwii-nan/   162) /ama pašni/

    once 1OBJ-INST-speak-HAB   that pig

    [maqtími ŋ kiliičiwíina]   ['amá m pášn̥i]

    'he once told me'   'that pig'

163)/tlaq katsii čii ikinan/   164) /k-łuku qawaačǫ/

    much know how we   LOC-hole boy

    [tlaq katsíi n čii 'ikinán]   [kłúku N qawáacǫ]

    's/he knows more than we'   'the boy in the hole'

This phenomenon, which creates nasal-plosive clusters between words, and the phonotactic constraint that otherwise limits nasal-plosive clusters to morpheme-final position (see §2.5.2), conspire to allow this type of boundary-oriented cluster to serve a parsing function. An additional ability to delimit prosodic constituents is provided by the fact that the word whose edges can undergo nasal epenthesis does not include clitics. Therefore, epenthetic nasals may be inserted between clitics and the words they attach to phonologically, and thus serve to distinguish clitics from suffixes, to the extent that this distinction is meaningful. The clitics (or affixes less tightly attached to the stem) which are subject to nasal epenthesis are negative potential *la-*; negative intensifiers *tii=* (not) anyone, *tuu=* (not) anything, *łaa=* (not) anywhere, and *čii=* (not) anyhow; all proclitic adverbials; enclitic adverbials *-ku'ų* and *-ts'ą* and deictics *-čį, -čitą, -ča'ą* and *–pį*. Between certain morphemes and stems, variation in the effects of the constraint requiring nasal epenthesis within and between speakers seems to point to ambiguity in the degree of attachment of those morphemes to the word (see §6.5.3.2).

165) /ta-akta-aa-ča'ą̃/

    MV-descend-IMPF-THERE

    [ta'aktayaančá'ą̃]/[ta'aktayaačá'ą̃]

    'he lands over there'

2.6.5.3 Glottal feature epenthesis at prosodic boundaries. Plain consonants are prohibited at the right edge of a phrasal boundary in FM Totonac. In §2.3.1.5, the lexical process of glottal stop epenthesis at the <u>left</u> edge of words, preceding vowel-initial roots and prefixes, was discussed. In addition, FM Totonaco has a postlexical process of glottal feature epenthesis at the right edge of words preceding a pause.

Since laryngeal consonants are common epenthetic segments at prosodic boundaries (Hyman 1989; Blevins 2008), an analysis of these glottal features as epenthetic features demarcating domains seems well-motivated and explains their unusual distribution. Except for a handful of lexical items (see example 11), glottal stops and spread or constricted glottis features attached to consonants are limited to prosodic boundaries in FM Totonac, either at the left edge (preceding vowel-initial roots or prefixes) or at the right edge (prepausally). This can be stated as a constraint against glottalization word-internally after the root onset (see §2.6.4.1 for a description of *y* rather than *ʔ* as the epenthetic consonant within this domain).

This limited distribution of glottals is particular to FM Totonac, but is not unusual for a Totonaco language. MacKay (1999:42) remarks on the distribution of *ʔ* in Misantla Totonac as differing from that of all other consonants, in that it appears either as a epenthetic segment syllable-initially, or else word-finally on nominals only, and never in consonant clusters. Troiani (2004:33), writing about Huehuetla Puebla Totonac, notes that the glottal stop occurs only in absolute final position following a vowel, and tends to disappear in connected speech. Levy (1987:60-61) mentions glottal stop as an optional demarcative feature preceding a vowel-initial root or prefix in Papantla Totonac, and as a marker of end of utterance word-finally following a short vowel.

Even segments that are morphologically glottalized have phonetically realized constricted glottis features only when the prosodic domain marking function is also active. There are two constructions in which glottalization serves a morphological or morphosyntactic function in FM Totonac. First, the second person singular subject is marked in two aspects by glottal features attached to the final consonant of the verb, as in *tantlíy'ą* 'you dance' (see §4.8.1.2). Second, certain deverbal nominalizations without suffixes are marked in the same way, for example, *takúk'ą* 'load' (see §3.3.11.7). In many cases the constraint against word internal glottalization results in morphological neutralization, particularly with 2SUB.sg marking, where the glottal feature is often all that distinguishes second person from third. It seems that FM Totonac may be near the end of a historical process that has relegated glottal stops primarily to a prosodic boundary-marking role.

Generally, word-final obstruents are aspirated and sonorants are glottalized phrase-finally before a pause. Only a consonant with a latent vowel in its release (see §2.2.3) is susceptible to the attachment of the spread or constricted glottis features; the vocalic features appear to be necessary for the perceptibility of the glottal features. Latent vowels are often deleted in rapid speech, most often following a sonorant or fricative, and this deletion entails the loss of the spread glottis feature as well. Long vowels in this prosodic context have their moras separated by a glottal stop, that is, -VV becomes -V'V. The details of glottal feature epenthesis are given below.

2.6.5.3.1 Final vowels. Aside from the reduced or latent final vowels which fail to protect the preceding consonant from prosodic spread/constricted glottis features, final short vowels are unmarked by glottal features prepausally.

166) Examples of non-glottalized final short vowels

túwa	'difficult'	*nakú*	'heart'
munú	'he waters it'	*čipá*	's/he grabs it'

Final long vowels are glottalized, with the second mora of the vowel devoiced. It should be noted that in verbal suffixes, the final mora of an unstressed long vowel is deleted by lexical rule word-finally; therefore final long Vs are found only in verbal or nominal roots.

167) Examples of glottalized final long vowels

číškú'ų	'man'	*stá'ą*	's/he sells it'
nána'ą	'mother'	*tantłí'į*	's/he dances'
qoolú'ų	'old man'	*pu'ų*	'it's in the fire'

2.6.5.3.2 Final sonorants. Prepausally, final sonorants with vocalic release features are glottalized:

168) Examples of glottalized final sonorants

kiw'į	'tree'	*stay'ą*	'squirrel'
qam'ą	'tasty'	*łtantal'ą*	'naked'
čuun'į	'vulture'	*wámpar'*	'he spoke again'

No verbal examples exist for two reasons. Verb roots in FM Totonac do not end in sonorants other than *n*, and the final *-n* in verb roots does not have associated latent vowel features. Also, verb stems with final sonorants only occur when sonorant-vowel suffixes have their final vowel

fully deleted phonologically (see §2.6.4.4.3.1); without a latent vowel, glottalization is not possible.

2.6.5.3.3 Final obstruents. Final obstruents are generally aspirated prepausally. The aspiration is very salient in the case of stops, but less often heard with affricates and fricatives, where latent vowels are often deleted except in careful speech.

169) Examples of aspirated final obstruents

napʰa̦	'aunt'	*panámakʰi̦*	'cotton'
saqáqʰa̦	'white'	*kučʰu̦*	'aguardiente'
pašʰa̦	's/he bathes'	*ksnatʰa̦*	'I embrace him/her'

Final obstruents that have been morphologically glottalized to mark 2nd singular subject or in a deverbal nominal at the lexical level do not receive post-lexical aspiration.

170) Examples of morphologically glottalized final obstruents

čup'a̦	'you poke it'	*waayán'a̦*	'you eat'
qałiniit'a̦	'you have waited'	*łaanatamoqós'a̦*	'don't fall!'
takúk'a̦	'load'	*talíits'a̦*	'smile'

There is a small group of nominals with glottalized rather than aspirated final stops, most often with final *k*, that poses a problem for this account. They appear to be monomorphemic, although some may be deverbal nominals. More research is needed to determine why they diverge from the normal pattern.

171) Examples of exceptionally glottalized final obstruents

čik'i̦	'house'	*xuuk'i̦*	'deer'
lank'a̦	'big'	*štuk'i̦*	'cricket'
łwakak'a̦	'liver'	*qooq'o̦*	'mute'
stap'u̦	'type of mosquito'	*čikič'i̦*	'type of plant'

2.7 Stress. In Filomeno Mata Totonac, stress always occurs within a three-syllable window on the right edge of the word. Stress is lexical in less than 15% of the lexicon. It is morphologically determined in all derived forms, which includes all verbs and about 85% of the nominals I have collected. Unusually in cross-linguistic terms, stress shift is a marker of interrogative utterances. Separate subsections below will describe lexical stress, morphological stress, and interrogative stress.

2.7.1 Lexical stress. Stress is lexical in the 15% of the lexicon composed of monomorphemes. Carolyn MacKay (unpublished manuscript, 2007) has proposed a stress rule for the Totonaco-Tepehua family: primary stress falls on a final heavy syllable, otherwise on the penultimate syllable. The definition of a heavy syllable differs somewhat across the family, but generally it is a CVV or CV(V)C, where the final consonant is a sonorant (*h, ʔ, m, n, l, y, w*). This proposal fails in the case of Filomeno Mata Totonac. Whether we assume that final latent vowels count for stress assignment or not (I assume they do not, lacking a root note), many monomorphemes **do** follow the MacKay stress rule (recall that final long vowels become -*V'V* in citation form and prepausally):

172) Examples of regular stress per MacKay's rule

ɬtantál'a̧	'naked'	*škayíw'a̧*	'green'
looqóy'i̧	'crane'	*kuyém*	'jicama'
'aaksán	'oak'	*papá'a̧*	'moon'
qoolú'u̧	'old man'		
tsíisa	'morning'	*kuškáyu*	'yucca'
'akáaška	'pineapple'	*kúyu*	'armadillo'
súwaɬ	'black sapote fruit'	*číwĩš*	'stone'
číkiči̧	'type of plant'		

However, the stress in many monomorphemic lexical items is counter to the rule, with heavy final syllables unstressed, or final light syllables stressed. Forms with the unpredicted stress pattern comprise about 25% of the monomorphemes in my nominal database.

173) Examples of unpredicted stress per MacKay's rule

štíilan	'chicken'	*sásan*	'skunk'
skáwaw'a̧	'dry tortilla'	*pičáwa'a̧*	'eagle'
wíitɬam	'edible caterpillar'	*nakú*	'heart'
čaalí	'tomorrow'	*tsumuxáatʰi̧*	'girl'
ɬtoxóx	'backpack'	*qawáača̧*	'boy'

Because the number of monomorphemic nominals is low, and the number of exceptions to the MacKay stress rule is high, I prefer to analyze stress as lexical. It is possible that the number of monomorphemes is even lower than I believe at present. For example, many descriptive adjectives end in what appears to be a reduplicated syllable, such as *spuxúx* 'straight' or *latáta̧* 'thin'. If this is a morphological construction that imposes final stress, then a significant number

of words I have included as following the stress rule actually have morphological stress. This would give the stress rule even less predictive power.

2.7.2 Morphological stress. Morphological stress is assigned by the final construction, usually by the suffixation of the aspect marker in verbs and the nominalizer in nouns. Compounds and ideophonic constructions have their own specific stress patterns. Stress is associated with constructions, not with the phonological surfacing of an affix. Thus a stem that has undergone the impefective aspect construction receives final stress, whether or not the imperfective –*aa,* for example is phonologically deleted.

Because of the various simplification processes that affect word-final suffixes (see §2.6.4.4) and the complications of nodeless vowels (see §2.2.3), the stress rules to be discussed are often not surface true. They must be computed based on underlyingly present suffix syllables. It is usually clearer to refer to stress falling one or two syllables preceding certain suffixes, rather than using the terms 'penult' and 'antepenult', although I will use these terms when they won't cause confusion.

In addition, to compute stress accurately, a few words must be said about the underlyingly latent vowels that some suffixes end in. These may not receive stress when they are word-final, but they count as syllables for calculating stress assignment because the addition of the following suffix will cause them to receive an epenthetic vowel node by regular rule (see §2.6.5.1). For example, the deictic –*čį* HERE, when word-final in a word with final stress, is not stressed: *waayánčį* 'he eats here'. In *waayančíw* 'we eat here', however, the *i* has become a full, stressable vowel by virtue of the following first person plural suffix –*wą,* which assigns stress to the syllable preceding it.

The totalitive –*qo'ǫ* and BEFORE –*qe'ę* morphemes act inconsistently with regard to stress. In final stress patterns, they behave as normal final long vowels, that is, they are stressed on the first mora and glottalized: *waayanqó'ǫ* 'he finishes eating', *nakqaltawaqaqé'ę* 'I will finish studying meanwhile'. With all other aspects, these suffixes count as two syllables, that is, as if the glottal stop is underlying. This anomalous behavior is perhaps associated with the trend in FM Totonac to losing morpheme-internal glottal stops (see §2.3.1.5).

Each type of morphological stress is detailed in the following subsections.

2.7.2.1 Suffix-associated stress. The suffixes marking all four aspects, the person agreement suffixes, and the enclitic =*kú'ų,* are each associated with a particular stress pattern underlyingly, final, penult, or antepenult. Verbal stress is assigned by whichever of these is the final suffixal construction, even if it does not surface phonologically. These stress patterns are often not found at the surface not only because of the phonological shortening and deletion of the stress-related suffixes, but also of other suffixes such as the iterative –*para*, which sometimes reduces to -*pa* (see §2.3.4.4.6). All other suffixes and enclitics have a null effect on stress, even if they occur outside a stress-assigning suffix.

2.7.2.1.1 Progressive aspect stress. The progressive aspect is associated with stress on the penultimate underlying syllable, regardless of which PROG suffix is involved. The progressive markers are –*paa* with 2nd person subject, -*maana* with 3rd plural subjects, and –*maa* elsewhere. Since the progressive markers occur in suffix position 6 of 15, many other non-stress-assigning suffixes may follow them, none of which affect the penult stress pattern. Only the presence of a person agreement morpheme or the adverbial =*kú'u̧* can relocate stress.

The second person allomorph –*paa* is never word-final; it is always followed by the 2nd subject singular suffix –*ti̧*, which assigns stress two syllables preceding itself (as does PFTV -*li̧*; see §2.7.2.1.2), or the 2nd subject plural suffix –*titi̧*, which assigns stress to the preceding stem syllable (as do the other person agreement suffixes). In other Totonac varieties, -*na* is a plural person marker, but in FM Totonac, it only occurs in the 3rd plural progressive suffix –*maana*, which I therefore analyze as a single morpheme.

174) /paati-nan-maa/

suffer-HAB-PROG

[paatináma]

'he is suffering'

175) /taaskux-paa-ti̧/

work-PROG2-2SUB.sg

[taaskúxpaatʰi̧]

'you are working'

176) /ta-min-maana/

3SUB.pl-come-PROG3

[tamimáana]

'they are coming'

177) /lii-čiiwinan-maa-wa̧/

INST-talk-PROG-1pl

[liičiiwinamáaw]

'we are talking about it'

178) /š-ta-łtata-maana-para/

PAST-3Sub.pl-sleep-PROG3-ITER

[štałtatamaanapá]

'they were sleeping again'

179) /š-k-siit-maa-qo'o/

PAST-1SUB-cut-PROG-TOT

[šaksiitmaaqó'o̧]

'I was finishing cutting it'

180) /š-qašpat-paa-pi̧-ti̧/

PAST-hear2-PROG2-THERE2-2SUB.sg

[šqašpatpáapʰi̧]

'you were listening over there'

2.7.2.1.2 Perfect aspect stress. The perfect aspect suffix –*niita̧*, which occurs in suffix position 12, is associated with a penultimate stress pattern. Thus stress often falls on its first syllable: -*níita̧*. This is true even when it optionally shortens phonologically to –*nii*, as is common. It can

be followed only by a deictic (these have no impact on stress), or a person agreement suffix or enclitic (most of which do determine stress).

181)/k-wan-nii-niitą̀/
    1SUB-say-DAT-PFT
    [kwaniiníitʰą̀]/ [kwaniiníi]
    'I have told him'

182) /ta-waka-niitą̀-wą̀/
    INC-up-PFT-1pl
    [tawakaniitáw]
    'we have raised ourselves up'

183)/waa-qo'o-niitą̀-[cg]/
    eat-TOT-PFT-2SUB.sg
    [waaqooníit'ą̀]
    'you have eaten everything'

184) /ta-min-niitą̀-ča'ą̀/
    3SUB.pl-come-PFT-THERE
    [taminiitančá'ą̀]
    'they came there'

2.7.2.1.3 Imperfective aspect stress. The imperfect aspect is associated with final stress whenever its marker, *-aa*, (in the same suffix position 12 as the perfect) is suffixed in the final construction of the verb. However, the IMPF suffix is phonologically deleted whenever it is the final construction of the word, so imperfective stress usually falls on a stem syllable, not the suffix itself. It is stressed word-finally only in the speech of younger speakers in verbs with 1st or 2nd plural subjects, where the subject markers are deleted. Because the imperfective suffix *–aa* is often deleted phonologically, as are the perfective suffixes, it is often only the stress pattern that distinguishes these two aspects.

185)/laka-swiik-aa/
    FACE-shave-IMPF
    [lakaswiík]
    'he shaves him'

186) /k-laa-aa-wą̀/
    1EXC-live-IMPF-1pl
    [klaayáaw]/[klaayá]
    'we (exc) live'

187)/tan-kaa-pii-aa-[cg]/
    REAR-cut-DOWN-IMPF-2SUB.sg
    [tankaapíy'a]
    'you cut it down'

2.7.2.1.4 Perfective aspect stress. An antepenult stress pattern is characteristic of perfective aspect, which is marked by *–ti̧* with 2nd person subjects and *–li̧* elsewhere. It is more accurate to say that when the perfective aspect marker is the final suffix, it assigns stress two syllables preceding itself, i.e. *qášmatɬ* 'he heard', where *-ɬ* is an allomorph of PFTV *–li̧*. Due to the

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simplification and deletion rules affecting these suffixes (see §2.6.4.4.3.2), they often fail to surface phonogically, so that the non-final stress pattern is what most reliably distinguishes this aspect from the imperfective. In FM Totonac, -tị (in conjunction with –paa PROG) marks the progressive as well as the perfective aspect, so it is not strictly a perfective marker, unlike in some other Totonac languages e.g., Misantla.

The perfective markers occur in the same suffix position 14 as the person agreement suffixes, and therefore cannot co-occur with them. When both are required by the morphosyntax, it is the person markers that block the perfective suffixes and assign stress.

188)/maqtaqal-lị/
care.for-PFTV
[maqtáqaɬ]
'she cared for it'

189) /maqtaqal-nị/
care.for-2OBJ
[maqtaqáɬnị]
'she cared for you'

190)/ta-qašmat-lị/
3SUB.pl-listen-PFTV
[taqášmatɬ]
'they listened'

191) /qašpat-titị/
listen2-2SUB.pl
[qašpátitʰị]
'you pl. listened'

192)/ka-taa-skuh-tị/
IRR-COM-work-2SUB.sg
[katáaskuhtʰị]
'work!'

193) /š-ti-ta-skin-lị/
PAST-CNTR-MV-PFTV
[štitáskiɬ]
'they should have requested it'

2.7.2.1.5 Person markers and stress. The three person agreement markers of suffix position 14 assign stress to the syllable that immediately precedes them underlyingly. The stress pattern they impose can only be overridden by the enclitic =ku'ụ, which follows them and assigns final stress. These person-marking suffixes are 2nd object –nị, first plural –wạ and 2nd subject plural –titị. In addition, the construction that adds the constricted glottis feature which marks a 2nd singular subject in the imperfective and perfect aspects has the same effect on stress, causing it to fall on the syllable preceding the one the floating [cg] feature is attached to (always the final consonant of the word.)

194)/na-k-qaši-aa-nị/
FUT-1SUB-punch-IMPF-2OBJ
[nakqašiyáan]
'I'm going to punch you'

195) /k-waayan-ča'ạ-wạ-lị/
1EXC-eat-THERE-1pl-PFTV
[kwaayanča'áw]
'we ate over there'

196)/laa-laaqtsin-paa-titi̧/   197) /pin-niita̧-[cg]/

    REC-see-PROG2-2SUB.pl   go-PRFT-2SUB.sg

    [laalaaqtsimpáatitʰi̧]   [piníit'a̧]

    'you (pl) are looking at each other'   'you have gone'

2.7.2.1.6 Enclitic =kú'u̧ and stress. The enclitic *=kú'u̧,* meaning 'just' or 'still' and occurring in the final post-verbal position, always takes the primary stress of the word it attaches to, overriding any stress patterns assigned by previously affixed morphemes.

248)/anu laa-maa = ku'u̧/   199) /k-puu-čeqee-li̧ = ku'u̧/

    there live-PROG-JUST   1SUB-INS-clean-PFTV = JUST

    ['anú laa-maa-kú'u̧]   [kpuučeqeekú'u̧]

    'he's still living there'   'I just cleaned it inside'

2.7.2.2 Compound stress. Compound nouns are characterized by a particular pattern of stress falling on the final syllable of the penult member of the compound. The penult member is usually the first one, since compounds generally contain two members, but compounds of three nouns are possible, for example, *munču̧lu-seeqná-paɬma̧* 'swamp banana leaf'. The first member of a compound may be any part of speech, the second is always a noun. This stress pattern distinguishes compound nouns from nouns prefixed by body part morphemes, for example.

Table 2.10 Compound nouns

kaštíla	*čaw'a̧*	*kaštiláṅčaw'a̧*
'Spanish'	'tortilla'	'bread'
máyakʰi̧	*stápʰu̧*	*mayákstapʰu̧*
'vine'	'bean'	'vine-bean'
puksnan	*kiw'i̧*	*puksnáṅkiw'i̧*
'it stinks'	'tree'	'cedar'
lakán	*xúuk'i̧*	*lakáxuuk'i̧*
'face'	'deer'	'species of ant'
luuwa̧	*skiti̧*	*luuwáskiti̧*
'snake'	'fish'	'snake-fish'
šuuna̧	*taqʰo*	*šuunátaqʰo*
'bitter'	'grandfather'	'greatgrandfather'

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2.7.2.3 Sound symbolic adverbial stress. Reduplicated sound symbolic adverbs (see §2.8 and §5.5.6) express sound or manner of motion and precede the verb. They always take emphatic primary stress on each of the reduplicants.

    200) /pim pim min čučut̥i̥/
        hop hop come water
        [pím pím mín čúčut̥i̥]
        'the rain comes bouncing down'

    201) /qolo qolo ta-an-l̥i̥ čiwiš/
        roll roll 3SUB.pl-go-PFTV
        [qólo qólo ta'áɬ číwis]
        'the stones went rolling down'

    202) /čimpš čimpš laka-wan/
        blink blink FACE-say
        [čímpš čímpš lakawán]
        'he blinks his eyes'

2.7.3 Interrogative stress shift. A cross-linguistically unusual pattern of stress shift (as well as a special intonational pattern) marks interrogative utterances Filomeno Mata Totonac. Stress is morphologically or lexically determined in the language, but in interrogative utterances, the stress on one or more words shifts one or more syllables to the right or left, as in *čii liilakaštláwa* 'how he fixed it' vs. *čii liilakáštlawa* 'how did he fix it?'. The process is optional but very frequent, and affects both polarity and content questions. The syntactic constituent most often affected is the verb, and the most common shift is one syllable to the left, although great variation is found. Stress may shift on subject, object, determiner, adjective or other element as well as, or instead of, on the verb. This is especially interesting since often the only difference between a verb in the imperfective aspect and one in the perfective is the stress pattern, with perfective stress one syllable to the left.

The details of this process, particularly the interaction between stress and intonation, must be left for further study. At this time I can only offer a statistical summary of the findings. In my database of 200 questions (90 content, 110 yes/no), 81% show stress shift on at least one element. The most likely shifts are: one syllable to the left in 57% of the cases, two syllables to the left in 20% of the questions, and one syllable to the right in 15% of cases. The elements most

likely to show stress shift are the verb 69% of the time, the direct object 12%, the subject 6%, and the indirect object 5% of the time. The direction and number of syllables of stress shift can differ on the various constituents within a question.

Due to the frequent simplification of the stress-assigning aspect suffixes (see §2.6.4.4 for simplification processes and §2.7.2.1 for suffix related stress), stress is often the only way to distinguish imperfective and perfective aspect. Imperfective aspect is associated with final stress, and perfective aspect with antepenult or (on the surface) penult stress. Interrogative stress shift affects these two aspects somewhat differently: in perfective aspect, a leftward shift occurs approximately 62% of the time, a rightward shift 28% of the time, with no shift in about 10% of the cases. In the imperfective aspect, normally associated with final stress, a leftward shift is usually the only possibility and occurs in 80% of cases, while 8% of examples show a rightward shift, and 12% no shift. The interrogative stress shift may thus create ambiguity as to aspect when the aspect markers are not present. This is resolved by the presence of temporal expressions or by context. Examples of various kinds of stress shift are exemplified in the following subsections.

2.7.3.1 Questions with verbal stress shift.
203) Examples with stress shifted one syllable left

/tuu łaa＝ta-lii-ta-qałuu-kutun-aa/

what NEG-3SUB.pl-INST-INC-descend-DES-IMPF

[túu łaataliitaqałuukútu]

'Why don't they want to descend?'

Declarative:

[łaatataqałuukutún]

'They don't want to descend.'

/suuqi-ta-kii-aa ana/

early-INC-upright-IMPF ana

[sooqentáakii 'ána]

Does Ana get up early?

Declarative:

[sooqentakií 'ána]

Ana gets up early.

204) Example with stress shifted one syllable right

/čii laka-štlawa-kan-lị̧ radyo/

how face-fix-REF-PFTV radio

[číi lakaštláwaka rádyo]

How was the radio fixed?

Declarative:

[lakaštlawáka rádyo]

The radio was fixed.

205) Example with stress shifted two syllables right

/łaa kii-puš-tị̧ stápụ̧

where RT-pick-2SUB.sg bean

[łáa n kiipuští stápʰu]

Where did you go to pick beans?

Declarative:

[kíipušti stápʰu]

You went to pick beans.

2.7.3.2 Stress shift on nonverbal constituents. The following examples show stress shift on an object, a dative object, a conjunction and a locative expression as well as on the verb.

206) Example with stress shifted two syllables leftward on object

/łaa = ka-ti-kaa-munu-titị̧ wiši-nán min-šaawatị̧-kan

NEG IRR-CNT-LOC-water-2SUB.pl you-PL 2POSS-field-POSS.pl

[łaakatikaamunútitʰi wišinán i mišáawatkan]

'Didn't you pl. water your cornfield?

Declarative:

[łaamunútitʰi wišináni mišaawatkán]

'You pl. didn't water your cornfield.

207) Example with stress shifted two syllables right on IO, one right on verb

/tíi ta-ii šanatị̧ gabryela

who INC-give flower Gabriela

[tíi n ta'íi šanatí gabryéla]

Who gave Gabriela flowers?

Declarative:

[tá'ii šánati gabryéla]

'She gave Gabriela flowers.'

208) Example with stress shifted one syllable left on 'because', one right on verb

/tuu špalakata ta-ta-lii-punqa-lị číkị/

what because 3SUB.pl-INC-INST-collapse-PFTV house

[túu špalákata n tataaliiponqá n číkʰị]

Why did the houses collapse?

Declarative:

[špalakáta tataliipónqa n číkʰị]

'because the houses collapsed'

209) Example with stress shifted one syllable left on locative expression and on verb

/kii-ta-aqałuu-lị k-tałpaan/

RT-INC-descend-PFTV LOC-ravine

[kiita'áqałuu ktáłpaan]

Did he go down into the ravine?

Declarative:

[kiita'aqáłuu ktałpáan]

He went down into the ravine.

Much more research is required on this topic to discover, among other things, how it interacts with intonation, what determines the directionality of interrogative stress shift and how aspectual ambiguity is resolved.

2.8 Sound symbolism. Sound symbolism is pervasive in the phonology of FM
Totonac. It is especially prominent in ideophones, but has at least sporadic or diachronic productivity throughout the lexicon. Three sound symbolic intensity series exist in the language: a fricative series: *s, s̆, ł*; a coronal stop-affricate series: *t, ts, č, tl*; and a dorsal-uvular stop series: *k, q* (all are common cross-linguistically; see Nichols 1971). For comparison, the full consonant inventory is repeated in Table 2.11, with sound symbolic segments bolded; note that all of the coronal obstruents are involved in sound symbolism.

Table 2.11 FM Totonac consonant inventory

p	t		k q	?
	ts č tl			
	s š ł		x	
m	n			
	l		y w	

FM Totonac lexical items differing only in sound symbolic segments almost always exhibit diminutive-augmentative semantic differences, with *š* and *ł* usually indicating greater intensity than *s*, and *q* greater than *k*. However, the pairing of semantic content to particular segments is inconsistent; although *ł* marks the higher intensity in many verb pairs, such as *sqawi* 'he bends it', *łqawi* 'he bends something thick', in several sets of color terms, such as *škayiw'ạ* 'green' and *łkayiw'ạ* 'light green', it indicates the lower intensity. Thus synchronically there is no clear directionality in intensity in any of these series. Sometimes a word with a dorsal stop and a fricative will show changes in both sound symbolic segments when augmentative semantics are involved, as in *smukúkụ* 'yellow' and *šmoqóqọ* 'deep yellow of ripe fruit'.

The most common categories of words to employ sound symbolism are verbs and to a much greater extent, three categories of ideophones: color terms; odor/flavor terms; and sound and manner of motion adverbials (another ideophonic category of descriptive adjectives exists, but does not feature sound symbolic segments; see McFarland to appear). Occasionally other word classes utilize sound symbolic phonemes to derive semantic pairs, such as *cišitị* 'hair(s)' and *tsísitị* 'little hair(s), or *čiič* 'hot' and *tsiits* 'warm', but this is relatively unproductive. Each of the ideophonic categories shows a particular pattern of reduplication, position of sound symbolic phonemes, stress pattern and vowel melody. The major sound symbolic categories are described in the following subsections.

2.8.1 Color terms. Most of the major color terms have related minor color terms derived through sound symbolism, as shown in Table 2.12. Each of these terms, with the exception of 'green' terms, exhibits partial reduplication, penult stress, and a single vowel (recall that high vowels lower to mid vowels adjacent to /q/).

Table 2.12 Major and derived color terms

Major color term	Related terms
snapáphạ　'white'	*łnapáphạ*　'pallid'
tsitséqhẹ　'black'	*titéqhẹ*　'black' *tlitléqẹ*　'dark gray-black'
tsutsóqhọ　'red'	*čučóqhọ*　'red-skinned'
smukúkhụ　'yellow'	*łmukúkhụ*　'light yellow' *šmoqóqhọ*　'deep yellow of ripe fruit'
spupónqhọ　'blue'	*łpupónqhọ*　'violet' *spupúkhu*　'gray/ blue' *(s)pupónqho*　'purple'
škayíw'ạ　'green'	*skayíw'ạ*　'light green' *łkayíw'ạ*　'light green'

The other major color terms without related minor terms follow the same template: *saqáqa* 'white' and *špiníni* 'red'.

2.8.2 Odor/flavor terms. All odor/flavor terms include sound symbolic phonemes which are employed in the derivation of groups of related words in which differences in intensity are not apparent.

Table 2.13 Odor/flavor terms

Odor/flavor terms	Odor/flavor of:
šeeqʰi̥	burnt beans
čiikʰi̥	burnt beans, hair, or feathers
tsiikʰi̥	scented soap
skunkʰu̥, ɬkunkʰu̥	egg; fish; dog; blood
ɬqonqʰo̥	beef or mutton
haqɬ	urine
hakš	spoiled cornmeal; onion; mildewed cloth
haks	burning dry chile; orange peel
muqʰu̥	mildew or petroleum
muks	flowery
mukɬ	overly flowery
séqsi̥	sweet
šéqši̥	sweetish-salty

2.8.3 Sound and manner adverbials. The sound and manner of motion adverbials are a large class of mostly fully reduplicated forms[3] that indicate the sound or manner of motion. They fall into two shapes, with each reduplicant having either a single closed syllable, or a CVCV disyllable with a (usually) single vowel melody and a voiced final vowel (unstressed final vowels are usually devoiced in FM Totonac). Most do not include sound symbolic segments. Among those that do are some clear augmentative-diminutive pairs as well as sets of related words without a clear direction of intensity. While it is mainly the sound symbolic consonants that derive related adverbials, in some cases changes in vowels also have iconic significance. A few of these adverbials are triplicated, or are monosyllables that describe a single action. The following are a sample of the over 100 forms I have collected.

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[3] Complete reduplication is elsewhere very rare in the language.

Table 2.14 Sound and manner of motion adverbials

kápa kápa	'clopping sound of animal with small hooves'
qápa qápa	'clopping sound of animal with large hooves'
loqs loqs	'sound of someone being slapped'
loqš loqš	'sound of wet clothes slapping as someone walks'
tisˇtiš	'sound of water flowing rapidly'
tił tił	'sound of water flowing rapidly or grains being poured'
čikł čikł	'sound of lighting a match'
čeqł čeqł	'sound of splashing in a puddle'
čaqł čaqł	'sound of footsteps in a puddle'
piks piks	'sound of water dripping'
peqš peqš	'sound of burning/rustling leaves or shelling beans'
paks paks	'applause; falling in water'
piinkš	'overheated china cracks'
wax	'a whole bucket of water hits someone'
čimpš čimpš	'blinking'
łqonqł łqonqł	'snoring'
łtank łtank	'yanking (a rope)'
lup lup	'gulping a liquid'
pim pim	'hopping'
slank slank	'water drips'
tuks tuks	'poking'
šlit šlit	'slipping'
štonq štonq	'a weight bounces on an elastic thread'
šun šun	'a car or hummingbird passes by quickly'
lama lama	'a flame flickers'
muči muči	'worms squirm around'
pili pili	'rolling like a stick'
swinki swinki	'a very thin person walks along'
loqš loqš loqš	'waves slap against a boat'
qo' qo' qo'	'knocking on a door'
torónq torónq torónq	'bells ringing'

2.**8.4 Sound symbolism in verbs**. Many verb pairs or series exist with some type of augmentative-diminutive semantic relationship. In a few cases, the change in the consonant indicates a non-gradient difference in semantics, as for example in *kuka* 'carry something on one's back' vs. *qoqa* 'carry a child on one's back'. It is unclear to what extent verbs may be derived synchronically using sound symbolic consonants.

Table 2.15 Verbs derived by sound symbolism

suu	'peel something with a thin peel'
šuu	'peel something with thick peel'
snat	'embrace someone'
ɬnat	'embrace someone brusquely'
sqawi	'bend something'
ɬqawi	'bend something thick'
snapu	'cover something'
ɬnapu	'cover with something heay/thick'
stunk	'straighten'
štonq	'stretch'
maapeqs	'peel something whose skin is removed in pieces'
maapeqš	'shell something in a pod'
sqo	'it illuminates'
ɬku	'it burns'
šqo	'it burns (a skin rash)'
štoqo	'inject'
stoqo	'insert a spit into meat'
ɬtoqo	'scrape the bottom when stirring'
ɬtuku	'prick, stab'

2.9 Spanish loanword phonology. The lexicon of most speakers of Filomeno Mata Totonac includes a relatively small number of borrowings from Spanish. Most of my consultants show no tendency to code switch when in the village, where modern life has intruded only slightly thus far. Because most of the loanwords they use are well-integrated into the phonology of Totonac, and name objects available in the 16th century and unknown in Mexico before the arrival of the Spaniards, I assume that most of these borrowings date back to early in the period of

colonialization. This would be after 1519, the date of first contact between the Spanish and the Totonacos. This subsection gives a brief overview of the phonological adaptation of Spanish words into FM Totonac.

I assume a model in which a bilingual speaker may misperceive the phonetic cues in an L2 word and therefore adopt an underlying phonemic representation for the word that is different from that of a native speaker of L2. It is this possibly 'deviant' UR, determined by a perception grammar that has been shaped by the constraints of the native language (as suggested by Broselow 2004), which is evaluated by the constraints of L1 to produce the surface loan form.

Table 2.16 presents a phonemic inventory for 16th century Spanish, based on Penny (2002:54-110). As can be seen by comparing this table with the inventory of FM Totonac in Table 2.1, the phonemes present in 16th century Spanish and absent or rare in FM Totonac are /b/, /d/, /g/, /f/, /z/, /ž/, /ñ/, /ɾ/, /r/, /e/ and /o/. In addition, hiatus and tautomorphemic obstruent-liquid clusters, frequent in Spanish, are prohibited in Totonaco.

Table 2.16 Spanish phonemes (16th century)

p b	t d	č	k g	
f	s z ș ẓ	š ž	x	
m	n	ñ		
	l ɾ r			
w		y		
u	i	a	e	o

2.9.1 Phonemic substitutions. Many of the phonemes that are non-existent in FM Totonac are not straight-forwardly replaced in loan words with a single native segment; different choices are made in different words. More work is needed to determine the basis for these choices; it is possible that some were borrowed into FM Totonac through neighboring indigenous languages.

2.9.1.1 Voiced stops. Spanish *d* and *g* (in either their stop or spirantized allophones) are usually replaced by their voiceless counterparts, but *b* is substituted sometimes by *p*, other times by *w*. There are too few examples to find a pattern.

210) Examples of loan words with voiced stops

tumínkụ	< Sp. *domingo*	'Sunday'
sáapatụ	< Sp. *sábado*	'Saturday'
karawása	< Sp. *garbanzo*	'garbanzo bean'
buréko	< Sp. *Borrego*	'sheep'
piolín	< Sp. *violin*	'violin'
wákaš	< Sp. *vacas*	'cows'

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The treatment of initial *b* in borrowed words in FM Totonac is not uniform; it may be borrowed as *p, b*, or *w*, as shown in the final three examples of 210). It is possibly relevant that Spanish stops are spiranticized unless preceded by a pause or a stop, so word-initial stops may have two allophones depending on their context. With the labial stop, it is unclear how the allophones, *b* and *ß* affect the outcome. It is possible that for some words, the most frequent phrasal context may explain the difference. While Totonac does not have a voicing contrast in any segment, stops do occasionally become at least partially voiced intervocalically, and this fact may also influence the outcome.

2.9.1.2 Fricatives. The analysis of the fricatives is complicated by the fact that the Spanish sibilants were undergoing a readjustment precisely during the period in question here, the first half of the 16th (Penny 2002:101). The conquistadores may have had a dento-alveolar ṣ, an alveolar *s* and a prepalatal *š,* however, the first two merged and the prepalatal became velar *x* around 1650. Spanish *s*, which was probably apical in the 16th century dialect, was borrowed into Totonac almost as often as *s* as it was as *š*. It is possible that Totonac listeners may have perceived the apical *s* as randomly varying between the two sibilants, but since a Spanish *s* in similar contexts could be borrowed as either phoneme (e.g. *karastiánu* < Sp. *cristiano* 'person', but *kaštíla* < Sp. *castellano* 'Spanish'), more analysis is needed.

211) Examples of loan words with sibilants

sáapatu̧	< Sp. *sábado*	'Saturday'
šinúula	< Sp. *señora* 'lady'	'non-indigenous woman'
kapunésus	< Sp. *japoneses* 'Japanese'	'tangerine'
'áawaš	< Sp. *habas*	'lima bean'

Words with the Spanish phoneme that was changing from *š* to *x* at this time were borrowed with *š* as in *káša* < Sp. *caja* 'box' and *'áašuš* < Sp. *ajos* 'garlic'. Spanish *f* generally becomes *p* in loanwords, as in *kapé* < Sp. *café* 'coffee'. With both Spanish *f* and *x*, there are cases where they are replaced by *k*, e.g. *šakwers* < Sp. *a fuerzas* 'by force' (*ša-* is the adjectivizing prefix) and *kapunésus* < Sp. *japoneses* 'Japanese' (but meaning 'tangerine'). A relevant fact may be the strong aspiration of syllable-final stops in FM Totonac, and particularly the release of syllable-final uvular stops into the affricate q^χ. Listener misperception could lead to an analysis of Spanish fricatives as the release burst of a stop.

2.9.1.3 Liquids. FM Totonac usually replaces all the Spanish laterals and rhotics with *l* or syllable-finally with ł. There are some cases, however, of the tap or trill rhotic, or even *l*, being borrowed as a tap. In the single case of *kawáyu* < *caballo* (with a palatal *l*) 'horse', the lateral is borrowed as *y*.

212) Examples of loan words with liquids

méłkulĭš	< Sp. *miércoles*	'Wednesday'
'anílo	< Sp. *anillo*	'ring'
piritóra	< Sp. *veladora*	'candle'
buréko	< Sp. *borrego*	'sheep'

2.9.1.4 Obstruent-liquid clusters. Although FM Totonac tolerates complex onsets and codas (up to CCC), it does not allow obstruent-liquid clusters. In loanwords, these are always broken up by an epenthetic vowel. How this vowel is chosen is not clear from my data; in most cases it is seems to be a copy vowel.

213) Examples of loan words with obstruent-liquid clusters

karastiánu	< Sp. *cristiano*	'christian'='person'
puláto	< Sp. *plato*	'plate'
paránksis	< Sp. *Francisco*	'Francis'

2.9.1.5 Mid-vowels. FM Totonac lacks the mid-vowel phonemes *e* and *o*, but it may be relevant that mid-vowel allophones of high vowels do appear adjacent to glottal stop or uvulars. In loanwords, Spanish *o* is almost always replaced by *u*, but Spanish *e* seems as likely to be borrowed as *a* or *i* as *e*.

214) Examples of loan words with mid vowels

kawáyu	< Sp. *caballo*	'horse'
tumínkų	< Sp. *domingo*	'Sunday'
buréko	< Sp. *borrego*	'sheep'
'ałpuwéeno	< Sp. *yerba buena*	'spearmint'
kunéšu	< Sp. *conejo*	'rabbit'
mačíta	< Sp. *machete*	'machete'

Generally the shared vowels *a, i* and *u* are borrowed without change, although a few exceptions exist, as in 'ałpuwéeno < Sp. *yerba buena* 'spearmint', where the two *a* vowels are borrowed as back rounded vowels.

2.9.2 Stress. Stress in both Spanish and FM Totonac is limited to the final three syllables, but for different reasons. In FM Totonac, stress is morphologically determined in all derived words, and

is lexical in monomorphemes. Most FM Totonac words have either penult or final stress, as is true of the majority of Spanish words. However, most borrowed lexical items in FM Totonac have penult stress, regardless of where stress is found in Spanish. Where exceptions exist, it is usually to match the stress pattern of the loan word, as in *kapé* < Sp. *café* 'coffee', or *méɬkuliš* < Sp. *miércoles* 'Wednesday'.

Table 2.17 Spanish loanwords in FM Totonac

Loanword	Source	Eng Gloss of Source	Notes
'áawaš	habas	lima bean	
'áašuš	ajo	garlic	
'aɬpuwéeno	yerba buena	spearmint	
'anílo	anillo	ring	
'ankulíim	(aj)onjolí	sesame	
buréko	borrego	sheep	
kapé	café	coffee	
kapunésus	japoneses	Japanese	='tangerine'
karastiánu	cristiano	christian	='person'
karawása	garbanzo	garbanzo bean	
kawáyu	caballo	horse	
káša	caja	box	
kaštilánčaw'ạ	castellano	Castilian tortilla	='bread'
kulánṭi	cilantro	cilantro	
kúmu	como	since	='because'
kunéšu	conejo	rabbit	
kúštaɬ	costal	sack	
kwénta	cuenta	account	='fault'
láašuš	(na)ranja	orange	
lúneš	lunes	Monday	
mačíta	machete	machete	
muntsánaš	manzana	apple	
márteš	martes	Tuesday	
méɬkuliš	miercoles	Wednesday	
pára	para	for	='if'
pátuš	ganso	duck	='goose'
pašyaɬnan	pasear	stroll	-nan=HAB
piérnis	viernes	Friday	
piolín	violin	violin	

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piritóra	veladora	candle	
pulátu	plato	plate	
			= 'town center'
puu'ítaţi	mitad	middle, half	puu = LOC
puusikúlan	saecula	Latin *saecula* = century	puu = LOC
puuskwélu	escuela	school	puu = LOC
sáapatu̧	sabado	Saturday	
sarapésa	cerveza	beer	
séqeţi̧	zacate	grass	
séra	cera	wax = bee	
šáalu	jarro	jar	
			= 'necessarily'
šakwé(r)s	a fuerzas	by force	ša = adjectivizer
			= 'non-indigenous
šinúula	señora	lady	woman'
tumínku̧	domingo	Sunday	
wákaš	vacas	cow	
wéepis	jueves	Thursday	

Chapter 3 Non-verbal morphology

3.1 Introduction. This chapter covers the morphology of the major non-verbal word classes in Filomeno Mata Totonac: nouns, pronouns, adjectives, adverbs and numerals. Although far simpler than the verbal morphology, as will be seen, the morphological processes associated with some of these classes, namely nouns and adjectives, are quite extensive, and include inflection, derivation, cliticization and compounding. Each of the other word classes undergoes a very limited number of morphological processes: pluralization in the case of pronouns, derivation with classifiers in the case of numerals. In addition, all word classes may take the negative/negative polarity proclitics and aspectual enclitics; this is the only type of morphological process associated with adverbs. Almost all morphology related to non-verbal elements is concatenative, achieved, as in verbs, through both prefixation and suffixation. The exception is reduplication in certain subsets of the lexicon, where it appears to be mainly a diachronic process. Some adjectives are subject to partial reduplication; the sound and manner of motion adverbs are fully reduplicated forms; and a handful of nouns are fully reduplicated to form time expressions.

In a number of Totonac languages (see MacKay 1999 for Misantla Totonac; McQuown 1990 for Coatepec Totonac) nouns and adjectives are placed together in a single word class of nominals, but this is not justified for FM Totonac (also see Beck (2000) for Upper Necaxa Totonac). In the variety studied here, both nouns and adjectives may be pluralized (§3.3.1), may undergo derivation with Body Part prefixes (BPP) (§3.3.4), and may take certain clitics (§3.3.9). However, the morphological patterning of the nouns and adjectives is distinct in many other ways, with nouns undergoing many additional inflectional and derivational processes which are detailed in this chapter.

Since nouns are subject to the greatest amount of morphology, this chapter is structured around them. The morphological processes related to nouns only, or to both nouns and other word classes, are discussed in §3.3; strictly adjectival morphology follows in §3.4, adverbial morphology in §3.5, and §3.6 ends the chapter with a description of the large number of numeral classifiers. First, I will briefly address derivation and stress, and in §3.2 provide an outline of pronouns and demonstratives. Appendix A contains a list of all affixes and clitics discussed in this chapter.

3.1.1 Non-verbal derivation. In my database of 1500 nouns, adjectives and adverbs, approximately 15% are monomorphemic. The great majority has undergone some morphological construction, and most are derived from verbs.

3.1.2 Stress. Non-verbal monomorphemes have lexical stress. Stress in all derived words is determined by the final suffix construction. Stress in FM Totonac always falls within a three-syllable window at the right edge of word. While monomorphemic words show only final or

penultimate stress patterns, derived nouns can also take antepenult stress (see §2.7 for stress details).

3.1.3 Verbal preference. FM Totonac is a language which prefers verbal expression in general. As noted above, a large percentage of nouns are deverbal constructions. Even when nouns exist, verbal forms are often employed in narratives instead.   For example, instead of 'opponents', the phrase *tiilaqatawaká* 'those who stand up to him'; instead of 'visitors', *tiintamimáana* 'those who are coming'; instead of 'seamstresses', *tiintsapananáh* 'those who sew'. It is notable the extent to which FM Totonac is verb-central.

3.2 Pronouns and demonstratives. Although personal pronouns and demonstratives undergo a very limited number of morphological processes, a brief outline of their forms and functions is included in the interest of completeness.

3.2.1 Pronouns. As is common with languages like FM Totonac, which obligatorily marks subjects and objects on the verb, independent personal pronouns are used only for clarification or emphasis and are generally omitted. When present, they may precede or follow the verb. Only one set of personal pronouns exists which may be used for subjects or objects. No gender distinctions exist among pronouns. Perhaps due to their limited usage, some uncertainty is found with these forms. Speakers vary in the first vowel with which they begin the first person pronoun, some using *i-*, others *a-*, and others *e-*. Speakers also fail to agree on the third person pronouns. Some give *'uu'* for 3rd person singular, some say it is *tsamá*, and others alternate between the two. Some also use *tsamá* for the plural, while others state that *tsamá* is incorrect and there is no third person plural pronoun. Both *'uu'* and *tsamá* also find use as demonstrative pronouns (§3.2.2). To clarify or emphasize a 3rd person reference, a noun or proper name is often employed rather than a pronoun. The first and second person plural forms are derived from the singular through the affixation of a pluralizer *–nan* used only in this context.

Table 3.1 Independent pronouns

	Singular	Plural
1st person	'íkiti̜, 'ákiti̜, 'ékiti̜	'ikinán, 'akinán, 'ekinán
2nd person	wiš	wisinán
3rd person	'u'u̜, tsamá	tsamá (?)

1) Personal pronoun examples
    'íkiti k'an kaatuwán   'I go to the ranch'
    'íkiti n kiláaqtsi   'it was I that he saw'
    taaskúha wiš   'you work'

'uu', túu kwanín	'it, what I told you about'
tsamá lukunán	'he fights (habitually)'
'akinán i ktsukuniitáw	'we have begun'
wišinán qootnunáa	'you pl. drink'
tsamá tatamóqosłị̥	'they fell'

No independent possessive pronouns exist. The possessive affixes are discussed in §3.3.2.1.

3.2.2 Demonstrative pronouns. There are two demonstrative pronouns in FM Totonac, proximal *'amá* and distal *tsamá*, which is also used as a 3rd person personal pronoun. Some speakers also use *'u'ų̥* (§3.2.1). Both are also employed as adjectives.

2) *'amá wani-kán š-mákan móonqšnu*
   this say-REF   3POSS-claw owl
   'this is called the owl's claw'

3) *čiinóo wan-níi tsamá*
   then say-DAT that
   'then he says to that one . . .'

3.3 Morphological processes undergone by nouns and other non-verbal word classes. Nouns may be inflected for plural number, possession and locative case; they may undergo body part prefixation and several other fairly unproductive derivational processes; serve as a base for clitics; and combine with other words to form compounds. Adjectives may be inflected for plural number, be derived with body part prefixes and take clitics. Pronouns may be pluralized, as noted in §3.2.1. Numerals are bound roots that require classifier prefixes (§3.5). All word categories may take certain negation and negative polarity proclitics and aspectual enclitics. Each of these morphological possibilities will be discussed in turn, as well as a range of deverbal nominalization processes.

3.3.1 Pluralization. Most nouns in FM Totonac do not have plural forms, while all adjectives and the first and second person independent pronouns do. The nouns referring to human beings and one domestic animal, the dog, have plural forms, such as s*qatạ* 'baby', *laqsqatáan* 'babies', and *čičí'ị̥* 'dog', *lakčičíin* 'dogs'. Deverbal agentive nouns comprise a large subset of nouns with plural forms. Adjectives are pluralized when they modify a noun whose referent is plural, even when the noun does not have a plural form.

In addition to human and dog-referring nouns, some nouns referring to body parts that occur in pairs have a form unmarked for number that is most commonly used, another form that specifically refers to only one of the two body parts, and another for both the paired parts (§3.3.1.4). These latter two forms are infrequently used. Finally, I was able to elicit plurals for locative nouns referring to plots of vegetable crops (§3.3.1.5).

3.3.1.1 Plural affixes. Two general pluralization constructions are available for human and canine-referring nouns, both involving circumfixes: *lak-* . . . *–(ii)n* and *na-* . . . *–n'į̀*. The *na-* . . . *–n'į̀* construction is used only with kinship terms, while *lak-* . . . *–(ii)n* is used with various other human-referring terms. I have not found a basis for determining the selection criteria for the two constructions. Also, several variations on these constructions exist and seem to be lexically determined. Many of these words can be pluralized with either construction, and with others, only one circumfix is accepted. My consultants sometimes differ on which forms are preferred or even grammatical. Note that a few of the plural forms, such as *kamán'ą̀* 'children' and *napápą̀* 'grandfathers', idiosyncratically fail to take one or the other of the subcomponents of the circumfix. In these cases, it is usually the pluralizing prefix that is missing; the examples I have collected of these words split evenly between the glottalized and non-glottalized suffixes, for example *-kaman'ą̀* 'children' vs. *-nataanátnį̀* 'grandchildren'.

The prefix *lak-* is etymologically related to the verbal distributive prefix, which can indicate pluractionality in the object, the subject, or the action of the verb (see §5.5.2). Like the distributive, the nominal pluralizer *lak-* undergoes uvular harmony with the root (see §2.6.2.1). In most cases degemination does not occur when the *lak-/laq-* prefix creates a false geminate at a morpheme boundary, but occasionally, for example with *laqawaačán*, 'boys', it is common. Both the *–iin* and *–n'į̀* suffixes determine stress on the final syllable of the preceding stem. Following a voiceless consonant, the devoiced allomorph *–nį̀* replaces both the other suffixes.

Pluralized adjectives take the *lak-/laq-* prefix and no suffix, regardless of what type of noun they modify.

3.3.1.2 Human and dog plurals. A list of many of the nouns with grammatical plural forms follows. The kinship terms are inalienably possessed and require a possessive pronoun or the alienating prefix *ša-* for grammaticality (see §3.3.6.1):

Table 3.2 Kinship term plurals

Unspecified number	Plural	Plural gloss
-kam	-kamán'a̱,-lakkamanáa*n*	'children'
luwáan	luwanáan	'non-indigenous men'
tantlíin	tantliiníin	'dancers'
kučiiná'a̱	kučiinaníin	'healers'
karastiánu	lakkarastianún, (lak)karastianún'i̱	'persons'
-náana'a̱	laknaanaaníin	'mothers'
puskáati̱	lakpuskán, lakpuskaatíin	'women'
-pušku̱	lakpuškuníin	'elder (brother)s'
qawáača̱	laqawaačán	'boys'
qoolútsin	laqqoolún	'old men'
qootnín	laqqootníin	'drunks'
sqata̱	laqsqatáan	'babies'
-stanku̱	lakstankún'i	'youngest children'
šinúula	lakšinuuláhn̥i	'non-indigenous women'
-táqo̱	na-/laq-taqón'i̱	'grandmothers'
tsumuxáati̱	laktsumuxán	'girls'
čičí'i̱	lakčičíin	'dogs'
čiškú'u̱	(lak)čiškuwíin, lakčiškún'i̱	'men'
-kuku̱	na-/lak-kukún'i̱	'uncles'
-kukustá'a̱	na-/lak-kukustáan'i̱	'brothers-in-law'
-náp'a̱	na-/lak-napán'i̱	'aunts'
-pápa̱	napapán'i̱	'grandfathers'
-píipi'i̱	napiipín'i̱	'elder sisters'
-pušnímati̱	napušnimátn̥i	'nephews/nieces'
-taalá'a̱	nataalaán, nataaláan'i̱	'siblings'
-táanati̱	nataanátn̥i	'grandchildren'
-taapušnímati̱	nataapušnimátn̥i	'cousins'
-téko̱	natekuníin, natekún'i̱	'fathers'

3.3.1.3 Agentive plural nouns. Besides the general human-referring nouns, deverbal agentive nouns are regularly capable of pluralization. These nouns derive from a verb suffixed in *–nan* or *–nVn* (with a harmonic vowel), the habitual suffix (§5.4.4.1). The morphology associated with the agentive construction is a stress shift leftward which results in the deletion of the final *-n* of *-nan*, and the glottalization of the vowel: *kučiinán* 's/he heals habitually', *kučiiná'ą* 'healer'. Such nouns do not take a pluralizing prefix, only the suffix *–iin*, with stress on the final syllable preceding the suffix. Because this moves stress rightward, the final *–n* of the *–nan* suffix is recovered, yielding: *kučiiná'ą* 'healer' → *kučiinan-iin* → *kučiinaníin*. Although my consultants said the pluralized forms were correct, they stated that they were rarely used.

Table 3.3 Agentive plurals

Singular	Plural	Plural gloss
maqniiná'ą	maqniinaníin	'assassins'
pašiiná'ą	pašiinaníin	'painters'
qałaaná'ą	qałaananíin	'thieves'
saqná'ą	saqnaníin	'wood-gatherers'
staaná'ą	staananíin	'vendors'
tlaqná'ą	tlaqnaníin	'musicians'
tsapaná'ą	tsapananíin	'seamsters'
tsoqnú'ų	tsoqnaníin	'writers'
šapaná'ą	šapananíin	'masseurs'
šwakná'ą	šwaknaníin	'carpenters'
laataamaaná'ą	laataamaananíin	'inhabitants'

3.3.1.4 Number and body parts. Most body part nouns, which are unspecified for number like other nouns, end in a nominal suffix *–nį*. This *-nį* form is the one used most commonly. To emphasize specifically one or both of body parts that occur in pairs, two other constructions are possible. To specify only one of the pair (most frequently, the <u>other</u> of the pair), the suffix *–tų* replaces *–nį*; to specify both of the pair, *-tiyú'ų* replaces *–nį*.

The forms specified for number that follow in the list are the only ones my consultants felt comfortable with. They agreed that theoretically the constructions would apply to other body part nouns, such as 'ears' or 'legs', but said that no one employed them. Except in unusual contexts (i.e., a severed limb) all body parts must appear with a possessive prefix.

Table 3.4 Body part plurals

Unspecified number	One of pair	Both of pair	Gloss
-makán	-makátu̱	-makatiyú'u̱	'hand'
-qaapíin	-qaapíitu̱	-qaapiitiyú'u̱	'thigh'
-tantíin	-tantíitu̱	-tantiitiyú'u̱	'buttock'
-tantúun	-tantúutu̱	-tantuutiyú'u̱	'foot'
-taapáan	-taapáatu̱	-taapaatiyú'u̱	'side'
-laqastápu̱	-laqátu̱	-laqatiyú'u̱	'eye'
-peeqén	-peeqétu̱	-peeqetiyú'u̱	'arm'

3.3.1.5 Vegetable plot plurals. The final category of nouns that some consultants were comfortable pluralizing comprises locative nouns referring to plots of vegetables. These forms carry the nominalizing suffix *–n* and are not inalienably possessed. They form plurals in pluralizer *–iin*, with stress on the vowel preceding the suffix, just as the human- and canine-referring nouns do.

Table 3.5 Vegetable plot plurals

kaanipšín	'squash plot'	*kaanipšiníin*	'squash plots'
kaapinín	'chile plot'	*kaapininíin*	'chile plots'
kaapaqɬčín	'tomato plot'	*kaapaqɬčiníin*	'tomato plots'

3.3.1.6 Pluralization of adjectives. The pluralization of adjectives is always accomplished in my database through the prefixation of the pluralizer *lak-*/*laq-*, as is the usual case with nouns, but without the suffix normally found with nouns. This prefix participates in uvular harmony as discussed in §2.6.2.1. While most nouns are not pluralized, adjectives modifying nouns with semantically plural referents are prefixed with the pluralizer morpheme.

4) *lak-sáasti n tamáqn̥ṵ*

   PL-new ep. shirt

   'The shirts are new'

5) *laq-tsutsóqo mi-laqastápṵ*

   PL-red 2POSS-eye.bean

   'Your eyes are red'

6) *lak-čaałmáan lak-čiškuwíin*

   PL-tall PL-men

   'the tall men'

7) *laq-qoníwa laq-qawáačán*

   PL-fat Pl-boys

   'the boys are fat'

When an adjective modifies a conjoined noun phrase, the adjective in its plural form may precedes or follow the conjoined NP. However, my consultants stated that modification of a conjoined NP is rare, and I have no examples of it in narratives.

8) *laq-tsutsóqo tamáqnu čoo qaan*

   'the red shirt(s) and skirt(s)

9) *lak-łkaakála laq-qawaačáa-n čoo laq-sqatáa-n*

   'the thin boys and babies'

10) *číki n čoo kiwi lak-taałmáan*

   'the tall house and tree'

3.3.2 Possession. Nouns (but not adjectives) may be inflected for possession, with the person and the number of the possessor marked on the possessed noun. Kinship terms are inalienably possessed, meaning they always carry possessive markers. Body part nouns and nouns referring to items of clothing are also almost always possessed. Nominal possession follows the pattern

predicted of the Meso-American linguistic area (Campbell, Kaufmann, Smith-Stark 1986): POSS-NOUN1 NOUN2.

3.3.2.1 Possessive morphemes. The possessive prefixes are *kin-* 1st person, *min-* 2nd person, and *š-* 3rd person. When a plural possessor is involved, *–kan* is suffixed to the noun. The final nasal in the first and second person possessive morphemes deletes preceding a continuant, yielding allomorphs *ki-* and *mi-*. When the third person possessive prefix, *š-* would create a geminate at a morpheme border, the possessive *š-* alternates with *k-*. (This also holds true of the homophonous past tense prefix *š-,* but not of the final - *š* of body part prefixes *piš-* 'neck' and *qaapiš- 'thigh',* which optionally but infrequently degeminate through deletion). Most false geminates are tolerated in FM Totonac, although a few other affixes undergo either obligatory or optional simplification when their initial or final consonants are found adjacent to a like phoneme (see §2.6.2.2 for details on degemination).

Table 3.6 Possessive paradigms: *túmin* 'money'

Singular		Plural	
kin-túmin	'my money'	*kin-tumin-kán*	'our money'
min-túmin	'your money'	*min-tumin-kán*	'your money'
š-túmin	'his/her/its money'	*š-tumin-kán*	'their money'

***štíilan* 'hen'**

ki-štíilan	'my hen'	*ki-štíilan-kán*	'our hen'
mi-štíilan	'your hen'	*mi-štíilan-kán*	'your hen'
k-štíilan	'his/her/its hen'	*k-štíilan-kán*	'their hen'

Normally possessive affixation does not affect word stress. The one exception is the noun *čiki̧* 'house'. When it has a first or second person singular possessor, stress shifts to the prefix: *kínčiki̧* 'my house'; '*mínčiki̧* 'your house'; the other possessed forms of *čiki̧* are either monosyllabic (*ščiki̧* 'his/her house') or take the plural suffix (*kinčikkán* 'our house', *minčikkán* 'your house') which always carries the stress.

3.3.2.2 Possessed word order. When the noun referring to the possessor appears with the possessed noun, the order is POSSESSED-POSSESSOR, with the first noun affixed with possessive marker(s). This possessive structure is typical of the Meso-American linguistic area.

11) Possessed-Possessor examples

š-kamána 'antáres   'Andrés's children'

š-čáwa sqátạ   'the baby's tortilla(s)'

š-páłma kíw'ị   'tree(s) leave(s)'

k-šnúxuti kúsi   'Jose's vein(s)'

This word order is consistent with the head-first order of sentence components VSO, although ADJ-NOUN order departs from this general rule.

3.3.2.3 Inalienable possession. All kinship terms are inalienably possessed in FM Totonac, that is, they do not occur without a possessive prefix unless an 'alienating' prefix is present. When they are used in a general sense without reference to a possessor, they are prefixed with *ša-*, which otherwise serves to derive nouns from adjectives and verbs. In its 'alienating' and other functions, it seems to act almost like a determiner (see §3.3.6).

12) Possessed kinship term examples

kim-puskáaṭị   'my wife/woman'

ša-puskáaṭị   '(she is) a woman'

kin-téko   'my father'

ša-téko   '(he is) a father'

Body part and clothing terms are normally possessed; in the infrequent instances when they appear without a possessor, they do not take the alienating prefix.

13) Possessed body part and clothing examples

ki-łáqaaṭị   'my clothing'

łáqaaṭị   'clothing'

ki-'aqšáaqạ   'my head'

'aqšáaqạ   'head'

3.3.2.4 Pluralization and possession. When one of the few nouns with plural forms is possessed, the possessive affixes occur outside the plural morphemes. Again, the use of such plural forms is unusual.

14) *ki-na-püpí-nʾị̦*

    1POSS-PL-older.sister-PL

    'my older sisters'

15) *ki-na-kuku-nii-n-kán*

    1POSS-PL-uncle-PL-ep-PL.POSS

    'our uncles'

16) *mi-na-taaláa-n*

    2POSS-PL-sibling-PL

    'your siblings'

17) *š-na-taqo-nii-n-kán*

    3POSS-PL-grandmother-PL-ep-PL.POSS

    'their grandmothers'

3.3.3 Body part prefixes. The body part prefixes which are so productive in verbal derivation may also be affixed to nouns and adjectives to derive nominals with a more specific or lexicalized meaning.

3.3.3.1 Nouns and body part prefixes. Any discussion of the 'genius' of FM Totonac must include a lengthy section on the body part prefixes (BPP), which are very frequently affixed to all word classes (see §5.4.2.5 for BPPs and verbs) to derive transparently compositional or lexicalized forms. The BPPs may directly refer to the body part in question, or to an extended semantic field that is body part-like in some way, usually shape, e.g., the 'belly' of a pot, the 'face' of a house (see Levy 1999). The prefixes are usually formal truncations of the independent body part nouns, for example ʾ*aqšáaqạ* 'head', ʾ*aq*- HEAD-. Many nouns are derived with body part prefixes and generally also refer to parts of the body; some examples are given in Table 3.7.

Table 3.7 Body part prefixes

laqa- FACE	stapu̱ 'bean'	laqastápu̱ 'eye'
laqa- FACE	číšiti̱ 'hair'	laqačíšiti̱ 'beard'
'aq- HEAD	čaani̱ 'leg'	'aqčáan 'upper back'
'ak- HEAD	lúkuti̱ 'bone'	'aklúkuti̱ 'skull'
'aqa- EAR	tsúkuti̱ 'wax'	'aqatsúkuti̱ 'earwax'
maka- HAND	píšṇi 'neck'	makapíšṇi 'wrist'
paa- BELLY	luw'a̱ 'snake'	paalúw'a̱ 'intestines'
tan- BOTTOM	kiłṇi 'mouth'	tankíłṇi 'waist'
tuu- FOOT	píšṇi 'neck'	tuupíšṇi 'ankle'

3.3.3.2 Adjectives and body part prefixes. Adjectives in FM Totonac are very frequently derived with body part prefixes (BPP). In these forms the BPP often refers to an object other than a body part, but similar to it in shape. For example, anything with a point at the top end, like a pair of scissors, can be described with the BPP *kinka*- NOSE. While it is possible to say that someone has long legs or a short neck in FM Totonac, it is far more likely that the corresponding adjective plus BPP will be used.

Table 3.8 Adjectives derived with BPPs

BPP-adjective	Gloss
kinka-slaxáxa̯ NOSE-sharp	'pointed'
čaa-łmáan LEG-long	'tall'
piš-łmáan NECK-long	'long-necked'
qee-lánka̯ BACK-large	'fat'
paa-łapóqo̯ BELLY-fat	'big-bellied'

3.3.4 Native of. Place names may undergo a construction deriving a noun referring to a native of that place. This involves the attachment of a suffix –*ti̯*, which requires stress on the final syllable of the stem (unlike other –*ti̯* suffixes, the verbal 2nd person subject marker and a nominalizing suffix, which require penult base stress). Like other human-referring nouns, 'native of X' forms may be pluralized, and their plural forms are somewhat idiosyncratic. For example, 'natives of Jopala' takes only the plural suffix –*ni̯*, while 'natives of Coyutla' is prefixed with the plural *lak-*.

Table 3.9 'Native of' derivation

Town	Native of
šúupal (Jopala)	šuupalíští̯, šuupalištíin (pl)
kuyútla (Coyutla)	liikuyútla, lakliikuyútla (pl)
kaamayákni̯ (Mecatlán)	mayáakti̯, mayaaktíin (pl)
kaakiwinínti̯ (Coahuitlán)	kiwiiniínti̯, lakkiwiinínti̯ (pl)

3.3.5 Locative derivation. FM Totonac has three locative constructions, one with a case-like prefix *k-*. The other two involve the prefixes *kaa-* and *puu-*, which derive locative nouns from nouns. The two latter prefixes are etymologically related to the verbal locative prefixes, and have similar semantics: *kaa-* derives nouns that refer to a flat expanse, and *puu-* nouns that refer to a space that is partially or wholly enclosed. Deverbal nominalizations are also frequent with these prefixes (see §3.3.11.2).

3.3.5.1 Locative 'case'. While FM Totonac is otherwise free of case, noun phrases meaning 'in/on X' consist of the noun prefixed by *k-*. Some Totonac varieties have a preposition *nak* meaning 'in/on', but the Filomeno Mata variety has no (other) prepositions, their functions performed through the use of applicatives. It is possible that rather than a case marker, *k* is a cliticized preposition. There is no language internal evidence to decide between these possibilities. The status of this *k-* prefix is therefore unclear.

Locative *k-* is affixed outside any possessive prefix, e.g., *k-mín-čiki̜* 'on your house'.

Table 3.10 Locative *k-* examples

kuštáł	'sack'	kkuštáł	'in the sack'
číwiš	'rock'	kčíwiš	'on the rock'
mésa	'table'	kmésa	'on the table'
kméxiko n čoo n kwatemála	'in Mexico and in Guatemala'		
ktíxi n čoo n kpúʃqe̜	'in the road and in the river'		

3.3.5.2 Expanse locative *kaa-* . . . *–ni̜*. The 'expanse' locative construction is fairly productive, particularly in deriving terms for plots or plantings of crops. This *–ni̜* suffix imposes penultimate stress. Following a vowel, the final vowel quality of the suffix is deleted and the nasal resyllabifies with the stem.

18) Expanse locative examples

kiw'i̜	'tree'	*kaakiwín*	'forest'
kušḭ	'corn'	*kaakušín*	'cornfield'
munčulu̜	'mud'	*kaamunčulún*	'mudhole'
nípšḭ	'squash'	*kaanipšín*	'squash plot'
páqłčḭ	'tomato'	*kaapaqłčín*	'tomato plot'
sípi	'hill'	*kaasipíxṇi*	'hilly area'
stápu̜	'bean'	*kaastapún*	'bean plot'
číwišḭ	'rock'	*kaačiwĩ́šṇi*	'place of stones'

3.3.5.3 Enclosed locative *puu-*. The 'enclosed' locative construction has low productivity with nouns. It often derives nouns with somewhat idiosyncratic semantics from Spanish loan words.

19) Enclosed locative examples

< Sp. *escuela* 'school'		*puuskwélu*	'school'
< Sp. *café*	'coffee'	*puukápe*	'cup'
< Sp. *mitad*	'half'	*puu'íitaṭi*	'downtown'
< Lat. *saecula* 'century'?		*puusikúlan*	'church'
pašn̥i	'pig'	*púupašn̥i*	'pigpen'

Another locative construction exists in *puu-lan-*, with the 3ʳᵈ possessive prefix *š-*. It creates nouns that refer to places where certain plants or animals live or grow:

20) 'Place of' locative examples

lúuw'a̧	'snake'	*špuulanlúuw'a̧*	'place of snakes'
šánaṭi	'flower'	*špuulanxánaṭi*	'place of flowers'
páqɬči̧	'tomato'	*špuulanpáqɬči̧*	'place of tomatoes'

The syllable *–lan-* derives from the verb *la* 'exist, live', but the *-n* is problematical. Nasal epenthesis is common in FM Totonac between words, but never preceding continuants (see §2.6.5.2). But these locative constructions have the stress pattern of a single word; if they are words, they provide the only systematic context in the language where an *n* preceding a continuant does not delete word-internally. The etymology of these forms therefore remains unclear.

3.3.6 *ša-* derivation. The prefix *ša-*, besides being used with inalienable nouns in nonpossessive contexts (see §3.3.6.1), derives nouns from other nouns and from adjectives. It may be affixed to nouns referring to humans to derive related nouns, and to adjectives to create nouns of the form 'the X one(s)'. It is unclear if these uses of *ša-* are related or if two homophonous prefixes are involved.

3.3.6.1 *ša-* and human-referring nouns. The prefix *ša-* derives certain nouns from human-referring nouns. It is affixed outside pluralizer prefixes.

21) Examples of human-referring nouns in *ša-*

qawáačạ	'boy'	*šaqawáačạ*	'male (pigs or dogs of any age)'
qoolú'ụ	'old man'	*šaqoolú'ụ*	'male (other animals of any age)'
sqatạ	'baby'	*šasqátạ*	'fresh, young one'
tsi'iṭi	'(any) female'	*šatsí'iṭi*	'female (other animals)'
tsumuxáaṭi	'girl'	*šatsumuxáaṭi*	'female (pigs or dogs)'

The terms *šaqawáačạ* 'the son' and *šatéko* 'the father', *šatsumuxáaṭi* 'the girl' and *šanáana'ạ* 'the mother' are also employed to distinguish a parent and child of the same name.

3.3.6.2 *ša-* and nouns < adjectives. To use an adjective as a noun of the form 'the X one(s)', it is prefixed with *ša-*. This process is available to all adjectives.

22) Examples of deadjectival nouns

maqán	'old'	*šamaqán*	'the old man'
tsée	'good'	*šatsée*	'the good one, the best'
sáasṭi	'new'	*šasáasṭi*	'the new one'
tsutsóqọ	'red'	*šatsutsóqọ*	'the red one'
spupónqọ	'blue'	*šaspupónqọ*	'the blue one'
snapápạ	'white'	*šalaksnapápạ*	'the white ones'

Because FM Totonac is a zero-copula language, a phrase of the form ADJ-NOUN, such as *tsitséeqe n kintamáqnu* may be interpreted as 'my shirt is black' or 'my black shirt'. To ensure the attributive reading, the *ša-* prefixed adjective is used: *šatsitséeqe n kintamáqnu* 'my black shirt' ('my shirt the black one').

3.3.7 'Companion' derivation. A few nouns allow the derivation of a possessed form meaning 'X's companion or fellow kind' with the prefix *taa-*. This affix is etymologically related to comitative *taa-* (see §5.4.2.1). It is almost always found referring to second or third persons:

23) Companion derivation examples

lakčičíin	'dogs'	*š-taa-lakčičíin*	'his fellow dogs'
štíilan	'hen'	*š-taa-štíilan*	'her companion hens'
lakpuskáan	'women'	*min-taa-lakpuskáan*	'your companion women'
laqawaačán	'boys'	*š-taa-laqawaačán*	'his fellow boys'
lakčiškuwíin	'men'	*min-taa-lakčiškuwíin*	'your fellow men'

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3.3.8 Derogatory derivation. A derogatory suffix –*qš* exists that is used only with the nouns for 'boy' and 'girl', with the semantics of 'damn' or 'pesky' (in Spanish *pinche*). This suffix does not affect stress.

24) Derogatory derivation examples

qawáačą	'boy'	*qawáačaqš*	'damn boy'
tsumuxáaţi	'girl'	*tsumuxáataqš*	'pesky girl'

3.3.9 Non-verbal elements and clitics. Both proclitics and enclitics attach to all word classes in FM Totonac, most of them the same as verbal clitics discussed in Chapter 5. They fall into the categories of negation/negative polarity items, aspectual adverbials, and a category of other adverbials.

3.3.9.1 Negation and negative polarity clitics. Negative *łaa*= 'no' and the negative polarity proclitics *łaa=ał*= not yet; *łaa=naa*= 'still not', and any of the negative intensifiers *tuu=, tii=, łaa=* and *čii=* may attach to nouns, pronouns, adjectives, adverbs and numbers.

25) Negation and negative polarity examples

łaa=wišinán	'not you pl.'
łaa=ša-tsée	'the bad (not good) one'
łaa=čiškú'ų	'(he is) not a man'
łaa=ał=puskáaţi	'(she is) not a girl anymore'
łaa=nah=tsíkan	'(she is) not yet old'
łaa=puułmáan in čúčuţi	'the water is not deep'
łaa=tuu=sóoqe	'not at all early'
łaa=too-'aqtim in tačiiwín	'there is not even one word' (7,75 jsf)

3.3.9.2 Aspectual clitics. The aspectual enclitics =*ts'ą* 'already' and =*kú'ų* 'just; still' may also attach to words of almost any class (I have no examples with adverbs). By regular rule, the glottalization found in the citation forms is lost in connected speech. Pre-clitic aspiration is also shown in these examples.

26) *prépah = tsa ša-k-'án*

    high.school = ALREADY PAST-1SUB-go

    'I was already going to high school'

27) *čiškúh = ts'ą*

    man = ALREADY

    'He's already a man.'

28) *činčoo k-universidah = ts'ą kqałtawaqá-ma*

    now LOC-university = ALREADY 1SUB-study-PROG

    'Now I'm already studying at the university'

29) *maqáan = ts'ą*

    old-ALREADY

    '(s/he is) already old'

30) *ša-sqatah = kú'ų*

    ADJ-baby = STILL

    '(it is) still unripe'

31) *maqkáw = tsa k-la-ł k-čúčuṭi*

    ten = YA 1SUB-live-PFTV LOC-water

    'I already went to the water ten times'

32) *'aqtim = kú'ų*

    one = STILL

    'barely one'

3.3.9.3 Other clitics. Two other proclitics, *maya*=, meaning 'nothing but' and *laa*=, 'meaning 'like', may attach only to nouns.

33) *maya = ša-tsitséqę*

    nothing.but = ADJ-black

    'nothing but black ones'

34) *maya = séqeṭi*
   'nothing but grass'

35) *maya = lakpuskáan*
   'nothing but women'

36) *maya = š-tačiwíin*
   nothing.but = 3POSS-word
   'nothing but his words' ('he's nothing but talk')

37) *láa = m-pášni waayán*
   like = ep-pig eat
   's/he eats like a pig'

38) *láa = n-kin-taalá'ạ*
   like = ep-1POSS-sibling
   '(he's) like a brother to me'

39) *láa = n-čičíi la*
   like = ep-dog live
   'S/he lives/acts like a dog'

3.3.10 Compound nouns. Nouns may be compounded from two or more nouns or a noun and a verb, and are usually right-headed. A compound noun is diagnosed by its stress pattern, with stress on the syllable preceding the first syllable of the final member. Some compounds, such as *kaštilánčaw'ạ* 'bread', show postlexical nasal epenthesis (see §2.6.5.2). Some compound nouns incorporate body part prefixes. Most of my examples refer to plants or animals.

Table 3.11 Compound nouns

'aq-HEAD	spilíl' 'spotted'	spun 'bird'	'aqspilíspun 'species of bird'
	xúuk'i̧ 'deer'	lúuw'a̧ 'snake'	xuuk'íluuw'a̧ 'boa constrictor'
	kaštíla 'Spanish'	čaw'a̧ 'tortilla'	kaštilánčaw'a̧ 'bread'
	kíw'i̧ 'tree'	stápu̧ 'bean'	kiwístapu̧ 'tree beans'
	puksnun 'it stinks'	kíw'i̧ 'tree'	puksnúnkiw'i̧ 'cedar'
	qosni 's/he flies'	stáy'a̧ 'squirrel'	qosnístay'a̧ 'flying squirrel'
	tsíntsi 'puny'	stáy'a̧ 'squirrel'	tsintsístay'a̧ 'small species of squirrel'
munčul'u̧ 'swamp'	séeqn̥a̧ 'banana'	pá꞉m̥a̧ 'leaf'	munčulaseeqnápa꞉M̥a̧ 'swamp banana leaf'

3.3.11 Deverbal nominalizations. Filomeno Mata Totonac has numerous deverbal nominalization constructions, most of them very productive, that derive

1. Agent nouns/subject nominalizations
2. Locations/times
3. Instruments
4. Purpose nouns
5. Result nouns
6. 'Ought to' constructions

These constructions are generally accomplished by the suffixation of a nominalizer to a derived verb. The semantic type of the nominalization depends primarily upon the derivational affix and to a lesser extent on the specific nominalizing suffix selected. Within most of the construction types, a variety of nominalizers is possible, with the choice determined lexically for any particular construction. A few deverbal nouns are formed on the base of an underived verb root, mostly result nouns.

The verbal derivational affixes involved in nominalizations include locatives *kaa-* and *puu-*; instrumentals *lii-* and *puu-*; inceptive *ta-*; and habitualizer *–nan*. The nominalizing suffixes used in deverbal constructions are *–ti̥* with antepenult stress; *-ni̥* with antepenult stress; and *–ni̥* with penult stress. There are also two zero-morph constructions, one associated with penult and one with antepenult stress. (In FM Totonac, the stress pattern of any multimorphemic word is determined by the final suffix—see §2.7.2.)

A small number of nouns are derived by one of the above processes plus glottalization of the final consonant. These are covered in the last subsection.

3.3.11.1 Subject nominalizations in habitualizer *–nan*. Two types of subject nominalizations are found in FM Totonac, one forming agentive nouns from transitive verbs and another yielding 'experiencer' nouns from intransitives.

3.3.11.1.1 Agentive nominalizations. Deverbal agentive nouns are derived from a transitive verb root suffixed by the habitualizer/ detransitivizing morpheme *–nVn*. The suffix is usually *–nan*, but certain verbs are lexically specified to take a vowel harmonic allomorph of the habitualizer. Rather than adding a nominalizer to the derived stem, the agentive construction is associated with a phonological rule that changes *–nVn* to *–nV'V,* with stress on the first vowel. This appears to be a stress shift leftward, which always results in the deletion of a final *–n* (§2.6.4.4.3.5). The subject nominalization process is very regular and productive. All agentive nouns may be pluralized (§3.3.1.3).

Table 3.12 Agentive nominalizations

tlaqná'ḁ	< tlaq 'play'	'musician'
tsapaná'ḁ	< tsapa 'sew'	'seamstress'
staaná'ḁ	< staa 'sell'	'seller'
tsoqnú'ṵ	< tsoq 'write'	'writer'
'aqsiitní'i̥	<'aq-siit 'HEAD-cut'	'barber'
maalaná'ḁ	< maa-la 'CAUS-live'	'owner'
qałaaná'ḁ	< qałaa 'rob'	'thief'
šapaná'ḁ	< šapa 'rub'	'masseur'
čukunú'ṵ	< čuku 'cut'	'sawyer'
'aqsqawiní'i̥	< 'aqsqawi 'trick'	'demon'

3.3.11.1.2 Experiencer nominalizations. The base for experiencer nouns is an intransitive or stative verb. This not-very-productive construction takes two forms. The first type is derived

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with the nominalizing suffix –*n* (following vowels)/-*ni̥* (following voiceless consonants), with stress on the final syllable of the stem. The second type of experiencer construction shares the final vowel and stress pattern of the agentive nouns, even though intransitive verbs cannot take the habitual/detransitivizer -*nVn*. Most of the experiencer nouns of both types are prefixed with *šǎ-*, which derives nouns from adjectives. The unprefixed adjectives (without *ša-*) do not seem to be grammatical.

Table 3.13 Experiencer nominalizations

šapeekwá'a̦	< peekwa 'be afraid'	'fearful person'
šamaašaná'a̦	< maašana 'redden'	'shy person'
tatatlá'a̦	< ta-tatla 'MV-be sick'	'sick person'
šasiitsín	< siitsi 'be angry'	'angry person'
šalónqn̥i̥	< lonq 'be cold'	'cold person'
šatasáan	< tasa 'cry'	'crybaby'

3.3.11.2 Locative nominalizations. Nominalizations based on verbs derived with the locatives *kaa-* and –*puu* are similar in semantics to nouns derived from other nouns with these locative morphemes (see §3.3.5): *kaa-* is used for actions taking place on a surface expanse (eg. a floor, a field), while *puu-* indicates that the action of the verb is accomplished in a location with an interior (eg. a building, a hole).

3.3.11.2.1 Locative *kaa-*. The surface-locative prefix *kaa-* is more frequently used with noun roots to derive nouns meaning 'place of noun', eg. *kaa-cĭwíš-ni* 'place of stones' *číwiš* 'stone'. I have only one example of the deverbal construction, *kaatakúštu̥,* which may in fact be derived from the deverbal result noun *takúštu* 'that which has been weeded' (see §3.3.11.5 on result nouns) rather than directly from the verb *kuštu* 'weed'. I suspect that there are less ambiguous examples of the construction to be discovered.

3.3.11.2.2 Nominalizations in locative *puu-*. Deverbal nouns in *puu-* refer to an 'interior space for Xing' or sometimes to a 'time of year for Xing'. About a third are suffixed by –*n/-ni̥* with stress on the penult syllable of the stem. Most of the remainder are unsuffixed and split between those with stress on the final and the penultimate syllable.

Table 3.14 Locative nominalizations

puupáatin	< paati 'suffer'	'hell'
púupašni̥	< paš 'bathe'	'bathroom'
puustáan	< staa 'sell'	'store, market'
puutaaskúxuti̥	< taaskux 'work'	'workplace'
púulonqni̥	< loonq 'be cold'	'winter'
puučiwíin	< čiwiin 'speak'	'city hall'
puutátseeqni̥	< ta-tseeq 'INCH-hide'	'hiding place'
púutam'ḁ	< ta-maa 'INCH-lie'	'bed'

3.3.11.3. Instrumental nominalizations. The instrumentals *lii-* and *puu-* are applicatives that are prefixed to a verb to license an NP referring to an instrument used in the action of the verb. The semantic difference between the two instrumentals is similar to that described for the *kaa-* and *puu-* locatives (in §3.3.11.2): *puu-* derives instruments whose interior or concavity is used, and *lii-* any other type of instrument, (as well as the reason or cause for the verb action). Thus from *tsulu* 'urinate', for example, *lii-* derives *líitsuɬ* 'penis', but *puu-* derives *puutsúluti̥,* 'bladder'.

3.3.11.3.1 Nominalizations in *lii-*. Instrumental nominalizations in *lii-* have *–n/ -ni̥* or *–n'i̥* as a nominalizing suffix, with stress generally on the penultimate syllable of the stem, but occasionally on the final stem syllable. None take the nominalizer *–ti̥;* in section §3.3.11.4 we will see that a *lii-*ROOT-*ti̥* construction yields a different type of nominal.

Table 3.15 Nominalizations in *lii-*

líisiitni̥	< siit 'cut'	'scissors'
líipałni̥	< pał 'sweep'	'broom'
líičan'i̥	< čan' 'sow'	'sowing stick'
líičiin	< čii 'tie'	'rope'
líispeeqni̥	< speeq 'whistle'	'wind instrument'
líiwašni̥	< waš 'dig'	'shovel'
liinéqen	< neqe 'fan'	'fan'
liiqámaan	< qamaan 'play'	'toy'
liiqeeštúkun	< qee-štuku 'BACK-bar'	'bar (to bar door)'
liitsílin	< tsili 'fry'	'cooking grease'
liikučún'i̥	< kuču 'cure'	'medicine'
líitsoqni̥	< tsoq 'write'	'pen/pencil'

3.3.11.3.2 Instrumental nominalizations in *puu-*. Instrumental nominals in *puu-* are usually suffixed by *–n/-ni̥* or *–n'i̥*, with stress on the penult stem syllable.

Table 3.16 Nominalizations in *puu-*

póoqootni̥	< qoot 'drink'	'beverage container'
puumaaxínin	< maa-xin 'CAUS-smoke'	'incense burner'
puušpátan	< špata 'grind'	'mortar'
puumaaqawíwin	< maa-qawiw 'CAUS-cold'	'refrigerator'
púučiitni̥	< čiit 'squeeze'	'sugarcane press'
puučálan	< čala 'pulp (coffee)'	'coffee de-pulper'
puumákskati̥	< mak-skat 'BODY-dip'	'spoon/ladle'

3.3.11.4 Purpose nominalizations in *lii-*. The verbal prefix *lii-*, besides licensing an instrument noun phrase, may also license an NP related to the purpose, reason, or cause of the action of the verb e.g., *naliiníi m puusikulán* 'he will die for the church'. Such derived verbs may be nominalized to yield purpose nouns. In most cases the nominalizer is *–ti̥*, distinguishing these nouns from the instrumentals derived in *lii-* with *–n, -ni̥* or *–n'i̥* nominalizers (discussed in section §3.3.11.3.1). This *–ti̥* requires stress on the penult syllable of the stem.

Table 3.17 Purpose nominalizations

líistaati̥	< staa 'sell'	'merchandise for sale'
liičéqeeti̥	< čeqeen 'wash'	'dirty laundry'
liitɬáwati̥	< tɬawa 'do'	'chore'
liimáqniiti̥	< maq-nii 'CAUS-die'	'intended victim'
liikúštuti̥	< kuštu 'weed'	'area needing weeding'
liičípati̥	< čipa 'catch'	'prey'
liikíɬtɬiti̥	< kiɬtɬi 'sing'	'song'
liimaaɬkúyuti̥	< maa-ɬkúyuu 'CAUS-burn'	'kindling'
líiwaati̥	< waa 'eat'	'food'

When possessed, this class of derived noun can also serve as a verbal 'ought to X' construction that will be discussed in §3.3.11.6.

3.3.11.5 Result nominalizations. Another type of very productive deverbal nominalization is the result noun. It is usually derived from a verb with the prefix *ta-* and a *–n/-ni̥* suffix that requires stress on the final syllable of the stem, although sometimes no suffix is involved. It contrasts aspectually with the purpose construction described in §3.3.11.4, for example, purpose noun *liičéqeeti̥* 'dirty laundry (laundry to be washed)' vs. result noun *tačeqéen* 'clean laundry (washed laundry)'. There is also a fairly large group of resultative deverbal nouns with a body part prefix or no derivational prefix.

Like most FM Totonac deverbal nominalization processes, result nominalizations in ta- are very productive with both transitive and intransitive verbs. Since it is unusual typologically to find inceptivized transitives, some background is needed.

McQuown, for a Sierra Norte dialect of Totonaco, notes similar patient nominals ("nombres recipientes de la acción") derived from a broad class of inceptivized transitive verbs (1990:113-114), including 'possess', 'tie', 'dress', 'kiss', 'weave', 'help', 'write', 'see', 'hunt', 'count' and more. So TFM seems to be between the other two varieties in the range of transitive verbs that can be inceptivized.

3.3.11.5.1 Result nouns in *ta-*. The nature of the *ta-* prefix with result nominalizations is unclear. With resultative verbs it appears to be the middle voice (MV) marker (§5.4.4.2) that is required to convert these verbs from an active to middle voice reading. Thus *pink* 's/he splits it', *tapínk* 'it splits', *tapínk* 'the crack'; *číi* 's/he ties it', *tačíi* 'it is tied', *tačíin* 'knot; prisoner'. With non-resultative verbs, which normally cannot take the MV prefix, it may be that MV is possible only in this construction to give a resultative, middle voice reading, although this would be paradoxical morphologically. Or it may be a nominalizing prefix unrelated to the verbal middle voice affix (but see §3.3.11.6.2).

Table 3.18 Result nominalizations in *ta-*

takiɬtɬín	< kiɬtɬi 'sing'	'song'
tawášn̥i	< waš 'dig'	'hole'
tatsóqn̥i	< tsoq 'write'	'message'
tamaqníin	< maq-nii 'CAUS-die'	'butchered animal, victim'
taqaɬín	< qaɬi 'possess'	'domestic animal'
tatláqn̥i	< tlaq 'play'	'music'
tastáan	< staa 'sell'	'merchandise'
tapáɬn̥i	< paɬ 'caress'	'caress'
tapáɬn̥i	< paɬ 'sweep	'swept-up dirt'
tapatláan	< patlaa 'vomit'	'vomit'
taxášn̥i	< xaš 'breathe'	'breath'
tačíin'i̥	< čiin 'arrive'	'arrival'
tatsúku̥	< tsuku 'begin'	'beginning'
tačóqo̥	< ta-čoqo 'MV-stop'	'stop'
tapúšn̥i	< ta-puš 'MV-cut'	'harvested fruit'

3.3.11.5.2 Result nominalizations in *-ti̥*. Another large group of result nouns are formed from intransitive verbs with either no verbal derivational prefix or a body part prefix, and the suffix –*ti̥*, which determines stress on the penultimate stem syllable.

Table 3.19 Result nominalizations in *-ti̥*

šánati̥	< šana 'bloom'	'flower'
čúxuti̥	< čuxu 'spit'	'saliva'
paatínati̥	< paati-nan 'suffer-HAB'	'suffering'
patláanati̥	< patlaa-nan 'vomit-HAB'	'vomit'
laqaštáxati̥	< laqa-štax 'EYE-water'	'tears'
qaɬšláwati̥	< qaɬ-šlawa 'MOUTH-drool'	'drool'

3.3.11.6. 'Ought to' construction. As mentioned in §3.3.11.4, the purpose nominalization in *lii-
. . .-ti̧* is the base for an unusual 'ought to' construction. It is found in an active and a passive
form, discussed respectively in the next two sub-sections.

3.3.11.6.1 Active 'ought to X' construction. Both transitive and intransitive verbs can serve as
the base for this construction. When a purpose nominalization in *lii- . . .-ti̧* is possessed (see
§3.3.2.1 for possessive affixes), it is translated into Spanish equally as a noun or a verb, eg., *š-lii-
čeqee-ti̧* 'his dirty laundry' or 'he should wash it'; *ki-líi-waa-ti̧* 'my food' or 'I should eat it'; *š-
lii-maq-nii-t-kán* as 'they should kill it' or 'their victim'; *mi-lii-maa-qałtawáqa-ti̧* 'your student'
or 'you should make him/her study'. Many such possible forms have no independent existence as
nouns, and have only a verbal translation; formally, of course, they are all nouns. When
translated as a verb, the possessor of the noun is the subject of the 'ought to' construction. There
is no other construction for expressing deontic obligation. Some examples follow.

 40) *ki-líi-waa-ti̧*

  1POSS-PURP-eat-NOM

  'I should eat it'

 41) *š-lii-kúštu-ti̧*

  3POSS-PURP-weed-NOM

  's/he should weed it'

 42) *mi-lii-łtáta-ti̧*

  2POSS-PURP-sleep-NOM

  'you should sleep'

 43) *ki-lii-maa-qałtawaqa-t-kán*

  1POSS-PURP-CAUS-study-NOM-POSS.PL

  'we should eat make him/her study'

Multiply derived verbs can serve as the base for this construction; that is, besides the purposive
lii- required for this construction, other derivational affixes may appear on the verb that serves as
the base.

 43) *š-lii-tii=šóqo-ti̧*

  3POSS-PURP-PASS.BY-pay-NOM

  's/he should pass by to pay'

44) *mi-lii-qałtawaqá-qee-ti̞*

    2POSS-PURP-study-MEANWHILE-NOM

    'you should study meanwhile'

45) *mi-lii-lii-čípa-ti n tsał*

    2POSS-PURP-INSTR-catch-NOM ep net

    'you should catch it with a net'

When these derived forms have transitive verb roots, although they are formally possessed nominals, they appear to behave as transitive verbs in their ability to take third person objects. They cannot, however, be inflected with 1st or 2nd person object pronouns.

46) *mi-líi-waa-ti séeqṇa̞*

    2POSS-PURP-eat-NOM banana

    'you should eat a banana'

47) *ki-lii-maqtaqal-ti-kán i štíilan*

    1POSS-PURP-care.for-NOM-POSS.PL ep hen

    'we should take care of the chickens'

The verb-like behavior of this 'ought to' nominalization is explained by the fact that in this reading, it is the predicate of a zero-copula phrase (I owe this insight to Lynn Nichols). FM Totonac is a zero-copula language, and also has a null third person pronoun. Thus a possessed purpose nominalization, eg, *š-lii-čéqee-ti̞*, may be translated as 'his (clothing) for washing' or 'it is his (clothing) to wash'. The latter translation becomes associated with modal obligation semantics, to yield 'he ought to wash it'.

3.3.11.6.2 Passive 'ought to be X'd'. In addition to the active 'ought to X' construction, a passive 'ought to be X'd' derivation exists that begins with a transitive verb prefixed by *ta-*, which is then entered into the *lii- . . –ti̞* construction. Thus *š-lii-kúštu-ti̞* 's/he should weed it' becomes *š-lii-ta-kúštu-ti̞ 'it should be weeded';* *š-lii-laqá-loqs-ti̞* 's/he should face-slap him/her' becomes *š-lii-ta-laqá-loqs-ti̞* 's/he should be face-slapped'. This construction is very regular and transparent with all transitive verbs.

48) *š-lii-ta-máq-nii-ti̞*

    3POSS-PURP-MV?-CAUS-die-NOM

    'it should be killed'

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49) *š-lii-ta-wilí-nii-ṭi̧*

　　3POSS-PURP-MV?-hit-DAT-NOM

　　'he should be hit'

50) *š-lii-táa-staa-ṭi̧*

　　3POSS-PURP-MV?-sell-NOM

　　'it should be sold'

The nature of the *ta-* prefix in this construction is problematical. It may be the middle voice verbal prefix which attaches to certain resultative roots to derive a middle voice (MV) reading from an active verb, for example, *šiit* 's/he cuts it', *taštiit* 'it gets cut'; *qaps* 's/he folds it', *taqaps* 'it folds up' (see §5.4.4.2.2). However, the MV prefix is not grammatical with most transitive verbs. If it is involved in the passive 'ought to' construction, it would mean that an ungrammatically derived transitive verb is permissible only when serving as the base for this construction, that is (*š-* (**lii-*(**ta-kuš-tu*)-*ṭi̧*).

In §3.3.11.5.1, a similar issue was discussed related to result nominalizations such as *tatsóqṇi̧* 'that which is written, message'. Again, in this construction, whose semantics include a non-active voice reading, the *ta-* MV prefix would be appropriate except that it does not affix grammatically to the many transitive, non-resultative verbs which undergo this nominalization. The morphosemantics of the *ta-* prefix in these two constructions needs further analysis.

3.3.11.7 Glottalization and deverbal nouns. An additional group of deverbal nouns are formed by one of the constructions discussed above and glottalization of the final consonant rather than a final suffix. The criteria for determining which verbs undergo this process are unclear, although positional verbs and verbs ending in sonorants make up most of the examples in my database, as do result nouns.

51) *púutaam'a̧*

　　/puu-ta-maa/

　　LOC-MID-lying

　　'fallow field'

52) *qałtáawil'a̧*

　　/qał-ta-wila/

　　MOUTH-MID-sitting

　　'pot lid'

53) *ta'oqspúl'a̧*

　　/ta-'oqspula/

　　PURP-occur

　　'event'

54) *tapaasáw'a̧*

　　/ta-paašawa/

　　PURP-be.happy

　　'happiness'

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55) takúk'a̦   56) taqáš'i̦

/ta-kuka/   /ta-qaši/

PURP-carry   PURP-punch

'load'   'punch'

3.3.12 Nouns and reduplication. The final morphological operation to be noted relating to nouns is full reduplication, which is very rare in the language, otherwise found only with ideophonic sound and manner of motions adverbials. It is possible only with a handful of time expressions, and derives adverbs from nouns, such as *kaat-kaat* 'annually' from *kaat* 'year', and *čaali-čaali* 'daily' from *čaali* 'tomorrow'.

3.4 Adjectival morphology. In previous sections of this chapter, adjectives have been shown to undergo some of the same constructions as nouns: the inflectional process of pluralization (§3.3.1.6); derivation with Body Part Prefixes (§3.3.3.2); and cliticization with the negative/negative polarity proclitics (§3.3.9.1) and both aspectual enclitics (§3.3.9.2). In §3.3.6.2 the derivation of nouns from adjectives was covered.

In addition, two processes exist which apply only to adjectives, both involving the clitic =w̥a̦. I analyze =w̥a̦ as an enclitic because it takes as host words of various classes and is unstressable. It causes aspiration of a preceding vowel like the enclitics =ts'a̦ and =kú'u̦ (§2.6.4.3). Finally, adjectives show evidence of partial reduplication.

3.4.1 Approximate =w̥a̦. The basic color terms and a few other adjectives are given an 'approximate' meaning when cliticized with =w̥a̦.

3.4.1.1 Color adjectives and =w̥a̦. The clitic = w̥a̦, with semantics similar to English *–ish,* attaches to any basic color term to give an approximation of that color. This suffix determines stress on the final stem syllable, and causes aspiration of a preceding vowel.

Table 3.20 Color adjectives in =w̥a̦

laašášw̥a̦	< láašuš 'orange'	'orange-ish'
spuponqóhw̥a̦	< spupónqo̦ 'blue'	'blue-ish'
titeqéhw̥a̦	< titéqe̦ 'black'	'blackish'
smukukúhw̥a̦	< smukúku̦ 'yellow'	'yellowish'

3.4.1.2 Adjectives with optional =wą̊. A number of adjectives characterized by partial reduplication are given an 'approximate' semantics by =wą̊.

Table 3.21 Adjectives with optional =wą̊

slamámą	'shiny'	slamamáhwą̊	'sort of shiny'
slipípį	'shiny, greasy'	slipípwą̊	'sort of shiny'
lasásą	'thin'	lasasáhwą̊	'sort of thin'
spuxúx	'straight'	spuxuxúhwą̊	'not quite straight'

3.4.2 Adjectives in =wą̊. The clitic =wą̊ attaches to words of various classes, including verbs, sound symbolic adverbials, and nouns, to derive adjectives. This process is not particularly productive and it seems to be lexically determined whether a base can take this clitic to derive an adjective.

3.4.2.1 Deverbal adjectives. =wą̊ sometimes derives an adjective from a verb, but this is not a productive process and is highly lexicalized.

Table 3.22 Deverbal adjectives

čutáhwą̊	< čuta	'bend'	'flexible'
čítwą̊	< čit	'squeeze'	'wet'
makastúhwą̊	< maqastux	'have good aim'	'having good aim'
wiléqšwą̊	< šwileq	'screw in'	'twisted'
túkšwą̊	< tukš	'break'	'breakable, rigid'

3.4.2.2 Deadverbial adjectives. A few examples exist of adjectives in =wą̊ derived from reduplicated sound symbolic adverbs (see §2.8.3).

Table 3.23 Deadverbial adjectives

pámw̥ḁ	'heavy'	< pam pam	'the sound of s.t. heavy falling'
pénqw̥ḁ	'breakable'	< penq penq	'the sound of branches breaking'
spímw̥ḁ	'agile'	< pim pim	'the manner of jumping along'
tónqłw̥ḁ	'clumsy'	< tonqł tonqł	'a clumsy manner'
slipípw̥ḁ	'shiny'	< slip slip	'the manner of shining repeatedly'

3.4.2.3 Other adjectives in =w̥ḁ. My database includes adjectives in =w̥ḁ derived from a noun, a number, and another adjective, as well as other =w̥ḁ adjectives whose bases are not independent words.

Table 3.24 Other adjectives in =w̥ḁ

čišíhw̥ḁ	< číšiti̥ 'hair'	'hairy'
staatíhw̥ḁ	< táati̥ 'four'	'square'
kaaxaláxw̥ḁ	< kaaxalax 'disordered area'	'disordered'
	< xalax 'disordered by long objects'	
qoowíitw̥ḁ	< ??	'poorly cleaned'
tłenqłw̥ḁ	< ??	'big and clumsy'

3.4.3 Partial reduplication of adjectives. Although I have found no evidence of a synchronic process of reduplication in adjectives, many of the descriptive adjectives in FM Totonac appear to have been formed through reduplication of the final syllable (see examples in Table 3.25). For comparison, examples of non-reduplicated adjectives are given in Table 3.26.

Table 3.25 Reduplication in adjectives

slamámą	'shiny'
slipípi̦	'shiny'
skawáwą	'dry'
spuxúxų̦	'straight'
staqáqą	'sharp'
lasásą	'thin'
latátą	'thin'
tsatátą	'soft'
pamámą	'soft, yielding'
sqawíwi̦	'cool'
šqawíwi	'insipid'
mulúlų̦	'indented'
čimámą	'fuzzy'
łtulúlų̦	'thick'
qolúlų̦	'spherical'
šalálą	'full of holes'
skalálą	'intelligent'
spilíli̦, łpilíli̦	'spotted'
smalálą	'dark-skinned'

Table 3.26 Non-reduplicated adjectives

lánką	'big'
tináx	'small'
tsee	'good'
caałmáan	'long, tall'
'aqtsú'ų̦	'short'
qoolú'ų̦	'old'
sáasti̦	'new'
túwa	'difficult'
łapóqǫ	'fat'
páła	'hard'

3.5 Adverbial morphology. It was noted in §3.3.9.1 that adverbs may sometimes serve as a base for the negative and negative polarity clitics. The only other morphological operation undergone by adverbs in the language is full reduplication in the case of the ideophonic sound and manner of motion adverbs. This is a very salient trait, since full reduplication is almost entirely absent outside the realm of expressive speech. These adverbs were covered in §2.8.3, and will not be further discussed here.

3.6 Introduction to numeral classifiers. Filomeno Mata Totonac has a large set of numeral classifiers, many of them body part- or more generally shape-related, as is common cross-linguistically and in the Meso-American Sprachbund. They are obligatorily prefixed on numbers up to twenty but not on any higher numbers. The classifiers are also prefixed to adjectives that refer to quantity, such as *ɬúuwa* 'much, many', e.g., *čaaɬúuwa* 'many (persons)'.

3.6.1 Numeral system. The Totonac numeral system is basically vigesimal, although the number roots from 11-19 are composed roughly of a 'ten' prefix and the numerals from 1-9. Table 3.27 gives the numerals up to twenty prefixed by the general numeral classifier *'aq-*, also used for spherical objects. Table 3.28 provides the numerals up to 100.

Table 3.27 Numerals 1-20

1	'aq-tím	11	'aq-kawítu̱
2	'aq-tó'	12	'aq-kutó'
3	'aq-tutu̱	13	'aq-kutútu̱
4	'aq-tati̱	14	'aq-kutáti̱
5	'aq-kítsis	15	'aq-kukítsis
6	'aq-čašán	16	'aq-kučašán
7	'aq-tuxún	17	'aq-kutuxún
8	'aq-tsayán	18	'aq-kutsayán
9	'aq-naxátsa̱	19	'aq-kunaxátsa̱
10	'aq-káw	20	'aq-pušám

Table 3.28 Numerals 10-100

10	'aq-káw	60	tutumpušám
20	'aq-pušám	70	tutumpušamakáw
30	pušamakáw	80	tatipušám
40	tipušám	90	tatipušamakáw
50	tipušamakáw	100	kitsispušám

Of note is the fact that the number is often separated from the noun it modifies by the verb, that is, the numeral precedes the usual VSO word order, as shown in the following examples:

57) *’aqstitútu kintáawa láašuš*

   /’aqsti-tutu̧ kin-taa-waa láasuš/

   SLICE-3 1OBJ-COM-eat orange

   ‘he offered me three slices of orange to eat’

58) *peeqtútu tsanqaniiyáan mimpulátu*

   /peeq-tutu̧ tsanqa-nii-aa-ṇi̧ min-pulatu/

   DISH-3 lack-DAT-IMPF-2OBJ 2POSS-plate

   ‘you lack three plates’

3.6.2 Numeral classifiers. I have collected 26 numeral classifiers, which are shown in Table 3.29 along with their approximate meaning. This list is not exhaustive; speakers offered several more but were unsure of their usage, so I have omitted them. As noted above, many of the classifiers are shape-related (see Levy 1999); and/or have the same origin as body part nouns, and to participate in the same metaphorical semantic expansion as the body part prefixes (BPP) (see the list of BPPs in Table 5.2). Thus *paa-* is both a BPP and a numeral classifier, both of which refer to belly-shaped things; *qan-* also serves both functions, and counts objects that are long and nosed-shaped, like pencils. A few classifiers are etymologically related to BPPs, but count shapes that are difficult to relate to the body part referred to, such as *piš-*, which is the neck-related BPP, but counts handfuls.

Table 3.29 Numeral classifiers

Classifier	For counting:	Similar/Same as:
’amaq-	X more times	
’aq-	Spherical objects (also the default classifier)	head-related BPP
’aqa-	Spherical/round objects on a stem, like flowers, trees	ear-related BPP
’aqsti-	Slices, furrows	
čaa-	People and chiles	leg-related BPP
kiɬ-	Objects with an opening that is pursed to close it, like a sack	mouth-related BPP
kiɬ’ak-	Pieces of wood or firewood	
kiɬmak-	Floor in a house; used without a noun, i.e., *kiɬmaktútu ščiki̧* ‘his house has three floors’	

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laq-	Coins	
laka-	Places, towns	face-related BPP
laqa-	Flat surfaces, like sheets of paper, fields	face-related BPP
liiqała-	Number of people involved in carrying something	
liičaa-	Same as above	
mak-	Flat things, like sheets, books, empty sacks	
maq-	Times, e.g., *maqtím* 'once', *maqtó'* 'twice'	
paa-	Containers like buckets, or items with a wider girth in the middle like corncobs	belly-related BPP
peeq-	Empty plates and cups	arm-related BPP
piš-	Handfuls	neck-related BPP
pooqał-	Mounds planted with several corn seeds	
puu-	Pairs of things like shoes, or clothing outfits	'inside' BPP/locative
puu'ak-	Piles of things	
puulak-	Types or species	
qał-	Pieces of meat	mouth-related BPP
qan-	Long narrow things, like posts, pencils, wires	nose-related BPP
qee-	Full sacks, rolls of firewood, bananas	back-related BPP
tan-	Animals	rear-related BPP
tuu-	Filled plates and cups	

59) *'aq-tím i číwiš*
    NC-1 ep stone
    'one stone'

60) *čaa-łuuwa pin'*
    NC-many chile
    'many chiles'

61) *puu-tími łáqaṭi̱*
    NC-1 clothing
    'one set of clothing'

62) *laka-tutu n kaa-cikí-n k-lakapás*
    NC-3 ep LOC-house-PL 1SUB-recognize
    'I know three towns'

63) *puulak-tím in čičí'i̱*
    NC-1ep dog
    'one species of dog'

64) *qał-tó' k-wáa-łi liiwán*
    NC-2 1SUB-eat-PFTV
    'I ate two pieces of meat'

Chapter 4 Verbal Inflection

4.1 Introduction. This chapter provides an overview of the complex inflectional verbal morphology of FM Totonac, which marks the categories of tense, aspect, mood, subject and object. The discussion will limit itself to the functional and semantic aspects of verbal inflection, with a similar treatment of verbal derivation to follow in Chapter 5. Linear (position class) and hierarchical aspects of verbal structure will be considered in Chapter 6. This organizational structure is not meant to imply that inflection and derivation are always easily separable categories; FM Totonac has its share of complications in this regard, including aspect markers that occur inside derivational ones, and derivational suffixes whose choice of allomorph is determined by the subject. These issues are left for Chapter 6, however, and the division in Chapters 4 and 5 is made by labelling all and only those categories obligatorily marked on verbs as inflection. This chapter begins with a general description of verbal organization and verb classes, then addresses the inflectional system. Appendix A contains a list of all affixes and clitics discussed in this chapter.

4.2 Overall verb structure. The morphologically complex FM Totonac verb has at its center a stem that may be simple, compound and/or derived. The minimal structure of a verb is:

Table 4.1 Minimal verb structure

TENSE/MOOD—PERSON—STEM—ASPECT—PERSON

The stem may be a single or a compound root, and may include one or more derivational affixes. Tense and mood morphemes appear preceding the stem, aspect morphemes follow the stem, and person agreement (subject and object) is marked by both prefixes and suffixes. The status of tense and mood markers as clitics vs. prefixes will be explored in §6.5.3.2.

The depiction in Table 4.1 is somewhat simplistic in several ways: subject is sometimes realized by morphological processes other than affixation; mood, aspect and person markers occur in multiple positions interspersed with one another; some aspect and person affixes are combined in one position; and certain aspect suffixes precede some derivational suffixes, that is, inflection is not always peripheral to the stem. These complications will receive further treatment in Chapter 6. The complete verb structure is displayed in Appendix B.

As in other Totonac varieties, all verbs in FM Totonac fall into three phonotactic categories, depending on whether they end in a vowel, *-n*, or a non-nasal obstruent. Unlike with other varieties, however, these phonotactic groupings do not require positing different inflectional classes. All FM Totonac verbs inflect in the same way, subject however to regular phonological rules, such as nasal deletion (see §2.6.1.1), that result in surface differences.

4.3 Verb transitivity classes. All verb roots in FM Totonac have an inherent level of transitivity that is morphologically unmarked. Almost all verbs are subject to valency-increasing and/or – decreasing operations, as described in §5.4. The three verb classes, positionals, intransitives and transitives, are described in the following three subsections.

4.3.1 Positionals. The positionals are a closed class of roots that I subdivide into the bound positionals and the posturals; all have meanings related to physical position, and form the base for a very large number of derived forms. With the positionals the prefix *ta-* acts as an inceptivizer, whereas with verbs of other classes *ta-* serves as a marker of middle voice (see §5.4.4.2).

4.3.1.1 Bound positionals. The bound positionals are: a) *xuu* 'in(side), having entered from above or below'; b) *nuu* 'in(side), having entered from one side'; c) *štu* 'out(side), having exited from one side', and d) *kut* 'out(side), having exited from above or below'. These bound roots, as in other Totonaco languages, have "no inherent transitivity" (Levy 1994:238); they require combination with an applicative, a causative, the inceptive, or another verb root before they may serve as a predicate and be inflected.

1) /ta-xuu-maa/ *taxúuma* 'he's getting into (a hole)'
   INC-inside-PROG

2) /ta-nuu-kan/ *tanuukán* 'someone enters'
   INC-in-REF

3) /ta-laka-štu/ *talakaštú* 's/he looks out'
   INC-FACE-out

4) /maa-kut-uu/ *maakútu* 's/he takes it out'
   CAUS-out-TRAN

4.3.1.2 Posturals. The posturals are stative verbs that, as such, differ from the bound positionals in their ability to be inflected without first undergoing a derivational process. The posturals are: a) *maa* (with 2SUB suppletive form *paa*) 'be lying'; b) *yaa* 'be standing'; c) *wi(la)* 'be seated'; d) *kii* 'be upright', and e) *waka* 'be up in/on/against'. The same five postural statives are found in all the well-described Totonac dialects, with only minor phonological and semantic differences. Examples of their underived and inceptivized use follow:

5) /k-maa-aa/   *kmaa*   'I am lying down'
   1SUB-lying-IMPF

6) /k-yaa-aa/   *kyaa*   'I am standing'
   1SUB-standing-IMPF

7) /k- wi-aa/   *kwi*   'I am seated'
   1SUB-seated-IMPF

8) /ša-k-waka-aa/   *šakwáka*   'I was up (in, on, against something)'
   PAST-1SUB-up-IMPF

9) /k-ta-yaa-aa/   *ktaayáa*   'I stand up'
   1SUB-INC-standing-IMPF

10) /k-ta-wila-aa/   *ktawilá*   'I sit down'
    1SUB-INC-seated-IMPF

11) /łaa=k-ta-waka-kutun-aa/   *łaaktawakakutún*   'I don't want to get up
    NEG-1SUB-INC-up-DES-IMPF   there'

12) /ta-paa-paa-ti̥/   *tapáapaati̥*   'you are (in the process of) lying down'
    INC-lying2-PROG2-2SUB.sg

13) /ta-kii-li̥=ts'ḁ/   *táakiits'*   's/he already stood up'
    INC-upright-PFTV=YA

4.3.2 Intransitive verbs. The intransitive verbs form a large and open class in FM Totonac. As noted above, there is no formal marking of level of transitivity in FM Totonac; the intransitive verbs are those which cannot be inflected with object markers without first undergoing some valence-increasing operation.

14) Examples of intransitive verbs

'an	'go'	*panq*	'explode'
kiłtłi	'sing'	*paš*	'bathe'
liitse'en	'laugh'	*puks*	'stink'

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łku	'burn'	*qałi*	'have, wait'
łtata	'sleep'	*skux*	'work'
mas	'rot'	*sput*	'run out, be finished'
min	'come'	*škulu*	'smoke'
moqos	'fall'	*šlit*	'slip'
muksun	'smell good'	*tantłi*	'dance'
muštu	'drown'	*tasa*	'cry'
nii	'die'	*tlaawan*	'walk'
paati	'suffer'	*waš*	'dig'
paastak	'think'		

4.3.3 Transitive verbs. Transitive verbs can be divided into two sub-groups, transitives and ditransitives. There are only a handful of verbs in the latter subclass. Again, no formal marking differentiates the inherently transitive verbs from the statives or intransitives, but they are always understood to include a direct object in their core meaning. Ditransitives include a direct and indirect object. The only inherent ditransitives found in my sample are shown in 16); other researchers note an equally small number in other varieties of Totonac.

15) Examples of transitives

čan	'sow it'	*skin*	'request it'
čeqee	'wash it'	*staa*	'sell it'
čii	'tie it'	*šama*	'touch it'
kaa	'cut it'	*ška*	'bite it'
laaqtsin	'see it'	*tamaawa*	'buy it'
maqtaqał	'take care of it'	*tlaq*	'play (an instrument)'
puutleqe	'count it'	*tsuuk*	'kiss it'
qała	'steal it'	*waa*	'eat it'
rentarli	'rent it'[4]	*wan*	'say it'

16) Examples of ditransitives

| *maqłti* | 'take it away/receive it from him/her/it' |
| *miški* | 'give it to him/her' |

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[4] This is one of two verbal borrowings from Spanish (used by my youngest consultant only), both transitive verbs. The other is *konfesarli*, 'confess someone'.

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4.4 Inflectional categories. As shown in Table 4.1, the inflectional categories realized on the FM Totonac verb are person agreement, both subject and object; and tense, aspect and mood. Subject and (on transitive verbs) object markers are obligatory, and express singular or plural number, and first, second or third person, with an inclusive-exclusive distinction in 1st plural. Third person singular is always zero-marked. TAM inflection is also obligatory on verbs in FM Totonac; there are no non-finite forms. The tenses are past, present and future, with present tense having the unmarked value. Four aspects are distinguished: imperfective, perfective, perfect and progressive. The moods are realis (zero-marked) and irrealis, both obligatorily marked, and the counterexpectational, required in certain TAM combinations. These facts are summarized in Table 4.2.

Table 4.2 Inflectional categories

Person				
Subject	1 sg/pl inc/pl exc	2 sg/pl	3 sg/pl	
Object	1 sg/pl inc/pl exc	2 sg/pl	3 sg/pl	
Tense	Past	Present	Future	
Aspect	Imperfective	Perfective	Perfect	Progressive
Mood	Realis	Irrealis	Counterexpectational	

4.5 Inflectional processes. All morphological processes associated with inflection involve the addition of segmentally overt affixes, with one exception: second person subject, in addition to agreement suffixes, is marked by i) suppletion of certain roots and derivational suffixes; and, for second person singular only, by ii) a floating constricted glottis [cg] feature, realized as laryngealization of the final consonant of the verb stem in the imperfective and perfect aspects. A summary of all inflectional affixes appears in Table 4.3.

Table 4.3 Inflectional affixes

Category	Morphosyntactic properties
Mood	
ka-	IRREALIS
ti-	COUNTEREXPECTATIONAL
Tense	
š-	PAST
na-	FUTURE
Aspect	
-aa	IMPERFECTIVE
-lį̥	PERFECTIVE /non-2SUBJECT
-niitą	PERFECT
-maa	PROGRESSIVE
-paa	PROGRESSIVE/2SUBJECT
-maana	PROGRESSIVE/3plSUBJECT
Person	
k-	1SUBJECT.exclusive
kin-	1OBJECT
-wą̥	1 plural
[cg]	2SUBJECT.singular [IMPERFECTIVE/PERFECT]
-t̨į̥	2SUBJECT.singular [PERFECTIVE /PROGRESSIVE]
-tit̨į	2SUBJECT.plural
-n̨į̥	2OBJECT
ta-	3SUBJECT.plural
kaa-	OBJECT.plural
laa-	1OBJECT.plural/2SUBJECT

4.6 Inflectional ordering in position classes. Table 4.4 illustrates how the inflectional affixes are ordered in relation to the derived stem. (This schema does not represent their positions in relation to the derivational affixes.) Their division into position classes is based on well-established patterns of precedence and non-co-occurrence.

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Table 4.4 Overview of inflectional position classes

4 Tense, Mood	3 Person	2 Mood	1 Person	0
PAST *š-*	1SUB *k-*	CNTREXP *-ti̥*	2/1 *laa-*	STEM
IRR *ka-*	1OBJ *kin-*		OBJ.pl *kaa-*	
FUT *na-*			3SUB.pl *ta-*	

0	1S Aspect	2S Aspect	3S Person
STEM	PROGR *-maa*	PERFECT *-niitą*	2OB *-ni̥*
	PROGR/2 *-paa*	IMPF *-aa*	1pl *-wą*
			2SUB.pl *-titi̥*
			PFTV *-li̥*
			2SUB.sg *-ti̥*
			2SUB.sg [cg]

Again, Table 4.4 somewhat simplifies the verb structure. Several derivational suffixes regularly occur between the progressive affixes of suffix position 1 and the desiderative in suffix position 2, as well as between the desiderative suffix and the aspect markers of suffix position 3.

4.7 Tense, aspect and mood. Cross-linguistically, the area of grammar labeled 'tense-aspect-mood' contains a great variety of broadly related concepts. This section will discuss those distinctions relevant to FM Totonac and provide a general description of the morpho-semantics involved.

To begin with, an overview of the possible interactions among TAM categories is necessary. As stated earlier, every verb in FM Totonac must be inflected for tense, aspect and for the mood distinction of realis/irrealis. Table 4.5 depicts the interactions of the obligatory TAM categories.

Table 4.5 TAM interactions

MOOD	REALIS			IRREALIS
ASPECT	IMPERFECTIVE	PERFECT	PROGRESSIVE	PERFECTIVE
TENSE	FUTURE-PRES-PAST	PRES-PAST	PRES-PAST	PRES-PAST

The rest of this section will define all TAM terms used and illustrate their usage.

4.7.1 Mood. Mood (or mode) is a cover term that can refer to a range of grammatical distinctions that generally fall into two categories: epistemic and deontic. Epistemic moods "pertain to knowledge and belief, specifying the speaker's commitment to the truth of what is being related and the basis for that belief" (Mithun 1999:170). The epistemic moods in FM Totonac are realis and irrealis. Deontic moods "express the subject's duty or obligation to perform the irrealis act expressed by the verb" (Payne1997:246). FM Totonac has three deontic moods: counterexpectational, negative potential, and desiderative. The first of these will be described in this section, because it is required for certain grammatical forms such as the negative future and the conditional. The other deontic moods, not being obligatorily marked on the verb, will be covered in §5.3.1 on derivation.

4.7.1.1 Realis and irrealis. Realis mood "asserts that a specific event or state of affairs has actually happened, or actually holds true" (Payne 1997:244). Irrealis mood locates the event or state in a possible world that is not the real world. As shown in Table 4.5, realis mood is compatible with any aspect or tense. It is zero-marked, that is, any verb without the irrealis prefix is assumed by speakers to be in realis mood.

Irrealis marker *ka-* may only co-occur with perfective aspect. It is associated with four functions: negative future, imperative, hortative and a subordinate clause use.

4.7.1.1.1 *ka-* & negative future. To assert in a main clause that a future event will not take place requires the use of irrealis *ka-* as well as counterexpectational *ti-*. It cannot be expressed with the future prefix *na-* (as shown in examples 17 and 18), although this will be seen to be grammatical in certain types of subordinate clause in §4.7.3.1. When the negative future predicate involves the first person object *kin-*, IRR *ka-* is optionally dropped, as in example 19.

17) *ɬaakatiwáaya*   **ɬaanawaayan*
    /ɬaa=ka-ti-waa-nan-lį̓/   /ɬaa=na-waa-nan-lį̓/
    NEG-IRR-CNTR-eat-HAB-PFTV   NEG-FUT-eat-HAB-PFTV
    's/he will not eat'   *'s/he will not eat'

18) *ɬaakatípį̓*   **ɬaanapín'a*
    /ɬaa=ka-ti-pin-tį̓/   /ɬaa=na-pin-tį̓/
    NEG-IRR-CNTR-go2-2SUB.sg   NEG-FUT-go2-2SUB.sg
    'you will not go'   *'you will not go'

19) *ɬaakintiwilíin'į̓*
    /ɬaa=kin-ti-wilii-nii-[cg]/
    NEG=1OBJ-CNTR-hit-DAT-2SUB.sg
    'you're not going to hit me'

4.7.1.1.2 *ka-* & imperative. IRR *ka-* is always present in imperative constructions with a singular or plural second person subject.

20) *kačiwíinant̠į̓*   21) *kapíntit̠į̓*
    /ka-čiwii-nan-t̠į̓/   /ka-pin-tit̠į̓/
    IRR-speak-HAB-2SUB.sg   IRR-go2-2SUB.pl
    'speak!'   'leave!'

4.7.1.1.3 *ka-* & hortative. The hortative functions as an indirect command, exhortation, or admonition to a first or third person subject, and like the imperative, requires IRR *ka-*.

22) *kakwaayáw*   23) *ka'ampá*
    /ka-k-waa-nan-wą̓/   /ka-an-para-lį̓/
    IRR-1SUB-eat-HAB-1pl   IRR-go-ITER-PFTV
    'let's eat!'   'may s/he go again'

4.7.1.1.4 *ka-* in subordinate clauses. In subordinate clauses following certain complement-taking verbs, irrealis mood may be an alternative to the more frequently found future tense of the subordinate verb. This is most common following the invariant particle *šlakaskínka* 'it is necessary' (literally 'it would have been necessary' from the passive form of the past counterfactual of *laka=skin* FACE-ask 'need').

24) *šlakaskínka napín'ą̈*

/š-laka-skin-kan-l̥ḭ na-pin-aa- [cg]/

PAST-FACE-ask-REF-PFTV FUT-go2-IMPF-2SUB.sg

'it's necessary for you to go'

25) *šlakaskínka kapítḭ*

/š-laka-skin-kan-l̥ḭ ka-pin-tḭ/

PAST-FACE-ask-REF-PFTV IRR-go2-2SUB.sg

'it's necessary for you to go'

Subordinate verbs following main clause verb *wan* 'tell' are also inflected in irrealis mood.

26) *kwánii n kakaašáka*

/k-wan-ni-l̥ḭ ka-kaa-šaka-l̥ḭ/

1SUB-tell-DAT-PFTV IRR-OBJ.pl-scrub-PFTV

'I told him to scrub the floor'

27) *kaktáakii kiwaní*

/ka-k-ta-kii-l̥ḭ kin-wan-nii-yaa/

IRR-1SUB-MV-upright-PFTV 1OBJ-tell-DAT-IMPF

'he tells me to get up'

Intonation differentiates this usage of *wan* from syntactically identical quotative sentences, that is, 'he tells me to get up' vs. 'he tells me: "get up!"'

The contexts in which IRR *ka-* occurs in or alternates with the future tense in subordinate clauses is an issue deserving of further research.

4.7.1.2 Counterexpectational. The counterexpectational marker *ti-* has two related functions. It can be used with any verb in any TAM inflection to indicate that the action of the verb takes place contrary to some expectation relevant to the context. This non-obligatory usage will be described in §5.3.1.1 on derivation.

Counterexpectational *ti-* is also required to appear with certain other mood or tense markers for a particular compositional semantics. One of these cases was touched on in §4.7.1.1.1, involving the collocation of NEG *łaa=*, IRR *ka-* and CNTR *ti-* as the only grammatical means for expressing the negative future in main clauses. The counterexpectational in this case seems to negate the implied expectation in the discourse context that made necessary the negative assertion.

The other special use of CNTR *ti-* is with PAST *š-* and the perfective aspect to express past deontic necessity. This contrasts with past tense/perfective aspect forms without *ti-*, as in example 30, which have a past conditional meaning.

   28) *štitáskił*

       /š-ti-ta-skin-lį̦/

       PAST-CNTR-3SUB.pl-ask.for-PFTV

       'they should have asked for it'

   29) *štitamparátitį̦*

       /š-ti-tan-para-titį̦/

       PAST-CNTR-come2-ITER-2SUB.pl

       'you pl. should have returned'

   30) *štamparátitį̦*

       /š-tan-para-titį̦/

       PAST-come2-ITER-2SUB.pl

       'you pl. would have returned'

4.7.1.3 Secondary moods. Besides the major moods of realis and irrealis, whose marking on verbs is obligatory, and counterexpectational *ti-*, two other deontic mood markers exist. These are negative polarity potential *la-*, and desiderative *–kutun*. These, along with the optional uses of the counterexpectational, will be considered in §5.3.1.

4.7.2 Aspect. Aspect is often described as characterizing "the internal temporal structure of a situation" (Mithun 1999:165). Klein proposes that 'aspect' refers to the relation between the time of the situation and topic time, the time for which the claim is made (Klein 1994:3). The four

primary aspects expressed morphologically in FM Totonac are the imperfective, perfective, perfect and progressive. As already noted, this kind of aspect marking is obligatory on all verbs in the language. In addition, other aspectual distinctions are made possible by various derivational affixes and will be addressed in §5.3.2, as well as by adverbials and adverbial phrases. Each of the four major aspect markers is associated with a particular stress pattern when word final. An introduction to each of these suffixes will be found in the next subsections.

4.7.2.1 Imperfective aspect. Imperfective aspect indicates habitual activities, or ongoing, uncompleted activities, although progressive aspect is more frequently used for the latter. It is compatible with past, present and future tenses, and in fact is the only aspect that may combine with the future. The imperfective suffix, -*aa*, is affixed only if it is followed by another morphological operation, whether or not this operation involves an overt affix. Since imperfective –*aa* occurs in one of the outermost positions, this means it can appear only on verbs with a more peripheral suffix, that is, a deictic or adverbial suffix, or a second person or first person plural agreement suffix. Thus –*aa* surfaces regularly only on verbs with a first or second person plural or second person singular subject, or a second person object. Younger speakers but not older ones generally drop the 1ˢᵗ plural and 2ⁿᵈ plural subject markers, but retain IMPF –*aa*. The analysis that –*aa* requires an outer affix for its expression thus becomes somewhat abstract. Imperfective aspect is associated with final stress. Example 31 is interesting, since the semantically idiosyncratic verb *liitse'en* 'laugh' is formed with the instrumental, and then transitivized by another derivation with the instrumental, giving *liiliitse'en* 'laugh at someone'.

31) *kiliiliitse'én*

/kin-lii-lii-tsee-'an-aa/

1OBJ-INST-INST-well-go-IMPF

's/he laughs at me'

32) *ščiwiinanáa*

/š-čiwii-nan-aa-wą/

PAST-speak-HAB-IMPF-1pl

'we used to speak/were speaking'

33) *nakmimpará*

na-k-min-para-aa/

FUT-1SUB-come-ITER-IMPF

'I will return'

34) *kanahláy'ą*

/kanaxla-aa-[cg]/

believe-IMPF-2SUB.sg

'you believe (it)'

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4.7.2.2 Perfective aspect. The perfective aspect presents "an event as a complete whole, without specification of internal temporal structure" (Mithun 1999:165). Without a tense affix, that is, in the unmarked present tense, it is generally glossed in Spanish in the preterite or simple past tense. The marking of the perfective aspect is somewhat complex. It is marked by the suffix –*lį̥* when the subject is first or third person, and it is one of two aspects (the other is the progressive) in which the second person singular subject is marked by –*tį̥*. Both of these suffixes determine a stress pattern in which stress falls two syllables before the suffix, and it is this stress pattern that most saliently distinguishes the perfective from the imperfective. This is because verbs in these two aspects are often without any overt marking of aspect: PFTV –*lį̥* and –*tį̥* are often blocked morphologically or deleted by phonological processes, and IMPF –*aa* is also absent under the conditions specified in §4.7.2.1.

Besides its use in the present tense to indicate a simple past tense, the perfective is the only aspect that may co-occur with irrealis mood. As described in §4.7.1.1, irrealis mood with perfective aspect is found in the negative future, the imperative and hortative, and in the complements of certain verbs such as *wan* 'tell', *lakaskin* 'need' and *šlakaskínka* 'it is necessary'. Examples of the simple past (examples 35 and 36) and all irrealis uses (examples 37-40) of the perfective are provided below.

35) *laqštiqáši*

/laqšti-qaši-lį̥/

TEM-punch-PFTV

's/he punched him/her in the temple'

36) *kískinţį*

/kin-skin-tį̥/

1OBJ-ask.for-2SUB.sg

'you asked me for it'

37) *ɬaakaktilaalaaqtsíw*

/ɬaa=ka-k-ti-laa-laaqtsin-wą̥/

NEG-IRR-1SUB-CNTR-RECP-see-1pl

'we will not see each other'

38) *katláqti líitlaqNI*

/ka-tlaq-tį̥ lii-tlaq-nį̥/

IRR-play-2SUB.sg INST-play-NOM

'play the guitar!'

39) *ka'ampá*

/ka-an-para-lị

IRR-go-ITER-PFTV

'let him go again!'

40) *šlakaskínka kakaapašíkạ*

/š-laka-skin-kan-lị   ka-kaa-paš-kan-lị/

PAST-FACE-ask-REFL-PFTV IRR-OBJ.pl-bathe-REF-PFTV

'it's necessary to bathe them'

4.7.2.3 Perfect aspect. The perfect aspect in FM Totonac describes, in the present tense, "a past event from a present point of view, or as being currently relevant" (Kearns 2000:158). Or more generally, to include the past tense, "the perfect locates the topic time in the post state of the corresponding situation" (Klein 1994:9). The perfect suffix, *-niitạ*, optionally reduces to *–nii* when it is word-final, as in example 42. It is associated with a penult stress pattern.

41) *kmiškiniitánts'ạ*

/k-miški-niita-ni-ts'ạ/

1SUB-give-PFT-2OBJ-YA

'I have already given it to you'

42) *waaqooníi*

/waa-qu'u-niitạ/

eat-TOT-PFT

's/he has eaten it all'

43) *šmaqtaqałníitạ*

/š-maqtaqal-niitạ/

PAST-care.for-PFT

's/he had taken care of him/her/it'

4.7.2.4 Progressive aspect. Progressive aspect "takes us inside the duration of a reported event to where the event is in progress" (Kearns 2000:156). In FM Totonac, progressive aspect is often employed instead of the imperfective not only for events, but also for states, that are

ongoing 'right now'. Progressive *–maa* is one of several suffixes that have a suppletive form, *-paa,* when the subject is second person; in addition, it has another suppletive form for third person plural subject: *-maana*. In some Totonac varieties *–na* is a separate plural number affix (Beck 2003:48), but in FM Totonac it is a frozen particle found only as part of the progressive suffix, and I analyze *–maana* as a single suppletive form. When the *–maa* and *–maana* allomorphs are word final, they impose penultimate stress. The *–paa* allomorph is always followed by a second person subject suffix, which are associated with different stress patterns: 2SUB.sg *–ti̜* requires stress two syllables preceding itself, and 2SUB.pl *–titi̜* one syllable preceding itself.

44) *kmaqalóonqma*

    /k-maqa-loonq-maa

    1SUB-HAND-cold-PROG

    'my hands are cold'

45) *liilamaapá*

    /lii-la-maa-para/

    INST-live-PROG-ITER

    'he's at it again' ('he is living for it again')

46) *štakiɬwamáana*

    /š-ta-kiɬ-wan-maana/

    PAST-3SUB.pl-mouth-say-PROG3

    'they were saying'

47) *šwaayampaaqóotits'*

    /š-waa-nan-paa-qoo-titi̜-ts'a̜/

    PAST-eat-HAB-PROG2-TOT-2SUB.pl-YA

    'you pl. were already finishing eating'

4.7.2.5 Secondary aspect markers. In addition to the set of four primary aspect markers just described, many derivational affixes have aspectual significance. These include negative polarity *aɬ=* (NOT) YET; '*ak-* 'at the point of'; associated motion *kii-* ROUND-TRIP and *tii-* PASS-BY; ambulative *–tiiɬa*; iterative *–para*; totalitive/terminative *–qo'o*; MEANWHILE *–qe'e*; deictic/momentary *–ci̜*; and enclitic adverbials JUST *–ku'u̜* and YA *–ts'a̜*. These affixes will be covered in Chapter 5 on derivation.

4.7.3 Tense. "Tense markers situate an event or state in time with respect to some point of reference, usually the moment of speech." (Mithun 1994:152). FM Totonac has two such tense markers, future *na-* and past *š-*; verbs without either tense marker are understood by speakers to be in the present tense.

4.7.3.1 Future tense. As depicted in Table 4.5, the future tense marker *na-* is found only on verbs in realis mood and imperfective aspect. In main clauses and most subordinate clauses, its presence indicates that the action of the verb occurs after the utterance time as in example 48, or after the time of the action of another verb in the sentence, as in example 49.

48) *naktlawayáa*

/na-k-tlawa-yaa/

FUT-1SUB-make-IMPF

'we're going to make it'

49) *kiwáni na'án*

/kin-wan-nii-lį̇   na-'an/

1OBJ-tell-DAT FUT-go

'he told me he will/would go'

Note that in example 49, the action of going must take place after the time of the telling event, but the time of utterance is irrelevant. This example is equally felicitous whether followed by ' . . . and he has gone.' or ' . . . and he still plans to'.

As noted in §4.7.1.1.1, the negative and future *na-* may not be combined to form a negative future proposition in main clauses, but in subordinate clauses they may be:

50) *máski łaanapína ksikúlan*

/maski łaa=na-pin-aa-[cg] k-sikulan/

although-NEG-FUT-go2-IMPF-2SUB.sg LOC-church

'although you won't go to church'

The future tense is also often required in the complement to certain verbs where most Indo-European languages would use an infinitive. This infinitival usage is found following verbs and invariant particles such as *kwesa* 'have to', *lakaskin* 'need', *šlakaskinka* 'it is necessary', *lakča'an* 'it is one's turn to', and *maaqašmat* 'convince'. (As described in §4.7.1.1.4, verbs in irrealis mood can sometimes substitute for future tense forms in these contexts.)

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51) *kwésa naktaayáa*

/kwesa na-k-ta-yaa-aa/

have.to FUT-1SUB-MID-standing-IMPF

'I have to stand up'

52) *lakaskíni napín'ą̈*

/lakaskin na-pin-aa-[cg]/

need-FUT-go2-IMPF-2SUB.sg

'he needs you to go'

53) *kimaaqašmáta naktaakíi*

/kin-maa-qašmat-ii-lį̈   na-ta-kii/

1OBJ-CAUS-hear-TRANS-PFTV FUT-MID-upright

'he convinced me to get up'

4.7.3.2 Past tense. The past tense, like the present tense, is compatible with any of the four aspects, and simply locates the event or state in a time prior to utterance time. It is marked by prefix *š-* (or *ša-* only before 1SUB *k-*). It takes the suppletive form *k-* when it precedes a stem beginning with *š*. Its use in realis mood with the imperfective, perfect or progressive aspects results in transparent semantics.

54) *šaktlawakutín*

/š-k-tlawa-kutun/

PAST-1SUB-do-DES

'I wanted to do it'

55) *kskinkutín'ą̈*

/š-skin-kutun-aa-[cg]/

PAST-ask.for-DES-IMPF-2SUB.sg

'you wanted to ask for it'

56) *šwaníitą̈*

/š-wan-niita/

PAST-tell-PFT

's/he had told him/her'

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57) *škuštupáatiti̧*

    /š-kuštu-paa-titi̧/

    PAST-weed- PROG2-2SUB.pl

    'you pl. were weeding'

PAST *š-* combines with the perfective aspect only to form the conditional 'would have X'd' or, when the counterexpectational is also present, the 'should have X'd' form, as described and exemplified in §4.7.1.2, and again below:

58) *štalakawakaqóoł*

    /š-ta-laka-waka-qu'u-li̧/

    PAST-3SUB.pl-FACE-up-TOT-PFTV

    'they all would have confronted him/her'

59) *štími*

    /š-ti-min-li̧/

    PAST-CNTR-come-PFTV

    's/he should have come'

I propose that these 'would have/should have' forms are in irrealis mood, with the irrealis marker morphologically blocked by the PAST marker, which occurs in the same position. Therefore, I contend that the past marker does not meaningfully co-occur with the perfective aspect in realis mood.

4.7.4 TAM conclusion. This section has provided a brief overview of the TAM system in FM Totonac, revealing an agglutinative system that is morphologically additive and, for the most part, semantically transparent.

4.8 Person agreement. As noted previously, subject inflection is obligatory on all verbs, as is object inflection on transitive verbs. Independent pronouns, which are the same for subject and object, are optional (see §3.2.1). Person agreement is accomplished through affixation, suppletion and glottalization.

4.8.1 Subject inflection. The subject agreement affixes are shown in Table 4.6, along with the glottalization process which marks second person singular in certain aspects.

Table 4.6 Subject inflection

	Singular	Plural
1	*k-*	(*k-*). . *.-wą̊* exclusive *–wą̊* inclusive
2	-[cg] IMPERFECTIVE/PERFECT -*tį̊* PERFECTIVE/PROGRESSIVE	*–titį̊*
3	Ø	*ta-*

4.8.1.1 First person subject. The prefix *k-* has the semantic content of 'first person subject exclusive'. When it appears without a plural marker, it indicates a first person singular subject. Although consonant degemination is sometimes found in the phonology (see §2.6.2.2.2), *k-k* sequences that result from first person subject inflection on a stem beginning with a *k* do not usually simplify' although sometimes the *k-* prefix is replaced by aspiration.

60) *kšaamá*

    /k-šama-aa/

    1SUB-touch-IMPF

    'I touch it'

61) *šakkiɬwama*

    /š-k-kiɬ-wan-maa/

    PAST-1SUB-MOUTH-say-PROG

    'I was saying'

The first person plural marker is the suffix *–wą̊*, which marks 1ˢᵗ plural subjects OR objects. First person plural exclusive subject is indicated by *k-* plus *–wą̊*, while *–wą̊* alone indicates 1ˢᵗ plural subject inclusive. In the presence of the second person object suffix *–ni, –wą̊* does not occur since they occupy the same suffix position (see example 66). *–wą̊*, like all the suffixal

person agreement markers, causes primary stress to fall on the syllable preceding itself when word-final.

In the imperfective aspect, younger speakers drop *–wą*, while older speakers do not. For these younger speakers, the subject of a first person plural inclusive form in the imperfective is recognized only by the presence of IMPF *–aa*. Since younger speakers also omit 2SUB.pl *–titį* in the imperfective, ambiguity between first plural and second plural subjects is common in the imperfective (see §4.7.2.1). One younger speaker uses the allomorph *–ah* following the habitual suffix *–nan* with 2nd plural subjects only; I am not aware how widespread this innovation is.

62) *ktlawamáaw*

/k-tlaawa-maa-wą/

1SUB-do-PROG-1pl

'we (excl) are doing it'

63) *kučiyáa* younger/ *kučiyáaw* older speakers

/kuči-aa-wą/

cure-IMPF-1pl

'we (incl) cure him/her/it'

64) *łaaka'áw*

/łaa=ka-an-wą-lį/

NEG-IRR-go-1pl-PFTV

'let's (incl) not go!'

65) *ktawakaniitáw*

/k-ta-waka-niita-wą/

1SUB-MID-up-PFT-1pl

'we (excl) have climbed up'

66) *kkaatiyayáan*

/k-kaa-tiya-aa-ni/

1SUB-OBJ.pl-grasp-IMPF-2OBJ

'we (excl) grab you pl.'

4.8.1.2 Second person subject. Second person subject inflection in FM Totonac is somewhat complex, being marked by affixes, realizational morphology and suppletion of certain roots and inflectional and derivational morphemes.

The second person singular marker has two allomorphs, the suffix –*ti̧* and a floating constricted glottis feature that attaches to the final consonant of the verb stem. The -*ti̧* allomorph is associated with stress two syllables preceding itself, the [cg] allomorph with stress one syllable before itself. (Primary stress on all multimorphemic words in FM Totonac is determined by the final suffixal construction; for a discussion, see §2.7.2.) The choice of allomorph is made by the phonology: -*ti̧* cannot appear immediately following an unstressed vowel; in such contexts, [cg] is the required marker. Since the syllable preceding the 2SUB.sg morpheme must be unstressed due to the associated antepenult stress pattern, this means that the –*ti̧* allomorph is found only with stems ending in a closed syllable. The one exception occurs with verbs in the progressive aspect; the –*ti̧* allomorph is selected immediately following the second person progressive suffix –*paa*, as in example 70. Given the phonological forms of the four major aspect markers, the result is that the 2nd person subject in the perfective and progressive is marked by –*ti̧,* and in the imperfective and perfect by the constricted glottis feature.

In other Totonac varieties –*ti̧* and –*li̧,* both with an associated antepenult stress pattern, mark the perfective aspect in verbs with 2nd and 1st/3rd subjects respectively.

67) *naqałíy'a̧*

/na-qałi-aa-[cg]/

FUT-have-IMPF-2SUB.sg

"you will have it'

68) *tapaaníit'a̧*

/ta-paa-niita-[cg]/

MID-lying2-PFT-2SUB.sg

'you have lain down'

69) *tančíčinti̧*

/tan-čičin-ti̧/

REAR-heat- 2SUB.sg

'you burned your tail'

70) *taaskúxpaati̧*

/taa-skux-paa-ti̧/

COM-work-PROG2-2SUB.sg

'you are working'

71) *čapán'i*

/čapa-nii-[cg]/

grind-DAT-2SUB.sg

'you ground it for him/her'

72) *kalínkšti*

/ka-linkš-ti̜/

IRR-jump-2SUB.sg

'jump!'

Second person plural subject is indicated by the suffix –*titi̜* in all aspects, except, as noted above, by younger speakers who omit it after IMPF –*aa*. When –*titi̜* is dropped, the subject is distinguished only by the presence of –*aa*. Since younger speakers also omit 1st plural –*wa̜* in the imperfective, verbs in this aspect are ambiguous for these speakers between 1st plural inclusive and 2nd plural subject. The ambiguity is resolved by context or the presence of an optional independent pronoun. The suffix –*titi̜* is associated with stress on the syllable preceding itself when word-final.

73) *putsayáa* younger / *putsayáatiti̜* older speakers

/putsa-aa-titi̜/

look.for-IMPF-2SUB.pl

'you pl. look for him/her/it'

74) *štitamparátiti̜*

/š-ti-tan-para-titi̜/

PAST-CNTR-come2-ITER-2SUB.pl

'you pl. should have returned'

75) *kučíipaatiti̜*

/kučii-paa-titi̜/

cure-PROG2-2SUB.pl

76) *qałtawaqaniitátits'a̜*

/qal-tawaqa-niita̜-titi̜-ts'a̜/

MOUTH-practice-PFT-2SUB.pl-YA

'you pl. have already studied'

Besides glottalization and the 2SUB.sg *–ti̢* and 2SUB.pl *–titi̢* suffixes, suppletive forms of certain morphemes are associated with second person subject. This is the case with four verb roots, one inflectional affix, and three derivational suffixes, as summarized in Table 4.7.

Table 4.7 Second person suppletive allomorphs

Morpheme	2ⁿᵈ person allomorph	Function/Gloss
'an	*pin*	go
min	*tan*	come
qašmat	*qašpat*	hear
maa	*paa*	lying down
-maa	*-paa*	PROGRESSIVE
-mii	*-pii*	DOWN
-či̢	*-čitą*	HERE
-ča'ą	*-pi̢*	THERE

In verbs with 2ⁿᵈ person subject, <u>all</u> relevant morphemes occur in the 2ⁿᵈ person suppletive form, such that second person subject may be multiply exponed. This may be seen in examples 74 and 75, as well as in the following:

77) *łaatooqašpátpaati̢*

/łaa=tuu=qašpat-paa-ti̢/

NEG-INT-hear2-PROG2-2SUB.sg

'you aren't listening'

78) *waayámpi*

/waa-nan-pi-ti̢/

eat-HAB-THERE2-2SUB.sg

'you ate over there'

79) *tankaapiipítiti n kiw'I*

/tan-kaa-pii-pi-titi̢   kiw'I/

REAR-cut-DOWN2-THERE2-2SUB.pl tree

'you cut the tree down over there'

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80) *kiitantliiyaačitátiṭi*

/kii-tantlii-aa-čita-titi̧/

RT-dance-IMPF-HERE-2SUB.pl

'you pl. only come for a moment to dance'

In an interesting example of blocking, (the suppression of a morpheme by another with which it is semantically compatible), the second person allomorphs of the independent verbs and suffixes can never co-occur with the first person plural object marker (for details, see §4.8.2.1). In example 81, the object is first person singular, and the second person allomorphs of the verb and two suffixes are present. In example 82, the object is 1ˢᵗ plural, and none of the morphemes appears in its second person form. This blocking receives further analysis in §4.8.2.1.

81) *škinqašpátpaapi̧*

/š-kin-qašpat-paa-pi̧/

PAST-1OBJ-hear2-PROG2-DEICTIC2

'you were listening to me over there'

82) *škilaaqašmatmaača'áw*

/š-kin-laa-qašmat-maa-ča'a-wa̧

PAST-1OBJ-3OBJpl-hear-PROG-DEICTIC-1pl

'you were listening to us over there'

4.8.1.3 Third person subject. The third person singular subject is zero-marked, that is, a verb without other subject markers will be interpreted as having a third person singular subject. The prefix *ta-* indicates a third person plural subject. With a 3ʳᵈ plural subject, the progressive marker takes the suppletive form *–maana*, as noted in §4.7.2.4.

83) *čuh*

/čuh-aa/

spit-IMPF

's/he spits'

84) *kintatáamił*

/kin-ta-taa-min-li̧/

1OBJ-3SUB.pl-COM-come-PFTV

'they came with me'

85) *taqamaanamáana*

/ta-qamaa-nan-maana/

3SUB.pl-play-HAB-PROG3pl

'they are playing'

The 3SUB.pl prefix *ta*- cannot occur on a verb marked for a plural object, because *ta*- shares a prefix position with OBJ.pl *kaa*-, which overrides it. This results in number ambiguity for third person subject forms with a plural object.

86) *kaamaqtaqáɬ*ṇ̊i

/kaa-maqtaqaɬ-ṇ̊i/

OBJ.pl-care.for-2OBJ

'they took care of you pl.'

87) *kaatiyá*

/kaa-tiya/

OBJ.pl-grab

'they grab them'

4.8.2 Object inflection. Objects are obligatorily cross-referenced on transitive verbs, regardless of the presence of an object NP. The object marker may reference the direct object or any other object licensed by an applicative. Generally, when a verb has more than one object, the object marked on the verb will be the one highest on a person hierarchy of 1, 2 > 3. These facts can often result in ambiguity that is resolved by context. The object pronominal affixes appear in table 4.8. Note that the plural object morpheme marks 1st, 2nd, and 3rd person objects. It is the only one of the inflectional affixes involved in variable ordering, to be discussed in §6.2.3.1.

Table 4.8 Object inflection

	Singular	Plural	
1	*kin-*	*kin-laa-* . . .-*wạ*	w/2SUBJ
		kin-kaa-. . .-*ṇ̊i*	w/3SUBJ
2	-*ṇ̊i*	*kaa-*. . . -*ṇ̊i*	
3	∅	*kaa-*	

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4.8.2.1 First person object. The first person singular pronominal object prefix is *kin-*, which truncates to *ki-* preceding continuants.

88) *ki'aqqáši*

/k̲in-'aq-qaši-l̥i̥/

1OBJ-HEAD-punch-PFTV

'he punched me in the head'

89) *kinčíiní kimpášn̥i̥*

/kin-čii-nii kin-pašni/

1OBJ-tie-DAT 1POSS-pig

'he tied up my pig for me'

A first person plural object is marked differently depending on whether the subject of the verb is 2nd or 3rd person. In either case, the marking of 1OBJ.pl comprises three separate morphemes having an additive meaning. With a third person subject, the morphemes involved are *kin-* 1OBJ, *kaa-* OBJ.pl, and *–n̥i̥* 2OBJ. When the subject is second person, the object morphemes are *kin-* 1OBJ, *laa-* 2/1, and *–wą* 1pl. In both cases, a plural morpheme, the first person object prefix, and another person marker must be present. The compositional semantics of this marking could be seen as differentiating an exclusive from an inclusive 1st plural object, that is, *kin-laa-* . . .*-wą* 'you X me+him/her' vs. *kin-kaa-* . . .*-n̥i̥* 's/he/they X me+you'. This distinction is not made in fact. Although the 1st plural object is always interpreted as exclusive 'us' with a 2nd subject, with a 3rd subject, the 1st plural object, formally inclusive 'us', can refer to any one or more persons and 'me'.

The first person plural object marker *kin-laa-* . . .*-wą* is required not only when a second person subject acts on a first person plural object, but also when a second person plural subject acts on a first person <u>singular</u> object. This parallels the situation with verbs having first person subjects and second person objects: a second person plural object marker is required whether the 2nd person object is singular or plural, as long as the subject is plural (see §4.8.2.2). This sort of idiosyncratic person marking when speech act participants act on each other was noted by Heath (1998) in many American languages and dubbed by him 'pragmatic skewing'.

The *laa-* prefix is etymologically related to the reciprocal marker, and is analyzed as such by Treschel & MacKay (2003) for Misantla Totonac, where the facts are similar. I analyze it as a different morpheme due to its behavior in suppressing second person subject morphology, a form of blocking not found with the reciprocal. Verbs inflected with 1OBJ.pl *kin-laa-* . . . *–wą* (by definition having a 2nd person subject) are ungrammatical with any form of second person marking, either affixation or suppletive 2nd person forms of roots or affixes (see Table 4.7 for all 2nd person suppletive forms). Even when the *kin-laa-* . . .*-wą* marking is morphologically but not

semantically required, in the case of a 2SUB.pl with a 1OBJ singular, all second person morphology is suppressed. The reciprocal in FM Totonac however, does co-occur with 2nd person subject morphology. In other varieties of Totonac, *laa-* refers to a third person object, which I believe to be similar to its semantic contribution to the compositional 1OBJ.pl marker.

4.8.2.2 Second person object. The second person object suffix *-ni̥* is used alone in the singular, and with the plural object prefix *kaa-* in the plural. The suffix loses its vowel and resyllabifies with a vowel-final stem word-finally (see §2.6.4.4.3.3). Exceptionally, in the case of a verb with a first person plural subject, the second person plural object marker is required whether the object is singular or plural. This is parallel to the requirement for a 1st person plural object marker with a 2nd plural subject, even if the object referent is singular (see §4.3.2.1). This suffix, when word-final, requires stress on the syllable preceding itself.

90) *naklee'enáan*

/na-k-lii-'an-yaa-ni̥/

FUT-ISUB-INSTR-go-IMPF-2OBJ

'I will take you'

91) *lakapastákni̥*

/laka-pastak-ni̥-li̥/

FACE-think-2OBJ-PFTV

's/he remembered you'

92) *kkaatiyayáan*

/k-kaa-tiya-aa-ni̥/

1SUB-OBJ.pl-grab-IMPF-2OBJ

'I grab you pl.'

93) *šakkaamaqtaqałkutunán*

/ša-k-kaa-maqtaqał-kutun-aa-ni̥/

PAST-1SUB-OBJ.pl-care.for-DES-IMPF-2OBJ

'we wanted to take care of you (sg or pl)'

4.8.2.3 Third person object. Like the third person singular subject, the third person singular object is zero-marked. This entails that all transitive verbs unmarked for object are interpreted to have a third person object. This fact increases the possible ambiguity of forms with more than one object, as in example 95.

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94) *špáta*

/špata-lį̥/

mash-PFTV

s/he mashed it'

95) *kimaamáqnii*

/kin-maa-maq-nii-lį̥/

1OBJ-CAUS-CAUS-die-PFTV

's/he made me kill him/her/it', 's/he made him/her/it kill me'

The third person plural object makes use of the general plural object prefix *kaa-*.

96) *kaakučiiyáatiṭį*

/kaa-kučii-aa-tiṭį̥/

OBJ.pl-cure-IMPF-2SUB.pl

'you pl. cure them'

4.9 Subject and Object Inflection. Due to issues of complementarity, the pronominal agreement inflection found on transitive verbs is not always the simple additive result of the expected subject marker plus the expected object marker. Table 4.9 provides each possible subject-object combination.

The primary departures from a simple additive inflectional system involve syncretism in the marking of first and second persons acting on one another when either or both are plural (in which case the object marker must be plural, whether it is the object or subject referent who is plural), the blocking of second person morphology when a first person plural object is present (already described in §4.8.2.1), and the blocking of the 3ʳᵈ plural subject marker when the plural object marker is affixed (because these two prefixes fall into the same prefix position).

Table 4.9 Subject and object inflection

S		O B 1sg	J 1pl	E 2sg	C 2pl	T 3sg	3pl
U	1sg	X	X	k-. . .- ni̥ 1SUB.exc-2OBJ	k-kaa-. . . – ni̥ 1SUB.exc-2OBJ.pl-2OBJ	k- 1SUB.exc	k-kaa- 1SUB.exc-OBJ.pl
B	1pl	X	X	k-kaa-. . .- ni̥ 1SUB.exc-2OBJ.pl-2OBJ	k-kaa-. . .- ni̥ 1SUB.exc-2OBJ.pl-2OBJ	(k-). . .-wa̱ (1SUB.exc)-1SUB.pl	(k-) kaa-. . .-wa̱ (1SUB.exc)-OBJ.pl-1SUB.pl
J	2sg	kin-. . .-[cg]/-ti̥ 1OBJ-2SUB	kin-laa-. . .-wa̱ 1OBJ-3OBJ.pl-1pl	X	X	-[cg]/-ti̥ 2SUB.sg	kaa-. . .[cg]/-ti̥ OBJ.pl-2SUB.sg
E	2pl	kin-laa-. . .-wa̱ 1OBJ-3OBJ.pl-1pl	kin-laa-. . .-wa̱ 1OBJ-3OBJ.pl-1pl	X	X	-titi̥ 2SUB.pl	kaa-. . .-titi̥ OBJ.pl-2SUB.pl
C	3sg	kin- 1OBJ	kin-kaa. . .- ni̥ 1OBJ-OBJ.pl-2OBJ	- ni̥ 2OBJ	kaa-. . .- ni̥ OBJ.pl-2OBJ	∅	kaa- OBJ.pl
T	3pl	kin-ta- 1OBJ-3SUB.pl	kin-ta-. . .-ni̥ 1OBJ-3SUB.pl-2OBJ	ta-. . .- ni̥ 3SUB.pl-2OBJ	kaa-. . .- ni̥ OBJ.pl-2OBJ	ta- 3SUB.pl	kaa- OBJ.pl

Chapter 5 Derivational Verbal Morphology

5.1 Introduction. The verbal derivational morphology of FM Totona is exceptionally rich. This chapter will describe the many verbal morphemes whose categories are not obligatorily marked on the verb, including a wealth of valence-changing affixes; negation and negative polarity items; distributive, desiderative, iterative, ambulative, totalitive and deictic affixes; and other more idiosyncratic ones, such as DOWN, ROUND-TRIP and MEANWHILE. All affixes and clitics discussed in this chapter are listed in Appendix A.

As noted in Chapter 4, the division of the morphology into inflectional and derivational is made problematic by complications like the occurrence of inflectional affixes inside derivational ones, and affixes that express both derivational and inflectional categories. One affix, counterexpectational *ti-*, must be considered in both chapters 4 and 5, since it is obligatory for the expression of deontic necessity and conditionality, but is also available to freely derive verbs with the meaning 'do X against expectations'. As with the treatment of the inflectional morphology, this chapter will limit itself to the functional and semantic aspects of derivation, with a discussion of verbal structure to come in Chapter 6.

The use of the extensive morphological resources of the language to create new lexical items is apparent on a daily basis. Perhaps because Totonac has not been a written language until very recently, speakers often differ in how they construct words, for example, using different nominalization strategies, as in *takátsi̧* and t*akatsíin*, both meaning 'knowledge', or *líitsoqṇi̧* and *liimaqátsoqṇi̧,* 'writing instrument', with the second form including the body part prefix *maqa-* 'hand'. Speakers in Filomeno Mata frequently say that they don't use a certain word used by others, but that it's understandable, and often comment with pleasure on particularly apropos derived forms that have not been previously lexicalized. For example, there seems to be no widely accepted word in the FM Totonac for 'eyebrow', but my consultant's brother was celebrated by his family for his creation of *muutanqačišiti̧,* from 'forehead' and 'hair'. It seems that people are creating words on the fly with the rich derivational resources at their command, some of which become conventionalized and others not, to a greater extent than is found in non-agglutinating languages.

Most derivational affixes may occur only once on a verb, but a small number may attach recursively if morphosemantically motivated. These include dative *–nii*, causative *maa-*, and the instrumental applicatives *lii-* and *puu-*. In the case of the two instrumentals, it is possible for both to be affixed to a single verb. Each case of recursive affixation is discussed in the appropriate section of this chapter.

The rest of this chapter is divided into four categories: 1) negation and negative polarity items; 2) secondary mood and aspect, 3) valence-changing morphology; and 4) other affixes, including deictics. Derivation is achieved entirely through affixation, and like inflectional affixes, derivational affixes occur both preceding and following the verb stem. Appendix B gives the

complete linear structure of the FM Totonac verb, including all inflectional and derivational affixes and clitics.

5.2 Negation and negative polarity items. The outermost pre-verbal position is reserved for the negation morpheme *ɬaa=*, followed by three positions of negative polarity, *aɬ=* '(not) yet', *la=* negative potential, and the negative intensifiers (also used as relativizers) *tii=* (not) anyone, *tuu=* (not) anything, *ɬaa=* (not) anywhere, and *čii=* (not) anyhow. Because the negative and all the negative polarity items are unstressable and can attach to verbs, nouns, and adjectives (see §3.3.9), and because nasal epenthesis occurs between most of them and the following stem (see §2.6.5.2), I class them as clitics.

5.2.1 Negative *ɬaa=*. The negative morpheme *ɬaa=* is a proclitic that can attach to stems of any grammatical class. With verbs, its use as a negator depends on tense, aspect and mood. It serves by itself to produce simple negation with most TAM. However, a negative intensifier is also required for simple negation with the present perfective, and the present and past progressive (as in the last of example 1) (see §5.2.4).

1) Examples of negation
    ɬaa=š-qaɬí n tačiiwín   'he didn't have words'
    NEG-PAST-have ep word (10,2 mjl)

    ɬaa=š-ta-tlaxá '*they didn't beat him*'
    NEG-PAST-3SUB.pl-beat (5,118 mjl)

    ɬaa=š-ta-tá-štu   'they would not have left'
    NEG-PAST-3SUB.pl-INC-out (10,18 mjl)

    ɬaa=tuu= š-ta-núu-ma   'he wasn't there'
    NEG-INT-PAST-INC-in-PROG   (6,53 mjl)

5.2.2 Negative *aɬ=*. In the next position, *aɬ=* YET, occurs only in conjunction with NEG *ɬaa=*, and means 'not anymore' or 'not yet'. In the same position *naa=* ALSO can occur, but it is not only a negative polarity item; it means 'also' when it it cliticized to an affirmative verb, and has the noncompositional meaning of 'not still' when it co-occurs with NEG *ɬaa=*. The affirmative corresponding to *ɬaa=aɬ=* 'not yet' is *=ts'ą* 'already', and it occurs at the other extreme of the verb, as an enclitic in the final postverbal position. The same is true for *ɬaa=naa=* with the semantics of 'not still'; its affirmative counterpart is the clitic *=ku'ų* 'still', also appearing in the final postverbal slot. All elements of negation always have scope over the entire verb complex, which can often include two clauses when translated to Spanish or English, e.g., *ɬaalaamaalaaqtsiní* 'he doesn't make them look at each other'; the meaning 'he makes them not

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look at each other' would require periphrastic expression. The order of *ał=* is fixed immediately following *łaa=*, and the three consecutive vowels are shortened, yielding *łaał=* in all cases.

2) *łaałštápaa꜌ị*

/łaa = ał = š-ta-paati-aa/

NEG-YET-PAST-3SUB.pl-tolerate-IMPF

'they couldn't tolerate it anymore'

3) *łaałkškulí*

/łaa = ał = k- škuli-aa/

NEG-YET-1SUB-smoke-IMPF

'I don't smoke anymore'

4) *łaanaakaktitáma*

/łaa = naa = ka- k- ti-ta- maa-lị̇/

NEG-ALSO-IRR-1SUB-CNTR-MID-lying-PFTV

'I'm still not going to bed.'

5.2.3 Negative potential *la=*. The second negative polarity morpheme is the negative potential, *la=*, which can also be categorized as a secondary mood marker. Semantically it adds the meaning 'not able to'. An affirmative potential statement cannot contain *la-*, but relies on the use of the pre-verbal adverbial *tsee* 'well', as exemplified in example 7.

5) *łaałlatlaawán*

/łaa = ał = la = tlaawan-aa/

NEG = YET = POT = walk-IMPF

'he can't walk anymore'

6) *łaalaliičiiyáan láaso*

/łaa = la = lii-čii-aa-nị̇ laaso/

NEG = POT = INSTR-tie-IMPF-2OBJ rope

'he can't tie you up with rope'

7) *tsee nakán*

/tsee-na-k-an-aa/

well-FUT-1SUB-go-IMPF

'I can go'

5.2.4 Negative intensifiers. The third negative polarity position contains the negative intensifiers *tii=* (not) anyone, *tuu=* (not) anything, *ɫaa=* (not) anywhere, and *čii=* (not) anyhow. The semantics of a verb affixed with one of these morphemes depends on the mood, aspect and tense. In most contexts—irrealis mood; past perfective; and imperfective and perfect aspects, past or present--they serve as negative intensifiers. In the present perfective and past or present progressive only, one of these intensifiers is required for a simple negative reading.

8) *ɫaatuuštsanqaníi*

/ɫaa=tuu=š-tsanqa-nii-aa/

NEG=INT=PAST-lack-DAT-IMPF

'he lacked nothing'

9) *ɫaatiimaqatlaxá*

/ɫaa=tii=maqa-tlaxa-aa/

NEG-INT-HAND-defeat-IMPF

'no one can defeat him'

10) *ɫaatuukmaastaníitạ*

/ɫaa=tuu=k-maasta-niita/

NEG-INT-1SUB-deliver-PFT

'I haven't delivered anything to him/her'

11) *ɫaatuukinkučíima*

/ɫaa=tuu=kin-kučii-maa/

NEG-INT-1OBJ-cure-PROG

's/he is not curing me'

12) *ɫaatuukskíɫ*

/ɫaa=tuu=k-skin-lị/

NEG-INT-1SUB-ask.for-PFTV

'I didn't ask for it'

13) *łaałaantamaakán*

    /łaa＝łaa＝ta-maa-kan/

    NEG＝INT＝INC-lie-REF

   'they don't lie down anywhere' (7,156 jsf)

14) *łaalančiikatíwanṭi*

    /łaa＝la＝čii＝ka-ti-wan-ṭi/

    NEG＝POT＝INT＝IRR-CNTR-say-2SUB.sg

    'you can't say anything' (8,158 mjl)

5.3 Secondary mood and aspect. In addition to the primary mood and aspect categories obligatorily marked on every verb that were covered in the section on inflection, FM Totonac has several secondary affixes in each category. This includes three deontic moods, and a varied set of aspectual affixes. Each of these is discussed below, beginning with the modal markers.

5.3.1 Secondary moods. Besides the epistemic mood distinction of realis and irrealis, FM Totonac has three deontic moods: negative potential, counterexpectational, and desiderative. These are all generally able to combine with each other, with realis or irrealis mood, and with all tenses and aspects, although some combinations are pragmatically unusual. The negative potential was described in §5.2.3.

5.3.1.1 Counterexpectational mood. The counterexpectational marker *ti-* has two related functions. It is required to appear with certain other mood or tense markers for a particular compositional semantics, as discussed in §4.7.1.2. It can also be used with any verb in any TAM inflection to indicate that the action of the verb takes place contrary to some expectation relevant to the context, an expectation that is often not made explicit. This is the function exemplied in 15 and 16.

15) *naktičán*

    /na-k-ti-čan/

    FUT-1SUB-CNTR-sow-IMPF

    'I'm going to sow (in spite of . .)'

16) *kintikaaliilán*

    /kin-ti-kaa-lii-la-ni-ḷi/

    1OBJ-CNTR-OBJ.pl-INST-live-2OBJ-PFTV

    'he beat us (in spite of . .)'

5.3.1.2 Desiderative mood. The suffix *–kutun* very regularly and transparently adds a desiderative meaning to a verb.

17) *špašiikutunkán*

/š-paš-ii-kutun-kan/

PAST-bathe-TRAN-DES-REF-IMPF

'they wanted to bathe him'

18) *ktsulukutún*

/k-tsulu-kutun/

1SUB-urinate-DES-IMPF

'I want to urinate'

5.3.2 Secondary aspectual morphemes. FM Totonaco has many verbal affixes or clitics with an aspectual meaning in addition to the four primary aspect suffixes discussed in §4.7.2. One of these, *ał*= (NOT) YET, was treated in §5.2.2 with the other negative polarity items. The others, to be discussed below are: adverbial '*ak*- 'at the point of'; the associated motion *kii*- ROUND-TRIP and *tii*- PASS-BY; *ta*- MIDDLE VOICE, which functions as an inceptive with positional verbs; ambulative *–tiiła*; iterative *–para*; totalitive/ terminative *–qo'o*; BEFORE *–qe'e*; deictic HERE/MOMENTARY *–či*; and enclitic adverbials JUST *–ku'ų* and YA *–ts'ą*.

Other non-aspectual adverbials are also found in prefix position 15. These are discussed in §5.5.5.

5.3.2.1 Aspectual adverbial *'ak=.* Adverbs generally occur immediately preceding the verb they modify. Several which are monosyllabic cliticize to the verb stem. Among the various aspectual adverbials that may appear in preverbal position 15 is '*ak*= 'at the point of'. It is probable that this morpheme derives from the body part prefix '*ak*- HEAD.

19) *'akłtatatáwi*

/'ak=łtata-ta-wi/

POINT-sleep-MID-seated-IMPF

'he's at the point of falling asleep seated'

5.3.2.2 Associated motion *kii-* and *tii-*. MacKay (1999) uses the label 'intentional' in Misantla Totonaco for the prefix *kii-* 'go with the intention of Xing', or in the perfective aspect 'go, do x, and return'. In FM Totonac *kii-* always has the latter meaning, with no implication of intentionality, so I have followed Beck (2004) in calling it ROUND-TRIP. The other associated motion prefix, *tii-* means 'pass by and do X'. Neither prefix specifies the beginning or endpoint of the action with respect to the location of the speaker; that is, they are more appropriately glossed as *kii-* 'come or go, do X, return to point of origin' and *tii-*, 'do X in passing by a location (here or there)'. The semantics of verbs prefixed by either suffix is generally transparent. However, when an associated motion prefix occurs on a causativized verb, the 'going' or 'passing by' may be imputed to either the causer or the causee. A lexicalized use of *kii-* with forms of the verb *la-* 'live, produce' (but often used as a simple existential) commonly serve as an alternative past tense of the verb *'an* 'go', as in example 22.

20) *kiikaaštlawanáw*

/kii-kaa-štlawan-wa̦/

RT-LOC-adorn-1pl

'we went to adorn the place and returned'

21) *hkiiwaayánči̦*

/k-kii-waa-nan-či̦-li̦ /

1SUB-RT-eat-HAB-HERE-PFTV

'I came here to eat and returned'

22) *kíila'a̦*

/kii-la-[cg]/

RT-live-2SUB.sg

'you went'

23) *kitiimaašooqóni*

/kin-tii-maa-šooqo-nii-li̦/

1OBJ-PASS-CAUS-pay-DAT-PFTV

'he made me pass by to pay'

24) *kiliitiimaapuuwášni m pála*

/kin-tii-lii-maa-puu-waš-nii-li̦ pala/

1OBJ-PASS-INSTR-CAUS-LOC-dig-DAT-PFTV shovel

'he passed by to make me dig with a shovel'

5.3.2.3 Inceptive/Middle voice *ta-*. The prefix *ta-* generally serves as a marker of middle voice with resultative verbs; this function is presented in detail in section §5.4.4.2 on valence-changing morphology. With the positional verbs (§4.3.1), it acts as an inceptive marker, adding the meaning 'to enter into the state of X'.

25) *taštú n tsamá n tíx̣i̱*

ta-štu-aa tsamá tíx̣i̱/

INC-out-IMPF that road

'he gets out of that road' (7,119 mjl)

26) *'aqátanuuy'a*

/aqa-ta-nuu-aa-[cg]/

EAR-INC-in-IMPF-2SUB.sg

'understand?' ('does it enter your ear?') (7,73 jsf)

27) *tatámaats'a̱*

/ta-ta-maa-li̱-ts'a̱ /

3SUB.pl-INC-lie-PFTV-YA

'they already lay down' (7,61 jsf)

28) *tawakaqóoɫi n kíw'i̱*

/ta-waka-qóo-ɫi kíw'i̱/

INC-upright-TOT-PFTV tree

'he ended up climbing the tree' (7,62 jsf)

5.3.2.4 Ambulative *-tiiɫa*. The ambulative – *tiiɫa* has the literal meaning that the action of the verb is carried out while walking. It is often used, however, to add a progressive aspectual semantics to a verb, with the added implication of pluractionality, with the action taking place at intervals over a period of time, or here and there over a period of time.

29) *kiɫtɫitiiɫá*

/kiɫtli-tiiɫa/

sing-AMB-IMPF

'he walks along singing'

30) *štapuštiiłá n kapé*

　　/š-ta-puš-tiiła-aa kape/

　　PAST-3SUB.pl-cut-AMB-IMPF coffee

　　'they were harvesting coffee (e.g. at intervals over the harvest season)'

5.3.2.5 Iterative *–paɾa*. The iterative suffix *–paɾa* adds the meaning 'again' to the entire verbal proposition. When *–paɾa* occurs word-finally on a verb in the progressive or perfective aspect (in which case stress falls on the first syllable of the suffix), the allomorph *–paɾ* or *–pa* appears. The phoneme /ɾ/ in FM Totonac is generally found only in lexical items borrowed from Spanish, and *–paɾa* is the only grammatical morpheme with this phoneme.　Other Totonac varieties have iterative suffixes with the form *–pal* or *–pala*.

31) *taaskuxpaapáɾ'*

　　/taa-skux-paa-páɾa-[cg]/

　　COM-work-PROG2-ITER-2SUB.sg

　　'you're working again'

32) *štitankutumpaɾátiti̜*

　　/š-ti-tan-kutun-paɾá-titi̜/

　　PAST-CNTR-come2-DES-ITER-2SUB.pl

　　'you pl. should have come again'

5.3.2.6 Totalitive/terminative *qo'o*. The interpretation of the totalitive suffix depends on subject number and the transitivity of the verb; it may refer variously to the totality of the subject, the object, or the action of the verb.　On any verb, it may be interpreted as adding the aspectual meaning 'finish Xing'; this is a particularly likely interpretation with an intransitive verb with a singular subject. An intransitive with a plural subject derived with *–qo'o* is ambiguous between 'everyone Xs' and 'finish Xing'. Attached to a transitive verb, the totalitive may be interpreted to mean 'finish Xing' or 'do X to all of Y'.　In some cases, *-qo'o* refers to the totality of the results of the event, e.g., *stax-qoo* 'get soaked' (< 'wet'+ totalitive). The range of interpretation of the totalitive is parallel to that of the distributive prefix described in §5.5.2. The aspectual usage is exemplified below:

33) *kpašqoolikú'*

　　/k-paš-qu'u-li̜-ku'u̜/

　　1SUB-bathe-TOT-PFTV-JUST

　　'I just finished bathing'

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34) *šwaayampaaqóotits'*

/š-waa-nan-paa-qu'u-tit̯i-ts'a̯/

PAST-eat-HAB-PROG-TOT-2SUB.pl-YA

'you pl were finishing eating already'

35) *qantaštuqóo*

/qan-ta-ʃtu-qu'u-aa/

NOSE-INC-out-TOT-IMPF

'everything turns out (as predicted)'

36) *katawilaqóotit̯i*

/ka-ta-wila-qu'u-tit̯i/

IRR-INC-sit-TOT-2SUB.pl

'sit down everyone!'

37) *kaamaqneeqóo*

/kaa-maq-nii-qu'u-aa/

OBJ.pl-CAUS-die-TOT-IMPF

'he kills all of them'

5.3.2.7 MEANWHILE *–qe'e.* The suffix *–qe'e* indicates that the action of the verb is carried out first or in the meanwhile before some other planned activity, which need not be specified.

38) *katayiqée*

/ka-tayi-qi'i-t̯i/

IRR-give.gift-MW-2SUB.sg

'first give him/her the gift'

39) *tatlaqnanqéeł akalistał in tawáaya*

/ta-tlaq-nan-qi'i-l̯i akalistal ta-waa-nan-l̯i/

3Sub.pl-play-HAB-MW-PFTV then 3SUB.pl-eat-HAB-PFTV

'first they played (music), then they ate'

5.3.2.8 HERE/MOMENTARY –*či*. The affixes of postverbal position 13 are primarily deictics, but the proximal deictic HERE –*či* (or with a second person subject, -*čita*) also may have the reading 'momentarily'.

40) *takiiwaayánč̩i*

/ta-kii-waa-nan-či-l̩i/

3SUB.pl-RT-eat-HAB-HERE-PFTV

'they came momentarily to eat, and returned'

41) *kinkušmutawakáči peqtím im pál̩m̩a*

/kin-kušmu- ta-waka-či-l̩i peqtimi pal̩m̩a/

1OBJ-CHEST-MID-up-HERE-PFTV one leaf

'a leaf fell on my chest for a moment'

5.3.2.9 Enclitic adverbials YA –*ts'a̩* and JUST –*ku'u̩*. The final postverbal position may be filled by the aspectual clitics YA –*ts'a̩* or JUST –*ku'u̩*. I gloss –*ts'a̩* in Spanish as *ya,* meaning 'already', because it is used in FM Totonac much as *ya* is in Spanish, that is, almost automatically in verbs in the perfect or perfective aspect with little semantic addition. YA also frequently co-occurs with the totalitive –*qo'o* in its meaning of 'finish Xing', but can occur on verbs in any aspect. Both clitics cause the devoicing of the second mora of a preceding long vowel, or aspiration following a short vowel (see §2.6.4.3).

42) *kmiškiniitánts'a̩*

/k-miški-niita-n̩i-ts'a̩/

1SUB-give-PFT-2OBJ-YA

'I have already given it to you'

43) *čiškuuwáhts'a̩*

/čiškuu-wan-aa-ts'a̩/

man-BECOME--IMPF YA

'he's already becoming a man'

The other aspectual enclitic, -*ku'u̩*, expresses the meaning 'still' on verbs in the imperfective or progressive aspect, and 'just' with the perfective or perfect aspect.

44) *lamahkú'ṵ*

   /la-maa-kú'ṵ/

   live-PROG-JUST

   'he's still alive'

45) *ḳpuučeeqehkú'ṵ*

   /k- puu-čeqee-lị-kú'ṵ/

   1SUB-LOC-wash-PFTV-JUST

   'I just cleaned it inside'

5.4 Valence-changing morphology. This section describes the valence-changing morphology of Filomeno Mata Totonaco, for the most part following the framework spelled out in Dixon (2000) and Dixon & Aikhenvald (1997). The language has a variety of argument-transferring derivations, including two morphological causatives and five applicatives, as well as constructions sometimes analyzed as a passive voice, middle voice, and antipassive, and reflexives and reciprocals. What is typologically interesting is the great productivity of the valence-changing constructions. Almost every verb in the language, intransitive or transitive, may be causativized, and most may be derived by one or more of the applicatives. Equally, almost all transitive verbs may undergo the passive and antipassive-like constructions, and many are eligible for middle voice. The following sub-sections will cover each of these derivations, beginning with the valence-increasing constructions.

5.4.1 Causatives. Dixon & Aikhenvald provide the following criteria for the prototypical causative:

   a) applies to an underlying intransitive clause and forms a derived transitive;
   b) the argument in underlying S function goes into O function in the causative;
   c) a new argument is introduced, in A function;
   d) there is some explicit formal marking of the causative construction.

Dixon & Aikhenvald (1997:81)

FM Totonac has two morphological causative constructions, both of them formally marked by prefixation: a productive one using *maa-*, and one whose usage is restricted, with *maq(a)-*. The former but not the latter is usually accompanied by the transitivizing suffix, usually *–ii*, but sometimes *–VV*, with vowel quality in harmony with the preceding root vowel (see §2.6.4.2). In fact, although causative *maa-* and the transitivizer suffix occasionally occur alone, they may generally be thought of as a circumfix. Both causatives may derive a transitive from an intransitive, add a new A argument, and cause the underlying S argument to be marked on the verb using O affixes. The *maa-* construction also regularly causativizes transitive verbs, promoting an oblique argument into the core. FM Totonac imposes no limitations on the

animacy of the causer or causee in the *maa-* construction, nor on the degree of intentionality of the causer.

The verbs that normally causativize with *maq(a)-* are mainly verbs of emotion or physical sensation, and the causation is indirect, e.g., 'make cry by scolding'. These verbs may instead combine with *maa-* to indicate direct, physical causation e.g., 'make cry by putting chile in his eyes'.

These facts are discussed more fully in the rest of this section. The productive causative will be covered first in some detail, then the unproductive causative briefly, with a final section on periphrastic causatives.

5.4.1.1 Causative *maa-*. The causative *maa-* is extremely productive, entering into constructions with almost any verb in the language, with the exception of the posturals (see §4.3.1.2). As stated above, a *maa-* construction adds an A argument and forces the underlying S into O function. The morphological, syntactic and semantic facts relating to causative constructions involving each of the verb classes follow.

5.4.1.1.1 Causitivized positionals. The bound positionals causativize with *maa-*, forming transitive verbs of achievement:

> 46) Examples of causativized positionals
> *maa-nuu* 's/he puts it in'
> CAUS-in
> *maa-štu* 's/he takes it out'
> CAUS-out
> *maa-xuu* 's/he puts it in (a hole)'
> CAUS[5]-in.vertically
> *maa-kut-uu* 's/he takes it out of (a hole)'
> CAUS-out.vertically-TRAN

The second class of positionals, the postural verbs, are exceptional in their inability to enter into either of the causative constructions. There is no apparent formal or semantic reason why these verbs cannot combine with either causative, but only *waka* 'up' does so (example 47). Idiosyncratic or unanalyzable forms are required to express the causative of the other positional statives (examples 48-50). Two of them, *wi(la)* 'seated' and *yaa* 'standing' appear with unanalyzable suffixes in their causative form. The causative of the third, *maa* 'be lying' is

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[5] FM Totonac has vowel harmony, often optional, associated with certain suffixes (see Chapter 2, §3.4.2). This is the only instance of vowel harmony with the causative.

replaced by an idiosyncratic construction based on the root *la* 'live'. This kind of exceptional behavior is not entirely unexpected in a closed class item, and seems to be purely lexical.

47) *kamaawáka kmésa*
/ka-maa-waka k-mesa/
IRR-CAUS-up LOC-table
'put it up on the table!'

48) *wilíi   *maawi(la)*
/wila-ii/
seated-TRANS
'he seated her'

49) *yáawa   *maayaa*
/yaa-wan/
standing-become?
'he stood it up'

50) *ktaramí   *kmaamaa*
/k-ta-la-mi/
1SUB-INC-live-DOWN
'I put him to bed'

5.4.1.1.2 Causativized intransitive verbs. A subset of the intransitives have causatives in *maq(a)*- (see §5.4.1.2) Otherwise, any intransitive verb may be causativized by *maa-*, usually in combination with the transitivizing suffix –ii or –*VV*. Note that, in example 53, an inanimate object may be the causer, although animate causers are much more common.

51) *maaxašáa*
/maa-xaš-ii-aa/
CAUS-rest-TRAN-IMPF
's/he makes him/her rest'

52) *maapanqnankán*
/maa-panq-nan-kan-aa/
CAUS-explode-IND.O-REF-IMPF
'someone explodes something'

53) *kimaamóqosii n číwiš*

/kin-maa-moqosii-lį̥ čiwiš/

1OBJ-CAUS-fall-PFTV rock

'a rock made me fall'

54) *kmaapuksíi*

/k-maa-puks-ii-aa/

1SUB-CAUS-stink-TRAN-IMPF

'I make it stink around here'

55) *maatsukiiyáa*

/maa-tsuku-ii-aa/

CAUS-begin-TRAN-IMPF

'we begin it'

56) *kmaačiwiiníi*

/k-maa-čiwiina-ii-aa/

1SUB-CAUS-talk-TRAN-IMPF

'I make her talk'

57) *kmaastalánkwi*

/k-maa-stalankwa-ii-lį̥/

1SUB-CAUS-awake-TRAN-PFTV

'I awakened him'

As noted at the beginning of this section, the causer becomes the new A argument, and the S argument of the original clause (the causee) becomes the O argument in the causative construction. This can be seen in example 53, where the 1st person causee is marked on the causativized verb with the 1OBJ prefix *kin-*. This is true not only for the intransitive verbs in this section but also for the positionals and statives discussed above. Given the semantics of the latter classes, however, third person singular causees are by far the majority, and these are zero-marked. Other examples of causativized intransitives with non-third person singular causees are:

58) *kimáawi*

/kin-maa-waa-TRAN-lį̥/

1OBJ-CAUS-eat-PFTV

'she made me eat/she fed me'

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59) *kaamaaqamáani*

  /kaa-maa-qamaanan-ii-lị/

  OBJ.pl-CAUS-play-TRAN

  'he made them play'

60) *kinkaaliimaapuuqootníin puukápe*

  /kin-kaa-maa-puu-qoot-nii-nị puukape/

  1OBJ-OBJ.pl- CAUS-INST-drink-DAT-2OBJ cup

  'he made us drink from a cup'

61) *kimaašteqniit'a*

  /kin-maa-šteq-niita-[cg]/

  1OBJ-CAUS-stay-PFT-2SUB.sg

  'you have left me'

A fairly large subset of verbs exists in intransitive-transitive pairs, with the intransitive a bare root and the transitive derived with the causative *maa-*.

62) Examples of intransitive-causativized verb pairs

čaa	it cooks	*maa-čaa*	s/he cooks it
čiči	it warms up	*maa-čiči*	s/he warms it
xiin	it smokes	*maa-xiin-ii*	s/he smokes it
łaqa	he gets dressed	*maa-łaq-ee*	s/he dresses him/her
miš	it cools off	*maa-miš-ii*	s/he cools it
panq	it bursts	*maa-panq-aa*	s/he pops it
puupu	it boils	*maa-puup-ii*	s/he boils it
skaak	it dries	*maa-skaak-aa*	s/he dries it

5.4.1.1.3 Causative *maa-* and transitive verbs. Unlike Dixon & Aikhenvald's (1997) prototypical causative construction which applies only to intransitives, Totonaco transitive verbs also have an unrestricted ability to be causativized with *–maa*, with the transitivizer *–ii* or *–VV* required on most verbs. (Although causative *maa-* and the transitivizer can occasionally appear independently of each other, they may be generally thought of as a circumfix with a single causativizing function.) As with intransitive verbs, the new causer argument is marked on the verb by subject agreement morphemes. The old A argument, now the causee, or the underlying O argument, now an oblique, may be marked by object agreement morphemes. If both objects refer

to speech act participants, both may be cross-referenced on the verb with object affixes. When a second object argument is in the third person, it is marked by the dative –*nii* suffix. FM Totonac is a symmetrical object language in Bresnan & Moshi's (1990) sense, as MacKay and Trechsel (2000) argue for Misantla Totonac. That is, the two objects simultaneously exhibit primary object properties. There is no formal way to determine which object marker references the causee and which the oblique argument. Unless clarified by context or pragmatics, the interpretation is guided by a 2, 1>3 person hierarchy. In non-causative constructions, DATIVE -*nii* serves similarly to add an additional argument to a transitive verb, e.g. *kkuciiyáan* 'I cure you'; *kkuciiniiyáan* 'I cure you for him/him for you'. Some examples of causatives of transitive verbs follow:

63) *kimaalaaqtsíni*

/kin-maa-laaqtsin-nii-l̥i/

1OBJ-CAUS-see-DAT-PFTV

'he made me see it'

64) *kinkaatiimaamaqtaqáłni*

/kin-kaa-tii-maa-maqtaqal-nii-l̥i/

1OBJ-OBJ.pl-PASS-CAUS-care.for-DAT-PFTV

'he made us pass by to care for him'

65) *kimaaliimíni*

/kin-maa-lii=min-nii-l̥i/

1OBJ-CAUS-bring-DAT-PFTV

'he made me bring it'

66) *maakiłtłiniiyáan*

/maa-kiłtli-nii-aa-n̥i/

CAUS-sing-DAT-IMPF-2OBJ

'he makes you sing it'

67) *kmaamaqłtiníini kintúumin*

/k-maa-maqłti-nii-n̥i-l̥i/

1SUB-CAUS-receive-DAT-2OBJ-PFTV

'I made you receive my money for him'

As example 67 shows, ditransitives may be causativized in the same way as monotransitives, producing a four-argument verb.

To summarize, verbs in all classes enter into causative constructions with *maa-*. Additional derivational processes when causativized: most verbs must be suffixed with the transitivizer *–ii*, and transitives require dative *–nii* to mark the additional object. With all verbs, the causer is marked as the A argument, and the causee as the O argument. Most of these facts are also true for the other causative construction in *maq(a)-;* the differences will be discussed in §5.4.1.2.

5.4.1.2 Causative *maq(a)-.* Only a limited number of intransitive verbs, most having experiencer subjects and belonging to the semantic field of bodily sensations and emotions, may form a causative construction with *maq(a)-*. Examples are 'make laugh/cry/urinate/fart/itchy/ fearful/angry/stinky/happy'. Others that are closely related are *maqastak* 'CAUS+grow=raise'; and *maqasaanan* 'CAUS+sound=purr'. A few other lexicalized forms exist, including *maqnii* 'CAUS+die=kill'; *maqlipni* 'CAUS+lightning= there is lightning'; *maqšteq* 'CAUS+stay=leave something'; *maqatlaxa* 'CAUS+lose= beat'; and *maqatsanqa* 'CAUS+lacking=lose something'. The object marking of the causee is exactly the same as with the *maa-* causative construction.

68) *ɬaalakimaqatasá*

   /ɬaa=la-kin-maqa-tasa-aa/

   NEG-POT-1OBJ-CAUS-cry-IMPF

   'he cannot make me cry'

69) *liimaqasiitsí*

   /lii-maqa-siitsi-aa/

   INST-CAUS-angry-IMPF

   'she makes her angry'

70) *maqapéekwa sqatạ*

   /maqa-peekwa-lị sqatạ/

   CAUS-afraid-PFTV

   'he scared the child'

71) *laamaqapašawapará*

   /laa-maqa-pašawa-para-aa/

   REC-CAUS-happy-ITER-IMPRF

   'they make each other happy again'

72) *maqlípma*

/maq-lip-maa/

CAUS-lightning-PROG

'there is lightning'

73) *maqasták i štíilan*

/maqa-stak-aa štíilan/

CAUS-grow-IMPF

'he raises chickens'

74) *maqałtatá*

/maqa-łtata-aa/

CAUS-sleep-IMPF

'he makes her sleep'

In verbs normally causitivized by *maqa-*, the causation is understood to be indirect or unintentional; to indicate direct or intentional causation, the *maa- . . .-ii* construction is employed:

75) *maqa-xikswá* 'I make you asphyxiate" (indirectly, e.g., by making you laugh   while you eat),

vs. *maa-xiksw-í* 'I asphyxiate you' (directly).

76) *k-maqa-łtatá* 'I make you sleep (unintentionally, e.g., with a boring speech),

vs.   *k-maa-łtatí* 'I put you to sleep' (intentionally).

5.4.1.3 Double causatives. It is possible to recursively causativize intransitive verbs in FM Totonac, as shown in the examples below:

77) *kintamaamaqniimán*

/kin-ta-maa-maq-nii-maa-ni/

1OBJ-3SUB.pl-CAUS-CAUS-die-PROG-2OBJ

'they are making me kill you'

78) *kintiimaamaatsamaníini šmaaʼáqoƫ*

/kin-tii-maa-maa-tsama-nii-nii-aa š-maaʼaqoƫ/

1OBJ-CAUS-CAUS-eat-DAT-DAT-PFTV 3POSS-receptacle

'he passed by to have me fill his receptacle for him'

79) *maamaqasaaní míistun*

/maa-maqa-saan-nii-aa miistun/

CAUS-CAUS-sound-DAT-IMPF cat

'he makes the cat purr'

In all cases, it is the productive *maa-* prefix that is applied, whether the original causative was derived with *maa-* or *maq(a)-*. Similarly to the case of causativized transitives, the highest level causer receives subject marking, and the other core participants are marked as objects. No formal means exists for determining which object role belongs to the higher level causee and which to the lower level causee; example 77 is ambiguous between 'they are making me kill you' and 'they are making you kill me'. The ambiguity is resolved through context or pragmatics. Recursive causativization of transitive verbs seems not to be ungrammatical, but is pragmatically rare.

5.4.1.4 Causative summary. FM Totonac has at least one periphrastic construction of limited usage, and two morphological causatives. The *maq(a)-* construction is limited to verbs of partially involuntary physical or emotional sensation and a small number of other lexicalized causatives. The productive *maa-* construction is possible with all other verbs in the language, transitive or intransitive, except for three of the positionals; it requires the co-occurrence of the transitivizing suffix with most verbs. The morpho-syntactic facts of person agreement marking are the same for both morphological derivations: the causer in A role is marked by subject affixes; the causee takes the O role and object marking, as does, simultaneously, any original O argument.

Dixon (2000:362) discusses nine semantic parameters that apply to causative constructions cross-linguistically, and that often distinguish one causative mechanism from another within a single language. These parameters are State/action, Transitivity, Control, Volition, Affectedness, Directness, Intention, Naturalness, and Involvement. The differential usage of the Totonac causatives are well predicted by Dixon's schema. The *maq(a)-* construction differs from constructions in *maa-* on the parameters of state/action (*maqa-* applies only to certain subset of intransitives); transitivity (*maqa-* cannot affix to transitive verbs); control (the majority of verbs taking *maqa-* are verbs of partially involuntary physical or emotional sensation), and directness and intention (as predicted, the shorter causative *maa-*, indicates more direct or intentional causation). On other parameters, either morphological construction can cover the full range of possibilities: the causee can be willing or unwilling, partially or completely affected; the

causation may be natural or forced; and the causer may be involved or not involved in the activity.

5.4.2 Applicatives. According to Dixon & Aikhenvald (1997:78), a prototypical applicative meets the following criteria:

a) applies to an underlying intransitive clause and forms a derived transitive;
b) the argument in underlying S function goes into A function in the applicative;
c) a peripheral argument (which could be explicitly stated in the underlying intransitive) is taken into the core, in O function;
d) there is some explicit formal marking of an applicative construction, generally by an affix or some other morphological process applying to the verb.

Totonaco has four applicatives per the definition, each realized through affixation: a comitative, dative, instrumental, locative. Additionally, a large group of body part prefixes can occasionally serve as applicatives. Each of these constructions derives a transitive verb from an intransitive by bringing a peripheral argument into the core in O function. All of them may apply to transitive verbs as well. These various applicatives, however, differ in their possession of applicative properties. Their objects, too, vary in their possession of object properties. These issues will be discussed as the applicative constructions are described in turn.

5.4.2.1 Comitative *taa-*. The affixation of the comitative applicative results in a verb meaning 'X does Y with (another person)', 'X invites (another person) to do Y', or (another person) helps X do Y'. The secondary 'subject', whose referent is almost always a person, is marked on the verb using direct object affixes; this is in accord with the finding that the more highly animate and topical the referent of an applicative is, the more likely it will "display the object properties, often in preference to or to the exclusion of the base object" (Peterson 1999: 34). The comitative marker must refer to a specific person or persons; when an action involves the participation of an unspecified person or group of persons, the associative *maq-* prefix is used instead (see §5.5.1). The referent of the comitative is understood to have lesser agency than the subject, that is, to be participating in the action of the verb at the invitation or instigation of the subject. When both referents have equal agency, a reciprocal comitative construction is used (see §5.4.4.3).

The comitative occurs regularly with all possible person combinations, and with both intransitive and transitive verbs. Some intransitive examples follow:

80) *kintaatsaalayáan*

/kin-taa-tsaala-aa-ni̥/

1OBJ-COM-flee-IMPF-2OBJ

'you flee with me'

81) *ktaamináa*

/k-taa-min-aa/

1SUB-COM-come-IMPF

'we come with him'

82) *kilataačiwiinanáa*

/kin-laa-taa-čiwiinan-aa/

1OBJ-2/1-COM-speak-IMPF

'you pl speak with us'

83) *kaakiitaawáaya*

/kaa-kii-taa-waayan-li̥/

OBJ.pl-RT-COM-eat-PFTV

'he went to eat with them'

84) *kkaatiitaatantlín*

/k-kaa-tii-taa-tantli-ni̥/

1SUB-OBJ.pl-PASS-COM-dance-2OBJ

'I passed by to dance with you pl'

85) *katáapi̥*

/ka-taa-pin-ti̥/

IRR-COM-go-2SUB.sg

'go with him!'

Examples 86-90 of transitive verbs derived with the comitative show that both the secondary 'subject' and the base object are marked on the verb with object affixes. No formal means exists to distinguish the secondary 'subject' from the base object. Thus example 68 could be interpreted as 'he went to see her with me' or 'he went to see me with her'; context is used to disambiguate the sentence. In all examples below, at least one of the objects is third person and therefore zero-marked. Unfortunately the database is lacking examples in which both objects refer to speech act participants (it is possible that these are disallowed; see §4.8.2.1). In example 69, the third person object is marked by the dative, but this seems to be an option whenever a causativized positional is found, as will be discussed in §5.4.2.2.

86) *kintaamaamoqós in kiw'i̧*

   /kin-taa-maa-moqos kiw'i̧/

   1OBJ-COM-CAUS-fall pole

   'he made me fall pole and all'

87) *kintakiitaatamáawa*

   /kin-ta-kii-taa-tamaawa-li̧/

   1OBJ-3SUB.pl-RT-COM-buy-PFTV

   'they went with me to buy it'

88) *tataamaqníi*

   /ta-taa-maq-nii-aa/

   3SUB.pl-COM-CAUS-die-IMPF

   'they kill her with him'

89) *kinkiitaaláaqtsi*

   /kin-kii-taa-laaqtsin-li̧/

   1OBJ-RT-COM-see-PFTV

   'he went to see her with me'

90) *kinkaataamuuxúun*

   /kin-kaa-taa-maa-xuu-ni̧/

   1OBJ-OBJ.pl-COM-CAUS-inside-2OBJ

   'he helped us put it in'

Comitative applicatives, then, add a secondary 'subject' that has object properties equal to those of the base object in transitive clauses, as indicated by the object agreement affixes. The comitative object almost always has a human referent, thus confirming Peterson's findings that animacy and object properties tend to coincide in applicative objects. Because the interactions of the comitative with imperfective and perfective aspect and person agreement marking are not always as expected from compositional morphosemantics, Table 5.1 displays all possible combinations of these morphemes with the suppletive verb *min/tan* 'come'. The glosses translate the 'Present imperfective' column; 'came' should be substituted for 'come' to gloss the 'Present perfective' column. It is noteworthy that in all comitative forms inflected with the first person object marker, the voiceless vowel of –*wa̧* becomes post-aspiration on the *w*. This is not found in non-comitative forms.

Table 5.1 Comitative Paradigm with 'come'

Persons	Gloss	Present imperfective	Present perfective
1-2	'I come with you'	/k-taa-min-aa-ni̥/ *ktaamináan*	/k-taa-min-ni̥/ *ktaamín*
1-3	'I come with him/her/it'	/k-taa-min/ *ktaamín*	/k-taa-min/ *ktáami*
1-5	'I come with you pl'	/k-kaa-taa-min-aa-ni̥/ *kkaataamináan*	/k-kaa-taa-min-ni̥/ *kkaataamín*
1-6	'I come with them'	/k-kaa-taa-min/ *kkaataamín*	/k-kaa-taa-min/ *kkaatáami*
2-1	'you come with me'	/kin-taa-tan-aa-[cg]/ *kintaatán'a̧*	/kin-taa-tan-[cg]/ *kintáat'a̧*
2-3	'you come with him/her/it'	/taa-tan-aa-[cg]/ *taatán'a̧*	/taa-tan-[cg]/ *táat'a̧*
2-4	'you come with us'	/kin-laa-taa-min-aa/ *kilaataamináa*	/kin-laa-taa-min-wa̧/ *kilaataamíwh*
2-6	'you come with them'	/kaa-taa-tan-aa-[cg]/ *kaataatán'a̧*	/kaa-taa-tan-[cg]/ *kaatáat'a̧*
3-1	'he comes with me'	/kin-taa-min/ *kintaamín*	/kin-taa-min/ *kintáami*
3-2	'he comes with you'	/taa-min-aa-ni̥/ *taamináan*	/taa-min-ni̥/ *taamín*
3-3	'he comes with him/her/it'	/taa-min/ *taamín*	/taa-min/ *táami*
3-4	'he comes with us'	/kin-kaa-taa-min-aa-ni̥/ *kinkaataamináan*	/kin-kaa-taa-min-ni̥/ *kinkaataamín*
3-5	'he comes with you pl'	/kaa-taa-min-aa-ni̥/ *kaataamináan*	/kaa-taa-min-ni̥/ *kaataamín*
3-6	'he comes with them'	/kaa-taa-min/ *kaataamín*	/kaa-taa-min/ *kaatáami*
4-2	'we come with you'	/k-kaa-taa-min-aa-ni̥/ *kkaataamináan*	/k-kaa-taa-min-ni̥/ *kkaataamín*
4-3	'we come with him/her/it'	/k-taa-min-aa/ *ktaamináa*	/k-taa-min-wa̧/ *ktaamíwh*

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4-5	'we come with you pl'	/k-kaa-taa-min-aa-ni̥/ *kkaataamináan*	/k-kaa-taa-min-ni̥/ *kkaataamín*
4-6	'we come with them'	/k-kaa-taa-min-aa/ *kkaataamináa*	/k-kaa-taa-min-wḁ/ *kkaataamíwh*
5-1	'you pl come with me'	/kin-laa-taa-min-aa/ *kilaataamináa*	/kin-laa-taa-min-wḁ/ *kilaataamíwh*
5-3	'you pl come with him/her/it'	/taa-tan-aa/ *taatanáa*	/taa-tan-titi̥/ *taatántit*
5-4	'you pl come with us'	/kin-laa-taa-min-aa/ *kilaataamináa*	/kin-laa-taa-min-wḁ/ *kilaataamíwh*
5-6	'you pl come with them'	/kaa-taa-tan-aa/ *kaataatanáa*	/kaa-taa-tan-titi̥/ *kaataatátit*
6-1	'they come with me'	/kin-ta-taa-min/ *kintataamín*	/kin-ta-taa-min/ *kintatáami*
6-2	'they come with you'	/ta-taa-min-aa-ni̥/ *tataamináan*	/ta-taa-min-ni̥/ *tataamín*
6-3	'they come with him/her/it'	/ta-taa-min/ *tataamín*	/ta-taa-min/ *tatáami*
6-4	'they come with us'	/kin-kaa-taa-min-aa-ni̥/ *kinkaatamináan*	/kin-kaa-taa-min-ni̥/ *kinkaataamín*
6-5	'they come with you pl'	/kaa-taa-min-aa-ni̥/ *kaataamináan*	/kaa-taa-min-ni̥/ *kaataamín*
6-6	'they come with them'	/ta-taa-min/ *tataamín* *kaataamín	/kaa-taa-min/ *kaatáami*

5.4.2.2 Dative –*nii*. With intransitive verbs, the dative applicative *-nii* acts as a transitivizer and adds a direct object. As examples 94 and 95 illustrate, the argument added by the dative, in these cases a first person singular object, is marked on the verb with normal object affixes, as with the comitative. The long suffix vowel shortens word-finally (see §2.6.4.4.3.4).

91) *kpeekwaníi*
    /k-peekwa-nii-aa/
    1SUB-afraid-DAT-IMPF
    'I fear him'

92) *łaakatsiiní*

/ł aa=katsii-nii-aa/

NEG-know-DAT-IMPF

'he doesn't know it'

93) *puuwaníi*

/puu-wan-nii-aa/

LOC-say-DAT-IMPF

'he thinks about her'

94) *kintanúuni*

/kin-ta=núu-nii-aa łtukúun'i̧/

1OBJ-enter-DAT thorn

'a thorn got stuck in (entered) me'

95) *kinqašpatníiy'ą*

/kin-qašpat-nii-aa-[cg]/

1OBJ-hear-DAT-IMPF-2SUB.sg

'you hear me'

With transitive verbs, the dative *–nii* generally adds an additional theme or benefactive argument, creating a ditransitive verb. FM Totonac appears to disallow ditransitive forms in which both objects are speech act participants. This may be related to the pragmatic skewing noted by Heath (1998) in many American languages when both subject and object are non-third person. This means that, since one of the objects of a FM Totonac ditransitive is always third person, *-nii* is systematically interpreted as marking a third person object on a ditransitive. As noted in §4.8.2, there is no formal means of mapping each object separately to its referent. An example such as 97 below can be read as 'he takes care of her for me' or 'he takes care of me for her'. The same ambiguity is possible with each of the other examples; it is context or pragmatics that disambiguates such cases.

96) *kwáni*

/k-wan-nii-li̧/

1SUB-say.it-DAT-PFTV

'I said it to him'

97) *kimaqtaqałníi*

/kin-maqtaqal-nii-aa/

1OBJ-care.for.it-DAT-IMPF

'he takes care of her for me'

98) *kinčíini m pašnị̦*

/kin-číi-nii-lị̦ pašnị̦/

1OBJ-tie.it-DAT-PFTV

'he tied the pig up for me'

99) *kučiiníi*

/kučii-nii-aa/

 cure-DAT-IMPF

'he cures her for him'

100) *łkuyuuníin*

 /łku-ii-nii-nị̦-lị̦/

burn-TRAN-DAT-2OBJ-PFTV

'he burned your (papers)'

Examples 101 and 102 show that the dative is used in the same way to mark a 3rd-person object on a transitive verb made ditransitive by causativization.

101) *kimaaliimíni*

/kin-maa-lii=min-nii-lị̦/

1OBJ-CAUS-bring-DAT-PFTV

'he made me bring it'

102) *maakiłtłiniiyáan*

/maa-kiłtli-nii-aa-nị̦/

CAUS-sing-DAT-IMPF-2OBJ

'he makes you sing it'

However, in the case of a causative ditransitive, two objects referring to speech act participants are permissible, as in example 103, and the dative co-occurs with the normal marking of the first and second person objects.

103) *kimaalaktayaaniiyáan*
/kin-maa-lak-ta=yaa-nii-aa-ni̧/
1OBJ-CAUS-LEG-kick-DAT-IMPF-2OBJ
'she makes me kick you in the leg'

The affixation of *–nii* seems to be optional in marking third person objects on causativized positionals:

104) *yáawa*
/yaa-wa-li̧/
standing-become-PFTV
'he stood it up'

105) *kyaawáni*
/k-yaawa-nii-li̧/
1SUB-stand.up-DAT-PFTV
'I stood him up'

106) *wíili*
/wila-ii/
seated-TRAN
'he seated her'

107) *kwilíni sqatą̧*
/k-wili-nii sqatą̧/
1SUB-seat.it-DAT
'I seat the child'

To summarize, dative *–nii* increases the valence of any verb to which it affixes by adding an (additional) object, often an animate beneficiary, beyond that licensed by the inherent transitivity of the verb. The object so added to the verb has the same object properties as the base object, and is referenced by the expected object marker.

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5.4.2.3 Instrumentals *lii-, puu-.* The instrumental applicative *lii-* usually adds an inanimate instrument or means, or an abstract cause; with verbs of speaking or thinking, it adds a topic of conversation or thought. The prefix *puu-* (related to the BPP *puu-* 'inside part') adds an inanimate instrument whose interior or concavity is the salient part. Either locative can be affixed to a transitive or intransitive verb, often transitivizing the latter. Many of the verbs made transitive by the instrumental *lii-* have an idiosyncratic meaning, and are more likely to have a human referent for the instrumental argument. Some representative examples follow, with 114 demonstrating that *lii-* may be used recursively

108) *škaaliimimáaka 'aqšaaqa̧*

/š-kaa-lii-min-maa-kan 'aqšaaqa/

PAST-OBJ.pl-INST-come-PROG-REF head

'they were bringing them the heads' (7,54 mjl)

109) *kliimaakúšti šaqá̧łqolúl'u̧ mačíta*

/k-lii-maa-kuštu-ii ša-qá̧ł-qolúlu mačita/

1SUB-INST-CAUS-weed-TRAN ADJ-MOUTH-round machete

'I made him weed with a dull machete' (9,30 jsf)

110) *kaliitaačiwíinanti̧*

/ka-lii-taa-čiwiinan-ti

IRR-INST-COM-speak-2SUB.sg

'speak with her about it!' (9,40 jsf)

111) *liipuuwaníi*

/lii-puu-wan-nii-aa/

INST-LOC-say-DAT-IMPF

'he blames her'

112) *líila*

/lii-la-li̧/

INST-live-PFTV

'he dominated him'

113) *liitayáa*

/lii-ta═yaa-aa/

INST- stands-IMPF

'he accepts it/ declares it'

114) *kiliiliitse'én*

/kin-lii-lii-tsee-'an/

1OBJ-INST-INST-good-go

'he laughs at me'

115) *puuxúu*

/puu-xuu-aa/

INST-in-IMPF

'she fills it'

116) *puučeqée štása*

/puu-čeeqee-aa š-tasa/

LOC-wash-IMPF 3POSS-cup

'he washes his cup's inside part'

117) *púusnatłi tsínaṭi̥*

/puu-snat-li̥ tsinaṭi̥/

INST-embrace-PFTV thread

'the thread is rolled around it'

118) *puutsánqa ščiki̥*

/puu-tsanqa-li̥ š-čikI/

INST-lack-PFTV 3POSS-house

'her house fell down'

119) *laqapuučán*

/laqa-puu-čan-aa/

FACE-INST-sow-IMPF

'he sows it in the empty spots (where seeds didn't germinate)'

Peterson (1999) predicts that the instrumental is less likely than the benefactive or comitative applicatives to take over object marking from the direct object; in fact, it seems to be marked on the verb with object affixes in FM Totonac only when the referent is human. This can be seen in example 114 above, in which the first person object prefix marks the instrumental object, and in example 111, where the dative marks the third person object. (This may be an artifact of insufficient data and needs confirmation through additional research; it may simply result from the fact that third person objects are zero-marked.)

Unlike the comitative and the dative, the instrumental does not always serve as an applicative. In some cases intransitives derived with the instrumental show no increase in valence, but merely have what would be a prepositional phrase in English added to their meaning. In these cases the instrumental object usually has an inanimate referent. Note that in example 112, which does have a human referent, the dative suffix does not appear marking the additional object on the verb. This may indicate that the instrumental NP has not become a core argument, or may simply be related to the lack of compositionality of this derived word. Some instrumentalized intransitive examples follow:

120) *kliiwáka máalakci̧*

/k-lii-waka-aa maalakči̧/

1SUB-INST-up-IMPF

'I lean up against the door'

121) *liipašawá*

/lii-pašawa-aa/

INST-content-IMPF

'she becomes happy because of . . .'

122) *kliitamóqosłi číwis*

/k-lii-ta-moqos-li̧ číwiš/

1SUB-INST-INC-fall-PFTV

'I fell because of a stone'

123) *kliiláma n kintéko*

/k-lii-la-maa kin-teko/

1SUB-INST-live-PROG 1POSS-father

'I am living for my father'

124) *liitaštú štíilan*

/lii-ta=štu-aa štíilan/

INST-MID-leave-IMPF chicken

'he turns into a chicken'

None of the transitive verbs in my database with the instrumental prefix have an animate instrumental referent. There are therefore no formal criteria to determine if *lii-* increases the valence in these cases, or if it simply adds the equivalent of a prepositional phrase, as in the intransitive examples in examples 120-124. The following are examples of intrumentalized transitive verbs.

125) *liimaqšúu šmánku kučílo*

/lii-maq-šuu-aa š-manku kučílo/

INST-BODY-peel-IMPF 3POSS-mango knife

'she peels the mangos with a knife'

126) *kiliimaapuuwášni m pála*

/kin-lii-maa-puu=waš=nii-l̥i pala/

1OBJ-INST-CAUS-dig.hole-DAT-PFTV shovel

'he made me dig a hole with a shovel'

127) *tiiliipaɬnán líipaɬn̥i*

/tii-lii-paɬ-nán-aa líipaɬn̥i/

PASS-INST-sweep-IND.O-IMPF

'he passes by to sweep with a broom'

128) *kliiwaaɬi n qeela n kučára*

/k-lii-waa-l̥i qeel'ḁ n kučara/

1SUB-INST-eat-PFTV atole spoon

 'I ate corn gruel with a spoon'

129) *liitiitamawáni*

/lii-tii-tamawa-nii-l̥i/

 INST-PASS-buy.it-DAT

 'he passed by to buy it for him with (money)'

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With many intransitives, in summary, the instrumental applicatives transitivize the verb by adding an instrument, means or cause object argument to the core; when this object has an animate referent, it is marked on the verb with an object affix or the dative. Other intransitives and possibly all transitives fail to gain valence through derivation with the instrumental. In these cases *lii-* and *puu-* seem to merely license an oblique argument without bringing it into the core. In these latter cases, the instrumental cannot be said to act as an applicative.

5.4.2.4 Locatives *kaa-*, *puu-*. The two locative prefixes, *kaa-* and *puu-*, only rarely serve as applicatives. The semantics of the two locatives is different, with *kaa-* meaning 'in or at a place', 'on a surface', and *puu-* glossed as 'inside or within a place', 'inside (something)'. The semantics of *–puu* are closely related to the related instrumental prefix described in §5.4.2.3; they differ in their position in the verb (see Appendix B). Both may originate in the body part prefix meaning 'inside part'; such a derivation is one of the traits common in the Meso-American linguistic area defined by Campbell, Kaufman and Smith-Stark (1986). Either locative can be affixed to a verb of any class, with the location they license generally remaining an oblique argument. Given the nature of the locative, the argument they mark is inanimate in the overwhelming majority of the cases. Some examples of the locatives' non-applicative use with positionals, statives and intransitives are:

130) *puuxúu*

/puu-xuu-aa/

LOC-inside-IMPF

'it's inside (its case)'

131) *púuyaa šánat̨i*

/puu-yaa-l̨i šánat̨i /

LOC-standing-PFTV flower

'the flower stood in (a vase)'

132) *puumaakú'ų*

/puu-maa-aa-ku'ų/

LOC-lying-STILL-IMPF

'(the cornfield) is still sown'

133) *puuwáka*

/puu-waka-aa/

LOC-up-IMPF

'it's hanging up inside (a treetop)

134) *kaawakayáa*

/kaa-waka-aa/

LOC-up-IMPF

'he's up on (the roof)'

135) *kaatsiisnáma*

/kaa-tsiis-nan-maa/

LOC-night-HAB-PROG

'night is falling in this place'

136) *kaaškaqá*

/kaa-škaqa-aa/

LOC-dawn-IMPF

'it becomes dawn in this place'

137) *kaaqawíw'*

/kaa-qawiw-aa/

LOC-cold-IMPF

'the place is cold'

138) *kaapuksán*

/kaa-puksan-aa/

LOC-stink-IMPF

'it stinks around here'

However, examples of locatives deriving transitives from positionals and intransitives exist. My database contains no examples in which the object licensed by a locative has a speech act participant as referent, but it likely that the lexicalized predicates in 142 and 143 could be inflected with 1st or 2nd person object marker. Of the three cases below in which the locative argument takes object marking (in 141, 142, and 143), two have completely non-compositional semantics ('he blames her', 'he thinks of him'), and one is also derived with instrumental *lii-*.

139) *puunúu kustáł*

/puu-nuu-aa kustal/

LOC-in-IMPF sack

'he fills the sack'

140) *púuwi kinčúčuţï*

/puu-wi-aa kin-čučuţï/

LOC-seated-IMPF 1POSS-water

'it contains my water'

141) *puuwašníi*

/puu-waš-nii-aa/

LOC-scratch.at-DAT-IMPF

'he digs a hole'

142) *liipuuwaníi*

/lii-puu-wan-nii/

INST-LOC-say-DAT

'he blames her'

143) *puuwaníi*

/puu-wan-nii/

LOC-say-DAT

'he thinks of him'

In examples 140-143, the presence of an object NP or the dative suffix clearly marks these verbs as transitives. However, very similar constructions are ambiguous as regards their transitivity:

144) *puuwáš*

/puu-was-aa/

LOC-scratch.at-IMPF

'he digs a hole'

145) *kaawáš*

/kaa-was-aa/

LOC-scratch.at-IMPF

'he digs a trench'

171

146) *kaačeeqée*

/kaa-čeeqee-aa/

LOC-wash-IMPF

'(a rainstorm) washes the area'

147) *kkiikáapał*

/k-kii-kaa-pa-l̩/

1SUB-RT-LOC-sweep-PFTV

'I went to sweep the floor'

148) *takaašaká kpusikúlan*

/ta-kaa-šaka k-pusikulan/

3SUB.pl-LOC-scrub LOC-church

'they scrub the church floor'

Although example 144 has the same gloss as 141, 'he digs a hole', the lack of the dative in the former suggests that a better translation for *puuwaš* might be 'he hole-digs'. An intransitive interpretation of examples 145 to 148 is also possible despite the glosses, since the sentences contain no overt NPs, and FM Totonac fails to formally mark transitivity on verb roots in most cases. Further syntactic tests are needed to clarify this issue. (Note that with verbs like *čeeqeen* 'wash', *šaka* 'scrub' and *pał* 'sweep', *kaa-*, with its connotation of 'surface area', is conventionally understood to refer to 'floor' in many contexts.) The verb *šaka* 'scrub' in example 148 takes the transitivizer *–ii* when transitivized through causativization; the lack of *–ii* when derived with the locative may be another indication of intransitivity.

With transitive verbs, the locatives license an oblique argument; no evidence of an increase in valence is found. This is seen most clearly in example 150, where the dative would be expected to mark 'him' if locative 'spoon' had become a core argument.

149) *kaaštlaawá*

/kaa-štlaawa-aa/

LOC-arrange-IMPF

'she adorns the place'

150) *kkiipuumáawii n kučára*

/k-kii-puu-maa-wii-l̩ kučara/

1SUB-RT-LOC-CAUS-eat spoon

'I went to feed him with a spoon'

172

151) *puuwán*

　　/puu-wan-aa/

　　LOC-say.it-IMPF

　　'he says it over a loudspeaker'

The use of locatives as applicatives is very limited. Like the instrumental, the locatives may affix to both transitive and intransitive verbs with no increase in valence, simply licensing an oblique argument. With a small number of positionals and intransitives, the locatives do serve as applicatives, transitivizing the verbs by promoting an oblique to a core argument. Locative objects are the least likely of all applicative objects to have animate referents, and as expected, they are least likely to take object marking.

5.4.2.5 Body Part Prefixes (BPP). Body part prefixes, of which more than 35 are documented in my database, occasionally serve as applicatives in FM Totonac. The BPPs are phonologically reduced forms of the full body part nouns that can refer to the part in question, but that also often have semantically extended reference. As Gerdts writes of the lexical suffixes of Halkomelem, "they are polysemous morphemes showing an elaborate network of semantic extensions" (Gerdts 2004:231). In FM Totonac, the metaphorical extensions include for example, *laka-* 'face' or any vertical surface such as a wall or door; *kił-* 'mouth' or any round opening, like that of a jar; *paa-* 'belly' or the interior of anything, like a bowl, or the widest part of objects like roads or rivers; *tan'-* 'posterior' or the lower part of anything, such as the bottom of a chair. Some body part terms are metaphorical in themselves, being recursively composed of body terms, such as *tan-kilh-* 'posterior+mouth=hip' and *tuu-pis̵-* 'foot+neck=ankle'. While the BPPs have only occasional use as applicatives, they are ubiquitous in the language. In any context in which a body part or a metaphorical extension of one is present or implied, verbs, nouns and adjectives will be derived with the appropriate body part prefix.

Table 5.2 provides a list of many of the FM Totonac BPPs. Some prefixes with a velar segment have a uvular allomorph that are affixed to roots containing a uvular segment (see the discussion of uvular harmony in §2.6.2.1). Unusually, the BPP *tan-* 'rear, bottom' from *tan'* sometimes appears as *tank-* or *tanq-*, inserting a harmonic dorsal to replace the glottalization of the final sonorant which cannot occur word-internally. In most cases the harmonious morphemes differ only in the velar/uvular segment, such as HAND *maka-/maqa*, but a few also have vocalic differences, such as MOUTH *kil-/qal-*.

Table 5.2 Body part prefixes

BPP	Full noun	Gloss
'ak-	'aqšáaqa	head
'aqa-	taqéen	ear

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ʼaqɬčaa-	ʼaqɬčáan	upper shoulder
čaa-	čaan	lower leg
čaaspi-	čaaspin	back of thigh, hamstrings
qaltsan-	qaɬtsán	chin
kil-, qal-	kíɬnį	mouth
kiɬpi-	kiɬpíin	lip = mouth-edge
kinka-, qanqa-	kinkán	nose
kušmu-	kušmúun	chest
lak-	láknį	lower leg
laka-, laqa-	lakastápU	eye = face-bean
laka-	lakán	face
lakpi-	lakpín	cheek, jaw = face-edge
laqšti-	laqštín	temple
makapiš-	makapíšnį	wrist = hand-neck
maqšpa-	makšpáan	lower arm
maq-	máknį	body, torso
maka-, maqa-	makán	hand
muušti-, muu-	muuštíin	forehead
paa-	paan	belly
peeqštu-	peeqštúun	shoulder
peqee-	peqéen	upper arm
piš-	pišnį	neck
puu-	?	inside part
qaapi-	qaapín, qaapíṭį (sg)	front of thigh, quads
qaapiš-	qaapísNI	crotch
qee-	qeen	back
stiipu-	stiipún	spine
tampuna-, tampa-	tampunán	waist, lower back
tan-, tank-, tanq-	tánʼI	posterior
tankiɬ(a)-	tankiɬáan	hip = post-mouth
tantu-, tuu-	tantún, tantúṭį (sg)	foot
tančaaspi-	tančaaspín	calf

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As with the instrumental and locatives, the BPPs may be argued to act as applicatives in certain constructions, while in many cases they have no effect on valence. They serve a more clearly applicative function with the inceptivized positionals in examples 152 and 153. Here, the BPPs FACE and BACK can be analyzed as metonymic markers of the direct objects 'me' and 'horse' respectively. They thus meet Dixon & Aikhenvald's (1997) criteria by transitivizing the intransitive verbs they combine with, and bringing a peripheral argument into the core in O function.

152) *kakintiilaqtáštu*

/ka-kin-tii-laqa-ta-štu-l̥i̥/

IRR-1OBJ-PASS-FACE-INC-out-PFTV

'come by to see me!'

153) *qeetawaká kawáayu*

/qee-ta-waka-aa kawaayu /

BACK-INC-up-IMPF horse

'he back-mounts the horse'

Other similar constructions with BPPs, however, are less prototypically applicative in function. In many cases they serve as transitivizers, but the body part marked on the verb is not brought into the core; it remains an oblique argument (often a goal), while the core object is the possessor of the body part. In other words, the BPPs derive transitive possessor raising constructions:

154) *lakatanúu*

/laka-ta-nuu-aa/

EYE-INC-enter-IMPF

'he puts something in his eye'

155) *kamaqatawíla mirelóh*

/ka-maqa-ta-wíla-l̥i̥ mi-ɾelox/

IRR-HAND-INC-seated-PFTV 2POSS-watch

'put your watch on your hand!'

156) *'aqčaatawilá*

/aqčaa-ta-wila-aa/

SHO-INC-seated-IMPF

'he carries it on his shoulders'

175

The BPPs comprise one of the very few types of affixes involved in scopal ordering, usually with positional verbs and the inceptive or causative prefixes. For example, *ta-laka-štu* 'he stuck his head out (the window)' vs. *laka-ta-štu* 'he got it out of his face/eye', or *k-ta-kinka-nuu* 'I took it out of my nose' vs. *k-kinka-ta-nuu* 'I took my nose out of (the hole)'. Scopal affix ordering is discussed in more detail in §6.5.1.

In other derivations with BPPs, the constructions often have such idiosyncratic semantics that the role of the body part is hard to state, as in 157, where the form glossed as 'he remembers you' literally means 'he face-stomach-grows you'. However, in none of the examples below does the BPP become the direct object.

157) *lakapastákn̥i*

/laka-paa-stak-n̥i-aa/

FACE-BELLY-grow-2OBJ-IMPF

'he remembers you'

158) *kmaqa'án*

/k-maqa-an-aa/

1SUB-HAND-go-IMPF

'I throw it'

159) *lakatawaká*

/laka-ta=waka-aa/

FACE-get.up-IMPF

'he confronts him'

160) *kpaatsánqa*

/k-paa-tsánqa-l̥i/

1SUB-BELLY-lack-PFTV

'I forgot it'

161) *tilaqawilaníi*

/ti-laqa-wila-nii-aa/

CNTR-FACE-seated-DAT-IMPF

'he owes him something in spite of . .'

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Like the instrumental and the locatives, BPPs may also combine with intransitives (examples 162, 163) and transitives (164, 165) without increasing their valence, as shown in the following examples:

162. *kkiɬkatsán*

    /k-kiɬ-katsán-aa/

    1SUB-MOUTH-hurt-IMPF

    'my mouth hurts'

163) *kpaaɬkú*

    /k-paa-ɬkú-aa/

    1SUB-BELLY-burn-IMPF

    'my belly is burning'

164) *kilaqáloqs*

    /kin-laqa-loqs-l̥i/

    1OBJ-FACE-slap-PFTV

    'he slapped my face'

165) *kilaamakatsúukw̥ą*

    /kin-la-maka-tsuuk-wą̥/

    1OBJ-2/1-HAND-kiss- 1pl

    'you kissed our hands'

Examples 164 and 165 again exemplify possessor raising or external possession, with the referent of the body part prefix acting as the direct object (the theme), and the possessor as indirect object. Additional examples of this common BPP function follow:

166) *k'aqčipá*

    /k-aq-čipá/

    1SUB-HEAD-grab

    'I grab his head'

167) *kinčaašaamá*

/kin-čaa-šama-aa/

1OBJ-LEG-touch-IMPF

'he touches my leg'

168) *kpaatsúukni*

/k-paa-tsuuk-nii-li̥/

1SUB-BELLY-kiss-DAT

'I kissed his belly'

169) *qanqaqašín*

/qanqa-qaši-ni̥/

NOSE-punch-2OBJ

'he punched you in the nose'

170) *makáška štáan*

/maka-ška-li̥ štaan/

HAND-bite possum

'the possum bit his hand'

In these constructions, the possessor is marked on the verb with an object marker in the case of speech act participants (examples 167, 169), while only occasionally is the dative *–nii* found with a 3rd person possessor (example 168 vs. the more typical 166 and 70). This use of the dative on a monotransitive verb is unusual (normally the single 3rd person object would be zero-marked). It seems to be affixed optionally to disambiguate external possession constructions, which could otherwise be interpreted reflexively.

Outside of this last set of examples, object agreement markers appear only in the applicative-metonymic usage and with the idiosyncratic predicates derived with BPPs. It can be argued that each of these latter cases actually represents possessor ascension, and that therefore only the possessors, never the body parts themselves, have object properties. If this is the case, then BPPs are the least prototypical of the applicatives; they may transitivize some intransitives, but the arguments they mark on the verb always remain oblique.

5.4.2.6 Applicative summary. FM Totonac has a variety of affixes that may serve as applicatives, but they vary greatly in their propensity to enter into applicative constructions. The comitative and the dative are the most likely to do so; when they do, the object they bring into

the core as the O argument is highly likely to have a human or animate referent and to share object properties with the base object, as indicated by object agreement markers. Unlike the prototype, both the comitative and the dative may also apply to transitive verbs, increasing their valence.

While the comitative and the dative invariably transitivize the intransitives they affix to, the instrumental, locatives and BPPs only occasionally do so. Instead, predicates derived with any of the latter three categories of applicatives often retain their original valence, whether transitive or intransitive. These affixes, then, function as applicatives only in a minority of the constructions in which they appear; when they do so, the O argument they add to the core usually has an inanimate referent. In some constructions with non-compositional semantics, the instrumental and less commonly, the locatives may have a human referent, and in these cases alone the applicative object is marked on the verb via object agreement affixes. Generally, though, the inanimate objects found in instrumental and locative constructions reveal no sharing of object properties with the base object. The evidence for the BPPs as applicatives is the most meager, and the place of body parts on an animacy hierarchy is the most problematical. Body parts naturally occur only with a possessor, and it is the possessor, not the possessum, which receives object marking on many verbs derived with BPPs.

The applicatives of FM Totonac can be divided into two categories: those that always derive transitives from intransitives, and generally have human referents that are referenced on the verb through object agreement markers; and those that only occasionally transitivize the intransitives to which they attach, rarely have human referents, and tend not to be marked on the verb. Peterson (1999:34) accounts for the correlation between animacy of applicative objects and possession of object properties as due to the necessity for the grammar to be able to access entities of high topicality. The further correlation in FM Totonac between animacy/object marking and robust applicative construction on the one hand, and lack of animacy/object marking and sporadic applicative construction on the other hand may have the same explanation.

5.4.3 Summary of valence-increasing morphology. The morphology of Totonaco de Filomeno Mata provides a variety of transitivizing constructions, including two causatives and five different types of applicative. Unlike the prototypes discussed by Dixon & Aikhenvald (1997), all of these may increase the valence of transitive and ditransitive, as well as intransitive verbs, routinely allowing the marking of 3- and 4-arguments on the verb. Constructions with a causative and multiple applicatives, such as the one shown in example 171, are possible.

171) *kiliimaapuuwašníi m pála*
    /kin-lii-maa-puu-waš-nii-IMPF pala/
    1OBJ-INST-CAUS-LOC-dig-DAT-aa stick
    'he makes me dig a hole with a stick'

The readiness of FM Totonac to increase the valence of its verbs is typologically unusual.

5.4.4 Valence-decreasing constructions. In addition to the many valence-increasing operations, FM Totonac has four valence-decreasing constructions: a non-prototypical antipassive, an inceptive/middle voice marker, a reciprocal and a reflexive. In addition, an impersonal passive-like construction formed with the reflexive morpheme exists and will be discussed in this section. Most of these constructions may be applied to any transitive verb, except for the middle voice construction, which is limited to resultative verbs.

5.4.4.1 Anti-passive –*nan*. Dixon & Aikhenvald give the following criteria for a prototypical antipassive:

a) applies to an underlying transitive clause and forms a derived intransitive;
b) the underlying A becomes S of the antipassive;
c) the underlying O argument goes into a peripheral function, being marked by a non-core case, adposition, etc; this argument can be omitted, although there is always the option of including it;
d) there is some explicit formal marking of a passive construction [generally, by a verbal affix or periphrastic verbal construction].

<div align="right">Dixon & Aikhenvald (1997:73-4)</div>

FM Totonac's antipassive-like derivation uses the habitual or indefinite object suffix –*nan* (or –*nVn*, sometimes subject to root vowel harmony; see §2.6.4.2) and meets criteria a), b), and d), but always omits the underlying O. Dixon & Aikhenvald predict this type of construction, calling it a "patientless antipassive" (D&A 1997:74), although they state that no examples are known at the time of their writing.

Examples of intransitive verbs derived from inherently transitive ones with –*nan* are given below; each of these includes the semantics of 'habitually' or 'for a living':

172) *staanán*

/staa-nan-aa/

sell-HAB-IMPF

'she sells'

173) *ktlaqnán*

/k-tlaq-nan-aa/

1exc-play-HAB-IMPF

'I play (music)'

174) *taqałaanán*

/ta-qałaa-nan-aa/

3SUB.pl-steal-HAB-IMPF

'they steal'

175) *čanán*

/čan-nan-aa/

sow-HAB-IMPF

'he sows'

176) *kaaštlawanán*

/kaa-štlawa-nan-aa/

LOC-adorn-HAB-IMPF

'she adorns (the place)'

177) *liipałnán*

/lii-pał-nan-aa/

INST-sweep-HAB-IMPF

'he sweeps with (a broom)'

In spite of some of the English glosses, the verbs in the examples are all intransitive. For example, *ktlaqnán* is glossed as 'I play (music)'. The root *tlaq* means 'play a musical instrument'; *tlaqnán* means 'play', with 'music' as a pragmatic inference; **ktlaqnán tatláqNI*, with 'music' (*tatláqNI*) as a direct object, is ungrammatical. Another of the examples, *kaaštlawanán* may be better glossed as 'she place-adorns'; while *kaaštlawá puusikúlan* 'she place-adorns the church' is possible, **kaaštlawanán puusikúlan,* with the same intended meaning, is not. Note that the last two examples are inherently transitive verbs (*kaaštlawa* 'adorn it', *pał* 'sweep it') that have lost their ability to take a direct object through derivation by antipassive *–nan*, but whose transitivity is then increased by the affixation of an applicative (*kaa*-locative, *lii*- instrumental).

Besides its function as an antipassive, *-nan* is often understood to add the meaning 'habitually' or 'for a living' to verbs, as is crosslinguistically common (Jacobsen 1985).

178) *škanán čičí'į̇*

/ška-nan-aa čiči'į̇/

bite-HAB-IMPF dog

'the dog bites often'

179) *tsapanán*

/tsapa-nan-aa/

sew-HAB-IMPF

'she sews for a living'

180) *kučiinán*

/kuču-ii-nan-aa/

cure-TRANS-HAB-IMPF

'he is a curer'

181) *štoqonún*

/štoqo-nun-aa/

inject-HAB-IMPF

'she gives injections for a living'

Certain verbs are almost always found in the antipassive form, except when causativized. These include *čiwiinan* 'speak', *łaqaanan* 'get dressed', *lukuxnan* 'fight', *pašyałnan* 'go for a walk', *patlaanan* 'vomit', *ponqšnun* 'wash (clothes), *qamaanan* 'play (games)', *qałaanan* 'rob', *qoxoonun* 'cough', *saaqnan* 'look for/make kindling'. Also included in this group are all sorts of weather/natural condition verbs such as *čaxaanan* 'hail', *łkaaknan* 'be hot', *loonqnun* 'be cold', *monqaanan* 'dew falls', and *kaatsiisnan* 'night falls'.

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A few verbs change meaning in a non-transparent way when derived with –*nan*: *xaš* 'rest', *xašaanan* 'breathe'; *paš* 'bathe', *pašnanan* 'swim'; *qos* 'fly', *qosnun* 'run'; and *štaqa* 'flatten', and *štaqanan* 'make tortillas'. Note that the word meaning 'swim' seems to have two –*nan* suffixes.

One common verb root, *waa* 'eat it', takes an irregular form of the antipassive: *waayan* 'eat'.

5.4.4.2 Middle voice *ta*-. The inceptive or middle voice prefix *ta*- combines with only three types of verbs: positionals, transitive resultatives, and roots that exist only in an inchoative/causative alternation. The middle voice marker has a different effect on the valence of each of these types of verbs, as will be described in the following subsections.

5.4.4.2.1 Positionals and *ta*-. Both classes of positionals, the posturals and the bound positionals (see §4.3.1), are frequently derived with the *ta*- prefix, and its effect is to inceptivize them, making them verbs of achievement. This is clearly not a valence-decreasing operation. The posturals are stative verbs that include *maa* 'be lying'; *yaa* 'be standing'; *wi(la)* 'be seated'; *kii* 'upright', and *waka* 'be up in/on/against'. The bound positionals are *nuu* 'in', *štu* 'out', *xuu* 'in vertically', and *kut* 'out vertically'. Prefixed with *ta*-, these statives become intransitives whose meaning is to enter into the state described by the root, for example *yaa* 's/he is standing', *tayáa* 's/he stands up' or *nuu* 'in', *tanúu* 's/he enters'.

182) *ktamaakú'ų̄*
/k-ta-maa-lį-ku'ų̄/
1SUB-MID-lying-JUST
'I just lay down'

183) *taayáay'ą̄*
/ta-yaa-aa-[cg]/
MID-standing-IMPF-2SUB.sg
'you stand up'

184) *táwi*
/ta-wi-lį/
MID-seated-PFTV
'he sat down'

185) *tawakaniitáwa n kiw'į̄*
/ta-waka-niitą-wą kiw'į̄/
MID-up-PFT-1pl
'we have climbed the tree'

186) *łaalantanúu*
/łaa=la-ta-nuu/
NEG-POT-MID-in
'he can't enter'

187) *taštú*
/ta-štu/
MID-out
'she exits'

188) *táxuu n kkúštał*
/ta-xuu-lį k-kuštal/
MID-in-PFTV LOC-sack
'it got in the sack'

189) *tákut*
/ta-kut-lį/
MID-out-PFTV
'he got out'

When inceptive *ta-* and a body part prefix occur on a positional verb, they take scopal order, as in *'aqa-ta-nuu* 'she puts it in her ear' and *ta-'aqa-nuu* 'she puts her ear in (the opening)' (this is covered more fully in §6.5.1.1).

5.4.4.2.2 Resultatives and *ta-*. In FM Totonac, a limited number of non-derived transitive verbs accept the inceptive prefix. MacKay (1999) describes a similar phenomenon in Misantla Totonaco as involving "accomplishment transitive verbs that denote actions or events resulting in a change of state of the object" (1999:256). The group of transitives allowing inceptivization in FM Totonac is somewhat broader. Although it includes some that meet MacKay's criteria, such as 'fold', 'cut', 'detach', 'uproot' 'shave', 'stretch', 'break', 'peel', 'move', 'scrape', 'tie', 'cover' and 'change', it also contains 'poke', 'drag', 'inject', and 'squeeze', where the change of state of the object is less obviously salient. The semantically clearest examples are with the subclass of cutting/breaking verbs:

190) Examples of cutting/breaking verbs
čukú	'he cuts it'	*tačukú*	'it gets cut'
štiit	's/ he tears it'	*taštíit*	'it tears'

The inceptivizer in these cases has the same function as a passivizer.

5.4.4.2.3 Transitives and *ta-*. A relatively small group of inherently transitive roots is detransitivized by affixation of *ta-*. Many of these verbs, like *čuku* 'cut', *tukš* 'break, snap', *šlaxa* 'loosen' and *štonq* 'stretch' are clearly resultatives, meaning that they describe the change of state of an object. Others, such as *saqa* 'drag' and *štoqo* 'inject', would not be described as resultatives in English or Spanish; it is unclear whether resultative semantics are part of their meaning in FM Totonac. For this group of verbs, derivation with *ta-* gives a middle voice reading of a verb of achievement, which is usually translated into Spanish using the impersonal *se* construction. A list of all transitive verbs in my database that take the middle voice marker are provided in Table 5.3

Table 5.3 Transitive verbs taking middle voice *ta-*

Verb	Gloss	Middle voice	Gloss
čii	s/he ties it	*ta-čii*	it gets tied
čuku	s/he cuts it with a knife	*ta-čuku*	it gets cut with a knife
čup	s/he pokes it	*ta-čup*	it gets poked
kaa	s/he cuts it with a machete	*ta-kaa*	it gets cut with a machete
pisa	s/he detaches it	*ta-pisa*	it detaches
pułu	s/he uproots it	*ta-pułu*	it gets uprooted
puš	s/he cuts/harvests it	*ta-puš*	it bursts
qaps	s/he folds it	*ta-qaps*	it folds up
saqa	s/he drags it	*ta-saqa*	it gets dragged
saqaali	s/he moves it	*ta-saqaali*	it moves
siit	s/he cuts it with scissors	*ta-siit*	it gets cut with scissors
snapu	s/he covers it	*ta-snapu*	it gets covered
sqaa	s/he splits it	*ta-sqaa*	it splits
sqawi	s/he bends it	*ta-sqawi*	it bends
swiik	s/he shaves it	*ta-swiik*	it gets shaved
šaqa	s/he scrubs it	*ta-šaqa*	it gets scrubbed
škiti	s/he squeezes it	*ta-škiti*	it gets squeezed
šlaxa	s/he loosens it	*ta-šlaxa*	it loosens
štiit	s/he tears it	*ta-štiit*	it tears
štonq	s/he straightens it	*ta-štonq*	it straightens
štoqo	s/he injects it	*ta-štoqo*	it gets injected
šuu	s/he peels it	*ta-šuu*	it gets peeled
šwata	s/he drags it	*ta-šwata*	it gets dragged
tlaqa	s/he shoos it away	*ta-tlaqa*	it gets upset
tuks	s/he breaks it by twisting	*ta-tuks*	it breaks by twisting
lak-ponqa	s/he knocks it down	*ta-lak-ponqa*	it falls down
poo-qoš	s/he inflates it	*ta-poo-qoš*	it inflates

5.4.4.2.4 Verbs in inceptive/causative alternation. The final group of FM Totonac verbs that can be derived by *ta-* are bound roots that may be inflected only after they are prefixed by either *ta-* or CAUSATIVE *maa-* (. . *–ii*), i.e., those that exist only in the inchoative/caustive alternation in the sense of Levin and Rappaport (1995) or Haspelmath (1993). The intransitive/transitive pairs thus derived have meanings such as *ta-'akta* 's/he descends', *maa-'ak-tii* 's/he lowers it'; *ta-čoqo* 's/he stops', *maa-čoq-ee* 's/he stops it'; *ta-moqos* 's/he falls', *maa-moqos-ii* 's/he drops it'; *ta-kaks* 's/he calms down', *maa-kaks-aa* 's/he calms him/her down'; *ta-pitsi* 'it cracks', *maa-pits-ii* 's/he divides it'. Some of the forms in *ta-* are intransitive verbs of activity (e.g., 'descend'), while others are verbs of accomplishment (e.g., 'calm down') or of achievement (e.g., 'split'). A list of all the bound roots in this category from my database is given in Table 5.4.

Table 5.4 Inceptive-Causative alternations

Inceptivized verb	Gloss	Causativized verb	Gloss
ta-'akta	s/he descends	*maa-'akt-ii*	s/he lowers it
t-'aqału	s/he descends	*maa-'aqałuu*	s/he lowers it
ta-čawa	it opens	*maa-čaw-ii*	s/he opens it
ta-čoqo	s/he stops	*maa-čoq-ee*	s/he stops it
ta-čutoqł	its outer layer pulls off	*maa-čutoqł*	s/he pulls off its outer layer
ta-kaks	s/he calms down	*maa-kaks-aa*	s/he calms him/her down
ta-laki	it opens	*maa-laki*	s/he opens it
ta-moqos	s/he falls	*maa-moqos-ii*	s/he drops it
ta-peqs	it gets peeled	*maa-peqs*	s/he peels it
ta-pink	it splits	*maa-pink*	s/he splits it
ta-pitsi	it splits	*maa-pitsi*	s/he divides it
ta-puuli	s/he enters the small streets in a town	*maa-puuli*	s/he introduces something into the small streets in a town
ta-(tan)-qalax	it turns over	*maa-(tan)-qalax*	s/he turns it over
ta-qe'ę	it gets uncovered	*maa-qe'ę*	s/ he uncovers it

ta-qolu	it rolls	*maa-qolu*	s/he rolls it
ta-poo-qooš	it inflates	*maa-poo-qooš*	s/he inflates it
ta-siyu	it seems (shows itself)	*maa-siyu*	s/he shows it
ta-spit	it turns	*maa-spit*	s/he turns it
ta-tsama	it fills up	*maa-tsama*	s/he fills it
ta-katala	he trips/falls	*maa-katala*	s/he trips him/her
ta-noqł	they meet	*maa-noqł-uu*	s/he meets him
ta-stoq	it gathers	*maa-stoq*	s/he gathers it
ta-tseeq	it hides	*maa-tseeq*	s/he hides it
ta-štoq	it mixes	*maa-štoq*	s/he mixes it

In addition to the verbs listed above, it seems that virtually all verbs may be prefixed with *ta-* and take on middle voice semantics when they undergo a deverbal nominalization process yielding an 'ought to be X'd' reading. §3.3.11.6 contains more detail on this unusual construction.

5.4.4.3 Reciprocal *laa-*. A reciprocal involves an underlyingly transitive verb in which the plural subject and object have the same reference. In Filomeno Mata Totonac, a reciprocal verb is derived by the *laa-* prefix, and the verb is inflected with subject agreement markers, with object marking suppressed unless the verb is also causativized. In this case, the causee is marked as the object, as is usual in causative constructions, and the reciprocal is always interpreted as within the scope of the causative.

191) *laalaaqtsimpáatiti̧*
/laa-laaqtsin-paa-titi̧/
REC-see-PROG2-2SUB.pl
'you were looking at each other'

192) *laačipáw*
/laa-čipa-wa̧/
REC-grab-1pl
'we grabbed each other'

193) *talaatsúukł*
/ta-laa-tsuuk-li̧/
3SUB.pl-REC-kiss-PFTV
'they kissed each other'

194) *štalaačiikutín*
/š-ta-laa-čii-kutun-aa/
PAST-3SUB.pl-REC-tie-DES-IMPF
'they wanted to tie each other up'

195) *laamaqasiitsí*
/laa-maqa-siitsi-aa/
REC-CAUS-angry-IMPF
'you pl annoy each other'

196) *kaalaamaačipíiw*
/kaa-laa-maa-čipa-ii-wa̧/
OBJ.pl-REC-CAUS-grab-TRAN-1pl
'we made them grab each other'

FM Totonac also has what I will call a reciprocalized comitative construction. In this construction, the verb is affixed with the reciprocal, the comitative and a plural subject marker, with no object marking. The meaning is variously translated as 'among us/you/them all, we/you/they X', 'we/you/they invite each other to X', 'we/you/they supported or accompanied each other in Xing'. All my examples of this construction involve intransitive verbs.

197) *laataaqóotiti̜*

/laa-taa-qoot-titi̜/

REC-COM-drink-2SUB.pl

'you invited each other to drink'

198) *talaatáami*

/ta-laa-taa-min-li̜/

3SUB.pl-REC-COM-come-PFTV

'they invited each other to come'

199) *laataataaskúhtiti̜*

/laa-taa-taa-skux-titi̜/

REC-COM-INC-work-2SUB.pl

'you supported each other at work'

200) *klaataamíw*

/k-laa-taa-min-wa̜/

1excl-REC-COM-come-1pl

'we accompanied each other in coming'

5.4.4.4 Reflexive –kan. Like the reciprocal, the reflexive "involves an underlying transitive clause in which A and O have identical reference" (Dixon & Aikhenvald 1997:77). In FM Totonac, the reflexive is formed with the suffix –*kan*, which is often referred to as the 'Indefinite Subject' marker in Totonac studies. With 1st and 3rd person subjects, the reflexive stem is inflected with the object agreement markers, and subject markers are blocked.

With 2nd person subjects, on the other hand, subject marking is always present, that is, [constricted glottis] or -*ti̜* for 2nd person singular, and suffix –*titi̜* for 2nd person plural. In the case of 2pl reflexive verbs, the plural object prefix –*kaa* is also affixed, but not the second person object suffix –*ni̜*, which would also be required to mark 2OBJ.pl on a non-reflexive verb with a 1st or 3rd person subject. It may be argued that the absence of 2OBJ –*ni̜* in this context is the result of positional blocking rather than morpho-syntactic factors, since –*ni̜* occurs in the same position (S14) as the first and second person subject suffixes. However, the order of blocking would be anomalous; that is, when both 2OBJ and any other suffix in S14 are present in the morpho-syntactic target, it is always the 2nd object marker that appears on the surface.

Table 5.5 shows the affix combinations required for a reflexive verb (compare with Table 4.9, showing non-reflexive subject/object affix combinations). Note that the object markers for a 1st person plural reflexive are the *kin-kaa-* . . .-*ni̜* 'me + you' that normally occurs with third person subjects, rather then the *kin-laa-* . . .-*wa̜* 'me + him' required with second person subjects. Although these affix combinations do not truly encode an exclusive/inclusive distinction in non-

reflexive verbs (see §4.8.2.1), the choice of *kin-kaa-* . . .-*ni̥* 'me + you' for 1st plural reflexives correctly reflects the underlying semantics of reflexive 'we' as 'you + I'.

Table 5.5 Reflexive verb paradigm

I saw myself	*kilaaqtsínkḁ* /kin-laaqtsin-kan-li̥/ 1OBJ-see-REF	we saw ourselves	*kinkaalaaqtsinkán* kin-kaa-laaqtsin-kan-ni̥ 1OBJ-OBJ.pl-see-REF-2OBJ
you saw yourself	*laaqtsínk'ḁ* laaqtsin-kan-[cg] see-REF-2SUB.sg	you pl. saw yourselves	*kaalaaqtsinkántiti̥* kaa-laaqtsin-kan-titi̥ OBJ.pl-see-REF-2SUB.pl
he saw himself	*laaqtsínkḁ* laaqtsin-kan-li̥ see-REF	they saw themselves	*kaalaaqtsínkḁ* kaa-laaqtsin-kan-li̥ OBJ.pl-see-REF

The meaning of any reflexive sentence in FM Totonac is ambiguous between the reflexive reading and an 'indefinite subject' reading, for example 'I saw myself' or 'Someone saw me'. This is treated further in the next section.

5.4.4.5 Indefinite Subject –*kan*. As just noted, all verb forms in -*kan* can be read equally as reflexives or as having an 'indefinite subject', as it is referred to in Totonac studies. The latter reading is glossed as 'someone does X', with the impersonal 'they do X', or as 'X is done'. With first and third person subjects, the 'someone does X' gloss is formally appropriate; that is, in the sentence 'someone sees me', for example, the verb 'see' is inflected with the first person object prefix and with –*kan* (refer to Table 5.5). However, verbs in –*kan* with second person subjects take 2nd person subject markers (again, see Table 5.5), have the formal characteristics of an atypical passive, and are more appropriately glossed as, for example, 'you are seen'. Dixon & Aikhenvald's criteria for a prototypical passive are:

a) applies to an underlying transitive clause and forms a derived intransitive;
b) the underlying O becomes S of the passive;
c) the underlying A argument goes into a peripheral function, being marked by a non-core case, adposition, etc; this argument can be omitted, although there is always the option of including it;
d) there is some explicit formal marking of a passive construction (generally, by a verbal affix or periphrastic verbal construction.

<div align="center">Dixon & Aikhenvald (1997:73)</div>

Verbs with 2nd person subjects and the suffix –*kan* meet criteria a), b), and d), but always omit the underlying A; Dixon & Aikhenvald call this an "agentless passive" (Dixon & Aikhenvald 1997:74). Note that verbs in –*kan* with second person subjects show <u>all</u> second person subject

morphology, including suppletion of stems and inflectional and derivational affixes (as in example 203). Anomalously, those with plural subjects also take the plural object marker –*kaa* (see Table 5.5).

201) *túu n tlawakán*

   /tuu tlawa-kan-aa/

   what do-REF-IMPF

   'it is what is done'

202) *waniikán kévin*

   /wan-nii-kan-aa kevin/

   say-DAT-REF-IMPF kevin

   'He is called Kevin'

203) *šmaqtayaapaakámpI*

   /š-maqtayaa-paa-kan-pii/

   PAST-help-PROG2-REF-DOWN2

   'they were helping you over there'/

   'you were being helped over there'

204) *kintaaqootkán*

   /kin-taa-qoot-kan-aa/

   1OBJ-COM-drink-REF-IMPF

   'they drink with me'

5.5 Other derivational morphemes. This section covers a number of derivational morphemes not discussed in previous sections, including the associative, the distributive, DOWN, the deictics, the adverbial proclitics and the reduplicated sound and manner adverbials.

5.5.1 Associative *maq-*. As noted in §5.4.2.1, the associative prefix *maq-* indicates that the action of the verb is performed with others. Unlike the comitative, the associative does not affect the valence of the verb, and the other participants it refers to may not be specified. The verb *maqtayaa* (ASS+stand) exists with the lexicalized meaning 'help someone'

205) *kmaqwaayanqóow*

   /k-maq-waayan-qoo-wą/

   1exc-ASS-eat-TOT-1pl

   'we finished eating together'

206) *naamaqtanúuma*

   /naa=maq-ta-nuu-maa

   ALSO=ASS-INC-in-PROG

   'he is also among them'

207) *kkiitamaqskuxɬi̥*

   /k-kii-ta-maq-skux-ɬi̥/

   1exc-RT-INC-ASS-work-PFTV

   'I went with him to work with others'

5.5.2 Distributive *lak-*. The distributive prefix *lak-* (or *laq-*; see §2.6.2.1 on uvular harmony) distributes the action of the verb over multiple objects or places, as in *tačoqó* 's/he stops', but *talaqčoqó* 's/he strolls around' (with the implication that s/he stops here and there). It adds the meaning of 'all over' with verbs of hitting, i.e., *nik* 's/he hits him with a stick' and *lakník* 's/he hits him all over'. With resultative verbs of cutting, breaking, etc., it indicates that the affected entity is decomposed into many small pieces; for example *puš* 's/he breaks it'; *lakpuš* 's/he bursts it'. With verbs of washing and drying, *lak-* is conventionally taken to refer to dishes, as in example 210. A verb derived with *lak-* does not take an object marker, indicating that it does not affect the valence.

208) *lakkaamií*   209) *laktláwa radio*

   /lak-kaa-mii-aa/   /lak-tlawa-li̥ radio/

   DIST-cut-DOWN-IMPF   DIST-make-PFTV radio

   'he cuts it into pieces'   'he took apart the radio'

210) *maalakskáak*   211) *talakčiwíina*

   /maa-lak-skaak-aa/   /ta-lak-čiwii-nan-li̥/

   CAUS-DIST-dry-IMPF   3SUB.pl-DIST-talk-HAB

   'he dries the dishes'   'they all talked it over'

5.5.3 'Down'. The suffix I refer to as 'DOWN' appears to derive from the transitivized postural stative *maa* 'lying' (*maa* 'lying' + *-ii* 'transitivizer'). This stative has a suppletive form, *paa*, when the subject of the verb is second person, and likewise DOWN has the form *-mii* with first and third person subjects, and *-pii* with 2nd subjects. Verbs derived with DOWN sometimes have straightforward semantics as in *taramii sqatʰA* (<*ta-la-mii* INC-live-DOWN) 's/he lays the child down' or *tankaapíiyaa kiw'I* (REAR-cut-DOWN2-IMPF-2SUB.sg tree) 'you cut down the tree'. With verbs of cutting and breaking, DOWN often adds the meaning of 'into little pieces', as does DIST *lak-* (described in §5.5.2), and with verbs of beating/thrashing/kicking, this suffix implies 'thoroughly' or 'into the ground'. Several lexicalized derivations exist in which the semantics of DOWN seem to be 'getting the better of someone' or 'putting someone down', as in *'aktlawamíi*

(HEAD-do-DOWN) 's/he exploits him/her' or 'aqsqawimíi (HEAD-twist-DOWN) 's/he manipulates him/her'. Outside the semantic domains just described, DOWN is found only in a few lexicalized forms.

212) *laksíitmi n kápsnaṭi̥*

/lak-siit-mii-l̥i kápsnaṭi̥/

DIST-cut-DOWN-PFTV paper

'she cut the paper up in little pieces (with scissors)'

213) *'akɫkanuumíi*

/ak-ɫka-nuu-mii/

HEAD-measure-DOWN

'he passed him (in weeding his strip of land)'

214) *kapuutlaqápiiṭi n čaawilá'A*

/ka-puu-tlaqa-pii-ṭi̥ čaawilá'A/

IRR-LOC-chase.off-DOWN2-PFTV2 turkey

'chase out the turkey!'

215) *kaa'aktlawapíipaaṭi*

/kaa-ak-tlawa-pii–paa-ṭi̥/

OBJ.pl-HEAD-do-DOWN2-PROG2-PFTV2

'you are mistreating them'

5.5.4 Deictics. FM Totonac has proximal and distal deictics, *či* HERE and *ča* THERE, that occur in an interesting distribution. As prefixes they are found only with the verb *'an* 'go', as in *či-an→ čin* 'arrive here' and *ča'an* 'arrive there', and in many other forms derived from these two. The deictics always occur immediately preceding the verb root. Because of this limited distribution, I have considered *ča'an* and *čin* to be frozen forms, and have not given the prefixes *či-* and *ča-* a place in the verb template.

However, they also occur in a slightly different form in suffix position 13, preceding the final subject/object/aspect inflectional markers. In this position HERE takes the forms *–či* with first and third person subjects, and *–čitọ̣* with second person subjects, and THERE appears as *–ča'ọ̣* with 1st and 3rd subjects and as *–pi̥* with 2nd subjects. The suffix *–či* is identical with the corresponding proximal prefix; of the other three deictic forms, *-čitọ̣* and *–ča'ọ̣* are formally identical to the verbs in the perfective aspect *čitọ̣* 'arrived here' (*či-tan*, with perfective final *–n* deletion) and *ča'ọ̣* 'arrived there' (*ča-'an*, also with final *–n* deletion). The form *–pi̥*

THERE.2SUB is identical to the 2nd person suppletive form *pin* of '*an* 'go' in the perfective aspect, showing the final –*n* deletion characteristic of perfective forms, and without the *ča-* prefix. These deictic suffixes seem likely to have developed from verb sequence constructions in which the verbs *čin* and *ča'an* occurred in the V2 position. Since many verbs have no inflection marker in position 14 (only those with a 2nd person object, 1 plural object, or 2 plural subject do), the independent verbs *čin* and *ča'an* may have been reanalyzed as suffixes occurring immediately following position 12.

5.5.5 Adverbial proclitics. Adverbs generally precede verbs in FM Totonac. Many of them, particularly those that have only one syllable, lose their stress and cliticize to the verb. §5.3.2.1 covered the aspectual adverbial '*ak*= of preverb position 15. In this same position several other monosyllabic adverbial clitics may occur. When negation and possibly a negative polarity proclitic as well as an adverbial precede a verb, this complex may receive full stress, that is form a separate word apart from the verb. This is more likely the more syllables are present. Thus for example the complex verb *ɬaa=sih=k-liimín* 'I don't bring it closer' with simple negation and a monosyllabic adverbial has only a single primary stress, while speakers would pronounce *ɬaa=aɬ=tuu=sóoqe wayáama* "I'm not yet eating early', with the negative and two negative polarity proclitics and a bisyllabic adverbial as two words, each with a primary stress. Several of the adverbial clitics are described in the following subsections. This does not purport to be a full list of all such adverbials.

5.5.5.1 Adverbial *'a*=. This adverbial has an existential deictic meaning much like *voici* in French. It is usually used with verbs in the present tense and the incompletive or progressive aspect.

216) *'awaayán*
/a-waayán-aa/
HERE-eat-IMPF
'here he is, eating'

217) *'atamín*
/a-ta-min-aa/
HERE-3SUB.pl-come-IMPF
'here they come'

218) *'alámaa*
/a-lá-maa/
HERE-live-PROG
'here he is (alive)'

5.5.5.2 Adverbial *tsaa*=. The proclitic *tsaa-* has the meaning 'having other options', indicating that the action of the verb was one among several possibilities that the subject might have pursued but didn't.

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219) *tsaaktláawa*

/tsaa = k-tlaawan-lį̥/

OPT-1SUB-walk-PFTV

'I walked, (having other options)'

220) *tsaaqałaananáatitį̥*

/tsaa = qałaa-nan-aa-titį̥/

OPT = rob-HAB-IMPF-2SUB.pl

'Having other options, you steal'

5.5.5.3 Adverbial *sih*=. This adverbial adds the meaning 'partially' to the verb to which it is cliticized.

221) *sihpúu*

/sii-puu-aa/

PART-in.fire-IMPF

'he puts it partially in the fire'

222) *sihliimín*

/sih-lii = mín-aa/

PART-bring-IMPF

'he brings it nearer'

5.5.5.4 Adverbial *sooqe*=. The meaning of this proclitic is 'early'.

223) *sooqektáma*

/sooqe-k-ta-maa-lį̥/

early-1SUB-INC-lying-PFTV

'I went to bed early'

5.5.5.5 Adverbial *tuunu*=. The proclitic *tuunu*= means 'apart from others; by one's self; separately' or 'in a different way; idiosyncratically'.

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224) *ɬaaliwána kɬtatá 'ášni n tuunukɬtatá*

/ɬaa = liwana k-ɬtatá-aa 'ašni tuunu = k-ɬtatá-aa/

NEG = well 1SUB-sleep-IMPF when APT-1SUB-sleep-IMPF

'I don't sleep well by myself'

225) *tuununčiwiinán*

/tuunu-čiwii-nan-aa/

APT-speak-HAB-IMPF

'he speaks in a different way'

5.5.5.6 Adverbial *tseeq=.* It means 'secretely, in hiding'. With some verbs, instead of cliticizing to the verb, *tseeq* is reduplicated and appears preceding the verb in the position of other reduplicated sound symbolic adverbs (see §5.5.6).

226) *tseeqtalaakíitsuukɬ*

/tseeq = ta-laa-kii-tsuuk-lị/

HID-3SUB.pl-REC-RT-kiss-PFTV

'they went to kiss each other in secret'

227) *tséeq tséeq waayán*

/tseeq tseeq waayan-aa/

HID HID eat-IMPF

'he eats in hiding'

5.5.6 Reduplicated sound and manner adverbials. Besides the adverbials noted in §5.5.5, FM Totonac has a large number of sound symbolic adverbials (see §2.8.3). They precede basic verbs of motion like *min* 'come', *'an* 'go', *wan* 'say' and *tlaawan* 'walk' to express particular manners of motion. These manner adverbials, some referring to the sound made by the motion, are fully reduplicated forms, each with its own primary stress. Such constructions are usually the only way to express certain kinds of movement, e.g. 'roll', 'limp'.

228) Examples of sound and manner adverbials

píɬi-píɬi míɬ	'he came rolling down like a cylinder'
qólo-qólo ʾáɬ	'he went rolling down like a sphere'
šúun-šúun án	'it moves rapidly through the air (hummingbird)'
kápa-kápa mín	'it comes clopping like a burro'
tánčaka-tánčaka ʾán	'he goes lumbering along'
swínki-swínki ʾán	'an emaciated person walks along'
lúnkuš-lúnkuš tlaawán	'he limps along'
tónqɬ-tónqɬ míɬ	'he came walking heavily'
pím-pím ʾáɬ	'it ran away hopping'
tíiɬ-tíiɬ míma	'water comes running rapidly'

Since each of the reduplicants carries primary stress, they seem likely to be independent words. They usually accompany third person singular forms that have no inflection. However, sometimes they are used with first, second or third person plural subjects, and in these cases they occur inside the person prefixes without primary stress:

228) Examples of word internal sound and manner adverbials

k-pili-pili-ʾán	'I went rolling down like a cylinder'
ta-kapa-kapa-míɬ	'they came clopping along'

It has not been possible to determine the position in which these manner adverbials occur when incorporated into the verb, but it cannot be preverb position 15 where many other adverbials occur (§5.5.5). They occur closer to the verb root than 3SUB.pl *ta-* of position 11, but I have no examples of their co-occurrence with any derivational morpheme in positions 1-10. Perhaps an additional position should be posited for the reduplicated adverbials just inside position 11

5.6 The morphology of verb sequences. Two or more verbs can occur in sequence in a sentence in FM Totonac, either as verb compounds or as a complement-taking verb and its complement. A basic overview of these constructions and their associated morphology is provided in this section.

5.6.1 Verb compounds. As noted in §4.2, a verb stem in FM Totonac may be simple or compound. Verb compounds are morphological constructions of two or occasionally three verb stems. Each of these is the phonologically full form of an independently occurring verb stem. Inflectional morphemes attach on the periphery of the compound verb just as with a simple verb stem, such that both verbs share all TAM and person agreement marking. Because fully inflected

verbs are possible without any inflectional morphemes attached to the right or left edge of the verb (3rd person singular present tense, imperfective aspect realis forms are identical to bare roots), verb compounding can sometimes be difficult to distinguish from other verb sequencing constructions. Compounding is most easily recognized when inflectional affixes form a sort of circumfix around the compound stem, that is, with the following person/TAM markings which both require a prefix and a suffix:

Table 5.6 Person/TAM marking requiring prefix and suffix

1SUBpl	*k- . . . -wą̇*
1OBJpl	*kin-laa- . . . -wą̇,* or *kin-kaa- . . . -ṇ̇į̇*
2OBJ.pl	*kaa- . . . -ṇ̇į̇*
3SUB.pl/PROG	*ta- . . . –maana*

With all other persons/ TAM combinations, ambiguity is possible as to whether a structure is a compound verb or a verb sequence.

In a verb compound, either verb stem may be morphologically complex, but such derived stems are generally inceptivized positionals such as *taa-yaa* (INC-stand) 'standing' or lexicalized forms, such as *lii-'an* (INST-go) 'take'. Nothing else can intervene between the two stems.

In a compound, V1 filled by a more or less open class of verbs, depending on the semantic construction (i.e., in transitive caused motion constructions, V1 must be a verb that can cause someone to move, like 'scold', 'hit', 'whip', 'pull'.) V2 is limited to a closed set of verbs of motion and (often inceptivized) positionals, of which those in Table 5.7 are representative:

Table 5.7 V1 verbs of motion

'aktii	lower, cause to descend
'an, lii'an	go, take
čin	arrive here
min, liimin	come, bring
tapuuli	go among the streets
(taa)kii	get up
(ta)maa	lie down
(ta)nuu	enter
(ta)waka	climb up
(ta)wi(la)	sit
(ta)štu	exit
(taa)yaa	stand
(ta)xuu	enter horizontally
(ta)kut	exit

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The semantics of such compounds generally translates into English as 'accomplish X by/while doing Y', with four main semantic subclasses, each described in the following subsections.

5.6.1.1 Transitive caused motion constructions.   In these very common constructions, A causes B to move as described in V2 by A doing the action of V1 to B.

229) *kinkaałtanka'aktíin*

/kin-kaa-łtanka-'aktii-nị/

1OBJ-OBJ.pl-pull-lower-2OBJ

'he pulled us down (got us down by pulling us)'

230) *kilaqaloqslee'éma*

/kin-laqa-loqs-lee'an-maa/

1OBJ-FACE-slap-take-PROG

'he takes me by face-slapping me'

231) *laqsnoqliimíma*

/laq-snoq-liimin-maa/

1OBJ-DIST-whip-bring-PROG

'he's bringing him by whipping him all over'

232) *kinkiłnilii'áma*

/kin-kiłni-lii'án-maa/

1OBJ-sold-take-PROG

'he takes me by scolding me'

233) *kaalaqqaši'aktiiníit'ạ*

/kaa-laq-qaši-aktii-niitạ-[cg]/

OBJ.pl-DIST-punch-lower-PFT-2SUB.sg

'you got them down by face-punching them'

234) *kałtankalíipị*

/ka-łtanka-líipin-lị/

IRR-pull-take2-PFTV

'take him by pulling him!'

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There are also several verb compounds in which both verbs are fixed and the meaning is lexicalized, such as *kaa-makan* 'cut/throw' (='something is sent flying when it is cut off') and *staa-maasta* 'sell/give' (='sell'). These can be thought of as 'throw by cutting' and 'give by selling'.

235) *piškaamakántiti̜*

/piš-kaa-makan-titi̜/

NECK-cut-throw-2SUB.pl

'you pl cut off his head and sent it flying'

236) *kistaamáasta*

/kin-staa-maasta-li̜/

1OBJ-sell-give-PFTV

'he sold it to me'

5.6.1.2 Motion-while constructions. In these verb compounds, A moves as described in V2 while doing the action of V1.

237) *šlakapaastaktampáatiti̜*

/š-laka-paastak-tan-paa-titi̜/

PAST-FACE-think-come-PROG2-2SUB.pl

'you pl were coming along thinking'

238) *štaki̜ɬtlitapuuliparakutún*

/š-ta-ki̜ɬtli-tapuuli-para-kutun/

PAST-3SUB.pl-sing-go.among-ITER-DES

'they wanted to go among the streets singing again'

239) *tapaaštiitaktiitapuulimáana*

/ta-paa-štiit-aktii-tapuuli-maana/

3SUB.pl-BELLY-tear-descend-go.among-PROG3

'they went around the streets tearing (the papers) down'

5.6.1.3 Positional-while constructions. Similar to the motion-while constructions, here A does the action of V1 while in the position described in V2.

240) *k'akłtatatawiláw*

/k-'ak-łtata-tawila-wą̧/

1SUB-HEAD-sleep-sitting-1pl

'we fell asleep seated'

241) *waayantayáay'ą̧*

/waayan-ta-yaa-aa-[cg]/

eat-INC-standing-IMPF-2Sub.sg

'you eat standing up'

242) *kwaayantamáaw*

/k-waayan-ta-maa-wą̧/

1SUB-eat-INC-lying-1pl

'we ate lying down'

243) *štalaqsqowakamáana stakų̧*

/š-ta-laq-sqo-waka-maana stakų̧/

PAST-3SUB.pl-DIST-shine-up-PROG3 star

'the stars were shining up above'

5.6.1.4 Metaphorical caused motion. In this case, A does the action of V1 to B, with the motion verb V2 adding an aspectual character—that the action of V1 is carried out over an extended period of time and intermittently.

244) *kilaamaqtaqałlii'áw*

/kin-laa-maqtaqał-lii'an-wą̧/

1OBJ-2/1-care.for-take-1pl

'you were taking care of me at intervals over a period of time'

245) *kimaa'aqłuuwiliimíima*

/kin-maa-aqłuu-wilii-mii-maa/

1OBJ-CAUS-be.dizzy-hit-DOWN-PROG

'he's bothering me at intervals over a period of time'

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5.6.2 Verb sequencing constructions with complement-taking verbs. When a complement-taking verb is followed by another verb with the same subject as its complement, incomplete sharing of inflection occurs. In these verb sequences, V2 is from an open class of verbs; V1 belongs to a limited set, of which those in Table 5.8 are examples:

Table 5.8 Complement-taking verbs

'an	'go (to do X)'
min	'come (to do X)'
katsii(nii)	'know how/learn (to do X)'
laqapaastak	'think of/remember (doing X)'
puuwan	'think (of doing X)'
laqati	'like (to do X)'
tsaqsa	'try (to do X)'
tsuku	'begin (to do X)'

In such constructions, V1 is fully inflected as normally for person agreement and TAM. Whatever the aspect of V1, V2 is in the imperfective aspect, that is, it has final stress and carries the IMPF suffix *–aa* where expected (whenever another suffix or enclitic attaches outside it, mostly with first plural or second subjects or objects). The imperfective stem thus seems to function here like an infinitival or participial form, in a language which otherwise makes no use of non-finite forms. Tense and person marking on V2 have some degree of optionality.

V2 often repeats the person agreement marking of V1 for persons marked by prefixes, that is, 1SUB *k-* and 3SUB.pl *ta-*. The double marking of *ta-* is always present in my database, while that of *k-* is in about half the examples, thus the minimal pair *k-laqatí k-waayán* and *k-laqatí waayán* 'I like to eat'. If both verbs are in the imperfective aspect with a 2nd person singular subject, 2SUB.sg laryngealization is present on the right edge of both verbs. The other person agreement suffixes for first and second person plural are never repeated on V2. Like first person subject, future or past tense marking is sometimes, but not always, doublemarked on V2. A large number of examples are provided to give a sense of the variation in inflectional marking with various person/TAM combinations in these verb sequences. In example 250 both a high vowel and a nasal are epenthesized between words, thus the unglossed syllable *in*.

246) *nak'án i kskín*

    /na-k-'an-aa k-skin-aa/

    FUT-1SUB-go-IMPF 1SUB-ask.for-IMPF

    'I will go ask for it'

247) *qamaanantiiłayáa píntiṭi*

/qamaanan-tiiła-aa pin-tiṭi/

play-AMB-IMPF go2-2SUB.PL

'walking along playing you pl. went'

248) *tamimpará tatantlíi*

/ta-min-para-aa ta-tantlii-aa/

3SUB.pl-come-ITER-IMPF 3SUB.pl-dance-IMPF

'they return to dance'

249) *katát tantlíiy'a*

/ka-tan-ṭi tantlii-aa-[cg]/

IRR-come2-2SUB.sg dance-IMPF-2SUB.sg

'come dance!'

250) *minkutín in kaamaasputúu*

/min-kutun-aa kaa-maa-sput-uu-aa/

come-DES-IMPF OBJ.pl-CAUS-finish-TRANS-IMPF

'he wants to come finish them off'

251) *tamimáana tatankaamíi*

/ta-min-maana ta-tan-kaa-mii-aa/

3SUB.pl-come-PROG3 3SUB.pl-REAR-cut-DOWN-IMPF

'they are coming to cut it down'

252) *naktayáa nakmalakčawá*

/na-k-ta-yaa-aa na-k-malakčawa-aa/

FUT-1SUB-INC-stand-IMPF FUT-1SUB-open-IMPF

'I will get up to close the door'

253) *kiłtliitiiłá čiił*

/kiłtli-tiiła-aa čii-łI/

sing-AMB-IMPF arrive-PFTV

'walking along singing he arrived'

254) *kkatsiiníimaa qałtawaqá*

/k-katsiiníi-maa qałtawaqá-aa/

1SUB-learn-PROG read-IMPF

'I'm learning to read'

255) *štakatsiiniikutún taqałtawaqá*

/š-ta-katsiinii-kutun-aa ta-qałtawaqa-aa/

PAST-3SUB.pl-learn-DES-IMPF 3SUB.pl-read-IMPF

'they wanted to learn to read'

256) *laqatiyáa qałaqašpatáa*

/laqati-aa qałaqašpat-aa/

like-IMPF obey2-IMPF

'you pl. like to obey him'

257) *šaklaqatí šak'an k-qałtawaqá*

/ša-k-laqatí-aa ša-k-'an-aa k-qałtawaqá-aa/

PAST-1SUB-like-IMPF PAST-1SUB-go-IMPF 1SUB-study-IMPF

'I used to like to go to study'

258) *łaašaklaqatí kisákstu šaktawilá*

/łaa=ša-k-laqati-aa ki-sakstu ša-k-ta-wila-aa/

NEG-PAST-1SUB-like-IMPF 1SUB-alone PAST-1SUB-INC-sit-IMPF

'I didn't like to stay alone'

259) *štalaqatí n takiłtlíi*

/š-ta-laqati-aa ta-kiłtlii-aa/

PAST-3SUB.pl-like-IMPF 3SUB.pl-sing-IMPF

'they liked to sing'

260) *tatsáqsa taqałtawaqá*

/ta-tsaqsa-ḽi ta-qałtawaqa-aa/

3SUB.pl-try-PFTV 3SUB.pl-study-IMPF

'they tried to study'

261) *tsaqsátiti kilaaqašmatáan*

/tsaqsa-titi̱ kin-laa-qašmat-aa-ni̱/

try-2SUB.pl 1OBJ-2/1-hear-IMPF-2OBJ

'you pl. tried to listen to us'

262) *tsaqsapá n kinkučíi*

/tsaqsa-para-li̱ kin-kučii-aa/

try-ITER-PFTV 1OBJ-cure-IMPF

'he tried again to cure me'

263) *šaktsaqsá ktanúu*

/ša-k-tsaqsa-aa k-ta-nuu-aa/

PAST-1SUB-try-IMPF 1SUB-INC-in-IMPF

'I was trying to enter'

264) *lakapaastakáa n tlawakutunáa*

/lakapaastak-aa n tlawa-kutun-aa

think-IMPF do-DES-IMPF

'you pl. think you want to do it'

265) *štalakpuuwantiiɬá natawaayán*

/š-ta-lak-puuwan-tiiɬa-aa na-ta-waayan-aa/

PAST-3SUB.pl-DIST-think-AMB-IMPF FUT-3SUB.pl-eat-IMPF

'they were thinking of eating'

The verb *tsuku* 'begin' can function like the V1 verbs exemplified above, but sometimes acts as a preverbal particle that inflects (through perfective stress shift) only for aspect, as in the first 3 examples below, where all overt inflection is on V2. This is more common when there are no TAM affixes involved. If TAM categories are overtly marked, they are marked on *tsuku,* and both verbs are inflected for 1SUB *k-* and 3SUB.pl *ta-*.

266) *tsúku n ktasá*   267) *tsúku n talaaqtsín*

/tsuku-li̱ k-tasa-aa/   /tsuku-li̱ ta-laaqtsin-aa/

begin-PFTV 1SUB-cry-IMPF   begin-PFTV 3SUB.pl-see-IMPF

'I began to cry'   'they began to look'

268) *tsúku štastiwí*

/tsuku-lį š-ta-stiwi-aa/

begin-PFTV PAST-3SUB.pl-rock-IMPF

'they began to rock him'

269) *štatsukú n tastiwí*

/š-ta-tsuku-aa ta-stiwi-aa/

PAST-3SUB.pl-begin-IMPF 3SUB.pl-rock-IMPF

'they began to rock him'

270) *tsukuniitatiti stiwiyáa*

/tsuku-niitá-titį stiwi-áa/

begin-PFT-2SUB.pl rock-IMPF

'you pl. have begun to rock him'

271) *natatsukú takuštú*

/na-ta-tsuku-aa ta-kuštu-aa/

FUT-3SUB.pl-begin-IMPF 3SUB.pl weed-IMPF

'they will begin to weed'

272) *štsukúpaati tasáy'ą*

/š-tsuku-paa-tį tasa-aa-[cg]/

PAST-begin-PROG2-2SUB.sg cry-IMPF-2SUB.sg

'you were beginning to cry'

This section only scratches the surface of the morphology of complement-taking verbs. A thorough study of the syntax of Filomeno Mata Totonac remains to be done.

Chapter 6 The structure of the FM Totonac verb

6.1 Introduction. Chapters 4 and 5 describe each of the approximately 100 verbal morphemes of Filomeno Mata Totonac, their functions and semantics. This chapter will analyze the structure of the complex verb, which can be simultaneously affixed with many of these morphemes. While the FM Totonac verb clearly has characteristics of a position-class morphology, such as fixed affix ordering and non-semantically motivated blocking, some evidence also exists for an (apparently nascent) hierarchical structure[6]. This evidence, much of it theoretically and typologically significant, includes morphophonological and morphological processes that divide the verb into zones. The basis for the major division of the verb into three zones of each side of the root is typologically unusual: the permissible ordering of the affixes, which may be fixed, variable or scopal. Other processes, such as blocking and nasal epenthesis, give evidence for sub-zones, many of whose boundaries do not coincide exactly with those of the major zones. Thus the various types of evidence do not converge to mark out well-defined subconstituents or stems, and the zones often interpenetrate one another. (This may be typical of a language in a particular stage of diachronic development, one in which the relationships among morphemes are moving from being syntactic to being morphological.) In any case, the layering undeniably shows signs of a hierarchical structure unexpected in a pure position class or templatic morphology.

This chapter will continue with an overview of some of the more interesting phenomena related to verbal structure: variable affix ordering, blocking and the interpenetration of zones. The following sections will then motivate the structure of the verb from the inside out, working through each of the three major zones on each side of the root.

6.2 Overview of variable affix ordering. As in many languages with multiple affixation, some affixes must occur in a fixed order, while the order of affixation of others depends on semantic scope (affix order based on scope will be discussed in §6.5.1.1). This is true of FM Totonac, but the language also allows the variable ordering of certain affixes that is unrelated to scopal issues. The possibility of affix permutations occurs in a zone on either side of the verb root, as shown in Table 6.1.

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[6] Other languages with combined templatic/hierarchical structure are described in Caballero 2008; Melnar 2004; Inkelas 1993; Muysken 1986 and Muysken 1981.

Table 6.1 Verbal zones based on affix ordering

P19-11	P11-5	P5-1	0	S1-3	S4-10	S11-15
Fixed	Variable	Fixed/Scopal	Root	Fixed	Variable	Fixed

The variable affixes have a most frequent order (that shown in Appendix B), but may occur in reverse order with no difference in meaning, even when they stand in a scopal relation to one another. For example, *k-**tii-kaa**-taa-staa-náw* (1SUB.exclusive-**PASS-OBJ.pl**-COM-sell-HAB.1pl) and *k-**kaa-tii**-taa-staa-náw* (1SUB.exclusive-**OBJ.pl-PASS**-COM-sell-HAB.1pl) (9,5 mjl), with the Pass-by and object plural markers reversed, can both mean 'we passed by with them and sold' or 'we passed by and sold with them'. The affixes capable of variable order are all derivational, with one exception, the object plural person agreement prefix *kaa-* The reversed order most often occurs with adjacent affixes, but is sometimes found with affixes several positions apart. The type of variability permitted differs pre- and post-root, with much greater freedom to reverse order found among the prefixes, as will be detailed separately in the following subsections. I class an affix as capable of variable order if it can appear on the rootward side of an inner affix. If it does not have that ability, even if other outer affixes can move to its inner side, I count it as having fixed or scopal order. This is found, for example, with the dative (suffix position 3), which cannot appear on the root side of position 1-2 suffixes, but can be separated from the stem by the DOWN morpheme (position 4) or the ambulative (position 5). No phonological factors have been found to influence affix order; most of the prefixes involved have the shape CVV-.

Languages characterized by such non-semantic variability in affix ordering are rare in the literature, but several researchers have recently reported cases in other languages of Mexico (see Beck 2007a for the closely related Upper Necaxa Totonac; Caballero 2008 for Choguits Rarámuri; Kim 2009 for San Francisco del Mar Huave) and in a Sino-Tibetan language (Bickel 2007).

Section 6.2.1 will describe the methodology used to elicit the affix permutations, and §6.2.2 will discuss some general conditions on variability; then, as no affix varies between prefixal and suffixal status, §6.2.3 will cover prefix variability separately, and finally, §6.2.4 will discuss suffix variability.

6.2.1 Methodology. Because the variable affix order described here is unusual cross-linguistically, and because the data-gathering techniques employed were necessarily somewhat problematical, I will describe my methodology in detail.

I became aware of the possibility of variation when attempting to discover the exact order of the many verbal affixes. A consultant would provide me a verb with the affixes in one order, either during elicitation or in a narrative, and later give the same verb with the affix order reversed, or one consultant would give a different affix order than another consultant. Occasionally a speaker would spontaneously offer two different forms as a translation of the same Spanish phrase, for example *h-**kii-kaa**-čeqeé-w* (1SUB.exc-**RT-LOC**-wash-1pl) and *h-**kaa-kii**-čeqeé-w* (1SUB.exc-**LOC-RT**-wash-1pl) (4,82 magc) for 'we went, cleaned the place and returned', with the round-trip and locative morphemes reversed. When I asked about the discrepancy, they would often tell me 'es igual'—'it's the same'. This led me to try to discover the limits of affix variability.

Because of the large number of verbal morphemes that may co-occur, and the extremely low probability of all possible combinations occurring in natural speech or narratives available to me, I decided to systematically elicit every combination of semantically compatible affix pairs, both derivational and inflectional. I therefore prepared two Spanish sentences for every affix pair that would elicit the target combination, and separately asked two consultants, JSF and MJL, to interpret one set of sentences in FM Totonac. Many of these attempts failed to elicit the target, but eventually I gathered two sentences for every affix combination. Then, on different days, I presented each of these Totonac verbs with the target affixes in reverse order separately to JSF and MJL, and asked them what they meant. That is, each speaker was asked about all of the sentences elicited from both. When context had been necessary to elicit the original sentence, I provided that context to the consultant when asking for the meaning. Later I did the same with a third set of sentences and the same two consultants, and less systematically with many other verbs and one or the other speaker. I also presented each of them with the verbs with reverse order affixes that I found in free narratives and asked their meaning. Whatever their response to the reverse affix order verb, I then asked about the equivalent verb with the affixes in standard order. This process was accomplished over several field visits of 2-5 weeks in length in 2006 and 2007. I also elicited some forms with three or more affixes in various free orders, but I found the results questionable, with consultants rapidly losing their ability to judge the grammaticality of such forms. I therefore excluded such forms from the results reported here. I did occasionally find a spontaneous form in a narrative with permutations involving more than two affixes, such as:

1) *kaataalaaliipín'ą̣*
   /**kaa-taa-laa-lii**-pin-aa-[cg]/
   OBJ.pl-COM-REC-INST-go2-IMPF-2SUB.sg
   'you get along with them'   (5,177 mjl)

   (standard order would be:
   OBJ.pl-REC-INST-COM)

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I categorized the responses of each consultant for each sentence into four classes, whether the verbs with normal and reverse affix order were: 1. grammatical and with the same meaning; 2. ungrammatical but easily interpretable with the intended meaning; 3. interpretable with a different meaning (usually due to affix homonymy, which is rampant in the language); or 4. uninterpretable. My consultants' responses were not always consistent from day to day, with each other, or with different verb stems with the same affix pair. However, whenever I received the 1. grammatical/same meaning response more than twice for a particular affix combination, and no 3. interpretable/ different meaning or 4. uninterpretable responses, I counted that reverse order of affixes as grammatical. The results are detailed in subsections §6.2.4 and §6.2.5.

The flaws in this method of data collection are obvious, particularly using mostly elicited material and only two consultants for the bulk of the work. There is undoubtedly a correlation between the difficulty of obtaining good data of this kind and the rarity of documented instances of the variable ordering phenomenon cross-linguistically. It is clear that an unusual phenomenon is at work here, and a great deal more research to elucidate the scope and nature of free affix order is needed. It will be extraordinarily time-consuming to do the work, but what is needed is a massive collection of free narrative to capture naturally occurring affix pairs, as well as the elicitation and testing of the grammaticality of reverse order forms with a much larger number of speakers. In addition, free affix ordering with three or more affixes deserves study; although I discarded my elicited results in this area because of methodological problems, such forms do occur naturally on occasion.

6.2.2 Limitations on variable affix ordering. Several factors seem to inhibit the reordering of affixes, the clearest one being ambiguity avoidance. Many homophonous affixes exist in FM Totonac, including *ɬaa=*, NEG and relativizer 'where'; *kaa-*, object plural and locative; *ta-* 3SUB.plural and inceptive/middle voice; *puu-*, instrumental and locative; *maq-*, associative, causative, and BPP 'body'; *maqa-*, causative and BPP 'face'; *lak-* BPP 'leg' and distributive; -*nii*, dative and perfective aspect (short form) and –*ni* dative (short form) and 2 object. My consultants would often find reversing the order of affixes less felicitous when an affix thereby appeared on the same side of another affix as a homophonous one. That is, given standard order X_1YZX_2, affix X_1 is less likely to move to the right of Y given the homophonous affix X_2 with which it might be confused, depending on the semantics of the entire stem. For example, associative *maq-* (position 6), would be likely to be interpreted as the body part prefix if it moved rootward of position 5, and the interpretation of it as the associative would be rejected; similarly if object plural *kaa-* (position 11) appeared inward of instrumental *lii-* (position 8), thus becoming confusable with the homophonous locative.

Another factor seemed to be the semantic likelihood of an affix appearing with a certain root; if a body part prefix commonly appeared with a certain verb root like *skaak* 'dry', then *maq-* would be more likely to be interpreted as the BPP 'body' with that root than as the associative, especially if it occurred closer to the root than when in standard order. Other factors undoubtedly exist that limit or facilitate the order reversal of affixes; this is an area that deserves further study.

6.2.3 Variable order among prefixes. The prefixes in the variable order zone include the associative (position 6), the comitative (7), the instrumentals (8), the Round-trip and Pass-by morphemes (9), and the reciprocal (10), all derivational; and one inflectional prefix from position 11, the plural object marker *kaa*- (all verbal morphemes are described in Chapters 4 and 5). The other prefixes in position 11 have a strictly fixed order. This set of prefixes from position 6 to 11 generally occurs in the order given in Table 6.2, but they sometimes take a reversed order with no difference in semantics. This is true of most adjacent pairs of these prefixes, and at times even of non-adjacent prefixes. Even when the affixes exist in a scopal relationship, the reversal of order cannot be used to indicate scope. Some free order pairs are more robust, able to occur in reversed order with almost any stem; others are judged grammatical only with certain stems. The sub-sections below provide more detail on the ordering possibilities in this zone.

Table 6.2 Prefix ordering zones

14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Fixed	Fixed	Fixed	Fixed/Var	Variable	Variable	Variable	Variable	Variable	Scopal	Fixed	Scopal	Scopal	Fixed	
Mood/Tense	Person	Counterexpectational	Person	Reciprocal	Associated Motion	Instrumental	Comitative	Associative	Causative	Locatives	Body Parts	Middle Voice/Inchoative	Distributive	ROOT

6.2.3.1 Position 11 Object plural *kaa*-. This inflectional prefix can occur in reverse order with Round-trip *kii*- with almost any stem, and with Pass-by *tii*- in some cases, both in position 9. (It cannot co-occur with the adjacent reciprocal in position 10, because only subject affixes are found on reciprocalized verbs.) The object plural marker is also sometimes considered grammatical in reverse order with instrumental *lii*- in position 8, with the comitative in position 7, and with the associative *maq*- in position 6, with decreasing frequency as the distance from position 11 increases. It is thus the most mobile of the affixes, able to take free order, at least in some contexts, with all the other prefixes of this zone.

The placement of this inflectional prefix in a position with two other morphemes which do not engage in variable ordering requires a few words of justification. In templatic morphology, position slots are useful in describing non-semantic blocking of one affix by another. In this case, OBJ.pl *kaa*- blocks the 3rd person plural subject marker *ta*-, and is blocked by 2/1 *laa*-, which appears when a 2nd person subject verb has a 1st plural object. In neither case is the suppression semantically driven. Thus these three prefixes, which generally occur in the same place in the pre-verbal string of affixes, are included in a single position, despite the different ordering behavior.

2) *kkaakiilaknikwilíiw*
/k-**kaa-kii**-lak-nik-wilii-wa̧/
1SUB.exc-**OBJ.pl-RT**-DIST-hit-seat-1pl

kkiikaalaknikwilíiw
/k-**kii-kaa**-lak-nik-wilii-wa̧/
1SUB.exc-**RT-OBJ.pl**-DIST-hit-seat-1pl
'we went, beat them with cudgels and returned'
(7,104 jsf)

3) *kaaliitúksl̥i*
/**kaa-lii**-tuks-l̥i/
OBJ.pl-INST-poke-PFTV

liikaatúksl̥i
/**lii-kaa**-tuks-l̥i/
INST-OBJ.pl-poke-PFTV
'he provoked them with (a pistol)'
(8,1 jsf)

4) *nakinkaataayaawáy'a̧*
/na-kin-**kaa-taa**-yaawa-aa-[cg]/
FUT-1OBJ-**OBJ.pl-COM**-stand-IMPF-2SUBsg.

nakintaakaayaawáy'a
/na-kin-**taa-kaa**-yaawa-aa-[cg]/
FUT-1OBJ-**COM-OBJ.pl**-stand-IMPF-2SUBsg.
'you're going to stand me with them' (9,7 mjl)

5) ***kaamaq****maawiiyáa*
/**kaa-maq**-maawii-áa/
OBJ.pl-ASS-feed-IMPF

maqkaa*maawiiyáa*
/**maq-kaa**-maawii-áa/
ASS-OBJ.pl-feed-IMPF
'we help them feed the others'   (8,38 jsf)

6.2.3.2 Position 10 Reciprocal *laa-*. The reciprocal is much less robustly capable of free variation in order, but is sometimes found acceptable in certain contexts in pair-wise variation with the adjacent Round-trip and Pass-by morphemes, as well as with instrumental *lii-* in position 8.

6) *ta****laa-kii****'akskáṭi̧*
/ta-**laa-kii**-'ak-skát-li̧/
3SUB.pl-**REC-RT**-HEAD-louse

*ta****kii-laa****'akskáṭi̧*
/ta-**kii-laa**-'ak-skáti-li̧/
3SUB.pl-**RT-REC**-HEAD-louse
'they went, deloused each other and returned' (7,89 jsf)

7) *k****laa-tii****spáɫw̧ą*
/k-**laa-tii**-spaɫ-w̧ą/
1SUB.exc-**REC-PASS**-caress-1pl

*k****tii-laa****spáɫw̧ą*
/k-**tii-laa**-spaɫ-w̧ą/
1SUB.exc-**PASS-REC**-caress-1pl
'we passed by and caressed each other' (8,103 jsf)

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8) *ta**laalii**škilí n kiw'į̥*

/ta-**laa-lii**-škili-aa kiw'į/

3SUB.pl-**REC-INST**-scratch-IMPF stick

*ta**liilaa**škilí n kiw'i*

/ta-**lii-laa**-škili-aa kiw'į̥/

3SUB.pl-**INST-REC**-scratch-IMPF stick

'they scratch each other with sticks' (7,89 jsf)

6.2.3.3 Position 9 Round-trip *kii-*. The round-trip morpheme is also quite mobile, occurring in free order very robustly with object plural *kaa-* (as shown in example 1) and instrumental *lii-*, and sometimes with instrumental *puu-*, the comitative and the associative.

9) *k**kiilii**lakakíɫ̥ni*

/k-**kii-lii**-laka-kiɫni/

1SUB-**RT-INST**-FACE-scold

*k**liikii**lakakíɫ̥ni*

/k-**lii-kii**-laka-kiɫni/

1SUB-**INST-RT**-FACE-scold

'he went and scolded him for that'

(8,150 jsf)

10) *na**kiipuu**laaqtsína teleskópyo*

/na-**kii-puu**-laaqtsin-aa-[cg] telescopyo/

FUT-RT-LOC-see-IMPF-2SUB.sg telescope

'you will go see it with a telescope'

*na**puukii**laaqtsín'ą teleskópyo*

/na-**puu-kii**-laaqtsin-aa-[cg] telescopyo/

FUT-**LOC-RT**-see-IMPF-2SUB.sg telescope

'you will go see it with a telescope'   (8,103 jsf)

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11) *kaa**kiitaa**tantɬíw*

/kaa-**kii-taa**-tantɬi-wą̌/

OBJ.pl-**RT-COM**-dance-1pl

*kaa**taakii**tantɬíw*

/kaa-**taa-kii**-tantɬi-wą̌/

OBJ.pl-**COM-RT**-dance-1pl

'we went and danced with them'   (8,151 jsf)

12) *ta**kiimaq**'ákti*

/ta-**kii-maq**-akti-lį̌/

3SUB.pl-**RT-ASS**-lower-PFTV

'they went and helped others descend'

*ta**maqkii**'ákti*

/ta-**maq-kii**-akti-lį̌/

3SUB.pl-**ASS-RT**-lower-PFTV

'they went and helped others descend'   (8,96 mjl)

6.2.3.4 Position 9 Pass-by *tii-*. Pass-by *tii-* is much less commonly found in free variation with other prefixes than *kii-*, with which it is mutually exclusive, hence is placed in the same slot. It occasionally appears in reverse order with the object plural *kaa-*, as in example 13, and with reciprocal *laa-* (see example 7). When *tii-* was given in reverse order with an outer prefix, speakers tended to interpret it as the counterfactual *ti-*, no matter how careful my pronunciation of the long vowel.

13) *k**kaatii**taastaanáw*

/k-**kaa-tii**-taa-staa-nan-wą̌/

1SUB.excl-**OBJ.pl-COM**-sell-HAB-1pl

'we passed by and sold with them'

*k**tiikaa**taastaanáw*

/k-**tii-kaa**-taa-staa-nan-wą̌/

1SUB.excl-**COM-OBJ.pl**-sell-HAB-1pl

'we passed by and sold with them'   (9,5 mjl)

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6.2.3.5 Position 8 instrumentals. As already mentioned, instrumental *lii-* can occur in free order at least in some contexts with the variable prefixes of positions 9, 10 and 11, as shown in examples 3 (plural object-*lii-*), 8(reciprocal-*lii-*), and 9(round-trip-*lii-*), and with the comitative (example 14) and the associative (example 15) prefixes. The instrumental *puu-* is far less likely to appear in reverse order, doing so only occasionally with the round-trip prefix (example 10), the comitative (example 16) and the associative (17). The factors influencing variability in ordering are discussed in more detail in §6.2.2, but it seems that the possibility of confusing instrumental *puu-* with locative *puu-* of position 4 may usually prevent it from moving to the rootward side of prefixes in positions 6 and 7. The semantics of the two etymologically related prefixes, one referring to an instrument with an interior, the other to a location with an interior, are difficult to tease apart with some stems.

14) *kaaliitaakíɬtɬi*
   /kaa-**lii-taa**-kíɬtɬi-li̥/
   OBJ.pl-**INST-COM**-sing-PFTV

   kaataaliikíɬtɬi
   /kaa-**taa-lii**-kíɬtɬi-li̥/
   OBJ.pl-**COM-INST**-sing-PFTV
   'he sang (a song) with them'   (8,136 mjl)

15) *liimaqlakaštláwa*
   /**lii-maq-**laka-štláwa-li̥/
   INST-ASS-FACE-fix-PFTV

   maqliilakaštláwa
   /**maq-lii-**laka-štláwa-li̥/
   ASS-INST-FACE-fix-PFTV
   'he fixed it with others with (an instrument)' (8,151 jsf)

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16) *kaa**puutaa**láaqtsi*

/kaa-**puu**-**taa**-laaqtsi-lị̃/

OBJ.pl-**INST**-**COM**-see-PFTV

*kaa**taapuu**láaqtsi*

/kaa-**taa**-**puu**-laaqtsi-lị̃/

OBJ.pl-**COM**-**INST**-see-PFTV

'he let them use (an instrument) to see it' (8,103 jsf)

17) *k**puumaq**waayán kučáɾa*

/k-**puu**-**maq**-waayan-aa kučaɾa/

1SUB-**INST**-**ASS**-eat-IMPF spoon

*k**maqpuu**waayán kučáɾa*

/k-**maq**-**puu**-waayan-aa kučaɾa/

1SUB-**ASS**-**INST**-eat-IMPF spoon

'I eat with others with a spoon'   (8,136 mjl)

It should be noted that both instrumentals may co-occur on a verb, usually when *puu-* is licensing an instrument and *lii-* is marking the cause of the action. Either order is allowable in this circumstance, although *lii-puui* is preferred (example 18). (This contrasts with the situation of the causatives in position 5 in the fixed/scopal order zone. The two causatives, productive *maa-* and limited-use *maqa-* (used with verbs of partially voluntary bodily sensations and emotions) may co-occur, but when they do, the order is fixed, with *maa-* preceding *maqa-*: *maa-maqa-peekwii-lị̃*, **maqa-maa-peekwii-lị̃* CAUS-CAUS-scare-PFTV 'he made me scare her'.)

18) *kliipuupuukiinán in kimaa'áqootị̃*

/k-lii-puu-puukii-nan-aa kin-maa'aqootị̃/

1SUB-INST-INST-HAB-IMPF 1POSS-gourd.recipient

'I collect money for (a cause) in my gourd'. (10,31 jsf)

6.2.3.6 Position 7 comitative *taa-*. This affix reverses order with the outer prefixes in positions 8-11 in certain contexts, as is seen in examples 4 (OBJ.pl-*taa-*), 11 (RT-*taa-*), 14 (INST *lii-taa-*), 16 (INST *puu-taa-*). It does not co-occur often with the associative of position 7, but when it does, either order is grammatical. A spontaneous example of the less frequent order is *maq-taa-wilá* (ASS-COM-sit) 'together they carry it' (1,96 magc). Interestingly, the comitative is also

able to appear to the right of the causative, although the causative is not included in the variable zone by my definition.

19) *taamaqtantɬí*
/**taa-maq-**tantɬi-aa/
COM-ASS-DANCE-IMPF

maqtaatantɬí
/**maq-taa-**tantɬi-aa/
ASS-COM-DANCE-IMPF
'she dances with him along with others'   (9,11 jsf)

20) *kintaamaapaasták*
/kin-**taa-maa-**paastak-aa/
1OBJ-**COM-CAUS-**remember-IMPF

kimaataapaasták
/kin-**maa-taa-**paastak-aa/
1OBJ-**CAUS-COM-**remember-IMPF
'you and he make me remember it' (8,3 jsf)

6.2.3.7 Position 6 associative *maq-*. As exemplified in earlier subsections, *maq-* may sometimes appear in reverse order with many of the outer prefixes of this zone: with the object plural (example 5); with round-trip (example 12); with the instrumentals in examples 15 and 17, and with the comitative (example 19). It may also vary its order with the causative in position 5.

21) *maqmaaskuxúu*
/**maq-maa-**skux-uu/
ASS-CAUS-work-IMPF

maamaqskuxúu
/**maa-maq-**skux-uu/
CAUS-ASS-work-IMPF
'he makes him work for money (with others)'   (7,156 jsf)

6.2.3.8 Summary of variable order prefixes. Most of the prefixes in this zone may occur in reverse order with an adjacent affix, at least with certain stems (determined both by the root and the other affixes). The most robustly variable prefixes are the plural object marker *kaa-* and round-trip morpheme *kii-*, both on the outer edge of the zone, which may reverse order with several non-adjacent prefixes. The adjacent comitative and associative prefixes seem to occur in either order grammatically. In all cases the frequency of free order of paired prefixes diminishes as the distance between the slots they occupy increases. Prefixes are also less likely undergo permutation when this might lead to confusing them with a homophonous affix.

6.2.4 Variable order among suffixes. The free ordering of suffixes in the variable order zone is much different from that of prefixes. The affixes involved include several of those from suffix position 4 through 10: DOWN (position 4), the ambulative (5), the iterative (7), the desiderative (8), the totalitive (9), and MEANWHILE (10). However, the frequency of variable order is much less among the suffixes, and much more idiosyncratic. That is, some adjacent suffixes are not capable of reverse order, while others in slots much farther apart are. In addition, the progressive aspect markers in position 6, the only inflectional markers in this zone, cannot move rootward, thus meeting my definition of fixed affixes.

Table 6.3 Suffix ordering zones

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Fixed	Fixed	Fixed	Variable	Variable	Fixed	Variable	Variable	Variable	Variable	Fixed	Fixed	Fixed	Fixed
Transitivizer	Indefinite Object	Dative	Down	Ambulative	Progressive	Iterative	Desiderative	Totalitive	Meanwhile	Reflexive	Aspect	Deictics	Aspect/Person

6.2.4.1 Variable order and suffix positions 4 and 5. Beginning with the suffixes closest to the fixed zone adjoining the root, DOWN (position 4) and the ambulative (position 5) may both occur inside the dative, and the ambulative may also preceed DOWN. A factor in the ability of DOWN to appear inside the dative may be that it is usually part of derived forms with non-compositional semantics, as in example 22, where *'ak-tlawa-mii* (HEAD-do-DOWN) means 'exploit, mistreat'. It seems that when *–mii* occurs inside dative *–nii*, the verb is being interpreted as a lexicalized stem, and when the suffixes follow the standard order the morphemes are seen as separable elements in a string. This is confirmed by another example provided spontaneously in which *–mii* occurs inside the habitual suffix *–nan* of suffix position 2: *'ak-tlawa-mii-nán* 'he exploits habitiually, he is a cacique' (7,18 jsf).

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One of my consultants perceived a semantic difference in the ordering of the dative and the ambulative that no other speakers reported: in certain root-affix combinations, with ambulative –*tiiła* in its standard order outside the dative, he read –*tiiła* in its concrete meaning of action while walking along (example 23), and when the ambulative preceded the dative, he interpreted the former in its metaphorical or aspectual sense of an action done intermittently over a period of time (example 24) (see §5.3.2.4). I was unable to determine the factors on which the variation depended. The possibility of non-scopal, semantically-linked variation in affix order merits further study.

22) *šta'aktlawaniimíi*
   /š-ta-ak-tlawa-**nii-mii**-aa/
   PAST-3SUB.pl-HEAD-do-**DAT-DOWN**-IMPF

   šta'aktlawamiiníi
   /š-ta-ak-tlawa-**mii-nii**-aa/
   PAST-3SUB.pl-HEAD-do-**DOWN-DAT**-IMPF
   'they were exploiting him for him'   (7,12 jsf)

23) *nakkaapuutleqeeniitiiłá*
   /na-k-kaa-puutleqee-**nii-tiiła**-aa/
   FUT-1SUB-OBJ.pl-count-**DAT-AMB**-IMPF

   nakkaapuutleqeetiiłaníi
   /na-k-kaa-puutleqee-**tiiła-nii**-aa/
   FUT-1SUB-OBJ.pl-count-**AMB-DAT**-IMPF
   'I'm going to go along counting them (cattle) for him'   (9,8 mjl & 9,11 jsf)

24) *tanqsnoqniitiiłá*
   /tan-snoq-**nii-tiiła-**aa/
   REAR-whip-**DAT-AMB-**IMPF
   'he was going along rear-whipping (someone's horse)'   (7,6 jsf)

   tanqsnoqtiiłaníi
   /tan-snoq-**tiiła-nii-**aa/
   REAR-whip-**AMB-DAT-**IMPF
   'he was intermittently rear-whipping (someone's horse)'   (7,6 jsf)

6.2.4.2 Variable order and suffix position 6. Occupying suffix position 6, roughly in the center of a string of derivational slots, are the progressive aspect markers. (The markers of the three other major aspects are found on the right periphery among other inflectional suffixes.) The progressive aspect markers cannot appear inside any of the more inner suffixes. This inability to move rootward, which I define as fixed order, groups them with most other inflectional affixes, in spite of their occurrence in the midst of variable order derivational suffixes. It will be seen in §6.2.4.3 that one outer affix, totalitive *–qo'o,* may occur rootward of progressive *-maa.*

6.2.4.3 Variable order and suffix positions 7 and 8. While I have no attested cases of the iterative (7) or the desiderative (8) preceding the adjacent progressive markers, they do sometimes occur preceding the ambulative of suffix position 5. The desiderative also sometimes precedes the iterative.

25) *škaalaqapas**tiiłakutún***

/š-kaa-laqapas-**tiiła-kutun**-aa/

PAST-OBJ.pl-recognize-**AMB-DES**-IMPF

*škaalaqapas**kutuntiiłá***

/š-kaa-laqapas-**kutun-tiiła-**aa/

PAST-OBJ.pl-recognize-**DES-AMB-**IMPF

'he wanted to go along recognizing them'   (8,104 jsf)

26) *škiti**tiiłapará***

/škiti-**tiiła-para**-aa/

crush-**AMB-ITER**-IMPF

*škiti**paratiiłá***

/škiti-**para**-**tiiła-**aa/

crush-**ITER-AMB-**IMPF

'again he goes along cruhing it'   (8,97 mjl)

27) *šaktsaqsa**parakutún***

/ša-k-tsaqsa-**para-kutún**-aa/

PAST-1SUB-try-**ITER-DES**-IMPF

*šaktsaqsa**kutunpará***

/ša-k-tsaqsa-**kutun**-**para-**aa/

PAST-1SUB-try-**DES**-**ITER**-IMPF

'I wanted to try again'   (8,98 mjl)

6.2.4.4 Variable order and suffix positions 9 and 10. The totalitive *–qo'o* in position 9 and 'meanwhile' *–qe'e* in position 10 show rather idiosyncratic variability in ordering. I have cases of the totalitive preceding the adjacent desiderative of position 8, and none preceding position 7. However, it occasionally occurs inside the progressive suffix (position 6). The MEANWHILE morpheme *–qe'e* in position 10 may also precede the desiderative (position 8), and I have one example of it occurring rootward of the ambulative (5). It is not attested preceding the adjacent totalitive, but since they rarely co-occur, this is perhaps not surprising.

28) *šoqonii**kutunqoo**yáan*

/šoqo-nii-**kutun**-**qoo-**aa-ni̥/

pay-DAT-**DES**-**TOT**-IMPF-2OBJ

*šoqonii**qookutun**áan*

/šoqo-nii-**qoo**-**kutun**-aa-ni̥/

pay-DAT-**TOT**-**DES**-IMPF-2OBJ

'he wants to finish paying you'   (8,105 jsf)

29) *tatamaqštoqqoomáana lakkarastiánu*

/ta-ta-maq-štoq-qoo-maana lak-karastianu/

3SUB.pl-INC-BODY-leave-TOT-PROG3 PL-person

'the people were finishing getting together'   (8,74 mjl)

30) *taaskuxkutunqé'e̥*

/taa-skux-kutun-qee-aa/

COM-work-DES-MEAN-IMPF

taaskuxqeekutún

/taa-skux-qee-kutun-aa/

COM-work-MEAN-DES-IMPF

'he wants to work first'   (8,159 mjl)

31)   *maqatawaqa**tiiłaqé'ę***
        /maqa-tawaqa-**tiiła-qee**-aa/
        HAND-practice-**AMB-MEAN**-IMPF

        *maqatawaqa**qeetiiła***
        /maqa-tawaqa-**qee**-**tiiła-**aa/
        HAND-practice-**MEAN**-**AMB**-IMPF
        'he comes along hand-practicing in the meantime'   (8,159 mjl)

6.2.4.5 Summary of suffix order variability. The derivational suffixes in positions 4 through 10 are much less capable of systematic variability in ordering than the prefixes. The ambulative in position 5 acts most like the prefixes, with well-attested occurrence preceding two of the rootward suffixes. Most of the other suffixes have idiosyncratic permutation patterns, with the occasional possibility of reverse order with other suffixes several positions distant. In the middle of this zone of derivational suffixes is a set of morphemes marking the progressive aspect, which fail to move rootward, in this behaving like most other inflectional affixes.

6.2.5 Summary of affix order variability. The FM Totonac verb is divided into zones based on affix ordering facts, with inner and outer zones of fixed order on each side of the root, and middle zones of optional variable order on each side. The affixes involved in non-scopally conditioned variable order are all derivational, with the exception of the plural object prefix. They occur most often in a 'standard', or most frequent order shown in Appendix B, but are considered grammatical in an optional reverse order, with no semantic difference. The grammatical 'goodness' of reversed affix order exists on a cline, with some speakers showing greater tolerance for it, and speaker-to-speaker and day-to-day variation in its acceptability. The morphology and semantics of the entire stem determines the possibility of variable order, with ambiguity avoidance playing a role in limiting its occurrence.

6.3 Blocking. Another phenomenon of interest that provides information on the structure of the FM Totonac verb is long distance blocking of some verbal components by an inflectional prefix. As described in §4.8.1.2, second person subject is marked by glottalization of the final stem consonant or by affixation, and by suppletion of certain roots and inflectional and derivational affixes (summarized in Table 4.7). Thus verbs that contain suppleting roots and/or affixes will have multiple exponence of the 2nd person subject. However, all of this subject marking is suppressed in the presence of the 2/1 prefix *laa-*, associated with a second person subject and first person plural object (see §4.8.2.1), as shown in Table 6.4. This blocking of both morphemes and realizational morphology across the span of the verb from root to final suffix position is unusual. The contribution of these facts to an understanding of verbal structure is discussed in §6.5.2.2.

Table 6.4   2nd subject morphology suppressed by 2/1 *laa-*

P11	0	S4	S6	S13	S14
2/1	ROOT*	DOWN*	Progressive*	Deictics*	2 Subject
laa-	*paa* (*maa*) *pin* (*'an*) *tan* (*min*) *qašpat* (*qašmat*)	*-pii* (*-mii*)	*-paa* (*-maa*)	*-čitạ* (*-čị*) *-pị* (*-ča'a*)	*-ṭi/*[cg] 2sg *-titị* 2 pl

*Suppletive roots and affixes (with non-2nd subject forms)

6.4 Interpenetration of zones. A standard model well attested cross-linguistically for hierarchically structured verbs has various morphophonological processes confined to and definitive of particular stems or subzones of the verb. In Filomeno Mata Totonac this situation is the exception rather than the rule, found only with the causativized stem. Generally the major zones (defined by affix ordering possibilities) and subzones (spelled out by morphophonology and morphosyntax) tend to interpenetrate into neighboring zones in ways that will be discussed in the second half of this chapter. This tendency has already been apparent in certain facts which reveal that even inflection and derivation are not confined to cleanly separable areas of the verb: a single inflectional prefix on the edge of the derivational zone, OBJ.pl *kaa-*, participates in variable affix ordering; and a set of inflectional suffixes, the progressive aspect markers, occur in the middle of a string of derivational affix positions. (Neither can affixes and clitics be clearly distinguished from one another; see §6.5.3.2). It is possible that this fuzziness at zone boundaries is related to the fact that FM Totonac shows clear signs of both templatic and hierarchical structure. This may be typical of an agglutinating language with a diachronically nascent hierarchical structure. Far too little has yet been done on the reconstruction of proto-Totonac-Tepehua to say whether this is the case.

6.5 Evidence of verb structure. The rest of this chapter will address in detail the phenomena that diagnose some degree of hierarchy in the FM Totonac verb. The major divisions will be first the root with the fixed affix order zones on either side in §6.5.1, which comprises the causativized stem; then the next larger structure that includes the variable order zones of mostly derivational morphemes in §6.5.2; and finally the full verb with the outer zones of fixed order affixes and clitics (which are often difficult to distinguish from one another) in §6.5.3. Within and sometimes shading across these areas are subzones defined by various phonological and morphological processes that apply only across certain subdivisions of the verb.

6.5.1 Zone 1. The inner fixed/scopal order zone spans the first five prefix positions, the root, and the first three suffix positions, as depicted in Table 6.5.

Table 6.5   Zone 1: fixed or scopal order

5	4	3	2	1	0	1	2	3
Causatives	Locatives	Body Parts	Middle Voice/Inceptive	Distributive	ROOT	Transitivizer	Indefinite Object/Habitual	Dative

Within this area the order of all affixes is strictly fixed, with one exception: the body part prefixes of position 3, and the inceptive and causative prefixes in positions 2 and 5 respectively, may participate in variable order that reflects semantic scope. Inceptive *ta-* and causative *maa-* co-occur with body part prefixes most often in combination with the bound positionals or the postural verbs (see §4.3.1). In these cases, the order BPP-INC/CAUS-root indicates something moving in/on/out of a body part, while INC/CAUS-BPP-root indicates a body part moving in/on/out of a position.

32)   *kamaqatawíla mirelóh*
       /ka-maqa-ta-wila mi-ɾelox/
       IRR-HAND-INC-seated 2POSS-watch
       'put your watch on your hand!'

33)   *tatúuxuu n čúčuṭi̧*
       /ta-tuu-xuu-li̧ čúčuṭi̧/
       INC-FOOT-in-PFTV water
       'he stuck his foot in the water'

34) *ktalakáštu*

/k-ta-laka-štu-lị̥/

1SUB-INC-FACE-out-PFTV

'I stuck my head out (the window)'

 klakatáštu

/k-laka-ta-štu-lị̥/

1SUB-FACE-INC-out-PFTV

 'I got it out of my eye'

35) *maakinkánuu*

/maa-kinka-nuu-lị̥/

'she took it out of his nose'

/kinkamáanuu/

/kinka-maa-nuu-lị̥/

'she took his nose out of (the hole)'

Unusually for this language, Zone 1 is coterminous with a subzone defined by the causativized stem, to be discussed in the next subsection. Following that, another type of subzone delineated by harmony processes will be covered.

6.5.1.1 Causativized stem. Spanning the entire inner fixed/scopal order zone is a subzone defined by causativization constructions. The causative is actually a circumfix; while some verbs may be causativized by causative *maa-* in P5 alone, or transitivized by transitivizer *–ii* in S1 alone, many verbs require both affixes acting together for causativization (see §5.4.1). In addition, when certain intransitive and most transitive verbs are causativized, dative *–nii* (suffix position 3) is required to mark a new or second object, as in *linkš* 'he jumps' and *maa-linkš-níi* 'he makes him jump'. If this entire span from P5 to S3 is considered the causativized subzone, then it is coterminous with Zone 1, which can be defined as the causativized stem.

6.5.1.2 Harmony subzone. In FM Totonac very few assimilatory morphophonological processes occur at boundaries where morphemes are brought together. With one exception, all such processes occur within the inner harmonic subzone posited here, pointing to a tighter bonding of morphemes in this inner part of the verb. The zone includes the first three prefix positions and the first two suffix positions as shown in Table 6.6, and the processes are dorsal harmony pre-

verbally, and vowel harmony and vowel coalescence post-verbally. No evidence exists to determine if it is the harmonic prefixes or suffixes that attach to the verb root first.

Table 6.6 Inner harmonic zone

3	2	1	0	1	2
Body parts	Inceptive/Middle Voice	Distributive	ROOT	Transitivizer	Indef. Object/Habitual

6.5.1.2.1 Suffix vowel harmony. Marking out the first of the subzones to be considered is root-to-suffix vowel harmony, undergone only by the transitivizer *–ii* and the indefinite object *–nan*. (Actually, there is a single lexicalized case of vowel harmony of CAUS *maa-* with the positional root *xuu* 'in vertically', *muuxúu* 'he inserts it'; note that this also occurs within the causativized stem/Zone 1.) For some speakers, this is a regular and productive process, with a few verbs, however, lexicalized with a non-harmonic transitivizer or indefinite object marker. For other speakers, the opposite situation holds: certain verbs seem to be lexicalized to take the harmonic affixes, but generally the *–ii* and *–nan* forms are employed (see §2.6.4.2).

36) Examples of vowel harmony in TRAN *–ii* and HAB *-nan*

    maa-kut-úu   'he removes it'

    maa-kaks-áa   'he shuts him up'

    čuku-nún   'he drills for a living'

    neqe-nín   'he prepares a field for planting'

One other process occurs only[7] within this inner subzone: vowel coalescence. Instead of the glottal stop or glide epenthesis found in every other case of hiatus, the affixation of the transitivizer suffix to a vowel-final verb root results in the loss of the final root vowel.

6.5.1.2.2 Prefix dorsal harmony. On the prefix side of the verb, distributive *lak-* in position 1 and some of the more than 30 body part prefixes (BPPs) in position 3 regularly undergo dorsal

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[7] One possible additional case is the resolution of the three mora string of NEG *łaa=* and NOT YET *ał=* into the two mora *łaał=* on the leftmost edge of the verb.

harmony with the root (Table 2.9 contains a list of such BPPs). A uvular segment anywhere in the verb root results in the affixation of the uvular allomorph of a harmonizing prefix, although not all body part prefixes with velar stops have uvular allomorphs (described more fully in §2.6.2.1). The intervening prefix position 2 contains only the inceptive or middle voice marker *ta-*, which of course cannot undergo dorsal harmony.

37)   Examples of dorsal harmony with the distributive and BPPs

ta-lak-čawá   'it closes'

ta-laq-čoqó   'he strolls around'

maka-'án   'he throws it'

maqa-lóonq   'his hands are cold'

6.5.1.2.3 Harmony summary. Dorsal harmony and the vowel harmony and coalescence processes among the few affixes closest to the verb root seem to mark out a subzone of tightly bound morphemes within the larger Zone 1. As is often the case in FM Totonac, a zone picked out by one type of evidence conforms only partially with other zones. Outside this harmonic subzone, verbal morphemes do not undergo morphophonological changes when brought together at word edges. The harmony sub-zone may be at the historical core of the FM Totonac verb.

6.5.2 Zone 2. Zone 2 includes the causativized stem plus the variable affix ordering areas on either side (discussed in §6.2). It begins with one of the three person agreement prefixes of P11 and continues to suffix position 10, thus encompassing almost all, and almost only, the verbal derivational morphemes, as depicted in Table 6.7. The exceptional morphemes which prevent this from being denominated the 'derivational stem' are *kaa-*, the inflectional marker just noted in P11 and the progressive aspect suffixes in S6, both included in this derivational zone; and the reflexive in S11 and the deictics in S13, derivational affixes excluded from the zone. Two subzones are spelled out within the variable affix order area, defined primarily by morphosyntactic evidence and blocking, as described in the following subsections.

Table 6.7 Zone 2 Variable affix ordering

11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10
Person	Reciprocal	Round trip/Pass by	Instrumentals	Comitative	Associative	Causatives	Locatives	Body Parts	Middle Voice/Inc.	Distributive	ROOT	Transitivizer	Habitual/Indef.Obj.	Dative	Down	Ambulative	Progressive	Iterative	Desiderative	Totalitive	Meanwhile

6.5.2.1 Valence-changing subzone. This section deals with both valence-increasing and valence-decreasing morphology. The FM Totonac verb has a rich set of applicatives, including the instrumentals, the comitative, the dative, and sometimes the locatives and BPPs, as well as the associative, which can increase the valence of the verb (see §5.4). These valence-increasing morphemes are found from P8 to S3, in effect expanding the causativized stem, as shown in Table 6.8.

Table 6.8 Valence-increasing subzone

8	7	6	5	4	3	2	1	0	1	2	3
Instrumentals	Comitative	Associative	Causatives	Locatives	Body Parts	Middle Voice/Inceptive	Distributive	ROOT	Transitivizer	Habitual/Indefinite Object	Dative

Something more may be said about the coherence of the valence-increasing subzone: with a single exception, it includes all of the affixes that often lexicalize with a root to yield a new verb with non-compositional semantics. The exception, DOWN, can be included in the subzone by expanding it by one suffix position, to position 4. I have no examples of affixes outside this zone being involved in forming non-transparent lexical items, while most of the morphemes in the zone more or less frequently do so. In spite of the evidence of special lexicalization linking DOWN in S4 with the affixes of this subzone, other facts suggest that the prefixes out to position 10 must attach as a block prior to any suffixes beyond the dative in position 3. This will be addressed in the next sub-section.

The valence-<u>increasing</u> span includes some of the valence-<u>decreasing</u> affixes as well: the middle voice/inceptive marker and the indefinite object/habitual suffix. Expanding it by two prefix positions (to the reciprocal in P10) enables it to include <u>all</u> of the valence-changing affixes except for the reflexive, which interacts tightly with the inflectional affixes and is located toward the outer edge of the derived stem. The valence-changing subzone, then, includes all prefixes out to P10 and the suffixes forming part of the causativized stem to S3.

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Table 6.9 Valence-changing subzone

10	9	8	7	6	5	4	3	2	1	0	1	2	3
Reciprocal	Round-trip/Pass-by	Instrumentals	Comitative	Associative	Causatives	Locatives	Body Parts	Middle Voice/Inceptive	Distributive	ROOT	Transitivizer	Habitualizer/Indef.Object	Dative

6.5.2.2 Morphological blocking subzone. The next subzone within Zone 2 is characterized by the long-distance co-occurrence restriction between the prefix 2/1 *laa-* in position 11 and all 2nd person subject marking across the verb, as detailed in §6.3. Since 2/1 *laa-* blocks all 2nd person subject morphology from the root out to suffix position 14 (see example 38), a model in which 2/1 *laa-* is affixed before the suppleting suffixes or person agreement markers in positions 4, 6, 13 and 14 is reasonable.[8] This evidence thus picks out almost the same subzone as that of the valence-changing affixes.

38) *škinqašpátpaapi̥*

   /š-kin-**qašpat-paa-pi̥**/

   PAST-1OBJ-**hear2-PROG2-DEICTIC2**

   'you were listening to me over there'

   škilaaqašmatmaača'áw

   /š-kin-**laa-qašmat-maa-ča'a**-wą̥/

   PAST-1OBJ-**2/1-hear-PROG-DEICTIC**-1pl

   'you were listening to us over there'

The analysis of variable but non-scopal affix ordering is difficult in any currently available framework, but it seems likely that the affixes that engage in free ordering may attach to the verb

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[8] Since four roots in FM Totonac have 2nd person subject suppletive forms which are blocked when 2/1 *laa-* is present, the morphology must have an ability to 'see' the subject/object specifications before the root form is chosen. This may be conceptualized as having access to a morphosyntactic target that guides the construction of the verb. If this is the case, it might be argued that the affixation of 2/1 *laa-* need not precede that of the suppleting suffixes, since the grammar would be able to view the target at any point in the construction.

as a block. Together with the evidence that a prefix in position 11, 2/1 *laa-*, is affixed prior to any of the suppleting and second person agreement morphemes in suffix positions 4-14, it seems likely that within Zone 2, the variable ordering prefix block is affixed prior to that of the variable order suffixes (see Beck 2007a for a comparable analysis).

6.5.2.3 Summary of Zone 2. In summary, Zone 2, the variable order zone, corresponds roughly to the derivational stem, with the fuzziness at the edges of the zone that is characteristic on FM Totonac verb structure. It seems to be divided into a valence-changing span encompassing all variable order prefixes and the first three suffixes, and the block of remaining variable order suffixes. While not participating in reverse order, the reflexive/indefinite subject marker in position 11 determines which person agreement markers are required, and therefore should attach before any of the inflectional affixes of Zone 3.

6.5.3 Zone 3. Zone 3 comprises the entire verb structure, with its 19 pre-verbal and 15 post-verbal positions. The new areas added to Zone 2 on either side of the stem contain inflectional affixes and clitics (some whose status is difficult to distinguish), and are characterized by the strictly fixed order of the morphemes.

Table 6.10 Fixed order Zone 3

Clitics P19-15	P14	P13	P12	P11	Zone 2	S12	S13	S14	Clitics S15
Neg. Polarity/Adverb.	Mood/Tense	Person Agree.	Counterexpect.	Person Agree.	Root and affixes	Aspect	Deictics	Aspect/Person	Adverbials

A single subzone is found within Zone 3, one demarcated by the verbal stress facts, to be discussed in §6.5.3.1. Another subzone that might be expected, consisting of the morphemes cliticizing to the fully affixed verb, cannot be clearly distinguished in FM Totonac due to conflicting evidence regarding the status of several of the outer morphemes. This will be covered in §6.5.3.2.

6.5.3.1 Stress zone. Primary stress on the FM Totonac verb is determined by the final suffix or enclitic to attach to the verb (see §2.7.2 for a full discussion of morphological stress). Only certain suffixes assign stress: any of the major aspect markers in positions 6, 12 and 14, the person agreement markers of position 14, and the enclitic *–ku'u̧* STILL in position 15. Each of these morphemes assigns either final, penult or antepenult stress. The morphemes on which

stress may fall include the enclitic, all suffixes, the root, and all prefixes out to position 13.[9] Thus the stress zone of the verb (all stressable and stress-assigning morphemes) includes all verbal affixes except the proclitics in P19-15 and the mood and tense markers in P14. If the unstressable mood/tense prefixes were analyzed as proclitics, the stress zone would be more cohesive, including the entire verb with the exception of any proclitics. However, the evidence for their status is mixed. The affix-clitic distinction, which is an issue with other outer morphemes, is discussed further in §6.5.3.2. Examples 39 and 40 show the grammaticality of stress on a prefix in P13 but not on one in P14.

Table 6.11 Stress zone

P13	P12	P11	Zone 2	S12	S13	S14	Clitics S15
Person Agree.	Counterexpect.	Person Agree.	Root and affixes	Aspect	Deictics	Aspect/Person	Adverbials

39) *kísnatḷi*

/kin-snat-ḷi̥/

1OBJ-embrace-PFTV

'he embraced me'

40) *kasnátḷi*

/ka-snat-ḷi̥/

IRR-embrace-PFTV

'embrace him!'

There is no evidence as to the sequence in which the mostly inflectional affixes of this stress subzone attach, whether first the prefix positions 11-13, or first the suffix positions 12-14 and enclitic position 15. A standard assumption would be that the inflectional prefixes and suffixes

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[9] Note that an affix must have a full vowel with a root node to receive stress; suffixes lacking vowel nodes such as deictics *–cį̌* and *–pi̥*, person markers *–ni̥, -wą, -ti̥,* perfective *–li̥,* and the adverbial *–ts'ą* may never be stressed when word-final.

would attach before the enclitics (but see the following subsection for a discussion of the inconsistent facts regarding affixes vs. clitics in FM Totonac); certainly there is no evidence against this.

6.5.3.2 Affixes vs. clitics. Morphemes occur on both the outer edges of the FM Totonac verb for which the evidence of 'affixhood' or 'clitichood' is mixed. These include the mood/tense markers just discussed, as well as the deictics and other outer postverbal morphemes. These facts complicate the analysis of verb structure.

There are four types of evidence in this language for the strength of attachment of a morpheme to a verb: stress, nasal epenthesis (see §2.6.5.2), position in the verb, and ability to attach to other word classes. Generally affixes may be stressed, clitics may not; nasal epenthesis occurs between independent words and between clitic and stem, but not between affix and stem; clitics attach outside affixes; and clitics but not affixes may attach to words of multiple classes. These phenomena will be used to test the questionable outer morphemes in the following subsections.

6.5.3.2.1 Pre-verbal outer morphemes. The morphemes outside the stress zone on the left of the verb root include the mood/tense markers, a set of adverbials, negation, and various negative polarity elements. Besides their unstressability, the mood/tense markers IRR *ka-* and future *na-* show no evidence of clitichood: they do not attach to other word classes, and are not separated from the stem by nasal epenthesis by the great majority of speakers[10]. Except for their inability to be stressed, then, the mood and tense markers pattern with the other prefixes. Their unstressability may indicate a weaker attachment to the verb than that of the more inner prefixes, but is also indicative of the lack of a categorical distinction between clitics and affixes in this language.

Adverbials in P15 may occur as independent words or attached to the stem, as diagnosed by lack of primary stress. Those of a single syllable and those without preceding negative or negative polarity morphemes are more likely to attach to the verb or other parts of speech; those with more phonological weight tend to remain as separate words. In either case, nasal epenthesis is the rule. Thus the adverbials seem to behave as clitics or words, but certainly not as affixes.

41) *tsaałtatáma*
/tsaa-łtata-maa/
OPT-sleep-PROG
'having other options, he's sleeping'   (6,46 jsf)

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[10] It is interesting that my youngest consultant did consistently insert a nasal between the future *na-* and a stem, so that for example, *na-* + *tasa*, *natasá* 's/he will cry' in standard speech becomes *nantasá* in her speech. She is the only person to do this among at least two dozen individuals I tested.

42) *ɬaalantuunú n kɬtatá*

/ɬaa = la-tuunu k-ɬtatá-aa/

NEG-POT-apart 1SUB-sleep-IMPF

'I can't sleep apart from others' (6,40 jsf)

The final group of preverbal morphemes includes the negative and negative polarity items in P19-16. These give every sign of being clitics: they are never stressed; can take as a base words of various classes (see §3.3.9.1); most exhibit nasal epenthesis; and they occur in the outermost positions. The exceptions which never exhibit nasal epenthesis are NEG *ɬaa =* (see example 42) and STILL (NOT) *naa-* (example 43) in preverbal positions 19 and 18 respectively (recall that nasal epenthesis is an optional process that shows inter- and intra-speaker variation). It is possible that the failure of the negation marker *ɬaa =* to undergo nasal epenthesis helps to disambiguate it from homophonous negative polarity (and relativizer) *ɬaa =*, meaning 'where' (example 44).

43) *ɬaanaalaktlaawán*

/ɬaa = naa-la-k-tlaawan-aa/

NEG-ALSO-POT-1SUB-walk-IMPF

'I still can't walk' (7,130 mjl)

44) *ɬaanta'aktayaačá'ą̱*

/ɬaa = ta-ak-ta-yaa-čá'ą̱-lį̱/

where-3SUB.pl-HEAD-INC-standing-THERE

'where they landed' (6,137 mjl)

Preverbally, then, the structure is fairly straight-forward: negation and the negative polarity items are clitics, as are certain adverbials; all other morphemes in positions 1-13 show consistent signs of being affixes. Only the mood/tense morphemes, by their unstressability, reveal a weaker attachment to the stem than other affixes. The situation among the outer post-verbal morphemes is more problematical.

6.5.3.2.2 Post-verbal outer morphemes. All post-verbal morphemes are included in the stress zone (one vacuously: adverbial *=ts'ą̱,* without a vowel node, cannot be stressed), and all morphemes from S1-S12 meet all criteria for affixhood. It is the morphemes in S13 to S15 that provide more grist for analysis.

The adverbials in the final post-verbal position are very clitic-like, frequently found attached to all word classes, and frequently preceded by epenthetic nasals. Unlike canonical clitics, *-ku'ṷ* STILL takes primary word stress whenever it occurs.

The facts of nasal epenthesis are also inconsistent on this extreme of the verb: as noted, nasals are generally epenthesized preceding the adverbial clitics of post-verbal position 15, and also preceding the deictics of position 13, but are never found before any of the person/aspect markers of S14. This seems to indicate that the deictics are less tightly attached to the stem than a set of morphemes that appear farther from the root than they. This situation may have diachronic roots: it seems possible that the deictics developed from independent verbs occurring in a verb sequence construction (see §5.5.4) and were mis-analyzed as attaching after position 12, which could seem to be the end of the verb, since most verbs do not have an affix on the surface in position 14. The suffixes of position 14 offer their own idiosyncracy; they assign stress, but because of the interplay of the stress rules, can never be stressed themselves. Therefore there is conflicting evidence of strength of attachment to the verb of all of the morphemes of the last three post-verbal positions.

6.5.3.3 Degemination at the stress zone boundaries. One other phonological process occurs only in Zone 3. FM Totonac generally preserves false geminates brought together at morpheme boundaries. However, at the edges of the stress zone, where the nasal epenthesis and stress facts are inconsistent, certain morphemes undergo degemination processes. The morphemes involved are four inflectional affixes: first person exclusive *k-* in prefix position 13, past tense *š-* in P14, 2nd person singular and plural subject markers *–ti̢* and *–titi̢* in suffix position 14; and enclitic *–ts'a̢* in S15 (see §2.6.2.2 for degemination details). With the exception of 1SUB *k-*, these morphemes are among those noted in §6.5.3.2 as appearing less tightly bound to the verb stem. It is not clear why degemination should occur precisely where morpheme attachment to the verb stem is weaker.

6.5.3.4 Other evidence of structure. Evidence regarding the order of attachment of the final preverbal vs. post-verbal morphemes of Zone 3 is weak. The negative intensifiers of P16 interact with major aspect in an interesting way. In the progressive and perfective aspects, they are required for simple negation, e.g., *ɬaa＝tuu=kúči* (**ɬaa＝kúči*) 'it didn't cure him' (perfective), while in the imperfective and perfect aspects they reveal their intensifier function: *ɬaa＝tuu=š-kuchíi* 'nothing cured him' (imperfective). This confirms the stress evidence that the morphemes through S14 attach prior to the negative polarity proclitics.

Summary of Zone 3. Zone 3 includes the outermost morphemes, affixes and clitics, occurring in fixed order. It would have been convenient for diagnosing verb structure if the affixes and clitics of this zone had been clearly disntinguishable. However, several morphemes at both edges of the stress zone—those in preverbal position 13 and postverbal positions 13-15—exhibit inconsistent evidence of their status as affixes or clitics. FM Totonac verbal affixes generally are stressable, occur only on verbs, and cannot be separated from a stem by nasal epenthesis, while clitics show the opposite patterns. The conflicting evidence related to the morphemes in question raises

questions about the usefulness of categorical distinctions rather than gradient, descriptive ones in describing the binding of verbal morphemes to the stem. The stress facts in particular support an assumption that the negative/negative polarity proclitics are the last block to attach to the verb.

6.5.4 Summary of verbal structure. The preceding sub-sections have provided evidence regarding the hierarchical structure of the Filomeno Mata Totonac verb, with its division into three major zones based on affix ordering possibilities, confirmed or cross-cut by subzones based on other phonological and morphological evidence. In spite of the fuzziness at the edges of the zones due to conflicting evidence, a general model of the verb may be offered in Table 6.12.

Table 6.12 Structure of FM Totonac verb

[P19-[root]-S15]	Fully derived/inflected verb
[P14-[root]-S15]	Stress zone
[P11-[root]-S10]	Variable order suffix zone
[P11-[root]-S3]	Variable order prefix zone
[P5-[root]-S3]	Causative-harmonic stem
[root]	

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Appendix A. Filomeno Mata Totonac affixes and clitics

Morpheme	Abbreviation	Gloss	Described in:
'a=	HERE	Cliticizing adverb 'here, *voila'*	§5.5.5.1
'ak-	HEAD	Head-related body part prefix	§5.4.2.5
'ak=	POINT	Cliticizing adverb 'at the point of'	§5.3.2.1
'amaq-	NC	Numeral classifier	§3.6.2
'aq-	NC	Numeral classifier	§3.6.2
'aqa-	NC	Numeral classifier	§3.6.2
'aqa-	EAR	Ear-related body part prefix	§5.4.2.5
'aqłčaa-	SHO	Upper shoulder-related BPP	§5.4.2.5
'aqsti-	NC	Numeral classifier	§3.6.2
-(ii)n, -(VV)n,-n̥'į	PL	Pluralizer of nouns	§3.3.1.1
-[cg]	[cg]	Second person singular subject, floating constricted glottal feature	§4.8.1.2
-a'ą̥, -V'V	none	Experiencer nominalizer	§3.3.11.1.2
-aa	IMPF	Imperfective aspect	§4.7.2.1
ał=	YET	Negative polarity yet, anymore	§5.2.2
čaa-	NC	Numeral classifier	§3.6.2
čaa-	LEG	Lower leg-related body part prefix	§5.4.2.5
čaaspi-	none	Back of thigh, hamstrings-related BPP	§5.4.2.5
-ča'ą̥	THERE	Deictic, distal	§5.5.4
-č̥į	HERE	Momentary; Deictic, proximal	§5.3.2.8, §5.5.4
čii=	Neg.int	Negative intensifier and relativizer 'how'	§5.2.4
-čitą̥	HERE2	Momentary; Deictic, proximal, 2nd person subject	§5.3.2.8, §5.5.4
-ii or -VV	TRAN	Transitivizer; part of causative circumfix	§5.4.1.1.3
k-	1excl; 1SUB	First person subject exclusive	§4.8.1.1
k-	LOC	Locative on nouns	§3.3.5.1
ka-	IRR	Irrealis mood	§4.7.1.1
kaa-	OBJ.pl	Plural object	§4.8.2
kaa-	LOC	Locative, general/expanse	§5.4.2.4
-kan	REF	Reflexive; indefinite subject	§5.4.4.4, §5.4.4.5
-kan	PL	Pluralizer of nouns and possessives	§3.3.2.1

ki(n)-	1POSS	First person possessive	§3.3.2.1
kii-	RT	Round trip, 'depart, do X, return'	§5.3.2.2
kil-	MOUTH	Mouth-related body part prefix	§5.4.2.5
kiɬ-	NC	Numeral classifier	§3.6.2
kiɬmak-	NC	Numeral classifier	§3.6.2
kiɬpi-	none	Lip-related body part prefix	§5.4.2.5
kiɬ'ak-	NC	Numeral classifier	§3.6.2
kin-	1OBJ	First person object	§4.8.2.1
kinka-	NOSE	Nose-related body part prefix	§5.4.2.5
=ku'u̱	STILL	Still, just	§5.3.2.9
kušmu-	CHEST	Chest-related body part prefix	§5.4.2.5
-kutun	DES	Desiderative	§5.3.1.2
la=	POT	Negative polarity potential	§5.2.3
laa-	2/1	2nd person subject with 1st person plural object	§4.8.2.1
laa-	REC	Reciprocal	§5.4.4.3
laa=	LIKE	Like, similar to	§3.3.9.3
lak-	DIST	Distributive	§5.5.2
lak-	LEG	Lower leg-related body part prefix	§5.4.2.5
lak-, laq-	PL	Pluralizer of nouns and adjectives	§3.3.1.1
laka-	NC	Numeral classifier	§3.6.2
laka-, laqa-	FACE, EYE	Face- or eye-related body part prefix	§5.4.2.5
lakpi-	none	Cheek, jaw-related body part prefix	§5.4.2.5
laq-	NC	Numeral classifier	§3.6.2
laqa-	NC	Numeral classifier	§3.6.2
laqšti-	TEM	Temple-related body part prefix	§5.4.2.5
-l̥i	PFTV	Perfective, first or third person subject	§4.7.2.2
lii-	INST	Instrumental, general	§5.4.2.3
liičaa-	NC	Numeral classifier	§3.6.2
liiqaɬa-	NC	Numeral classifier	§3.6.2
ɬaa=	NEG	Negation	§5.2.1
ɬaa=	Neg.int	Negative intensifier and relativizer 'where'	§5.2.4
-maa	PROG	Progressive aspect	§4.7.2.4
maa-	CAUS	Causative, general	§5.4.1.1

-maana	PROG3	Progressive aspect, 3rd person subject	§4.7.2.4
mak-	NC	Numeral classifier	§3.6.2
maka-, *maqa-*	HAND	Hand-related body part prefix	§5.4.2.5
makapiš-	none	Wrist-related body part prefix	§5.4.2.5
maq-	ASS	Associative	§5.5.1
maq-	NC	Numeral classifier	§3.6.2
maq-	none	Body-, torso-related body part prefix	§5.4.2.5
maq(a)-	CAUS	Causative, limited use	§5.4.1.2
maqšpa-	none	Lower arm-related body part prefix	§5.4.2.5
maya=	ONLY	Only, just	§3.3.9.3
mi(n)-	2POSS	Second person possessive	§3.3.2.1
-mii	DOWN	Down	§5.5.3
muušti-, *muu-*	none	Forehead-related body part prefix	§5.4.2.5
-n(i)	NOM	Nominalizer	§3.3.11
na-	FUT	Future tense	§4.7.3.1
na-	PL	Pluralizer of nouns	§3.3.1.1
-na'ą, -nV'V	AGT	Agentive nominalizer	§3.3.1.3
naa=	STILL	Negative polarity still; also	§5.2.2
-nan	PL	Pluralizer of pronouns	§3.2.1
-nan or -nVn	HAB, IND.O	Habitual; indefinite object	§5.4.4.1
-n̥i	2OBJ	Second person object	§4.8.2.2
-nii	DAT	Dative, benefactive/malefactive	§5.4.2.2
-nii(tą)	PFT	Perfect aspect	§4.7.2.3
-paa	PROG2	Progressive aspect, 2nd person subject	§4.7.2.4
paa-	NC	Numeral classifier	§3.6.2
paa-	BELLY	Belly-related body part prefix	§5.4.2.5
-paɾa	ITER	Iterative, repetitive	§5.3.2.5
peeq-	NC	Numeral classifier	§3.6.2
peeqštu-	none	Shoulder-related body part prefix	§5.4.2.5
peqee-	none	Upper arm-related body part prefix	§5.4.2.5
-p̥i	THERE2	Deictic, distal, 2nd person subject	§5.5.4
-pii	DOWN2	Down, second person subject	§5.5.3

piš-	NC	Numeral classifier	§3.6.2
piš-	NECK	Neck-related body part prefix	§5.4.2.5
pooqaɬ-	NC	Numeral classifier	§3.6.2
puu-	INST	Instrumental, concavity	§5.4.2.3
puu-	LOC	Locative, interior/concavity	§5.4.2.4
puu-	NC	Numeral classifier	§3.6.2
puu-	none	Inside part-, genitalia-related BPP	§5.4.2.5
puu'ak-	NC	Numeral classifier	§3.6.2
puulak-	NC	Numeral classifier	§3.6.2
qaapi-	none	Front of thigh-, quads-related BPP	§5.4.2.5
qaapiš-	none	Crotch-related body part prefix	§5.4.2.5
qal-	MOUTH	Mouth-related body part prefix	§5.4.2.5
qaltsan-	none	Chin-related body part prefix	§5.4.2.5
qaɬ-	NC	Numeral classifier	§3.6.2
qan-	NC	Numeral classifier	§3.6.2
qanqa-	NOSE	Nose-related body part prefix	§5.4.2.5
-qe'e	MEAN	Meanwhile	§5.3.2.7
qee-	NC	Numeral classifier	§3.6.2
qee-	BACK	Back-related body part prefix	§5.4.2.5
-qo'o	TOT	Totalitive; 'finish Xing'	§5.3.2.6
-qš	none	Derogatory	§3.3.8
š-, ša-	PAST	Past tense	§4.7.3.2
š-	3POSS	Third person possessive	§3.3.2.1
ša-	none	Alienating prefix for inalienable nouns	§3.3.2.3
ša-	none	De-adjectival nominalizer	§3.3.6
sih-	PART	Cliticizing adverb, 'partially'	§5.5.5.3
sooqe=	early	Cliticizing adverb 'early'	§5.5.5.4
stiipu-	none	Spine-related body part prefix	§5.4.2.5
ta-	3SUB.pl	Third person plural subject	§4.8.1.3
ta-	INC, MV	Inceptive; middle voice	§5.3.2.3, §5.4.4.2
taa-	COM	Comitative	§5.4.2.1
taa-	none	Companion on nouns	§3.3.7
tampuna-, tampa-	none	Waist-, lower back-related BPP	§5.4.2.5

tan-	NC	Numeral classifier	§3.6.2
tan-, tank-, tanq-	REAR	Posterior-, bottom-, butt-related BPP	§5.4.2.5
tančaaspi-	none	Calf-related body part prefix	§5.4.2.5
tankił(a)-	none	Hip-related body part prefix	§5.4.2.5
tantu-, tuu-	none	Foot-related body part prefix	§5.4.2.5
-ti̥	2SUB.sg	Second person singular subject in progressive or perfective aspect	§4.7.2.2
-ti̥	none	'Native of' suffix; causes stress on preceding syllable	§3.3.4
-ti̥	NOM	Nominalizer, causes stress two syllables before itself	§3.3.11
ti-	CNTR	Counterexpectational	§4.7.1.2
tii-	PASS	Pass-by, 'stop by in passing and do X'	§5.3.2.2
tii=	Neg.int	Negative intensifier and relativizer 'who'	§5.2.4
-tiiła	AMB	Ambulative	§5.3.2.4
-titi̥	2SUB.pl	Second person plural subject	§4.8.1.2
-tiyu'u̥	none	Both of pair of body parts	§3.3.1.4
=ts'ḁ	YA	Already	§5.3.2.9
tsaa=	OPT	Cliticizing adverb 'having other options'	§5.5.5.2
tseeq=	HID	Cliticizing adverb, 'hidden'	§5.5.5.6
-tu̥	none	One of pair of body parts	§3.3.1.4
tuu-	NC	Numeral classifier	§3.6.2
tuu=	Neg.int	Negative intensifier and relativizer 'what'	§5.2.4
tuunu=	APT	Cliticizing adverb, 'apart, separately'	§5.5.5.5
-wḁ	1pl	First person plural subject or object	§4.8.1.1, §4.8.2.1
=w̥ḁ	none	'Approximate' on adjectives	§3.4.1
=w̥ḁ	none	Deverbal and deadverbial adjectivizer	§3.4.2

Appendix B Filomeno Mata Totonac verbal structure

Prefixes/proclitics

19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Negation	Yet/Still	Potential	Negative Intensifiers	Adverbials	Mood/Tense	Person	Counterexpect	Person	Reciprocal	Round-trip/ Pass-by	Instrumentals	Comitative	Associative	Causatives	Locatives	Body Parts	Incept/Middle Voice	Distributive
łaa-	ał- naa-	la-	tuu- tii- łaa- čii-	various	š- PAST ka- IRR na- FUT	kin- 1Obj k- 1excl	ti-	laa- 2/1 kaa- Obj.pl ta- 3Sub.pl	laa-	kii- tii-	lii- puu-	taa-	maq-	maa- maq(a)-	kaa- puu-	ʼak- maka- lak- mak- kił- +more	ta-	lak-

ROOT

Suffixes/enclitics

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Transitivizer	Indefinite Object/ Habitual	Dative	Down	Ambulative	Progressive	Iterative	Desiderative	Totalitive	Meanwhile	Reflexive	Aspect	Deictics	Person/Aspect	Adverbials
-ii	-nan	-nii	-mii/-pii	-tiiła	-maa/ -paa/ -maana	-para	-kutun	-qoʼo	-qeʼe	-kan	-aa IMPRF -niitḁ PRFT	-či̥ -čitḁ HERE -čaʼḁ -pi̥ THERE	-ni̥ 2OBJ -wḁ 1pl -titi̥ 2SUB.pl -cg/-ti̥ 2SUB.sg -li̥ PFTV	-kuʼu̥ STILL -tsʼḁ YA